INDIA AS KNOWN TO PĀṆINI
[A Study of the Cultural Material in the Ashtādhyāyī]

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TO
My Teacher
PROFESSOR DR. RADHA KUMUD MOOKERJI
WITH PROFOUND GRATITUDE
चष्पुषिपका

१. पाणिनीयं महत् सुविभितम् ।
२. महती सूक्ष्मेशिका वर्तते सूत्रकारस्य ।
३. घोभना खलु पाणिने: सूत्रस्य कृतः ।
४. यज्ञवल्ल आहू तदस्माकं प्रमाणम् ।
५. सर्वेदपारिषं हीदं शास्त्रम् ।
६. पाणिनिशब्दो लोकेक प्रकाशते ।
७. आकुमार्यं यश: पाणिने: ।
८. पाणिनेरचार्यस्य सिद्धम् ॥
येन धौता गिर: पुस्तं विमले: शब्दवारिभि:।
तमश्वाणानं भिन्नं तस्मै पाणिनये नमः॥
PREFACE

The book aims at an examination of the geographical, social, economic, literary, religious and political data found in Pāṇini's Ashtādhyāyī. The subject 'Pāṇini as a source of Indian History,' was suggested to me by my Professor Dr. Radha Kumud Mookerji M.A., Ph.D., while I was admitted to his Ph.D. class in 1929 as a Research Fellow in the Lucknow University. Chs. I—IV of the book substantially represent the Thesis approved by the Lucknow University for Ph. D. in 1941 and Chs. V—VIII for D. Litt. in 1946, with such additions and changes as later research made inevitable.

The value of such a study to Indian History can hardly be overestimated. It is due at once to the antiquity of Pāṇini's evidence, its definite and authoritative character as reliable as the history of India based upon epigraphic and numismatic records, and also to the singular fact in Sanskrit literature that the Ashtādhyāyī is the work of an individual author (like its commentary the Mahābhāṣya) and not the accumulated result of additions made to it from time to time by generations of teachers and pupils as happened in the case of the literature of Vedic Charaṇas or schools.

In a study of Pāṇinian evidence the greatest importance attaches to facts recorded in the sūtras. As already stated, the text of the sūtras with a few exceptions shown by Kielhorn is the same as that handed down from the time of Pāṇini. The gaṇas form an inalienable appendix to the sūtras and a genuine tradition of Gaṇa-pāṭha was known to Kātyāyana and Putraṇjali who at times have made the inclusion of a particular word in a gaṇa the basis of their comments. Unfortunately the present state of the Gaṇa-pāṭha has suffered from subsequent interpolations, and although there is much valuable material
especially concerning geographical, literary and gotra names found in the present Gaṇa-pañ̄ha, it has to be used with proper discrimination. I have always given preference to the sūtra evidence, but it does not mean that the Gaṇa-pañ̄ha can be ignored as useless accretion, for without it a substantial portion of the data of Pāṇini’s language would remain unaccounted for. The contribution of the Gaṇa-pañ̄ha is of distinct value and its facts when substantiated by Patañjali may be regarded as authentic. In all cases where evidence from the gaṇas has been utilized its source is plainly indicated.

No scholar of Pāṇini can do without the invaluable help offered by the commentaries, and I must record my indebtedness to Patañjali’s Mahābhāṣya and the Kāśikā-vṛtti without which this work would not have been possible. Prof. Max Muller was the first to point out ‘that Pāṇini’s sūtras were evidently from the beginning accompanied by a definite interpretation, whether oral or written, and that a considerable proportion of the examples in the Bhāṣya must have come from this source (Weber, History of Indian Literature, p. 225, f. n.). As an instance we may point out that Patañjali himself refers to a Māthuri-vṛtti which as stated by Purushottamadeva in his Bhāṣā-vṛtti (I.2.57), was a commentary on the Ashtādhyāyī, and was originally taught by oral instruction (tena proktam, na cha tena kṛtam, Bhāṣya, IV.3.101; II.315) and later on compiled in the form of a book. The subsequent commentaries including the Mahābhāṣya largely drew upon the older material. As Prof. Kielhorn has put it, ‘We may, in my opinion certainly assume, that like Pāṇini himself, both Katyayana and Patañjali have based their own works on, and have preserved in them all that was valuable in the writings of their predecessors (Ind. Ant. XVI.106). Each case, however, has to be viewed on its own merits, and in the absence of more convincing proof the citations in the Kāśikā should not be pressed too far as evidence for Pāṇini’s own time.
The aphorisms of Pāṇini are rich in historical and cultural material. It has been my effort here, firstly to evolve a classified presentation of the same, and secondly to broaden the scope of its interpretation by focussing on it as much light as was possible from comparative sources, utilising for the purpose the great traditional commentaries on Pāṇini’s Sūtras, like the Vārttikas, the Mahābhāshya, the Kāśika as supplemented by the more important subsequent explanations, and secondly early Indian literature both Vedic and classical. In the course of my readings during the last twenty years, with mind constantly switched on to Pāṇini, I found light from many a source—Sanskrit, Pali and Prakrit, Brahmanical, Buddhist and Jain; and thus the work of understanding the true import of the cultural institutions in Pāṇini of which each word dealt with by him is a pointer gradually advanced. Words like Jaya, Āśvaṅkṣaṇa, Rāja-pratyenas, Ārya-Brāhmaṇa, Akranda, Grāmanī, Parishad, Cārvaka, Kāra, Harana—to name only a few out of hundreds—will bear testimony to the success of this method. Thus it has been possible to throw fresh light on a number of Pāṇini’s sūtras by which their significance has been increased.

The Thesis reveals for the first time the deep relationship between the historical background of Pāṇini and Kauṭilya. The close proximity of their vocabulary and numerous items of cultural life common to both are worthy of greater attention, and point to underlying chronological relationships. Pāṇini is closely related in time to Kauṭilya by his numismatic data. It is very significant that there is not a single coin name in the Arthaśāstra which would reflect its late character. The numismatic evidence is completely in favour of its Mauryan date. Pāṇini must have preceded him by about a century or so.

Reference within brackets are to the sūtras, as (I.1.1) denotes the first sūtra of the first pāda of the first ādhyāya of the Ashtādhyāyī. For the Mahābhāshya text I have used
Kielhorn’s edition, citing its reference by the number of volume and page; e.g., III.467 directs us to the last page of the last volume of that edition. In all other cases, the name of the author or the work quoted is indicated in a manner clear enough to follow.

I wish to express my grateful thanks to all previous writers whose works I have utilized in the preparation of this volume. The immense help and light which I have derived from them are not a mere matter of formal acknowledgment. I owe an obligation to the two volumes of Word-Index of the works of Pāṇini and Patañjali compiled by Sridharsastri Pathak and Siddheshwarsastri Chitrao and published by the Bhandarkar Oriental Research Institute, Poona.

It is a pleasant duty to record my deep gratefulness to my Professor, Dr. Radha Kumud Mookerji, who prescribed for me this subject and whose constant help has greatly contributed towards the completion and publication of this work. In token thereof I respectfully dedicate this book to him. May this work be a small recompense to him for all the trouble he has taken on my behalf during the last twenty-five years. My sincere thanks are also due to Shri Sampurnananda Ji, Shri Chandra Bhan Ji Gupta and Acharya Narendra Deva Ji who kindly helped me in securing from the State Government of Uttar Pradesh through the Lucknow University a generous subvention in aid of the publication. I am also grateful to the authorities of the Lucknow University for inviting me to deliver a course of lectures in 1952 based on the contents of this book under the Radha Kumud Mookerji Lectureship Endowment Fund of the University.

I also thankfully remember the ungrudging help I received from my office-assistants, Shri Jagan Prasad Chaturvedi of the Mathura Museum, Shri Chandra Sen of the Lucknow Museum and Shri Gautam Dev Khullar of the C. A. A. Museum, New Delhi, in typing the Thesis and its finally revised press-copy. Shri G. S. Ramanathan of the office of the Government
Preface

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V. S. AGRAWALA
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Coins in Pāṇini.

* Appendix III on Gotras with a critical text of their Gana-pātha had to be held back for treatment as a separate monograph,
CHAPTER I

PÂÑINI: HIS LIFE AND WORK

GRAMMAR (Vyākaraṇa)—Grammar was regarded by the Indians as the first and most important of the sciences (Vyā-karaṇam nāme yam uttarā vidyā, Bhāshya, 1.2.32; I.208; also shatsu aṅgēshu pradānam). The results attained by them in the systematic analysis of language surpass those arrived at by any other nation. "The Sanskrit grammarians were the first to analyse word-forms, to recognise the difference between root and suffix, to determine the functions of suffixes, and on the whole to elaborate a grammatical system so accurate and complete as to be unparalleled in any other country." (Macdonell, India's Past, p. 136). Their singular achievements in this field have also rendered eminent services to Western philology.

The celebrated grammar of Pânini is the oldest surviving representative of this elaborate grammatical analysis of forms and linguistic investigation. Pânini is the architect of the magnificent edifice known as the Āśṭādhyāyī, which justly commands the wonder and admiration of the world. His work may be regarded as the starting-point of the post-Vedic age, almost entirely dominating the classical Sanskrit literature by the linguistic standard set by it. His grammar regulates equally the language of both poetry and prose in Sanskrit. Pânini's work holds good for all ages so far as Sanskrit is concerned. It is a permanent influence and institution in the world of Sanskrit even to this day.

PÂÑINI'S GREATNESS—Weber regards Pânini's grammar as "superior to all similar works of other countries, by the thoroughness with which it investigates the roots of the language and the formations of its words." (History of Indian Literature, p. 216). According to Goldstücker: "Pânini's work is
indeed a kind of natural history of the Sanskrit language.” His grammar “is the centre of a vast and important branch of the ancient literature. No work has struck deeper roots than his in the soil of the scientific development of India.” Pāṇini’s rules (sūtras) have been framed with the utmost conciseness and this dignified brevity is the result of very ingenious methods. His terminology adequately explaining all the phenomena of the language, demonstrates his great originality.

Coming at the end of a long evolution of grammatical studies the Astādhyāyī achieved finally its position as the only adequate and comprehensive Sanskrit grammar. Regarded as the highest authority and also as infallible, Pāṇini superseded all his predecessors whose works have consequently been lost in oblivion. Of the older linguists, Yāska alone survives, and that because his work lay in the different field of Vedic exegesis.

Pāṇini undertook a profound investigation of the spoken and the living language of his day. He applied the inductive method in discovering and creating his own material for purposes of evolving his grammatical system. As a trustworthy and competent witness of linguistic facts, he cast his net so wide that almost every kind of word in the language was brought in:

श-य-स-म-ब-हः स-क-ल-ि-त-ा-स-ट-ा-न-प-द-ा-य प-ण-ि-न-ि-ना स-म-स-त-ि-क-श-प-न-ि-न-ि-व-ा,
(Kāśikā, IV.I.114).

This is shown, for example, by his rules applied to the accent, or the lengthening of the vowels in cases of calling from a distance (durād-dbute), salutation (pratyabhivāde), and in the case of questions and answers (pari-praśna); or more specially, in his survey of place-names, and names of charanas, gotras and janapadas, for purposes of derivative formations which must have served an intensely practical need.

The characteristic feature of Pāṇini’s system is that it derives words from verbal roots. He has given us comprehensive lists of suffixes and roots. In this way his grammar is a contribution not merely to Sanskrit, but to linguistics in gene-
ral, throwing light on the structure of the cognate Indo-European languages. Pāṇini, unlike Śaṅkāyana, did not carry to extremes the theory of treating all nouns as verbal derivatives, but also recognised the formation of fortuitous words (yadṛīcchhā ṯabda, nipātana-ṣabda) in the language for which no certain derivation could be vouchsafed. Pāṇini's work is distinguished by the balanced judgment which it demonstrates in relation to contentious or extreme views.

His work is also unique in one respect, viz., that like Yāska's Nirukta it is one of the rare masterpieces of old Sanskrit literature which is the work of an individual author, and not of a school. As Colebrooke has put it, the Ashtādhyāyī "certainly bears internal evidence of its having been accomplished by a single effort" (Miscellaneous Essays, 1873, Vol. II, p. 5). According to Burnell: "Pāṇini's grammar has, in all probability, been little tampered with; we have better warrant for its integrity than in the case of any other work" (On the Aṃdra School of Sanskrit Grammarians, p. 31). For purposes of cultural and historical material the references in the Ashtādhyāyī have the same value as epigraphic or numismatic records. Its credit is also very much enhanced by its admitted antiquity.

On the whole one may say that Pāṇini's grammar is related to Sanskrit like the tap-root of a tree, the source of its sap and vitality regulating its growth. For Indo-European philology, Pāṇini's work has proved of inestimable value. For Indian history and culture, the Ashtādhyāyī is a mine of trustworthy information throwing light on numerous institutions, as the present study is directed to show.

The genius of Pāṇini appeared at a critical point in the history of Sanskrit to solve the crisis confronting it. The days of Vedic Sanskrit had come to an end by the time of Yāska, and fresh forms were coming into use. A new regulating and authoritative grammar was needed for bridging the gulf between the Vedic language and the rising popular speech or the classical Sanskrit which had come to stay. It was Pāṇini's mastermind
that saved the situation by devising a system which treated of the Vedic language on the one hand and the classical Sanskrit on the other with requisite synthesis and proper shifting of emphasis. Pāṇini's concentrated contemplation and penance accomplished a supreme task under the grace of God, to which tradition so amply testifies.

**EPITHETS**—Pāṇini's *magnum opus*, the *Aṣṭādhyāyī*, is a code of Sanskrit grammar consisting of about 4,000 or to be more precise 3,995 rules. Pāṇini wrote in the *sūtra* style with admirable regard for economy of words. Although Kātyāyana after him also composed the *vārttikas* in the *sūtra* form, Pāṇini alone is understood by the term *sūtrakāra* (*Pāṇineḥ sūtrakārasya, Bbāṣya, II. 2. 11; I. 414*). In a *kridanta* rule (III. 2. 23) he teaches the formation amongst other words of *sūtrakāra* and *sabdakāra*. Patañjali speaks of Pāṇini adopting the *sūtra* style as the medium of teaching grammar (*vyākaraṇaṁ sūtrayati, III. 1. 26; II. 34*). Previous writers were perhaps inclined to treat Vyākaraṇa as composed of rules as well as individual words (*lakṣhya-lakṣaṇa*). But Patañjali tells us that Pāṇini's contribution consisted in framing *sūtras* to embody the linguistic phenomena and to build up a system, rather than pursue the arduous and lengthy process of taking each word separately (*na hi Pāṇininā śabdāḥ proktāḥ, kiṁ tarbi, sūtram, I.12*). The title *sabdakāra* also may be applied to Pāṇini, since grammar concerned as it was with words is referred to as *śabda* in the *Aṣṭādhyāyī* itself (I.1.68 and VIII.3.86, *śabda-sainjña*). Elsewhere Pāṇini derives *sabdika* as applied to a grammarian on account of his authorship of *śabda* or grammar (IV.4.34, *Śabdanā karoti śabdikāḥ*). Since Pāṇini was the promulgator of a complete system of grammar, *Vyākaraṇa*, the title *vaiyākaraṇa* also applies to him, and he himself uses this term for a grammarian in one of his *sūtras* (VI. 3. 7).

**KĀTYĀYANA'S ESTIMATE**—Kātyāyana has been Pāṇini's ablest scientific critic, but also a follower. His own genius was of a high order. He subjected Pāṇini's work to a
searching examination, modifying and supplementing the sūtras where there was need for it in the process of time, initiating discussions on contentious grammatical theories, at times developed in as many as fifty-nine vārttikas (cf. sūtra I. 2. 64), and in other cases justifying and defending Pāṇini against his critics. He has written in a critical and scientific spirit, and not as a detractor of Pāṇini. The number of his vārttikas is nearly 4,263, showing that he laboured hard to bring out the depth and value of the Pāṇinian system.

There is unfortunately a tradition current in India, reinforced by legends that Kātyāyana was a biased critic of Pāṇini. The opinion is reiterated even by an eminent writer like Śabara-svāmin (sadvāditvāch-cha Pāñiner-vachanaṁ pramāṇam, asadvāditvān-na Kātyāyanasya, Mīmāṁsā-Bhāṣya, X.8.1). Prof. Kielhorn who set forth the true position of Kātyāyana in relation to Pāṇini, has shown that it would be a scientific mistake to stigmatize Kātyāyana as an unfair antagonist of Pāṇini, since the object which Kātyāyana and Patañjali have in view throughout their works is one and the same, the nature of their remarks being identical, but only differing in form (Kielhorn, Kātyāyana and Patañjali, p. 53). The Ashtādhyāyī instead of being weakened by Kātyāyana shines in his hands with added glory. Kātyāyana gives expression to his admiration for Pāṇini by concluding the vārttika-sūtras, in the following devout strain:

भवन्त: पाणिने: सिद्धम् ।

PATAÑJALI’S TRIBUTE—Patañjali, the author of the Mahā-bhāṣya, has applied his mastermind to reveal the depth and range of Pāṇini’s scholarship. Like Kātyāyana, Patañjali applies the term Bhagavān exclusively to Pāṇini in recognition of his supreme position in the field of study he had made his own. Only once the epithet refers also to Kātyāyana (III. 2. 3; II. 97) (Kielhorn, J.R.A.S., 1908, p. 503).

Patañjali next applies to Pāṇini the significant epithet Māṅgalika Āḗbārya (I.1.1; I.3.1; I.253), a great teacher
who commenced his treatise with a benedictory expression ensuring its continuity and development through the ages. There can be no doubt about Pāṇini's phenomenal success in the annals of human authorship, his work being greeted with universal approval: पाणिनीयं महत् मूच्छित्तम् (Bhāṣya IV.2.66; II.285). 'Superbly accomplished is the grand treatise of Pāṇini.' His grammar was acknowledged as of superior authority over the works of his predecessors (मूलकारकः शास्त्रिविदो मूच्छित्तमस्त: Padamaṇījārī on IV.1.93); and soon it spread from the elementary to the highest stages of studies. Patañjali testifies to the popularity of Pāṇini's work by saying that it was on the lips of young pupils (Ākumāraṁ yaśaḥ Pāṇineḥ, I.4.89; I.347). The Kāśikā goes further and says on the basis of an old stock-example that the name of Pāṇini was acclaimed as authority all over the country पाणिनिचिन्द्र: लोके प्रकाशते, इतिपाणिनि, II. 1.6.).

Another epithet applied by Patañjali to Pāṇini is that he is a Pramāṇabhūta Āchārya (I. 1.39; I.39), a teacher of the highest authority. He says that Pāṇini approached his task with a full sense of responsibility: 'Purified by the kuṣa grass held in hand, the Āchārya seated himself facing the sun and took infinite pains in composing each sūtra. Not one syllable is purposeless there, much less could a whole sūtra be' (I.1.1; I.39). This authoritative conception later on became the pivot of the maxim (परिभाष) that the saving of half a mātra is regarded by the grammarians to be as gladdening as the birth of a son (Paribhāshendu-śekhara, No. 122). Pāṇini adopted the sūtra style of composition based on utmost brevity, but not losing clarity. He was the founder of a new system planned with its logical method and scientific technique to solve the intricacies of grammar and reduce them to simplicity and precision as far as possible. He remains eminently understandable in spite of the rigour and conciseness of his work.

Patañjali also refers to the capacious intellect of Pāṇini by calling him an Analhpamati Āchārya (I.4.51; I.335). It was by his comprehensive genius that Pāṇini was able to handle an
almost unlimited range of linguistic material, subject it to masterly analysis, and reduce it to an order and system. His vigorous understanding and method have for ages disciplined and invigorated the minds of generations of Sanskrit scholars.

Pantañjali also mentions the technical ability of Pāṇini by calling him a specialist in the forms of words and their meanings (Vṛttajñā Āchārya, I.3.9; I.226). Pāṇini was possessed of a phenomenal insight (mahāti sūkhmekshikā, Kāśikā, IV.2.74) into the true meaning (vṛtti) of words in all their aspects and bearings as they were obtaining in the usage of the different localities, Vedic schools (sākbās and charānas), families (gotras), trades, professions and social classes of his times. We learn from Yuan Chwang that 'Rishi Pāṇini was from his birth extensively informed about men and things.' (Siyuki, I. 115). Pāṇini for the most part discovered and created his own material. He has applied his scientific method to the arrangement of this material by bringing the numerous vṛttis or derivative meanings of words under well-classified gaṇas or word-groups. It was a method, which, as pointed out by Whitney and Burnell, was unknown before him (Whitney, Atharva Prāt. p. 48; Burnell, On the Aindra School of Sanskrit Grammarians, p. 28). In fact, Pāṇini's name has gone down to posterity as the inventor of the device of the Gaṇa-pāṭha, which has done so much in the conservation of Sanskrit language and of its archaic and obsolete forms.

Lastly, Patañjali applies the significant epithet Subrīt (I. 2.32; I.208) to Pāṇini in reference to the simplicity of his style which makes an erudite work so easy of comprehension by its lucidity and logic.

By his inner qualities of head and heart Pāṇini was able to appreciate the views of others in a spirit of detachment and with balanced judgment. He avoided extreme views and preferred the path of synthesis between conflicting theories. For example, it is well-known that the question whether a word denotes a whole class (ākrīti) or only an individual (vyākati) was being
debated amongst the grammarians at an early stage. Later on this became the subject of a sharp controversy between Vājapyāyana and Vyādi (Bhāṣya, I.2.64; I.242,244), but Pāṇini seeing truth in either accepted both positions as explained by Patañjali.

It may also be noted that Kātyāyana’s epithet to Pāṇini has been also repeated at the end of Patañjali’s work in the same spirit of homage: भगवत: पाणिनेराजाम्य सिद्धम्। (VIII.4.68; III.467).

Name. The author of the Ashtādhyāyī is universally known as Pāṇini. Kātyāyana and Patañjali use this name. According to Baudhāyana, Pāṇini is a gotra name included amongst the Vatsa-Bhrigus, having five Pravaras, viz. Bhārgava, Chyāvana, Āpavāna, Aurva and Jámadagnya (Pravara-kāṇḍa, 3). Pāṇini’s own sūtra mentioning Pāṇin (VI.4.165) suggests Pāṇini to be a gotra name. According to Kaiyata’s derivation a son of Paṇin was Pāṇina, and a yuvan descendant of his would be called Pāṇini (Pradīpa on I.1.73.6).

The Trikāṇḍaśesha and Keśava, both later lexicons, mention Āhika, Śālaṇki, Dākṣiputra and Śālāṭuriya as the appellations of Pāṇini. We have no means to verify the correctness of the first two names. According to Weber the name Śālaṇki, which occurs in the Bhāṣya, though it does not clearly appear that Pāṇini is meant by it, leads us to the Vāhikas (History of Sanskrit Literature, p. 218). It would at least accord with the fact that Pāṇini was an Udichya. The last two are well-known names of Pāṇini. Patañjali quotes a kārikā describing Pāṇini as Dākṣiputra (Dākṣiputrasya Pāṇineḥ, I.75) after the name of his mother who was of the Daksha gotra. Dāksheya also would be Pāṇini’s metronymic.

THE DAKSHAS, A NORTHERN PEOPLE — The Dakshas are referred to as a clan organised into saṅgha as is apparent from the following examples in the Kāśika: Dākṣah saṅghah, Dākṣah aṅkah, Dākṣamān lakṣaṇam (IV. 3. 127). It also refers to a settlement of the Dakshas (Dākṣho gho- saḥ, IV.3.127), and as examples of the names of their villages are cited Dākshi-kūla and Dākshi-karsha (VI. 2. 129), seem-
ingly old illustrations, since Patañjali likewise mentions Dākshi-
karsbu as the name of a village of which a resident was called
Dākshikarshuka (IV. 2. 104; II. 294). That the Dakshas be-
longed to the north-west is suggested by the Kāśikā’s discussion
on Sanijñāyām kantbośinaresbu (II. 4. 20), citing a counter-
example to show that the place named Dākshi-kanthā lay out-
side the geographical limits of Uśinara. According to Pāñini
Uśinara formed part of Vāhika (IV. 2. 117, 118). That the
Dakshas did not belong to the eastern part of India either is
shown by another comment (Kāśikā on IV. 2. 113), where it is
said that the Dakshas lived outside the Prāchya-Bharata region,
i.e., towards the west. Patañjali’s interpretation of Prāchya-
Bharata on Pāñini II. 4. 66 shows that the Prāchya country or
eastern India began from the region of Bharata or Kuru-jana-
pada (I. 493). Strictly speaking the Bharatas although residing
in east Panjab were considered to form part of the Prāchyas.
Thus proceeding from east to west we encounter the chain of
the Prāchyas, Bharatas (region of Kuruksetra), Uśinaras,
Madras and Udichyas. The Gopatha Brahmaṇa mentions the
Udichyas with the Madras (Gopatha, I.2.10), and the two
jointly formed Vāhika. The Dakshas, as shown by the
Kāśikā, lived outside the Prāchya country, outside the Bharata-
janapada, and outside the Uśinara land which was in Vāhika,
and have therefore to be located towards further west, some-
where in Gandhāra. This lends support to the tradition that
Pāñini of the Daksha gotra was born at Śalātura, which lay a
few miles to the north of the confluence of the Kabul with the
Indus river. The area once occupied by the Dākshis may pro-
bably have been somewhere in the lower valley of the Kabul
river, between Dakka and the present site of Śalātura.
ŚALĀTURA, THE BIRTH-PLACE OF PĀNINI—The term
Śalāturiya applied to Pāñini preserves the tradition of his origi-
nal home being at Śalātura. The antiquity of the place is carried
back to the time of Pāñini himself, who mentions Śalātura in a
sūtra (IV.3.94) for the sake of the formation Śalāturiya to
denote a person whose ancestors were natives of that place (abhiyana). Thus the town existed even before Pāṇini, and the place of his ancestors may be taken as the place of his own birth. Vardhamāna refers to Pāṇini as Śālāturiya (Ganaratnamahodādhi, commentary on verse 2), and Bhāmaha and a Valabhi inscription also use this synonym for the grammarian (Śālāturiya-matam, Bhāmaha; Śālāturiya-tantra, Ins. of Śilāditya VII of Valabhi, Fleet, Corpus Inscript. Indi. III, p. 175).

Yuan Chwang visited Śalātura in the seventh century A.D. and found that the tradition about Pāṇini was current there. He writes, "To the north-west of U-to-kia-han-c’ho 20 li or so we come to the town of P’o-ls-tu-lo. This is the place where the Rishi Pāṇini, who composed the Ching-ming-lun (चिंग मिंग लुन =वेधशिल्प) was born." (Beal, Siyuki, I. p. 114; also footnote equating the symbol p’o for so’).

Śalātura has been identified by Cunningham with Lahur, a small town four miles north-west of Ohind, in the angle of the river Kabul meeting the Indus (Ancient Geog. pp. 66-7; A.S.R., II.95). It can be approached from Jahangira station of the N. W. Ry. on the right bank of the Attock bridge from where it is about 12 miles. Buses plying between Mardan and Ohind pass by Lahur.

For about five hundred years Śalātura continued as a

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1 A Kharoshṭhī inscription now preserved in the Lahore Museum and dated in the Kushāṇa year 40 (118 A. D.) was found at Shakardarrā near Campbellpore. It mentions the boat-ferry of Śalā (Śalanokrama, Sten Konow, Kharoshthi Ins. p. 160), which plied from the eastern bank of the Indus and derived its name from the town of Śalātura situated on the opposite side at some distance from the river. The name Shakardarrā may be derived from Śakradārā meaning the ‘entrance from the east.’

There are several high mounds at Lahur, at one of which recent excavations by Madame Corbeau exposed some stucco Buddhist heads and Gandhāra terracottas. Yuan Chwang speaks of a statue of Rishi Pāṇini being in worship at Lahur. R. B. K. N. Dikshit first informed me that a life-size image in Gandhāra style, was previously found at a Lahur mound. It is only a Buddha image in Gandhāra style, now preserved in the Peshawar Museum, where I saw it in 1946.
centre of Pāñinian studies. According to Yuan Chwang, “The children of this town, who are his (Pāñinī’s) disciples, revere his eminent qualities, and a statue erected to his memory still exists.” (Si yuki, I.116).

TRADITION ABOUT PĀÑINI’S LIFE—The Indian tradition about Pāñini is embodied in the Kathāsaritsāgara of Somadeva (11th century) and the Bṛihatkathāmaṇijarī of Kṣemendra (11th century) both of which were based on the original Bṛihatkathā of Guṇāḍhya. According to this, Pāñini was a pupil of the teacher Varsha. He was not much known for his intelligence (manda-buddhi) and lagged behind in studies. Withdrawing for a time to the Himalayan seclusion he performed meditation and pleased Śiva who revealed to him a new system of grammar (nava-vyākaraṇa). His rival was Kātyāyana whom he finally overcame by his superior powers. Pāñini’s grammar eventually replaced the older Aindra system. He also became a friend of the Nanda emperor. This tradition is supported in detail by Yuan Chwang as shown below.

MANJUŚRĪ-MŪLAKALPA—This work (c. 800 A.D.) refers to king Nanda, his learned council of Brahmin philosophers and to his intimacy with Pāñini: “After him (Śūrasena) there will be king Nanda at Pushpa City. In the capital of the Magadh-residents there will be Brahman controversialists (Brāhmānastārnikā bhuvi, verse 425) and the king will be surrounded by them. The king will give them riches. His minister was a Buddhist Brahmin Vararuchi who was of high soul, kind and good. His great friend was a Brahmin, Pāñini by name.” (Jayaswal, Imperial History of India, p. 14).

RĀJASEKHARA—Rājaśekhara (c. 900 A.D.) gives further point to this tradition by saying that in the city of Pāṭaliputra there was an old institution called Śāstrakāra-parikshā, the Board to examine authors of scientific systems. Before this Board appeared such great masters of grammar as Upavarsha, Varsha, Pāñini, Pingala, Vyādi, Vararuchi and Patañjali. Examined (parikṣhitāḥ) by this Board they attain-
ed fame. These names embody literary history over a long period.

Upavarsha was a commentator on the Mīmāṃsā and Vedānta sūtras (Jacobi, J.A.O.S., 1912, p. 15; cf. Śaṅkara-Bhāṣya, III.3.53). His views about śabda are preserved to us in a citation by Śaṅkarāchārya who refers to him as Bhagavān Upavarsha (I.3.28). Varsha, his brother is said to have been Pāṇini’s teacher. Pāṇini as a Śāstrakāra and author of a new grammatical system would have submitted his work to this learned assembly of Pā탈aliputra. Piṅgala, the author of the Chhandovichiti, a name at present included in the Gaṇa-pāṭha of IV.3.73, is spoken of as Pāṇini’s younger brother (anujya) by Shaḍguruśishya in the Vedārthadīpiṇī commentary. Vyādi the author of the Saṅgraha-sūtra, a known work on Grammar and highly spoken of in the Bhāṣya (cf. Patañjali on the meaning of Siddha decided in the Saṅgraha, I.6; also Sobhana khalu Dākṣhāyanasya Saṅgrahasya kriyāh, I.468) was a junior contemporary of Pāṇini. Vyādi wrote his Saṅgraha in the sūtra style as is evident from Patañjali’s reference to students called Saṅgrahasūtrakas, (those who studied the Saṅgraha-sūtras, IV.2.60; II.284). Kātyāyana and Patañjali are well-known grammarians. Thus the order in which these names are mentioned may be taken to be that of chronology. Patañjali who is a known contemporary of Pushyamitra Śuṅga of the second century B.C. is the last of this exalted race of grammarians.

ACCOUNT OF YUAN CHWANG—The sources of information about Pāṇini’s life are rather meagre and they should be supplemented by other sources that are available. Yuan Chwang is such a source and his account needs careful study. Most of the traditions recorded above are repeated by Yuan Chwang. The Chinese traveller visited Śalātura in person and

1 ज्याते व पादलिप्तः शास्त्रकार परीक्षा—
भाषप्यवस्थाविष्ठ शास्त्रिनिःपिण्डलाविष्ठ व्याख्य:।
वर्षस्व पतंजली इति परीक्षिता: व्याख्यातिमूलमः।। कृयाविमांसः।
the information collected by him on the spot may be regarded as trustworthy, specially on points where Somadeva, Rāja-
sekharā, Mañjuśrīmūlakalpa and the Chinese traveller are in accord.

Having stated that Rishi Pāṇini who composed the Sabda-
vidyā was born at Śalātura, Yuan Chwang proceeds to say:

'Referring to the most ancient times, letters were very numerous; but when, in the process of ages, the world was de-
troyed and remained as a void, the Devas of long life descended spiritually to guide the people. Such was the origin of the ancient letters and composition. From this time and after it the source (of language) spread and passed its (former) bounds. Brahma Deva and Śakra (Devendra) established rules (forms or examples) according to the requirements. Rishis belonging to different schools each drew up forms of letters. Men in their successive generations put into use what had been delivered to them; but nevertheless students without ability (religious ability) were unable to make use (of these charac-
ters). And now men's lives were reduced to the length of a hundred years, when the Rishi Pāṇini was born; he was from birth extensively informed about things (men and things). The times being dull and careless, he wished to reform the vague and false rules (of writing and speaking)—to fix the rules and correct improprieties. As he wandered about asking for right ways, he encountered Iśvara Deva and recounted to him the plan of his undertaking. Iśvara Deva said, "Wonderful! I will assist you in this." The Rishi, having received instruction, retired. He then laboured incessantly and put forth all his power of mind. He collected a multitude of words, and made a book on letters which contained a thousand slokas: each sloka was of thirty-two syllables. It contained everything known from the first till then, without exception, respecting letters and words. He then closed it and sent it to the king (supreme ruler), who exceedingly prized it, and issued an edict that throughout the kingdom it should be used and taught to others;
and he added that whoever should learn it from beginning to end should receive as his reward a thousand pieces of gold. And so from that time masters have received it and handed it down in its completeness for the good of the world. Hence the Brāhmaṇas of this town are well grounded in their literary work, and are of high renown for their talents, well informed as to things (men and things), and of a vigorous understanding (memory).’ (Siyuki, pp. 114-115).

The Pāṇinian tradition was still current even after the lapse of about eight centuries after Patañjali. Yuan Chwang faithfully repeats the much older tradition contained in the Mahābhāṣya with regard to the spread of Vedic learning in all its offshoots and branches, the origin of grammar, the growth of the Aindra system, chaos produced by different grammatical schools, and finally the emergence at this crisis of Pāṇini with his new grammar, his eminent qualities and method.

1 ORIGIN OF ANCIENT LETTERS—Yuan Chwang’s account of the primeval beginning of knowledge is in the nature of introductory remarks. This accords with the tradition almost universal in India regarding the divine origin of different śāstras and the divine guidance received in the propagation of knowledge. Patañjali also transposes the scene to the divine world when he refers to the period of a thousand years of gods (divya-varsha-sahasra) during which time Bṛhaspati expounded the subject of letters (śabda-pārāyaṇam provācha) to his divine pupil Indra (Bhāṣya, I.5.).

2 GROWTH OF LITERATURE—‘From this time . . . .
the source (of language) spread and passed its former (bounds).’ This is supported by Patañjali’s account of the vast expansion of language after the first impulse to it was received from divine revelation, He writes:1 ‘Here is the

1 सप्तदीमां ब्रह्मविदं महाभाष्यम् ।
| परमं तत्सर्वं सम्र ज्ञानं विज्ञानं तथा
| प्रकटः प्राप्तं च ज्ञानं ।

(Bhāṣya, 1.9)
wide world comprising seven divisions; its rich literature including the four Vedas with their Aṅgas and mystic portions, their ramifications into 101 śākbās of Yajurveda, 1000 of Sāmaveda, 21 of Rīgveda, 9 of Atharvaveda, the Dialogue portions, Itihāsa, Purāṇa and Vaiḍyaka treatises constitutes the expansive source of language.' It is true that even before the time of Pāṇini Sanskrit literature had reached a stage of considerable development, as we shall see in examining the literary evidence.

(3) AINDRA SYSTEM—The tradition of an Aindra grammar prior to Pāṇini is strong in Sanskrit literature. It is found in the Taittiriya Sāmbitā where it is said that the gods approached Indra to elucidate speech (vāchaṁ vyākuru). Patañjali speaks of Bṛihaspati expounding to Indra the words by means of individual forms or examples (pratīpadokta śabda, I.5; almost literally rendered by Yuan Chwang). The tradition in the Rīktantra, a Prātiśākhya work of the Śāmaveda, is more to the point: Brahmā taught Bṛihaspati; Bṛihaspati taught Indra; Indra taught Bhāradvāja; and from him the system devolved on the Rishis.' (Rīktantra, Dr. Suryakant’s edition, Lahore, p. 3). Here also Brahmā as Prajāpati is the ultimate source of knowledge. Indra represents the divine agency. The school of Bṛihaspati was continued through his descendant Bhāradvāja who initiated other teachers in the system. There certainly existed a Bhāradvāja school of grammar, Pāṇini himself citing the opinion of Bhāradvāja (VII.2.63). Patañjali frequently quotes the vārttikas of the Bhāradvāja system (i.e. followers of the Bhāradvāja system, as Pāṇiniyas were of Pāṇini) as giving a version variant from that of Kātyāyana (III.1.38; II.46; III.1.89; II.70, etc.). The Rīk Prātiśākhya, which is generally regarded as prior to Pāṇini, also refers to the opinion of Bhāradvāja who seems to have been an adherent of the earlier Aindra system. The legendary accounts of the Kathāsarasit-sāgara and the Bṛihatkathāmaṇjarī also mention that it was the Aindra school which was supplanted by Pāṇini’s work.
Thus we find strong support for Yuan Chwang's allusion to the establishment of rules by Indra. The existence of the Aindra system has been dealt with in detail by Burnell (On the Aindra System of Sanskrit Grammarians).

(4) DIFFERENT SCHOOLS BEFORE PĀNINI—'Rishis belonging to different schools each drew up forms of letters.' This refers to the intense literary activity about words and language preceding Pānini in which hundreds of great teachers including such names as Śākaṭāyana, Gārgya, Yāska, Saunaka, Śākalya, Bhārdvāja, Āpiśali, Audavraj, participated. Burnell's list of teachers from the Nirukta, Pānini and the Taittiriya-Prātiṣākhya (Aindra School, pp. 32-33) considered together with the list of numerous phonetic treatises and the terminological literature (cf. Dr. Sūryakānta Sāstri, Intro. to Laghu-Riktantra) furnishes evidence of the strong intellectual activity which preceded and followed the genesis of the Pāniniya śāstra. (See also for a list of 64 Teachers quoted in the Prātiṣākhyas, Nirukta and Pānini, Max Muller's History of Sanskrit Literature, pp. 142-43).

(5) COMPARATIVE DECAY OF GRAMMATICAL STUDIES—'Men in their successive generations put into use what had been delivered to them. And now mens' lives were reduced to the length of a hundred years . . . . The times being dull and careless.' Patañjali also refers to purā-kalpa (by-gone ages) when keen Brahmanical pupils devoted themselves first to master Vyaśkaraṇa, and then took up the study of the Veda. But in a subsequent epoch students devoted less attention to grammar; they even considered it useless (anarthakam vyākaraṇam). It was to reform such dull and careless students that Pānini wrote (vipratiṣāpanna-buddhibhyyo dhyetribhyya āchārya idam śāstram anvāchashte, Pat. I.5.). As to the lessening of mens' lives to a hundred years, Yuan Chwang is almost literally rendering Patañjali's remarks:

Kim punaradyatve yah sarvathā chiram jīvati sa varsha-sataṁ jīvati (I.5.).
'What to speak of the present times when the maximum span of human life is reduced to only one hundred years!' Pāṇini's object 'to fix the rules and correct improprieties' is supported by Kātyāyana referring to the Ashtādhyāyī as sādhvanu-śāsana śāstra 'the book of correct instruction' (vārīttika, I.1.44. 14; 1.104). Possibly it contains an allusion to Pāṇini's ministering to the normal speech current in his time.

(6) PĀNINIS METHOD—'Pāṇini was from his birth extensively informed about men and things. He wandered about asking for knowledge. He collected a multitude of words.' This information is valuable as it acquaints us with the fact that Pāṇini for the most part discovered and created his own material, making minute observations of facts in the course of his travels on a linguistic mission. We find in Pāṇini organism and life, an elastic and warm-hearted approach to the speech of the common people bringing in a vast and varied material about their life. A closer study of the Ashtādhyāyī as attempted in the following pages reveals how Pāṇini had explored and exploited all possible sources of linguistic material in the country including dialects, folk-lore and local customs, e.g. names of Yakshas like Viśāla used as personal names (V.3.84); pilu-kūna, a name for ripe berries of the Pilu tree (V.2.24); eastern sports, and names of coins, weights and measures, etc. His recording of the differences in the accentuation of names of wells situated on the right and left banks of the river Beas is a true pointer to his painstaking method, on which the author of the Kāśika observes: 'the Sūtrakāra was endowed with deep and subtle insight.'

महती सूक्ष्मविश्वासिती सूत्रकारस्य (IV.2.74).

Pāṇini's travels in search of facts from the living language and the method of personal discussion and interrogation to elicit information were in the manner of the true Takshaśilā style, which was marked by a practical bias in the pursuit of academic studies. We have a graphic account in Buddhist literature
describing how the royal physician Jivaka was directed by his teacher to examine the plants in the region of Takshaśilā as sources of medicine (Mahāvagga, VIII.1.6 ff). Born at Śālātura as he was, Pāṇini must have been brought up in the academic tradition of Takshaśilā which was a far-famed centre of learning in that period. In one of the Jātakas we are told how students after completing their studies at Takshaśilā, wandered far and wide, acquiring all practical uses of arts, and understanding the various country observances (Takkasilam gantvā uggabita-sippā tato nikkbamitvā sabbasamaya-sippaṇ cha desachārittatān cha jānissāmāti anupubbena chārikam charantā, Jāt. V.247).

(7) PĀNINI AND MAHEŚVARA—The information that Pāṇini possessed a well-conceived plan of his undertaking which was highly approved of by Iśvara Deva is of importance in crediting the grammarian with his full share of independent and original thinking in the execution of the Ashtādhyayī. The legend of Iśvara Deva indicates the traditional divine help usually associated with all pious undertakings. ‘The Rishi having received instruction, retired.’ It points to the period of Pāṇini’s intellectual labour and single-minded devotion to his work in quiet surroundings (suchāv-avakāśe, Bhāṣya, I.39).

(8) PĀNINI’S EFFORT—‘He then laboured incessantly and put forth all his power of mind.’ It is almost a literal translation of Patañjali’s remark about Pāṇini taking great pains in making his śūtras: Pramāṇa-bhūta āchāryaḥ mahatā yatnena sutram praṇayati sma (I.1.1; I.39). There can be no doubt about Pāṇini putting forth supreme effort to produce a work of such comprehensive nature and brevity as the Ashtādhyayī.

(9) PĀNINI’S MENTAL POWERS—Yuan Chwang speaks of Pāṇini’s spirit and wisdom, and of his vigorous mind which he devoted to investigate worldly literature (Siyuki, I.116). We have already spoken about Patañjali’s tribute to Pāṇini as anapamati āchārya, explained by Kātyāṭa as medhāvī, ‘endowed with great understanding and memory.’ We may confidently
dismiss the story of Pāṇini being dull at school. Moreover, the information that Pāṇini was extensively informed about men and things from his very birth indicates his inherent practical turn of mind and aptitude for observation amply borne out by the contents of the Ashtādhyāyī.

(10) EXTENT OF PĀṆINI’S WORK—‘He made a book on letters which contained a thousand ślokas; each śloka was of thirty-two syllables.’ It indicates the extent of Pāṇini’s Ashtādhyāyī consisting of 3,981 sūtras plus 14 pratyāhāra sūtras, computed by the śloka measure of 32 syllables each. Sköld has somewhat misunderstood this. He writes: ‘This curious statement can hardly be interpreted in another way than assuming, that the work of Pāṇini, just as so many other Indian works on grammar, was originally written in metrical form.’ (Papers on Pāṇini, p. 32). This is an untenable inference. As a matter of fact no Indian grammar, Sanskrit or Prakrit, is in metrical form. The Ashtādhyāyī was originally written in sūtra style, and its bulk from the beginning was very nearly 1,000 ślokas, as it is to-day. The statement is akin to the computation of Vyādi’s Saṅgraha, also in sūtras, as lakṣha-ślokātmaka. The Kāśikā on IV.2.65 says that not only Pāṇini’s work but those of Kāśakṛtsana and Vyāghrapāda also were in sūtra style (Daśakāni Vaiyāghrapadīyam; Trikāni Kāśakṛtsnam). Even up to a late period grammatical works were being written in sūtra form.

(11) PĀṆINI’S WORK, A COMPLETE DIGEST—‘It contained everything known from the first till then, without exception, respecting letters and words.’ Pāṇini’s work is rightly described by Patañjali as a vast ocean of science (mahat śastra-uṇgha, Bhāṣya, I.1.1, I.40); also vast and well-done (Pāṇinīyam mahat-suvihitam, IV.2.66; II.285). He also describes how Pāṇini’s work was based upon the material available in the different schools of Vedic learning so that it became acceptable to all of them (Saṅya-veda-pārashadāṁ hīdam śāstram, Bhāṣya, II.1.58; I.400).

Burnell truly points out that for the Ashtādhyāyī to have
gained such a position of authority, 'it must have been vastly superior in the eyes of the Brāhmaṇas to all the numerous treatises which must have been in existence before Pāṇini's time.' (Aindra School, p. 38). Pawate has recently raised the question of Pāṇini's borrowings from his predecessors, a point which deserves much further consideration (cf. Structure of the Ashtadhyāyī by I. S. Pawate, Hubli). We find in the Riktantra, a Sāma Prātiṣākhya which Dr. Śūrya Kānt attributes to Audavrajī some of Pāṇini's sūtras quoted almost verbatim (cf. Riktantra, sūtras 195-218).

(12) PĀṆINI AND PĀṬALIPUTRA—'He then closed it and sent it to the king (supreme ruler), who exceedingly prized it.' The Maṇjuśrīmulakalpa, Somadeva, and Tārānātha all relate the story of Pāṇini's friendship with one of the Nanda kings. Rājaśekhara records a tradition, already referred to, showing Pāṇini's connection with Pāṭaliputra. It is likely that Pāṇini visited Pāṭaliputra in person to participate in the Śāstra-kāra-parikshā rather than send his book through an emissary, Pāṭaliputra held a pre-eminent position in the literary life of the nation during the Nanda and Maurya periods. Chāṇakya, a resident of the distant North-West like Pāṇini himself, and nurtured in the glorious traditions of the Takṣhila school, also visited Pāṭaliputra. The Atthapakāsinī commentary of the Śrīmaṭe Mahāvamsa narrating the early life of Chāṇakya relates how during the course of his intellectual career to establish his reputation he was attracted to visit Pāṭaliputtra: (vādam paryesanto Pupphapurāṇi gantvā).

We may take it that Pāṇini's mission to the celebrated capital of the Magadhan empire was not very different from that of Chāṇakya, viz. a desire to have his work valued by the most competent judges gathered at the court of Pāṭaliputra. THE GREAT SYNOD (Sabhā)—It is interesting to note that

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1 I am grateful for this reference to Śrī C. D. Chatterji, M.A., History Department, Lucknow University.
this academic institution continued even in the time of the Mauryan emperors of Pātaliputra, as indicated by Megasthenes and other Greek writers. In the words of Megasthenes the Brāhmaṇas "are employed publicly by kings at what is called the Great Synod where at the beginning of the new year, all the philosophers are gathered together, and any philosopher who may have committed any useful suggestion to writing, or observed any means of improving the crops and cattle, or for promoting the public interests, declare it publicly." (Strabo, XV.1., McCrindle, Megasthenes, Frag. XXXIII). Diodorus also refers to these distinguished gatherings at the beginning of each new year in which the learned men participated and the sovereign of the land acted as patron (McCrindle, Megasthenes, Frag. I, p.39). These statements corroborate the Sanskrit and Pāli accounts of the congregation at Pātaliputra, and Rājaśekhara’s Śā strakāra-pariksā very nearly corresponds to the functions of the Great Synod described by Megasthenes. The time of its meeting is recorded as the beginning of each new year. Very probably the technical term for this Synod and the Board responsible for the Śāstrakāra-pariksā was Sabha, as in the expressions Chandragupta-sabhā and Pushyamitra-sabhā used by Patañjali (I.77; see also var. lect. at p. 515) and also Rāja-sabhā by Pāṇini in sūtra II, 4.23 (sabhā rājamanusbya-pūrvā).

(13) RECOGNITION OF LEARNING—Victors at these synods who distinguished themselves publicly by producing a scientific contribution ‘committed to writing’ which promoted public interest or was conducive of general welfare, must have deserved to be adequately rewarded. Speaking in general it is said that "in requital of their services they receive valuable gifts and privileges." (Diodorus, Frag. I, p. 38). Megasthenes in continuation of his account of the Great Assembly specifically writes: "He who gives sound advice is exempted from paying any taxes or contributions." (Meg. Frag. XXXIII).

1 Chandra cites Chandragupta-sabhā only on his sūtra II.2.69 corresponding to Pāṇini, II.4.23.
We have a suggestive word in Patañjali, *viz.* Sābhā-sannayanaḥ, ‘the honour derived from literary exposition in a Sabhā, (I.1.73; I.189). Pāṇini himself uses the word sannayana in the special sense of sammānana (I.3.36), *i.e.* bestowal of honour on successful exposition of a śāstra (cf. Kāśikā on sammānana, I.3.36).

Yuan Chwang speaks of a thousand pieces of gold as the reward received by one who mastered the Asthādhyāyī from beginning to end. Sūtra VI.2.65 (Saptami-hārinau dharmae‘harane) presupposes a customary payment of this nature called dharmya and speaks of its recipient as hārin, one who took away the dharmya prize (āchāra-niyatam deyan yah svikaroti, Kāśikā). The rule prescribes acute accent on the first syllable of the word denoting the recipient. One of the stock-illustrations cited by Patañjali actually makes the vaiyākaraṇa or grammarian a recipient (hārin), and speaks of an elephant as his customary fee (Bhāshya, VI.2.52; III.130; Kāśikā, VI.2.65, vaiyākaraṇa-basti). The gift of an elephant as a prize could have originated only in the east of India. Kauṭilya mentions 1,000 silver pieces as the reward of learning (vidyāvataḥ pūjāvetana, Arth. V. 3; p. 248).

The above detailed analysis shows that the tradition recorded by Yuan Chwang was based upon facts of Pāṇini’s life as known at that time.

PĀNINI AS A POET—There is a tradition that Pāṇini was also a poet. It is suggested by certain verses cited from a poem named Jāmbavatījaya attributed to Pāṇini in certain anthologies. A verse in the Sadukti-karnāmṛita refers to Dākshīputra as a poet. The available information with regard to Pāṇini as a poet is put together by Pischel (Z.D.M.G., XXXIX pp. 95 and ff.) who is inclined to accept the theory that Pāṇini was also a poet. Bhandarkar, on the other hand, holds that the style in which the verses ascribed to Pāṇini are written is sufficient to prove that they cannot be by that grammarian (J.B.B.R.A.S., XVI, p. 344). Prof. Kshitis Chandra Chatterji holds the same view
and after discussing at length all the known verses assigned to Pāṇini dismisses the theory of his authorship in these words: "The fact that Pāṇini as a poet is nowhere mentioned in the Mahābhāṣya or in any of the later first-rate works of the Pāṇini school and that annotators and commentators have racked their brains to explain away ungrammatical forms instead of regarding the uses in the Jāmbavatīvijaya as jñāpakaś, that some of the verses attributed to Pāṇini in one anthology are attributed to other poets in others, that some of these verses show distinct traces of borrowings of a much later period, that none of the verses belonging to the Jāmbavatīvijaya bear the stamp of the grammarian on them, that some of them contain forms which would make Pāṇini shudder, and that some of them seem to be composed as examples for a work on rhetoric of a much later period, clearly indicate that the verses cannot have been the work of poet Pāṇini. The Jāmbavatīvijaya-kāvyā or the Pāṭalavijaya-kāvyā must have been composed by a poetaster of about the ninth century A.D. who made use of many peculiar grammatical forms in it and fathered it on Pāṇini, the great grammarian." (Cal. Oriental Journal, Vol. I, pp. 22-23; also p. 135).

We may, however, note that in a kārikā of the Bhāṣya, Pāṇini is referred to as a kavi: tadakīrtitam-ācharitam kavinā (I.4.50; I.334). But the meaning of kavi is not necessarily a poet. Although the Kāśikā equates kavi with the sūtra-kāra, both Kaiyāta and Nāgēśa understand kavi not as a poet, but as one possessed of supreme wisdom (medhāvī).

THE ASHṬADHYAYI: (i) Its Name.—The Ashṭādhyāyī is differently designated as (1) Ashtaka (ashtāv-adhyāyāḥ pari-mañamasya sūtrasya, V.1.58); (2) Pāṇiniya (Pāṇinīnāḥ prak-tam, IV.3.101); (3) Vṛttisūtra (Bhāṣya I.371 differentiating Vṛttisūtra from vārttika).

In the illustrations to several sūtras, the Kāśikā speaks of the Pāṇiniya system as an akālaka grammar (Pāṇinyupajñam akālakaṃ vyākaraṇam, II.4.21, IV.3.115 and VI.2.14).
name is significant as showing that Pāṇini wisely excluded from his purview the discussion of kāla or tenses like Paroksha (Perfect) and Vartamāna (Present), on the exact definition of which subtle and elaborate arguments were often advanced by grammarians (cf. Bhāṣya, III.2.115; II.120, III.2.123; II.123). 'Some say Paroksha means the lapse of a century; others say that which is screened from the eye of the speaker is Paroksha; still others contend that an interval of two to three days constitutes Paroksha' (Bhāṣya, II.120). Pāṇini took a practical view in the matter, as indeed he did in the case of other extreme views also. In the Sūtra-kānda (I.2.51.57) he says that it is not within the province of the grammarian to lay down rules (aśishyam) about particulars of time and tense durations, since he must depend on the usage of the day (saṁjñā-pramāna) for such regulations. This position of Pāṇini expressed in the sūtra 'Kālo-pasarjane cha tulyam' (I.2.57) must have been responsible for the epithet akālaka applied to his grammar.

(ii) TEXT—The text of the sūtras has been handed down to us almost intact by the method of oral transmission by which Sanskrit learning through the ages has descended from generation to generation through a succession of teachers and pupils (guru-sīshya-pārampara) instead of being conserved in writing. This method of oral teaching of Pāṇini continued for many centuries and Yuan Chwang noticed it as prevailing in his time also: "And so from that time masters have received it and handed it down in its completeness for the good of the world." (Siyuki, I.115).

According to the author of the Svarśiddhānta-chandrikā the Ashtādhyāyī consists of 3,995 sūtras, i.e. 3,981 sūtras and the 14 pratyāhāra-sūtras.1 Bōhtlingk’s critical edition contains 3,983 sūtras. Dr. Kielhorn after a detailed enquiry into the

text of the Ashtādhyāyi came to the conclusion that "the text given in the Kāśika-vṛtti (and that of the Ashtādhyāyi in the editions) contains 20 more sūtras than the original text." (Ind. Antiquary, XVI.184). This increase is accounted for in two ways, viz. (1) by applying the principle of yoga-vibhāga or splitting into two what Pāṇini originally read as a single sūtra, and (2) by introducing some vārttikas as full-fledged sūtras in the present text of the Ashtādhyāyi.² There is also evidence of retouching of some of the sūtras by introducing into them some words from the vārttikas.

Some also discuss that the original text of the Ashtādhyāyi contained (1) the sign of nasalization marked on indicatory vowels (Upanedeṣa'janunāsaka it, I.3.2); (2) the sign of svarita accent to denote adhikāra (Svariteṇ-ādbikārāḥ, I.3.11); (3) accentuation of the text as in the case of Vedic works (traisvarya-pātha); and (4) the Sanskrit-pātha or arrangement by which the sūtras of each pāda are read in continuation and are joined to each other by Sau dbi. But there is also the view that these features were not a part of the original text of Pāṇini, but only assumed by teachers. We know that in the case of the nasal and svarita marks the followers of the Pāṇinīya school now take recourse to oral tradition, to indicate where such marks existed in the sūtras. This suggests an oral transmission from the time of Pāṇini's upadeśa or first instruction. The Ashtādhyāyi with an accented textual tradition, is not known. Kaiyaṭa is in favour of the hypothesis of ekaśruti or unaccented text from the beginning. The theory of Sanskrit-pātha which was being discussed even before Patañjali (cf. Śloka vārttika on I.4.56 discussing rīśvara and viśvara, the latter form being possible only

² In one case unnoticed by Kielhorn we have evidence of the fact that even before the time of Patañjali, variant wording of the sūtra had come to be discussed; cf. III.2.134, Iba kechid-ākver iti sūtrain paṭhant, kechit prāk-kver iti, Bhāṣya, II.135. There are some additional variants also to be noticed, e.g. Kāśika III.3.78, IV.1.117, VI.1.156, VI.2.134; Padamañjari, IV.3.118, IV.4.88; Siddhāntakaumudi V.2.64, V.2.68).
in Samhitā-pāṭha, Bhāsyā, I.340) appears to have been adopted more as a convenient device to get over stray cases of difficulty of interpretation rather than as a textual reality.¹

(iii) GANA-PĀṬHA—The Gāṇa-pāṭha forms the most important accessory treatise to the Asṭādhyāyī. The gāṇas were not known in the Aindra School (Burnell, Aindra System, pp.28-30). They must have been Pāṇini’s innovation. Patañjali definitely states that Pāṇini first compiled the Gāṇa-pāṭha, and then composed the sūtras (Evan tarbi Āchārya-pravṛttir-jñāpayati sa pūrvah pāṭho’yaṃ punah pāṭhah I.1.34; 1.92-93).

Yuan Chhwang’s reference that Pāṇini collected a multitude of words and made a book, almost endorses Patañjali’s statement regarding the priority of the Gāṇa-pāṭha to Sūtra-pāṭha.

The significance of the Gāṇa-pāṭha is that it introduces a comprehensive principle of classification by which similar grammatical formations may be grouped together and brought under the operation of a common grammatical rule. By this original device a large mass of linguistic data is reduced to order, system and simplicity so as to make for their easy understanding. By this method Pāṇini was also able to take note of comprehensive geographical, social, political and cultural details, names of towns, regions (janaṇapadas), rivers, families (gottras), schools (charaṇas), republics (saṅghas), as examples of single short rules. Thus Pāṇini’s genius was able to utilise what was primarily designed as a grammatical technique, to throw light upon the life of the people and serve as a source of sociological and historical studies. By its flexibility the way was left open for the incorporation into the Gāṇa-pāṭha of new material as it cropped up in course of time so as to render the system always up to date.

A critical reconstruction of the Gāṇa-pāṭha is an essential part of the Pāṇinian textual problem. The Kāśikā has preserv-

ed lists of words belonging to each gaṇa. The evidence of the Chāndra-vṛitti also, shows that the Kāśikā was following a previous tradition. Kātyāyana and Patañjali were also at pains to conserve the purity of the Gaṇa-pāṭha. In many cases they have critically examined the inclusion of certain words in a particular gaṇa, e.g. ulūka and Ksudraka-Mālava in Khaṇḍikādi (IV.2.45); nṛinamana in Kshubhnaḍi (VIII.4.39); Sākalya in Lobitādi (IV.1.18, on which there is a long discussion); takṣaṇ in Śivādi (II.262; Kātyāyana has three vārttikas to discuss the reading in the group); Garga-Bhāravikā in Gopāvanādi (II.4.67; I.492); and Athavar and Atharvaṇa in the Vasantādi group (Bhāṣya II.320, cf. Patañjali’s remark that the words are read four times in the Ashtādhya-yā). Their discussions, helpful in reconstructing a genuine text of the Gaṇa-pāṭha, create the impression that the Pāṇinian tradition attached as much authority to gaṇas as to sūtras. It is, however, difficult at present to ascertain in all cases whether a particular word was originally included in its gaṇa. The commentaries on Pāṇini have proceeded on the assumption that the basis of the Gaṇa-pāṭha is generally sound. We must agree with Dr. Bhandarkar that most of the words in the gaṇas must have been handed down from the time of Pāṇini himself, a good many being cited by Patañjali in his great commentary (Ind. Ant., I.21). For example, the Yaskadi group (II.4.63) is analysed by the Kāśikā; out of a total of 36 words 16 have been directly traced to 5 different gaṇas of Pāṇini, viz. the first five words to Śivādi (IV.1.112); Kudri, Viśri, Ajabasti, Mitrayu to Grishtyādi (IV.1.136); Pushkarsad to Bābhvādi (IV.1.96); Kharapa to Naḍādi (IV.1.99); Bhalandana again to Śivādi (IV.1.112); and Bhaḍila, Bhaḍita, Bhaṇḍita to Aśvādi (IV.1.110). Moreover, intrinsic evidence from the sūtras in support of Gaṇa-pāṭha is sometimes available; e.g. the reading of Pravabana in IV.1.123 is presumed by the sūtra VII.3.28; or the reading of the gaṇa Sarvādi is authenticated by several sūtras of Pāṇini himself like Pūrvādi (VII.1.16), Dvyādi (V.3.2), Datarādi.
(VII.1.25) and Tvaśádi (VII.2.102). The Lobiśádi-Katanta group was included in the Gargádi gana (IV.1.105), which like the Bidádi (IV.1.104) must be considered as one of the best preserved groups.

On the other hand the text of the ganas, especially of those which were called ākriti ganas (i.e. of which the list was left open by Pāṇini himself), did lend themselves to later additions. Patañjali distinguishes two kinds of ganas, firstly those fixed (pathyante) by Pāṇini, and secondly those which were only illustrative (ākriti). The process of interpolation must naturally have been more freely operating in the case of groups which were of linguistic importance, as Ardhabhādi (II.4.31), Gaurādi (IV.1.41), Tārakādi (V.2.36). On the other hand, ganas containing lists of proper names were comparatively more stable, as they tended to become obsolete in time. Pāṇini’s names of gotras could be verified in the light of lists given in the oldest Srauta-sūtra text of Baudhāyana in the Mahāpravara-kāṇḍa. Groups in which geographical names predominate (e.g. Dāmanyakādi and Takshāsilādi) can to some extent be verified from the mention of those place-names in old independent sources, as the Pāli literature, the Mahābhārata and the accounts of the early Greek writers. A large percentage of place-names in the ganas is undoubtedly archaic, and in many cases not traceable outside the Ashtādhyāyī. For example, the tribe of the Sāvitrīputrakas in the gana Dāmanyakādi (V.3.116) must date from Pāṇini himself, as it is unknown in literature except in one passage of the Karna-parvan (Mbh., 5. 49). At any rate the possibility of fresh accretions to lists of janaḥpadas and place-names was considerably less after their examination by Patañjali.

In a vārttika on the Kraudyādi gana (IV.1.80) Katyāyana refers to the Raudhyādi class, which Patañjali informs us was identical with the former (Bbāṣya, IV.1.79; II.233). Since

1 Cf. Patañjali on II.1.59, śreṇyādayāḥ pathyante, krittādir-ākriti-ganāḥ, i.e. of the two groups in the same sūtra one was fixed and the other was only illustrative.
Raudbli is not included in the Pāṇinīya Gaṇa-pāṭha, we may infer that in some other grammar (vyākaran-āntara) the gaṇa was named after it. We are indebted to Bhartrihari for the valuable information that the grammar of Apiśali (a predecessor of Pāṇini) arranged the words of the gaṇa Sarvādi (I.2.27) in a different order (Kielhorn, Intro. Bhāṣyā, II.19). The fact, however, remains that the Gaṇa-pāṭha evidence is at best only secondary and should always be taken with caution.

KĀŚIKĀ, ITS VALUE FOR PĀΝINIAN TRADITION—
The Kāśikā is now the only ancient, exhaustive, concrete and authoritative commentary on the Ashtādhyāyī. According to Haradatta it was written at Banaras (Kāśisbhu bbavā). Its importance for interpreting Pāṇini cannot be overrated. Amongst previous commentaries Bhartrihari refers to Vṛttikāra Kuṇi (Kielhorn, Bhāṣyā, Vol. II. Intro. p. 21, footnote) and Kāyaṭa mentions that Patañjali followed Kuṇi as an authority (Pradīpa, I.1.75, Bhāṣyakārās tu Kuṇi-darśanam aṣṭiśriyāt). A comparative examination of the extent commentaries on Pāṇini, Tripiḍī, Bhāgavṛtti in quotations, Kāśikā, Nyāsa, Padamāṇjarī) shows that each subsequent author was following the pre-existing Pāṇinian tradition.

An intensive study of the Kāśikā, reveals its immense indebtedness to the Mahābhāṣyā. In the first verse the author explicitly states his dependence on the Bhāṣyā and also on an earlier commentary which unfortunately is left unnamed (Vṛttatū Bhāṣye). Even the perusal of a few sūtras will show how completely the Kāśikā relied on Patañjali for its material and the stock of its examples. The numerous illustrations in the Bhāṣyā on IV.3.42 are bodily taken by the author of the Kāśikā, who did his work intelligently and not as a mere copyist of the older material. In discussing the meaning of Prāchya-Bharata (II.4.66) the Kāśikā replaces Audḍālakāyana of Patañjali by Ārjunāyana, the name of a tribe nearer to its own time. (cf. reference to Ārjunayāna in the Allahabad Pillar Inscription of Samudragupta).
It may be noted that the Kāśikā does not confine itself only to the tradition of Patañjali, Kātyāyana and Pāṇini. It has cited some older traditions showing that it considered a wide range of material. The best illustration of this fact is to be found in the example to sūtra I.4.86, anu-Śaṅkāyanaṁ vaiyā-karanāḥ, i.e. 'all grammarians were lesser than Śaṅkāyana.' Śaṅkāyana was a well-known predecessor of Pāṇini. The Kāśikā here thus cites and conserves an older grammatical tradition, though Pāṇini long ago had eclipsed the fame of Śaṅkāyana. It also proves the tenacity of the tradition embodied in the examples (udābaraṇa). There are also a few other examples drawn from the earlier strata of grammatical tradition.

STOCK-EXAMPLES—Patañjali states that the sūtras were related to stock-illustrations called mūrdhābhishiktā udābarana (I.1.57; I.144). According to Kaiyāta they were so called because they were accepted in common by all commentaries (sarva-vṛttish-ūdāṅratvāt). They formed an essential part of the sūtra explanation, and were sometimes considered so important as to direct the course of subsequent discussion. The illustration sāstrī-śyāmā on II.1.55 is a case in point, which may be as old as Pāṇini himself, for it was made by Kātyāyana the basis of one of his vārttikas (I.398).

PĀṆINI AS A TEACHER—The title Vṛitti-sūtra applied by Patañjali to Pāṇini's work (I.371) means that the sūtras of Pāṇini were the subject of a vṛitti or commentary, which was the result of his own teaching. Kautsa was a well-known disciple of Pāṇini as mentioned by Patañjali (upadayēn Kautsah Pāṇinin, II.115). The Kāśikā adds that he was a resident pupil (anūśhivān) of Pāṇini and was directly instructed by him (uṣuṣrūvān, III.2.108). It may be accepted that Pāṇini's explanations (Vṛitti) formed the model and standard for later commentaries on his sūtras.

Patañjali also makes the interesting assumption that Pāṇini himself was responsible for explaining some of his sūtras to his pupils in two different ways. As an example may be cited the
rule I.4.1, Ṛkaḍāraḍekā samija. Pataṇjali enquires why there should be a doubt about the correct wording, and remarks that the Āchārya (Pāṇini) had taught his pupils both the alternative readings of the sūtra (ubhayathā hyāchāryena sishyāḥ sūtraṁ pratīpāditāḥ, I.296). Even Kātyāyana was acquainted with the alternative wordings of this rule (cf. vārttikas 1 and 9 on I.4.1.), for which he must have depended on a still earlier source, most likely Pāṇini’s own explanation. In sūtra V.1.50 (Taddharati bhārād-vaṁśādibhyāḥ), we have an example of the same rule being interpreted by the Kāśikā in two different ways, on the authority of an unnamed commentary (āparā vṛitti), which occasioned its remark that both the meanings of the sūtra were expounded by Pāṇini himself to his pupils. (Sūṭr-ārtha-dvayam-āpi chaitaḥ-āchāryena sishyāḥ pratīpāditāḥ). The same unnamed commentary (āparā vṛitti) further provides an alternative, but equally authoritative, explanation of sūtra V.1.94 (Tadasya Brahmacaryam), on which the Kāśikā repeats the same statement (ubhayam āpi pramāṇam ubhayathā sūtra-panāyanāt). The case of sūtra V.4.21 is similar. These instances show that Pāṇini became the originator of a tradition of sūtra explanation which was handed down through an unbroken succession of Pāṇiniya teachers and pupils following that system (Tadadhite tadveda). We have already seen that in respect of the signs of vowels, nasalisation and svarita accent on them, the Pāṇiniya grammar relied on an oral tradition which must have originated with Pāṇini himself as a teacher (Pratiṣṭhānunāsikyāḥ Pāṇiniyāḥ, and Pratiṣṭhā-svaritāḥ Pāṇiniyāḥ, Kāśikā on I.3.2 and 11). Kaiyata’s comment on the śloka-vārttika, tad-analpa-mater-vachanam smaratā (I.4.51; I.335), points to the unbroken continuity of the tradition (āgamsya avichchhem). He also remarks that his own Pradīpa commentary on the Bbāsbya was composed in accordance with the tradition (yath-āgamam vidbāsye, Introductory Verses).

NATURE OF THE ORIGINAL VYĀKHYĀNAS—Both Kātyāyana and Pataṇjali admit the necessity of a commentary
(vyākhyāna) to elucidate the words of the sūtras (I.11). The earliest commentaries were of a simple nature intended for the practical purpose of teaching. They comprised the following elements: (1) charchā, or pada-vigraba, splitting up the sūtra into its component parts; (2) udāharaṇa, examples; (3) praty-udāharaṇa, counter-examples; and (4) vāky-ādhyaḥpāra, or anuvṛtti, repeating the words of a previous sūtra to aid in the meaning of the subsequent sūtra.¹ The explanation emanating from the Sūtrakāra or from those nearest to him in time must have been of this simple character. To them should be assigned illustrations like anu-Sākaṭāyanaṃ vaiyākaraṇāḥ (I.4.86), Sākaṭāyana-putraḥ (VI.2.133), Nanda-putraḥ (VI.2.133) referring to both king Nanda and his son, and Nand-opakra- māṇi mānāni 'the weights and measures were first standardised by king Nanda, (II.4.21). The historical value of such early illustrations will be discussed in their proper places.

The antiquity and the genuineness of the Pāṇinian tradition are factors which must weigh with us in assessing the value of whatever commentaries are now left to us. Every commentary should be viewed as a link and a very important link too, in the chain of Pāṇinian interpretation. Dr. Kielhorn examining the question of the earlier authorities quoted in the Mahābhāṣya made the significant recognition that 'Kātyāyana was acquainted with the works of other scholars who, before him, had tried both to explain and to amend Pāṇini's grammar, and who had subjected the wording of the Sūtras to that critical examination, which is so striking a feature of Kātyāyana's own Vārttikas,' and also that 'between him and Patañjali there intervenes a large number of writers in prose and verse, individual scholars and schools of grammarians, who all have tried to explain and to amend the works of both Pāṇini and Kātyāyana.' (Ind. Ant.,

¹ नहिः सूत्त एव शब्दः प्रतिपद्यन्ते, कि तहिः, व्यास्यानतत्सः ...न केवलानि
रचितवानि व्यास्यानं बुद्धम् ग्राहतु ऐतृं इति। कि तहिः, उदहरणं प्रत्युदहरणं वाक्या-ध्याहनं इत्यतः समुदितं व्यास्यानं भवति। माध्य १. ११.
XVI. p. 106). The treatises of pre-Kātyāyana vārttika writers and pre-Patañjali exponents of vārttikas typified by such names as the Bhāradvājīyas, Saunāgas, Kuṇaravāḍava, Kroshtriyas, or more faintly symbolised in references like kechid, apare, have become mere shadows. But those ancient masters passed on the fruits of their labours to Kātyāyana and Patañjali. As observed by Kielhorn: 'To what extent Kātyāyana and Patañjali were indebted to those that went before them, we shall never know; judging from the analogy of the later grammatical literature of India we may, in my opinion, certainly assume, that, like Pāṇini himself, both have based their works on, and have preserved in them all that was valuable in the writings of their predecessors.' (Ind. Ant., XVI. p. 106). This statement from one of the most eminent authorities on Indian grammar in recent times brings out the characteristic feature of the evolution of Indian grammatical tradition from Pāṇini to Patañjali, and the same with equal soundness holds good for the period from Patañjali to the Kāśikā.
CHAPTER II

GEOGRAPHICAL DATA

SECTION 1. INTRODUCTORY

The most important contribution of the Ashṭādhyāyī to the history of ancient India is its geographical information. The country, its mountains and ocean, forests and rivers, natural and territorial divisions (janapadas), towns and villages receive their full share of attention in the linguistic material dealt with by Pāṇini. It is here that the grammarian can be credited with having created his material in a very real sense by undertaking an original survey of the place-names in the vast area of the country stretching from Kamboja (Pamir region) and Kāpiśī (Begrām in Afghanistan) to Kaliṅga (Orissa) and Śūramasa (Śūrmā Valley in Assam). The question may be asked as to the raison d'être of the rich geographical information that a work proclaimed to deal with grammar contains.

The answer to this may be understood in this way. Place-names form an integral part of language which it is the object of grammar to discuss and regulate. The analysis which Pāṇini has given of the underlying meanings which relate names of places to social life and background, shows conclusively that such names do not originate by mere accident, but are the outcome of social and historical conditions with which a people are intimately connected. These conditions are reflected in language in the geographical names. An etymological approach to the place-names of a country reveals to us many a forgotten chapter of history and settlement on land, and the contribution that Pāṇini makes in this respect through his grammatical expositions possesses abiding historical value. He has given a list of endings of place-names by which geographical places are classified. Most of the names of the geographical
places originate, as he points out, from one or the other of the following factors:

(1) 'this object is found in a particular place;'
(2) 'the place was founded (nirvṛitta) by such and such a person;
(3) 'the place was the abode (nivāsa) of such a person, or a community;' and
(4) 'the place is located in proximity (adurabhava) to a known object.'

It will thus appear that places are here distinguished for their founders, their economic products, their historical associations and their proximity to monuments. These four descriptions are termed Chāturarthika, 'suffixes with four-fold meaning'.

Pāṇini also instances places which have lent their names to persons as the places of their own residence (nivāsa), such as Māthura, or of their ancestors (abhijana, IV.3.90), such as Saindhava, 'one whose ancestors lived in Sindhu'. Besides persons, commodities may also be associated with places as their origin, e.g., the wine (pbalaja-madbhu) known as Kāpiśāyana which was known after the place of its origin called Kāpiśi (IV.2.99). Animals also were called sometimes after the places of their origin, e.g., Rānkava or Rānkavāyana, a bull bred in the Raṅku country (IV.2.100); or Kāchchha, a bull of Kachchha country (IV.2.134). There may also be other associations of names with places under the general rule stated in the sūtras IV.2.92145 (Śaishika), e.g., Kāśika, 'the cloth woven at Kāśi' (IV.2.116). An assemblage of meanings can be seen in Kāchchhaka which used to denote (a) an inhabitant of Kachchha, (b) the turban (chūḍā) peculiar to its people, (c) their manners in speech (jalātita) and laughing (basita). The term Saindhava is also cited under this rule with reference to the above peculiarities of its people.

Another class of geographical names is that of regions or provinces (vishaya, IV.2.52-54), called after their peoples, e.g.,
Saibha, the region of the Śibis; Āprītaka, the region of the Āprītas (=Afridis); Mālavaka, the region of the Mālava people. Similarly, Rājanyaka (of the Rājanya tribe), Traigartaka (Kangra), Vāsātika (of the Vasātis or the Ossadioi, Sibi in Baluchistan), Vairāṭaka (Bairāṭ in Jaipur), Audumbaraka, and so forth. The names according to vishaya seem to be based on the ethnic distribution of population over particular areas for the time being without reference to the form of government.

Places were also named after the nature of their polity. Thus Pāṇini divides janapadas into two classes, firstly janapadas under monarchy (Ekarāja) enumerated in sūtras IV.1.168-176; and secondly janapadas as republics (Sāṅgha), such as Vāhika where flourished the Āyudhajīvī Sāṅghas (Military Republics).

The suffixes applied to these names point to the types of government (Tadrāja) associated with their names.

This in short illustrates Pāṇini’s scientific classification of place-names on the basis of the principles underlying their formation.

Names of rivers, forests and mountains are noticed not in connection with any social or historical significance, but as examples of linguistic peculiarity, such as vowel-lengthening (VI.3.117-120) or cerebralisation (VIII.4.4-5).

Kātyāyana and Patañjali following Pāṇini add more examples to his. For instance, under Sālvāvayava (IV.1.173) Patañjali mentions the names of the states belonging to the Sālva Janapada (Bhāṣāya, II.269); under sūtra IV.1.172 illustrating names of countries beginning with the letter n, Nichaka and Nipa (II.269); and under the Rājanya gaṇa, Vasāti, Devayāta, Bailvavana, Ambarishaputra and Ātmakāmeya, which probably go back to Pāṇini himself (IV.2.52; II.282).
CH. II, SECTION 2. COUNTRY

GEOGRAPHICAL HORIZON—Pāṇini knew of a wider geographical horizon. The extent of the country known to him is indicated by several landmarks mentioned in the sūtras. The western-most point is Prakaṇva corresponding to the term Para-kanīoi mentioned by Herodotus and to the modern country of Ferghana. It may be noted that Pāṇini names Rishi Praskaṇva in sūtra VI.1.153 and from this name is derived as a counter-example, as given by the Kāśikā, the name of the country called Prakaṇva. To the south of Ferghana lay Kamboja (IV.1.175), which as will be shown later may be identified with the region of Badakshan-Pamir. South of it lay Kāpiśā (IV.2.99), capital of the kingdom of Kāpiśā, which may be identified with modern Kafiristan, south-east of the Hindukush. South of Kāpiśā was situated Gandhāra (IV.1.169) comprising the valley of the Kabul river, with its frontier outpost at Takshaśilā (IV.3.93).

There are also mentioned from west to east janapadas, of (1) Madra (IV.2.131), (2) Uśinara (IV.2.118), (3) Kuru (IV.1.172), (4) Bharata, called also Prāchya-Bharata as the dividing line between north (Udīchya) and east (Prāchya) (IV.2.113).

Eastern India is known by its divisions called (1) Kosala (IV.1.171) (2) Kāśī (V.2.116) (3) Magadha (IV.1.170) (4) Kaliṅga (IV.1.170) and Sūramasa (IV.1.170).

On the west side the country of Kachchha is mentioned (IV.2.133), and also the islands of the adjoining sea (anu-samudra dvīpa, IV.3.10).

Further up, modern Sind is mentioned under the name of Sauvīra. Pāṇini had a direct knowledge of the country as he shows acquaintance with its social life (formation of its gotra-names) as will be explained later.
The southern limit of his horizon is indicated by the mention of Aśmaka (IV.1.173) of which the capital as known from other sources was Pratishṭhāna, modern Paiṭhaṇ on the Godā-vari.

**DIVISIONS OF THE COUNTRY**—Udichya and Prāchya are the two broad divisions of the country mentioned by Pāṇini, and these terms occur in connection with the linguistic forms known to the eastern and northern grammarians. The Udichya country included Gandhāra and Vāhīka, the latter comprising Madra and Uṣinara, and possibly Trigarta also. The Kuru region in the south-east of the Punjab was contiguous with the Bharata janaṇapada. The Bharata region separated the east from the west, as shown by Pāṇini’s reference to Prāchya-Bharata, on which Patañjali remarks that the proper Prāchya country lies outside the sphere of the Bharatas (II.4.66; I.493, anyatraprāg-grahane Bharata-grahaṇāṁ no bhavati). The river Śrāvatī mentioned in Pāṇini (VI.3.120) formed according to commentators the boundary between the two divisions of Udichya and Prāchya. It may probably be identified with the Dṛishadvati or Chitāṅg flowing through Ambala district.

Both Udichya and Prāchya were taken as the home (Lōka) of standard Sanskrit both in Pāṇini’s time and earlier. In the time of Patañjali, however, this became contracted to Āryāvarta as the home of the ṣishtas (persons proficient in the ṣāstras) whose language set its norm.
CH. II, SECTION 3. MOUNTAINS, RIVERS AND FORESTS

Pāṇini shows knowledge of the mountainous regions called Himālaya, with its perpetual snow (himāṇī, IV.1.49), its melting (hima-śratha, IV.4.29), uplands (adhitīyakā) and lowlands (uṇḍīyakā, V.2.34). In this connection the expressions Antargiri and Upagiri (with variant forms Antargiram and Upagiram, according to the opinion of āchārya Senaka, V.4 112) are especially noteworthy as proper names also known to the Mahābhārata, the former signifying Himālaya proper (Antargiri—‘Heart of Himālaya’), same as Pāli Mahāhimavant or the Great Central Himālaya including its highest peaks, such as Gauriśāṅkara, Nandādevī, Kedāranātha, etc., and the latter the sub-Himālayan region of low-lying peaks (Pāli Chullā-Himavant). The Mahābhārata also adds Bahirgiri, signifying the outlying region of the Tarā (Sabhā, 27.3).

Pāṇini mentions some particular hills: (1) Tri-kakut (V.4.147) so-called from its three peaks, a name first used in the Atharvaveda as the source of a salve (aṇṭana), which may be identified with the Sulaiman mountain, famous as the source of antimony all over the Punjab and Sind (probably same as Sauvīraṅjana; cf. Vedic Index, I.329); (2) Vidūra (IV.3.84) as the source of the precious stone called vaidūrya, cat’s eye, which according to Patañjali was quarried at Vālavāya and treated by the lapidaries in Vidūra, probably Bidar (cf. Pargiter, Mārk., p. 365, for Vaidūrya as Satpura); (3) Kimśulakā-giri (VI.3.117), to which the Ganapāṭha adds five more names, viz., Śālvakāgiri, Aṇjanāgiri Bhaṇjanāgiri Lohitāgiri, Kukkuṭāgiri. These six names seem to be taken from some Bhuvanakosha list, giving in order the ranges on the western frontiers from Afghanistan to Baluchistan.

Starting from below, Śālvakāgiri is phonetically the name of
Hālā Range lying north-south between Sind and Baluchistan. To the west of it is the Makran chain of hills, the home of the Hiṅgulā river and Hiṅgulāja goddess. Hiṅgulā seems to be the Prakrit form of Kimśulakā. It was also called by its synonymous name, the Pārada country, Pardene of classical writers, corresponding to Pārdāyana of Patañjali (IV.2.99). Goddess Hiṅgulā of this place is of vermilion colour, also called Dadhīparṇī, because of its association with the ancient Scythian tribes of Dahae and Parnians. It was worshipped also as Nānī, or Nanā of antiquity.

The next great range is that of Sulaiman mountains which as the source of a famous salve was rightly celebrated as Aṅjanā-giri. With the other two ranges of Tobā Kākāḍ and Shingar to the west of it, Sulaiman with its triple chain was rightly called Trikakut which seems to have been its Vedic name (Atharva., IV.9.8), also recorded by Pāṇini (V.4.147).

The next step lands us into Afghanistan. Here we have two conspicuous mountainous ranges, viz., one in the north-east of Kabul called Hindukush and the other to the south-west of Kabul called Koh-i-Bābā. The old name of Hindukush was Lohitāgiri (cf. Kāśikā on IV.3.91 where the military highlanders of Rohitagiri are referred), from which Afghanistan in medieval geography was called Roha (Ling. Survey of India, X, p.5). In the route of Arjuna’s conquest we read of Lohita with its ten tribes after Kashmir (Sabhā., 27.17). This can apply only to Hindukush and its martial tribes occupying the valleys of Kohistan-Kafiristan.

Sandwitched between the Sulaiman (Trikakut) and the Hindukush (Rohitagiri) we find a little to the west the Koh-i-Bābā range which acts as the central watershed for the dispersal of waters to the south, west, north and east. A glance at the map of Afghanistan points to it most probably as being the Bhaṅjanā-giri.

The last name Kukkuṭā-giri seems to represent the comparatively low peaks in the west of Afghanistan towards Herat.
which in Iranian geography were called *Uparsaena*, "The Falcon’s Perch", and by the classical writers *Paropamisus*, with special reference to their low height.

In *sūtra* IV.3.91 Pāṇini mentions peoples who lived by the profession of arms and were settled in hilly regions (*Āyudhajīvibhyāśchhah parvate*). Hṛidgola, Andhakavarta and Rohitagiri are mentioned as names of particular hills occupied by these military Highlanders. The mention of Rohitgiri suggests their identification with the mountainous tracts in Afghanistan known as Rōha, the Tribal Area which is still the recruiting ground of good soldiery. In the *Mārkandeya Purāṇa* the home of the Highlanders (*Parvatāśrayinah, 57.56*) is placed in the region of Nihāra or Jalalabad (for which the Vāyu gives the true reading Nagarahāra; Pargiter, *Mar. P.*, p. 345). It may be added that Patañjali gives several new names of mountain-dwellers, of which Mālāvat (II.287) is noteworthy as corresponding to Malākand, the mountainous district north of Dargai, the home of the Dārgalas in the country south of the Swat river.

**FORESTS**—Several names of forests are mentioned in *sūtras* VIII.4.4-5. Of these the five names enumerated in the first *sūtra* occur also in the *Koṭarādi gana* giving a list of forest names (VI.3.117). Of these the Puragāvana seems to be connected with Pāṭaliputra as the *Ganaratnamahādabi* associates the Yakshi Puragā with Pāṭaliputra (verse 291). Miśrakāvana appears to be the name of the well-known forest of Misrikh in Sitapur district. The Pāli literature, however, makes Missaka a mythical forest of the Tāvatimśa heaven (*Jātaka*, VI.278; *Dict. Pāli Proper Names*). The other names, *i.e.* Sidhrakā-, Sārikā-, Koṭarā- and Agreavana are unidentified. Similarly names like Saravana, Ikshuavana, Plakshavana, Amravana, Kārshyavana, Khadiravana and Piyūkshābana included in *sūtra* VIII.4.5 cannot be definitely identified since Pāṇini takes them both as proper and common names. Some of these proper names are known in Pāli works; they may not have been big
forests but mere groves of trees situated in the vicinity of big towns. For example, Khadiravana occurs in the Aṅguttara Nikāya as the birth-place of the teacher Revata who was the foremost of the forest recluses and called Khadiravana after the place of his birth. Similarly Saravana is said to have been a settlement in the neighbourhood of Śrāvastī, where another great teacher Gosāla Maṅkhaliputta was born. Amravana is said to have been attached to the city of Rājagṛiha, and also Kāmpilya.

Forests of herbs and big trees (Vibhāshaushadhi-vanaśpati-bhyaḥ, VII.4.6) and those reserved for the grazing of cattle (gospaḍa, VI.1.145; āśitam-gavaṇa arāṇya, V.4.7) are also mentioned.

RIVERS—On the north-west frontier Pāṇini mentions the river Suvāstu (IV.2.77; Swat). This river with its tributary the Gaurī (mod. Panjkora) flowed through Gandhāra of which the upper part was known as Udḍiyāna, famous for its blankets called pāṇḍu-kambala, mentioned by Pāṇini (IV.2.11). The western capital of Gandhāra was Pushkalāvatī which is identified with modern Charasadda a little above the junction of the Swat with the Kābul river. The Kāsiṅa mentions Pushkarāvatī as the name of a river in three sūtras (IV.2.85; VI.1.219; VI.3.119) along with certain other names as Udumbaravatī, Vāraṇavatī, Maśakavatī. Of these Maśakavatī seems to be identical with the name of the river on which Massaga or Massaka, capital of the warlike people known as the Āsvakāyanas was situated. It is possible that Pushkalāvatī and Maśakavatī were the designation of only those particular portions of the river Swat where it flowed past by these two great towns of Gandhāra in the south and north respectively. It may be added that Patañjali mentions Udumbarāvatī, Maśakavatī, Ikshumati and Drumati definitely as names of rivers (II.287). Of these Udumbarāvatī may have flowed through the country of the Audumbaras, and Ikshumati (also included in the Madhvādī group, IV.2.86) is identical with a tributary of the Ganges re-
ferred to as Oxymagis by Arrian and now known as Ḫikan (also Kālindī) flowing through Farrukhabad district.

The next great river mentioned in the north-west is the Sindhu after which the country to its east was named Sindhu, the present Sind-Sagar Doab (IV.3.93). Taking its rise from the snows of western Kailāsa in Tibet, the Sindhu first flows north-west for about half of its length, and then reaching the Darad country in the north-west of Kashmir and south of Little Pamir it takes a southward course along which lay its most famous places. A geographical feature of the Indus descending from the defiles of Dardistan is expressed in the grammatical formation Dāradi Sindhubh, naming it after its immediate source (Prabhavati, IV.3.83). Emerging from the Darad highlands the river enters the Gandhāra country with Swat or Udḍiyāna on its right and the ancient janaṇapada of Uraśā (mod. Hazara in N.W.F.P.) on its left until it receives its most important western tributary the Kabul river at Ohind, a few miles north of Attok where it is at present crossed by a bridge. Ohind was the ancient Udabhāṇḍa, the place of transhipment of goods across the Sindhu and the spot where the great northern trade-route called Uttarapatha in sūtra V.1.77 crossed the river. Pāṇinī’s own birth-place, Śalātura was a riparian town of the Indus situated at a distance of only about four miles from Ohind in the angle of the Kubhā and the Sindhu. About sixty miles east of Uabhāṇḍa was Takshaśilā, the eastern capital of Gandhāra, and at an equal distance to the west was Pushkalahavatī (mod. Charsadda), its western capital. The trans-Indus country was known in ancient times as Pāre-Sindhu (Sabhāparva, 51-11). Its famous breed of mares imported into India is mentioned by Pāṇinī as Pāre-vadavā, ‘the mare from beyond the border’ (VI.2.42).

Varṇu, corresponding to Bannu on the other side of the river is mentioned in a sūtra, and also Gana-pāṭha. The Bannu valley is drained by the rivers Kurram (Vedic Krumu) and the Gambila or Tochi which unite and flow into the Indus. The
Kāśikā commenting on sūtra IV.2.103 speaks of Varṇu deśa named after the river Varṇu (Varṇur-nāma nadas-tat-samīpo deśo Varṇuh). It appears that the Kurram river after it left the Kurram Agency and from the point where it enters the Bannu valley was named Varṇu in ancient days. The place situated in proximity to Varṇu is mentioned as Vārṇava (IV.2.77, gaṇa Suvāstvādi). Although Bannu (Edwardesabad) is a modern town founded only in 1848, the valley after which the town was named is mentioned in ancient texts. Opposite Varṇu, across the river, was situated the famous Kekaya janapada mentioned in sūtra VII.3.2, comprising parts of the three modern districts Jhelum, Gujrat and Shahpur, adjoining which lay the Salt Range (Saindhava). To south of Kekaya was situated the Sindhu janapada lying north to south between the rivers Jhelum and Indus. Along the lowermost course of the river Sindhu was situated the ancient Sauvīra janapada (IV.1.148), now known as Sind.

Of the rivers of the Punjab, Pāṇini mentions Vipās (Beās) and the wells dug on its north side (Udak cha Vipāsah, IV.2.74). The northern wells were more stable as being on high and dry ground than those on the other side and the former were therefore distinguished by the peculiar accent on their names.

Pāṇini names two other rivers, Bhidya and Uddhya (Bhidy-ōddhyau nade, III. 1. 115). Uddhya is the same as Ujh flowing through Jasrota district and falling into the Rāvi (Imperial Gazetteer of India, Vol. XV, p. 73; located to the north-west of Mādhopur on the Rāvi, p. 107). On Pāṇini II.4.7 the Kāśikā illustrating the compound names of two rivers cites the example Uddhy-Erāvati, that is Uddhya and Irāvatī, the former of which we must consider as a tributary of the latter on the analogy of Gaṅgā-Śoṇam, another example of the same rule, and of the counter-example Gaṅgā-Yamune. Bhidya may be identified with a river named Bāi, rising in Jammu about 15 miles to the west of Ujh, and flowing into the Rāvi in the
Gurdaspur district. The names Uddhya and Bhidya suggest that they dried up in summer but flowed in torrents in the rains, as indicated by Kālidāsa who describes their brisk and wayward movements as those of lusty youths like Rāma and Lakshamaṇa (Raghuvaṃśa, XI.8).

DEVIKĀ—Pāṇini also mentions the river Devikā and what grew on its bank (Dāvikā-kūla, VII. 31.1), which Patañjali describes to be sāli rice (III. 316). Pargiter rightly identified it with the river Deg (Mārk. Purāṇa, p. 292). According to the Vishnudharmottara Purāṇa (I.67.15) the Devikā flowed through the Madra country, and joined the Ravi according to the Vāmana (ch. 84). Rising in the Jammu hills, the Deg flows through Sialkot and Sheikhpura districts and joins the Ravi. In each rainy season it deposits on its banks layers of rich alluvium soil which produce rice of fine quality that are famous all over the Punjab and exported from Muridke and Kamoke towns. (cf. Jagannath Agarwal, On the Identification of the Devikā, JUPHS, 1944, Pt. II, pp. 76-79).

Pāṇini mentions another river Ajiravatī (VI.3.119) the Achiravatī of Pāli texts (modern Rapti) on which stood Srāvas-tī. The next river mentioned in this region is Sarayū (VI.4. 174) of which the Rapti is a tributary. It may be noted that Sarayū was also the name of a river in remote Rīgvedic India flowing past Herat (derived from Hari-Rūd; cf. Old-Persian Harayū from Vedic Sarayū). Darius I (516 B.C.) in his inscription mentions Haraīva, the people of Harayū, equal to Pāṇini’s Sārava. In the Elamite version of the Behistun inscription occurs the name Arriya (=Haraīva=Gk. Aria with its capital at Heart).

Another river Rathaspā is mentioned in the Gaṇa-pāṭha to sūtra VI.1.157 (Bhāṣya, III. 96, Rathaspā nadi). This name occurs in the Jaiminiya Brāhmaṇa (Caland, JB., Extract 204) and in the Adiparva (172.20) where it is one of the seven sacred rivers between Sarasvatī on the one side and Gaṇḍakī on the other. Most probably it was a river of Pañchāla and the name
may correspond to Rhodopha which is mentioned by the Greek writers as marking an important stage on the great royal road from the frontier to Pātaliputra. Rhodopha is stated there to be 119 miles from the Gaṅgā; although it is called a town but the mention of the stages generally between two well-known rivers as Jhelum and Beās, Sutlej and Jamna, suggests its having been the name of a river (Megasthenes, Fragm. LVI; Rawlinson *Intercourse between India and the Western World*, p. 64). the distance of 119 miles lands us on the banks of the Rāmagaṅgā which is the only big river between the Gaṅgā and the Sarayū to present difficulties of crossing so as to merit the name Rathasthā, given to it in the Vedic period, and which is still in its upper course known as Ruhut or Ruput (Imp. Gazetteer, U. P., I.166). The distances from Hastināpur on the Gaṅgā to Bareilly on the Rāmagaṅgā, and from Bareilly to Kanauj where the Rāmagaṅgā falls into the Gaṅgā, are equal to the stages of the Royal Road mentioned by Megasthenes from the Gaṅgā at Hastināpara to the town of Callinipaxa identified with Kanauj as the river Kālindī joins the Gaṅgā near it.

Rathaspā or Rathasthā as the name of a river occurs as an independent sūtra in the Ṛktantra Prātiśākhyā (sūtra 209). Śarāvati is mentioned in sūtra VI.3.120 (Śarādinām cha). Several rivers lay claim to this name (cf. Dey’s *Geog. Dict.*), the most famous one was that which separated the Udichya from the Prāchya country already noted.

Of the rivers of Central India (now Vindhya-Pradeśa) Pāṇini mentions Chaṅmvatī (Chambal, VIII.2.12).

Pāṇini uses the term Rumaṅvat, which the Kāśikā connects with a place producing salt (*Lavaṇa-śabdaya rumaṇa-bhāvo nipātyate*). The form Rumaṅvat may have been based on the name Rumā, a river or lake in the district of Sambhar in Ajmer which is also the source of the river Lūnī.

**DESERT REGIONS** — Pāṇini mentions a desert region as *dhanva* (IV.2.121), of which two examples are cited by Patañjali, viz. Pāre-Dhanva and Āśṭaka (II.298), and another by
the Kāśikā as Airāvata. Pāre-dhanva literally means ‘across the desert,’ which seems to refer to the region called Thar-Parkar to the west of the Marusthala desert of Rajasthan. Āśṭakadhanva seems to be the name of the desert region of the Attock district which is called Dhanni, probably from dhanva. East Gandhāra included the desert of Attock and the hilly tracts of Rawalpindi called Prith ānapada, both of which are preserved in the joint name Dhanni-Pothowar. The Bhīshma-parva (VI. 7) places Airāvata-varsha beyond the Sītā or Yarkand river in Chinese Turkestan where we may look for Airāvata Dhanva in the desert regions of Central Asia.
CH. II, SECTION 4. JANAPADAS

An important geographical term used by Pāṇini is Janapada, which was both a state and a cultural unit, its culture counting more than its geography. Its cultural integrity was reflected and preserved in the manners, customs and above all the dialect of its people. The citizens of the same (samāna) janapada were called sajanapadāḥ (VI.3.85). The janapadas known to Pāṇini are the following:—

1. Kamboja (IV.1.175). Gandhāra, Kapiśa, Bālhika, and Kamboja are the four janapadas the relative positions of which should be clearly understood. Of these Gandhāra extended from Takhaśīlā, its eastern capital, to the river Kunar, its western boundary, and from the river Kābul in the south to Swat in the north. Next to it was the kingdom of Kapiśa coinciding with modern Kāfiristan and occupying the whole area between the river Kunar and the Hindukush. The latter mountain identified as Rohitāgiri separated Kapiśa from Bālhika. Sometimes Kapiśa politically formed part of Gandhāra, as in the reign of Darius, and then the name Gandhāra was applied to both of them. In none of these three janapadas can Kamboja be included. It stands as a separate janapada, which Lassen correctly identified with the head-waters of the Oxus comprising the Ghalcha-speaking areas of Pamir.

This identification is also supported by important linguistic evidence, viz. that the root śava 'to go' which was noticed by Yāska as a peculiarity of Kamboja speech (Śavatir-gatikarmā Kambojeshveva bhāṣyate, Nirukta, II.2), is still current there. (Cf. Grierson, Linguistic Survey of India, Vol. X, pp. 468, 473, 474, 476, 500, etc; Jayachandra, Bhārata-Bhūmi, pp. 297-303). The Kambojas are known as Kambu-
jiya in the Old-Persian Inscriptions. In the Aitareya Brāhmaṇa the Uttarakurus and the Uttaramadras are described as living beyond the Himālaya (VIII.14); and in the Vāinša Brāhmaṇa Kāmboja Aupamanyava is spoken of as a pupil of Madragāra, from which the Vedic Index postulates a possible connection of the Uttaramadras with the Kambojas, who probably had Iranian as well as Indian affinities, (Vedic Index, I.84, 138 cf. also Jean Przyluski, An Ancient People of the Punjab: The Udumbaras, Journal Asiatique, 1926, p.11 showing that Bālhika was an Iranian settlement of the Madras; Bālhika-Uttaramadra).

2. Prakaṇva. The name is a corollary to Praskaṇva in sūtra VI.1.153 and is stated by the Kāśikā to have been a country (deśa). It should be identified with the people mentioned by Herodotus as Parikanioi, (modern Ferghāna, Sten Konow, Kharoshṭhi Ins., p. xviii) who are said to have formed part of the empire of Darius. Prakaṇva was thus situated immediately to the north of Kamboja or the Pamir region.

3. Gandhāra. Pāṇini mentions both the Vedic form Gandhāri as the name of the janaṭada and its people in sūtra IV.1.169, and its later form Gandhāra in the gaṇas to IV.2.133 and IV.3.93. Gandhāra extended from the Kābul Valley to Takshaśilā. Two towns of Gandhāra are mentioned, viz. Takshaśilā, its eastern capital, and Pushkalāvatī, the western. The latter occurs in a gaṇa as the name of a river on which the town stood. The Greeks refer to it as Peucelaotes (modern Charsadda, situated near the junction of the Swat with the Kābul). The Pushkalas of the Mārkaṇḍeya Purāṇa must be the people of this region. The country between the rivers Suvāstu and Gauri was known as Uḍḍiyāna which Kātyāyana mentions as Aurdāyana (Bhāṣya, IV.2.99; II.292). It was considered in ancient days a part of Gandhāra. A special variety of blankets known as pāṇḍu-kambala (IV.2.11) was a product of Gandhāra. Gandhāra is also known to the Atharvaveda for its wool.
4. *Sindhu*. Sindhu was originally the name of the river, which gave its name to the whole country. The term Sindhu was corrupted to Hi(n)du in the Old Persian inscriptions of Darius I (516-485 B.C.) and to Indus by the Ionian (=Pāṇini’s Yavana) Greeks. Sindhu as a *janapada* may be identified with Sind-Sāgar Doāb, the region between the Jhelum and the Indus. Most of it is now the sandy desert of Thal.

5. *Sauvīra* (IV.1.148). Pāṇini mentions Sauvīra and gives valuable social history of the region. It was the home of many gotras of which he names two, Phāntāhriti and Mimata, and the Kāšikā following an old tradition adds Bhāgavitti, Tārnābindava, Akaśāpeya, Yamunda and Suyāmā. Bhāgavitti is also mentioned by Patañjali (II.243) and may be identified with the present Bugti tribe on the northern border of Sind, numbering about thirty thousand. Pāṇini mentions Śarkarā or Śārkara (modern Sukkur on the Indus) as a town (IV.2.83) The name was suggested by its proximity to the rocky region (*śarkarāyāḥ adūrabhavah*) on the borders of which Sukkur is situated.

Pāli literature mentions Rauruka (modern Rori in Upper Sind) as the capital of Sauvīra.

6. *Brāhmaṇāka*. It is mentioned in Pāṇini’s *sūtra* V.2.71. Patañjali definitely calls it a *janapada* (*Brāhmaṇako nāma janapadah*, II.298). The significance of its name is brought out by the Kāšikā, which describes it as the land of Brahmins who were *āyudha jīvins* or followers of military art, (*yatrāyudha jīvino Brāhmaṇaḥ santi*). Their military traditions continued up to the time of Alexandar whose invasion they resisted with patriotic heroism (Plutarch, *Alex.*, 59). The Greeks call them Brachmanoi and locate them in middle Sind (Arrian, VI.16), of which the capital is still called Brahmanabad (Cunningham, *Ancient Geog.*, p. 310).

It may be noted that even Rājaśekhara (9th century A. D.) names Brāhmaṇāvaha (‘abode of Brāhmaṇas’) as one of the *janapadas* of the west. The Muslim geographers called Brah-
manabād as Bahmanwā after this old tradition.

It may be noted that Patañjali mentions two formations *a-Brāhmaṇaka* and *a-Vṛishalaka* as names of countries (I.301), corresponding to Śaudräyaṇa and Brāhmaṇaka respectively.

Śaudräyaṇa or the Śūdra country is mentioned along with other names in the *gaṇa* Aishukāri (IV.2.54) which denoted names of countries after their peoples (*Visbayo dešā*). Like the Brāhmaṇas, the Śaudräyaṇas (=Greek *Sodrae*) also are mentioned as having opposed Alexander. Cunningham treats the present Soḍā Rajputs of south-east Sind around Umardot as their descendants (*Ancient Geog.*, p. 291). Diodorus couples the *Sodrae* with the *Massanae* as occupying the opposite banks of the Indus. Cunningham equates the *Massanae* with the *Mausarnaioi* of Ptolemy, which name corresponds to the Masūrakarṇa (derivative Mausurakarṇa) of the *Gaṇa-pāṭha* (II.4.49; IV.1.112).

7. *Apakara*. This name is mentioned along with Sindhu in *sūtra* IV.3.32, to explain the forms Apakarakā and Apakara, denoting its products. It may be identified with Bhakkhar on the Indus in Mianwali district.

8. *Pāraskara* (VI.1.157). This is mentioned in the *gaṇa* Pāraskara-prabhṛiti. Patañjali treats it as a country (*Pāraskaro deśāḥ*, III.96). The name corresponds to Thara-Pārkara (Thara being the Sindhi form of Thala meaning dry country or desert, as opposed to Kachchha or jāngala country), one of the biggest districts of Sindh which once denoted the whole of its south-eastern part up to the coast of the Great Rann of Kachchha or Kachchha-Irīṇa.

The *Rīktantra* takes the name Pāraskara as that of a mountain, and the term Pārakara for non-mountainous region, such as the Thar-Parkar district (*Pāra parvate*, IV.5.10, Suryakant’s edition, p. 41).

9. *Kachchha* (IV.2.133). Kachchha represented the water-logged portions in the south as against the dry desert area.
in the north. Kachchha was historically connected with Sindh forming its province in the seventh century when Yuan Chhwang visited the country. Cunningham says that Kachchha and Parkar have always been linked together (Anc. Geog., p. 347). Panini also refers to the names of towns ending in Kachchha (IV.2.126), which were mostly situated along the coast from Bhārīgu-Kachchha to the province of Kachchha. The inhabitants of the Kachchha janapada were known as Kāchchhaka, and a reference to their peculiarities in speech, laughing and dress has already been noted.

10. Kekaya (VII.3.2). The descendants of the Kshatriyas of the Kekaya janapada were known as Kaikeya. The ancient Kekaya janapada consisted of the territory now comprised in the three districts of Jhelum, Shahpur and Gujerat.

11. Madra (IV.2.131). Madra was a part of the Vāhika country, as already seen, with its capital at Śākala, modern Sialkot. Panini mentions two divisions of Madra, Pūrva (Eastern) and Apara (Western) (Diśo'Madrāṇām, VII.3.13; also IV.2.108). Pūrva-Madra extended from the Ravi to the Chenab and Apara-Madra from the Chenab to the Jhelum.

In the Mahābhārata Śākala is mentioned as the chief city of the Vāhikas on the Āpagā river. Patañjali also mentions Śākala as a Vāhika-grāma (IV.2.104; II.294; cf. also Kāṣiṇa, IV.2.117). Panini does not explain the derivation of the name Vāhika. Kātyāyana, however, derives it from babis, 'outside,' with the suffix ikak (IV.1.85.5). This seems to agree with the epic description of Vāhika as the country of five rivers but lying outside the pale of Aryan society (dharma-bāhya), devoid of religion (nashta-dharma) and impure (āsuchi) Karnaparva, 44.7.32).

12. Uṣīnara (IV.2.118). Panini mentions Uṣīnara as a part of Vāhika (cf. Kāṣiṇa on IV.2.118, Uṣīnaresbu ye Vāhika-grāmāḥ). In the Gopatha Brāhmaṇa the Uṣīnaras are regarded as northerners (II. 9, Śavasosīnaresbu Udīchyesbu).
Thus Pāṇini names three divisions of the Vāhika country, viz. Kekaya, Uśinara and Madra to which is to be added the fourth division Śavasa. Of these Kekaya and Śavasa may be located between the Jhelum and the Chenab, the first in the south and the second in the north respectively, and Madra and Uśinara between the Chenab and the Ravi in the north and south respectively. The divisions become clear on the map.

The Divyāvadāna refers to the Švasas in Uttarāpatha with headquarters at Takshašilā to which Asoka was deputed by his father Bindusāra as Viceroy to quell their rebellion. The name Šavasa or Śvasa seems to be preserved in the modern name Chhibha comprising Punch, Rajauri and Bhimbarha. In literature the Uśinaras are often associated with the Śibis (Gk. Śiboi) whose chief town Śibipura has been identified with Shorkot, headquarters of a Tehsil in the Jhung district.

13. Ambashṭha. It is mentioned by Pāṇini in sūtra VIII.3.97, and is stated by Patañjali to be implied in sūtra IV.1.171 as the name of a janapada under a monarchy. The Mahābhārata locates them in the north-west and describes them as a kingship. The Ambashṭhas may be taken as Gk. Abastanoi or Sambastai on the lower course of the Chenab (Invasion of Alexander, p. 155).

14. Trigarta. It is mentioned by Pāṇini as an Ayudhajī-vī Saṁgha, and a Confederation of Six States known as Trigartā-Śashṭha (V.3.116). The Trigarta country, although in itself marked out by natural boundaries from the rest of the province, was partitioned into smaller territorial divisions or janapadas. The name Trigarta denotes the region drained by the three rivers, Ravi, Beas and Sutlej, and corresponds to the Jālandhar group of states which had retained their geographical identity all these years. Jālandharāyaṇa is mentioned in the Rājanyādi group (IV.2.53).

Patañjali mentions Pāṭanapraśtha as a Vāhika-grāma (II.298). It may be identified with Paithan or Pathānkot, situated at the
entrance of the Kāngrā valley and at one time the capital of the Audumbaras (Cunningham, A.S.R., XIV, p. 116; also V,p. 153).

The central portion of Trigarta formed by the valley of the Beas was also named Kulūta (same as Ulūka of the Sābhāparva, 27.5-16), now known as Kulū. Its ancient capital was at Nagara on the Beas, a name included in the Katrāyādi gāna (IV.2.95).

Maṇḍamati (Yavādi gāna, VII.29) was perhaps modern Maṇḍi, lying to the south of Kulūta. Pāṇini makes special mention of the Bhārgāyaṇa gotra in the Trigarta country (IV.1.111).

15. Kalakūṭa (IV.1.173). It is mentioned as a janapada under a king. The Sābhāparva calls it Kālakūṭa and makes it a part of Kūlinda (Kūlinda-visbāye, 26.3) which was conquered by Arjuna. Pāṇini’s Kūluna (Gāṇa-pāṭha, IV.2.133 and IV.3.93) seems to be the same as Kūlinda and later Kūninda. Kūlinda (Gk. Kūlindrīnī) was known to Ptolemy as an extensive country including the region of the lofty mountains wherein the Beas, the Sutlej, the Yamunā and the Gāṅgā had their sources (McCrindle, Ptolemy, p. 105, 109). The Kalakūṭa lay somewhere in this area, with possible traces of its name in modern Kalka in the Simla hills.

16. Kuru (IV.1.172). It was known to Pāṇini as a janapada and a kingdom. He also mentions the town of Hāstina-pūra (VI.2.101), which was its capital. The region between the triangle of Thaneswar, Hisar and Hastinapur was distinguished by three different names: Kuru-rāṣṭra proper between the Gāṅgā and the Yamunā with its capital at Hastināpura; Kurujāṅgala equal to Rohtak, Hansi, Hisar; and Kuru-kṣhetra to the north with its centre at Thaneswar, Kaithal, Karnal. The Kāśikā mentions all the three as distinct geographical units (Kuruvaścha Kuru-kṣhetrāṇa cha Kuru-Kuru-kṣhetrāṇa, Kuruvāsaḥa Kurujāṅgalaṁ cha Kuru-Kurujāṅgalaṁ, II.47). The name Asandīvat, the place with the king’s throne where Jana-
mejaya Parikshit is stated in the Mahabharata to have performed his sacrifice, is also noticed by Panini (VIII.2.12). Panini also refers to the householders' way of life obtaining amongst the Kurus (Kuru-garhapatam, VI.2.42) as against the ascetic way. It seems to be akin to the Kuru-dhamma of the Jataka of that name which insisted on the purity of family life and the cultivation of proper domestic relations and virtues (Kurudhamma Jataka, Vol. III, No. 276), a way of life and philosophy that are reflected in the basic doctrine of the Bhagavadgita expounded in Kurukshetra.

17. Sālva. Panini mentions Sālva (IV.2.135), Sālveya (IV.1.169) and Sālvāvayava (IV.1.173) as three distinct janapada units which were monarchies. Of these Sālva seems to have been the parent state, Sālveya equal to Sālvaputra, a collateral branch, and Sālvāvayava, a bunch of kingly states which the enterprising Sālvās either brought under their conquest or planted during the course of their colonising activity. The last although confined to a limited geographical horizon in the central and north-eastern Punjab, were in relation to each other not geographically contiguous.

The Sālva is mentioned as a pair janapada with Matsya as early as the Gopatha Brāhmaṇa (I.2.9) and also in the same group in the Mahabharata (Bhishmaparva, 10.3) where the Sālvas, the Mādreyas and the Jāngalas are juxta posed. Matsya with its capital at Virāṭa (Bairāṭ in Jaipur) provides a fixed point and Sālva should be located near that region. Making allowance for the position of the other known janapadas, the only place left for Sālva coincides with the territory extending from Alwar to north Bikaner. It may be mentioned that the Sālvas were an ancient people who seem to have migrated from the west through Baluchistan and Sindh where they left traces of their name in Śālvakā-giri (mentioned by Panini in the Gana-pātha to VI.3. 117), the present Hālā mountain, and then advancing towards north Sauvira and along the Sarasvati finally settled in north Rajasthan. Of their intrusion towards
the Yamunā some dim intimation is preserved in an old Vedic verse.  

Sālveyaka. The Sālveyakas are mentioned as a separate people in the Mahābhārata, grouped with the Matsyas in their fight with king Suśarmā of Trigarta (Virātāparva, 29. 2). They must be the same as Sālvaputra mentioned in the Udyogaparva (4.24) amongst kings to whom the Pāṇḍavas were to send emissaries. The name Sālvaputra may still be traced in Alwar, which is in the same geographical sphere. The Sālveyas stood in relation to the Sālavas as the Mādreyas to the Madras (Bhīshmaparva 10.37).


Udumbara. The Udumbara (also Rājnyādī group, IV. 3.53) territory is fixed by the find-spots of their coins in the Kangra valley, between the Ravi and the Beas, and at Pathankot in Gurdaspur district at its mouth (Allan, Coins of Ancient India, Intro.p. lxxxviii). Udumbarāvati as a river-name (Bhāshya, IV.2.71; II. 287) might be some tributary flowing through the Udumbara country on which the town of the same name was situated.

Tilakhala. Looking at the map of this region we find that the area south of the Beas comprising Hoshiarpur district, where even today sesame forms the main crop should be indentified with Tilakhala (‘the threshing-floors of tīla’). Thus Tilakhala and Udumbara were immediate neighbours, and the former appear to be the same as the Tilabhāras of the


‘The Sālva women turning their wheels and sitting on thy banks, O Yamunā, have told us that their king is a Yaugandhari.’ (Un ancien peuple du Panjab: Les Sālva, Journal Asiatiqve 1929, (pp. 311-314) p. 314). Keith considers a reference to war-like raid more plausible.
Geographical Data

epic (Bīshmaparva, 10.51)\textsuperscript{1}.

Madrakāra. The Madrakāras, as pointed out by Prof. Przyluski, signifies the warrior-troops of the Madras (Les Salva, \textit{Journal Asiatique}, 1929, pp. 311-354; from old Persian \textit{kāra} meaning ‘army’). Their connection with the Sālvas was the outcome of an important event in the history of the two peoples, viz. the marriage of the Madra princess Sāvitrī with the Sālva prince Satyavān (\textit{Vanaparva}, 279.15). It appears that consequent to this marriage three new small kingdoms came into existence for which distinct names have been preserved, e.g. 1. Sāvitrīputrakāh, 2. Madrakārāh and 3. Sālvasenayāh. The first represented the hundred sons of Sāvitrī and Satyavān mentioned both in the \textit{Mahabhārata} (\textit{Vanaparva}, 283.12; Karpnaparva, 4.47) and in the \textit{Gaṇa-pāṭha} (V.3.166, Dāmanyādi gaṇa). Putra denoted a clan as in the names Kehar-potre, Chanan-potre, etc. amongst the Arora Khattris of the Punjab, or in such old designations as the Śākyaputras. The Madrakāras and the Sālvasenāyaḥ (Skt. \textit{senā} corresponding to Iranian \textit{kāra}; Bhishmaparva 10.59), were smaller kingdoms of such warrior chiefs as were lent both by the Madras and the Sālvas in order to rehabilitate Sāvitrī and Satyavān who were bereft of their kingdom and married in exile.

Madrakāra and Bhadrakāra appear to be variants of the same name (\textit{madra=bhadra, sūtras} II.3.73 and V.4.67). It seems that Bhadra situated on the Ghaggar near the north-eastern border of Bikaner marks their old home.

Yugandhara. Yugandhara should be some where in the region of the Yamunā, since the Sālva women spinning on its banks, as mentioned above, invoked Yaugandhari as their king. It may be located in Ambala district between the Sarasvatī

\textsuperscript{1}Vulgate 9.53; Poona edition gives tilakāḥ in the text and Tilabhāra in the foot-note.

and the upper Yamunā, where Jagādhari, probably is a relic of the old name.

*Bhūlinga.* The Bhūlingas should be identified with the *Bolingae* of Ptolemy settled in the north-west of the Aravallis. Bhūlinga seems to be the same as Kuliṅga mentioned in the *Mahābhārata* (Bhistimaparva, 10.38)¹ and the *Rāmāyana* on the route connecting Sāketa and Kekaya at the point where the Śaradaṇḍā river was crossed (Ayodhyākāṇḍa, 68.16).

*Saradaṇḍā.* The Śaradaṇḍās must have been settled along the Śaradaṇḍā river mentioned above. Nothing is known about it, but the first part of the two names Śaradaṇḍā and Śāravatī points to their being one and the same river. The latter formed the boundary between the Prāchya and the Udīchya divisions of India and may be identified with the Drishadvatī or Chitāṅg.

*Ajanīḍha and Ajakranda.* Patañjali adds to this list three other names, viz. 1. Bodha, 2. Ajakranda and 3. Ajamīḍha. (IV.1.170; II.289). The prefix Aja in the last two names has reference to a local cult deity Asura Ajaka with whom king Sālva was identified as its incarnation (*Ādiparva*, 61.17).²

*Bodha.* The Bodhas occur also in the list of the Bhīshmaparva (10.37-38) in the same group as the Kuliṅgas, the Sālvās and the Mādreyas. Patañjali also mentions them along with the Udumbaras (II.4.58; I.489).

An important economic feature of the Sālva country was its special breed of bulls mentioned as Sālvaka by Pāṇini (IV.2.136). The Sālva *janapada* also provided recruits for the infantry known in those days as Sālvā *padāti* (IV.2.135).

¹ The critical edition records Kaliṅga in the text and Kuliṅga in the footnote; but all the *janapadas* in this list e.g. Sālva, Mādrey, Jāṅgala, Śāravatī, Bodha and Kuru-Paṅchāla being of the Punjab-Rajputana region, the original reading must be taken to be Kuliṅga and not Kaliṅga, as supported by a Kashmir MS. also.

² Vulgate 67.17; Poona edition gives *malla* in the text and*Sālva* in the footnote.
Pāṇini further mentions a particular item in the Sālva dietary, the porridge known as Sāltvikā yavāgū made of barley, which is still a favourite food of the people in Bikaner and Jaipur states, i.e. the area which was formerly the Sālva janaṇapada.

18. Pratyagratā (IV.1.173). It is the name of a janaṇapada in Pāṇini. While Patañjali and the Kāśikā are silent on this name, we have the later authority of Hemachandra referring to the Pratyag-rathas as belonging to the Ahichchhatrā region (Abhidhānachintāmaṇi, 4. 22). It may be noted that Pāṇini mentions the river named Rathastā (=Ruhut or Rāmagāṅgā), 'that which brings the chariot to a halt,' a meaning suggested by Pratyagratā also. It may be taken as the 'chariot' of Aryan advance marching towards the east.

19. Ajāda (IV.1.171). Nothing is known about this janaṇapada. It is connected with the grazing of goats. It may be taken to be the Etawah district, the region between the Chambal and the Yamunā, famous for its goats (Hindi jarnāpārī bakrī).

20. Raṅku (IV.2.100). Pāṇini uses the term Raṅkavaka for a native of Raṅku. He also mentions the terms Raṅkavāyāṇa and Raṅkava to indicate what was non-human, as examples of which the Kāśikā mentions the Raṅkavāyāna bull and the Raṅkava blankets. It may be noted that Rangka is the name of a language used in parts of Almora district (Moti Chandra, Indian Costume, Bhārtīya Vidyā, Vol. I, p. 46, footnote; for the Rangka language see, Linguistic Survey of India, Vol. III, pt. I, p. 479). So the Raṅku janaṇapada may have been located in this region which was the home of woollen blankets. The area of ancient Raṅku must have been much bigger than at present.

21. Bhāradvāja (IV.2.145). The Kāśikā states clearly that Bhāradvāja in this śūtra is not a gortra name but a country. As Pargiter has remarked Bhāradvāja is often mentioned in the Mahābhārata in connection with the upper part of the Ganges near the hills, and the Bhāradvājās were the people living in
Garhwal (Märk. Purāṇa, p. 320). Pāṇini mentions the Atreyas as a division of the Bhāradvājas (Gāṇa-pāṭha Asvādi, IV.1.110, Ātreya Bhāradvāje), and the Mahābhārata and the Märkaṇḍeya Purāṇa also group them together.

22. Kosala (VI.1.171). As seen above this figures as one of the sixteen Mahājanapadas of the Pāli texts. Its town Śrāvasti is mentioned by Pāṇini in a Gāṇa-pāṭha; also the two terms Sarayū and Ikshvāku in sūtra VI.4.174. Patañjali mentions Ikshvāku as a janapada (IV.2.104; II.298) which was obviously the same as Kosala.

23. Kāṣi (IV.2.116). Pāṇini does not mention Kāṣi as an independent monarchy like Kosala, and Magadha. The omission may be accidental, or due to political reasons reflecting the condition when Kāṣi lost its separate identity and was under the control of Magadha. Pāṇini also mentions the term Vārānasī (the capital of the Kāṣi janapada) in a gāṇa IV.2.97, and its citizens as Vārānaseya.

24. Vṛijī (IV.2.131). It was the name of a janapada. Its citizens were called Vṛijīka.

25. Magadha (IV.1.170). It was a famous monarchy in Pāṇini’s time, as we know from other sources. A Kshattriya descendant of the Magadha tribe was termed a Māgadha.

26. Kaliṅga (IV.1.170). Pāṇini mentions Kaliṅga as a janapada with a monarchy. Probably in his time the boundaries of Kaliṅga and Magadha touched each other.

27. Śūramasa (IV.1.170). As already noted this janapada may be identified with the Sūrmā Valley and Hill District of Assam.

28. Avanti (IV.1.175), an independent janapada with a monarchical government. Its capital Ujjayinī is referred to in the Gāṇa-pāṭha (IV.2.82; IV.2.127).

29. Kunti (IV.1.175). Patañjali instances Kunti and Avanti as janapada names ending in short i and implied in sūtra IV.1.171. The Mahābhārata speaks of Kunti as the region through which flowed the Aśva Nādī (Vanaparva,
308.7), a tributary of the Chambal (Dey, Geog. Dict., p. 109). Kunti must be identified with the region of Kontwar in Gwalior State, through which flows the Kumārī river. Pāṇini also refers to the compound names Kunti-Surāśṭrāḥ and Chinti-Surāśṭrāḥ indicative of the period when the royal houses of Kunti and Chinti were tied to Surāśṭra (VI.2.37).

This phenomenon belongs to Mahābhārata polity when the royal house of Kunti under Dantavakra and of Chinti under Śiśupāla suffered a reverse by Kṛiśṇa and were tied to the political wheels of Surāśṭra. Chinti seems to be the old name of Chedi.

30. Āsmaka (IV.1.173). Pāṇini also refers to the pair names Avantyaśmakāḥ, showing their geographical proximity (VI.2.12). Āsmaka is named Assaka in Pāli texts with its capital at Paiṭhan (Pratisṛṭhāna) on the Godāvarī.

Pāṇini refers to Taitila-kadrū (VI.2.42) which is mentioned after Pāre-vadavā, 'a mare from across the Indus' and may have denoted a tawny-coloured mare of the Taitila country. Kauṭilya refers to horses imported from Taitila (Arthaśāstra, II.30). The Mahābhārata refers to horses of partiridge colour as tittirakalmāśa (Sabhāparva, 28.6; 19) which seems to be an equivalent of Taitila-kadrū. These horses came from the Uttara-Kuru regions (north of Pāmīr in Central Asia). The Taitila janapada may therefore be looked for in the neighbourhood of that region. But according to medieval lexicons Taitila was synonymous with Kaliṅga (Nāṇārthārṇava, II.891; Vaijayanti, p. 37, verse 26) which may be identified with Tītilgarh, south of Sambalpur in Orissa. In this case Pāṇini’s Taitila-kadrū would refer to some tawny-coloured material produced in Kaliṅga, probably rhinoceros hides, from Taitila.

In the above list the following janapadas mark the extreme points of Pāṇini’s geographical horison, Kamboja in the north, Sauvīra in the west, Āsmaka in the south, Kaliṅga in the south-west and Śūrāmāsa in the east.
Pāṇini also refers to boundaries of janapadas as known in the expression janapada-tadavadhi (IV.2.124). This indicates that the janapadas formed the boundaries of other janapadas, without needing any smaller landmark like a village (Kāśikā, tadavadbhirapi janapada eva grihyate na grāmāh).

The Gaṇa-pātha furnishes some additional names of janapadas, viz., Barbara (IV.3.93, on the sea-cost near the mouth of the Indus where the port Barbarika was situated); Kaśmīra (IV.2.133; IV.3.93); Urāśa (IV.3.93, modern Hazara); Darad (IV.3.93, modern Dardistan); Gabdikā (IV.3.93; Patañjali mentions the Gabdikās as living outside Aryāvarta in his time; to be identified with modern Gadderan, the homeland of the Gaddi tribe, beyond Dhaulidhar in the Chambā valley); Paṭachchāra (IV.2.110, probably modern Pataudi), Yakrīlōman (IV.2.110 mentioned in the Bhīshmaparva 9.46 and Virāṭaparva 5.4, and corresponding to the region between Etawah in the north, Jalaun and Orai in the south, and Kalpi in the east); Sarvasena (IV.3.92; also called Sārvaseni, cf. Kāśikā, VI.2.33; VIII.1.5 described as a dry region;). Bhīshmaparva 9.59). Patañjali mentions the names of two other janapadas, viz., Rishika and Jihnu (IV.2.104; II.298, Jihnu, perhaps modern Jhind). The name Rishika occurs in the Mābābhārata as part of Śakadvīpa. Arjuna conquered the Rishikas across the Vakshu (Oxus) 'which flowed through the Śaka country.' The Rishikas were later known as Yuechis whose language was called Arṣī.

Further substantial geographical information is obtainable from the Ashtādhyāyī in the form of tribal names of people who were living under political constitutions of a varied character. These together with the names of localities as habitation of particular peoples after whom they were named, will be dealt with in a later chapter on political data.
CH. II, SECTION 5. TOWNS AND VILLAGES

The units of settlement comprised (1) nagara (town) (2) grāma (village) (3) ghosha (abode of herdsmen (VI.2.85) and (4) khetā (hamlets, VI.2.126). Pāñini mentions separately the villages and towns of Eastern India (Prāchām grāma-nagarāṇāṃ, VII.3.14), but with reference to Vāhika and Udichya country he uses the term grāma in a generic sense to include all centres of population (IV.2.117 and IV.2.109). Patañjali in commenting on the distinctions between the terms grāma and pura remarks that these should not be settled by rules of grammar but by local usage (tatrāti-nirbandho na lābbah, III.321).

The two terms grāma and nagara were used indiscriminately in the Vāhika country, whereas the distinction between them in eastern India was much more sharp. This may be due to the fact that in the Punjab the villages also had grown in prosperity like the towns, and hence the word grāma there included nagara also in its connotation. The Greek accounts testify to the existence of about five hundred towns, all rich and prosperous, in the Vāhika country, where naturally the old distinction of grāma and nagara must have lost its sharpness as reflected in the Asvādhyāyi.

Endings of place-names—Pāñini uses these various endings to frame rules for explaining the formation of certain words derived from the places concerned, and this is explained by the following examples:

1. Nagarā (IV.2.142), e.g., Mahānagara and Navanagara, as names of towns ‘not in the north’ (anudichām, VI.2.89) but in the east. Mahānagara as an eastern town is to be identified with Mahāsthāna, capital of north Bengal or Punḍra, and Navanagara with Navadvīpa, capital of west Bengal or Vaṅga. The latter seems to have sprung up as a ‘new town’
when the southern route from Rājagṛiha to the sea outgrew in importance the route along the north bank of the Gaṅgā, from Mithilā and Aṅga to Puṇḍra. In between Mahānagarā and Navanagarā lay Gauḍapura (VI.2.100), modern Gauḍa, an important town on the route from Champā to Mahāsthāna and a trading centre for guḍa manufactured in the Puṇḍra country.

2. Pura (IV.2.122), which is mentioned by Pāṇini as an ending in the following names of towns, e.g., Arishṭapura (Pāli Ariṭṭhapura, a city in the kingdom of Śivi in Vāhika), Gauḍapura (VI.2.100, Gauḍa in Maldah in Bengal); Hāstina-pura (the well-known epic town in Meerut district), Phalakapura (Phillaur on the Sutlej in Jullundhar district); Mārdeyapura (VI.2.101), probably Maṇḍāwar in Bijnaur district where the ancient route to Hastinapur crossed the Gaṅgā on its opposite bank.

Patañjali mentions Nāndipura (IV.2.104; II.298) as a Vāhikagrāma.

The Kāśikā adds the following names: Kāntipura (IV.2.122); Lalāṭapura (probably in the region called Lalāṭāksha, modern Ladakh; Sabhāparva, 47.15), Kāṛāpura, Nārmapura, Śivadattapura (VI.2.99) and Śivapura (a northern town, probably in the Śivi country).

3. Grāma (IV.2.142). Patañjali mentions a grāma called Ishukāmaśamī, both eastern and western (pūrva, aṭ̄arpa (VI.1.81, III.62) to which the Kāśikā adds the name Krishnamṛittikā (VII.3.14), both situated in Eastern India (Prāchām).

4. Kheṭa (VI.2.126), a small hamlet; Hindi and Gujratī kherā.

5. Ghosha (VI.2.85), a settlement of cowherds (ābhīra-palli).

6-9. Kūla, Sūda, Sthala, Karsha (VI.2.129), endings applied to names of villages according to the Kāśikā (grāmanāmadbeyāni) which gives the following examples: Dākshikūla, Māhakikūla; Devasūda, Bhājisūda; Dākshikarsha. Kalhaṇa
refers to sūda as a place-name ending (Rāj. I.157, 167). Kar-
sha of Pāṇini might be the same as karsbū (pit or hollow) of
older literature (Drāhyāyaṇa Grihya, III.2.31; Khādira,
III.5.36).

The ending sthala occurs in the name Kapisthala implied
in sūtra (VIII.3.91, modern Kaithal in Karnal district). It
may be noted that the ending sthala had an alternative form
sthali (IV.1.42). Pāṇini takes it in the sense of a natural
(akṛitriṃa) dry land. The Kāśikā instances under sthali
Dāṇḍāyanasthali and Māhakisthali.

10-11. Tīra and Rūpya (IV.2.106). In another sūtra
Pāṇini gives the name Kāstira as that of a nagara (VI.1.155).
Patañjali takes it to be a Vābika-grāma (IV.2.104, II.293).

The Kāśikā mentions Kākatīra, Palvalatīra, and Vṛika-
rūpya, Śivarūpya, respectively as examples of these endings.

examples of these names are found in the sūtras and in Patañjali,
but there was the well-known seaport called Bhṛigukachchha
(Bharukachchha, Jāt. No. 463) called Broach. The Kāśikā
instances under kachchha Dāru-kachchha and Pippali-kachchha
(Rajpipla near the mouth of the Narbada); under agni
Kāṇḍañgi and Vibhujāngi (modern Bhuj); under vaktra
Indravaktra and Sindhuvaktra; under garta Bahugarta and
Chakragarta.

Here we have four pairs of eight geographical names,
preserved as grammatical examples from antiquity. A care-
ful glance at the map of western India affords clue to their
identification. Standing at the head of the Gulf of Cambay,
we have to our left Pippali-kachchha, the sea-coast of Pippali,
comprising the delta areas of Sābarmati, Mahi, Narmadā and
Tāptī rivers, of which the old name is still preserved in Piplā
or Rāj-Piplā. To our right is the sea-coast of Kathiawar,
literally equivalent of Dāru-kachchha (Dāru=Kāṣṭha).
Agni refers to a burning sandy tract, equivalent to Skt.
līṇa or Rann. Vibhujāngi refers to the great Rann of Cutch-
Bhuj in the north-west, and Kāṇḍāgni to the Little Rann of Cutch towards the north-east, traces of its name being preserved in the sea-port of Kāṇḍalā.

Of the pair of names ending in *vaktra*, Sindhu-vaktra clearly refers to the Indus Delta in lower Sindh depending for its irrigation on that river, and therefore a *nadīmāṇṭika* region. Opposed to it were the *deva-māṇṭika* tracts of Baluchistan where the parched soil depends for irrigation on whatever it gets as scanty rainfall. The country was therefore called Indra-vaktra as opposed to Sindhu-vaktra. The Mahābhārata mentions the exact nature and location of these two regions (Sabhāparva, 51.11-12), the agricultural produce in one being called *Indrakrīṣṭha* and in the other *nadīmukha* (*Indrakrīṣṭha-vartayaṇi dāṇyair-ye cha nadīmukhaḥ*). The former lay across the river Indus (Pāre-Sindhu, Sabhā., 51.11); and comprised the peoples of Kej-Makran named *Kitavāḥ* (=Kej), *Pāradāḥ* (=Hingulaj) and *Vairāmāḥ* (=Rambakia of Alexander’s historians; Sabhāparva, 51.12).

The last pair of names refers to Bahugarta and Chakragarta. Bahugarta refers most likely to the valley of the Sābarmatī, Skt. Śvabhramatī, literally the river of holes or pits (*śvabhra*=hole, pit). Chakragarta refers to the region of Chakra-tīrtha on the Gomati near Dvārakā in Prabhāsa-kshetra. The two indicated the peculiarity of the natural terrain formed by undulating loessic dunes.

Paṇini refers to *garta*-ending names again in *sūtra* IV.2.137 and separately mentions Trigarta. Patañjali names Śvāvidgarta as a *Vābika-grāma* (IV.2.137), to which the *Kāśikā* adds Śrīgālagarta, Vṛikagarta, both *Vābika-grāmas*.

16. *Palada* (IV.2.142) found in such names as Dākshipalada. This word in the *Atharvaveda* (IX.3.17) denotes straw and may have denoted a place in the vicinity of which stumps of various weeds and grasses were found.

17. *Arma* (VI. 2. 90). Paṇini mentions Bhūtārṇa,
Adhikārma, Sañjivārma, Madrārma, Āsmārma and Kajjalārma (VI.2.91), to which the Kāśikā adds Dattārma, Guptārma, Kukkutārma, Vāyasārma, Brīhadharma, Kapiñjalārma, Mahārma and Navārma. The Tāṇḍya Brāhmaṇa mentions a lake (brada) called Sthūlārma north of the Sarasvati, where on its pasture-lands 100 cattle had grazed and increased to 1,000 (XXV.10.8). The word arma in the Bāndh. Śrauta Sūtra (ix.1; ix.3) is explained by the commentator as a village in ruins (vinashṭagrāma) and deserted (śūnya).


20. Prastha (IV.2.122; IV.2.110). Pāṇini mentions Karkprastha and Mālāprastha in sūtras VI.2.87-88, and in the Gana-pāṭha adds: Maghī-, Makarī-, Karkandhū-, Šami-, Karīra-, Kaṭuka-, Kavala-, Badarī, (VI.2.87), Śāla-, Śoṇa- (Sonepat), Drākhsā-, Kshaumā-, Kāńchi-, Eka- and Kāma-. To these the Kāśikā adds: Indraprastha (well-known epic town), Kuṇḍa-, Hrada-, Suvarṇa-, Dākshi- and Māhaku, the latter two being stock-examples.

In Pāli the term prastha is thus explained by Buddhaghosha: 'It denotes a place outside the grāma, a wasteland not used by men either for ploughing or sowing (Dhammahāpada-Atthakathā, 1.210; Dīgh. 1.71). It may be noted that the places ending with prastha (Hindi, pat) are confined mostly to the Kuru country, such as Panipat, Sonepat, Baghpat, Tilpat, etc., and to the region of the Himalayas watered by the Ganges.

21. Kanthā (IV.2.142). Pāṇini gives the interesting information that this ending was in use in Uśīnara (II.4.20)
and Varṇu (Bannu) (IV.2.103). He names the following places:

Chihāṇakantha, Maḍarakantha, Vaitulakantha, Paṭatka-kantha, Vaidālikarṇakantha, Kukkuṭakantha, Chitkanaṇakantha, the first one in sūtra VI.2.125 and the rest in gana. The ending and the place-names seem to show that Pāṇini was drawing upon the linguistic material of the frontier country and its non-Aryan dialects. Kanṭhā was a Śaka word for a town as in the expression kadhavara—kanthavara occurring in a Kharosṭhī inscription: "Here belongs Sogdian expression kanda- "city", and Śaka kantha "city", earlier attested in Markantha" (Lüders, JRAS., 1934, p. 516; also Sten Konow, Corpus of Kharosṭhī Inscriptions, p. 43; Śaka Studies, pp.42, 149, kantha "town" in feminine gender). H. W. Bailey also points out that the Persian word kand, Khotanese kanthā, Sogdian Buddhist Sanskrit kndā, Pashto kandāi, Asica (the dialect of the Rishikas or Yue-chis) kandā, are all akin to Sanskrit kanṭhā (H. W. Bailey, Asica, Transactions of the Philological Society, 1945, pp. 22-23).

It may be noted that in the time of Pāṇini and as stated by Darius I, in his inscriptions, the Śakas were living beyond the Oxus (Śaka tyiy parādraya 'the Śakas to the east of the Caspian Sea, Naksh-i-Rustam Ins.). That region naturally still abounds in kanṭhā-ending place-names, as Samar-kand, Kho-qand, Chim-kand, Tash-kent, Panj-kand, Yar-kand, all indicating Śaka influence.

The Mahābhārata speaks of the Śakas as living in this region, named by it as Śākadvīpa, and particularly mentions its places like Chakšhu (=Oxus), Kumud (=Komedai of Herodotus, a mountain in the Śaka country), Himavat (=Hemodan mountain), Sītā (=Yarkand river), Kaumāra (=Komarai of Herodotus), Mašaka (=Massagetai of Strabo), Rishika (=Asioi), Tushāra (=Tokarai).

Pāṇini also must have known the Śakas, not in Seistan but in their original home in Central Asia. How a string of
kanthā-ending place-names was found in the Uśīnara country in the heart of the Panjab, is an unexplained problem. It points to an event associated with Śaka history even before Pāṇini, possibly an intrusion which left its relics in place-names long before the Śaka contact with India in the second century B.C. Kātyāyana mentions Śakandhu, Karkandhu, two kinds of wells of the Śakas and the Karkas (Karkians), which may be identified as the stepped well (vāpi) and the Persian wheel (arghaṭṭa) well respectively.

Lastly we owe to the Kāśikā the following names ending in kanthā; Sauśamikantha, Ahvarakantha, both in the Uśīnara country in Vāhika (II.4.20).

TOWNS—Pāṇini’s geography mentions towns which may be grouped under two divisions, called Udichyagrāma (IV.2.109) and Prāchyaagrāma (VII.3.14). Among the Udichya towns some lay in the Vāhika country (Vāhika-grāmas, IV.2.117), and some in its southerly part known as Uśīnara (IV.2.118), while others were located outside Vāhika towards the west (the present North-West Frontier Province).

The sūtras mention the following towns which naturally figure in them as being the most important in those days:

1. Kāpiśi (IV.2.99). It was a town known for its wine Kāpiśāyana as already stated. According to Pliny Kāpiśi was destroyed by the Achaemenian emperor Cyrus (Kurush) in the sixth century B.C. It is identified with modern Begram, about 50 miles north of Kābul on the ground of a Kharoshthi inscription found there naming the city (Sten Konow, Ep. Ind., Vol. XXII (1933), p. 11).

2. Sauvāśtava (IV.2.77) capital in the valley of the Suvāśtu or Swat.

3. Varanā (IV.2.82). It may be identified with the place called Aornos by the Greeks as a fort in the country of the Assakenoi (Aśvakāyanas). It may correspond to modern Ūṇa, pronounced Ūnra in Pashtu, situated a few miles west of the Indus, as pointed out by Sir Aurel Stein who gave its conjec-
tural restoration as Avarṇa. It really corresponds to Varanā mentioned by Pāṇini (Arch. Survey Memoir., No. 42, pp. 89-90).

4. Vārṇava (IV.2.77; IV.2.103). It was so called from its situation in the Varṇu or Bannu valley.

5. Śalātura (IV.3.94), modern Lahur situated at a distance of four miles from Ohind on the right bank of the Indus, in the northern angle of the junction of the Kabul river, identified as the birthplace of Pāṇini.

6. Tūdi (IV.3.94), not identified.

7. Varmati (IV.3.94), Bimran (Masson, Ariana Antiqua, p. 69), or possibly Bamian.

8. Kūchavāra (IV.3.94); it was Kūchā, the old name of Turkestan appearing in a Sanskrit manuscript and inscriptions from that region (Lüders, Zur Geschichte und Geographie Ostturkestans, p. 246). Varāhamihira mentions the Kūchikas amongst the people of the north.

9. Takshaśilā (IV.3.93); Pāṇini applies the term Tākshaśīla to those whose ancestors (abhijana) lived at Takshaśilā. Takshaśilā existed in all its glory at the time of Alexander's invasion and is described by the Greek writers as "a great and flourishing city, the greatest, indeed, of all the cities which lay between the Indus and the Hydaspes" (Alexander's Invasion, p. 92).


11. Sāṅkala (IV.2.75) probably the same as the town Sangala, the capital of the republican peoples called Kaṭhas by the Greeks, which was strongly fortified; modern Sāṅgalawālā Tibā in Jhang district (Alexander's Invasion, p. 115).

12. Kāṣṭīra (VI.1.155), mentioned as a Vāhika city by Patañjali.

13. Ajastunda (VI.1.155), not identified.
14. Chibana Kantham (VI.2.125), a town in the Usinara country where the word kanthā was a popular ending.

15. Arishtapura (VI.2.100), same as Ariṣṭhapura, a city of Sivi kingdom referred to in Buddhist literature.

16. Gauḍapura (VI.2.100), Gauḍa, the well-known town in Maldah district in Bengal.

17. Kaṭisthala (VIII.3.91), modern Kaithal in Karnal district.

18. Katri (IV.2.95).

19. Hastinapura (VI.2.101), same as Hastinapur on the Gaṅgā in Meerut district.

20. Phalakapura (VI.2.101), probably Phillaur in Julundhur district.


22. Paladi (IV.2.110).

23. Roṇī (IV.2.78), probably Roḍi in Hissar district.

24. Sānkāśya (IV.2.80), modern Sankissā, situated on the north bank of the river Ikshumatī in Farrukhabad district. The Sānkāśyādi group also includes Kāmpilya, modern Kampil in Kaimganj Tehsil of Farrukhabad.

25. Āsandivat (VIII.2.12; IV.2.86), name of the royal city of Janamejaya Pārīkshita, in which the horse for his famous sacrifice was bound (Vedic Index, I. 72); the Kāśikā equates it with Ahisthala.

26. Sīkhāvala (IV.2.89), name of a nagara according to the Kāśikā; probably Sihawal on the left bank of the Son in Rewa State. Pāṇini again refers to Sīkhāvala as a proper name (Danta-Sīkbāt samjñāyām (V.2.113).

27. Mahānagara and Navanagara (VI.2.89), names of two eastern towns; the former may be identified with Mahāsthāna and the latter with Navadvīpa, both ancient towns in Puṇdra and Vaṅga, i.e. North and West Bengal.

TOWNS IN THE GANAS—The ganas mention the names of
about 500 towns. Of these the more famous are noticed here, while a full list is given in an Appendix:

1. Saunetra, modern Sunet in Ludhiana district, three miles south-west of Ludhiana town, with a large mound and other ruins indicative of an old city; here were found Yaudheya, Āgreya and other coins of the pre-Christian period (Cunningham, ASR., Vol. XIV., p. 65; Pāṇini Saṅkalādi-gaṇa).

2. Śairīshaka (IV.2.80); same as Sirsā, headquarters of a subdivision of the same name in Hissar district, and situated on the north side of a dry bed of the Ghaggar, having considerable ancient ruins.

3. Taushāyaṇa (Pakṣāḍi-gaṇa, IV.2.80); modern Tohānā, a place of historical and archaeological interest in the Fathabad Tehsil of Hisar district.

4. Śrāvastī (IV.2.97).

5. Vārāṇasī (IV.2.97).


7. Pāvā (IV.2.97), probably Pāwā of the Pāli texts, capital of the Malla country.

8. Saubhūta (IV.2.75), usually identified with the kingdom of the Sophytes mentioned by the Greek writers (M'Crindle, Alexander, p. 280). The place is especially noted by the Greeks for a ferocious breed of dogs whose fame spread to Greece even before Alexander's time (ibid., p. 364). The Rāmāyaṇa also refers to similar dogs bred in the Kekaya country of the Salt Range. It describes them as bred in the royal kennels (antahpurēti-samvṛiddhān), strong like tigers vyāghra-vīrya-balopamān), big in size (mabhākāyān) and with big teeth (mabhādāṃśhrān, Rāmāyaṇa, II. 70.20). It was probably this breed of dogs that was referred to by Pāṇini as kauleyyaka (IV.2.96). Saubhūta was thus a part of Kekaya in the Salt Range.

The Kāśikā gives the following examples of towns with the ending nagara: Nāṇḍināgara, Kāntinagara in the north (udichām); Suhmaṇagara and Puṇḍranagara (the capitals of
Suhma and Puṇḍra provinces in eastern India, VI.2.89; Pātaliputra and Ekachakrā (VII.3.14; IV.2.123 in the east); Madranagara (in the north, VII.3.24); and Dākshingara (in the country of Pāṇini's kinsmen, a citizen of which was called Dākshinagariya, IV.2.142); Māhakinagara (IV.2.142).

With reference to Pātaliputra it is interesting to note that it was a vast metropolis with two divisions which the Kāśikā records as Pūrva-Pātaliputra (eastern, on the Ganges) and Apara-Pātaliputra (western, on the Son, VII.3.14). A citizen of Pātaliputra was called Pātaliputraka (Ropadhetoh Prāchām, IV.2.123).

That ancient India possessed a large number of flourishing centres of population in the form of cities or towns is also attested to by Greek writers. According to them the Panjab was full of towns, centres of industry and economic prosperity. Many of these figured as forts or centres of defence such as the famous town of Massage (Maśakāvatī) or Aornos (Varañā) in the country of the Asvakas. The free clan called the Glaukanikoi (identical with the Glauchukāyanakas of the Kāśikā on Pāṇini IV.3.99) whose country lay in the fertile and populous regions lying in the south of Kāśmīr (the Bhimber and Rajauri districts) between the upper courses of the Jhelum and the Chenab and the Ravi, had as many as thirty-seven cities, the smallest of which contained not fewer than 5,000 inhabitants, while many contained upwards of 10,000. There were also a great many villages which were not less populous than the towns (M'Crindle, Alexander, p. 112). Strabo affirms that in the territories of the nine nations situated between the Jhelum and the Beas, such as the Malloi, Oxydrakai and others, there were as many as 500 cities (Ibid, p. 112). Megasthenes makes the following general statement on the cities of Mauryan India: "Of their cities it is said that the number is so great that it cannot be stated with precision" (M'Crindle's Megasthenes and Arrian, p. 209).
The above accounts of Greek historians do not seem to suffer from exaggeration, as only in the lists attached to the two sūtras IV.2.75 and IV.2.80 we have about 500 names, and these may be further augmented if we add the testimony of the other gaṇas, as those headed by Suvāstu (IV.2.77), Varāṇa (IV.2.82), Madhu (IV.2.86), Utkara (IV.2.90), Nāḍa (IV.2.91), Kattri (IV.2.95), Nadi (IV.2.97), Kāśi (IV.2.116), Dhūma (IV.2.127), Karkī (VI.2.87), Chīhaṇa (VI.2.125), etc. This gives us a substantial list of about 750 town names, a case of curious coincidence with Greek evidence. Probably both Pāṇini and the Greek geographers depended on a common source or tradition. The grammatical literature is now a valuable source of information regarding the old and forgotten cities of India. This literature like Yuan Chwang’s Travels has preserved landmarks in the light of which arahaeological old sites may be verified. It may be further noted that certain names of tribes and gotras as recorded in the gaṇas (cf. Aśvādi, IV.1.110) point to places with which they were connected.
CHAPTER III
SOCIAL LIFE

SECTION 1. CASTE

The Ashīdhyāyī is full of interesting details regarding the social life, manners and customs of its times. Pāṇini, as we have seen, was acquainted with a large part of India including Gandhāra, Vāhika, Sindhu, Sauvīra, and the Prāchya country or eastern India. His master-mind did not fail to observe minutely the characteristics of social and economic life in these different regions.

Society in his time was based on Varṇāśramadharma, i.e. on Castes and Āśramas or stages into which life was divided.

Pāṇini twice uses the Vedic term Varṇa for caste (Dharma-śila-varṇāchcha, V.2.132; VI.3. 84) which is more often referred to by the specific term Jāti adopted in later legal texts (II.1.63; VI.3.41).

The term Jāti seems to have a more comprehensive sense so as to include both gotra and charaṇa indicative of natural and cultural lineage as implied in sūtra II.1.63 (Katara-kata-mau jāti-ṇariṇāśne). Patañjali explains jāti in this extended sense (gotraṁ cha charaṇaiḥ saba, IV.1.63), citing as its examples the Kaṭha and Kalāpa charaṇas (cf. also sūtra V.3.93). Evidently the gotras and charaṇas were fast developing their separate entity as jātis.

BRĀHMĀNA. The Brāhmaṇas formed the highest caste. There were four principal castes which Kātyāyana mentions as Chāturvarṇya (V.1.124). These were to be mentioned in their order of status, as pointed out definitely by Kātyāyana in a vārttika on Pāṇini II.2.34 (varṇānāṁ ānupāravyena pūrva-nipātaḥ), as Brāhmaṇa-Kshattriya-Viś-Sudrāḥ (Bhāshya, I. 436). Thus the Brāhmaṇa was the highest caste.
Panini uses the Vedic term Brahman (V.1.7) and also Brahmana for the caste (Brahmo' jātāu, VI.4.171). He seems to find a distinction between them taking the former in a cultural reference as shown in the derivative brahmaṇya (Brahmaṇe hitam) to indicate what appertains to the spiritual welfare of a Brahmana (Brahmaṇe bbhyyo hitam, Bbāṣya, V.1.7; II.339), and reserving the term Brāhmaṇa for the caste based on birth (son of a Brahman). This point is also explained by Patañjali stating that 'although the two terms Brahman and Brāhmaṇa are synonymous (sāmān-ārthau etau ... Brahman-śabdo Brāhmaṇa-śabdāscha, II.339), yet the affix yat is added only to Brahman to have the form brahmaṇya.

Panini in a sūtra V.1.124 refers to the bhāva (nature) and karma (conduct) which should characterise a Brāhmaṇa (Gunavachana-Brāhmaṇaḥdibhyah karmāṇi cha). These are indicated in the derivative expression Brāhmaṇya. Kātyāyana applies this rule to the four castes collectively to indicate the norm and the duties for which the system stands.

Provincial Distinctions amongst Brāhmaṇas (JĀNA-PADĀKHYĀ). Panini knows of the practice of the Brāhmaṇas being named after the localities (janapada) to which they belonged by birth (V.4.104, Brahmano jānapadākhyāyām), of which the Kāśikā cites the following examples: Avanti-Brahmah and Surāśṭra-Brahmah, i.e. a Brāhmaṇa of Avanti jānapada, (modern Malwa), and a Brāhmaṇa of Surāśṭra or Kathiawar. Such names are the precursors of the later terms like Kānyakubja, Sārasvata, Mahārāśṭra and Gurjara Brāhmaṇas.

A degraded Brāhmaṇa was called ku-Brahmah (V.4.105), while a Brāhmaṇa pre-eminent in his duties (dharma) mahā-Brahmah (V.4.105). The Pāli texts take Mahā-Brahma to mean a super-Brāhmaṇa, one with realised soul. The Mahānārada-kassapa Jātaka speaks of Bodhisattva Nārada as being the Mahā-Brahma (Great Brahma) at a particular epoch (Jāt. VI.242). The Mātanga Jātaka explicitly refers to the
superior position of a Mahā-Brahmā (Jāt. IV.377; cf. also Jāt. No. 254).

KSHATRIYA. Pañini mentions the Kshatriya caste in connection with gotras, janapadas and saṅghbas. For example the Kuru gotra occurred both amongst Brāhmaṇas (IV.1.151) and Kshatriyas (IV.1.172). If the father was a Brāhmaṇa, he and his young (yuva) son were both called Kauravya, but if a Kshatriya they would be Kauravya and Kauravyāyaṇi (II.4.58, Kāśikā). Andhaka and Vṛishṇi were Kshatriya gotras. As to Kshatriyas associated with the janapadas, they as original founders gave their name to the region where they settled down (Janapada-śabdāt kṣhatriyād aśi, IV.1.168), the ruling families being designated as janapadins (IV.3.100); e.g. Paṇḍāla country named after the Paṇḍāla Kshatriyas; similarly Dardistan from Darads, Johiyāwār (Bahawalpur) from Yaudheyas, Mālva (in Ferozpur-Ludhiana) from ancient Mālavas (now called Malavais). Pāṇini specially mentions the Vāhika saṅghbas (V.3.114), some dominated by Brāhmaṇas as ruling caste (Gopālavas), others by Rājanyas, and called Rājanyaka (IV.2.53), most likely referring to the Rānas of the Hill-States. The majority were Kshatriya saṅghbas, as Kshudrakas, Malavas (V.3.114, Kāśikā), Vṛikas (V.3.115), Yaudheyas (V.3.117). Distinguished Kshatriya heroes had become objects of religious bhakti (IV.3.99) before Pāṇini’s time, referring to the emergence of a popular cult of hero-worship.

RĀJANYA—In the Saṁhitās Rājanyas is a synonymous term with Kshatriya. Pāṇini has retained the old sense of the word in sūtra IV.2.39, whereas he has used it in a new constitutional significance in sūtra VI.2.34 (Rājanyas-bahuvaṃchana-advandve Andhaka-Vṛishṇisbhu), where the Kāśikā defines rājanyas as a member of such families in a Kshatriya tribe as were consecrated to rulership (abhishikta-vaiśya kṣhatriya).

VAIŚYA. The Vaiśyas were given the title arya to indicate their social status (Aryaś svāmi-vaiśyayoh, III.1.103).

ŚUDRA—Pāṇini refers to some Śudras living within the pale of
the Aryan society \((\text{anirvasita}, \text{II.4.10})\), implying that there were other Śūdras, probably aboriginal peoples, who were yet to be assimilated in the Aryan society.

Patañjali makes clear the social status of the Śūdras in his time. Firstly, there were Śūdras who were not excluded from Āryāvarta but were living within its social system. Secondly, there was another class of Śūdras who were living outside Āryāvarta and its society. He cites as examples (1) Kishkindha-Gabdikam (2) Śaka-Yavanam and (3) Saurya-Krauṇḍham. Of these Kishkindhā may be identified with Pāli Khukhundo in Gorakhpore, Gabdikā with the Gaddis of Chambā, who were deemed as living outside the limits of Āryāvarta, Saurya with Soreyya or Soron in Etah district and Krauṇḍha with the later Krauṇḍha-dvāra somewhere in Garhwal. The Śakas and the Yavanas who are termed Śūdras were not yet parts of the Aryan society and were outside Āryāvarta in Patañjali’s time. The Aryan society was at pains to repel the invasion of the Yavanas (Greeks under the leadership of Demetrius and Menander) and this hostility must have emphasized the cleavage between them. The Śakas geographically were still living outside the borders of India in the second century B.C. But in the first century B.C. we find Śaka settlements springing up at Takṣaśilā, Mathurā and Ujjayinī.

Thirdly, there were Śūdras who had separate settlements of their own within the Aryan colonies (ārya-nīvāsa), such as a grāma (village), a ghoṣa (cattle ranch), a nāgara (town) or a saṁtvāha (caravan camp). Examples of such Śūdras are Mṛitatapas (undertakers), Chāṇḍālas, who were of the lowest grades. Fourthly, there was another class of Śūdras who were entrusted with some of the work connected with yajñas or sacrifices as carpenters (takṣā), metal-workers (ayaskāra), washermen (rajaka) and weavers (tantarvāya). There were also Śūdra untouchables who had to take their food in their own utensils and not in those of the household, while there were others who were not subject to this restriction as
being more closely associated with the household (yair-bhukte pātram saṁskāreṇa śudhyati, II.4.10; I.475).

ARYA AND DĀSA. Pāṇini applies the epithet Ārya to a Brāhmaṇa to denote the king’s chief counsellor (Ārya-Brāhmaṇa) and to Kumāra to denote the Crown-Prince (Ārya-Kumāra, VI.2.58).

The use of the term Ārya in the expression Ārya-kṛita in sūtra, IV.1.30, (feminine Āryakṛiti, terms which were also Vedic words) had a specific meaning in current speech (saṁjñā). The meaning of these terms is best explained by Kauṭilya (Dāsakalpa chapter). Kauṭilya takes Ārya to mean a free man as opposed to Dāsa who had lost his freedom, e.g. ‘The offspring of a man who has sold himself off as a slave shall be an Ārya; on paying the value (for which one is enslaved) a slave shall regain his Āryahood’ (Āryatava, Āryabhāva, Artha. Text, III.13). The regulations contained in that chapter aim at humanising the institution of dāsyā and restoring to the dāsas the privileges of an Ārya or ‘free citizen.’ The linguistic form Āryakṛita (i.e. Ārya with the root kṛi) is also implied in Kauṭilya’s expression, Dāsamunurupenā nishkrayen-Āryamakurvato dvādaśa pāno daṇḍah, i.e., ‘12 pānas is the fine for not making a slave a freeman (Ārya) even after receiving the proper ransom.’ The feminine form Āryakṛiti would denote the woman similarly made free, or her daughter who had obtained the status of an ‘adāsa’ or ‘Ārya’ either through payment of ransom or birth. (Cf. Artha. Text, III.13, Mātā bhrātā bhaginī chāsyā adāsāh syuh). Pāṇini uses dāsi-bhāra in sūtra VI.2.42, as a word with specific meaning (saṁjñā). The Kāśikā explains it as dāsyā bhāraḥ, i.e. the burden of a dāsi to be borne (by her master). Kauṭilya states, ‘If a pregnant female slave is sold or pledged without any provision for her confinement, her master is punishable.’ (Artha. Trans. p. 207). This probably explains the nature of the burden implied in the term dāsi-bhāra of Pāṇini.
MIXED CASTES—Pāṇini uses the terms anuloma and pratiloma (V.4.75) which are well-known in later Smṛiti texts. The Ashtādhyāyī mentions the names Ambashṭha and Āmbashṭha (VIII.3.97). These were a republican people in the Panjab. They are taken to be a mixed caste in the Smṛitis, as the offspring of a Brāhmaṇa husband and a Vaiśya wife. Pāṇini also knows of a class of people called udakahāra (or udahāra, VI.3.60), 'drawer of water,' who may be taken as a caste (Hindi kahāra). It may be noted that Kātyāyana knows of a special caste (jāti) called mabāśūdra, with its female mabāśūdrī. The Kāśika explains the term to mean the Ābhīras regarded as higher Śūdras.
CH. III, SECTION 2. ĀŚRAMAS

Pāṇini knows of (1) Brahmacārin (V.2.134), (2) Grihapatī (IV.4.90), (3) Parivrājaka (VI.1.154), and (4) Bhikshu (III.2.168). The system of four āśramas is called by Kātyāyana chāturāśramya (V.1.124).

BRAHMACHĀRIN—Brahmacharya denoted the condition or life of a Brahmacārin or religious student. The institution of Brahmacārya was known to Pāṇini in its full development. He refers to educational institutions known as the Charaṇa or Vedic schools devoted to the study of some major recension (āmnāya) of the Vedas together with its accessory and subordinate literature (IV.3.126). The Brahmacārins congregated for study at a Charaṇa which was run under the direction of one great teacher or Vedic exponent. From the manner of Pāṇini’s reference to this organisation it appears that the Brahmacārins looked upon their Charaṇa as their alma mater, and were attached to it by permanent bonds of common fellowship with other members of the same school, all distinguished as sabrahmachārins (Charaṇe Brahmacārīṇi, VI.3.86).

The growing distinction of the religious student is indicated by the emergence of a new word Varnī, unknown in the Samhitā and Brāhmaṇa literature. Pāṇini explains it as a synonym for Brahmacārin (Varnād Brahmacārīṇi, V.2.134). According to the Kāśikā the students of only the three upper classes (traivarṇika) were called Varnī.

The preceptor or Āchārya initiated the young student. Every pupil became attached to his preceptor by a formal ceremony which Pāṇini calls upanayana and āchāryakaraṇa (I.3.36). The Kāśikā explains it as follows:

‘Āchāryakaraṇa is a ceremony (kriyā) by which the
teacher brings the pupil (māṇavaka) into close relationship with him (ātmasamipān prāṇayati). By means of this ceremony the upanetā (performer of the upanayana ceremony) formally becomes the āchārya.'

Pāṇini uses the two terms māṇava and antevāsin for the pupils (VI.2.69). The former were also called danda-māṇavas (IV.3.130), probably from the staff they bore. The māṇava seems to have been a novice, as seen from the term bāla applied to him in the Mātanga Jātaka, which also calls him danda-māṇava (IV.379, 387).

Pāṇini mentions a danda made of palaśa wood (Butea frondosa) as āshāda (V.1.110).

PERIOD—There is a general rule by which the student was to be named after the special circumstances of study (Tadasya Brāhmaṇacharyam, V.1.94). The maximum period of studentship is stated by Kātyāyana to be 48 years, the student concerned being called ashtā-chatvārinīsaka (also ashtā-chatvārinī). The same vārttika refers to gaudānika whose period of study ended by the performance of the godāna or hair-cutting ceremony (cf. Manu, II.65).

Besides the studentship proper for fixed periods, there were occasional studentships for shorter terms, e.g., students for half a month (ardhamāsīka), a month (māsīka), or a year (sāṇivatsarīka), as instanced by the Kāśikā.

Kātyāyana also introduces a new feature, viz. naming occasional students after their subjects, or vows (special disciplines adopted by them), e.g. Māhānāmnika, one studying the Mahānāmnī hymn (a kind of Sāman, cf. Gobhila Grihyasūtra, quoting Rauruki Brāhmaṇa); Ādityavratīka, a student who had consecrated himself to the vow of mastering the Āditya Sāma (cf. Jaiminiya Upanishad Brāhmaṇa), Avāntara-dikṣī (one who enters upon the vow of studentship for an intermediate period), and Tilavrati (probably the vow of studentship to last through life, such as that of the naishṭhīka Brāhmaṇachāri).
The occasional studentships for shorter terms or study of special texts or observance of particular vows points to a new feature in the educational system. These gave to seekers after truth and advanced knowledge, opportunities for specialisation to realise their desires towards self-fulfilment both through the study of texts and prescribed practices. This practice of occasional studentship is also known to the Upanishads.

SNATAKA—The student who completes his study is called snātaka. The Gaṇasūtra holds it as completion of Vedic study (Veda-samāpti, V.4.29). The more proficient snātaka was singled out as nishnāta (with his study fully completed). This term for proficiency was later on applied to proficiency in any study or craft, e.g. nishnātaḥ kaṭakaraṇe, skilled (kuśala) in the art of mat-making (VIII.3.89). The epithet sravī (V.2.121, wearer of garland) appears also to have been applied to a snātaka. The srak was a sign of graduation and the Grihya Sūtras differentiate it from the ordinary garland for decoration called mālā (V. M. Apte, Social and Religious Life in the Grihya Sūtras, p. 107). Manu also applies the term sravī to a snātaka (Manu Smṛiti, III.3). A student who ends his studentship and enters upon the householder's life is condemned by Pāṇini as khaṭvārūḍha ('taking to the luxury of sleeping on a cot,' not permitted to a Brahmachāri, II.1.26).

HOUSE-HOLDER—Grihapati is the regular name, from the Rgveda onwards, for the householder as master of the house. Pāṇini refers to him in connection with the Fire kindled at the time of marriage with whose worship commenced his life as a householder (Grihapatinā samyukte ſyah, IV.4.90). The Kāśika treats Gārhpatya as the technical term for the Household Fire.

His wife was technically called Patnī derived from the term Pati to whom she was wedded at the sacrifice (Patyur-orno yajñasamīyoge, IV.1.33). The two together tended through life the sacred Family Fire, (Gārhapatya Agni) essential for the performance of domestic ceremonies. As
stated by Manu (III.67) the married couple installed and tended the vaivābika agni for the grihya rites. They were also called āvasathika from their dwelling in an āvasatha (IV.4.74), from which their Fire was named Āvasathyā.

Happy family life is envisaged in such terms as suprajās (V.4.122), bahuṣpraja (V.4.123), putrapautrīṇa, 'having healthy sons, a big family, and enjoying generations of sons and grandsons' (putrapautram anubhavati, V.2.10).

The head of the family was called Vaṁśya (IV.1.163) or Vṛiddha (I.2.65), i.e. Patriarch, and its other members Yuvan (Juniors). Pāṇini teaches different suffixes to distinguish the head of the family from its junior members. This distinction between the patriarch and his descendants was expressed by appropriate suffixes, e.g. Gārgya as patriarch, and his juniors as Gārgyāyaṇa. The family or the household was the centre of social life supporting its different factors. These distinctive titles were of real practical value; e.g. a Gārgya as patriarch represented his family in the social assemblies, whereas the junior members called Gārgyāyaṇa would be given the nomenclature Gārgya only when they were admitted to the headship of the family in the absence of Gārgya the elder.

The duties of the householder were to entertain the guests (atithi), to make suitable gifts on occasions (vyaya I.3.36; upayoga, I.3.32), to perform the family sacrifices (yajñas) and offer due worship to the ancestors (śrāddha, IV.3.12).

The economic pursuits of a householder are also indicated. He might be a priest (ritvik), merchant (vānija, VI.2.13), an agriculturist (krishāvula, V.2.112), craftsman (śilpi), a labourer earning wages (bhṛitaka karmakara, III.2.22), and the like. Rich householders are referred to as possessing hoarded wealth, amounting to 100 (naishka-satika) and 1000 niskhas (naishka-sahasrika, V.2.119).
CH. III, SECTION 3. MARRIAGE

The householder's life began with marriage. Its ceremony was performed round the Fire as witness. Pāṇini refers to marriage by the word upanyamana (I.2.16), which he explains as sva-karaṇa, i.e. 'the bridegroom making the bride his own' (I.3.56). The marriage ceremony was solemnised by pāṇigrahaṇa, 'the holding by the bridegroom of the bride's hand.' Pāṇini uses two other terms for it, baste-kṛitya and pāṇau-kṛitya. This holding of the hand was a symbol of sva-karaṇa, i.e. formal transfer of the father's dominion over the girl to the husband. We may cite Manu's comment that this ceremony was observed for marriage within the same caste (III.43).

This formality was considered so important in marriage that Kātyāyana calls the legally wedded wife as pāṇi-grihitī (vār. on IV.1.52; Bhāṣya II.221), whereas the girl married without proper ritual was marked out by the different term pāṇi-grihitā (yasyā hi yathākathančhit pāṇir-grihyate, II.221).

SOCIAL EFFECT OF MARRIAGE—The legal effect of marriage is an important proposition in Hindu law. The term sva-karaṇa of Pāṇini is explained by Patañjali as 'making one's own what was not so previously' (asvam yadā svām karotī, Bhāṣya, I.3.56; I.284). According to Manu marriage meant the gift (pradāna) of a girl by her parents by which they transferred their dominion over her to the bridegroom (pradānam svāmya-kāraṇam, V.152).

According to Pāṇini, the bride whom the husband marries should be a kumārī, which is explained by Patañjali as a pūrva pati, i.e. one who is not previously married (Kaumārāpūrva-vachane, IV.2.13). The virgin after marriage was honoured by the title kaumāri bhāryā, and her husband kaumāra-pati. It
is the same as the epithet ananyapūrvikā applied by Yājñavalkya (I.52). The husband and his wife after marriage had to perform jointly the sacrificial rites, from which the wife derived the title of honour as patnī (patyur-no yajña-samīyoge, IV.1.33). It was denied to a woman not properly married. The social status of the husband devolved on his wife, as implied in Pāṇini’s sūtra (Punīyogad ākhyāyām, IV.1.48), i.e. a designation derived from her husband; e.g. mahāmātri (ministrix), wife of a mahāmātra, a high government official, and gaṇakī, wife of a gaṇaka (accountant). Pāṇini also speaks of āchār-yanī as the wife of an āchārya (IV.1.49).

EXOGAMY—Marriage must have been contracted outside the gotra. Pāṇini in one place refers to the formation of compound words showing two gotras united in marital relationship. (maithunikā) (IV. 3. 125). Patañjali instances (1) Atri-Bharadvājikā, (2) Vasishṭha-Kaśyapikā, (3) Bhriguv-Aṅgirasikā, (4) Kuṭsa-Kuśikikā, and (5) Garga-Bhārgavikā, i.e. marriages contracted between two different gotras jointly designated (II.4.62; I.492). Most of these gotra names occur in Pāṇini’s sūtras.
Pāṇini refers to Woman in all the aspects of her life, as a girl, a maiden, a wife, a mother, a friend and a teacher. We obtain glimpses of her life inside the household as its virtual mistress in her capacity of ṁatnī, and in the larger public sphere of education (charanaśas) and citizenship (janapadas, IV, 1.175). As examples may be cited (1) Kāthī, a female member of the Vedic Kātha śākhā, and (2) Yaudheyī, a female citizen of the Yaudheyā republic (saṅgha). The woman also figures as an ascetic as indicated in the title kumāra-śramaṇā (II.1.70), i.e. an unmarried female mendicant, showing that women were also eligible for the ascetic order. It may be assumed that such women ascetics moved about freely in public as homeless wanderers (prabrahita, Gaṇa-pāthaka II.1.70). A veil of privacy was, however, thrown on the ladies of the royal household who were described as asūryaṁ-paśyā (III.2.36), 'screened from the sun's gaze' and kept in their harems (cf. Kāśikā, rāja-dārāḥ).

MAIDEN—In the first part of her life (vayasi prathame IV.1.20) she was called kumārī, kiśorī and kanyā. Some women remained unmarried through life (kumāryāṁ vayasi, VI.2.95) and were still called kumārī even in old age, e.g. vṛiddha-kumārī, jara-t-kumārī.

There were exceptional cases of unmarried girls becoming mothers whence their offspring was called kānīṇa (IV.1.116), 'issue of a kanyā not formally married.' Manu counts kānīṇa as one of the twelve kinds of sons (Manu, IX.172; cf. Yāj. II.129). Patañjali makes the objection that kanyā, a virgin, and kānīṇa, her son, cannot go together. He holds that the term kanyā continued to be applied to a girl before her legal marriage (puṁs-ābhīsambandha-pūrvaka samprayoga, II. 257).
A maiden of marriageable age was known as vṛtyā, i.e. one to be wooed freely without restriction (anirodha, III.1.101). When she became engaged, she was called pātini or vṛtiyā. No doubt parents exercised their choice in fixing proper matches, but girls of mature age were free to choose their husbands and were described as pātini (III.2.46).

**WIFE**—The bride is called jāni and the maids in attendance who conducted her to the prospective husband janyāḥ. The newly wedded bride was called by the Vedic name sumangali, which Pāṇini cites as current in later Sanskrit also (sanjñā-chhandasah, IV.1.30). The term Jāyā was used for the wife with reference to the ideal of motherhood, whereas Patni as stated above denoted her religious function (IV.1.33). She is also called Jāni in the examples yuvajāni and vṛddha-jāni (V.4.134). The term Pativatni was used to indicate that so long as her husband lived she was the mistress of the household (IV.1.32). Reference to polygamy can be traced in the word sapatni (IV.1.35).

Pāṇini also refers to mantras repeated for captivating the hearts of lovers which were known as brīdyā (brīdaya-bandhana, explained by Kāśikā, as vasikaraṇa mantra, IV.4.96).

An elderly sister marrying later than her younger sister was called didbīsū and her husband didbīsū-pati (VI.2.19; cf. Vedic Index, I. 307).

**MOTHER**—The practice of naming sons after their mothers found in the Vaniśa lists was also known to Pāṇini. Sometimes the son is extolled for the virtues of his mother, e.g. bhadramātura, son of a noble mother (IV.1.115) and kalyānineya, son of a beautiful mother (IV.1.126). In cases of doubtful parentage the son was named according to the mother’s gotra, e.g. Gārgika, son of Gārgī a female descendant of the Garga gotra; but such names after the mother involved social opprobrium (kutsana, IV.1.147).

**CIVIC STATUS OF WOMEN**—Women were distinguished as members of larger associations than the family. They were
known by the gotras and the janapadas or States to which they belonged, e.g. Avanti (the lady of Avanti Janapada), Kunti (of Kunti), Kurū (of Kuru) (IV. 1. 176); Bhārgī (of Bharga Janapada, a part of the Trigarta country), Yaudheyi (a woman of the well-known Yaudheya republic); and similarly Pāñchālī, Vaidehi, Āṅgī, Vāṅgī, Māgadhi, hailing from those Eastern janapadas implied in the sūtra (IV.1.178). The Gaṇapātḥa adds other names, such as Kārūṣhī, Kaikēyī, Kaśmirī, Sālvī, Śaubhreyī, Śaukreyī, Bhāratī, Auśinaṇī, etc. It is also laid down that female names in the plural derived from gotra and janapada should be distinguished in their formation from those of the male members, and this distinction was brought out by retaining the female-denoting suffix, e.g. a bevy of women of Yaska gotra was named as Yāskyāḥ (II.4.63) and Āṅga women as Āṅgyāḥ (II.4.62). A peculiarity in the names of women in the eastern country was the addition of the suffix āyana (IV.1.17), e.g. a female descendant of the Garga gotra was called Gārgyāyaṇī in the east corresponding to modern Gargā, a feature preserved specially in the Bhoja-puri dialect.

Women also figured as students of Vedic schools (charāṇas, cf. sūtra IV.1.63 in which jāti includes both gotra and charāṇa), e.g. Kaśṭhī, Bahvṛīchī. Sometimes they were in-residents at the schools in what were called cbbātri-sālā (VI.2.86).

Women also occupied the exalted position of teachers and were called āchāryā (IV.1.49, a counter-example of āchāryāṇī).

We have already seen that women sometimes devoted themselves totally to the pursuit of learning and religion as ascetics, and were called by the generic term kumāra-sramaṇā.

Women also pursued other cultural occupations. They took part in the cultural sports of the times. Pāṇini refers to the games of Eastern India (Prāchya-krīḍas, VI.2.74), e.g.
śālabaṇjikā (the game of plucking the flowers of the Śāla trees in blossom); Aśoka-pushpa-prachāyikā (gathering of the flowers of the Aśoka trees in blossom), etc. The Jātakas also mention these sports as uyyāna-kidikam (IV.376). Patañjali mentions sāktikī, a woman warrior who specialised in the wielding of lance (IV.4.59; Bhāṣya, IV.1.15; II. 209).

Women also paid attention to personal adornment and beauty (bhūshaṇa and maṇḍana, III.2.151). Mention is made of an ornament of the fore-head (lalāṭikā) and ear-rings (karnikā, IV.3.65), and also to hair-dressing (keśa-veśa, IV.1.42). The lalāṭikā is seen as an ornament on the forehead of the earliest Indian women in the sculptures of Bharhut (Cunn. Bharhut, plate XXIII).
CH. III, SECTION 5. SOCIAL FORMATIONS


Panini is acquainted with a number of Janapadas or States. To start with, a wandering Jana which was a Kshatriya clan, settled down in a particular region (Jana-pada), which came to be named after it. In time, other peoples also came to settle in it, whence arose the conception of a common citizenship binding them to the Janapada. It marked the evolution from the racial (Jana) to the territorial (Janapada) basis of citizenship embracing a variety of peoples. The citizens bound in loyalty to a common Janapada were called Sajanapadas (VI.3.85), nationals of the same State. The Vedic Bharata Jana, for instance, became settled in the region called Bharata, where were also settled later on other people giving rise to the territorial conception of citizenship replacing the clan. Thus it marked a great progress in political evolution.

The governing class of each Janapada, however, was distinguished from the rest of its citizens by the designation Janapadins (IV.3.100), or the citizens proper as an elect body or nucleus representing the original settlers.

A typical Janapada was peopled by members of the four principal castes and other mixed castes so that its population was heterogeneous.

Varna and Jati—Panini mentions members of the same caste or Varna as savarna (from samana varna, VI.3.85).

However, the term Jati is used more often for caste. In the early Vedic texts and even in the Katyayana Srauta Sutra, it had only the sense of family (Vedic Index, Vol. I.281).
In the Ashtādhyāyī an individual member of a caste is designated as bandhu in relation to his jāti (Jātyantāch-chha bandhuni, V.4.9). ‘The affix chha (iya) is added to a word ending in the word jāti, when it denotes a bandhu.’ The examples are Brāhmaṇa-jātiyāḥ, Kṣatriya-jātiyāḥ, Vaiśya-jātiyāḥ. The Kāśikā says that bandhu in the sūtra means an individual; the jāti or class is in itself an invisible entity which achieves concrete form only through its component parts or bandhus. The term bandhu implies relationship, thus pointing to the fact that the jāti had evolved out of the common bond of mutual kinship. The word sabandhu in sūtra VI.3.85, indicates this idea of kinship, (samāna-bandhutva) uniting members of one caste.

SAGOTRA—Next to caste was Gotra. Gotra denoted the ancestral family from which its members traced their descent. Members belonging to the same gotra were called sagotra (VI. 3.85). The gotra name of a person on the basis of his gotra must have been a matter of considerable practical importance. In the Jātakas we often find the gotra name of a person asked along with his personal name. This is shown by Panini having prescribed elaborate rules for the formation of gotra names, e.g. Garga, father; Gārgi, son; Gārgya grandson; Gārgyāyaṇa great-grandson.

SAPINḍA—It is important to note that the word Sapinḍa is peculiar to the Sūtra literature; there is no trace of it either in the Saṁhitās, or the Brāhmaṇas and Aranyakas. The Dharmśāstra works explain Sapinḍa as blood-relations upto the seventh degree on the father’s and fifth on the mother’s side (Manu, V.60). Pāṇini refers to the Sapinḍa institution in the aphorism, Vānyasmin sapinḍe sthaviratere jivati (IV.1.165), which states that a great-grandson was called yuvan when a more elderly Sapinḍa, i.e. either his uncle or grand-uncle was alive.

SANĀBHĪ—Sanābhi is equal to samāna nābhi, i.e. those connected with a common nābhi or umbilical cord (VI.3.85), thus bringing within its fold all the blood-relations of different
degrees. In the Rigveda I.139.9, the seer Paruchchhepa says: our nābhis (umbilical cords) join us to Manu, Atri and Kaṇva of old (Asmākaṁ tesu nābhayaḥ). In Manu, Sanābhya is taken as Saṁinda (cf. Kullīka, V.184).

JNĀṬI—Jnāti mentioned in sūtra VI.2.133 is explained by the Kāśikā as comprising ‘all relations on the mother’s and father’s side’ (jñāta-yo mātri-pitri-sambandhino bāndhavāḥ, VI.2.133). Pāṇini considers jnāti to be synonymous with sva, i.e. kinsmen or paternal relations (I.1.35).

SAMYUKTA—Jnāti and Samyukta occur in the same sūtra (VI.2.133), the latter formed a smaller social unit than the former. The Kāśikā says that the samyuktas included relations on the wife’s side only, as brother-in-law and others (samyuktaḥ strī-sambandhināḥ śyālādayaḥ), which means that the wife’s jnātis were the samyukta relations of the husband. Among samyuktas Pāṇini himself mentions śvaśura-śvaśrū, i.e. father-in-law and mother-in-law (I.2.71), and śvaśurya or brother-in-law (IV.1.137).

FAMILY (KULA)—The family was considered to be the fundamental unit or nucleus of society in ancient India. Society was an aggregate of families, each comprising several members under the headship of the father, or in his absence the eldest brother, and as far as possible partaking of a common household. Pāṇini calls family a kula (IV.1.139; IV.2.96).

The word kulina ‘of eminent family,’ (IV.1.139) indicated high descent. The epithet mahākula was indicative of a still higher family status. Pāṇini refers to the members of these distinguished families as mahākulina, māhākulina and māhākula (IV.1.141). On IV.1.139 the Kāśikā refers to a member of a superior family of śrotriya Brāhmaṇas as śrotriya-kulina. Manu points out that a kula could be improved in its status by the following factors: (1) marriage, (2) study of the Vedas, and (3) performance of Vedic rites, (Manu, III.66; 184-186), to which the Mahābhārata echoing the same popular esteem for mahākula adds taṇa, dama,
annadāna and samyag vṛitta (Udyogaparva, 36.23-29).

On the other hand some families suffered in social status by their neglect of Vedic study or lapses in morals; members of such degraded families were stigmatised as dushkulīna or daushkuleya (IV.2.142).

VAMŚA—Vaniśas could be both natural and cultural in their character. The spiritual lineage is called by Pāṇini Vidyā-sambandha, and the natural Yoni-sambandha (IV.3.77; VI.3.23). The spiritual lineage is represented by a succession of teachers and pupils. The natural lineage is traced both on the father’s and mother’s side, as pointed out by Patañjali (IV.1.147; II.261).

It was the duty of the pupils to recite the succession-lists of the teachers of Schools to which they belonged. A few such spiritual genealogies are preserved in Vedic works.

Family pedigrees also seem to be carefully preserved by counting the number of its generations from the original founder. Sūtra, II.1.19, Samkhya vamisyena, states that a numeral may be prefixed to the name of an ancestor (vamisyā) and the compound thus formed will indicate the number of generations descended from him. As an instance Patañjali cites ekaviniśati-Bhāradvājam, meaning that there were twenty-one descendants in the line of Bhāradvāja (I.499).

A second instance is tripaṇcbāsad-Gautamam (Pat. I.499 on II.4.84), meaning that there were already counted fifty-three generations of the descendants of Gautamas. These numbers afford valuable chronological data for computing their time allowing 25 years to a generation. Thus the first Bhāradvāja should be dated to about five-hundred years earlier and the first Gautama to about thirteen hundred years earlier than the time when the two illustrations were adopted. It may be noted as a striking resemblance that the Brihadāraṇyaka Upanishad also knows only of 57 generations of teachers. It may be surmised that perhaps this stock-example of fifty-three Gautamas dates from the time when the Vaniṣa lists were being
compiled in the Brāhmaṇa period. We may also note that the Gautama family with which this example is connected was an important family famous for its learning as represented in its several descendants like Aruṇa, Uddālaka Āruṇī and his son Śvetaketu Āruṇeya in the Upanishads.

The sūtra IV.1.163 mentions the two terms Vanśya and Yuvā which denoted the great-grandfather and the great-grandson respectively as being alive at the same time (Jīvati tu vanśye yuvā). As stated above, suffixes were added to indicate these distinctions, as in the series Garga-Gārgyāyaṇa.

GRIHAPATI—The smallest social formation was the Gṛhā, its master being called Grihapati (IV.4.90), in whom vested the supreme authority of the family. Generally the father was the grihapati, but after him his eldest son. Sūtra IV.1.164 (Bṛratari cha jayasi) points out that the younger brother was called yuvā, when he was under the guardianship of his elder brother as the head of the family.

The family system was called gārhopatam, of which Pāṇini cites the example Kuru-gārhopatam (VI.2.42), i.e. the family-system in the Kuru country, to which Kātyāyana adds another example, viz. Vṛijī-gārhopatam, the family-system in the Vṛijī country.

FAMILY RELATIONSHIPS—The sphere of relationships constituting the family is indicated by the following list from the Ashūdhyāyī:

Mātā, Pitā (I.2.70); Pitāmaha; Pitrīvya (uncle IV.2.36); Bṛratā, Sodarya (uterine brother, IV.4.109); Jyāyān Bṛratā (IV.1.164); Svasā (sister, I.2.68); Putra, Pautra (V.1.10); Pitrī-shvasā (father's sister, VIII.3.84), Paitrishvaseya (her son, IV.1.132); Mātri-shvasā (mother's sister, VIII.3.84) and her son Mātrishvaseya (IV.1.134); sister's son or Svasriya (IV.1.143); brother's son or Bṛratīvya (IV.1.144); Mātāmaha (mother's father, IV.2.36); Mātula (mother's brother, IV.2.36) and Mātulāni (maternal uncle's wife, IV.1.49).

The parents are called Pitarau by the Ekaśesha compound
which drops out mātā (I.2.70). Patañjali’s illustration mātā-pitarau on the vārttika, Abhyarhitam (II.2.34; 1.436) recalls Manu’s view that the mother was entitled to greater esteem than the father (Manu, II.145). Pāṇini was probably of the same view as inferred from his mentioning Mātāmaha before Pitāmaha (IV.2.36). In the Ekaśesha compounds like Pitarau (parents), Bhrātarau (brother and sister, I.2.68), Putrau (son and daughter, I.2.68), and Śvaśurau (parents-in-law, I.2.71), it is always the word for the male that is retained and expresses the female also, which is probably indicative of his importance in a patriarchal society. The sūtra I.2.67, Pumān striyā points to their relative positions. According to sūtras I.2.56 and 57 Pāṇini knowingly eschewed the discussion of Pradhāna (Principal) and Upasarjana (Subordinate) from the Asthādhyāyī. In his view the usage of society is the best guide in matters like defining the primary and secondary position of husband and wife, teacher and pupil, male and female, etc.

Pāṇini refers to a father with many children as Bahu-prajah (V.4.123), and to a grandfather as Putra-pautrīna, who lived to enjoy the affection of his sons and grandsons in an expanded family (Putra-pautramanubbavati, V.2.10).

FRIEND—The domestic sphere of the home was extended in a wider social circle of friends. The Jātakas include mitta and subajja, friends and acquaintances, in the gradation of relationships. (māta-śitu-mitta-subajja nāti-vaggo, Jātaka Vol. V, p. 132).

Pāṇini calls a friend sakbi (V.1.126), or mitra (V.4.150), and friendship sakhyam (sakhyuh bhāvah karma vā, V.1.126), or also saṅgataṁ, comradeship (III.1.105). Pāṇini marks out a friend by his goodness of heart and the enemy by its wickedness (Subrid-durbridau, V. 4. 150). Friendship to last for a life-time is called ajarya. In the following interesting sūtra Pāṇini puts his seal of approval on the basic principle of friendship so often repeated in Sanskrit literature:
Sāptapadīnām sakhyam, (V.2.22).

Friendship is called sāpta-pādina because it is accomplished through "Seven Steps" (sāpta-pāda). In the Atharva-veda, Athārvā calls Varuṇa his sāpta-pāda friend, and Varuṇa pleased with the insight of Athārvā and his consequent fitness to keep the Prāśni cow reciprocates the same sentiment (Atharva, V.11.9, 10). The Mahābhārata also repeats the conception of sāpta-pāda friendship (Vana-parva, 260.35; 297.23). We find the full explanation of sāpta-pāda in the Sātapadī ritual of marriage as given in the Gṛihya Sūtras where the bridegroom makes the bride his sātapadī friend by repeating seven formulas beginning with Isba and Urja. The conception symbolised by the outer form of taking 'seven steps' appears to be very old, since the Rīgveda also mentions Agni milking the Isba and the Urja for the Sātapadī (Rig. VIII.72.16). Originally the sātapadī friendship was perfected round the fire; later the phrase assumed a figurative sense. (Cf. Vālmīki Rāmāyaṇa describing the friendship of Rāma with Sugrīva as agnisākṣhika, Kish. 8.4).

SERVANTS—In Pāṇini a new word kiṅkara (III.2.21) unknown in the Vedic and Brāhmaṇa literature denotes a domestic servant. The Gaṇa-pāṭha mentions several classes of them, e.g. (1) paricchāraka (attendant), (2) parishechaka (one helping in bath), (3) utsādaka (one who helps in toilet), (4) udvartaka (one who rubs the body with unguents), (5) snātaka (II.2.9 and VI.2.151, yājakādi group), (6) pralepiṅka (a female servant who applies paste to the body), (7) viṅkeṅka (a female servant who applies unguents before bath), (8) anulepiṅka (a female servant who applies them after bath), (9) anucchāraka (an assistant), (10) maṇi-pāli (a female to keep charge of jewellery, IV.4.48), (11) dvāra-pāli (a female door-

1 For wife as a friend, see Taittiriya Saṁhitā, VI. 2.9.2. The same sentiment is echoed by Kālidāsa in Raghu. VIII.67: Gṛihini saṁchivaṁ mitthāṁ sakha.
keeper), (12) daṇḍa-grāha (bearer of staff) and (13) chāmara-grāha (bearer of fly-whisk, IV.1.146). Most of these servants formed part of the establishment in the king's household and were in the service of aristocratic or high families as stated in the Arthaśāstra and the Kāmasūtra. In the sūtras, Pāṇini mentions dauvārika, chamberlain (VII.3.4), vaivadhika, carrier of load (IV.4.17) and udaka-hāra or udahāra water-carrier (VI.3.60).

GUESTS—Hospitality (ātithya, V.4.26) to strangers and guests was a cardinal virtue of household life. The hospitable man is referred to as ātitheya (atithau sādhuh, IV.4.104). The Gṛihya Sūtras lay down detailed rules for honouring a guest on his first arrival. Pāṇini mentions pāḍya and arghya (V.4.25) in the order in which they were offered to a guest, although grammatically contravening his own rule II.2.33. He also borrows from the Vedic terminology the word goghna, i.e. one for whom a cow was dedicated (III.4.73). A distinguished guest like a king, a priest, a preceptor, or a respectable relation was considered worthy of this honour. All these persons are incidentally mentioned in a sūtra (VI.2.133).
CH. III, SECTION 6. FOOD AND DRINKS

(Anna-Pāna)

The Ashtādhyāyī contains material for an important chapter on the history of food and drinks in ancient India. Food is called anna, and the eater of food annāda (III.2.68). The word bhakta which also occurs in the Jātakas (yāgubhattadini, Takkala Jāt. IV.43) and the Arthaśāstra (Text II.24) primarily denoted anna, as in sūtra VI.2.71 (Bhaktākhyās-tad-arthesu) where names of edible articles are implied. A servant or wage-earner whose daily remuneration was given to him in the form of food was called bhākta or bhāktika, a practice which seems to have been more true in the case of agricultural labour. The Arthaśāstra says that food and wages (bhakta-vetana) were paid to the artisans, but food only to agricultural labour (Arth. Text II.24). Patañjali is even more specific: ‘The meaning of the root krishi is not restricted merely to the actual operation of ploughing, but it also implies all accessory efforts by way of providing food (to labour), seed and bullocks, etc. which together contribute to the complete fulfilment of the sense of the verb’ (Bhāṣya, II. 33, Yadasau bhakta-bija-balīvardaiḥ pratividbānaṃ karoti sa krishy-arthaḥ). The other sense of bhakta, viz. boiled rice is seen in sūtra IV.4.100, which prescribes a suffix to denote a thing that is good for bhakta (Bhaktan-nah). Kāśikā’s examples bhāktaḥ sāliḥ and bhāktas-taṇḍulah show that bhakta here stands only for boiled rice, a meaning which it still retains in Hindi bhāt.

CLASSIFICATION OF FOODS—(i) Bhojya—In a simple-looking sūtra, round which controversy has raged, Pāṇini explains the meaning of bhojya:

Bhojyaṁ bhakshye, VII.3.69.
It means that the word bhojya is irregularly derived in the sense of bhakshya. To this Kātyāyana raises an objection that bhakshya is not to be taken as a synonym of bhojya, since bhojya includes all articles of diet, both solid and liquid, while bhakshya denotes only solid food. Kātyāyana suggests that the proper word to express the sense of bhojya is abhyavahārya, 'worthy of being taken in.' Patañjali disagrees with Kātyāyana and defends Pāṇini by saying that in such older examples as ab-bhaksha and vāyu-bhaksha (one who takes in water or air) even non-solid substances occur as the object of bhakshaṇa, and hence Pāṇini’s idiom in equating bhojya with bhakshya is unobjectionable. All subsequent commentators have accepted Patañjali’s liberal interpretation of bhakshya in this sūtra, viz. that it stands both for solid (kbara- viśada) and liquid (drava) foods (cf. Kāśikā, Iha bhakshyam-abhyavahāramātram). Dr. Goldstücker, however, raised his voice of dissent against Patañjali and maintained that ‘in Pāṇini’s time, which preceded the classical epoch, bhakshya must have been used as a convertible term for bhojya; while at Kātyāyana’s period, this rendering became incorrect, and the sūtra needed correction’ (Pāṇini and his Place in Sanskrit Lit. p. 97). Dr. Goldstücker’s statement, however, does not hold good even for the whole of the Ashtaṭādhyaṭi, since in Pāṇini’s own sūtra II.1.35 (Bhakshyaṇa misrikanamaṇaṇaṃ) as read with IV.2.16, (sāṃskritam bhakśhāḥ) bhakshya denotes solid food only and not liquids, as is evident from the illustration in the Bhāṣya, i.e. gudena sāṃsrishta guḍa-sāṃsrishtā, guḍa-sāṃsrishtā dhānā guḍa-dhānāḥ (I.387), which is accepted by all subsequent commentators. (Cf. Kāśikā, IV.1.16; Kbara-visadam abhyavahāryam bhaksham ity ubhyate; also II.1.35). Here bhakshya cannot be said to be strictly synonymous with bhojya, if, as rightly argued, bhojya included both liquid and solid diets. The correct view, we submit, is that bhakshya has a two-fold sense in the Ashtaṭādhyaṭi, a more general sense in sūtra VII.3. 69 and a restricted one elsewhere. As for the contention of Dr.
Goldstücker (ibid, p. 97) that in the classical language bhakṣhya is different from bhojya and applies to solid food only, we submit the following three examples from Kautṣīlyya, where exactly as in Pāṇini both meanings prevail side by side:

(a) Māṇīsa-surā-bhakṣya-bhojana. (Arth. Text. p. 214), i.e. eating of meat and other solid foods and drinking of liquors;

(b) Śūdo bhakṣakāro vā bhakṣa-bhojanam yācheta (p. 239), i.e. the cook or one who prepares food may ask for some bhakṣa and bhojana;

(c) Bhakṣyeshu smarati (p. 252), i.e. the king at meals remembers (his courtier).

In the above examples (a) and (b) distinguish between the meanings of bhakṣya and bhojya, while (c) uses bhakṣya as synonymous with food in general. It is this latter sense that holds good in Pāṇini’s sūtra VII.3.69.

(ii) Bhakṣya and Miśrī-karaṇa. For the rest of the Ashtādhyāyi Pāṇini has distinguished bhakṣya (II.1.35) from anna (food in general, II.1.34), and it is, therefore, right to take it as denoting khaḍya (eatable or solid) articles only. Pāṇini’s own examples of bhakṣyas as given in sūtra VI.1.128 are (1) palala (meat), (2) sūpa (pulses) and (3) sāka (vegetables), which are compounded with words denoting relish-giving articles of diet like ghṛita, guḍa, etc. According to Kāśikā’s gloss on VI.2.154 (Miśrāṁ chānuṣpa-sargam asandhau) guḍa, tila and ghṛita are examples of miśra articles. It follows that for improving the taste it was permissible to have any suitable combination with the principal bhakṣya food. The process of miśrikaraṇa, mixing therewith, is the same as sanīśrīṣṭa (IV.4.22). The sūtra Sanīśrīṣṭe provides that the suffix ṭbak is added to a word when the sense is ‘mixed therewith.’ According to Pāṇini chūrṇa (IV.2.23) lavāna (IV.2.24) and mudga (IV.2.25) are ingredients which are used in ‘mixing therewith.’ Kātyāyana, perhaps too subtly, thinks that there is something
wrong in salt being considered as an article for 'mixing,' since it is not an eatable by itself but an adjunct of food (guna) being one of the six rasas. (Cf. Kātyāyana on IV.4.24; II.330). But Pāṇini understands salt not merely as a rasa, but to be a panya or material commodity (cf. lāvanika, a dealer in salt, IV.4.52), and therefore a mixable article with food.

(iii) Vyañjana and Upasikta. Whereas miśra articles are mixed at the option of the eater, the use of vyañjanas is obligatory to make the food tasteful. Pāṇini takes vyañjana in the sense of upasechana, (i.e. ingredients of seasoning to improve the taste, IV.4.26, Vyañjanair-upasikte), as example of which Patañjali mentions dadhi (curds) (Annena vyañjanam, II.1.34) and the Kāśikā on Pāṇini II.4.12 mentions both curds and butter (dadhi-grhitam). The nature of any dish determines whether a particular article bears to it the relation of a vyañjana or miśrīkarana, i.e. an indispensable or optional ingredient of mixing. For example, the Kāśikā takes grhita as an article both for mixing and for seasoning the food (Kāśikā on VI.2.128 and 154).

(iv) Sanaskrita. This term (IV.2.16 and IV.4.3) denotes such food as is ready for eating direct from its place of preparation, e.g. groats ground in a hand-mill. Patañjali further points out that barley which is being pounded in the mortar is not in an eatable stage until it is boiled (Bhāṣya, IV.3.25; II.307). Pāṇini mentions dadhi (IV.2.18), udāsvit (butter-milk, IV.2.19) and milk (kṣīra, IV.2.20) as examples of sanaskrita food. The Kāśikā instances aṭṭhpā or sweet bread baked in an oven as coming under this class (bhrāṣṭrā aṭṭhpāḥ, IV.2.16).

DIFFERENT FOODS—A list of the principal food products and their preparations mentioned in the Ashtādhyāyī is given below:

I. Grains.
1. Cereals. (i) Śāli (V.2.2), a kind of rice growing
in winter which is replanted and called jaṭāban.

(ii) Mahāvṛihi (VI.2.38). One of the best known varieties of rice mentioned by Charaka in his list of principal kinds of rice (Charaka Samhitā, Nidāna-sthāna, IV.6). Suśruta mentions mahāśāli (Sūtra-sthāna, 46.7), which was perhaps a kindred variety of mahāvṛihi. Patañjali praises the śāli rice grown in Magadha (I.19). This variety seems to have survived for more than a thousand years. According to Yuan Chwang: "There is an unusual sort of rice grown here (Magadha), the grains of which are large and scented and of an exquisite taste. It is specially remarkable for its shining colour. It is commonly called "the rice for the use of the great." (Beal, Siyuki, II.82). This appears to be the rice called Mahāśāli and Sugandhikā (Julien). Hwui Li, the biographer of the Chinese pilgrim states that the Mahāśāli rice was grown only in Magadha and that Yuan Chwang, during his stay at Nālandā, was entertained with this special kind of rice (H. D. Sankalia, Nalanda, pp. 192-93). Pāṇini's acquaintance with the mahāvṛihi rice of Magadha must be due to his intimate knowledge of eastern India.

(iii) Hāyana (III.1.48) a kind of vṛibi (the rainy crop which is not transplanted); included by Charaka amongst the nine varieties of well-known rice.¹ 'In the Kāṭhaka Samhitā and the Śatapatha Brāhmaṇa the term appears as a designation of a species of red rice' (Vedic Index, Vol. II.502).

(iv) Yavaka (V.2.3). Both Pāṇini and Charaka mention yavaka as the name of a variety of rice. Pāṇini refers to it also in the Gana-pātha (yava vribishu, V.4.3, from which we get yavaka). The same gana also contains jīrṇa śālishu, from which we get jīrṇaka as a kind of rice, probably the same as jūrṇa of Charaka (Sūtra-sthāna, XXVII.18).

¹ Ḥāyana-yavaka-chinak-oddālaka-naisbadhetkaṭa-mukundaka—mahāvṛihi-pramodaka-sugandhikānām navānām. Also Sūtra-sthāna, XXVII.12, where the name is Ḥāyana as in Pāṇini, not Ḥāyana.
(v) Shashṭikā (V.1.90), so called because it took sixty days to ripen (shasṭi-rātreṇa pachyantē); it was considered as one of the best varieties according to medical authorities (Charaka, Sūtra-sthāna, XXVII.13).

(vi) Nīvāra (III.3.48), a wild inferior variety.

Pāṇini refers to the bank (kūla) of a river called Devikā (VII.3.1), on which was grown, according to Patañjali, a special kind of rice called dāvikākūla śāli (III.316). The river Devikā is identified with Deg flowing through Jammu and Sialkot, still famous for its excellent rice.

2. Pulses. Mudga (IV.4.25); Māsha (V.1.7; V.2.4); Kulatttha (IV.4.4), Dolichos uniflorus, mentioned as an article to be eaten with food (saṁskāraka dravya). Charaka enumerates kulatttha amongst pulses (saṁī-dhānya, Sūtra-sthāna, XXVII.26).

3. Other Grains. Yava (barley, V.2.3); Yavāṇi (a kind of inferior barley, IV.1.49); Anu (V.2.4) a small grain (Panicum miliaceum) which is the principal food of the poorer people in the Sindh-Sagar doāb and other parts of the Punjab; Gavedbhukā¹ (IV.3.136), Coix barbata, boiled with rice or barley in preparing gruel; and Tila (V.1.4; II.7).

II. Cooked Foods (Kritānna).

(1) Odana (IV.4.67), boiled rice, also called bhakta (IV.4.100), must have been a favourite diet, since as many as six varieties of rice are mentioned in the Ashťādhyāyī, of which some varieties were considered specially good for preparing bhakta (IV.4.100). Odana was either boiled alone in water, called udakaudana and udaudana (VI.3.60), or prepared in combination with meat (māmsaudana, IV.4.67). Vegetables and soups (śāka, sūpa, VI.2.128) were other ingredients eaten with boiled rice. Charaka giving a list of

¹Kātyāyana considers the reading of Gavedbhukā in the Bilvādi gaṇa (IV.3.136) as authentic (Bhāṣya, II.323). The same gaṇa also contains godhūma and maśīra.
thirty-five kinds of rice prescribes the use of ghṛita, taila, ṭhala, māsha, tila along with odana (Sūtrasthāna, XXVII.257). In India odana is most commonly eaten with sūpa of various pulses. According to the Mahāummage Jātaka1 the food of a labourer consisted of bhatta from barley eaten with sūpa. According to Patañjali odana made a decent dish to feast Brāhmaṇas (II.3.65; I.467) and friends (I.1.72; I.182). He repeats several times the phrase, Vindhyo vardhītakam (I.4.24; I.327), comparing humorously the heap of rice served on a plate with Mount Vindhya. (Bṛhaspita, I.220, Ekaścha tāṇḍulāḥ kṣbūt pratīghāte’ samartbhastat-samudāyaś-ccha vardhītakam samartham). Vindhya var-
dhitaka is a common sight in the eastern districts of the U. P. where rice is the staple food.

(2) Yavāgū (IV.2.136). Barley gruel was a popular food like odana, as can be gathered from its repeated mention in the illustrations to sūtras. The Jātakas mention yāgu as a popular food. Patañjali considered yavāgū to be a liquid diet (Bṛhaspita on VII.3.69). Pāṇini specially mentions the yavāgū eaten in the Sālva country (Sālvikā Yavāgū) which like the breed of Sālva bulls enjoyed wide reputation (IV.2.136, Go-yavāgvoś-ccha). The ancient Sālva janapada consisting of a confederacy of six member states most probably coincided with the vast territory stretching from Alwar to Bikaner in Rajasthan. People in these parts are still quite fond of eating gruel, which is of two kinds, viz. (1) thin lapsi, that is sweet in taste and eaten by the rich, and (2) thick rābari that is saltish and prepared by the poor. Pāṇini also mentions ushnikā in sūtra V.2.71 as a samijñā word, which according to the Kāśikā was the name of a yavāgū of very thin consistency (aḷpāṇṇā yavāgūr-ushnik-ety uchyate). In sūtra II.2.34 Pāṇini describes nakhaṁ-pachā, ‘nail scotching.’ The Kāśikā

connects nakhampačha with yavāgū. We know from other sources that yavāgū was of two kinds, peyā and vilepi. The peyā or thin variety was drunk like saktu dissolved in water, while vilepi or paste-like yavāgū was licked with fingers of the hand. The usbēnikā in sūtra V.2.71 must be the peyā variety, whereas the nakham-pačha yavāgū was called vilepi which scotched the finger ends when licked hot.

(3) Yāvaka (V.4.29). According to Patañjali yāvaka was made by pounding barley with pestle and mortar to remove the chaff, and then boiling its pearl grain in water or in milk with sugar added to it. Charaka calls yāvaka a steamed food (svinna bhaksya, Sūtra-sthāna, XXVII.259). The Arthaśāstra lays down that prepared yāvaka must weigh twice the original quantity of barley cooked (Arth. Text. II.15).

(4) Pishtaka (IV.3.147). Pishta (IV.3.146) denoted the ground paste of any grain. Articles prepared by mixing pishta were generally called pishtamayam. Pishtaka on the other hand was a special preparation, probably the cakes made of powdered rice. Suśruta counts pishtaka among cooked delicacies (kritānna varga) (G. P. Majumdar, Food, Indian Culture, I.413).

(5) Saṁyāva (III.3.23). Kullūka explains saṁyāva as a sweet preparation made with ghrīta, milk, guḍa, and wheat-flour (Manu, V.7), almost the same as modern chūrmā. Suśruta also includes it among confectionaries (G. P. Majumdar, ibid, p. 413).

(6) Aṇṭa (V.1.4). Sweet cakes made of wheat flour and ghrīta, a dainty confectionary prepared even now. The Kāśikā mentions oven-baked aṇṭas (IV.2.16). The Chāndra Vṛitti and the Kāśikā read abhyūsha (variant form abhyosha)

1 Bhāṣya, II.307; Idam tu na sidhyati aulākhalo yāvaka iti...Na cha yāvaka aulākhalād evāpaksyā abhyavahriyate vāsyam randhanādini pratikshayāni.
Social Life

in the ṛūpādi gāṇa. It must have been an ancient food since the Kāmasūtra also mentions abhyūṣha-khādikā as a sport in which boys and girls took part by eating the abhyūṣha ( parched grain) (Kāma-sūtra, ch. IV).

(7) Saktu (VI.3.59). Panini mentions saktu (modern satthu) mixed with water as udaka-saktu or udasaktu, but Patanjali mentions dadhi-saktu, i.e. groats eaten with dadhi as the seasoning ingredient (I.1.57; I.149). Bhrāshtra or the place for frying is also mentioned (VI.2.82).

Another article of diet when mixed with water was called udamantha or udaka-mantha (VI.3.60). Mantha was a kind of groats made from fried rice (Kātyāyana Śrauta, V.8.12) and generally mixed with milk (manthah kṣhīra-sāmyuto dbānā-saktubh). The special word udamantha referred to such sattu when taken only with water. This food is now called bhujiya ke sattu. (For mantha, see also Sat. Br., II.5.2.6).

(8) Kulmāṣha (V.2.83). Panini mentions kulmāṣha as a food which was ceremoniously eaten on a particular day in the year (Tad-asminn-annaṁ prāye samjñāyāṁ, V.2.82). The particular Full-Moon day on account of its association with kulmāṣha was known as Kaulmāṣbī Paurnāmāṣi.

What was the nature of the kulmāṣha food? In the Nirukta kulmāṣha is an inferior food, which is confirmed by the Chhāndogya Upanishad where the people of Ibhyagrāma (richmen’s village) in Kurukshetra begin eating kulmāṣha after the crops were damaged by hail-storm (I.10.2). The Kummāṣa-ṣiṇḍa Jātaka (No. 415) refers to it as the coarse food of the poor (dalidda) workman which he could carry in the form of a ball or lump, and to which on account of his

1 Also prithuka, boiled rice, crushed and dried (chiruve); cf. Kāśikā, guḍa-prithukā, II.1.35; Amara, Apakvanu paulir-abhyūṣbah, i.e. half-ripe corn fried in fire.

2 Kulmāshan chhidādara ity-avakutsite, Nir. I.4 Dr. Sarup renders it as sour gruel (Cf. Amara, kulmāṣha—yavaka; later Koshas add kāṇijka yavaka. Also Vedic Index where the meaning of sour gruel is accepted.
poverty he could not even add a little fat and jaggery (atelam, alonikam).  

1  Kulmāsha2 thus appears to have been a coarse thick gruel prepared by stewing beans, maize, or any inferior grain in a covered vessel with a little water (appodaka) and also adding guḍa and oil to it. Yāvaka was different from kulmāsha in that it was first pounded in a mortar (made aulūkhala, Bhāṣṭya, II.307) and then boiled like the latter. Charaka considers kulmāsha as a steamed food (svinna-bbaksbya), heavy to digest and dry in effect (Sūtra-sthāna, XXVII.239). The Kaulmāshi day of Pāṇini most probably coincided with the Full-Moon day of Chaitra, and the Vaṭakini of Kātyāyana with the Full-Moon day of Kārttika, when kulmāsha and vaṭaka cakes of māsha paste form the ceremonial food respectively. The Hindi equivalent of kulmāsha is ghugri. (Cf. Bhojana-kutūbala, P. K. Gode, A. B. O. R. I., XXII.256).

(9) Palala (VI.2.128). A sweetmeat made of pounded sesamum and sugar or guḍa, as illustrated by Kāśikā, guḍena miśram palalam guḍa-palalam (VI.2.128), and tila-palalam (VI.2.135). Its modern equivalent is tila-kuṭa.

(10) Chūrṇa (IV.4.23). It means wheat flour fried on a pan and mixed with gbi and sugar. In this form it was put inside cakes or apūpas, which in Pāṇini’s time were called chūṛninaḥ apūpāḥ (Kāśikā, corresponding to modern guṇjbā or guṇjibiya). The chūṛṇa preparation is still known as chūṇ in eastern districts like Banaras and kasār in western districts like Meerut.

1 Jāt. III.406; on p. 408 sukbbāya alonikāya cha. . . kummbāsapindiyā. The commentary explains sukbbāya as nisnebāya, and alonikāya as bhānita-virahita, adding that alonikā meant nipphāṇitattā, absence of jaggery.

2 Kāśikā (also Chandra) includes kulmāṭha in the guḍādi group (IV.4.103) and illustrates it as kaumlāṣhika mudga, i.e. mudga, suitable for making kulmāṣha. Chakrapāṇi on Charka, Sūtra-sthāna, XXVII.260, explains kulmāṣha as yayapiṣṭam ushnodaka-siktam ıśbatsvinam apūpikritam kulmāṣham abuḥ.
III. Sweets.

Pāṇini mentions the following sweets:—

(i) Madhu, honey from which is derived the general term madhura (V.2.107) denoting all confectionaries. Honey prepared by the common bee is referred to as ksbaudra (IV.3.118) treated as a samiṇā word.

(ii) Guḍa (IV.4.103), molasses, a universal product of sugarcane juice. Pāṇini’s phrase ‘excellent for making guḍa’ (guḍe sāḍbu) refers to some special variety of sugarcane yielding better quality of guḍa. Even now this consideration prevails with experienced farmers in selecting sugarcane seed for the next crop. Pāṇini refers to vast cane plantations or forests of sugarcane as ikshu-vāna (VIII.4.5).

(iii) Phāṇita, implied as a counter-example in sūtra VII.2.18 which mentions phāṇa. Phāṇita denotes inspissated juice of sugarcane boiled down to thick consistency, a preparation now called rāb, from which after crystallisation sugar is prepared.

(iv) Šarkarā, granulated sugar prepared from sugarcane.

IV. Milk Products.

Milk products are called gavya and ṣayasya (IV.3.160) of which curds, milk and butter-milk (IV.2.18; dadhi-ṣayasi II.4.14) are mentioned as important food articles. Phāṇa as given in sūtra VII.2.18 has the sense of ‘made without effort’ (anāyāsa). The Kāśikā understands it as a hot decoction, but the epithet anāyāsa points to its old meaning of butter produced from the cream of the day’s milk (ayātayāma, Śatapatha Brāhmaṇa, III.1.8), as opposed to nāvanita churned from curds of the previous day’s milk, for which a new classical word, baiyaṃgavīna (V.2.23) had come into use in Pāṇini’s time.

Pāṇini has an interesting sūtra, Pānaṁ deṣe (VIII.4.9), which apart from its grammatical interest (i.e. cerebralisation) acquaints us with the fact that different countries were named
after their popular drinks. Of the four illustrations on this sūtra the first cited by the Kāśika and repeated in the Chāndra-vṛtti (VI.4.109) refers to the people of Uśinara country as being fond of drinking milk (Kṣīra-pañā Uśinarāḥ). The information seems to be grounded in fact. Uśinara or the ancient Śibi janapada had its capital at Shorkot near the bank of the lower Chenab, and roughly corresponded with parts of Jhang, Multan and Montgomery districts famous for their breed of cows. The geographical term Pāna-Sindhu (Kāśika, VII.3.9) should be identified with the south-half portion of Sindhu janapada (Sind-Sagar Doab) which was an extension of Uśinara for its prosperity in cattle wealth and of which the inhabitants were fond of dairy products in their dietary. Charaka informs us that the people of Sindhu (Saimdhavāḥ) were fond of milk (Chikitsā-sthāna, 30-31). Saktu-Sindhu denoted the northern portion of Sindhu janapada where the people eat groats to this day. Eastern India was fond of wines (surā-pañāḥ Prāchyāḥ) Bāhika of sauvīra (a kind of sour drink); Gandhāra of kashāya wine.

The Mahābhārata mentions mathita (whey) as a favourite drink of the people in the Vāhīka country, and Patañjali refers to māthitika shopkeepers selling mathita (III.328, māthitam panyam asya māthitikāḥ).

V. Vegetables and Fruits.

Among auxiliary articles of food Pāṇini refers to śāka (leafy vegetables), bhājī (cooked vegetables, IV.1.42; also called śrāṇā in sūtra IV.4.67), sūpa (juice of boiled pulses, VI.2.128), prepared from pulses like mudga and māsha. Mention is also made of the practice of munching with food such digestive roots as radish and ginger, called upadaniśa (III.4.47).

Among fruits āmra (mango, VIII.4.5) and jambū (rose-apple, IV.3.165) are mentioned. Generally the name of the tree denoted also the name of the fruit (IV.3.163, Phale-luk).
COOKING—Cooking is called paksi (III.3.95). Frying-pans were used for cooking (ukha, ukhya, IV.2.17). The process of roasting on spikes is referred to as sula-karoti (V.4.65) and articles so roasted were known as sulya (IV.2.17). The commentators understand this process to apply only to meat preparations. Pāṇini explicitly refers to māmsa in sūtra IV.4.67. Kauṭilya also mentions shops of cooked meat (pakva-māmsika, II.36) and sulya articles of food.

The cooks in the time of Pāṇini derived their names from two factors, firstly from their specialised skill in preparing particular dishes, and secondly from the quantity which they were capable of handling. The first point is perhaps referred to in VI.2.129, in which the names of various classes of cooks are presumed, as deva-sūda and bhāji-sūda, i.e. cooks attached to temples and those expert in the cooking of vegetables.¹ Even at present the bhāji-sūda is a specialist whose services are in demand at the time of big feasts for making vegetables.

The practice of designating cooks on the basis of their capacity to cook a particular measure or quantity of food is referred to in sūtra V.1.52. This may have been a criterion to determine their wages and fitness for employment in domestic and festive cooking. Pāṇini speaks of cooks handling different quantities of food-stuffs, equal to an ādbhaka, āchita or pātra measure (V.1.53). Kātyāyana in a special vārttika refers to the cooking of a draṇa-measure, from which a female cook competent to handle this quantity was known as draṇī or draṇikī (V.1.52; II.352). There were also female cooks handling larger quantities like two ādbhakas, and named dvyādbhakī, dvyaṇakī, dvyaṇbakīnā (V.1.55; II.352). The popularity of these epithets is seen from another rule in which Pāṇini gives as many as four variant froms for designating one who could cook a couple of kulija

¹ Cf. Artha. Text, V.1, referring to sūda and bhakṣakāra as sauce-maker and sweetmeat-maker respectively. The Kāśikā understands Devasūda and Bhājisūda as place-names.
measures, e.g. dvikulijikī dvikulijinā, dvikulijā, dvaikulijikī (V.1.55).

The same principle held good in the case of utensils which were named from the quantity that they could contain (sam-bhavati, V.1.52) as prāsthika, kauḍavika, kṛārika, or the quantity that could be cooked in them (Parimāne pachah, III.2.33). This naming of cooking vessels according to their capacity was of practical use at the time of borrowing utensils for big feasts.

**CUSTOM OF FEEDING DOMESTIC SERVANTS.** Pāṇini refers to the custom of giving food to a domestic servant as part of his wages fixed by custom (niyukta, IV.4.66). This practice was so widely prevalent that special terms were used to indicate it, e.g. a servant who got cooked rice as his food every day was called odanika or bhāktika (odanikī for a female servant). According to Pāṇini the customary payments of food to domestic servants were of an obligatory nature:

*Tad asmai diyate niyuktam* (IV.4.66)

'The affix *ṭbak* is added after the name of food which is to be given as a customary payment.'

The word *niyukta* comes from *niyoga*, which Patañjali explains as a legal obligation like a debt.¹ For example, if one had engaged a servant for a *paṇa* per day, the *paṇa* was a *niyukta* charge, the payment of which at the end of the day was obligatory. We have to think of those circumstances in which an article of food became due in a like manner. We read in the *Arthaśāstra* of bhakta-karmakaras, i.e. servants engaged on the stipulation of being given daily food. In actual rural economy there has always existed the custom of giving a portion of the mid-day meal to certain domestic servants and menials, like the scavenger and the water-carrier, etc. Their daily wages in respect of

¹ *Yad-yasya niyogataḥ kāryam-ṛinam tasya tad-bhavati.* (Bhāṣya, I.391; in the course of explanation of the vārttika on sūtra, II.1.43).
the services rendered to the various families consist only of food articles which they are required to collect in the course of the day from the houses served by them. The village Brāhmaṇa also by virtue of his privileged position as Purohitā gets a portion, which is no doubt referred to in the illustration agrabhojanika (agre bhojanam asmai niyuktam diyate) cited by the Kāśikā. In this case the members of the household cannot partake of their food unless the agrabhojana has been set apart. It is to be noted that this supply of food (niyukta bhaksha) is part of the stipulated wages for which the servant is employed. According to Pāṇini the food thus supplied might be of different kinds, viz. cooked vegetables (śrāṇā), rice cooked with meat (māṁsa and odana, IV.4.67), or full meal, (bhaktā, IV.4.68). One getting cooked vegetables would be called śrāṇika, or śrānikī in the case of a female; similarly māṁsika (getting meat as food), odanika (getting boiled rice) and bhaktika. The bhaktika was the same as bhaktā-kārmakara of Kauṭilya, receiving a full meal every day. This practice worked out in a manner that the servant could make a complete meal with the different articles received from different houses. The same person would be a śrāṇika in respect of one family, odanika in respect of a second, and āpūpika in respect of a third. For example, a female waterdrawer (udabāri) agreed to take vegetables from one house, soup from another, meat and rice from a third and so on, and thus she earned her full meal. If she served a confectioner (āpūpika) she would naturally receive an apūpa a day as her payment for work, and with reference to that particular house she would be called āpūpikī, i.e. a female receiving an apūpa every day.

Such an arrangement alone would be responsible for the origin of different designations of servants based on the names of different articles of food as niyukta share. This is a living institution in North Indian villages upto this time where
cash payment is practically unknown for domestic and menial services rendered.

INVITATIONS—Pāṇini refers to two kinds of invitations to dinner, viz. nimamatraṇa and āmantraṇa (III.3.161). Patañjali explains the former as an invitation to take food at sacrifices (havya) and śrāddha (kavya), the acceptance of which was obligatory. Āmantraṇa, however, was an invitation to a feast extended to friends and relations and therefore less formal (āmantraṇaṁ kāmāchāraḥ, II.165).

PLATE-LEAVINGS—Pāṇini refers to special terms applied to food-leavings when served in different kinds of utensils. (Tātrodbhītam amatrebhyaḥ, IV.2.14). The domestic servants enjoy customary rights to receive particular leavings and hence the necessity of special words in the language. The Kāśikā records three such leavings of rice-food, viz. śarava, māllaka and kārpara. The first referred to the leavings from the plates in which rice was actually served for eating, and this must have been the share of the scavenger, as it is up to this day. The second, viz. māllaka, was the leavings in the pot (mallaka) from which it was served, and this must have been the share of the family barber (nāpita). The third or kārpara odana was that which was left behind in the cooking pot and as such must have been the customary share of the cooks. The Kāśikā explains udhrīta as bhūktocchbhīṣṭa, and the Nānārthārṇava Kosha as bhūktōjhibita (Vol. II, p. 42). The word ujjibita is the Prakrit form of Skt. udhrīta.

As to food-habits, Pāṇini refers to them as fasting (vrata, III.1.21), gluttony (audarika, V.2.67, ghasmara, admara, III.2.160), and moderation (subita, II.2.11).

DRINKS. Pāṇini mentions the following terms in connection with drinks:

1. Śundika—Drinking booth (IV.3.76),

Śauṇḍika—Vintner (IV.3.76).

2. Āsuti—Distillery (V.2.112).

Āsutivala—Distiller (V.2.112).
(3) *Madya* (intoxicating liquor, III.1.100);
(4) *Surā* (wine in general, II.4.25).
(5) *Maireya* and (6) *Kāpiśāyana*, names of special wines.

These are new classical words unknown to older Vedic literature.

**MAIREYA**—Maireya was a popular drink. The word is unknown in the *Brāhmaṇa* and *Āranyaka* literature, which suggests its origin in the post-Vedic period. The Buddha found its use so common as to lay down a prohibition against it. Pāṇini's *sūtra* is *Aṅgāni maireye* (VI.2.70).

'The first syllable of the word preceding *maireya*, gets the acute accent, when that word denotes an ingredient of *maireya*.' It implies that the word *maireya* enters into a compound with words denoting its ingredients.

Leaving the particular grammatical point aside, we infer from the *sūtra* that Pāṇini had a knowledge of the ingredients (*aṅgāni*) of *maireya* liquor. It is not possible to understand the rule properly without a knowledge of these ingredients.

The *Arthaśāstra* of Kauṭilya enumerates six varieties of liquors, viz. *medaka*, *prasannā*, *āsava*, *arishṭa*, *maireya* and *madhu* (*Arthaśāstra*, Text, II.25). It also gives the full recipe of *maireya*:

"Prepare a decoction of *meshaśringī* bark, mix it with jaggery (*guḍa*) and add the powder of long pepper (*piḍḍali*) and black pepper (*maricha*); to it the powder of *triphalā* may be added optionally,—this is the recipe of *maireya.*"

In the above recipe *meshaśringī*, *piḍḍali*, *maricha* and *triphalā* belong to one group, and *guḍa* to another. Further light on this division is thrown by the two illustrations given on Pāṇini's *sūtra*, by the *Kāśikā*:

*गुडमैरयः*। *मधुमैरयः*।
*मधविकवृत्तयुगङ्करयः* *गौडङ्कः* भवति, *मधुनो मधु*।

*मैरयः* *हह* *बत्त्र* *मैरयः*।

(*Arb.*, II.25)
Both these examples refer only to the sweetening ingredients of maireya, viz. guḍa and madhu. Obviously according to Pāṇini's intention as implied in the sūtra, the word aṅgāni refers only to the sweetening ingredients and not to the ausbadbi contents like mesbaśriṅgī, etc. It may be inferred with reason that the ausbadbi contents of maireya remained constant, whereas the sweetening ingredients varied between guḍa, madhu, šarkara, etc. The naming of maireya would thus depend not on the constant ingredients, but on the sweetening contents which varied. For example, the customer ordering his maireya drink from the master of the booth would not say mesbaśriṅgī-maireya or triphalā-maireya, but would express his desire for a variety in taste by ordering for guḍa-maireya, madhu-maireya, šarkara-maireya, phāṇita-maireya, ikshurasa-maireya, etc.

The above varieties of sweetening ingredients (madhuravarga) mixed with the decoction of mesbaśriṅgī and other specified herbs, must have produced a correspondingly superior or inferior quality of drink. Charaka tells us that maireya was primarily a madhura wine, a drink of sweet taste. The choice of an inferior condiment like guḍa and phāṇita, or of a superior one like refined sugar made all the difference in the quality, taste and price of the maireya drink. The aristocratic customer in the tavern would order a superior grade of wine, and in the case of maireya this emphasis would fall naturally on the first part of the compound, i.e. on the word denoting the sweetening ingredient which therefore got an acute accent on it.

The Arthaśāstra mentions guḍa as a mixture of maireya in the recipe quoted above. It agrees with the example guḍa-maireya of the Kāśikā. The other example madhu-maireya i.e. maireya prepared by mixing honey, lacks confirmation from the above statement in the Arthaśāstra. The question arises as to whether we are on good authority for assuming that other sweetening ingredients besides guḍa were also added to maireya.

The answer to this is in the affirmative. In the chapter
relating to the duties of the Superintendent of the Royal Storehouse, Kauṭilya gives directions for the storage of liquids tasting astringent:

'Mixture made by combining any one of the substances, such as the juice of sugar-cane, jaggery, honey, raw granulated sugar, the essence of the fruits of jambū and jack tree,—with the decoction of mesbaṣriṅgi (a kind of plant) and of long pepper should be stocked. To this the addition of the following is optional, viz. chirbbiṭa, cucumber, sugar-cane, mango fruit and the fruit of myrobalan. This mixture should be either one month or six months, or a year old. This constitutes the śukta-varga.'

In this context Kauṭilya does not actually use the name maireya for the liquid to be stocked in the royal storehouse, but the recipe leaves no doubt that high class maireya is intended. The osbadbi contents are the same, viz. the decoction of mesbaṣriṅgi and pippali (maricha is left out as of minor importance); in the optional group in place of triphalā alone, we have greater variety in āmalaka, āmra-ṭhala, urvāruka, ikṣbu-kāṇḍa, etc. In the enumeration of the sweet contents, in place of guḍa we have six varieties, of which madhu is also one. We can now understand the example madhu-maireya given in the Kāśikā on Pāñini, VI.2.70. Honey like guḍa was also an ingredient from which the particular variety of maireya derived its name. We may imagine that both guḍa-maireya and madhu-maireya were ancient illustrations to Pāñini’s rule. The plural number of the Pāñinian word aṅgāṇi also stands justified by its reference to as many as seven varieties of sweetening ingredients mixed with maireya, viz. molasses (guḍa), honey (madhu), sugar (śarkarā), sugar-

1  इक्षुरस-गुड-मधु-फाऱणित-जामबव-पनसानामाओति-मेषग्रुणी—
पिपपली कब्बानमिषुतो मासिक: अभावमासिकः सावकसर्वमः वा
विनापितोकस्केतृस्वरण्यास्रकामलकाभुते: गुडाया शुक्तवर्गः: ।

(Arth. Text, II.15, p. 94).
cane juice (ikshu-rasa), inspissated juice (phāṇita), sugar of jack-fruit (panasa) and of rose-apple (jāmbava).

KĀPIṢĀYANA—Kāpiṣāyana is referred to in sūtra IV.2.29: Kāpiṣyāḥ sbhpak.

The grape exported from Kāpiṣī was known as Kāpiṣāyani drākshā and its wine Kāpiṣāyanam madhu. Kāpiṣī¹ is even today the home of the grape. In ancient days an excellent quality of raisin wine was manufactured at Kāpiṣī and widely exported.² Kauṭilya supplies the clue to the name Kāpiṣāyana: 'The juice of grapes is termed madhu. Its own native place is the commentary on such of its various forms as Kāpiṣāyana and Hārabūraka.' (Arth. Trans. p. 145; Text. II.25). Obviously there were two varieties of the grape wine, the Kāpiṣāyana produced in the region round Kāpiṣī in north Afghanistan, and Hārabūraka in the south in the valley of the Harahvaiti or Arghandāb.³ The black raisins are still called harabūrā, and it is possible that the Kāpiṣāyana or northern variety of wine was made from green and the Hārabūraka or Kandhār wine from black grapes.

Kauṭilya’s sentence, tasya svadeśo vyākhyānam Kāpiṣāyanaṁ, supplies the needed commentary on Pāṇini’s Kāpiṣāyana which must have been the name of the reputed wines from that region. That Kāpiṣī was an emporium for this class of drinks is also proved by the recent archaeological discoveries at this site of numerous glass flasks, fish-shaped wine jars and drinking cups which were used in the wine trade many

¹ Kāpiṣī is ancient Begram on the confluence of the Ghorband and Panjshir rivers. An inscription in Kharoshthi characters recently found there settles the ancient site of the place. (Dr. Sten Konow, Kharoshthī Ins. on a Begram Bas-relief, Ep. Ind., XXII, pp. 1-11).

² Bindusāra sent for raisin wines from king Antiocchos in the third century B.C.

³ Harbhvati (Avestan), Harabuvati (O. Persian) = Skt. Sarasvatī; also called Haraquaiti (cf. CH.I. p. 326). It is the modern Arghandāb. (Vedic Index, II.434, footnote to Sarasvatī).

KASHĀYAS—Pāṇini also refers to names of kashāyas, or decoctions (VI.2.10, Adhvaryu-kashāyayor jātau) of which the Kāśikā gives several examples. The dauvārika-kashāya, must have been an intoxicating drink of mild effect specially prepared for the dauvārika or doorkeeper (Pāṇini, VII.3.4; also Arth. Text. V.3), whose duties required him to indulge only in the mildest kinds of drinks.

Besides the above names, the Gaṇa-pātha of V.4.3 (supported both by the Kāśikā and Chāndra Vṛttī) includes kālikā and avadātikā as names of special wines. Kālikā must be the same as kālikā surā in Kauṭilya (Arth. Text. II.25) and avadātikā might be only another name for śvetasurā of the Arthaśāstra (p. 121), also called prasannā (cf. Kāśikā on V.4.14). Kātyāyana refers to śīlbu in a vārttika on II.2.8.

DISTILLATION—In the distillery (āsuti, V.2.112), the ingredients were first prepared into a ferment (kiṅva); and when their fermentation was complete, they were termed āsāvya (III.1.126), literally ‘that of which the distillation has become imminent’ (āvasyaka). The sediment or refuse (kalka) left after distillation was termed vinīya (III.1.117), a technical word in the vintner’s vocabulary, literally ‘which is fit for removal.’ According to Kauṭilya, women and children could be employed for removing the surā-kiṅva, or fermented dregs (Arth. Text, II.25, p. 121).

Another expression originating in the vocabulary of the drinking booth was kane-batya (pibati) regularised in sūtra I.4.66, which corresponds to the English idiom ‘drinking or draining to the lees.’
CH. III, SECTION 7. HEALTH AND DISEASE

There is evidence of early investigation and nomenclature in the Vedic period of a number of important diseases and also of the identification of many useful herbs which pharmaceutical research in that age employed to fight disease. The evolution is further suggested by the development of specialised studies, as for example, Toxicology (Visha-vidyā) which is enumerated in one place in the list of special sciences or vidyās (Vedic Index, II.312).

These studies were cultivated at important educational centres and attracted brilliant pupils gifted with practical mental bias who must have found in them openings for a useful career in later life. Takshaśila was one such reputed centre at which Jīvaka, the royal physician of king Bimbisāra received his education.

Pāṇini brought up in the traditions of Takshaśila uses several words for disease, such as gada (VI.3.70), upatāpa (VII.3.61) and sparśa (III.3.16), the last probably referring to contagious diseases. A medical doctor is called agadanikāra (VI.3.70). The herbs were known as oshadhi and the medicines as aushadha (V.4.37, Oshadher-ajātau). Since an aushadha was a compound of several ingredients to suit the needs of each case Pāṇini takes the view that it did not form a genus or class like the herbs.

A special suffix tas was used to indicate the disease to be cured (Rogāchāpanayane, V.4.49), in such phrases as pra-vāhikātaḥ, kāsataḥ, cbhardikātaḥ kuru 'please cure me of (1) diarrhoea, (2) cough, and (3) vomiting'.

HUMOURS OF THE BODY. Kātyāyana commenting on Pāṇini's sūtra Tasya nimittān samyogotpātāu (V.1.38), mentions the three humours of the body for the first time
together, viz. (1) vāta (wind), (2) pitta (bile), (3) śleshma (phlegm). On this basis Eggeling says, there was "some kind of humoral pathology prevalent among the Indian physicians several centuries before our era." (Ency. Br. Vol. 19, p. 970b, 14th edition).

We have separate reference to vāta in sūtra V.2.129 in connection with a patient (vātakīn) suffering from wind. Pitta occurs in the Sidhmādi group (V.2.97) and śleshman forms part of the Pāmādi-gaṇa (V.2.100).

DISEASES (ROGA, UPATĀPA)—Pāṇini frames rules for naming diseases after, e.g. (1) time (kāla); e.g. dvītiyākā, chaturthākā, fevers appearing after two or four days; (2) cause or effect (prayojana); e.g. fevers with shivering (śītaka) or heat (ushnāka), or fevers produced by poisons as vishpūṣṭa, and kāsapūṣṭa (Kāṣikā).

Names of diseases (rog-ākhyā) were formed according to a regular pattern by adding the ika suffix (sūtra III.3.108), which according to the commentators regularised such forms as prachchhabardikā (vomitting), pravāhikā (diarrhoea), vicharbhiikā (scabs), etc. The rule points to the tendency in medical science for names of ailments to follow a uniform derivative pattern, similar to that in modern pathology. Pravāhikā diarrhoea and vicharbhiikā (scabs) are referred to in a sūtra as atisāra and pāman (V.2.129).

In medical language patients are described in terms of the disease from which they suffer. Pāṇini notes a general provision to derive the name of the patient after the name of the disease (V.2.128), for example kushṭā from kushṭha, one afflicted with leprosy, (VIII.3.97), etc. Similarly he mentions arīṣa (one suffering from haemorrhoids, V.2.127), vātakī (a sufferer from wind troubles), atisārakī (V.2.129, one afflicted with dysentry). One suffering from the debilitating effects of a disease was called glāṣnu, 'convalescent' (III.2.139). Kātyāyana notes the word āmayāvī (vārttika on V.2.122) for an ailing patient.
AUTUMNAL DISEASES—Seasonal outbreaks of epidemics were known, as shown in sūtra IV.3.13, referring to Šāradīka roga, 'autumnal diseases.' These diseases, mostly fevers, coming after the rainy season, are still known.

LIST OF DISEASES—The following diseases are noted in the sūtras.

(1) Atisāra (V.2.129), from which the derivative word was atisārakī.

(2) Arśas (V.2.127), piles.

(3) Āsrāva (III.1.141), discharge. It is a disease mentioned in the Atharvaveda, the precise nature of which is uncertain. Sāyaṇa translated it as painful urination (mūtr-āti-sāra, Atharva, I.2.4) Lanmann takes it as diabetes and Bloom-filed as diarrhoea (Vedic Index, I.74).

(4) Kushṭha (VIII.3.97), leprosy. According to Charaka sidhāna, pāmā and vicharchikā are reckoned amongst eighteen kinds of kushṭha.

(5) Kshetriyac. It is mentioned several times in the Atharvaveda, which scholars take to be the name of a special disease. Indian commentators understand it in the sense of hereditary disease (Vedic Index, I.211). Pāṇini throws light on its meaning in the following sūtra:

_Kshetriyac para-kshetre cikitsyah, V.2.92._

'Kshetriya is that (disease) which is curable in another body', i.e. a foul disease which is incurable in this life.

(6) Nyubja (VII.3.61), hump-backedness due to disease.

(7) Pāman (V.2.100), a skin disease. It occurs in the Atharvaveda as the name of a skin disease (V.22.12). According to Keith the derivative adjective, Pāmana 'suffering from skin disease' is found in the later Samhitās and the Brāhmaṇas (Vedic Index, I.517).

(8) Vikṣāva (III.3.25), cough.

(9) Samīvāra (III.2.142), fever, probably consumptive in nature. The sufferer was called samīvārī.
(10) Sidhāma (V.2.97), a kind of leprosy, the sufferer being known as sidhmala.

(11) Sparśa (III.3.16). According to Kātyāyana's vārttika the word denoted an ailment, probably contracted by touch or infection.

(12) Hṛid-rogā (VI.3.51), heart-disease. The word occurs also in the Rigveda. In the medical Saṁhitās the word probably denoted angina pectoris (Vedic Index, II.507).

BODY (ŚARĪRA)—Anatomy of the body was a subject which had attracted the attention of the Indians even in the Vedic times (Vedic Index, II.358). The popularity of the subject is proved by the fact that even a grammatical treatise like the Ashtādhyāyī contains a comprehensive list of terms for the various parts of the body. Body (śarīra) consists of two kinds of limbs (svāṅga), viz. dbruva (vital, VI.2.177) and adbruva (non-vital, III.4.54). The former is defined by the Kāśikā to include those limbs the loss of which results in death; the latter signified parts or limbs injury to which did not cause death. Pāṇini regards the costal bones (parsu, VI.2.177) as dbruva or an essential limb.

The following bodily parts (svāṅgas) are mentioned by Pāṇini:

Fingers (aṅguli), foot (pāda), forepart of the foot (prapāda, V.2.8), knee-caps (asbhīvat, VIII.2.12), legs jaṅghā, knee-joints (jānu, V.2.129) thighs (uru, ārvashṭīva, V.4.77), loins (saktbi, V.4.113), hips (spīga, VI.2.187), belly (udara), navel (nābhi), womb (kuksbi), arms (bāhu), chest (uras), ribs (parsu, VI.2.177), breasts (stana), collar-bone (aṁsa), neck (grīvā), nape (manyā, III.3.99, cf. Vedic Index, II.133), ears (karna), nose (nāsikā), eyes and eyebrows (akṣbi-bbruva, V.4.77), mouth (mukha, VI.2.167), lips (osbhā), teeth (dana, IV.1.55), tongue (jihvā), forehead (lalāṭa), head (mūrdhā, mastaka, śirṣa), bone (asthi), sinews and arteries (nādi, tantrī, V.4.159), heart (hṛidayā, hṛit, VI.3.50), lever (yakṛit, VI.1.163), hair (keṣa, loma),

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nails (nakba derived as na plus kha, VI.3.74), skin (tvach.),
flesh (māṁsa), vital parts (arush, V.4.51), bladder (vasti, IV.
3.56).

The list includes some words specially noticeable, as manyā,
tantri, arush and vasti. According to Amarakosha the vein
in the back of the neck was called manyā.
MAHA-HAILIHILA—Hailihila and maha-hailihila are words
of unknown meaning and origin, mentioned by Pāṇini as
special names of some article (VI.3.38). The word is not
explained in any Sanskrit dictionary, nor is there any instance
of its being used in literature. It appears that hailihila was a
Semitic word appearing in a sanskritised form, as the name of
a poison which was imported from the West.
In Arabic halābila means deadly poison (cf.
Hebrew halīl, deadly poison). Steingass derives without
reason the Arabic word from Skt. halābala (F. Steingass,
Persian-English Dictionary, p. 1506). The Skt. word itself is
exotic as shown by its variant spellings, e.g. hālābala, halābala,
hālahala, hālahāla, bābala, bāhāla (Monier-Williams, A Sanskrit-
hailihila seems to come nearest to the original Semitic form of
the word, which may have been Armaic, the international
language of trade and commerce in the Achaemenian world
from Syria to Gandhāra. Pāṇini refers to poisons in general
called visha and to the third degree methods of liquidating
particular persons marked out as vishya by the administering
of poison.
CH. III, SECTION 8. DRESS AND ORNAMENTS

WORDS FOR CLOTHING—Besides the usual vastra and vasana denoting clothing in older literature Pāṇini mentions three new post-Vedic words, viz. chīra (VI.2.127), chela (III.4.33) and chīvara (III.1.20). In the sūtra Chele knopel (III.4.33), chela denotes a garment worn on the body. Chīvara is frequently used in Buddhist books for a monk's robe. It is conspicuous by absence in the Brāhmaṇa and Āraṇyaka literature. Its Buddhist association is strengthened by its illustration which occurs both in the Chāndra-vṛtti and the Kāśikā, saṁchīvarayate bhikshuh, the monk dons the chīvara or 'takes the holy robes.' We do not find the word applied to the garments of laymen, a householder or a Brahmacārin.

The word āchchhādana denoted both a garment as prāvāra (III.3.54) and bhṛhatikā (V.4.6), and also cloth (VI.2.170). It is more frequently used in the Ashtādhyaśyā than any other word for cloth. Its later affinities are apparent from the fact that the word is not found in the Brāhmaṇas, but occurs several times in the Dharmasūtras (Vasishtha, XVII.62; XVIII.33, prāsāchchhādana) and the Arthasaśstra in the sense of clothing (Arth. Text, I.11, p. 18).

KINDS OF FABRICS—Various classes of fabrics are mentioned:

(1) kausteya (VI.3.42), silken cloth. According to Kātyāyana kausteya is so called because it is produced from the cocoon, and though the silk-worm is also a similar product, the word applies only to the silken cloth.

(2) Linen cloth (auma or aumaka, IV.3.150), made from the yarn of flax (umā), and hemp (bhaṅga) plants.
(3) Woollen garments (*aurṇa* or *aurṇaka*) made from wool (*ūrṇā*, IV.3.158).

(4) Cotton (*kārpāśa āchchbādāna*, a counter-example to IV.3.143). The word *karpāśi* occurs not in a *sūtra*, but in the *Gāṇa-pātha Bilvādi* (IV.3.136), but its reading there must be authentic, as it is the only fabric-denoting word in the Bilvādi group, and without it half of Pāṇini’s rule IV.3.143 (*abhakṣby-āchchbādānayoh*) would become redundant. In the chapter, IV.3.136-142, to which the rule IV.3.143 applies, *karpāśi* is the only word denoting cloth-making material.\(^1\) The word *tūla* also occurs in Pāṇini (III.1.25, III.3.64), in a compound like *isbikā-tūla*.

**DRESS**—The dress of the times is indicated in the *sūtra* *Antaraṁ babiryogopasaṁvyānayoh*, I.1.36. We learn from this rule that *antaṁ* in Pāṇini’s time was used in two senses, *viz.* exterior (*babiryoga*) and dress (*upasaṁvyāna*). According to Kātyāyana *upasaṁvyāna* denoted one of a pair of *sātakas*. Since there were two *sātakas* one serving as *uttariya* and the other as *antariya*, *upasaṁvyāna* denoted the one which served as *antariya*, *viz.* that which was worn, and not that which was used as a wrapper or scarf to be thrown over the shoulders. The Kāśikā further explains that *upasaṁvyāna* was a kind of *paridbāṇiya* ‘fit for wearing,’ and not a *prāvaraniya* ‘covering.’ In the most early examples of Indian sculpture as shown in the Parkham Yaksha *statue* (Dr. Coomaraswamy, *H.I.I.A.*, Pl. III), the Didārgan, Yakṣī from Patna, made of polished Chunar stone and belonging to the Maurya period (*ibid.*, Pl. V), and the numerous Yaksha and Yakṣī figures of Sanchi and Bharhut, the sole dress of both male and female figures consists practically of a pair of *sātakas* (*sātakayugam*). Both the *upasaṁvyāna* (*antaṁ sātaka, antariya*) and the *prāvaraniya* (*upper scarf*) were

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\(^1\) The genuineness of the Bilvādi group is also proved by Kātyāyana examining in a *vārttiṇa* the reading of *gavedbukā* which is ninth in position (II.323).
arranged gracefully in an endless variety of ways. The Greeks in the fourth century B.C. were struck with the extreme simplicity and elegance of Indian dress, consisting then as in the time of Pāṇini, of a pair of śāṭakas. Arrian writes: 'The dress worn by the Indians is made of cotton, as Nearchos tells us. They wear an undergarment of cotton which reaches below the knee half-way down to the ankles, and also an upper garment which they throw partly over their shoulders, and partly twist in folds round their head.' (Arrian, Ind. Frag. XVI). The Ashtādbhayi enables us to know that the undergarment reached down to the forepart of the foot, and was therefore called āprapadina (V.2.8). An invariable feature of wearing the antariya or dboti as seen on ancient sculptures depicting male and female figures is the tying of the girdle round the waist. The arrangement of the girdle is clearly visible on the Parkham statue, the Besnagar Yakshi and the Patna Yakshas, where it can be distinguished from the upper scarf and the lower dboti. Pāṇini refers to a girdle as nivi, the region of the belt being called upanivi (IV.3.40).

On sūtra, V.1.21 Patañjali cites an illustration from which we learn that the price of one hundred śāṭakas or dbotis was one hundred (Satena kṛitam satyam śāṭaka-satam, 11.346). It will be shown in the Section on coins that when the number occurs without specifying the name of the coin, a silver kārshāpana was usually meant. We may therefore say that in the time of Patañjali (2nd century B.C.) the selling price of an average cotton sāri was one silver kārshāpana.

In the Sthulādi-gaṇa (V.4.3) there is a reference to the gomūtrikā cloth, which appears to have been so called from the gomūtrikā design woven into its texture at one end. The gomūtrikā pattern was known in the fourth century B.C. as mentioned in the Arthaśāstra in connection with the formation of battle-arrays (Arth. Text, X.6). We may note in this connection that the paṭalī or front folds of the dboti on the
Yaksha statues aforesaid are arranged zig-zag in the form of the gomūtrikā motif.

BLANKETS (KAMBALA)—Several kinds of blankets and woollen wrappers of different kinds were in use. Blankets produced in a standard size as marketable goods were called panya-kambala (V.2.42). Their size and weight were determined according to the measure of wool used. Such measure was called kambalya, equal to one hundred palas in weight, roughly five seers. The kambalya measure is derived by Pāṇini as a saṁjñā word (Kambalāchcha saṁjñāyām, V.1.3), pointing to its definite meaning. The kambalya seems to have been a measure of value and medium of exchange for some transactions in the barter economy of those days. Pāṇini mentions the formation kambalyā in sūtra IV.1.22, illustrated by the Kāśika as dvi-kambalyā, tri-kambalyā, i.e. 'purchased for the price of 2 or 3 kambalya measures of wool' which would refer to a goat or sheep purchased for 2 or 3 kambalya measures of wool.

PRĀVĀRA—Pravāra (also pravāra) as a garment is referred to in the sūtra Vrīnoter āchchhādane (III.3.54). Kauṭilya names pravāraka as a blanket made of the wool of wild animals (mṛgiga-roma, p. 80). In the Mahābhārata pravāra is described as a class of blankets for protection against cold (Vanaparva; 3.51). It seems that pravāra was a wrapper made of finer quality of wool and lighter in weight than the panya-kambala.

BRIHATIKĀ—It is referred to in sūtra Brihatyā āchchhādane, V.4.6. The upper garment which was thrown on shoulders covering either one or both of them and falling down to the waist or knees seems to have been the brihatikā dress. The Amarakosha understands it as a kind of pravāra, a big all-covering mantle. As remarked by the Greeks about the dress of the Indians: "They have a tunic of tree-linen down to the middle of their shins" (C.H.I., p. 412). This long tunic may have been the brihatikā conforming to a real etymology of that word. Patañjali mentions brihatikā as a current dress (1.2.69). It seems to have been a fine wrapper 24' by 12'
in size, mentioned as bāhitikā in the Majjhima Nikāya (Sutta 88).

A rich kind of wrapper known as rānkava is referred to in ancient literature along with woollen fabrics.¹ Pāñini mentions raṅku in sūtra IV.2.100, from which we get rānkava and rānkavāyana. The Kāśika explains rānkava as a blanket.

We may also note the names of two other kinds of blankets known to Kātyāyana and Patañjali. In a vārttika on sūtra VII.3.45, (Varṇakā tāntave) Kātyāyana mentions varṇakā as a woven fabric, which Kauṭilya describes under the masculine form varṇaka as a kind of woollen blanket (Arth. II.11). Patañjali refers independently to kutapa, a Nepalese blanket or thulma (II.1.69; I.406).

ORNAMENTS AND TOILET—Pāñini refers to cultured citizens (pravīna nāgarakas, IV.2.128), and also to the arts of personal decoration (subhagaṅkaraṇa, III.2.56). Decoration was applied to the different parts of the body (Svāṅge-bhyaḥ prasite, V.2.66), such as keśa, which were dressed in an artistic manner by the dandy called keśaka. There are references to ornaments (alamkāra, IV.3.64), elegant drapery (āchchhādana, V.4.6), stylistic coiffure (keśavesha, IV.1.42) and to special words indicative of the beauty of the female form, e.g. vāmoru, saṁhitoro, śapboru (IV.1.70).

In a group of phrases as purusha-vaṁghra, purusha-siṁha (II.1.56, Upamitam vaṁghrādibhiḥ sāmānyāprayoge) and bastighna (III.2.54), Pāñini refers to the ideal of physical valour (śakti) for men.

He also mentions some epithets indicative of social-honour, e.g. sat, mahat, ṭarama, uttama, uṭkrishta (II.1.61), vṛndārka, nāga, kuṇījara, pūjyamāna (II.1.62), etc.

Whereas women enjoyed themselves with various garden sports as salabhaṅjikā implied in the sūtra Prāchāin kṛiḍāyām (V.2.74), the male members skilled in the use of arms parti-

¹ Sabhā Parva, 47.22, aurṇaṁ cha rānkavam.
icipated in jousts organised for the sake of pleasure (praharana-krīḍā, IV.2.57). Music, both vocal (gāyana, III.1.147) and instrumental (vādaka), practised on the lute and other percussion instruments, also formed part of the usual pastime of a cultured society.

Of ornaments (ālāṅkāras) Pāṇini refers to aṅguliya, finger-rings (IV.3.62), karnikā, ear-ring¹ (IV.3.65), lalātikā, ornaments of the forehead (IV.3.65) and graiveyaka, torque round the neck (IV.2.96). If we look to the earliest known examples of Indian art we find these three ornaments conspicuously depicted there. The karnikā is represented as the heavy ear-rings worn in cloven ears of men and women; the graiveyaka² as the torque, worn in addition to the flat triangular necklace on such statues as the Parkham Yaksha; and the lalātikā as the round pendant found on the forehead of the earliest female figures as the Yakṣī from Didārganj, Patna (Bachhofer, Early Indian Sculpture, Pl.9) and Sudarṣanā (Pl.19), Chulakokā (Pl.20) and Sirimā devatās (Pl.21) from Bharhut. These works of art are no doubt removed in time from Pāṇini, but they represent the earliest specimens of classical Indian art and show an older tradition. The Jātakas also mention ear-rings, frontlet pieces and torques round the neck (giveyya,Jāt.VI.590).

Pāṇini also mentions kumbā (III.3.105) which according to the Vedic Index denoted a female adornment connected with the dressing of the hair (Vedic Index, I,163). In one place he refers to a special style of female coiffure (keṣa-veṣa) known as kabari (IV.1.42). The word may have originated from the variegated appearance of the braid of hair interwoven with a garland of flowers.

Among other requisites of personal decoration (bhūshana,

¹ Nearchus, Frags. 9 and 10; "And the Indians wear ear-rings of ivory." C.H.I., p. 412)

² For graiveyakas see also J.U.P.H.S., May, 1933, p. 97, Pre-Kushāna Art of Mathura, by V. S. Agrawala.
I.4.64, VI.1.133; ālaṅkāra, IV.3.65, etc.) and toilet (subba-gain-karaṇa, III.2.56), we find reference to the following:

1. Darśana (V.2.6), mirror (ādarśādi, Kāśikā) which was of two kinds, (1) yathāmukhīna (flat) and (2) saṇīmu-khīna (convex) in which only the frontal view gave correct perspective, and which was probably made of polished metal.

2. Aṇjana, not referred to directly, but mention is made of the Trikakut mountain (V.4.147) from which a kind of valuable salve called Traikakuda aṇjana was obtained (Cf. Atharva, IV.9.9; Vedic Index, I.329). It may be identified with the Sulaiman mountains which is the home of a salve sold all over Sind and Panjab. The Mahābhārata refers to fair-complexioned Panjabi women painting their eyes with the aṇjana from the Trikakut mountain (Karna-parva, 44.18). Another kind of salve, Yāmuna aṇjana was obtained in the region of the Yamunā, (Dehra Dun Dt.) which was known to Pāṇini as Kalakuṭa ('the Black Hill', IV.1.173).

3. Mālā (VI.3.65), garland. One who adorned his person with garlands was called mālabhāri (VI.3.65; fem. mālabhārini). Patañjali illustrates this sūtra by the form utapala-māla-bhārini i.e. the girl adorned with lotus garlands (I.1.72; I.187). Pāṇini refers to sravī, a garland-wearer, used as the special epithet of a snātaka, who beautified himself with flower garlands after completing the period of studentship during which time the use of flowers was forbidden.

4. Gandha (perfumes). Pāṇini mentions several kinds of perfumes, as (1) kisara (IV.4.53), (2) śalālu (IV.4.54) in the sūtras, and others like narada, tagar, guggulu (bdellium) and usīra (Andropogon Muricatus), in the Kisarādi-gaṇa. From the way he mentions these perfumes it appears that there were special shopkeepers who traded in these articles (Tadasya paṇyam) and who were named after them, e.g. a woman selling śalālu (an unidentified fragrant substance) was called śalālukī and śalāluki. Spikenard (naḷada) was an old
Indian perfume produced in the regions of the upper Indus and in Indo-Scythia and forwarded through Ujjain to Bharukachcha and thence to Egypt. Pliny describes the nard with its spica, mentioning also that both the leaves and the spica are of high value, and that the odour is the prime in all unguents, the price being 100 denarii for a pound. (McCridle, Periplus, p. 25).

5. Daṇḍa (V.1.110). Pāṇini refers to the staff called āśādha (pāśāsa-dauḍa) which was used in the initiation ceremony (uṇanayana).

6. Asi (IV.296), sword, also called kauksheyaka from its being kept in a sheath.

7. Upānab (V.1.14), shoes, made of leather, manufactured according to the size of the foot (anupadinā, V.29). The Baudh. Sr. Sūtra mentions shoes made of tiger's skin (vaiyāgbryau upānabau charmaṇakbavau, XVIII.16, p. 361). Pāṇini also knew of the use of vaiyāgbhra leather (IV.2.12) for upholstering purposes.

The Brabmajāla Sutta contains a stock list of dress and toileting processes comprising twenty items. (G. P. Majumdar, Toilet, Ind. Culture, Vol. I, p. 651). This list agrees closely with the one laid down in Sūrūta (ibid. p. 653). Of those items Pāṇini refers to mirror, collyrium, garlands, perfumes, shoes and staff. In the Yājakādi group (which occurs twice in the Ashtādhyāyī, II.2.9 and VI.2.151), Pāṇini mentions snāpaka (barber), utsādaka (one who anoints), udvartaka (one who rubs the body with emollient unguents) and parishechaka (one who sprinkles); and again in the Mahishyādi-gañā (IV.4.48) anulepikā (a female for applying sandal paste after bath), pralepikā (a female to apply unguents before bath) and vilepikā (a female to apply scented oils, etc.). The Arthaśāstra also mentions these personal attendants in the service of the king. (Cf. also the king's toilet in the Kalpasūtra which mentions them, S.B.E., Vol. XXII, p. 241 ff.).
Pāṇini acquaints us with the principal architectural patterns of buildings found in a big city, e.g. rāja-sabhā (the king’s council-hall, II.4.23), geba, griba (houses, III.1.144), nivāsa and nikāyya (residential buildings or quarters, III.1.129), chhātri-sālā (hostels for women, VI.2.86), words ending in agāra, like koshṭhāgāra (royal store-houses, IV.4.70), nishadyā (rest-houses, III.3.99), dvāra (city-gates, IV.3.86), parikbā (moats, V.1.17), kaṭāta (door leaves, III.2.54) and parigha (bolts, VIII.2.22).

ŚALĀ—Śalā was used for a variety of buildings, e.g. sabbā (council-hall II.4.24, Aśālā cha); chhātri-sālā (female hostel, VI.2.86); gosālā and kharasālā (stables for cows and asses, IV.3.35); the last one being also found in the Atharvaveda and Brāhmaṇas (Vedic Index, II.376). Śalā was also used for a granary room for storing corn with an opening called śalā-bila (VI.2.102). It was a Vedic word (Vedic Index, II.376).

HOUSES—The Vedic word for home was griba. Pāṇini also uses the term griba (III.1.144) which the Kāśikā explains as veśma or homestead, or as the women in residence there (tāsthyād-dārāśca), implying that the women constituted principally the household. Three other terms were also used, viz. geba (III.1.144), agāra (III.3.79) and kshaya (VI.1.201; cf. Sabhāparva, 33.16, ajāyata Yaduksbaye, Kṛishṇa born in the house of Yadu). Agāra occurs once in the Kāushitaki Upanishad (Vedic Index, 1.7).

Pāṇini refers to officers (niyukta), in charge of buildings ending in agāra (IV.4.69-70), e.g. bhanḍāgārika, devāgārika, koshṭhāgārika (Kāśikā). Agāra indicated a larger building with several parts, one of which (agār-aika-dēsa) was called praghāna or pragbhāna (III.3.79), explained by the Kāśikā as
the rooms in the outer gateway of a building (bāhya-dvāra-prakosṭha). (Cf. Pali ṭaghana, a covered terrace before a house, Vin. II.153; ṭaghanaṁ nāma yaṁ nikkhamantā cha pavisantā cha pādehi bananti, Buddhaghosha). In the Udaya Jātaka there is a reference to koṭṭhaka which the commentary translates as dvāra-koṭṭhaka (Jāt. Vol. IV. 106). Dr. Coomaraswamy understands dvāra-koṭṭhaka specifically as gatehouses, which formed part of the gateways in the wall of a city and of which several examples are found in ancient Indian art (Early Indian Architecture, 'Cities and City-Gates,' p. 209, Eastern Art Annual, 1930, Vol. 11; Skt. alinda).

NISHADYĀ—In sūtra, III.3.99 Pāṇini gives nishadyā as a specific word (ṣamjñā) meaning a rest-house. The nīnśi (d) yās (resting places) are referred to by Aśoka (Pillar Edict VII). The Nāgarjunī Hill Caves were built for providing shelter to monks during rains (vāsa-nisidiyāya—varśā-nishadyāyai).

NIKĀYYA AND NIKĀYA—These are synonymous of nivāsa, a dwelling place (III.1.129; III.3.341), and are in this sense peculiarly Pāṇinian words. It is not certain whether they were used to denote only the residence of monks. In the Manu Smṛiti we find the word deva-nikāya (I.36), taken by the commentators as deva-nivāsa-sthāna. Nikāya occurs once in the Yajurveda, but as the name of a chbanda denoting Vāyu (Śatapatha, VIII.5.2.5, commenting on Yaj., XV.5). The Arthaśāstra also uses nikāya once, but in quite a different sense, viz. saṅgha (Text. II.4, p. 55).

EKAŚĀLIKA—The word eka-śālika, or its optional form aikaśālika, was of some practical importance. Pāṇini derives it as eka-śālā iva, 'that which is like one (man's) building' (V.3.109). It did not mean the owner of a single house, but it denoted a dwelling-place, which in respect of its use was reserved as one man's building, i.e. not intended for public use. The Tinduka-vana of queen Mallikā, wife of king Prasenjīt, in the vicinity of Śrāvastī (Dīgha Nikāya, I. p. 278) was formerly eka-sālaka used as her own pleasance or for her
guests. Such a residence was called rājāgāraka (Brahmajālā Sutta). Subsequently this park-house was thrown open to the Buddhist community (babū sālā katā; Sumaṅgala-Vilāsini, II. p. 365). It was a matter of some consequence in the social life of that period whether a park-residence of some rich man was of the nature of ekaśālika, i.e. reserved for personal use, or was thrown open for public use. We know from the story of Anāthapindika how he converted the garden of Prince Jeta which used to be eka-śālika (i.e. reserved for his own use) into a public residence for the use of the entire Buddhist Saṅgha.

MATERIALS—Pāṇini refers to bricks among building materials in the phrase ishtaka-chita, denoting something constructed with bricks (VI.3.65). The Pāli literature also mentions īṭṭhaka-vadḍhakī or brick-layers. (Dr. Coomaraswamy, City and City-Gates, p. 211; Jāt. VI. p. 333).

The roof of a house is called chhabdis, probably denoting the thatched covering known as chhappar. The word chhā-disheya refers to the material with which the chhabdis was made (V.1.13). The actual doorway (dvāra) opened or closed with a pair of leaves called kapāṭa. Reference is made to daring burglars (kapāṭagbna chaura) battering against the leaves of a door-way to secure entrance (III.2.54). The Mahākāna Jātaka refers to battering against the palace-door (kavāṭe ṭhāpetvā, IV.182). The closed door panels were secured from inside by a bar drawn across called parigbha or paligha (VIII.2.22), which meant an iron bolt (Vedic Index, I.494).

Besides the residential and public buildings, there were market-places (āpāṇa, III.3.119) where commercial commodities (panya) were stocked and saleable goods (krayya, VI.1.82) were displayed.

Pāṇini also refers to the old Vedic god Vāstoshpati (IV.2.32), the presiding deity of vāstu or homestead. Two older words, kshaya, 'abode' (VI.1.201) and āvasatha (V.4.23), are also mentioned. The precise sense of āvasatha appears to
be a place for the reception of guests, especially Brāhmaṇas and others on the occasion of feasts and sacrifices (*Vedic Index*, I.66). According to Pāṇini: ‘One who lives in an āvasatha is called āvasathika’ (IV.4.74). The religious guest-house was identical with that part of a householder’s dwelling in which the household fire (āvasathyā agni) was established.¹

¹ We are indebted to Patañjali for preserving two important architectural terms, viz., āmalaki and valabhi (*Bhāṣya*, VI.2.82; III.132) denoting the pinnacle and the cornice-mouldings respectively, which figure so prominently in the earliest representations of buildings in the sculpture of Bharhut and Sanchi.
CH. III, SECTION 10. TOWN-PLANNING

Pāṇini refers to some important towns of his time. *e.g.* Kāpiśi, Takshaśilā, Śākala, Hāstinapura, Śāmkāśya, and Kāśi. The *ganas* add other names. The existence of these cities shows progress in the art of town-planning (*nagara-māṇaṇa*) and architecture (*vāstuvidyā*). References to *vāthuvijnāchariya* and *pāśāda-māṇaṇa* are known in the Jātas (Suruchi Jāt. IV.323).

The most important parts of a city were its moat (*parikhā*), rampart (*prākāra*) and gates (*dvāra*), which served as the main defences. Sūtras V.1.17-18 envisage regular town-planning. For example, *Parikhāya ḍhaṇī* speaks of 'the space earmarked for a moat as *pārikheya* (*bhūmi*).' The previous sūtra, *Tadasya tad-asmin syād-iti*, V.1.16, presupposes some sort of planning preceding the actual construction work. The marking out of the site of the moat, the rampart and the palace formed the preliminary part of such planning. The *Vatthuvijnāchariyas* or expert architects were requisitioned for testing sites (Jāt. I.297; IV.323), for the actual planning of cities (cf. *nagaraiṇi Vedebena sumāpitaṁ, Mahāummaga Jāt. VI.448*). The *Arthasastra* mentions the construction of ditches (*parikhā*) as the first item in the construction of forts (*durga-vidhāna*). We read in the *Mahābhārata* that the site of Indraprastha was mapped out (*nagaraiṇi māpayāmāsaḥ*) in the presence of Dvaipāyana Vyāsa and others and that work commenced with the digging of a series of moats (*parikhaṁbhīḥ*), followed by the building of a high rampart (*prākāra*), numerous gateways (*dvāraṁḥ*) and towers (*sauṁhāṁḥ*) (Adiparva, 209.29-32). Why the moat was built first can be understood from the fact that the earth so obtained was utilised for raising the mud-
rampart (pañsu-prákāra), or for moulding bricks for the city-wall (prákāriya ishtakā), or as Kauṭilya says, for ramming in the hollow masonry work (pañsu-visēshena vāstu-chhidram vā pūrayet, Arth. Text, II.3, p. 52).

The Arthaśāstra ordains the digging of three moats round the fort, having an intermediate space of one danda (6 ft.) between each other and being fourteen dandas (84 ft.), twelve dandas (72 ft.), and ten dandas (60 ft.) respectively in width (Arth. II.23). Thus a total width of 38 dandas (218 ft.) represented the pārikbeyī land round the fort. We are indebted to the commentary on the Udaya Jātaka (IV.106) for names of the three moats, viz. udaka, kaddama and sukkha, a water moat, a mud moat, and a dry moat. These may be taken to have followed the width given in Kauṭilya. We have discussed in another chapter Pāṇini’s purusha measure (V.2.38) which according to the Arthaśāstra was equal to 5 1/3 feet (Arth. Text, II.20, p. 106). Kauṭilya says that depth was measured in terms of this length called kāta-paurusha. The examples dvi-purushi and tri-purushi in the Kāśikā on sūtra V.2.38 (Purusba-bastibhyām an cha) refer to the depth of ditches or moats.

PRĀKĀRA AND DEVAPATHA—There is no mention of prákāra in the sūtras. Kātyāyana mentions prāśada and prákāra in a vārttika on sūtra, VI.3.122, and the trend of his discussion shows that the words were implied in Pāṇini’s rule. The stock illustrations on V.1.16 (Tadasya tadasmin syāditi) include prākāriya deśa (the site for a rampart) and prākāriya ishtakā (bricks for the city-wall), the latter agreeing with the direction of Kauṭilya that the ramparts should be made of bricks.

There is, however, one word in the Ashtaḥdhyāyī, which gives a definite clue to Pāṇini’s acquaintance with the technical details of the building of ramparts and parapets. He mentions devapathā at the head of the gaṇa Devapathādi, (V.3.100), which again can be explained only in the light of Kauṭilya. This corroborative testimony from the Arthaśāstra is rather
singular since no other work throws light on the meaning of the Pāñinian word. According to Pāñini the 'passage' which resembles a 'celestial passage' (devapatha) is called devapatha (V.3.100). What can such a passage or road possibly be so as to deserve the comparison involved? According to Kauṭilya the wide road on the top of the parapet built along the line of battlements (indrakosas) was called devapatha (Arth. Text, II.3, p. 52; Trans. p. 51). The height of the brick fort-wall (prakāra) above the mud-rampart (vapra) is there stated to be thirty-six feet rising from the ground level\(^1\), and the battlements were built above it. The deva-paptha extending along the city-wall should be understood with reference to its great height resembling the celestial passage (devapatha) in the heavens, justifying the comparison of the former with the latter (V.3.100).\(^2\) The Raghubanaśa (XIII.19) also refers to devapatha (=surapatha) as an altitude in the stratospheric measurements. We learn from later literature that the walled town of Pāṭaliputra became noted for its fortifications (Pāṭaliputtrakāḥ prāsādāḥ) including its city-walls or palisades (Pāṭaliputtrakāḥ prakarāḥ), and we find Patañjali speaking of the guide-book called Sukosalā which gave a detailed (avyayavasāḥ) description of the wonderful city-walls of Pāṭaliputra (Bhāṣya, IV.3.36. II.3.11; and IV.3.134; II.321).

CITY-GATES—The plan of the ancient walled cities was rectangular, usually square, pierced with four gates, one in the middle of each wall, facing the four quarters. \((\text{Nagarassa chatusu dvāresu, Jāt. I.262; III.414; cf.} '\text{Cities and City-Gates}',\text{)}\)

\(^1\) The Mahākāyha (IV.182) and Mahāsutasoma (V.478) Jātakas mention the height of a pākāra to be 18 cubits (āṭṭhārasabatthā pākāram) or 27 ft. While visiting the Alwar fort I was told that the fort-wall is still built 18 cubits high from the ground level.

\(^2\) Vardhamāna misunderstands the point of comparison in the derivation of devapatha, when he says that the latter was so called from its possessing shady trees, supply of water and freedom from dangers in the manner of a divine road (Ganaratna. Verse 186).
Pāṇini describes the principle which governed the naming of these city-gates in the following sūtra:

Abhinīshkṛamati dvāram (IV.3.86).

i.e. 'the city-gate is named after the other city towards which it opens;' e.g. Māthuram Kānyakubja-dvāram, a gate in Kānyakubja, opening towards Mathurā.

This principle of naming the city-gates originated at least in the fifth century B.C. and has continued throughout up to our own days. Hundreds of gates built in the Mughal period derive their names in this manner, e.g. Ajmerī darwāzā, a gate situated in Delhi but named after Ajmer.

The roads leading out of the city-gates also derived their names in the same manner as stated in the following sūtra:

Tad gachchhati ṭathī dūtayoh (IV.3.85).

'The names of roads and couriers are derived from their destination.' For example, all the roads which proceeded in the direction of Mathurā, even though they were situated in different towns, were labelled Māthura by the people of each locality. Thus the Māthura road of each city passed through its Māthura gate.

Patañjali knows of a wide net-work of roads punctuated by well-marked stages for purposes of halt and rest. He refers to the road leading from Sāketa towards Pāṭaliputra (Bhāṣya, III.3.136; II.162), and again to the route leading towards Srugha (Bhāṣya, I.3.25; I.281). Pāṇini also refers to the termini of roads connecting cities. The terminus at its destination was called maryādā or limit, and the other cities on the way marked the intermediate stages at shorter (avarasmin) or longer distances of the journey (III.3.136). The Kāśikā adds the interesting fact that these halts were counted by the need of rest and meal on the way.

Pāṇini mentions the Grand Trunk Road of North India as Uttarapatha, 'the Northern Road' (V.1.77), running from
Gandhāra to the eastern country, of which the details are given by the Greek geographers.

**THE CITY**—We may thus picture a well laid-out city to have been equipped with a multitude of buildings, both for its defence and for the practical needs of residence and business. The fortification consisted of the moat, parapet wall and gateways, while the civil architecture had its residential buildings, business quarters (āpana, III.3.119), intersected by streets (śaṅchāra, III.3.119), royal store-houses (ending in agāra, IV.4.70, as koshṭhāgāra and bhāṇḍāgāra), king’s council-hall (rājasabhā) and a number of other buildings comprised under the general term śālā, e.g. places of dramatic performance (prekshā, IV.2.80), dancing, music, concerts and sports (pradhāna-krīḍā), etc. Reference is also made to ferries (nāvyā, IV.4.91).

**THE VILLAGE**—The villages were marked out by their natural boundaries, such as (1) forests (vana), (2) thickets (kaśbina, IV.4.72), (3) rivulets, (4) hills (giri), (5) jungle (jaṅgala, VII.3.25) and prastāra (rocks, IV.4.72). The village proper consisted of houses, mostly peasant cottages (kuṭīra, V.3.88), covered with a roofing of reed and straw (cchādīśeya tṛīṇa, V.1.13). An individual house (kuṭī, V.4.95) sheltering one family (gārpapāta, VI.2.42) formed the unit of village-life. The entire settlement was called vasati (IV.4.104) and a multitude of villages by the name grāmatā (IV.2.43). The village depended for its water-supply on wells (kūpa, IV.2.73), to which were attached nipānas (III.3.74) or water troughs from which cattle would drink. Wells were cleaned by specially trained labourers who acted as dredgers called udagāha or udakagāha (VI.3.60).

The area surrounding the village settlement consisted of (1) arable land (sitya, IV.4.91), (2) pasture (gochara, III.3.119), (3) plantations of bamboo thickets (vamśa-kaśbina, IV.4.72), and reeds like śara (VIII.4.5) and muniṣa (Saccharum muniṣa, III.1.117), (4) fruit-bearing trees (phalegrahi, III.2.
26), (5) reserves of herbs and plants (aushadi-vanaspata vana, VIII.4.6), (6) forests of timber as simśipā, samī, plaksha and mango (VIII.4.5), and (7) waste saline tracts or ūshara land (V.2.107).

Cultivated land was divided into a number of holdings (kshetra) which are specifically defined as plots where crops were grown (abānyānām bhavane, V.2.1). A systematic survey of agricultural land appears to have been undertaken by special officers called kshetrakara (III.2.21), who measured out each field and fixed its area (kshetra-bhakti) in terms of the kānda measure (IV.1.23); for example dvikānda kshetra-bhaktiḥ, a field having an area equal to two kānda measures. The estimated area of individual fields was further expressed in terms of the quantity of seed required for its sowing (Tasya vāpaḥ, V.1.45). The division of arable area into separate holdings (kshetra) shows that they were held under individual ownership. The term kaidārya (IV.2.40), 'a group of fields,' probably indicates some kind of consolidated holdings.

Pastures appear to have been held in common by the village for the grazing of its cattle (grāmya-pāṣu-saṅgha, I.2.73). The village also had its cattle ranches called gosṭha (V.2.18) or vraja (III.3.119). Settlements of cowherds (gopāla, VI.2.78) were known as ghosha (VI.2.85).

The site of the ranches was subject to shifting owing to exigencies of fodder. According to Pāṇini: 'A place which had formerly been occupied by a gosṭha was called gaushṭhīna' (Gosṭhāt khaṇ bhūtapūrve, V.2.18). The entire village land was marked out, as today, for habitation, grazing, dumping of manure, and agriculture, the last three shifting after every twelve years. The plot for grazing was gosṭha when in use, and gaushṭhīna after it was abandoned.

The village land was distinct from a forest (arānyya), the abode of wild people (arānyaka manushya, IV.2.129) and wild animals (arānyya pāṣu). The forests were also used for grazing of domestic animals (grāmya-pāṣu-saṅgha, I.2.73). When
a particular range was denuded of its fodder supply, it was called āśitaṅgavīna (V.4.7), i.e., 'the area where the cattle had eaten up all its fodder.' The herdsmen then moved the ranch to a different area which was called gosāpada deśa (for the use of cattle, VI.1.145). In the same sūtra Pāṇini refers to forests not so used (asevita) by cattle (agosāpada, VI.1.145), as they were too dense and impenetrable (mabāvana, Kāśikā).
CH. III, SECTION 11. FURNITURE

The progress of civilisation brought with it certain amenities, such as furniture to make life easy and homes comfortable. Furniture was of two main classes, viz. šayana, for lying down and āsana, for sitting, as mentioned by Pāṇini (VI.2.151). The word šayanāsana corresponds to Pāli senāsana which signified ‘furniture.’

As examples of household furniture Pāṇini mentions sayyā, bed (III.3.99); khaṭvā, cot (II.1.126); paryāṅka or palyāṅka, couch (VIII.2.22); āsandī,¹ settee or royal throne (VIII.2.12); vishṭara, an ordinary seat (āsana, VIII.3.93); and parpa a wheeled-chair for disabled persons (IV.4.10). One using a parpa was called parpika, evidently same as pītha-sarpī of the Vājasaneyī Sāṃhitā (XXX.24), Manu (VIII.394) and the Jātakas.

UTENSILS—Of these Pāṇini mentions (1) pātra, a vessel (VIII.3.46); kumbha, a big jar (VIII.3.46); (3) kanisā, a pot or vessel of bell-metal (cf. Vedic Index, I.130) which owing to its fragility attracted the attention of the Greeks as breaking, if it fell, like earthenware (cf. Nearchus, Frag. 7, Strabo, XV); (4) kundī, a bowl in different sizes of stone or wood (IV.1.42; also called amatra by Pāṇini); (5) sthālī, a cooking pot (V.1.70), from which was derived the phrase sthālibiliya, applied to a dainty article of food; (6) ukhā frying-pan (IV.2.17), a Vedic term (Vedic Index, I.83); (7) kalaśi, a small pitcher or vessel (IV.3.56); (8) kapāla, šarāva, earthen pots (VI.2.29) and pots of different shapes for holding water (udaka-pūrayitavya, VI.3.59), all coming

¹ Āsandī (settee) is an old Vedic word. Pāṇini uses Āsandivat, which was also the name of the royal city of Janamejaya (Vedic Index, I.72), so called because of its 'possessing the throne.' The Kāśikā equates Āsandivat with Ahisthala (VIII.1.12).
under the term kaulālaka, pottery (IV.3.118), on account of their being made by a kulāla or potter. Pottery has from time immemorial played an important role in the domestic economy of India, specially at communal feasts. Indian pottery with its long history reaching back to the age of Mohenjodaro reveals a surprising range of shapes, sizes and designs—worthy of illustration in a Corpus. At one end of this series stands the giant kusūla (VI.2.102) and at the other the tiny śarāva, or bowl (VI.2.29).

Other household articles included the winnowing basket (śūrpa, V.1.26), the churning stick (mantha, also called vaiśākha, V.1.110)¹ and spits for roasting meat (śūla, IV.2.17).

CONTAINERS—Pañini refers to leathern containers of big and small sizes called kutū and kutupa respectively (V.3.89), used for storing oil and ghee (charmamayan sneha-bhājanāni, Kāśikā); to uḍāṅka, oil-flasks (III.3.123), the opposite of which was uḍaṅchana, a big leathern bucket for lifting well-water; and to dṛiti (IV.3.56) and bhastrā, (IV.4.16). Dṛiti, a leather bag for holding fluids is frequently mentioned in the Vedic literature. Pañini derives dārteya to denote that which was filled in a leather bag (tatra bhavah, IV.3.53). We learn from the Panchavimśa Brāhmaṇa that milk (ksbīra) and liquor (surā) were kept in dṛitis.² At present it is generally used to hold water. In Pañini’s time dṛitis, leather bags, were transported on the back of animals which were therefore marked out as dṛitibari (III.2.25). This device of transporting liquids was preferred in mountainous regions where wheeled traffic was difficult.

BHASTRĀ (IV.4.16)—In the Śatapatha Brāhmaṇa (I.1.2.7;

¹Vaiśākha as a synonym of mantha still persists in the Hindi word baisākhi denoting the crutches of a lame person which exactly resemble an upturned churning stick.

6.3.16) **bhāstrā** denotes a leathern pouch. Pāṇini derives **bhāstrika** in the particular sense of one who **conveys** with a **bhāstrā** (IV.4.16). The **bhāstrikas** seem to have formed a special class of carriers engaged in river-transport by means of skin bags. The use of **bhāstrā** extended to the north-west where the people used its variant form as **bhāstrakā**, instead of **bhāstrikā** (VII.3.47).

**Goni** is mentioned as a container or sack (**āvapana**) made from **gona** (IV.1.42), obviously a cloth. It is unknown in the Vedic literature, but occurs in the Brahmajāla Sutta XV as **gonaka**, explained as a woollen cloth made from the hair of long-haired goats. It was probably the same as **kaunakēs**, one-piece loin cloth worn by the early Sumerians and the Accadians, and made of suspended loops of wool hanging from a woollen skirt (Marshall, *Indus Valley Civ.*, I.33, 342; pl. 95, fig. 10). The word seems to have travelled to India through commerce in pre-Pāṇinian times.

We are enabled to make some idea of the use of **goni**, as it is still known by its old name (cf. Hindi **gaun** or **goni**) and used to carry grain, salt, etc. on pack animals. Pāṇini knows of **goni** in two sizes, bigger, which was also the standard size, called **goni** itself, and smaller **gonitari**. The former was naturally used to load on mules and asses and the latter on goats and sheep. The standard one also served as an article useful for barter, as shown by the Kāśikā on the **sūtra** Id-goniyāḥ (I.2.50) mentioning a piece of cloth purchased for 5 or 10 **gonis** (**pañchabhīhogonibhiḥkritaḥpatāḥpañcha-gonih;** **dāsa-gonih**).

**VIVADHA** (IV.4.17), **VIVADHA**¹ (VI.3.60)—This was a device to carry loads suspended from the ends of a pole by professional carriers, and is still in use. Drinking water from

¹ Both long and short forms are used by Pāṇini himself, and hence Patañjali reads the long form **vivadhā** also in **sūtra**, IV.4.17. Another equivalent of **vivadhā** was **vīhaṅgikā** (**bāgī** in Hindi).
the village well was carried in this manner by persons called udaka-bhāra and udahāra (VI.3.60, modern kahār). The vīvadha hung from their shoulders containing pitchers full of water was called udaka-vīvadha or udavīvadha (VI.3.60). Kauṭilya uses vīvadha in the technical sense of supply or transport (Arth. XII.4, p. 388; Trans. p. 417).

STORAGE—Pāṇini refers to several forms of storage vessels in sūtra, VI.2.102, for example (1) kusūla, a large cylindrical vessel for storage of grain, made of earth and rising to more than a man’s height with a capacity to hold 15 to 20 maunds; (2) kumbha, a big earthen jar with a narrow mouth; (3) kūpa, a form of storage resembling a well and consisting of a series of earthen rings arranged one above the other; and (4) sālā, a masonry structure or store-room specially built for the purpose. The opening near their bottom for taking out corn was called bila.
CH. III, SECTION 12. CONVEYANCES

The means of transport are referred to as vahya (III.1.102) or vâhana; which was of two kinds, viz. vehicles for carrying load on land (as in the sūtra Vāhanam āhibāt, VIII.4.8.), and means of transport in water called vāhana or uda-vāhana (VI.3.58). The name of the load-bearing cart was specified according to the nature of its load (ābīta), e.g. ikshu-vāhana, sara-vāhana, dārīha-vāhana. Šākaṭa denoted the waggon for carrying goods, with sturdy bulls called šākaṭa (IV.4.80) yoked to it. (Cf. Vedic Index, II.345). Patañjali refers to caravans of carts (šakta-sārtba) passing along highways (III.2.115; II.120). In Buddhist literature numerous references to merchants conveying their goods and merchandise across the country, in caravans of 500 carts are met with, indicating the growing importance of wheeled traffic (šakta) for transport of heavy goods.

CHARIOT—Ratha (IV.2.10 etc.) was the more aristocratic conveyance. A collection of chariots is referred to as rathyā and ratha-kaṭyā (IV.2.50-51). The use of chariots for army was also known. Pāṇini refers to the divisions of an army (senānga, II.4.2), which according to the commentary included chariot-men and horsemen (rathikāsvāroham).

Several kinds of chariots were known, each named after the draught animal yoked to it (IV.3.122). On this Patañjali mentions chariots drawn by horses (āśvaratha), camels (aṁshṭra-ratha) and asses (gārdabha-ratha; Bhāṣya, II.318). Naturally the wheels and other parts of a camel-chariot must

1 The Mahānīḍḍhesa refers to ottba and kbara yānas and Jāt. VI. 355 to assatarī ratha. cf. Conveyances by G. P. Majumdar, Indian Culture, Vol. II.277. Also Vedic Index, II.202, for horses, asses and mules yoked to chariots.
have differed in dimension from others to suit the size of the yoked animal. The carpenter's vocabulary must have expressed this distinction by appropriate terms derived from the name of the draught-animal, and Pāṇini makes a provision in sūtra IV.3.122, Patra-pūrvād-aṅ. For example, a pair of wheels was labelled variously as āśva-ratha-, aushtra-ratha- or gārdabha-ratha-chakra (Pat. II.318 and Kāśikā) according to the kind of chariot for which it was required.

Pāṇini refers to the various parts of a chariot (rathāṅga) under the name of aṭaskara (VI.1.149). According to a vārttika on IV.3.121, rathya denoted parts of a chariot, as wheel, axle, etc. This special term derived from ratha seems to have been required in the cartwright's vocabulary to distinguish the chariot-parts from those of a cart, which were neither so costly nor so nicely built.

Upadhi denoted the part of a wheel between the nave and the circumference to which spokes were fitted. The cartwrights take special care in the selection of wood to make upadhi and hence the special word aṇpadbeya (V.1.13) became current. The axle is called aksba (V.4.74). In sūtra VI.3.104 Pāṇini refers to kāksba in the sense of an inferior (kutsita) axle. The inferiority may be due to diminution in its standard length, which according to the Śulba Sūtra of Āpastamba was 104 aṅgulas (=78 inches, or $6\frac{1}{2}$ ft.) (Vedic Index II.206). Pāṇini also refers to inferior chariots (kad-rathas, VI.3.102), being below the standard size. As against this, were the parama-ratha (superior chariots), implied in sūtra IV.3.121, both on the authority of Kātyāyana and Patañjali (Bhāṣya, I.1.72, vārt. 16, I.186). According to the Āpastamba Śulba Sūtra the dimensions of a chariot of standard size were: pole =188 aṅgulas, $11\frac{1}{4}$ ft; axle=104 aṅgulas, $6\frac{1}{2}$ ft.; yoke=86 aṅgulas, 5 ft. $4\frac{1}{2}$ inches (Āpastamba Śulba Sūtra, Mysore edition, p. 95; Vedic Index, II.203). The epithets kad-ratha and parama-ratha became current in relation to some such specification of standard size.
CHARIOT-UPHOLSTERY—After fabrication, the chariots were upholstered (Parivṛtto rathah, IV.2.10) of which the Kāśikā mentions three varieties, viz. vāstra, kāmbala and chārmana, i.e. mounted with cloth, blanket and leather. Chariots covered with a special woollen stuff known as pāṇḍu-kambala were called pāṇḍu-kambali (IV.2.11). According to the Vessantara Jātaka, pāṇḍu-kambala was a kind of red-coloured blanket imported from Gandhāra (Vessantara Jātaka, VI.500, Indagopaka-vanṇābba Gandhāra pāṇḍu-kambalā), which, as the commentary adds, were of red colour and used for the army (Jāt. Commentary, Vol. VI. p. 501, Gandhāra-ratthe uppannā satasahassagghanikā senāya pārūtā ratta-kambalā).

Leopard and tiger skins were also in use for special upholstery, the chariots so covered being called dvaiṇa and vaiyāgbra respectively (IV.2.12). The earliest reference to vaiyāgbra chariots used in the ceremony of royal consecration is found in the Atharvaveda (Vyaṅgro adhi vaiyāghre vikramasva, IV.8.4). It is interesting to note that like pāṇḍu-kambala the dvaiṇa and vaiyāgbra chariots also had become popular in the epics and the Jātakas. A verse in the Vessantara Jātaka records the gift of 700 such conveyances by prince Vessantara (Satta rathasate datvā...diśe atbo ṭi veyyaggbe, Vessantara Jātaka, VI.503), which the commentary explains as diśecchamma-vyaggbacchamma-ṭarikkbītte.

The Mahājanaka Jātaka refers in a song to artistically decorated diṭa and veyaggbe chariots (Jāt. VI, pp. 48-50). It appears that chariots so upholstered were intended for royalty. Rāma mounts the vaiyāgbra chariot on the eve of his proposed consecration as heir-apparent (Rāmāyana, II.16.28). Among the presents brought to Yudhisṭhira by kings of the Prāchya

1 Pāṇḍukambala occurs in Sasa Jātaka (Vol. III. p. 53, Pāṇḍukambala-silāsamam, rocky seat of Indra covered with pāṇḍu-kambala). Cf. also Jātaka, VI.515, for Vessantara’s elephant covered with pāṇḍu-kambala, showing the wide use of this stuff in the Jātaka period.
country were included vaiyāghra chariots each valued at 1000 kārshāpaṇas (Sabhāparva, 51.33, vaiyāghra-परिवारिता-रथa, and 61.4, sabasra-samita vaiyāghra-राजा ratha). The scabbard of Bhimasena is spoken of as vaiyāghra kosa (Mahābhārata, Virāṭa-parva, 38.30, 55, Poona edition).

A chariot suited for rough use on all kinds of roads was, called sarvapathīna (V.2.7). Among different classes of roads Kauṭilyya specially mentions one called rathapatha being 7½ ft. wide (Arth. Text, II. 4., p. 54).

RUNNING FOOTMEN—In sūtra VIII.3.75, Pāṇini states that the word-form pariskanda is current in the usage of the eastern people and of the Bharata janapada. It implies that in the idiom of the Udīchyas it was called parishkanda (cerebralised form), which occurs five times in the Vṛātya hymn of the Atharvaveda. Pariskanda denoted running foot-soldiers one on each side of a war-chariot (Vedic Index, I.497), who are referred to as chakra-raksha in the Bhīshmaparva (18.16).

A TERM OF CART-WRIGHTS—Sūtra I.4.78, Prādhvam bandhane, implies several stages in the making of carts and chariots. The idiom prādhvam-kṛitya, 'tying with cords,' refers to the final phase through which each vehicle has to pass in the process of manufacture before it becomes road-worthy. The carpenter first proceeds to prepare the different parts of a chariot (rathāṅga) one by one, as wheel, axle, pole, yoke, etc., and then assembles them together. Patañjali says that the parts of a chariot lying singly are not fit for locomotion and that only when they are assembled as chariot they contribute to movement (vraja, to move). After the frame-work is

2 In the Atharva, XV.2.1. et seq. the form is dual; but Taittiriya Br. III.4.1.7, has singular, Bhumne parishkandam (=parichārakam, Bhāṭṭa-Bhāskara).
3 Ṣathā tarbi rath-āṅgani vihritāni pratyekeṁ vraji-kṛiyāṁ pratya-
ready, the third process is to mount it with upholstery. The fourth stage is that of binding the parts with cords to keep them tight together. This is generally done, not by the carmaker but by the buyer at his place. A cart or chariot, even though all its parts be ready, is not considered road-worthy, unless it has undergone this stage of cording (bandhana). Therefore the phrase prādhvam-kṛitya, literally 'having made it road-worthy,' has the meaning of bandhana. The counterexample prādhvam-kṛitvā is derived from a chariot already in use, but which gets out of order and stranded, and then subsequently repaired and put on the road.¹ According to Pāṇini prādhvā (V.4.85) is that which is 'road-worthy' (prādhvā ratha, prādhvā sakaṭa).

asamartbhāni bhavanti, tat-samudāyaścha rathāḥ samarthaḥ . . . Bhāṣya, 1.2.45; 1.220.

¹ Cf. Kāśika, prādhvāṁ kṛitvā sakaṭan gatāḥ. . . The grammatical interest rotates round the gati samijñā of prādhvāṁ in the sense of 'fastening' and its absence in the latter case. The effect of gati samijñā is two-fold, viz. the compound and ṭyāḥ suffix in prādhvāṁ-kṛitya.
CH. III, SECTION 13. DRAUGHT-ANIMALS

A draught-animal is referred to by the peculiar term *patra*, from root *pat*, to move (III.1.121; IV.3.122-123). An animal fit to be yoked is called *yugya* (III.1.127). In the *Tad-vahati* section (IV.4.76-81) Pāṇini classifies animals on the basis of their being yoked to different vehicles and their capacity to draw various loads, as (1) *rathyā*, bulls to draw chariots (IV.4.76); (2) *sākata*, bulls for carts (IV.4.80); (3) *bālika* and (4) *sairika*, bulls for ploughs (IV.4.81). These distinctive terms were used in connection with the care and quantity of rations prescribed for the animals of each class, as we find in Kauṭilya (*Arth. II* 29, p. 131).

There are some bulls whom the drivers can yoke on both sides alternately, that is both on the right or left side of the pole. These were called *sarva-dhurīṇa* (IV.4.78) (*dhura*, frontal pole, *Jāt.I.192*). There are others who can be yoked on one side only, such being termed *eka-dhurīṇa*, the right one called *uparāl* in Hindi and the left one *tarvāl*.

We have already referred to various kinds of chariots (IV.3.122) drawn by different animals, as horse, camel, ass or bull, who must have been yoked in even numbers as two, four, etc. In addition to them sometimes a leader was yoked in front and called *prasṛṭha* (*Prasṛṭho’ gragāmini, VIII.3.92*), for which the Vedic term was *prasṛṭi*, the epithet *prasṛṭivāhana* or *prasṛṭivāhin* being used for such a chariot (*Vedic Index, II.42*). In Bharhut, Sanchi and Mathurā sculptures, the chariots are drawn only by two or four horses or bulls, without a *prasṛṭha*.

Pāṇini refers to bull-riders (*go-sāda*, and *gosādin*, VI.2.41), camel-riders (*uṣṭra-sādi*); to mounted officers (*yuktārobin*, VI.2.81), probably couriers or cavalrymen; to charioteers
(sārathī, VI.2.41); to reins (pragraha, raśmi, III.3.53); to expert bull-drivers (gosārathī, VI.2.41); and others competent to drive all kinds of animals (sarva-pātrīṇa, V.2.7).

ĀŚVINA—Āśvīna (aśva+khaṇ) denoted the length of journey made in one day by a horse (Āśvasya-aikāhagamāḥ, V.2.19).

In the Atharvaveda (VI.131.3) the āśvīna distance is mentioned immediately after 3 or 5 yojanas and appears to have exceeded the latter (Vedic Index, I.70). The Arthasaśtra defines precisely the āśvīna distance, as it was needed to calculate the travelling done by Government servants, and for determining the marches of cavalry or other post-chaise arrangements.

The āśvīna distances in the Arthasaśtra are as follows:—

<table>
<thead>
<tr>
<th>Quality of horse</th>
<th>Chariot-horses</th>
<th>Riding horses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>6 yojanas</td>
<td>5 yojanas</td>
</tr>
<tr>
<td></td>
<td>= 31 miles</td>
<td>= 25½ miles</td>
</tr>
<tr>
<td>Middle</td>
<td>9 yojanas</td>
<td>8 yojanas</td>
</tr>
<tr>
<td></td>
<td>= 46 miles</td>
<td>= 41 miles</td>
</tr>
<tr>
<td>Best</td>
<td>12 yojanas</td>
<td>10 yojanas</td>
</tr>
<tr>
<td></td>
<td>= 61 miles</td>
<td>= 51 miles</td>
</tr>
</tbody>
</table>

A yojana was equal to 5 5/44 miles.

(Arthasaśtra Trans. p. 149; Text, II.30, p. 134).

Thus the minimum length of one day’s horse-journey in the Arthasaśtra is 5 yojanas for a saddle horse of ordinary quality and 6 yojanas for a carriage horse. The āśvīna distance in the Atharvaveda was more than 5 yojanas, i.e. somewhere between 6 and 8 yojanas. According to Patañjali, the distance travelled by an average horse (aśva) was 4 yojanas and by a superior horse (aśvatara, V.3.55; II.413) 8 yojanas (aśvo’yaṁ yaś-chatvāri yojanāni gachchhāti, aśvataro’yaṁ yo’ashtau yojanāni gachchhāti).
Ch. III, Section 14. WATER TRANSPORT

Pañini refers to navigable rivers like the Sindhu, and also to samudra or ocean (IV.4.118). He knows of two kinds of islands, viz. (1) near the sea-coast (anu-samudra), and (2) in the main ocean. Goods imported from the former were called dvaipayā, and from the latter dvaipa or dvaipaka (IV.3.10).

Boats are called nau (V.4.99), and also udaka-vāhana or udavāhana (VI.3.58); oars aritra (III.2.184); and a boatman, nāvika (nāvā tarati, IV.4.7).

Pañini refers to a boat-ferry as nāvya (IV.4.9), same as nāva-tittha (Jāt., III.330). A ferry on the Indus was located near Pañini’s own home in Śalātura, as stated in a later inscription (Śala-no-krama).1 The Indus near this place is crossed by a boat-bridge for eight months of the year, and for the remaining four months the passage is effected by a ferry (Imp. Gazetteer, Vol. 1.382).

The worth of merchants was assessed in terms of the number of shiploads of merchandise, e.g., dvināva-dhana, a merchant having two cargo boats (Nāvo-dvigoś, V.4.99; Kāśikā). One who was sailing with five ship-loads was called pañchanāva-priya. A shipment arriving with two cargo boats was designated as dvināva-rūpya.

Supposing a full consignment of riverine trade was comprised of a hundred boats, it would happen that at important landing places, the cargo of some of these boats was unloaded and disposed of by exchange with other local goods, which latter were reloaden on the boats. Such transactions are referred to by the Kāśikā as pañchanau, daśa-nau (pañchabhiḥ

1 Sten Konow, Corpus of Kharosṭhī Inscriptions, Shakardartra Well Inscription, p. 159. An ancient copy of this inscription is now deposited in the Mathurā Museum.
naubbhā kritāḥ; V.4.99). A trader would own either the whole cargo boat or was sharing only a part of its merchandise. The cargo of 'half-a-boat' as well as its sale proceeds would be called ardha-nāva (Ardhāchchha, V.4.100).

Pāṇini also refers to another popular method of water transport called bhastrā, a raft of inflated skins; one who carried goods in this way was called bhastrīka (IV.4.16; Bhastrayāharati). This method of crossing is frequently resorted to in the flooded rivers of the Panjab, the N.W.F.-P., and Afghanistan and is considered the safest and quickest (see Imp. Gaz., N.W.F.-P., pp. 117-118).1 In Persia also the Behistun Ins. refers to "floats-of-skin" (mashkākhuvā) used by Darius. Examples are seen sculptured on Assyian panels from Sennacherib's palace, and Herodotus also mentions this cargo-raft on the Tigris.1

In the previous sūtra Haratyutsaṅgādibhyah (IV.4.15) reference is made to transporting by means of utsaṅga, a kind of small dug-out float, called chaṅg in Sindh, similar to the Roman cumba, a small boat made originally from the hollow of a tree and used on rivers and lakes by fishermen; udupā, another small boat shaped like the half-moon (cf. Hindi ḍongī), utpata, probably a longish fishing boat; and piṭaka, a basket-like coracle made of weeds and rushes covered with leather.

1 In Baltistan such contraptions are called zak (from Tibetan yak skins). A zak is now a raft of sewn-up goat skins, one leg of each left open for inflation. The skins are tied to a platform of sticks or have a fisherman's net spread on them on which the passengers travel at the rate of eight miles an hour, the Shighar zak consisting of four rows of four skins. In the Panjab a rude raft is made by tying together two inflated bullock-skins, with a charpoy on it for passengers. The rafts are so light that on reaching a downstream destination the crew merely pick them up and walk back along the bank with them. For the skin-raft (bhastrā), coracle (piṭaka), dug-out float (kāṇḍa-plava, Kāśikā, IV.4.5), see Hornell, Primitive Types of Water Transport in Asia, J.R.A.S., 1946, pp. 124-141.
TYPES OF BOATS

Bhastrā (inflated skins)
Piṭaka (coracle)
Utsaṅga (cumba)
Bharāṭa (float of wood)
SPORTS (KRĪḌĀ)—The following are some of the sports (krīḍās) mentioned by Pāṇini: (1) wrestling, (2) jousts, (3) hunting, (4) dicing, (5) garden pastimes, and (6) musical entertainments.

Sport was called krīḍā (VI.2.74; IV.2.57). A sportsman ākrīḍi (III.2.142), and the different parts of the play had their own names, e.g. anukrīḍā, saṁkrīḍā, parikrīḍā and ākrīḍā (I.3.21).

SAMAJYĀ—Pāṇini refers to samajyā (a saṁjñā in III.3.99) which Kātyāyana and Patañjali explain as a place where people flock together (saṁajantī tasyāṁ saṁajyā, Bhāṣya, II.152). We are indebted to the Jātakas for information that the saṁajjās (=saṁajyā) were special gatherings ‘where crowds of men, women and children gathered together and witnessed various kinds of shows and performances, like dancing and music, combats of elephants, horses and rams, bouts at quarter-staff (daṅdebi yuddhaṁ) and wrestling.’ (R. L. Mehta, Pre-Buddhist India, p. 355). The Vidhurapañḍita Jātaka refers to saṁajyā gatherings of men and women, and seats arranged in tiers upon tiers (maṁchāti maṁche, Jāt. VI.277). The saṁajyā gatherings formed a regular feature of social life in the Mahājana period.

Pāṇini also refers to assemblies under the general name of saṁavāya (IV.4.43), which according to the commentators included saṁāja. A cattle-fair was known as saṁajā (III.3.69), distinguished from a human assemblage (saṁāja), as stated above. Pāṇini explains saṁājīka in two senses: (1) who attends a saṁāja as its member to witness its games, and (2) the convener of a saṁajā (IV.4.43 and IV.4.33, rakṣbhati of the latter being taken as aiding a saṁajā by organizing it).
Samāja and samajyā appear to be synonymous terms, the first of wider meaning including religious gatherings also. Asoka interdicted the popular samāja as not promoting morals.

WRESTLING—Pāṇini refers to the term saṅgrāha, i.e. gripping in wrestling (Sami mushāu, III.3.36). Kātyāyana points out that saṅgrāha does not mean ‘palm-ful’ as taken by some. Patanjali’s gloss is mallasya saṅgrāhah, musṭikasya saṅgrāhabh (grip of a wrestler). The Jātaka calls a wrestler muṣṭhiba (Jāt. VI.277). Wrestling begins with a challenge (āhvāna, I.3.31; malle mmallam āhvaye), which is answered by a responsive action (karma-vyatihāra).

Jousts—Pāṇini mentions a joust as prabarana-kriddā, ‘a pastime with weapons.’ The name of the sport takes after the weapon used in it as prescribed in the sūtra Tadyāṇi prabaranaṃ iti krīḍāyāṃ naḥ (IV.2.57). The Kāśikā cites as examples maushtā (boxing) and dāṇḍā (lāthi-play). The Sarabhāṅga Jātaka describes sports of archery with such feats as arrow-stick, arrow-rope, (Jāt. V.130, sara-laṭṭhi, sara-rajju, etc.).

THE EASTERN SPORTS—Pāṇini knows of the sports of Eastern India (Prāchāṃ krīḍā, VI.2.74), for which he frames proper grammatical formations (II.2.17, sport-denoting words form a nitya compound, with nīl suffix). As examples the Kāśikā mentions the following: Uddālaka-पुष्प-भान्यिक, Vīraṇa-पुष्प-प्रचायिक, Śāla-भान्यिक, Tāla-भान्यिक (Kāśikā on VI.2.74, III.3.109 and II.2.17). Rule VI.2.74 regulating the accents in the compound-names of these sports shows that Pāṇini was acquainted with the institutions of social life and national sports of the remote regions of eastern India.

THE NATURE OF EASTERN SPORTS—Some of these sports relating to the plucking of flowers (prāchya-krīḍās) are illustrated in early Indian art. According to Dr. Vogel: “It is interesting that these games are said to be peculiar to Eastern India, as this tallies with the mention of the Śāla-bhaṅjikā festival in Buddhist literature. It is evidently
Magadha, the cradle of Buddhism, and the neighbouring countries, that may be taken to have been its home.” (The Woman and Tree or Śālabhaṇḍikā in Indian Literature and Art, Acta Orientalia, Vol. VII. pp. 203-204).

A graphic account of these popular festivals is found in the Avadānasātaka: “Once the Lord Buddha dwelt at Śrāvasti in the Jetavana, the garden of Anāthapiṇḍada. Now at that very time the festival called śālabhaṇḍikā was being celebrated at Śrāvasti. Several hundred-thousands of beings assembled there and, having gathered śāl blossoms, they played, made merry and roamed about.” (Ibid. p. 201). And again quoting from the Nidānakathā (Jāt. I.52) the description of the śālabhaṇḍikā festival celebrated in the Lumbini garden: “Now between the two towns (Kapilavatthu and Devadaha) there is an auspicious grove of śāl trees belonging to the people of both cities, and called Lumbini Grove. At that time from the roots to the topmost branches it was one mass of full-blown flowers; and amidst the branches swarms of five-coloured bees, and flocks of birds of different kinds, roamed, warbling sweetly. The whole of Lumbini Grove was like a wood of variegated creepers, or the well-decorated banqueting hall of some mighty king. The Queen beholding it was filled with the desire of disporting herself in the śāla grove (sālavakilāni kiliṭukāmatā); and the attendants entered the wood with the Queen. When she came to the root of an auspicious śāla tree, she wanted to take hold of a branch of it. The branch, bending down, like a reed heated by steam, approached within reach of her hand. Stretching out her hand she took hold of the branch, and then her pains came upon her.” (Cf. Rhys Davids, Buddhist Birth Stories, London 1880, Vol. I, p. 66).

The motif of the woman plucking flowers from a distended bough is met with on the toraṇas of Bharhut and Sānci in the Śuṅga period and is continued on the railing pillars of Mathurā during the Kushāṇa period. It also appears in a limited number of examples in Gandhāra art of the Kushāṇa age, but the weak
treatment of the subject there betrays its having been imported from the East. We have in the Kāśikā an example of a game played by people of the North known as Jīva-putra-prachāyikā.\(^1\) Vātsyāyana in the Kāmasūtra mentions as examples of deśya kridās (local sports) similar names ending in aka suffix, e.g. Sahakāra-bhañjikā, Abhyūṣha-khaḍikā (cited by Kāśikā, on III.3.109), Udaka-kṣveḍikā,\(^2\) Bisa-khaḍikā, Aṣokottamisikā, Pushpāvachāyikā, Chūta-latikā, Damana-bhañjikā, Ikshu-bhakṣikā, etc.

A feature of all such sports played by the gathering of fruits or plucking of flowers was that the plucking should be done by hand (bastādāne cberasteye, III.3.40). According to this rule the form pushpa-prachāya would not be regular unless the plucking was done by hand.

HUNTING—Hunting is referred to as lubdba-yoga (V.4.126), and a hunter was called mārgika, 'one who shoots mṛgas,' and a bird-trapper pākṣika or sākunika (IV.4.35).\(^3\) Among mṛgas the Kāśikā includes not only deer, but also big game like the boar. The fowlers are said to have derived their epithets from the names of particular birds trapped by them, as māyurika, taittrika. Game-shooting was done with arrows provided with barbs (patra), and such arrows are noted by Pāṇini to have caused extreme pain (ativyathana, V.4.61). He refers to two words in connection with shooting barbed shafts, viz. sapatrā when the arrow with the barbed end gets stuck inside the body of the animal, and nishpatrā when the barbed end pierces the body from one side with such force as to emerge on the other (V.4.61). Wounding an animal in the right flank was known as dakshiṇermā\(^4\) (V.4.126) in the

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\(^1\) Iyam Udichāñh kriḍā, Kāśikā, VI.2.74.

\(^2\) Played in Madhya-deśa according to Jayamaṅgalā. It is depicted in the Sigiriya paintings of Ceylon, also called Śrīṅga-kriḍā.

\(^3\) Paksbi—matsya—mṛigān banti, IV.4.35.

\(^4\) Irma denoting 'arm, side, haunches, forequarters' was an old Rigvedic word (RV. VIII.22.4).
hunter’s slang (lubdhayoga). It was less fatal than the shot in the left side, and hence the need of the term in the language, for it was of some consequence to the hunter to know whether the game had been pierced in the right or the left flank.

Pāṇini knows of the habits of big game roaring or yelling at a particular time of day or night (IV.3.51, Vyāharati mṛgāḥ), as shown in the expression (1) prādoshika (at dust) and (2) naiśika (at night). [Cf. Karṇaparva, 31. 40, krav-yādā vyābarantyete mṛgāḥ kurvanti bhairavam].

The hunters moved with a pack of hounds (Śva-gaṇena charati, IV.4.11). Pāṇini’s śvāgaṇika or śvagaṇika anticipates the śvagaṇin hunters mentioned in the Arthasastra, who were employed by the State to keep the pastures free of wild animals and thieves (lubdhaka-śvagaṇibhiḥ, II. 29 p. 130). In a Bharhut scene we actually find a hunter attacking his game with hounds (Barua’s Bharhut, Vol. III, fig. 146).

The fisherman is referred to as māṭsyika and mainika (IV. 4.35). His equipment consisted of a net called jāla and ānāya (III.3.124).

DICING (AKSHA-DYUTA)—Dicing is mentioned as a game from the time of Rīgveda onwards. It is referred to as aksha-dyūta (IV.4.19) or simply dyūta (III.3.37) in the Aṣṭādhyāyī. Pāṇini records a grammatical idiom according to which the words denoting the objects with which the game was played were connected with the verb div either in the instrumental or accusative case (I.4.4, Divaḥ karma cha). For example ‘akṣaṁ dīvyati and akṣaṁair dīvyati’ (he plays with dice) were both used, probably from the fact that the game and its accessories of play were both called akṣha.

Pāṇini calls a dicer ākṣhika (Tena dīvyati, IV.4.2.). Patañjali says that kitava and dhūrta formed part of the śauṇḍādi group (II.1.40) and he refers to a practised gambler as akṣha-kitava and akṣha-dhūrta (Bhāṣya, I.390). Kitava, ‘a gambler,’ was an old Vedic word (Vedic Index, I.156-7),
used also in the Buddhist literature (cf. aśippa dhuttaka and sikkhita kitava, Jāt. VI.228; also Dharmapāda, verse 252) and the Mahābhārata (Sabhāparva, sā.9). ACCESSORIES OF PLAY—Pāṇini refers to two distinct methods of the game, i.e., one played by aksbas, and the other played by śalākās (II.1.10). A player with the former was called ākshika and with the latter śalākika (cf. Kāśikā on Pāṇini, IV.4.2). The Arthaśāstra also refers to both of these, stating that the Superintendent of Dicing shall supply aksba and śalākā to the players (Artha. III.20. p. 198). The aksbas seem to have been cubical and the śalākās oblong pieces marked on the sides with points or numbers. In the representation of the gambling scene at Bharhut the aksbas are shown as little cubes (Cunningham, Stupa of Bharhut, pl. XLV).

The manner in which the game was played in olden days differed from that current today. At present only two pieces are used. But in ancient times the number of dice was five, at least so in the Brāhmaṇa period. In the Taṭṭiriya Brāhmaṇa it is said that ‘he hands to the king five dice, for these are all the dice’ (Taṭṭ. Brāh. I.7.10). These pieces were called Aksharāja, Kṛita, Tretā, Dwāpara and Kali (Vedic Index, I.3). The game as it was known to Pāṇini must have been played with five dice pieces as the form chatushpāri ‘an unlucky throw by four’ (II.1.10) shows. The Kāśikā, Chandra and Kaiyata agree that the game implied in sūtra, II.1.10 was pāṇchikā dyūta.

METHOD OF PLAY—Pāṇini throws light on the method of play in the following:

Aksba-śalākā-saṅkhyāḥ pariṇā (II.1.10).

The words aksba and śalākā and the numerals (up to four) are compounded with pari to form an Avyayībbāva compound,

1′. . . .kitava is used here in the usual sense of “gambler” without any special pejorative meaning.’ (K. de Vreese, “The Game of Dice in ancient India (The Vibhātaka Game),” Orientalia Neerlandica, Lieden (1948), p. 352. The interpretation of kitava by “cheat” does not suit the context.
when, as observed by Kātyāyana, the resultant words denote gambler’s throws (kitava-vyavabāra, vārt. on II.1.10). Thus we have the following forms:

1. Aksha-ṇari;
2. Śalākā-ṇari;
3. Eka-ṇari;
4. Dvi-ṇari;
5. Tri-ṇari;

The forms were used to indicate a deviation from the winning throw. The Pañchikā game was played with five dice or five ivory pieces. When all these five pieces fall with faces turned upward, or all with faces turned down, then the thrower wins the game. But when the fall is otherwise, he loses it (Kāśikā on II.1.10). For example, when four pieces fall alike and one is different, the dicier exclaims: Akshaṇari!, Śalākāṇari!, Ekaṇari!, i.e. missed by a single aksba or by a single salākā. The expression ekaṇari was synonymous with akshaṇari and śalākāṇari as shown in the Kāśikā cited in the Bhāṣya (ekatve’ksba-śalākayoh, I.379). If the throw fell amiss by two, it was called dvi-ṇari; if 'by three,' triṇari; and if 'by four,' chatushṇari. When all the five pieces fell uniformly the throw was called a winning throw of which the technical name was Kṛita. The name for the losing throw was Kali. According to the Dhammapada a deceitful player (kitavo sathbo) tries to conceal his losing or kali throw (verse 252). In the Bhūridatta-Jātaka-Vatthu, kali and kṛita are contrasted (Kali bi dbirānaṃ katham mugānāmi, 'Loss to the wise, a gain to the fool,' J.R.A.S., 1892, p. 127; also Jāt. VI.228). In the Chhāndogya Upanishad (IV.1.4) kṛita is the winning throw. In the Sabhāparva (52.13) Śakuni is described by Vidura as kṛita-basta, i.e. one who takes a winning throw. Pāṇini also refers to these two kinds of throws:
Kritam grihṇati—kritayati
Kalim grihṇati—kalayati (III.1.21)

These must have been current expressions used during the progress of the game when a player scored a winning or a losing throw. In the Vidhuraśāṅkīta Jātaka (545) a graphic description of the gambling scene between the Kuru king and the Yaksha Puṇṇaka is given and there an expression identical with that of Pāṇini is used:

'rājā kalim vichinam aggahesi,
kaṭam aggha Puṇṇako pi yakko.'

'The king played the losing throw and the Yaksha Puṇṇaka the winning throw.' (Jāt. Text, VI. 282; Trans. VI 138). It is stated there that the Yaksha was reshuffling with his miraculous powers such dice as were falling against him. The bhasamāṇa pāsaka (missing dice) of the Jātaka correspond to Pāṇini's ekapari, etc. It also appears that so long as a player was taking the krita throw he went on repeating his throws. But after the kali throw, the turn went to the other player. When once either Sakuni or Puṇṇaka begins to win deceitfully, he continues to throw the dice up to the end of the game.

WAGER (GLAHA)—Sakuni opined that dicing, a noble game, was maligned only because of its association with a stake (akṣha-glabha, Sabhā. 59.8). According to Pāṇini glabha is irregularly derived when it relates to the vocabulary of dicing (Aksbēshu glabah, III.3.70). According to the Vedic Index, glabha was a later form used in the Atharvaveda for grābha of the Rigveda meaning a 'throw' at dice (I.248). This may be its original meaning, but in classical Sanskrit glabha always denoted the stake and not the throw (Cf. Yaj. Śrīti, II.199 as rendered by Mitākṣharā, kitava-parikalpita paṇa; also Sabhā-

1 The sūtra deliberately reads kala instead of kali, as shown by Kātyāyana's vārttika 'bali-kalyoratva-nipātanam (Bhāṣya, II.28), which says that there can be no desiderative form in kalayati, since no one would wish for himself a losing throw.
parva, Dyūta Section where it invariably means a wager). This meaning Pāṇini had in view. Other references in Pāṇini to wager or stake-money are śatasya vyavaharati, śatasya paṇate (II.3.57), śatasya divyati (II.3.58), śatasya pratidivyati (II.3.59), all denoting ‘he stakes a hundred rupees’ in dyūta.¹

According to the testimony of the Vedic literature, Jātakas, Mahābhārata (Sabhāparva) and Kauṭilyya dicing was a game played in a sabhā. The Arthaśāstra prescribes 5 p.c. as Government fee to be realised on the amount of wager (Arth. III.20 p. 198). This would correspond to pañchakah (pañchāśmin āyāh), cited in the Kāśikā to illustrate sūtra, V.1.47.

ANOTHER BOARD GAME—Pāṇini also refers to a game resembling draughts or the Indian chaupar, which must have been played on a board (ākarsa, V.2.64) divided into squares, and in which the essential thing was the movement of the gamesmen from square to square in accordance with the results of the throw of the rival players. The gamesmen were known as sāra and the movement of the pieces as parināya (pari+ṇāya in the sense of dyūta, III.3.37), parināyena banti sārān (example on Pāṇini, III.3.37), i.e. he hits the rival gamesmen by an encircling movement (samantān-nayanena) of his own pieces.

Ayānayīna, a technical term mentioned in sūtra, V.2.9, denoted a gamesman fit to be moved to a square of safety. Patañjali comments on its meaning: ‘By giving the sense as ‘that which is to be carried to ayānaya’ the meaning is not made quite clear as to which is naya and which is anaya.’ (To this we reply). ‘The right hand move is aya and the left hand move anaya. (The pieces move both right and left with reference to the rival players seated opposite to each other). That square is called ayānaya in which pieces coming both from right and left (which virtually means the gamesmen of both players) are not attacked by their rivals. The gamesman that is desired

¹ Another sense of all these sentences is: he deals in sale and purchase transactions worth one hundred rupees (kraya-vikraya-vyavahāra).
to be moved to such a safe square is spoken of as *ayānayīna,* Bhāshya, II.373). On each side of the board there are such checkered squares in which rival gamesmen may rest without being attacked. This description holds good in the case of *chaupar* which thus appears to be an old game.
MUSIC

The tradition of the musical art in India is of high antiquity. In the sculptures at Bharhut and Sanchi both vocal and instrumental musicians are found frequently represented. In the Arthashastra of Kautilya music and musicians are often mentioned. In the Jataka literature music forms a chief item of social and individual entertainment. Panini's Ashtadhyayi which in point reflects an even earlier stage of culture, shows an equally full acquaintance with the various branches of the musical art. Besides referring to vocalists and instrumentalists, the Ashtadhyayi also mentions orchestral bands including singers to the accompaniment of vina, one of the most popular instruments in ancient Indian music.

MUSIC, A SILPA—In Panini's days music was regarded as an art (silpa). Not only instrumental music as cymbals, tabor, (IV.4.55-56) but also dance (III.1.145) and vocal music (III.1.146-47) are mentioned under the category of silpa. In the Jatakas also music is a silpa.

Music comprised nritta (dance), gita (song), vaditra (instrumental music), and sometimes also natyana (stage-acting). The Khantivadi Jataka mentions these four branches together as part of royal entertainment (gita-vaditra-natyana-chetana nataka nitya gitanayam, Jat. III.40). Kautilya also treats gita, vadya, nritta, and natyana as parts of music (Arth. II.27, p. 125). The Ashtadhyayi refers to all of them, e.g. song is referred to as giti (III.3.95) and geya (III.4.68), a vocal singer as gathaka (III.1.146) and gayana (III.1.147), a songstress as gathikka and gayani, a dancer as nartaka (III.1.145 as explained by Patañjali), dance as nritta (I.3.89, VII.2.57), and a player on an instrument as parivadaka (III.2.146). Stage acting is mentioned as natyana (IV.3.129).
Pāṇini's reference to a treatise called the *Nāṭasūtra* (IV.3.110) shows that the theoretical side of the dramatic art was also studied.

**ORCHESTRA**—The idea of having a concert of different instrumentalists was known to Pāṇini. The band was collectively known as tūrya, and individual members tūryāṅga (II.4.2). In concert two allied instrumentalists were grouped together, and the group was denoted by a compound in the singular number (II.4.2). For example, the set of players on *mṛdaṅga* and *pānava* was referred to as mārdaṅgika-pānavigam. The *Kāśikā* adds to this vīṇāvādaka (lute-player)—parivādakam. Pāṇini refers to parivādaka in *sūtra*, III.2.146 without stating its meaning. It appears that parivādaka was a player on a stringed instrument. Patañjali, considers parivādaka as a lute-player (Bhāṣya, VII.4.1; III.345; avēvadā-vīnām parivādakena). Pāṇini refers to vīṇā in several *sūtras* (III.3.65), and we learn from the *Jātakas* that vīṇā formed part of an orchestral band (vīṇādini turyāñi, Jāt. III.40).

**SAMMADA**—Pāṇini explains sammada and pramada as festivity (barsha, III.3.68). It was a kind of opera as illustrated in a sculpture at Bharhut, inscribed as 'Sādakāṁ sammadāṁ turaṁ devānāṁ,' an opera (saṭṭaka) comprising both instrumental and vocal music performed in the palace of gods (Barua Barhut, Book I, plate 2; also Book III, Fig. 34). The scene shows several groups, namely, singers, four female dancers, and an orchestral band (tūrya) comprising of female lyre-players, a hand-clapper, a cymbalist and a taborer. According to the Nidāna-kathā a tūrya party consisted of players on five musical instruments (*pañchaṅgika tūrya*, Jāt. I.32), probably by adding a flute-player to the four represented in the Bharhut scene. Sammada, therefore, appears to have been a festive celebration in which dance and music played an essential part.

**INSTRUMENTS**—Amongst stringed instruments the lyre
(vīnā) is mentioned. The term uṇavīnayati, 'sings with the lyre,' points to the popular practice of combining vocal and instrumental music. Singing without lyre was denoted by the expression apavīnam (VI.2.187). The musical notes produced from a lyre were known as nikvāṇa or nikvāṇa (III.3.65, Kuṇo vīnāyāṁ cha).

Of the percussion and ringing instruments mention is made of māḍḍuka, a small tabor (IV.4.56) and jharjhara (IV.4.56), the players being known as māḍḍukika and jhārjhārika, taborers and cymbalists, respectively. Keeping time by the clapping of palm is referred to in the expressions pānīgha and tālagha (III.2.55; cf. pānissara or clapper in the Vidhuraṇḍita Jāt. VI.267).

The dārdurika seems to have been a player on a drum made of an earthen jar (IV.4.34). In the Jātakas we find kumbhathūnīka mentioned in a list of musical players which the commentary explains as ghāṭadaddara-vādaka (Jāt. VI.276). The Kāśikā explains dārdurika as a potter, signifying one who was the maker of those particular pots used as vādyā-bhāṇḍa.
CH. III, SECTION 17. DIVISIONS OF TIME

AKĀLAKA VYĀKARĀNA—Pāṇini’s system of grammar became known to the ancients as a grammar without ‘time’ (akālaka). The Kāśikā repeats thrice the statement that Pāṇini was the promulgator of a grammatical treatise from which he excluded the discussion of the precise denotation of the various time-divisions (Kāśikā, II.4.21; IV.3.115; VI.2.14; also Chāndravṛitti, II.2.68, Pāṇiny-uḥajñam akālakair vyākaraṇam). ‘How much is the duration of the day, when does present (vartamāna) end and future (bhavishya) begin, what is adyatana, and how much interval of time makes parokska, etc.?—these are questions considered by Pāṇini as not coming within the province of grammar, but to be decided with reference to current usage (I.2.57, Kālopasarjane cha tulyam). Patañjali tells us that other teachers had entered into hair-splitting discussions about these matters (Bhāṣya, III.2.123; II.123).

Pāṇini, however, deals with the general divisions of time (kāla-vibhāgas, III.3.136), e.g., night and day (ahorātra, III.3.137), fortnight (paksya, V.2.25), month (māsa, V.1.81), half-year (śaṁmāsa, V.1.83), year (varsha, V.1.88), and the solstitial division (ayana, VII.4.25).

The more frequent word for time was kāla, although samaya and velā are also used (III.3.167). According to an unnamed author of a vārttika on Pāṇini, VII.3.15, the word parimāṇa in the Ashtādhyāyī applies to measures other than those of time (Bhāṣya, III.321). Pāṇini, however, treats Time as a measure of life (kālāh parimāninā, II.2.5); for example, a person after birth comes under the measure of time as dvyaha-, tryaha-, māsa-, saṁvatsara-jātaḥ. On the above sūtra Patañjali notes an important fact that time is an entity
by which growth and decay of visible objects are indicated and that the movement of the sun (ādītya-gati, I.409) is responsible for portioning out time into days and nights, months and the year by constant repetition (asakrid-aṅvṛitti). The sun is referred to as abhakara, maker of the day (III.2.21), and the heavenly bodies as jyotis (VI.3.85; vār. on I.3.40; Pat. I.231). Persons born under the same constellation were called sajyoti.

Pāṇini’s reference to vidhun-tuda (III.2.35) points to the belief in the legend of Rāhu causing a lunar eclipse, also referred to in Vedic literature (Vedic Index, I.254; also Tāndya Br. Caland, VI.6.8).

The following time-divisions are referred to in the Ashtādhyāyī:

AHHORĀTRA (III.3.137, VI.2.33)—Night and day constitute the fundamental unit of time-reckoning. The terms naktamindivam and rātrimindivam (sūtra, V.4.77) are according to Fleet rather peculiar since in India the day has always been measured from sunrise and he suggested that the forms may be due to euphonic considerations. Dr. Keith, however, thinks that they were genuine old expressions preserved in Pāṇini from a very remote past when the day was reckoned with sunset (J.R.A.S., 1916, p. 143-6). It is admitted that in the Sūtra period the day was reckoned with sunrise.

The day was further divided into pūrvāṇa and aparāṇa, forenoon and afternoon (IV.3.24), and the night into pūrvāṭra and aparāṭra (V.4.87). The union of night and day in the morning and evening is referred to as samdhi-velā (IV.3.16).

The division of the day into mubārtas was also known, the expiry of a mubārta period being quoted as a factor to determine tenses (III.3.9; III.3.164). Patañjali on sūtra, II.1.28

1 Cf. also Fleet’s reply (J.R.A.S., 1961, p. 356); Keith’s rejoinder (p. 355) and Fleet’s final reply (p. 561), in which Fleet’s view seems well-grounded.
refers to a variable period of six mūbūrtas (śaṃ-mūbūrtās charācharāḥ, I.384). This may be understood in the light of Kauṭilya who states that the day consisted of 30 mūbūrtas and that the equinoctial day and night of 15 mūbūrtas each fell in the month of Chaitra and Aśvayuj; the solstitial points, however, caused night and day to increase and diminish by three mūbūrtas each (Artha. II.20, p. 108). These six mūbūrtas representing the maximum increase of day in summer and of night in winter must have been called charāchara.

MONTH—The month consisted of the usual two pakshas of which the Amāvāsyā and the Paurṇamāsī formed the closing days. Pāṇini refers to the opening day of a paksha as pakshati (V.2.25) which the Kāśikā takes as a synonym of the Pratīpad day.

Sāvana Month. The reckoning of a Sāvana month consisting of 30 days is deducible from the phrase śaśṭi-rātra (V.I.90), literally 60 nights equivalent to two months. Kauṭilya also refers to a period of thirty days and nights together making one working month, (prakarma-māsa, Artha. II.20 p. 108). In this arrangement the last day of the half and the full month need not coincide with Amāvāsyā and Paurṇamāsī which were the characteristic days or parvans of a lunar month. Pāṇini derives two special words ardha-māsa-tama and māsa-tama to signify the last day of the half-month, and the last day of the full month respectively (V.2.57). It appears that the need for these two terms arose as they were not synonymous with Amāvāsyā and Paurṇamāsī. The words ardha-māsa-tama and māsa-tama may be taken to refer to the fifteenth day and the thirtieth day of the prakarma-māsa or the civil month used especially in the case of government or public offices. Patañjali clearly acquaints us with the existence of a bhūtaka-māsa, month by which the wages of labourers were reckoned. Both Kātyāyana and Patañjali interpret sūtra, IV.2.21 (Sāsmin Paurṇamāsītī) in a way so as to distinguish the lunar month ending with Paurṇamāsī from some
different reckoning (*Bhāṣya*, II.275). The *prakarma* month of Kauṭilya seems to be the same as the *bhṛtaka* month of Patañjali.

The *Sāvana* month of thirty days is again referred to by Patañjali as *triṁśadrātra*, consisting of two equal halves of fifteen days each, the first one of which was called *avarā paṇcbdasa-rātra* or *avarā ardhamāsa*, and the second by implication as *para-*. (*Bhāṣya*, III.3.136, II.162). It is interesting to note that Patañjali uses the term *rātri* for 'day' while referring to the *Sāvana* month of 30 days and its half of 15 days. This practice goes back to Pāṇini, who uses the word *rātri* (=*aborātra*) in the phrase *shashti-rātra*, a period of 60 days, being twice of the *Sāvana* month called *triṁśad-rātra* by Patañjali.

**Lunar Month.** The prevalence of a lunar calendar with a month (*chāndramāsa*) of 29½ days depending on the two *parvans*, *Amāvāsyā* and *Paurṇamāsī* was definitely known. It appears that in the *Ashtādhya-yī* the *pūrṇimānta* basis of reckoning the lunar month was accepted. This is suggested by the fact that the name of the month was derived from that of the *Paurṇamāsī* falling in it, of which Pāṇini refers to *Āgrahāyaṇī* (IV.2.22), *Phālguni*, *Śravāṇa*, *Kārttikī* and *Chaitrī* (IV.2.23). In one example the settlement of a debt claim is said to fall due on the *Paurṇamāsī* day (i.e. *Āgrahāyaṇī*, IV.3.50), this too pointing to *pūrṇimānta* reckoning. Moreover, the use of special terms *upa-paurṇamāsī* and *upa-paurṇamāsam* (V.4.110) meaning 'about the date of the month called *Paurṇamāsī*,' is more likely to have become current on the basis of a *pūrṇimānta* month, while no such idiom is available for *amāvāsyā*. Both Kātyāyana and Patañjali clearly accept *Paurṇamāsī* as the closing day of a month¹ (IV.2.35; II.277).

¹ (Var.) Pūrṇamāsādaṇ (Bh.) Pūrṇamāso *vartate* smin kāle Paurṇamāsī tithih (II.277).
Names of Months. Some Vedic names of months as Nabhasya, Sahasya, Tapasya are implied in sutra, IV.4.128. But the prevailing month-names were those derived from the names of nakshatras. Dr. A. B. Keith observes that the method of naming the months from the nakshatra names began in the Brāhmaṇas, while it is found regularly in the Epics and later (Vedic Index, II.162). He also points out that the name of the nakshatra in the Brāhmaṇas is more often turned into a derivative adjective and used with Purṇamāsi or Amāvāsyā, as in Phālgunī Purṇamāsi, but it is more usual in the sutras to use the nakshatra adjective alone to denote the full-moon night (Vedic Index, I.420). The Ashtādhyāyī refers to the latter practice e.g. Āgrahāyanī, Phālgunī, Śravaṇā, Kārttiķi, Chaitrī, etc. (IV.2.22-23) as names of Purṇamāsīs in which the full moon is in conjunction with the lunar mansions called Phalguni, Śravaṇa, Krittiķi, Chitra, etc. The months in which these Purṇamāsīs occur are called after them (Sāśmin Purṇamāsītī samjñāyām, IV.2.21).

NAKSHATRAS—Paṇini analyses nakshatra into na-kshatra (VI.3.75), a derivation found also in the Sātāpatha Brāhmaṇa (II.1.2.18, nakshatra ‘no light’, explained with a legend). The Nirukta, although it cites this Brāhmaṇa derivation, prefers to derive nakshatra from naksha ‘to come near’ (nakshater—gatikarmanāḥ, Nir, III.20; Cf. Vedic Index, I.409). Paṇini strangely enough followed the Sātāpatha tradition. The following Nakshatras are mentioned in the Ashtādhyāyī:

1. Kṛttikā. Referred to in the form Kārttiķi, the full-moon day of Kṛttikā (IV.2.23). Paṇini gives another name of Kṛttikā as Babula (IV.3.34) which word came to signify the asterism of Pleiades on account of the knowledge that this constellation consisted of numerous stars. The Sātāpatha Brāhmaṇa significantly remarks: bhūyishṭhā yat Kṛttikāḥ (II.1.2.3). Babula and Bhūyishṭha are interchangeable terms
according to Pāṇini, VI.4.158 (Bahor-lopo bhū cha bahoh).\(^1\)

3. Mrigāśīrsha. Not referred to by the name of the nakshatra, but the full-moon night called Āgrabāyaṇi is mentioned thrice (IV.2.22; IV.3.50; V.4.110). The month was named Āgrabāyaṇika (Āgrabāyaniko māsah). Pāṇini refers to agreements for repayment of loans on the Āgrabāyaṇi day (IV.3.50). The time near about Āgrabāyaṇi was called upāgrabāyaṇam and upāgrabāyaṇi (V.4.110).

4. Ārdrā (IV.3.28). A person born under Ārdā was named Ādraka.

5. Punarvasu. Pāṇini knows that there were two stars in this constellation; the two stars of Punarvasu and one of Tishya make three, but they are expressed by the dual number, as Tishya-Punarvasū (I.2.63). But in sūtra, IV.3.64 he mentions Punarvasu in the singular, the form found both in the Māitrāyaṇi and Kāthaka Samhitās (Vedic Index, I.413). According to rule I.2.61 the singular form was optionally used in the Vedas.

6. Tishya. Besides the form Tisbya (I.2.63; IV.3.34; VI.4.149), Pāṇini mentions its two other names, Pushya and Siddhya (Pushya-Siddhyau nakshatre, III.1.116). The person born under this asterism was also called Tisbya (IV.3.34), a common name in the Jātakas under the form Tissa, and also Phussa from Pushya.\(^2\) In the Arthasastra, Tishya had been replaced by the form Pushya, which Patañjali also prefers (I.462; II.35). Pushya in preference to Tisbya seems to be a feature of the post-Pāṇinean period.

9-10. Phalgunī, a double constellation called Phalgunyau;

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\(^1\) The number of stars in the Kṛttikā is counted seven in the Taitt. Br. III.1.41, viz. Ambā, Dulā, Nitatī, Abhrayantī, Meghanyantī, Varshayantī, Chūpuyakā. In classical literature this number is six, from which comes the epithet Shāmāturaḥ as the name of Kārttikeya. Pāṇini’s sūtra māturtat-saṅkhyā . . . (IV.1.115) is illustrated by Dvai-mātura and Shān-mātura.

\(^2\) Pausböll, Jātaka Index, p. 64, Tissa amachebo, Tissa-kumāra, Tissa Buddha, Tissa thera, and Tissa aggasavika; also p. 89 for Phussa.
and also in the plural as *Phalgunyāḥ* (I.2.60).

11. *Hasta*, IV.3.34.

12. *Chitrā*, IV.2.23, its full-moon day being called *Chaitrī.*

13. *Śvātī*, IV.3.34.


15. *Anurādhā*, IV.3.34.


21. *Śravāṇa*, IV.2.23. The *Kāṭhaka Saṁhitā* names it as *Āśvattha* (*Vedic Index*, I.413), a term also known to Pāṇini (IV.2.5; IV.3.48). The *Kāśikā* takes *Āśvattha* as the season when the berries of the *Pipal* (*Ficus religiosa*) ripen.

22. *Śravishṭhā*, IV.3.34.


24-25. *Proshṭhaṇḍa*, a double asterism called *Proshṭhaṇḍade* and *Proshṭhaṇḍadāh* (I.2.60), and also in the masculine gender as *Proshṭhaṇḍa* (V.4.120), a form used in the *Tait. Saṁhitā*, and also by Pāṇini when speaking of the deity of this asterism (IV.2.35) to whom religious homage (*bhakti*) was paid by its devotees.


27. *Āśvayuj*, IV.3.36. The *Āśvayuji* full-moon day was considered auspicious for sowing crops (IV.3.45).

ORDER OF NAKSHATRAS—The Vedic list of *nakshatras* begins with *Kṛttikā*. According to Hopkins: 'As late as Yājñavalkya’s law-book, I.267, the Pleiades hold this position as opposed to the still later scheme (since c. 490 A.D.) beginning with *Aśvinī* to indicate the vernal equinox' (*J.A.O.S.*, XXIV, p. 34). Patañjali’s illustration *Kṛttikā-Rohiṇyāḥ* to
show the order of precedence in the asterisms as required by a *värttika* on II.2.34 points to the fact that up to his time the *Krittikās* headed the list.

The question has to be considered in relation to Pāṇini from a different stand-point. In mentioning a list of about ten stars Pāṇini opens the list with Śravisṭhā:


What does the beginning with *Śravisṭhā* indicate? Now the list of the Vedāṅga *Jyotisha* also commences with *Śravisṭhā*, and Garga says that the *Krittikās* are the first asterism for the ritual, while *Śravisṭhā* is the first for ordinary reckoning: *Karnasu Krittikāḥ prathamam (nakshatram), Sraivasṭhā tu sanākhāyāḥ* (cited by Tilak, *The Orion*, p. 30). Hopkins who discussed this question with reference to the Mahābhārata evidence found that the *Mahābhārata* refers to two beginnings, *viz.* (1) with *Dhanisṭhā* (another name of *Śravisṭhā*) as in the Vanaparva (230. 10), and (2) with *Śravana* as in the Āsvamedha-parva (44.2, *Śravaṇādīni rikṣhāni*) (J. A. O. S. XXIV, p. 15, 34). Fleet discussing independently another *Mahābhārata* passage, *pratiśravana-pūrvāni nakshatranāi chakāra yah* (Ādiparva, 71.34) showed that the two passages of the *Mahābhārata*, giving a *Śravaṇādi* list of the *nakṣatras* are noteworthy as coming from a time when it was recognised that the winter solstice had travelled westwards from the first point of *Śravisṭhā* (*Dhanisṭhā*), where it was placed by the astronomy which was preserved in the *Jyotisha* Vedāṅga, and was in the preceding *Nakṣatra Śravana* (J.R.A.S., 1916, p. 570). Pāṇini’s mention of *Śravisṭhā* at the head of his list is evidently in conformity with the Vedāṅga astronomy and points to a time anterior to the revision of the *Nakṣatra* list, or, as Dr. Keith would have it (J.R.A.S., 1917, p. 139), its reform by substituting *Śravana* for *Śravisṭhā*. The point is
of some importance for the relative chronology of Pāṇini, as explained in the last chapter.

Pāṇini also subscribes to the Vedāṅga conception of the nakṣatras as a scale divided into twenty-seven equal parts. Under this division of the ecliptic, the twelve months were named after the moon's entry into the mansion of a particular star (Naksbtreṇa yuktah kālah, IV.2.3.). When the full-moon was in conjunction with the asterism of Chitrā, that day was known as Chaitrī Paurnamāśi (IV.2.3), and the lunar month which included the Chaitrī Paurnamāśi was named Chaitra (VI.2.21). The name of the star even without a suffix was used as synonymous with the time, for example, the expression adya Pushyah indicated the day named after the star, as we name our days at present after the tithis like Pratipad, Dwitiyā, etc. (IV.2.4).

Pāṇini also regulates the naming of the day or night after two stars being in conjunction with the moon as Rādhānurādhīya and Tisyapunarvasaviya day (IV.2.6).

Pāṇini uses the word lagna in the sense of sakta (VII.2.18) and not in the technical sense of rāśinām udaya. According to Dr. Kaye the system of the zodiac scale of twelve divisions replaced the nakṣatras division of the ecliptic at a fairly late date, probably about 450 A.D. (Kaye, The Nakshatras and Precession, Ind. Ant. Vol. 50, p. 45).

SOLISTICE—The sūtra VIII.4.25 (Ayanani cha) refers to antarayana or the time within the solstice, i.e. the period spent by the sun in proximity to the solstitial points. The alternative form antarayana denoted the countries situated within the tropics.

SEASONS AND YEAR—The year is referred to under various names as varsha (V.1.88), samā (V.1.85; V.2.12), samvatsara (V.1.87) and bāyana (III.1.148; V.1.130), the last word denoting both time and a kind of harvested paddy. The month-name Agrabāyana points to its being the first month of the year. Pāṇini also refers to the various terms
making up the five-year cycle, e.g. Idvatsara, Sanivatsara, Parivatsara (V.1.91-92). The Arthaśāstra mentions the cycle of five years as constituting one yuga.

The year was divided into two halves, each semester being known as śaṅ-māsa (V.1.83). The first half-year was called avarasamā, and the loan to be repaid during that period was avarasamaka (IV.3.49).

Pāṇini names all the six seasons, e.g. vasanta (IV.3.46), grīmha (IV.3.49), varṣbā (IV.3.18; also called prāvṛish (IV.3.17; 26), śarad (IV.3.12; 27), hemanta (IV.3.21-22) and śīśira (II.4.28). Each season (ṛitu) comprised two months, as shown by the mention of the two parts of a season, like pūrvavārśhika and aparavārśhika, the first and latter part of rains (Avayayād-ṛitoh, VII.3.11; see also Bhāṣya, I.1.72.18; I. 186 mentioning pūrva- and aparā-sārada, and also -nāditāga). Patañjali tells us that śīśira preceded vasanta and that the winter solstice began with śīśira (śīśira-vasantāv—udagayanasthau, Bhāṣya, II.2.34; I.436). In the Arthaśāstra also uttarāyaṇa begins with śīśira, consisting of the two months Māgha and Phālguna (Artha. II.20 p. 109).

VYUSHTA, NEW YEAR’S DAY—Pāṇini refers to Vyushta, the new year’s day, and to vaivyushta, the transactions or payments made on that day (Tatra cha dīyate kāryaṁ bhavavat, V.1.96; Vyushṭādibhyo’ṁ, V.1.97). In the Varāha Śrāuta Sūtra pradosha is the first yāma (3 hours) of the night, and vyushta the fourth (Akulaśāda Khaṇḍa III); but in the Arthaśāstra (II.6-7, pp. 60 and 64) as Dr. Shamasastri has shown, vyushta denoted the New Year’s day, i.e. the first day of the financial year commencing after the full-moon day of Āśādha (Artha. Trans. pp. 59, 64; Preface, xxiv; also the paper ‘Vyushti or the Vedic New Year’s Day’ in the Proceedings of the Second Oriental Conference). Pāṇini seems to use vyushta in this special sense. Kauṭilya throws light on the nature of payments and business on this day. At the close of the financial year (rāja-varsba) on the Āśādhi, the Heads of the Accounts Department reported
themselves at Headquarters with their registers in sealed boxes (samudra pusta-bbāṇḍa) and the cash balances (nīvī). There they declared the totals (agraṇī) of the receipts (āya), expenditure (vyaya) and cash (nīvī) and then deposited the net revenue in hand. This illustrates the vaiyushṭa payments of Pāṇini (treta cha diyate).

Next ensued the intricate checking and verification of accounts which corresponds to the business called vaiyushṭa by Pāṇini (treta cha kāryam). In the Arthaśāstra, Vyushṭa (i.e. cash balance on the opening day) formed the bed-rock of this checking, heading each of the three lists of audit-points (II.7.) In the Asokan Edicts, the yearly diary began on the Vyushṭa day.  

Pāṇini refers to the last day of the year as samvatsaratama (V.2.57), probably the day for the clearance of the sāmvatsarika loans (IV.3.50, samvatsare deyam riṇam).

Pāṇini refers to another allied term, viz. mahāparāḥya, 'the great afternoon' (VI.2.38). As the other words in the sūtra VI.2.38 like mabā-vrihi and Mabā-bbārata are technical terms, mahāparāḥya also appears to be of the same category. We may connect this word with the afternoon of the last day of the year, or better of Vyushṭa itself. The Sūryaprajñāpī states that the new year began with the longest day in the month of Śrāvana (Proc. Second Oriental Conference, p.38). This day was truly a Mahāparāḥya as its day-book (aborūj) would be long kept open for entries after verification. The Mahābhārata knows this term; Arjuna returning from the svayamvara 'entered the house on the mahāparāḥya (day), surrounded by Brāhmaṇas like the sun in the midst of the clouds' (mahatvathbāparābne tu ghanaiḥ sūrya iv—āvritah, Adiparva, Critical Poona edition, 181.40). The metaphor would be appropriate only in the rainy season. The Brāhmaṇas

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1 Cf Aśoka's Minor Rock Edict, Brahmagiri, for counting the days of the year from the Vyushṭa day: 'This proclamation was issued by me on tour when 256 days had elapsed after Vyushṭa.'
wearing black antelope skins (rauravājina-vāśibhiḥ, Adi. 181. 35) overshadowed Arjuna as masses of dark clouds cover the sun. This connects Mahāparābhava with the rainy season, and confirms its identification with Vyushta, i.e. the New Year's day in Śrāvana, considered from the accounts point of view to be the "Longest Afternoon" of the whole year.
CH. III, SECTION 18. CURRENT PERSONAL NAMES

Personal names always contain valuable linguistic and chronological data. Proper names of different periods are marked by special features characteristic of that age. For example, the usual method of referring to a person in the Rigveda is to give his own name along with another epithet connected with his father's name. In the later Vedic literature it was the gotra name. Sometimes the personal name was coupled with the name of the country or locality, e.g. Bhīma Vaidarbhā (Ait. Br., vii. 34). In the Varṇa lists of the late Brāhmaṇa period we find the frequent use of metronymics. (P. V. Kane, Naming a Child or Person, I. H. Q., June 1938, pp. 227-228). On the other hand there is no evidence in Vedic literature of individual names being derived from the names of Vedic gods or stars. Such naming came into vogue in much later times with a change in religious beliefs.

CLASSES OF NAMES KNOWN TO PĀṆINI—These were of four principal classes: (1) Gotra names mentioned in Chap. IV, pāḍa 1 of the Ashṭādhyāyī, e.g. Gārgya. (2) Patronymics, e.g. Upagu's son called Aupagava (Tasyāpatyam, IV.1. 92). (3) Names derived from localities, where they or their ancestors lived (nivāsa and abhijana). They throw light on the geography of the country. (4) Personal names proper (manushya-nāma, V.3.78-84) which are mainly dealt with in this chapter (also referred to as sanijñās, V.3.75; VI.2.106; VI.2.159; VI.2.165).

THEIR SPECIAL FEATURES—Personal names in the time of Pāṇini show three special features, viz. (1) names as compounds of two units; (2) names formed by contraction, as Devaka for Devadatta; and (3) names derived from stars (nakshatra-nāma), as Svātīdatta.
Names which are compound words normally consist of a pūrvapada and an uttarapada (V.3.82), and the compound is either Bahuvrihi or Tatpurusha. Almost all names in this section (V.3.79-83; VI.2.106-115) are polysyllabic (babvach), i.e. consisting of more than two syllables (urdhvam dvitīyādachāh, V.3.83), the actual number of syllables being usually four or five. According to the Grihya Sūtras a name should have a Krit ending, and not a Taddhita. Pāṇini mentions two examples of this, viz. datta and śruta (VI.2.148). To these Patañjali adds rakshita (I.189) and gupta (I.37, e.g. Āmragupta, Śālagupta). The above two features of names are ascribed to the Yājñikas by Patañjali (I.4), who must have based themselves on the tradition of the Grihya Sūtras.1 Besides krit-ending, Pāṇini mentions Mitra, Ajīna (VI.2.165; V.3.82) and Sena (IV.1.152; VIII.3.99) as the second part of personal names.

CONTRACTION—Contraction of names is unknown to Vedic literature, since the Gotra names were not susceptible to abbreviation. Only in the compound names do we find the elision of the uttarapada (V.3.82), or the retention only of its first two syllables (V.3.83). The contraction of a personal name is dictated by affection or endearment (anukampāyām, V.3.76); e.g., Vyāghrājina was simplified to Vyāghraka (V.3.82); and Devadatta to Devika, Deviya, and Devila (V.3.79). It might also be expanded into Devadattaka (V.3.78). In the opinion of the eastern grammarians, Upendradatta was shortened to Upaḍa and Upaka (V.3.80), and to Upiya and Upila, the last being the form which must have been transformed into Upāli, a name so well-known in Buddhist literature.

NAMES DERIVED FROM STARS (NAKSHATRA-
NĀMA)—Pāṇini knows the custom of naming persons after the asterism of their birth (IV.3.34;37; VIII.3.100); e.g., Tishya (a boy born under Tishya); Punarvasu (a boy born under Punarvasu, IV,3,34.¹ Such Nakshattra names are practically unknown in the entire Vedic literature (except perhaps Chitra and Ashāḍha, which also may be differently interpreted.² This class of names is post-Vedic and constitutes a chronological landmark in social history separating the age of the Śūtras from that of the Brāhmaṇas.

The Grihyasūtras show the earliest use of such names. According to Apastamba, the nakshatra name is the sacred name of a person. The Khādīra, Vārāha, Hiranyakesi and Gobhila Grihyasūtras contain injunctions for giving names based on stars (nakshatrāsraya nāma). These fall in line with Pāṇinian tradition. The use of such names is also found in Pāli literature. The epigraphic records of the Maurya and Śunga-Satavahana periods also testify to the use of such names for about four centuries.

A detailed analysis of the proper names in use in Pāṇini's time is given below. They fall under three groups, I. Miscellaneous names, II. Star names, and III. Abbreviated names. I. Miscellaneous Names: (1) Names with viśva as the prefix (Bahuvrihau viśvam samijñāyām, VI.2.106). The pre-Pāṇinian examples are Visvamitra, Visvamanas (Jaiminiya Brāhmaṇa), Viśvasāman; and Vissakamma (I.314), Vissasena king of Bārāṇasi (II.345), Vessabhū Buddha, Vessāmitta, a former king (porāṇakarājā) (VI.251), and Vessantara in the Jātakas.

(2) Names ending in udara, aśva and ishu (Udarāśveshu-

¹Tishyajīcha māṇavakāḥ Punarvasū cha māṇavakau Tishya-Punarvasavah. Patañjali takes these examples implied in sūtra, I.2.65 (Bhāṣya, I.231).

²As Chitra Gāṅgyāyana (Śāṅkha, Ār. III.1); Ashāḍha Śāyavasa (Jaiminiya Br.) who was a grāmanī of the Sārkarākshyas; Āshāḍhi Saurōmatēya (Śatapatha Br., VI.2.1.37), son of Ashāḍha and Sūrōmatā.
The names cited in the Kāśikā, viz. Vṛikodara, Haryāśva, Maheshu seem to be pre-Pāniniian. Allied classical instances are absent except Bahusodāri Devadhītā found in a Jātaka (VI.83).

(3) Names ending in karna (VI.2.112), as Mayūrakarṇa (Sivādi-gana, IV.1.112), and a few others in the Gana-pātha.

(4) Names ending in kanṭha, prishṭha, grīvā and jaṅghā (V.2.114). Such names are rare in Vedic literature, except Śiśiprīśṭha and Śitikanṭha. Pāṇini mentions Kalaśikanṭha, Dāmakanṭha, and Khārijāṅgha in the Upakādi group (II.4.69). Tālajaṅgha cited in the Kāśikā was an earlier name. Mani-kanṭha occurs in the Jātakas (II.282).

(5) Names ending in śrīṅga (VI.2.115). Rishyāśrīṅga is the only example in the Buddhist or classical period.

(6) Names with the instrumental form manasā as prefix (VI.3.4). The Kāśikā cites Manasādatta and Manasāgupta, but there is no instance of their actual use in literature.

(7) Names ending in mitra (VI.2.165). These were only few in Vedic literature, but are very popular in the post-Pāniniian period, e.g. Sarvamitta (Jāt. V.13), Jitamitta (Jāt. I.37), Chandamitta (Jāt. I.41), etc. The later epigraphical records¹ show abundant use of mitra-ending names.

(8) Names ending in ajina (VI.2.165). Kāśikā cites Vṛikājina, Kulājina and Krishnājina. In the Jātakas the only examples are Migājina (VI.58) and Kanṭhājina (daughter of Vessantara, VI.487). Pāṇini himself refers to Krishnājina in the Upakādi (II.4.69) and Tika-Kitavādi (II.4.68) groups.

¹The Sanchi inscriptions have Balamitra, Saṅghamitra (=Saghamitra), Ahimitra, Satyamitra (=Sachamita) among males, and Nāgamitrā, Uttaramitrā, Vasumitrā, Rishimitrā (=Isimitā), Jitamitā, and simply Mitrā, among females (Bühler’s List of Proper Names from Sanchi Ins., Ep. Ind., Vol. II, pp. 403-407); Bharhut adds Saṅghamitra and Gargamitra (Lüders List, Nos. 759, 832); the Pañcchāla coins give, Brhhaspatimitra, Agnimitra, Bhānumitra, Bhūmimitra, Dhruvamitra, Phālungimitra, Sūryamitra, Vishnumitra (Allan, Indian Coins, p. cxvii); also Prajāpatimitra (JNSI., III.1.1).
The paucity of ajinānta names in literature may be due to the elision of ajina as noted by Pāṇini: Ajināntasya-ottaraśpadalopaścha, V.3.82. For example, Vyagbrājina was contracted to Vyāghraka.

(9) Names of species (jāti-nāma) adopted as personal names (manusbya-nāma, V.3.81), e.g. Vyāghrika, Simhaka. Besides the suffix ka, the other forms were Vyāghrila, Simhila (Bühler’s Sanchi List). This custom of deriving names from animals was unknown in the Vedic period. Pāṇini makes reference to the contemporary ideals of personal bravery in instituting comparisons with the strength of a tiger or a lion (Upanimitam vyaghrādibhiḥ sāṁānyāpyrayoge, II.1.56).

(10) Names ending in sena (VIII.3.99). Pāṇini refers to senānta names in sûtra, IV.1.152 (Senānta-lakṣhaṇakāribbyaścha). Famous examples of such names in the lists of Vedic teachers are Yājñasena (Taśita. S. V.38.1; Kāthaka. S. XXI.4) or Yājñasena1 and Ṛishtisheṇa (Nirukta, II.11); Pataṅjali adds Jātasena as the name of a Ṛishi. As ancient examples of such names among Kshattriyas, Pataṅjali points out Ugrasena Andhaka, Vishvakṣena Vṛishṇi and Bhīmasena Kuru. They become common in the post-Pāṇinian times, e.g. Vārishena and Harishēṇa in Pataṅjali (loc. cit.); Sothisena (Jāt. V.88, Skt. Svastisena), Sūrasena (Jāt. VI.280), Ugrasena (Uggasena king of Banaras, IV.458), Upasena (Jāt. II.449), Atthisena (Jāt. III.352), Nandisena (minister of Assakarāja, Jāt. III.3), Jayasena (Jāt. Nidāṇa, p. 41), Chandasena (Jāt. VI.157) and Bhaddasena (Jāt. VI.134) in the Jātakas. Also Dhamasena, Varasena at Sanchi; Nāgasena (Lüder’s List, 719), Mahendasa (Lüder’s List, 850) at Bharhut; and Asādaṇasena from Pabhosā.

As shown by Pāṇini (VIII.3.100) some personal names were formed by prefixing names of stars to the ending sena, e.g. Rohiniṣena, Bharaṇiṣena, etc., and Šatabhishaksena, a name

1Descendant of Yajñasena also called Śikhandin, Kaush. Br., VII.4. In a list compiled from the Jaiminiya Br., Dr. Caland also gives Sutvan Yajñasena.
although seldom found in actual use, is implied in Pāṇini’s rule, VIII.3.100 (agakārād).

(11) Names ending in datta and śruta, and implying blessing (VI.2.148), e.g. Devadatta, ‘he whom the gods have bestowed,’ and Vishnusrūta ‘he whose wishes Vishnū may hear.’ These are examples of names ending in a Kṛit suffix of which we hear so often in the Grihyasūtras. We do not usually come across any real name ending in śruta in the Vedic or Buddhist literature. The number of names ending in datta is also limited, as Brahmadatta (Jaim. Br., king of Kosāla, also called Prāsenajīta), Punardatta and Sūryadatta (Śāṅkh. Ār. VIII.8); but in Buddhist literature they are more common, as Devadatta, Bhūridatta (Jāt. VI.167), Matidatta (Jāt. IV.342), Yaññadatta Brāhmaṇakumāra (Jāt. IV.30), Somadatta (Jāt. VI.170). These become a regular feature in the post-Pāṇinian period, e.g. Aggidatta, Vāyu-, Yama-, Id- (=Indra-), Rishi- (=Isi-), Brahma- (=Baha-), Upendra- (=Upidda- or Upeda-), Uttara-, Vaiśramana-, Pushya-, Gaṅga-, Dharmā- and Nāgadatta, etc., (Cf. Bühler’s Sanchi List). According to Kātyāyana (I.4.58-59), Maruddata would be equal to Marutta (Bhāṣya, I.341). Patañjali cites Yajñadatta and Devadatta as typical names of Brāhmaṇas (Bhāṣya, I.1.3; I.189), often shortened simply to Datta (I.1.45; I.111).

(12) Śevala, Supari, Viśāla, Varuṇa and Aryāmā (Śevala-Supari-Viśāla-Varuṇāryāmādināṁ trilīyāt, V.3.84)—these formed the first part (pūrvapada) of names and the three endearment suffixes, ika, iya and ila, added after them caused the elision of all the syllables after the third. For example, Śevaladatta or Śevalendradatta was shortened to Śevalika, Śevaliya or Śevalila; Suparyāśirdatta to Suparika, Supariya and Suparila; and Viśāladatta to Viśālika, Viśāliya and Viśālila.

In the Jātakas the equivalent of Śevala is Sivalikumāra (I.408), or the feminine Sivalidevi, wife of king Mahā-Janaka (VI.37). The form Devī Sivalā occurs at Bharhut in the name of this Jātaka (Lüder’s List, No. 709).
The names in this sūtra seem to refer to minor deities who were propitiated to grant the boon of a son, to be named after them. Most probably these were names of Yakshas. Viśāla is definitely a yaksba named in the assembly of Kubera (Sabhā-parva, 10.16). Sevala, who gives śeva or treasure, also seems to be a yaksba. Sevalendra would then denote, Kubera (lord of Sevala), and a child born by propitiating him was called Sevalendra-datta, or by the shortened names Sevalika, etc. Even Vedic gods were worshipped as yakshas in folk religion. According to the Aṭānātiya Sutta (Dīghanikāya, 32) Indra and Varuṇa are both yakshas like Maṇibhadra. Aryamā was closely related with child-birth and invoked for easy delivery (Atharva, I.11.1). A child would thus be named after him, but the use of the name is rare, only one instance being recorded at Bharhut as Ayama (Lüder's List, No. 813). Varuṇa was also the name of a Lokapāla and of a Nāgarāja. Its use is frequent in the Kumbha Jātaka (V.12). Kātyāyana's vārttika on this sūtra begins with Varuṇa, not Sevala. It shows that the sūtra formed part of an earlier grammar from which Pāṇini borrowed and recast it by adding three names of tutelary deities famous in his days viz. Sevala, Supari and Viśāla. But Kātyāyana retained for purpose of reference in his vārttika the original form of the sūtra as it began with Varuṇa.

(13) Names like Gosāla, Kharasāla (Sthānānta-gosālakharasālāchcha, IV.3.35), Vātsasāla or Vatsasāla (IV.3.36) are derived from places of birth. Gosāla is a historical example, also called Maṅkhali, which corresponds to Pāṇini's Maskari (VI.1.154). As a popular name it occurs at Bharhut (Lüders' List, No. 853).

(14) Names ending in putra, and preceded by a masculine word (Putrab pumbhyah, VI.2.132), as Kaunateputra. They have an initial acute accent (ādy-udātta). As counter-examples, were names preceded by the name of the mother, as Gārgiputra and Vātsiputra, and distinguished by the acute accent on the final vowel. The practice of adding the mother's
name to *putra* is found in the Vānśa list of teachers in the *Satapathabha Brāhmaṇa* beginning with Śaṅjavī-putra (*Vedic Index*, II.443; Br. U., VI.5). A Kātyāyanī-putra (Jātukarnya) and a Prātiyodhī-putra also occur in the Śaṅkha. Āraṇyaka (III.10; VII.13). It shows that such names formed part of a well recognised practice considered honourable. According to Pāṇini, one’s designation after the *gotra* name of one’s mother (*gotra-strī*) implied censure (IV.1.147), because it was supposed that the mother’s name would be adopted only in the event of the father’s name being unknown (*Kāśikā, Pitur-asanivijñāne matrā vyapadeśo patyasya kutsā*). But there seems to have been a change later on and Patañjali states that there is honour in being addressed by the mother’s name, as Gāgimātā, Vātismātā (*Bhāṣya*, VII.3.107; III.340 *matrī-γανι mātach putrārtham arbhe*).

Female names are regulated in *sūtra*, IV.1.113, on which the *Kāśikā* cites *Śikṣātā* and *Chintitā*. This rule also refers to women named after rivers, and also to their *apatya* or descendants, e.g. Yāmuna, son of Yamunā. The *Vārāha Grihyasūtra* states that a girl should not be named after a river, and this form of naming is not approved by Manu (III.9) also.

II. *Nakshatra-Nāma*: (15) Pāṇini deals at length with names derived from stars (IV.3.34; 36,37; VIII.3.100). The *Grihyasūtras* refers to the *nakshatra* name in addition to the personal name. According to Āpastamba the star name was kept a secret; Gobhila enjoins that the teacher was to give his pupil a *nakshatra* name which he used in bowing to him (*abhivādaniya nāma, Gobhila Grihyā, II.10.23-24*). The *Grihyasūtras* of Śaṅkhāyana, Khaḍira, Mānava and Hiranyakesī are also of the same opinion. Originally adopted as a secret name, the *nakshatra* name as being convenient to utter became later on as popular as the *gotra* name, e.g. Moggallāna Tissa in which the star name and the *Gotra* name are coupled.

Birth under a particular asterism (*Tatra jātah, IV.3.25*) inspired such names. In Pāṇini’s time stars were regarded as
deities to whom regular worship (bhakti) was shown. As such the star names are indicative of the religious attitude of the people based on a belief in numerous tutelary deities, including those presiding over the several asterisms.

In star names the suffixes are often dropped (IV.3.37), e.g. Rohina from Rohini. Persons, both male and female, were named after Sravishthah (=Dhanishthah), Phalguni, Anuradhah, Svati, Tisyah, Punarvasu, Hasta, Viśakhah, Ashādhā and Bahulā (i.e. Kṛittikā) without adding any suffix, i.e. the star name was synonymous with the personal name, e.g. Sravishthah, Phalgunaḥ, etc. From Abhijit, Aśvayuk and Šatabhishak the terminations were optionally dropped (IV.3.36), e.g. Abhijit and Abhijita, etc.

As stated above the star names are unknown in Vedic literature, but became popular in the time of Panini and later. For example, Viśakhah, Punabhasu, Chittā, Poṭṭhapāda, Phagguni, Phussa and Tissa or Upatissa occur in the Jātakas; to which may be added Phaguna, Phagulā, Tisaka, Upasijha (=Upasidhyā), Sijhā, Pusa, Pusaka, Pusini, Bahula (cf. Panini’s Bahula), Sātīla (=Svātigupta, or -datta). Asādhā, Mūla, Poṭhaka, Poṭhadevā (=Proshṭhadevī), Rohini or Rohā, etc., from Sanchi; and Bharanideva, Anuradhā and Sonā (=Śravaṇa) from Bharhut (Lüders’ List, 784, 874).

III. Abbreviated Names: (16) Names ending in ika (V.3.78). A polysyllabic name was shortened in order to express affection. Only the first two syllables were retained with a suffix added, e.g. Devika from Devadatta; Yajñika from Yajñadatta; Chhadika at Sanchi from Chhandodatta (List. 380); and Yaśika from Yaśodatta (List. 757).

(17) Names with iya suffix (=ghan, V.3.79) added as before, e.g. Deviya and Yajñiya. The Jātakas add Giriya (III. 322), Chandiya (=Chandakumāra, VI.137), Nandiya (II.199; same as Nandika, II.200, or Nandaka), Bhaddiya (=Bhadrasena, Bhadrakāra or Bhadrāsala, I.140; VI.135), Meghiya (=Meghakumāra, IV.95) and Sabhiya (VI.329), but they
are rare in Bharhut and Sanchi inscriptions.

(18) Names ending in ila (=V.3.79), e.g. Devila from Devadatta, and Yajñila from Yajñadatta. The Jātakas mention Guttila (II.248), Makhila (=Makhaḍeva, Jāt. Nidānakathā, p. 41); in Sanchi records are found Agila (=Agnidatta), Satila (Śvātī-datta), Nāgila (Nāgadatta), Yasila; Yakhila (=Yakṣadatta), Samghila, Budhila; and from Bharhut Mahila (L.L.766), Yakhila (846) and Ghaṭila (L.L.860).

(19) Names with the prefix upa were shortened in the opinion of Eastern teachers, by adding ada and aka (=vuch) (Prāchām upāder-adaj-vuchau cba, V.3.80), e.g. Upendra-datta shortened to Upaḍa and Upaka (in the east) and into Upiya, Upila and Upika according to other teachers (V.3.78-79), together with Upendradattaka.

Upaka occurs as a gotra name in Pāṇini (II.4.69), and Upagu and Upajiva in the Jaiminiya Brāhmaṇa (Caland 199.249). But such names became more popular after Pāṇini.

The Buddhist name Upāli (I.140) may be from Upila. At Sanchi, however, the name appears in full as Uppedadatta, Upidadatta or Opedadatta. Other names with upa, were Upaka, an Ājivika (Jāt. I.81), Upakarīsa (Jāt. IV.79), Upakañchana (Jāt. IV.395) and Upajotiya (Jāt. IV.382).

(20) Names ending in ka, a suffix added to denote (1) inferiority (kutsīte, V.3.75), e.g. Pūrṇaka, name of a servant; and (2) benediction (āśiṣī, III.1.150), e.g. Jivaka (May you live!), Nandaka (May you prosper!).

SHORTENED NAMES IN USE AFTER PĀṇINI—Kātyāyana and Patañjali record in the following rules and suffixes post-Pāṇinian tendencies to form abbreviated names of later times:

(a) Retaining the first four syllables, against two in Pāṇini (V.3.83), e.g. Brihaspatika from Brihaspatidatta, Prajāpatika from Prajāpatidatta. Pajaka (Jātaka, III.463) derived from Prajaka (=Prajāpatidatta) follows Pāṇini’s rule.
(b) Adding *ka* suffix for Pāṇini’s *ika* (No. 16 above); e.g. Devaka and Yajñaka for Devadatta and Yajñadatta; also Pahaka (*Jāt.* I.40, Prabhākara) Sonaka (*V.247, Ṣoṇananda*), Sachchaka (*VI.478, Satyayajña*) in the Jātakas, and Balaka (for Baladeva, Balarāma, Balamitra), Pusaka, Dhamaka, etc., at Sanchi.

(c) Adding *la* for Pāṇini’s *ila* (No. 18 above), after words ending in *u*, e.g. Bhānula for Bhānudatta: Vasula for Vasudatta; also Bandhula (Senāpati of Kośala, *Jāt.* IV.148) and Rāhula (=Rāhudatta, born under the planet Rāhu).

(d) Eliding the first part of the name, against Pāṇini’s second (*uttarapada-lopa*) and then adding the same suffixes, Devadatta would give, e.g. Dattika, Dattila, Dattiya, Dattaka; or Devadatta might become Datta, and Deva without any suffix. (Cf. Bhāṣya giving Bhāmā for Satyaabhāmā, I.111).

Pāṇini’s Senaka (*V.4.112*), appears to be a Senānta name formed by dropping *pūrvarupa* and adding *ka*, showing the antiquity of this custom.


**RESUME**—The following features of names in Pāṇini’s time thus stand out: (1) The use of a personal name as distinct from a *gotra* name. A man was asked both his *nāma* and *gotra* (*Jāt.* VI.243, *nāma-gottān cha puchchhī*); cf. also Virāṭa asking Yudhishtīra his *gotra* and *nāma* (Virāṭaparva, 7.11). The Bhikkhus who took *pabbajjā* retained their personal names as well as *gotras* (*nānānāma, nānāgotta*, *Vinayapiṭaka*, B. C. *Law, Pāli Lit.* I. xiii).

(2) Some names typical in Pāṇini but rare in Vedic literature had the endings *mitra, sena, datta, śruta, karna, śṛiinga,* or were prefixed by *uṇa*.

(3) Personal names after stars unknown in Vedic litera-
ture are numerous in Pāṇini, Gṛihyasūtras and Pāli literature. The Baudhāyana Gṛihyaśeshaśūtra giving a list of star names offers the closest parallel to Pāṇini (Ashy. IV.3.34-37; Baud. I.11.9-18).

(4) The shortening of names, unknown in the Vedic literature, and passed over in silence in the Gṛihyasūtras, was popular in the time of Pāṇini and the Buddhist literature. Pāṇini knows of it as a practice well-established both in time and over a wide area including eastern India (V.3.80).
CHAPTER IV

ECONOMIC CONDITIONS

VRITTI (Economy)—The science of economics later known as Vārttā may be connected with the word Vritti, or economic pursuits, such as krishi (agriculture), vānijya (trade and commerce) and pāsūpālya (cattle-rearing), about which Pāṇini furnishes interesting particulars. Pāṇini uses the general term jānapadī vritti (IV.1.42) to indicate the economic pursuits followed in a region or State. The term jānapadī was older than Pāṇini and is referred to by Yāska in the expression Jānapadishu vidyātaḥ purūsha-viśesho bhavati, ‘One gains celebrity by proficiency in the economic pursuits of the Janapada State’ (Nirukta, I.16).

1. AGRICULTURE

KRISHI (AGRICULTURE)—Pāṇini mentions agriculture as krishi, derived from the root krish, to plough, although the term was not restricted to mere ploughing. Kātyāyana and Patañjali have an interesting discussion that krishi denotes not merely ploughing, but includes collectively all other operations of agriculture, such as the supply of seeds, implements, animals, and human labour.¹

Pāṇini refers to cultivators tilling the soil, to officers measuring the fields (kṣetrakara), to agricultural implements as bala and bali, and to the various processes of agriculture, ploughing (balayati, III.1.21; III.1.117; III.2.183; V.4.58; V.4.121; IV.4.81; IV.4.97), sowing (vāpa, IV.3.44; V.1.45), weeding (mūlābārhaṇa, IV.4.88), harvesting (lavana, VI.

¹Nānakriyāḥ krishber-arthaḥ, nāvaśyam krishir-vilekhan eva vartate, kim tarhi? Pratividbhāne’pi vartate yad asau bhakta-bijabalivardaiḥ pratividbhānam karoti sa krishy-arthaḥ (Bhāṣya, III.1.26; II.33).
1.140), threshing (khala, IV.2.50,51) and winnowing (nishpāva, III.3.28).

CULTIVATORS—Pāṇini calls the husbandmen krishivala (Rajah krishyasuti-parishbado valach, V.2.112), a new word which had replaced the older Vedic term krishṭi, denoting people in general, as the most numerous class amongst them was the agriculturists (Vedic Index, I.183). Kīnāsa, another Vedic term (Rigveda IV.57.8; Vedic Index, I.159) for the tiller of the soil, is only referred to in a later Unādi-sūtra (kiserich-chopadbāyāḥ kan lopaḥ-cha lo nām cha, V.56).

In the post-Brāhmaṇical period the older word krishṭi must have been replaced by the more expressive krishivala, 'one following agriculture as his profession,' formed by adding to krishi the new suffix vala.

LAND AND FIELDS—A village included cultivated and uncultivated land. The land which was not under the plough included āsbara (wasteland, V.2.107), gochara, pastures (III.3.119), including cattle-ranches (vraja, III.3.119), and cattle-pens (goshta, V.2.18).

The cultivated land was divided into separate holdings known as kshetra (Dhānyāṇāṁ bhavane kṣetre khaṇ, V.2.1). The distribution of plots implied some kind of cadastral survey of which Pāṇini gives indication when he refers to the measuring of fields in terms of the kanda measure. Almost synonymous with kshetra was kedāra (IV.2.40) which word is unknown in the earlier Brahmanical literature. But the Arthashastra understands kedāra in the sense of a wet-field, and possibly it was distinguished from kshetra in this special sense. A collection of adjoining wet fields was known as kaidārya or kaidāraka. Other areas used as barn (khala, IV.2.50) were close to one another in a group called khalini (IV.2.51) or khalya (IV.2.50). The general word for arable land was karsba (IV.4.97), but the area actually brought under the plough was called halya (IV.4.97) and sitya (IV.4.91). Halya was the unit of land cultivated with one plough, as
may be inferred from the examples dvi-balya and tri-balya cited in the Kaśikā (IV.4.97). Patañjali distinguishes a bigger unit of land measure called parama-balya, in excess of the normal unit balya, and similarly parama-sītya of sītya (Bhāṣya, I.1.72; I.186).

The word sītā (IV.4.91) is as old as the Rigveda (IV.57.6-7, and is used in the later Samhitās also, where it variously represents the personified deity of agriculture and also furrow. Gradually the former sense fell into disuse. In the Arthaśāstra sītā retains its older meaning of the goddess of agriculture only in one place and there also it appears to be in an old quotation: Sītā me ridhyatām devī bijeshu cha dhaneshu cha (Arth. Text, II.24). Its more common sense in Kauṭilya is agricultural produce, specially from the crown lands. Whatever in the shape of agricultural produce is brought in by the Superintendent of Agriculture (of crown lands) is termed sītā' (Arth. II.15, p. 93; also p. 60).

In the Ashtādhyāyi sītā has no such technical meaning. It means furrow described by a plough, and sītya denotes a field brought under the plough (sītayā samitam saṅgatam, kṣhetram sītyam, IV.4.91).

In the chapter Sāsya devatā (IV.2.24-33) Pāṇini mentions the Vedic deities of agriculture, Śuna and Sīra (IV.2.32). According to Yāska these represented Vāyu and Āditya, but according to others 'the share and the plough,' (Vedic Index, II.386). Oblations to these agricultural deities were known in the time of Pāṇini.

MEASUREMENT AND SURVEY—The distribution of plots among individual peasants must have depended on some kind of land survey which took note of the area and boundaries of fields. Pāṇini gives an indication of this when he prescribes the rule for expressing the area of a field in terms of a measure known as kāṇḍa. The sūtra Kāṇḍāntāt kṣhetre (IV.1.23) states that the word kāṇḍa preceded by a numeral takes the feminine affix tāp, if the derivative word relates to a field. The
word denoting the area of a cultivated field (kṣhetra-bhakti) must have been the object of the present sūtra. The Kāśikā cites dvi-kāṇḍa to denote a field measuring two kāṇḍas. Similarly, tri-kāṇḍa etc. with other numerals. Kāṇḍa is later interpreted as 16 cubits (shodas-āratny-āyāmo daṇḍah kāṇḍam; Bālamana ramā). Thus 1 sq. kāṇḍa = 24×24 sq. ft. KSHETRAKĀRA (III.2.21), 'maker of a field'—This term denoted an officer who divided the cultivable area into plots by survey and measurement. Megasthenes also refers to officers whose duty was to measure lands for purposes of the assessment of revenue (Frag. 34). They might be the Rajjūgrāhakas of the Jātakas who measured the land with a rope. He had the rank of an amātya, surveyed the fields and measured them with a rope tied to pegs, of which one end was held by him and the other by the owner of the field (Kurudhamna Jāt., III.276). The bālya measure of land is explained by Pāṇini as balasya karsah, i.e. the area cultivated by one plough (IV. 4.97). Multiples of the bālya land measure were expressed as dvi-bālya, tri-bālya.) Manu refers to a measure of land called kula equivalent to two plough-lands (Manu, VII.119, Kullūka), same as dobalikā of land-grants.

CLASSIFICATION OF FIELDS—Pāṇini classifies fields, firstly on the basis of the crop grown (V.2.1-4), and secondly in terms of the quantities of seed required for their sowing (V.1.45-46).

As examples of fields named after the crops grown (Dhānyānāṁ bhavane kṣhetre khaṁ, V.2.1), we have: vraihēya for vṛīhi, śāleya for śāli (V.2.2). Other similar names were yavya for barley, yavakya for a kind of rice, sahasṭikya for the sahasṭikā rice so called from its ripening in two months, tilya or taśina for sesamum, māshya or māshiṇa for beans, umya or aumīna for linseed, bhaṅga for hemp, and anavya or āṇavīna field for the anu crop (Panicum Miliaceum, now called chīnā, V.2.3-4).

The size of a field is also indicated by the quantity of seed required for its sowing (Tasya vāpah, V.1.45), e.g. a
field sown with a \textit{prastha} measure of seed was called \textit{prasthika}; similarly \textit{draunjikha} and \textit{kbhrika}. P\text={}\text{\=a}nini refers to \textit{p\=a\=t\=ri\=ka} as a field requiring a \textit{p\=a\=tra} measure of seed (V.1.46, \textit{p\=a\=trasya v\=ap\=ah}).

The fields were also called after the crops for which they were suitable (\textit{Tas\=ina\=i hitam, V.1.5}), \textit{e.g.} fields for barley called \textit{yav\=ya}, for beans \textit{m\=a\=shya}, and for sesamum \textit{tilya} (V.1.7).

\textbf{AGRICULTURAL IMPLEMENTS}—The plough is named (\textit{s\=i\=ra-n\=a\=ma, VI.2.187}) in several s\=utr\={a}s as \textit{bala} (III.2.183; IV.3.124; IV.4.81; VI.3.83). \textit{L\=a\=ngala}, a plough in the \textit{R\=i\=gveda} and later (\textit{Vedic Index, II.231}), was one of the synonyms of \textit{s\=i\=ra} referred to in \textit{s\=utra}, VI.2.187.\textsuperscript{1} A large plough was called \textit{bali} (III.1.117), which was also known as \textit{j\=i\=tya}, perhaps from its utility to break even the hardest ground and to reclaim waste land. (III.1.117). The two words \textit{bali} and \textit{j\=i\=tya} are still preserved in the Avadh\={i} dialect where reciprocal assistance in tillage is called \textit{bar\=i} or \textit{j\=i\=ta} (Patrick Carnegie, \textit{Kachabri Technicalities}, Allahabad (1877), p. 14). This implied the lending of one’s plough and bullocks to one’s neighbour.

P\=a\=nini mentions three classes of farmers: (1) not possessing a plough of their own (\textit{abali}, also called \textit{ap\=ahala, ap\=as\=ira, or apal\=\=a\=nga\=la, VI.2.187}); (2) having a good plough (\textit{subala\=h, subali\=h}); and (3) with a bad plough (\textit{durba\=li or durba\=la, V.4.121}).

\textit{K\=a\=ty\=a\=yana} considers the plough as a mark of prosperity in the benedictory formula ‘\textit{Svasti bhavate sabahal\=a\=ya} or \textit{sa\=bal\=a\=ya}, ‘May you have good luck with your plough!’

The plough was made up of three parts: (1) the long wooden pole (\textit{ib\=a}), (2) the central bent portion called \textit{potra} (III.2.183), and (3) the plough-share or \textit{k\=u\=si} fitted in the \textit{potra} and made of iron (\textit{ayovik\=a\=ra, IV.1.42}). In Vedic

\textsuperscript{1}K\=a\=ty\=a\=yana is more explicit and mentions \textit{l\=a\=ngala} in \textit{a v\=art\=ti\=ka} on III. 2.9 (\textit{B\=a\=shya, II.99, l\=a\=ngala-graba}).
literature the share was called phāla (Vedic Index, II.58; Ṛig. IV.57-58). The plough was drawn by bullocks (IV.4.81) called bālikā or sairikā, as distinguished from others for drawing carts and chariots (IV.4.76; IV.4.80). They were fastened to the yoke (yuga) by a rope called yotra or yoktra (III.2.182), or leathern thongs called naddhrī (III.2.182). In the Khaṇḍikādi group we have yuga and varatrā, which refer to the yoke and the thick long rope used for lifting water from a well, still called burat in western and bārā in eastern Hindi. The whip was called vyaja (III.3.119) and totra (III.2.182); the spade khanitra (III.2.184) and ākhanā or ākhaṇā (III.3.125); the hoe for uprooting weeds and stumps stanībaghīa (III.3.83). The ripe grain was cut with a sickle for which besides the old Vedic word dātra (III.2.182) a new word lavitra (III.2.184) had come into use. Yāska (Nir. II.2) says that the sickle was called dātra in the North, and dātor in the East. Patañjali repeats this information.

AGRICULTURAL OPERATIONS—The operations of agriculture are neatly summed up in the Satapatha Brāhmaṇa (I.6.1.3), as ploughing, sowing, reaping and threshing (krishantaḥ, vaṃpantaḥ, lunaṃtah, mṛṇantah). In the Ash-ṭādhyāyī all these are distinctly mentioned.

(i) Ploughing (karsba). The ploughed land was called balya (IV.4.97). Ploughing is referred to by the new term balayati, 'he holds the plough' (III.1.21). We learn from Patañjali that agricultural labour was employed for ploughing. It enabled the owner of the land to sit in a corner and supervise the ploughing done by five hired labourers.

1 The Khaṇḍikādi group (IV.2.45) is one of those ganaś which had been subjected to a searching analysis by Patañjali (II.280) and all subsequent commentators, and hence its text may be considered reliable.

2 Dātor lavanārtbe Prāchyes bh, dātraṃ Udīchyesbh (Nir; II.2; Bābhyā, I.9).

3 Muṇḍa, . . . . . bala-kala-krita-tāstebbyah nīch, III.1.21. According to Kātyāyana bala is the substitute for the original bali (See Bābhyā, II.28).
India As Known To Pāṇini

(ekānte tūṣṇīm-āsina uchyate pāchabbhir-balaiḥ kṛishatīti, tatra bhavitvyām pāchabbhir-balaiḥ kṛashayatīti, Bhāṣya, II.33). The labourers received bhakta or food in lieu of wages. This food was supplied at the time required.

The Greeks in India were struck with the amazing fertility of the soil (Meg. Frag.1) and the skill of the agriculturists (Arr. Anab. V.6). Pāṇini knows of deep ploughing. It was effected by driving the plough twice (dvitiyā-karoti), or thrice (tṛitiyā-karoti, V.4.58). The Arthaśastra also (II.24, p. 116) refers to ploughing three times (trīn kṛashakān) in heavy rains. Pāṇini also refers to ploughings done more than three times (Sanikhvyāyaś-cha guṇāntayāḥ, V.4.59). To make cultivation more fruitful and intensive it was the custom to plough the same field over again from one end to the other in a reverse direction (sambā-karoti, V.4.58; anulomakṛishṭaṁ kṣetraṁ punaḥ pratilomaṁ kṛishat-ity-arthaḥ). The Greeks testify to the careful ploughing habits of the people in this country (Meg. Frag. I).

(iii) Sowing (vāpa). After the soil was prepared by ploughing, it was fit to be sown (vāpya, III.1.126). In some cases ploughing was done in a field with seed already scattered in it, e.g. bījākaroti (V.4.58), which the Kāśikā explains as saha bijena vilekhanam karoti.

The sowing of mixed crops was also known, specially during the rainy season. Patañjali states that sesamum was sown with beans, but in such combining beans predominated as the main crop and sesamum was subsidiary, so that the ploughing was done according to the requirements of the main crop. The seeds of the minor crop were scattered at sowing (Bhāṣya on VIII.4.13). The trend of Patañjali's discussion is that the mixing of tila with māsha is not obligatory for good germination, for if it were so, then both the crops would have to be considered as principal crops. Only when one is the principal (pradhāna) as māsha, and the other secondary as tila (in this case), can the sentence tilaiḥ saha māsān vapati be an
appropriate example of sūtra II.3.19, Sabayukte apradbāne (Bhāṣyā on II.3.19).

Farming is an operation vitally connected with Mother Earth and the farmers naturally attached great religious significance to the actual sowing of seed, for which purpose they selected auspicious days. Pāṇini tells us that one of the auspicious days for sowing was the full-moon day of the month of Agrahāyaṇa (Āsvayujī Paurnamāsī, IV.3.45). The Śarāt-puṁśmī is the brightest and clearest moonlit night in the whole year and is still considered auspicious for operations connected with agriculture and plantation.

(iii) Reaping (lavana, VI.1.140). The ripe grain was cut by a sickle (dātra or lavītra, III.2.182; 184). The operation of mowing was called abhilāva (III.3.28, Nirabhiyoḥ pūlvoḥ). In the present day dialects it is called simply lāva; at the time of lāva there is much buzzing activity in the fields and extra labour is engaged. The mowers were known as lavakāh (III.1.149). Pāṇini also refers to a special method of harvesting (VI.1.140, Kiratau lavane) expressed by the verb upaskirati, which refers to reaping, not from one end of the field to the other, but in an unsystematic manner. We learn from the Kāśikā that such a practice prevailed in the countries of Madra and Kashmir (Uपaskāraḥ Madrakā lunanti; upaskāraḥ Kāsmīrakā lunanti). Some cereals such as māśba and mudga cannot be harvested without uprooting the whole plant and were called mūlyāh (IV.4.88, Mūlamsy-ābarbi). The stumps were weeded by a special kind of hoe called stambaghna (III.3.83).

(iv) Threshing (nishpāva, III.3.28). The reaped crop was stacked on a threshing floor (khala). A plot was set apart for purposes of threshing, and was called khalya, 'good as a threshing floor' (V.1.7). A group of adjoining threshing floors was called khalyā, (IV.2.50) or khalini (IV.2.51).

1 The grain which had so much ripened as to require immediate reaping would be called lāvyu (Cf. Kāśikā on III.1.125).
Kauṭilya prescribes clustered siting of threshing floors for the purpose of safety: ‘The threshing floors of different fields shall be situated close to each other.’ (Arth. II.24).

Winnowing was done by scattering corn (utkāra or nikāra from kṛi dhānye, III.3.30) with a winnowing fan (sūrpa, V.1.26) in the direction of the wind, and separating grain from chaff (nispāva, III.3.28).

The stages as they followed in order of time in the process of harvesting are indicated by appropriate terms as given below:¹

1. lūyamāna-yavam, when barley was being harvested (as explained by Vardhamāna in the Gaṇaratna-mahodadhi);
2. lūna-yavam, when the harvesting was completed;
3. pūyamāna-yavam, when barley was being winnowed;
4. pūta-yavam, when the winnowing was completed;
5. khale-yavam, when barley grain was heaped on the threshing floor;
6. khale-busam, when the straw was separated from the grain and heaped on the floor;
7. Sāṃbhriyamāna-yavam, when barley was being collected;
8. saṃbhīta-yavam, when it was garnered;
9. saṃbhriyamāna-busam, when the straw was being collected;
10. saṃbhīta-busam, when the straw was gathered in.

Kauṭilya also directs that grains and other crops shall be collected as often as they are harvested. No wise man shall leave anything in the fields, not even straw (Arth. II.24).

¹ The ten words in this list form part of the Tishṭhadvṛti group (II.1.17); Kātyāyana’s vārttika on it, khaleyavadini prathamāntāni anypadārthe, and Patañjali’s comments on the same (Bhāṣya, I.381) show that the words were read by Pāṇini himself.
the above terms refer to the barley crop is suggestive of the
place of their origin being the Punjab where barley was one of
the staple crops.

(Pāṇini knows of crop-loans and instances yava-busaka
(IV.3.48), i.e. the loan to be repaid when the straw of barley
would be available. Patañjali refers to bumper harvests of
barley and rice (Eko vrībhiḥ sampannāḥ subhikṣbāṁ karotī; eko
yavah sampannāḥ subhikṣbāṁ karotī, Bhāshya, I.230). He
also points out that barley was the staple crop of Uśīnara and
Madra (U śīnara-van-Madresbu yavāḥ, Bhāshya, I.147; tān eva śālin
bhunījmahe ye Magadhesbu, I.19). Barley was so important
a crop that its cultivation was guarded by special officers
mentioned by Pāṇini as yavapāla (Go-tanti-yavam pāle,
VI.2.78).1

(RAINFALL)—Pāṇini refers to the rainy season as prāvṛish
(IV.3.26; VI.3.14) and varśā (IV.3.18), the former was the
first part of the season (Hopkins, Epic Chronology, J.A.O.S.,
1903, p. 26). These two parts were known as pu rva-varśā
and apara-varśā (Avayavād-ritoḥ, VII.3.11). He also refers
to varśa-pramāṇa (III.4.32), measurement of rain-fall, of
which goshpada is mentioned as the measure of lowest rain-fall
(VI.1.145). Kauṭilya speaks of the quantity of rain (varśa-
pramāṇa) in Jáṅgala and other parts of the country. Failure
of rain or drought (varśa-pratibandha) is referred to as
avagraha2 (III.3.51). Pāṇini mentions two crops in the year
as vāsantaka (vernal) and āśvayujaka (autumnal) (IV.3.45;
46). Megasthenes also noticed that India had a double rain-
fall and a double crop every year.

1. Patañjali refers to danger to barley crop from herds of deer: Na cha
mrigāḥ saṃtiitī jāvaḥ nopyante (Bhāshya, I.100). This proverb with that of
the Stbāli and Bhikshus is quoted in the Kāmasūtra under the name of
Vātsyāyana.

2. Besides avagraha known to Pāṇini, Patañjali mentions other pests to
crops from swarms of mice, locusts and hawks (ākhūttha, iṣalabottha,
iyenottha, III.2.4; II.98).
IRRIGATION—Pāṇini refers to many important rivers as the Sindhu, Suvāstu (IV.2.77), Varṇu (IV.2.103), Sarayū (VI.4.174), Vipāś (IV.2.74), Chandrabhāgā (IV.1.45), which served as sources of irrigation. He also refers to Devikā (VII.3.1) the banks of which were specially suitable for growing paddy crops as pointed out by Patañjali (Dāvikā-kūlāḥ śālayāḥ, Bhāṣya, III.316). Pāṇini also refers to the melting of snow in the hills as bimāsratha (VI.4.29) and glaciers as bimāni (IV.1.49). Irrigation with water from the wells was also known, as indicated by the word udañchana (III.3.123), the large leathern bucket used for lifting water, and also yugavaratrā, 'the yoke and the rope by which the bullocks were driven for raising the water (Gaṇa-pāṭha to IV.2.45).

Patañjali speaks of canals for irrigating paddy fields (śālyardhām kulyāḥ praniyante, Bhāṣya, I.1.24; I.82).

CROPS—Crops were of two varieties, (1) krishṭa-pachya (III.1.114), grown by cultivation, and (2) a-krishṭa-pachya, naturally growing in the jungles as the nivāra rice. They are further classified according to the time of sowing (IV.3.44; 46) and the ripening of crops sown (pachyamāṇa, IV.3.43).

According to the time of sowing (upṭe cha, IV.3.44) there were three crops, (1) sown on the full-moon day of the month Āśvayuja or Āśvina (Sept.-Oct.), called āśvayyuja (Āśvayyuja vuñ, IV.3.45); (2) sown in summer, called graishma or graishmaka; and (3) sown in spring and named vāsanta or vāsantaka (Grīshma-vasantād-anyatarasyām, IV.3.46).

The āśvayyuja crops are chiefly barely and wheat which ripen in spring. The crops sown in spring ripen in the rains, and those sown in summer ripen in autumn or the month of Mārgaśīrsha.

Kauṭilya also refers to the succession of crops from season to season, e.g. vārshikā sasya (rainy crops) followed by baimana musṭī (autumnal harvest) in Mārgaśīrsha (November-December); baimana sasya (autumnal crop) followed by vāsantika musṭī (spring harvest) in Chaitra (March-April);
and finally vāsantika sasya (spring crop) followed by vārshika mushti (rains harvest) in Jyesṭha (May–June). Sasya (crop) is the same as vāpa (sowing) and mushti (harvest) as pachyamāna (ripening) of Pāṇini. The evidence from these two sources may be thus tabulated:

<table>
<thead>
<tr>
<th>1. Name of crop (sasya) in Kauṭīlya according to sowing season (vāpa-kāla)</th>
<th>2. Name of produce (mushti) in Kauṭīlya according to ripening or harvesting season (pachyamāna)</th>
<th>3. Time Corresponding names in Pāṇini for the crops according to the time of sowing (uṭte cha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vārshika</td>
<td>Haimana</td>
<td>Mārgaśīrṣha</td>
</tr>
<tr>
<td>Haimana</td>
<td>Vāsantika</td>
<td>Chaitra</td>
</tr>
<tr>
<td>Vāsantika</td>
<td>Vārshika</td>
<td>Jyesṭha and Mula</td>
</tr>
</tbody>
</table>

Columns 1 and 4 are similar with the exception of Pāṇini’s summer crop (graishma) for which there is rainy crop (vārshika) in Kauṭīlya. (Although the Arthaśāstra also knows of graishmika crops (Arth. II.24, p. 117),¹ their raising entailed much hard labour for the agriculturists.) Hence Kauṭīlya directs that only the king who is in financial trouble and who has exhausted other means of replenishing his exchequer, should prevail upon the peasantry through his collector-general to raise summer crops (Arth. V.2, Tr. p. 271).

AGRICULTURAL PRODUCE

1. Cereals (Dhānya) and Pulses. Pāṇini mentions the following food grains and pulses:

Vṛībi. Special fields for growing vṛībi and śāli are mentioned (Vṛībi-śālyor-ṭbak, V.2.2). The sacrificial cake made from rice is called vṛīhimaya (IV.3.146). One who possessed a stock of rice was known as vṛīhimān, vṛībika or vṛībi, all

¹ karmodaka-pramāñena kedāraṁ haimanaṁ graishmikanī vā sasyanī sthāpayet, Arth., II.24.
being epithets of a rich man. *Bahu-vrībi*, the name of a compound (II.2.23) is synonymous with *vrīhīnām*, i.e., one who has a plentiful stock of *vrībi*. According to the *Taitt. Saṁhitā* (VII.2.10.2) *vrībi* was an autumnal crop (*Vedic Index, V.I.182*).

The following varieties of rice are mentioned:

(i) *Śāli* (V.2.2). It was different from *Vṛībi* as stated by Kauṭilya also. *Vṛībi* corresponds to Hindi *dhān*, and *śāli* to *jaṭāban*. *Śāli* crop was harvested in the cold season, and *vrībi* in the rainy season. *Vṛībi* is a much older word used in the *Vājasaneyī Saṁhitā* (XVIII.12) and the *Bṛhadāraṇyaka Upanishad* (VI.3.13) as the first of the cultivated grains (*grāmya-dhānyas*). *Pataṇjali* refers to red rice (*lobitaśāli*, I.403) and irrigation channels for watering the *śāli* crop.

(ii) *Mahāvrībi* (VI.2.38), a well-known variety of rice in the time of Pāṇini, also mentioned in the *Taittirīya Brāhmaṇa*, III.1.5.2.

(iii) *Hāyana* (III.1.148), a kind of *vrībi* grown by transplanting, popularly called *jaṭāban*.

(iv) *Shasṭikā*, ripening in sixty days (*Shasṭikāḥ shasṭiriśreṇa pachyante*, V.1.90). According to Kātyayana it was a specific term for rice irrespective of its etymology. Other crops taking sixty days to ripen would not be called by this term. (*Shasṭike saṁjñāgraṇam; also Bhāṣya on it II.360*). *Sāṁthi* (Hindi name of *Shasṭika* rice) was best suited to grow in the Punjab, since it does with but little water. It is a coarse rice, the grains of which agglutinate when boiled (*Watt’s Dictionary of Economic Products, Vol. V*, pp. 620-21).

(v) *Nīvāra*, (*Nau vṛī dhānye III. 3. 48*), wild or uncultivated variety of rice included under *a-krīṣṭa-pachyā* class.

2. *Yava* (Barley). Fields for growing barley were called *yavya* (V.1.7). Pāṇini refers to *yavānī* (IV.1.49), a kind of crude and coarse barley according to Kātyāyana. *Yavaka* (V.2.3) may be another variety of barley grown in
special fields (yavakya kshetra, V.2.3).

Barley was sown in the beginning of winter, probably on the Āsvayujī Pūrṇimā (IV.3.45), considered auspicious for sowing. A ceremonial sowing of barley is still practised in Hindu homes on the first bright day of the month of Āsvayuja, and its young sprouts (yavānkura) are worshipped on the tenth day of the same month. Barley ripens as a vernal crop, and the season of its harvesting is referred to by Pāṇini by about half a dozen names, such as yava-busa (IV.3.48), khale-yava, lūna-yava, pūta-yava, piyamāna-yava, saṁhyita-yava and saṁbriyamāna-yava (II.1.17).


4. Māśba (Phaseolus Radiatus) (V.1.7, V.2.4).

These two names occur also in the list of the Vājasaneyi Saṁhitā (XVIII.13). Fields for growing māśba were called māśhya and māśhīna, from which the crop is still called māsinā. As examples of crops harvested by uprooting, the Kāśikā quotes māśba and mudga on sūtra IV.4.88. (mūlyāḥ māśbāḥ, mūlyāḥ mudgāḥ). We are told by Watts that in certain districts the crop is cut, in others it is pulled out (Watt’s Dictionary, Vol. VI, Pt. I, p. 189). Patañjali says that mudga also takes sixty days to ripen like the shasṭikā rice (Bhāṣṭya, II. 360). He also refers to rājamāśba (rāja-māśbebhyo hitam rājamāśhyam kshetram, II.345) which is a variety of māśba grown principally in the Punjab.

5. Tila (sesamum). Both in the Vedic literature and Pāṇini tila is mentioned in connection with māśba (V.2.4. and V.1.7 tila-māśba and māśba-tila). Pāṇini does not explicitly mention the two varieties of tila, black and white, but he refers to the use of the same in the śrāddha ceremony (VI. 3.71; IV.2.58) where only the black grains are used. They are known to Patañjali also (krishnatilebhyo bitah krishnatilyah, II.345). Pāṇini knows of the oil extracted from the tila seeds (IV.3.149), but later grammarians thought that there is no derivative sense attaching to the word tāila, and
therefore, it should be taken not as a word but as a suffix in such names as sarrha-pa-taila and inguda-taila (Bhāshya, V.2.97; II.376).

6. Anu (Panicum Miliaceum, V.2.4). A very small grain consumed mostly by poorer people, growing as a rainy crop and mentioned with priyaṁgu in the Yajurveda (XVIII. 13).

7. Kulattha (Dolichos Biflorus, IV.4.4.), horsegram, popularly known as kulathī, is grown specially in the Punjab in the Trigarta region (Hoshiarpur, Ambala, Simla) as an autumnal crop. It is eaten as pulses or groats, but Pāṇini mentions it as a flavouring ingredient (saṁskāraka dravya, IV.4.4). Like shasṭika, kulattha also occurs for the first time in the Ashādhyāyī. Kauṭilya notes it as a crop grown at the end of the rainy season (Arth. II.24).

The Gana-pāṭha of IV.3.136 adds a few more names to the above list of cereals, e.g. masūra (Ervum Hirsutum), godbūma (wheat) and gavedhukā (Coix Barbata, Vedic Index, I.223). According to Kātyāyana gavedhukā formed part of the Būḍī group (IV.3.136; Bhāshya, II.323).

II. FIBROUS PLANTS—Pāṇini mentions umā (linseed) and bhaṅgā (hemp) and also the fields named after them (V.2.4). Kauṭilya refers to atasi and śana in place of umā and bhaṅgā. Pāṇini also mentions cloth made from linen as anuma and from wool as aurṇa (Uomorṇayor-vā, IV.3.158). For Pāṇini’s acquaintance with karpaśa or cotton we have to depend on the reading of the Būḍī-gaṇa (IV.3.134). He, however, knows tāla (III.1.25) which might have denoted cotton.

Patañjali raises an interesting discussion on sūtra V.2.4 as to whether umā (linseed) and bhaṅgā (hemp) can come under the category of dbānyaś or not and sums up by saying that the derivative meaning of dbānya is ‘what pleases’, and since umā and bhaṅgā are profit-yielding commercial crops which must please the grower they too count as dbānyaś. He further observes that the number of dbānyaś is seventeen,
a list in which śaṇa i.e. bhaṅgā is also included, hence there should be no objection to treating umā and bhaṅgā as dhānyas for purposes of Pāṇini’s rules.

III. SUGAR-CANE (IKSHU)—It is mentioned in sūtra VIII.4.5, and the manufacture of guḍa from sugar-cane is implied in rule IV.4.103 (Guḍādibhyashṭhaṇ) on which the illustration gaudika, meaning ‘excellent for making guḍa’ presumes sugarcane.

IV. KUSTUMBURU (VI.1.143), the spice coriander (Coriandrum Sativum). In the South Indian languages the words for coriander bear a closer affinity to Sanskrit kustumburu, e.g. kotamalli (Tamil), kotimirī (Telugu) and kotambari (Kanarese). It seems to have been a loan-word in Sanskrit.

V. DYE-STUFFS—Pāṇini refers to maṇṭijisṭha, madder (VIII.3.97) and nilī, indigo (IV.1.42). Maṇṭijisṭha (Indian madder, Rubia Munjista) is also mentioned in the Aitareya (III.2.4.) and Sāṅkhayāna (VIII.7) Āryanyakas. Pāṇini derives maṇṭijisṭha from maṇṭi and stha, where maṇṭi may mean a cluster of flower blossoms. The permanent dye made from madder has always been highly prized for its deep tintorial quality. The great part of the madder used in the Punjab is that imported by the Lohani Afghans from the hills of North Baluchistan, Kabul and Khorasan to Multan and Peshawar. (Watt’s Dictionary, Vol. VI, pt. I, p. 574).

(Nīlī is according to Kātyāyana the name of the indigo plant. In Pāṇini’s time nīla was a kind of cloth (āchchhādana, IV.1.42), dyed with indigo blue. According to McCrindle: “It appears pretty certain that the culture of the indigo plant and the preparation of the drug have been practised in India from a very remote epoch.” (Periplus, p. 17). In the post-Vedic language nīla describes the colour of dark blue objects, such as indigo, sapphire, etc. (Vedic Index, II. 246, foot-note).}

In Pāṇini the indigo plant as the source of this colour was known and this is the earliest reference to this plant in Sanskrit literature.
CH. IV, SECTION 2. FLORA

The study of Pāṇinian flora furnishes an important chapter in the general history of Indian plants which still remains to be written on the basis of literary and archaeological sources. Pāṇini refers to the systematic cultivation of forests and groves of trees and plants and to early attempts at nomenclature on the basis of their flowers, leaves, fruits and roots. He is acquainted with the principal trees of north India, a good many of which are referred to by him for the first time.

FORESTS—Pāṇini uses the term vana in a two-fold sense: (1) natural forests, such as Puragāvana, Miśrakāvana (Misrikh forest in Sitapur district, VIII.4.4); and (2) cultivated groves of trees and fruit-bearing plants, such as āmravana, khadiravana, īkshuvana, which were also used as common names (asaniṃṇāyām api, VIII.4.5). Pāṇini calls a large forest aranyā (IV.1.49) and Kātyāyana aranyānī (Bhāshya, II.220).

Pāṇini refers to forests classified on the basis of their produce, e.g. (1) oshadhi-vana, tracts producing herbs, as dūrvā-vana, mūrvā-vana, and (2) vanaspati-vana, those producing timber trees as sirishavana and devadāruvana (VIII.4.6).

OSHADHI AND VANASPATI—The plant kingdom is usually classified into two convenient divisions as oshadhi and vanaspati, plants and trees (Vibhāṣa-auṣhadhi-vanaspatibhyah, VIII.4.6). The word vṛiksba is synonymous with vanaspati in sūtra IV. 3.135 (Avayave cha prāny-oshadhi-vṛikshebhyah), with which Kātyāyana agrees (sūtra II.4.12, which prescribes optionally singular number for compounds of tree names, Bhāshya I. 475). Trīna and dhānya (grasses and cereals) mentioned separately from vṛiksba (II.4.12), must have been included under oshadhi, which in addition to these two comprised other
divisions of annual plants, such as creepers.

Patañjali speaks of a tree as consisting of roots, trunk, fruits and leaves (mūla-skandha-phala-palāsavān, I. 219). Pāṇini mentions all these parts in different sūtras, and in his view the plants were named after the peculiarity of their leaves, flowers, fruits and roots (parna, pushpa, phala, and mūla, IV.1.64), e.g. śāṅkhapushpī, (Andropogon aciculatus), a herb with a flower white like conch-shell. He mentions that a fruit was generally named after its tree, without the addition of any suffix (Phale luk, IV.3.163), as āmalaka, fruit of the āmalakī tree.

TREES—The following trees are mentioned in the sūtras:

1. Āsvattha (IV.3.48), Ficus religiosa. Pāṇini takes āsvattha to signify the time when these trees bear fruit (yasmin āsvatthāḥ ṭhalanti, Kāśikā).

2. Nyagrodha (VII.3.5), Ficus bengalensis. Pāṇini also mentions its other name vata (VI.2.82), a new word unknown in Vedic literature.

3. Plaksha (IV.3.164), Ficus infectoria, mentioned in connection with its fruits called plāksa, and its groves called plaksha-vāna (VIII.4.5).

4. Āmra (VIII.4.5), Mangifera indica, with its groves called Āmra-vāna. This is one of the earliest references to āmra in Sanskrit literature.

5. Palāsa (IV.3.141), Butea frondosa. The Palāśādigaṇa mentions seven other trees, e.g. Khadirā, Śīṁsapatā, Syandana, Karīra, Sirīsha, Yavāsa and Viṇaiṅkata.

6. Bilva (IV.3.136), Aegle Marmelos, the wood-apple tree.

7. Khadirā (VIII.4.5), Acacia catechu. In Pāṇini Khadiravāna is both a proper name and also applied to a grove containing catechu trees. As a proper name it is mentioned as the abode of Revata, the foremost of the forest recluses (Khadiravaniya, Aṅguttara Nikāya, XIV.1; see Journal of the Deprt. of Letters, Calcutta University, 1920, p. 233).
Patañjali speaks of its white trunk (gaura-kāṇḍa), small leaves (sūkṣma-पर्ण), and hard bark (kaṅkaṭavān, I.113).

8. Śimśapā (VII.3.1), Delbergia Sisoo; also included in the Palāśādi group (IV.3.141).

9. Varāṇa (IV.2.82), Crataeva religiosa. (Hindi barnā; (Watt, Dict., Vol. VI. pt. I, p. 340; Hindi name chbaukrā and Varāṇā (Gk. Aornos) situated near the groves of this tree.

10. Śaṃśī (V.3.88 and IV.3.142), Prospis spicigera, found in the arid dry zones of the Punjab, Sindh and Rajputana (Watt, Dict., Vol. VI. pt. I, p.340; Hindi name chbaukrā and jaṇḍ). A small tree was called śaṃśīra, and articles made of it śāmīla.

11. Pilu (V.2.24 and VI. 3.121), Salvador indica, a large evergreen tree of the same habitat as śaṃśī. Payment made, or incidents happening under the pilu trees were called pālumūla (V.1.97). The Vāhika country had large forests of pilu trees (Karṇaparva, 44, 31). Such places were used by the cattle thieves as places for concealing stolen animals (Watt, Dict., Vol. VI. pt. II, p. 448), and as out of the way places they gave scope to criminal acts, as stated in the Mahābhārata (Karṇaparva, 44, 20-22). The ripe small berries of Pilu were called pīlukūṇa in the time of Pāṇini (V.2.24), a word still surviving in the Punjabi dialect as pīlaknā (पिलक्कना).

12. Kārshya (VIII.4.5) synonymous with the Śāla (Shorea robusta). The reference to the forests of Kārshya trees (Kārshya-vanā) is important as pointing to the Terai forests of Śāla trees in eastern India.

13. Pīyūkṣbā (VIII.4.5) is a variety of Plaksha, also mentioned in the Tālādi (IV.3.152) and Kāsādi (IV.2.80) groups.

14. Tāla (IV.3.152), Borassus Flabelliformis. Bows made of Tāla are referred to in the Mahābhārata and the Kāsikā (Tālād-dhanushi).

15. Jambū (IV.3.165), Eugenia jambolana, of which the fruits were called jāmbava and jambū.
16. *Haritaki* (IV.3.167); *Terminalia chebula*, noted especially for its fruits, also called *haritaki* (yellow myrobalan).

17. *Vanīśa* (V.1.50) bamboo, also known as *venu* and *maskara* (VI.1.154); the latter is also mentioned in the *Rikatntra* (maskaro *venuh, sūtra 210*).

18. *Kāraskara* (VI.1.156), stated as the name of a tree, is in the *Mahābhārata* the name of a people identified with the *Āraṭtas* (Jayaswal, *J.B.O.R.S.*, 1933, p. 115), but the two words appear to be different.

19. *Sidhrakā* (VIII.4.4), mentioned as the proper name of a forest. The *Sāma-Vidhāna Brāhmaṇa* refers to the fuel of the Saidhrika tree (III.6.9), of which the wood was hard (*sāravriksha i.e. catechu; also Taittirīya Brāhmaṇa, III.4.10*). *Sidhrakā* and *Saidhrika* were the same.

20. *Vishtiara* (VIII.3.93), a tree but unidentified.

The names of trees in the *gaṇas* are:

1. Karkandibu and Badara (V.2.24), *Zizyphus jujuba*.
2. Kuvala (V.2.24), as above.
3. Kuṭaja (V.1.50), *Holarrbena antidysenterica*.

4. *Pāṭali* (IV.3.136), *Stereospermum suaveolens*. That *Pāṇini* included it in the *Bilvādi* group is inferred from *Pataṇjali*’s example, *pāṭalāṇi mūlāṇi* (*vārttika 2, sūtra IV.3.166; II.328*). *Pataṇjali* implies that *Pāṭali* takes *an* by IV.3.136 to denote ‘the roots thereof’ and since the *an* suffix is not elided as a case of exception to the *vārttika Pushpa-mūleshu cha bābulam*, the *i* of *Pāṭali* is elided in the form *pāṭala*.

5. *Vikaṅkata* (IV.3.141), *Flacourtia sapida*.
7. *Śālmali* (IV.2.82), Silk cotton tree, *Bombax Malabaricum*.

10. *Dāru* (IV.3.152) referring to *Pitadāru* or *Devadāru* which as the name of a tree ending in *u* seems to be
implied in śūtra IV.3.139. Pitadāru also occurs in Phīṭ śūtra (no. 37) and Sarala, a name of Devadāru (Cedrus deodara) in Patañjali (II.81).

12. Vibhitaka (IV.3.152), Terminalia beelerica.
13. Śīrīsha (IV.2.80), Mimosa sirisa (Albizizia Lebbek), mentioned in connection with the town Śairīshaka (modern Sīrā) named after it.

14. Spandana or Syandana (IV.3.141), Ongeinia Dalbergioides, an ancient tree known in the Rigveda (III.53.19). It is one of the best woods for shock-resisting ability and was used for making chariots, also called syandana cf. Hindi Sāndan).

15. Kaṭakāra (IV.3.152), Solanum jaquinii.
16. Karīra (IV.3.141), Capparis aphylla. Karīrāprastha, a town, (VI.2.87) was named after this tree.

GRASSES AND WEEDS—Pāṇini mentions the following grasses (tṛṇa, II.4.12) in the sūtras:

1. Śara (VIII.4.5), Saccharum arundinaceum. Pāṇini mentions Śaravaṇa as the name of a forest and Śaravati (VI.3.15) as a river. Patañjali mentions the names of two grasses as śara-śīryam II.4.12, I. 476). Śara is well-known, and śīrya should be identified with saīrya, mentioned earlier in the Rigveda, I.191.3.

2. Kāśa (IV.2.80 and VI.2.82), Saccharum spontaneum.
3. Kuśa (Poa cynosuroides) occurs in such words as kuśāgra, (V.3.105) and kuśala (V.2.63). Its feminine form was kuśā (IV.1.42). Patañjali mentions kuṣa-kāsam as names of grasses (II.4.12; I.475).

4. Muṇja (III.1.117), Saccharum munja. Pāṇini refers to muṇja grass being treated (vipūya) in water for its fibres. Its reeds were called isbikā (VI.3.65).

5. Nāḍa (Reed), IV.2.87, in such names as nadvāṇa; IV.2.88, nadvāla; IV.2.91, nāḍakīya, denoting a place abounding in reeds.
6. Šāda (IV.2.88), grass from which šādvala, a grassy land.

7. Vetasā (IV.2.87), cane or Calamus rotang.

8. Kattrina (VI.3.103), explained by Amara as saugandhika, a fragrant grass, probably same as sugandhitejana of the Vedic literature (Vedic Index, II.453).

Grasses mentioned in the gaṇas.

1. Viraṇa, Andropogon muricatus, also called uśira (IV.4.53; IV.2.80), a fragrant grass (Kisārādi group). The gathering of viraṇa flowers was a favourite game in East India called Viraṇa-pushpa-prachāyika, celebrated in the month of Vaisākha (April-May).

2. Balvaja, Eleusine indica, (IV.2.80; IV.3.142).

3. Darbha (IV.3.142); also in the Gavāśva group II.4.11, where it occurs in such compounds as darbha-śaram.

4. Pūṭika (II.4.11), a grass, also known in Vedic literature (Vedic Index, II.11).

FLOWERS (PUSHPA, IV.1.64)—Pāṇini mentions kumuda, water-lily (IV.2.80, IV.2.87), and pushkara, lotus (V.2.135). The Pushkarādi-gaṇa, also contains its other synonyms, e.g. padma, uṭṭala, bisa, mṛṇāla. The Haritakādi-gaṇa mentions śayphālikā (Nyctanthes Arbor Tristis), a sweet-scented flower, which was known to Patañjali who refers to a cloth dyed with its colour, called śayphālikā (Bhāṣya, V.3.55; II.413).

Pāṇini tells us that the flowering plants or creepers derived their names from the name of their flowering season (kālāt pushyat, IV.3.43) on which the Kāśikā cites vāsanti kundalata, i.e. the creeper Jasminum multiflorum flowering in the spring season.

HERBS (OSHADHI). The formation of the names of herbs is the subject of sūtra IV.1.64, Pāka-karṇa-paṇa-pushpa-mūla-bāl-ottara-pādāch-cha. Some herbs are cited in the four
antar-gaṇa sūtras to the Ajādi group IV.1.4, which also occur as vārttikas of Kātyāyana, although Haradatta treats them as part of the gaṇa (cf. Padamaṇjari proposing to correct sat-śrāk-kāṇḍa as sadach kāṇḍa on the basis of the vārttika). Thus triphalā, the traid of Indian myrobalans and amūlā, Methonica Superba (Vedic Index, I.31) appear to be old names. Brāhmaṇī, a famous herb (Herpestis Monniera; Watt, Dict., Vol. IV, p. 225), is known to Patañjali (Bhāṣya, III.233 on Pāṇini VI.4.171).

FRUITS (PHALA)—Pāṇini takes fruits as the produce of trees (cf. IV.3.163-167), but Kātyāyana and Patañjali take phala to include even grains as rice, barley, pulses, sesamum, etc., produced by the annual plants which wither away after ripening (phala-पाका-sūbhām upasaṁkhyānām, II.327). This agrees with Manu who defines oṣbadhi as phala-pākānta (I.46). Pāṇini refers to fruit-bearing trees (phalagrabi, III.2.26) and has made rules for denoting the fruits of various vanaspatis (Phale luk, IV.3.163 etc.), stating that the linguistic form of the name of the fruit is generally the same as that of the tree.

Mango, bilva, and jambu are important fruit-bearing trees mentioned, and berries of plaksba and haritaki are also named (IV.3.164,167). The drākṣa vine, and its fruits occur in the Gaṇa-pāṭha (IV.3.167). Pāṇini’s reference to Kāpiśāyana shows his acquaintance with the grapes and its wines from Afghanistan (IV.2.99). The word also occurs in the Mālādi and Yavādi-gaṇas (VI.2.88; VIII.2.9) and in a Phīṭsūtra (no. 57). Pomegranate (dāḍima) occurs in the ardbarchādi gaṇa (II. 4.31), but the first definite mention of the fruit is found in Patañjali (Bhāṣya, I.38 and 217). Outside India, the fruit is carved on the ancient monuments of Persepolis, Assyria and Egypt, showing its pre-Pāṇinian antiquity.

PILUKUNA—In sūtra V.2.24, Pāṇini mentions the suffix kuṇa from Pilu (Salvadora indica) and other tree names to denote their fruits. The ending kuṇa in this sense is a peculiarity of the Punjabi dialect round about Shahpur district in
north-west Punjab where pilukuna denotes the ripe pilu berries. In Sanskrit literature the kuna-ending is of rare usage and Pāṇini has taken here a word from the spoken dialect nearer home.
CLASSIFICATION—Pāṇini classifies creation into animate (prāṇin, IV.3.135; 154; also prāṇabhrīt, V.1.129) and inanimate (aṇrāṇin, II.4.6; V.4.97 etc.), the two being also mentioned as chittavat, 'with mind' (V.1.89) and achitta, 'without mind' (IV.2.47). This becomes significant against the background of the Upanishadic thought where prāṇa (vitality) and chitta (mind) are considered as the two characteristics of life. The animate world is further subdivided into human (mansushya, IV.2.134) and animal (pāsu, III.3.69) kingdoms; and the latter again on the basis of their habits into domestic (grāmya-pāsu, I.2.73) and wild (āraṃya, IV.2.129). Other modes of classification are also referred to, viz. according to size, as kṣudra-jantus (II.4.8), or their food as kravyād, the carnivorous animals (III.2.69). Pre-Pāṇinian attempts at classification are reflected in such words as ubhayatodanta and anyatodanta, dvipād and chatushpād, ekaśapba and eviśapba of Vedic literature (Vedic Index, I.510). Mrīga is generally a wild beast in the Ashāṭādyāyī (IV.3.51; IV.4.35), but in sūtra II.4.12 it stands for the cervidae, such as ruruprishaṭam in the Bhāṣya signifying two species of deer. Birds are called paksbi (IV.4.35) and ākuni (II.4.12). Pāṇini mentions the following animals:

1. An elephant is called bastin (V.2.133), nāga and kunjara (II.1.62); a trumpeteting elephant with prominent trunk was sunḍāra (V.3.88). A herd of elephants was called bāstika (IV.2.47). The height of an elephant constituted a measure as dvihasti, tribasti (V.2.38), as high as two or three elephants, words used with reference to the depth of a moat or the height of a rampart. Pāli bhattin also denotes the size of an elephant (Milinda, p. 312; Stede, Pali Dict.) The tusk
of an elephant was called danta (V.2.113), used also as ivory; a tusker was dantāvala. Strength to kill or shoot an elephant was a mark of valour, expressed by the term hastighna (III.2.54). A goad was totra (III.2.182).

Patañjali refers to the food for elephants as hasti-vidhā (vārīttika II.1.36.3, Bhāshya, I.388).

2. Camel is called ushṭra (IV.3.157) and camel corps aushṭraka (IV.2.39). A young camel (karabhā) restrained by a chain during infancy was known as śrīṅkbalaka (Bandhanam asya śrīṅkbalam karabhē, V.2.79). Pāṇini refers to camel-riders (ushṭra-sādi, VI.2.40), and to mixed corps of camels and mules (ushṭra-vāṇi). It seems that the term ushṭra-sādi and ushṭra-vāṇi referred to the army units employed for quick transport.

Pāṇini mentions aushṭraka as the name of articles made from the parts (vikārāvayava, IV.3.157) of dead camels. Such articles were large and small sacks (gōṇī and gōṇītārī, V.3.90) made of camel hair, and leather jars of large and small size (kutū and kutūpa, V.3.89), made of hides and intestinal integuments of camels (Watt, Dict. II.63-64).

3. Aśva. Horse and mare together were termed aśvavādava in the masculine gender (II.4.27). Pāṇini mentions Pārevaḍavā (VI.2.42), a special breed of mares from across the Indus. Kauṭilya states that the best class of horses were imported from Kamboja, Sindhu, Bāhlīka and Sauvīra (Arth. II.30).

HARANA—A mare in heat is referred to as aśvasyati (VII.1.51) and the charges paid for her covering as haraṇa. Haraṇa has a technical sense in the sūtra Saṃtami-bārīṇau-dharmye' haraṇe (VI.2.65). The object of the rule is to regularise the formation of words denoting some customary (dharma) dues of which haraṇa was one. The Kāśikā cites vāḍava-haraṇa, signifying a payment given to the owner of a sire for feeding him after covering the dame (vāḍavayāḥ ayaṁ vāḍavaḥ, tasya bijanishekād uttarakālani-yad diyate haraṇam iti taducchyate, Kā-
Śikā). Such dues in kind or cash, were fixed by custom (dharmony) as an obligatory charge. The Mahābhārata mentions barana in the wider sense of nuptial presents, both in cash and kind, given at the time of marriage; as for example those given by Kṛishṇa and the Yādavas to Arjuna marrying Subhadrā (baranaṁ vai Subhadrāyā jñātideyam, Ādiparva 233.44). The example vādava-baraṇam cited in the Kāśikā seems to be an old stock-illustration.

ĀŚVİNA—(V.2.19). Pāṇini mentions it as the distance travelled by a horse in one day (āsvasy-aiṅahagamaḥ). The āsvīna distance is mentioned in the Atharvaveda (VI.131.3) and the Aitareya and Tāṇḍya Brāhmaṇas (Vedic Index, I.70; cf. also Caland’s note in the Pañcchavimśa Br., XXV.10.16). The exact distance is not stated, but seems to have exceeded five yojanas (25 miles), since the Atharva mentions it as coming after five yojanas. Kauṭilya states that horses of the first, second and third class drawing a chariot (rathya) travelled 6, 9 and 12 yojanas in one day (a yojana—about 5 miles), cavalry horses 5, 8 and 10 yojanas respectively (Arth. II.30). Patañjali mentions an average horse going four yojanas and a horse of higher mettle eight yojanas in one day (Bhāṣya, V.3.55; II.413). Thus the āsvīna distance travelled by a horse in one day ranged from twenty-five to sixty miles according to the class of horse and the nature of work. As against Pāṇini’s āsvīna (aśva khaṅ), the form in the Atharvaveda is āśvina, derived from āśvin, a horseman. Patañjali describes śoṅa, hema and karka (red, black and white) as colours of horses (I.251).


5. Aja (Goat, IV.1.4; IV.2.39). A herd of goats was called ājakā. Goats and sheep together were called ajāvi and ajāida (cf. gaṇa Tischbaidgu). Jābāla denoted a goatherd, and mabājābāla (VI.2.38) one who was the owner of a big sheep-run. Jābāla does not seem to be a word of Sanskrit
origin. It may be traced to a Hebrew word yobel or jobil, signifying ram’s horn, whence ‘jubilee’. Pāṇini shows acquaintance with some Semitic and Iranian words in use across the frontier (e.g. hailibila, VI.2.38; Arabic halabila ‘deadly poison’, Steingass, Persian-English Dictionary, p. 1506), whence later Sanskrit halābala or hālabala; similarly karsba, berry).

6. Avi (Sheep, V.1.8) was also termed avika (V.4.28). A flock of rams is referred to as aurasbraka (IV.2.39). Kātyāyana mentions the dialectical forms avidūsa, avimarīsa, avisodha, as words for goat’s milk (avi-dugdba, IV.2.36, II.278).

7. Mrīga has a two-fold meaning in the Aṣṭādhyāyī, viz. (1) wild beast (IV.3.51) in general and (2) deer (II.4.12). Pāṇini mentions two species of deer, rīśya a white-footed antelope (IV.2.80) and nyāṅku, a gazelle or small deer (VII.3.53), both being Vedic words (Vedic Index, I.115, 463). The female deer was called enī (IV.3.159). Patañjali refers to robīt as the female of the rīśya deer (I.248).

Amongst carnivorous animals (kravyād, III.2.69) are mentioned sinha (VI.2.72), vyāghra (II.1.56), vṛika (V.4.41), krośṭu (jackal, VII.1.95), bidāla (VI.2.72), and śvā (IV.4.11). Domestic dogs bred in royal kennels were called kauleyaka (IV.2.96; cf. Kukkura Jāt. I.22, ye kukkura rājakulambhi baddb; also Rāmāyana, II.70.20).

Of birds (sakuni, II.4.12, pakshī, IV.4.35 or tīryach, III.4.60), individual names are chaṭakā (sparrow, IV.1.128), mayūra (peacock, II.1.72, also kalāpin, IV.3.48), kukkuta cock, IV.4.46), dhvāṅksba (crow, II.1.42), and švēna (hawk, VI.3.71). Šuka (parrot) is included by Patañjali in the Khaṇḍikādī gāṇa (IV.245). Pāṇini also refers to pecking birds as visbhīra (VI.1.150), amongst which Charaka counts the peacock and the cock (Sūtrabhāna, XXVII.46).

Of the kṣbuddrajanjus (II.4.8), animals up to the size of a mungoos according to Patañjali, were nakula (mungoos, VI.3.75), godbā (big lizard, IV.1.129-130), abī (snake,
IV.3.56), kshudrā, bhramara, vatara (kinds of bees, IV.3.119) and vatī (an ant, V.2.139).

Amongst aquatic animals mention is made of nakra (alligator, VI.3.75), varṣabḥū (frog, VI.4.84), and matsu (fish, IV.4.35) and vaisārīna, a species of fish (V.4.16).

FEEDING AND STOCK—A drove of cattle was called samaja, and a drive to the pasture udaja (III.3.69). Herds of domestic cattle (grāmyapāṣu-saṅgha) such as cows and bulls grazing together (saṅghībbūtāh) were called gāvah, after the female of the species; similarly mabishyaḥ (male and female buffaloes), and ajāḥ (he- and she-goats). But when their young ones (ataruṇa), as calves and heifers, formed a mingled herd, the masculine form vatsāḥ signified both. This idiom still holds good in such Hindi words as gāen and bāchhāre.

The age of an animal was expressed in terms of the number of its teeth (V.4.141) and the growth of horns (VI.2.1) and hump (V.4.146); e.g. a calf of tender age was spoken of as dvidan (with two teeth), asamjāta-kakut (without growth of hump), aṅgula-śringa (with horns an aṅgula long); and one of mature growth as chaturdan, shodan, pūrṇa-kakut, udgata-śringa, etc.

Pastures for cattle were called gochara (III.3.119), in which herds grazed and moved from one part to another as fodder was eaten up. An area once used for grazing and later abandoned was called gauṣṭhīna (bhutapurva gosṭha, V.2.18); similarly a woody pasture with its fodder consumed was called āśitāṅgavīna arāṇya (V.4.7). This indicates a system of shifting cowpens and pastures both in village settlements and in forest areas. Straw (busa and kaḍāṅkara) was the fodder for livestock, which feeding on it was called kaḍāṅkariya (V.1.69; if Hindi daṅgar). Watering places for cattle are referred to as nipāna and ābhāva (III.3.74), probably attached to a well as even today.

Pāṇini refers to the cattle craving for salt as lavanasyati
(VII.1.51). Kauṭilya prescribes salt to be given to cattle as part of their food.

The cow and the bull were together called dhenvanaduha (V.4.77). Prosperity in cows and calves was blessed by the expression 'Svasti bhavate sagave savatsāya (Kātyāyana on VI.3.83). A cow-pen was vraja, and cow-stall gosāla (IV.3.35) and gosṭha (VIII.3.97). Goshpada was the place for the cows to roam (VI.1.145, gobbiḥ-sevito deśah, Kāśikā). Dense forests impenetrable to cows were agoshpada (VI.1.145).

Gotrā in Pānini ‘an assemblage of cows’ (IV.2.51), recalls the earlier Vedic word gotra, as the common shed for cows belonging to several families. Pānini mentions two new synonyms of gotrā, viz. gavyā and ādhena (IV.2.47).

The cowherds were called gopāla; special officers in charge of royal cattle were called tantipāla (VI.2.78). The son of a cowherd attaining the age when he was fit to take the cows out for grazing was called anugavīna (VI.2.78). This was analogous to the term kavachabara for a Kshattriya boy, marking the age of maturity.

LIFE-STORY OF A COW—The different stages in the life-cycle of a cow were expressed by suitable terms. The heifer attaining puberty (kāyā praṇāne) was termed upasaryā (III.1.104), and her first mating upasara (III.3.71). The Mahābbārata refers to a cow attaining full youth at the age of three (māhēyi tribāyanī, Virāṇa, 16.6, Poona ed.). If she miscarried she was called vebat (II.1.65). On the eve of delivery she was called adyaśvīna, ‘calving today or tomorrow’ (V.2.13), a new term for the Vedic pravayyā (VI.1.83); and after calving grisṭi (II.1.65). Pānini also refers to mahāgrisṭi (VI.2.38), a better cow whose milking period continues up to the next calving, corresponding to Vedic naityikī (=nityavatsā, naichikī, Hemachandra, Abhidhāna-chintāmaṇi, IV.336).

Dhenu was a cow in milk (II.1.65), also called astikbīrā by Kātyāyana (II.2.24.21). After about six months of her calving she became bashkayāṇi (II.1.65). A cow calving every
year was marked out from the rest as samāṁsamīnā (V.2.12). Patañjali speaks of that cow as excellent (gotarā) which not only calves every year but gives birth to a heifer (strīvatsā, II.413). A cow pledged to the creditor to pay off the debt from her milk was called dhenusbyā (IV.4.89).

**BULL**—A very young calf was śakrit-kari (III.2.24), corresponding to Vedic atrīnāda (Br. Up. 1.5.2). Next it was called vatsa and a group of them vātsaka (IV.2.39). When the cows went out for grazing, the calves were confined to special enclosures called vatsāsālā (IV.3.36).

The wooden club hanging from the neck of a calf was called prāsaṅga, (cf. Hindi pāsaṅgā) and a calf so restrained while out grazing was prāsaṅgya (IV.4.76). A calf of two years was called dityavāb (VII.3.1; Vedic Index, I.359). A calf above the ordinary and selected to grow as a stud bull was called ārṣabhyā (‘good for becoming a bull,’ V.1.14). As such, he was termed jātoksba, ‘growing up as a bull’ (V.4.77), and was not castrated. Calves intended to grow as stud bulls are given special food and care. A young (taruna) bull was (ukṣbā), more developed ukṣhatara (V.3.91), when fully grown up mahaksbā (V.4.77), and declining in age vṛiddhokṣbā (V.4.77) or rīshabhatarā (V.3.91).

Similarly a draught bull was vatsa in the first stage, damya when broken, and balivarda as a bullock (Pat. on I.1.1, 1.42).

At the age of two and a half years the young bull gets his first pair of permanent teeth. This age was expressed by the word dvidan. He became chatur-dan, ‘with four teeth,’ at the age of three (V.4.141, Kāśikā).¹ Then he was given

¹ Teething of young bulls and cows:

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2—2½ years</td>
<td>2 teeth.</td>
</tr>
<tr>
<td>3</td>
<td>4 &quot;</td>
</tr>
<tr>
<td>3½</td>
<td>6 &quot;</td>
</tr>
<tr>
<td>4</td>
<td>8 &quot;</td>
</tr>
</tbody>
</table>

The question of the number of teeth has its practical importance in judging
a nose-string (*nātha-hari*, III.2.25), and was broken (*damya*) and castrated.

The draught bulls were classified according to their work, e.g. *rathya*, drawing a chariot (IV.4.76), *yugya*, a yoke (IV.4.76), *dhurya* and *dhautreya*, a cart (IV.4.77), *sākaṭa* (IV.4.80) a cart-load, and *bālika* or *sairika*, the plough (IV.4.81). An ox accustomed to be yoked both on right and left of the yoke was called *sarva-dhurīṇa* (IV.4.78), and to one side only, *ekadhurīṇa*, the latter being of less worth.

**BREEDS**—Pāṇini mentions the famous *Sālvaka* breed of bulls reared in the *Sālva* country (IV.2.136, *Goyavāgvoścha*). He refers to *Sālva* as a large confederacy of several member-states, whose number is stated to be six in the *Kāśikā* (IV.1.173). Patañjali mentions Ajamidha, Ajakranda and Bodha amongst them (IV.1.170, II.269). The *Mahābhārata* names Mṛitti-kāvati as a *Sālva* capital, perhaps Mairta in Marwar. The location of *Sālvas* is further suggested by Ptolemy's Bolingai living on the western slope of the Aravallis, who appear to be the Bhūliṅgas, one of the six *Sālvas* (McCridle's *Ptolemy*, p. 163). The *Gopatha* couples the *Sālva* with the Matsyas. Thus the *Sālva* janapada comprised the vast territory extending from Alwar to Bikaner or north Rajputana, and the *Sālvaka* breed of Pāṇini seems to be the same as the celebrated Nagauri bulls reared in the jungle-covered tracts of Nāgaur in the Jodhpur State (Hunter, *Imp. Gazetteer*, X.159) and those of Bikaner.

Patañjali adds the name of the Vāhika breed of bulls (1.354), and the *Kāśikā* two others, *viz.* of Kachchha (a

the age of an animal at the time of sale and purchase. The prospective buyer invariably examines the teeth to judge the age. The growth of the horns is likewise a sign of age as referred to by Pāṇini in VI.2.115 (*Śṛṅgam-avasthāyāṁ chā*). The stages of maturity were also expressed in terms of the development of the hump, e.g. the terms *akakut, pūrṇakakut* and *unnatakakut* denoted the three stages of infancy, youth and maturity (V.4.146, cf. *Kāśikā*).
counter-example to Pāṇini IV.2.134), and of the Raṅku country (IV.2.100). The former (Kāchha gau) reared in Kathiawar is considered by Watt as the finest in north-west India, its bullocks as powerful draught animals, and cows as excellent milkers (Watt, Dict., V.669). The bull bred in Raṅku was called Raṅkava and Raṅkavāyaṇa.

BRANDING OF COWS (LAKSHĀṆA). Lakṣana denoted the marks branded on the body, generally ears, of cattle to distinguish ownership (paśunām svāmi-viśesa-sambandha-jñāpaṇārtham, Kāśikā, VI.3.115). Pāṇini refers to the branding of cows in two sūtras:

(1) Karṇo varṇa-lakṣaṇat (VI.2.112);

The first rule prescribes initial acute accent in such words as dātrākarna, 'whose ears are marked with a sickle.' The second sūtra dealing with vowel elongation incidentally gives a list of some marks used to indicate different owners, e.g. viṣṭa, aṣṭa, paṇcha, maṇi, bhinna, chhinna, chhidra, sruva and svastika.

The branding of cows was known in the Vedic period. The Atharvaveda refers to it as lakṣhaṇa and mentions the mithuna mark (VI.141.2-3; XII.4.6). The Maitrāyaṇī Saṁbitā (IV.2.9), Mānava Śrauta Sūtra (IX.5.1-3), and Gonāmika Parishīṣṭa of the Vārāha Śrauta Sūtra give details of this ancient cattle rite and add a few more marks (Journal of Vedic Studies, Lahore, Jan. 1934, pp. 16 ff.). The Mahābhārata also refers to a census of the royal cattle (smāraṇa, Vanaparva, Ghoshayātra, 239.4) by branding them (aṅka, lakṣha, Vanaparva, 240.4). The Arthaśāstra prescribes it for the Superintendent of Cows to 'register the branded marks, natural marks, colour and the spread of the horns of each of the cattle as part of his duties relating to the cow-pen (vṛaṇa-ḥaryagra, Arth. II.29, p. 129). The Edicts of Asoka emphatically disallow the branding of horses and bullocks on certain specified
days (Pillar Edict, V). Patañjali refers to the mark (liṅga) being branded on the ear or the rump of the animal (goh sakthani karne vā kritam liṅgam, I.3.62; I.289); the mark being also called ainaka (aṅkitā gava ityuchyate nyebbyo gobbyah prakāṣyante, VIII.2.48; III.408).

NAMES OF MARKS—Pāṇini mentions nine marks (VI.3.115); to which other names may be added from the Maitrāyaṇi Sanīshṭā, Rik-Tantra¹ and Kāśikā, as shown below. Visṛṭakarnī, a mark in Pāṇini’s list, is in the Maitrāyaṇi Sanīshṭā a mark of the cows of Agastya, those of Jamādagni having a lute and of Vasishtha a stake (Vedic Index, I.46). The ashtakarnī of Pāṇini occurs in the Ṛigveda (X.62.7) where Grassmann translates ‘having the sign for (the number) 8 marked on the ear.’ (Vedic Index, V.I.46). The use of the numerals 5 and 8 as marks put on the ears of cattle shows that writing was popularly known (Goldstücker, Pāṇini, His Place in Sanskrit Literature, p. 44).

Some of these marks (lakṣaṇa) can be identified amongst the symbols stamped on punch-marks coins, e.g., ¹sruva, ²svastika, ³aṅkuṣa, ⁴kundala, ⁵ṭliba, ⁶bhāṇa, ⁷mithuna.

¹ See also A.S.B. Memoir, Animals in the Inscriptions of Piyadasii, p.373, referring to it as an old custom described in the sūtra literature; Pāraskara, iii.10; Śaṅkabāyana iii.10; Āśvalāyana Gr. Pariśisṭha, iii.-8. Also Drāhyāyana Grihyasūtra, III.1.46 (bhuvana mark); Khādira Grihyasūtra, III.1.46.

¹ Karṇe ṭlib-āṅkuṣa-kundal-ōparisht-ādhy-akshatu-bhāṇām, Riktantra sūtra 217.

² Allan, Coins of Ancient India, Index of Punch-marked Symbols, Index IV.
## List of Marks

<table>
<thead>
<tr>
<th>Source</th>
<th>Name of Mark</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pāṇini (VI.3.115)</td>
<td>1. Vishtā (-karni)</td>
<td>Uncertain; also in Mait. Saṁ.</td>
</tr>
<tr>
<td></td>
<td>2. Ashṭa</td>
<td>Numeral 8 marked on the ear.</td>
</tr>
<tr>
<td></td>
<td>3. Pañcha</td>
<td>Numeral 5.</td>
</tr>
<tr>
<td>Maitrāyaṇī Sarṁhitā (IV.2.9).</td>
<td>5. Bhinna</td>
<td>Cleft ears.</td>
</tr>
<tr>
<td></td>
<td>6. Chhinna</td>
<td>Clipped ears.</td>
</tr>
<tr>
<td></td>
<td>7. Chhidra</td>
<td>Bored ears; also Mait-Saṁ.</td>
</tr>
<tr>
<td></td>
<td>10. Sthūṇa</td>
<td>Stake (also Vanaparva, 167. 33 for stake mark on Arjuna’s arrow).</td>
</tr>
<tr>
<td>Kāśikā (VI.2.112; VI.3.115)</td>
<td>11. Karkari</td>
<td>Lute.</td>
</tr>
<tr>
<td></td>
<td>12. Puchhindyā</td>
<td>Perhaps the tail.</td>
</tr>
<tr>
<td></td>
<td>13. Dātra</td>
<td>Sickle; also in Kāśikā.</td>
</tr>
<tr>
<td></td>
<td>15. Plīhā</td>
<td>Spleen.</td>
</tr>
<tr>
<td></td>
<td>17. Kuṇḍala</td>
<td>Circle.</td>
</tr>
<tr>
<td></td>
<td>18. Uparishṭa</td>
<td>Twitched backwards.</td>
</tr>
<tr>
<td></td>
<td>22. Saṅku</td>
<td>Spike.</td>
</tr>
<tr>
<td></td>
<td>23. Dviguṇa</td>
<td>Folded twice.</td>
</tr>
<tr>
<td></td>
<td>24. Triguṇa</td>
<td>Folded thrice.</td>
</tr>
<tr>
<td></td>
<td>25. Dvyāṅgula</td>
<td>Two finger-marks.</td>
</tr>
<tr>
<td></td>
<td>26. Āṅgula</td>
<td>A single finger-mark.</td>
</tr>
</tbody>
</table>
MEANING OF ŚĪLPA—Pāṇini mentions śīlpa as a general word denoting both fine arts, like dance and music (III.2.55), and crafts (VI.2.62). Dancers (nartaka), musicians (gāyana) and instrumentalists (vādaka) are all called śīlpīns (III.1.146; IV.4.56). This meaning agrees with that in Buddhist literature where the sīppas include the work of craftsmen and even acrobats. The Kausitakī Brāhmaṇa also regards dance and song as śīlpa (XXIX.5). The Arthaśāstra considers proficiency in military science as a śīlpa, trained soldiers being referred to as śīlpavantaḥ pādātāḥ (Arth. V.3, p. 248), a king’s inspection of military parade as śīlpa-dāraśana.

Pāṇini refers to a worker in handicrafts as kāri (IV.1.152), which the Kāśikā explains as kāru, such as weavers, (kāri-ṣabdāḥ kārūṇāṁ tantuvāyādināṁ vāchakāḥ). Kāri is absent in the Arthaśāstra, but kāru is mentioned along with the śīlpīns (kāru-śīlpīnaḥ, Arth. II.36, p. 144). Kātyāyana uses the word kāri to denote an artisan (vārttika on IV.1.159).

CLASSES OF ARTISANS—Pāṇini mentions the village artisans as grāmaśīlpīns (VI.2.62), e.g. the village carpenter (grāma-taksbā, V.4.95), potter and barber. Patañjali says that in each village there were at least five artisans (tatra chāvarataḥ paṇčakārūkī bhavati, I.1.48; I.118), amongst whom Nāgeśa includes the potter, black-smith, carpenter (v ard bāki), barber and washerman.

Pāṇini mentions the skilled artisans as rāja-śīlpīns (Rājā cha praśānśiṣyāṁ, VI.2.63), e.g. rāja-nāpita, rāja-kulāla. Perhaps these enjoyed the patronage of kings from whom they were so named. Patañjali clearly says that a carpenter engaged to work for the king did not entertain private work (taksbā rāja-karmanī pravartamānaḥ svāmi karma jaṅgāti, Bhāṣya, II.2.1; I. 364).
Pāṇini condemns vile artisans as पाप-शिल्प (VI.2.68). The grāma-takṣaṇa (V.4.95) was a carpenter who went to work on daily wages to the house of his clients in the village. On the other hand, the kauṭa-takṣaṇa was one who worked on his own account in his own workshop (कुतिः) and was thus of a higher status. This distinction still obtains in rural economy (cf. Aurel Stein, Hatim's Tales, p. 41). The carpenter working at his own house is paid for his work a share of the agriculture produce by his customers.

NAMES OF SILPAS—Of those devoted to the art of music Pāṇini mentions gāthaka (III.1.146), gāyana, (III.1.147), māḍḍukīka (IV.4.56), jhāṛjharīka (IV.4.56), pāṇīgā (III.2.55), tāḍagha (III.2.25), and nartaka (III.1.145, with Kātyāyana's vārttika). Names of other craftsmen in Pāṇini are given below:

(1) KUŁĀLA (IV.3.118) potter; also kumbhakāra (in a gāṇa). Pottery or earthenware made by him was called kaulālaka.

(2) TAKŠĀ (V.4.95), carpenter. Pāṇini mentions tanukarana or hewing as the chief part of the carpenter's work (cf.III.1.76). Amongst his tools reference is made to udghana (III.3.80), the bench on which he works. The village carpenter played an important part in rural economy, the various agricultural implements mentioned above were made by him.

(3) DHANUSHKARA (III.2.21), a maker of bows, which were made of the wood of Tāla tree (IV.3.152) and were of several sizes (cf. mahesbvāsa, a bow of 6ft. ht., VI.2.38)

(4) RAJAKA (III.1.145 as interpreted by Kātyāyana). Pāṇini refers to several dyes then known, the cloth dyed being named after the dye (Tena raktāṇ rāgāt, IV.2.1.). Rāga signified both colour and dye-stuff (VI.4.26,27). Cloth dyed with red colour was known as lobitaka (V.4.32); and with black colour kālaka (V.4.33). Lākṣā (IV.2.2, also called jatu, IV.3.138) was a popular commercial dye produced in India from
very early times. Lacquer work was called jātusha. Madder (manjīṣṭhā, VIII.3.97), indigo (nīlī, IV.1.42), and orpiment (rochana, IV.2.2.) were also known as dyes. A garment dyed in indigo was known as nīlā (IV.1.42). According to Kātyāyana śakala (powdered potsherds) and kardama (black mud from the bottom of a pool) also served as dyeing stuff, probably for the first process of bleaching of coarser fabrics, thus called śakalika and kārdamika (Bhāṣya, IV.2.2; II.271). Haridrā, and mabārajana are mentioned by Katyāyana as dye-stuffs (IV.2.2, vārttika).

(5) MINER—The miner (khanaka) is referred to by Kātyāyana on III.1.145. Mining revenue was called ākarika (cf. Kāśikā on IV.3.75). Pāṇini refers to seams as prastāra (III.3.32), on which the Kāśikā cites maṇi-prastāra, the vein of gems. The same word occurs as prastāra in Kautūḍlya. Traders dealing in the prastāra minerals were called prastārika (IV.4.72).

Amongst precious metals mention is made of gold (bīraṇya or jātarūpa, nuggets, IV.3.153; cf. also Vedic upachāya-priṇa, III.1.123) and silver (rajata, IV.3.154). Iron (ayas, V.4.94), bell-metal (kāṁsyas, IV.3.168) and tin (traṇu, IV.3.138) are also mentioned. Pāṇini takes ayas both as a genus (jāti) and a species (saṁjñā), illustrated by the Kāśikā as kālāyasa (iron) and lobitāyasa (copper) respectively. Sīsa and loba are mentioned in a gaṇa (IV.3.154).

GEMS—Lobitaka (ruby) and sasyaka (emerald) are mentioned (V.4.30; V.2.68) as gems (maṇī). Both are referred to in the Arthaśāstra (II.11, p. 77), the latter in the Kāṇṭasūtra as a precious gem (sāsaga, III.13). The mines of vaidūrya (cat's eye) were in the mount Vālavāya, but the gem was cut in Vidūra (Bhāṣya, IV.3.84; II.313) which gave it its name. Vālavāya mountain is cited on sūtra VI.2.77 in the Kāśikā as an old example.

(6) WEaver. The word tantuvāya is implied in the sūtra, Śilpini chākṛīṇaḥ (VI.2.76). The place where the weaver
plied his loom is referred to as āvāya (āvayanti asmin, III.3.122), the loom as tantra (V.2.70), and the shuttle as prāvāṇi (V.4.160; tantuvāya-śalākā, Kāśikā). The process of weaving comprised stretching the warp and then weaving threads across it with a shuttle (cf. Bhāṣya, āstirṇāṁ tantram, pratam tantram, I.338). Pāṇini refers to a piece of cloth or blanket fresh from the loom as tantraka (Tantrād-achirāpah-rite, V.2.70), meaning a new (navaka) unbleached piece; and also nishprāvāṇi, 'separated from the shuttle as a mark of the weaving being completed' (V.4.160, apanita-śalākah samāpta-vānaha, Kāśikā).

Pāṇini refers to cloth and garments as āchobhādana. Patañjali names Kāśika as the famous cloth woven in Banaras; Mādhyaṃika as woven in Madhyamikā or Chittor; and sāṭakas woven in Mathurā (Bhāṣya, V.3.55; II.413; I.19). (7) BLANKET-MAKERS (kambala-kāraka, cf. Vālmiki, II.83.14). Woollen goods were called auruṇa and auruṇaka (IV.3.158). Pāṇini mentions several kinds of blankets, viz., (1) prāvāra (III.3.54), (2) pāṇḍu-kambala (IV.2.11), and (3) panyakambala (VI.2.42; to which Kātyāyana adds varṇaka (VII.3.45; cf. KAUTIYAL, II.11, p. 80), and the Kāśikā rāṅkava (IV.2.100, a counter-example to the śūtra). Panyakambala (VI.2.42) was a blanket of commercial variety of standard length and breadth, being woven with a fixed measure of wool called kambalya by Pāṇini (IV.1.22, Kambalāḥ-cha sañīṇiḥyāṁ), equal to 100 palas or 5 seers in weight (Kāśikā). Prāvāra was a special variety of light woollen covering woven on the loom (cf. tantraka prāvāra, V.2.70).

PĀNDUKAMBALA—This blanket was used for the mounting of chariots, which were called pāṇḍukambali after it (IV.2.11). The Kāśikā explains pāṇḍukambala as a high class coloured rug used for royal seats (rājāstaraṇasya varṇakambala-sya vāchakah). The Jātakas mention it as the stuff for covering the throne of Indra (II.188; III.53; IV.8), and the back of a royal elephant (Vessantara Jātaka, VI.490), and also add
that it was of a bright red colour woven in Gandhāra (Indagopakavāṇṇābba Gandhārā paṇḍukambala, Ves. Jāt., VI.500). Gandhāra, the home of wool in Vedic times, continued later on as a centre of wool-weaving industry. The paṇḍukambala may be identified with the blankets still woven in the Swat valley, which have beautiful borders of scarlet colour.

Sir Aurel Stein during his tours of the Upper Swat valley found blanket weaving as an ancient craft there: 'One of the crafts is represented by those heavy and gaily but tastefully coloured woollen blankets that the North-West of India knows as 'Swātī Kambals' or rugs. They are all brought from Churrai and are mostly made by the womenfolk in the side valley of Chihil-dara which descends to that place from the high snowy range towards Kāna and Dubēr on the east. To a lesser extent they are woven also in other side valleys of Torwal. That this local industry is as ancient as the Darad race that retains its hold there is proved by a passage of Mahāvānija-Jātaka which the great French Indologist M. Sylvain Lévi, quotes in his comments on that curious Buddhist Sanskrit text published by him under the title of 'Le catalogue géographique des Yakṣa dans la Mahāmāyūrī.' The Jātaka passage referring to commodities of great value mentions also 'the fabric of Kāśi' or Benares, and the kambala of Uḍḍiyāna, Kāśikāni cha vattbhāni Uḍḍiyāne cha kambale (IV.352). There can be no doubt about M. Sylvain Lévi rightly recognizing Uḍḍiyāna, the true ancient name of Swat, in that of the locality here mentioned... Indian literature can scarcely contain any earlier testimony to the antiquity of a still flourishing local industry than this Jātaka passage. Unfortunately though the ancient skill in weaving and the use of traditional patterns still survive, the introduction of aniline dyes has here, as elsewhere in the East, brought about a sad and rapid decline in the harmonious blending of colours. Rugs produced with the fine old vegetable dyes, such as were still obtainable at Peshawar some thirty years ago, could now no longer be found for me even in the remote
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tract where this manufacture has had its home for so many centuries.’ (Sir Aurel Stein, An Archl. Tour in Upper Swat and Adjacent Hill Tracts, A.S.M., No. 42, p.63). In my visit to Peshawar in 1940 I also purchased a Swati blanket with brilliant red borders of attractive design, recalling the Jātaka description indagopaka-vanṇabhā. Uḍḍiyaṇa is known to Kātyāyana as Urđi and Aurddāyani (Vārttika on IV.2.99).

(8) LEATHER-WORKERS—Articles made of leather (V.1. 15, Čarmano‘ū) are mentioned, e.g., naddhrī, strap (III.2 182) and vardhra, leather thong (IV.3.149) (called naddhi, baddhi in Hindi); sometimes varatrā, strong rope was also made of leather (Kāśikā on V.1.15). Pāṇini refers to skinning as tvachayati (III.1.25). An object entirely made of leather, such as a pair of shoes was called sarva-charmaṇa, which was a mark of its superior quality (sarva-charmanah kritah, V.2. 5) as explained by the Kāśikā. Pāṇini refers to the custom of manufacturing shoes to the order of a client as per measurement of his foot (anupadān baddhā), such a pair being called anupadinā (V.2.9.). Even now such articles are regarded as of better quality than those purchased direct from a shop.

(9) BLACKSMITH (KARMAṆA)—Of his tools mention is made of bellows (bhūstrā, VII.3.47), sledge-hammer (ayoghana, III.3.82), axe (drughana, III.3.82), tongs(kuṭilika, IV. 4.18), from which the smith himself was known as kauṭilika. He also manufactured iron plough-shares (ayovikāra kuṣi, IV. 1.42).

(10) GOLDSMITH (SUVARNAKĀRA)—Besides reference to gold and silver coins, Pāṇini mentions some ornaments, as ear-rings (karnikā), frontlets (lalāṭikā, IV.3.65), torque (graiveyaka, IV.2.96) and finger-rings (aṅguliyaka, IV. 3.62). The phrase nishtaṇṭati suvarṇam ‘he heats the gold in the fire only once,’ (Nisastaṭṭāvanāsevane, VIII.3.1612) belongs to the goldsmith’s vocabulary and needs to be explained. The viṅgae goldsmith seated before his miniature cupola,
has to deal with three kinds of orders. Firstly, new gold or silver in the shape of bar or ingot is brought to him to make ornaments. Secondly, old ornaments are brought in order to be melted and shaped into new forms. In these two cases he subjects gold to repeated heating and expands it by beating, for which the expression is nistaṭaṭi suvarṇam. In the third case old ornaments are brought to him in order to be repolished or brightened by heating to look like new ones. For this the ornament is heated only once (anāsevane) and either rubbed or immersed in a solution to be made brighter. This operation was expressed by the cerebralised form nisṭaṭaṭi (suvarṇam suvarṇakāraḥ).

Pāṇini also mentions ākārshaṇa, one skilled (kuśala) in testing gold on the touch-stone (ākārshaṇa, V.2.64). The term ākārshaṇa (IV.4.9) was also applied to a person going round with a touch-stone and testing gold (ākārshaṇa iti suvarṇa-paraśkaṁ pārśkaṁ nikaśaṇaḥ, Kaśika).

(11) LIFTERS—For scaffolding and lifting a large number of intricate knots and binding devices were being used. Pāṇini refers to them as bandhas (Sanjñāyām, III.4.42, read with Adhikaraṇe bandhaḥ, III.4.41), on which the Kaśika cites some old terms: (1) kruṇcha-bandha, 'heron-knot', (2) mayūrika-bandha, 'peafowl-knot', (3) aṭṭālikā-bandha 'tower-knot' (bandha-viśeṣaṇām nāmadheyān). The Arthaśāstra adds vṛiṣchika-bandha, 'scorpion-knot' (Arth. IV.8, p. 221).
CH. IV, SECTION 5. LABOUR AND WAGES

SKILLED AND UNSKILLED LABOUR—Pāṇini refers to unskilled labourers engaged in hard manual work as karmakara (III.2.22), and their wages as bhṛiti (karmañi bhṛitau, III.2.22). He has a special expression for the employment of hired labour, viz., karmakarān upañayate (I.3.36).

Skilled workmen were called silpins and their wages vētana (śilpinā nāma syabbūtyartham eva pravartante, vētanāṁ cha lapsyāmahe, Bhāṣya, III.1.26.14.; II.36). Pāṇini mentions a wage-earner as vaitanika, ‘earning livelihood by means of wages (Vētanādibhyo jīvati, IV.4.12). In the Arthaśāstra, vētana includes both wages paid to artisans (Arth. II.23, p. 114) and salaries paid to government servants (ibid, V.3, p. 248).

WAGES—Both agricultural labour and skilled artisans worked to earn their livelihood (jīvikārtha, VI.2.73) through either wages, or as food received. The system of receiving a fixed payment in return or stipulated services rendered was called pari-krayaṇa (I.4.44, niyatakaśāṁ vētanādīna svīkaraṇam, Kāśikā), the employer pari-kretā and the man employed pari-krita.

A hired workman was named after (1) the period for which he was engaged, e.g. māsika (V.1.80, Tam-adbhīṣṭo bhṛito bhūto bhāvī), and (2) the amount of wages fixed to be paid, e.g., pāṇchbaka (V.1.56). A month was the unit of time for calculating wages, as seen in the examples to sūtra V.1.80, viz., karmakaraḥ māsiḥ māsaṁ bhṛitah. This is also testified to by Kātyāyana’s vārtti on V.4.116 (māsād bhṛiti-pratyaya-pūrva-paḍāṭ-ṭhajvidbhiḥ) read along with sūtra V.1.56.

In his comments on the above vārtti Patańjali hints at the scale of monthly wages of labourers in his time, e.g. pāṇchbaka-māsiḥ, saṭkā-māsiḥ dasaka-māsiḥ, i.e., a workman
Economic Conditions

receiving five, six or ten (silver kārshāpaṇas) per month. Again, he mentions a labourer working for one pādika coin (one-fourth of a kārshāpaṇa) a day, i.e., seven and a half kārshāpaṇas per month (karmakarāḥ kurvanti pādikam ahar-lapsyāmhe, Bhāṣṭya, I.3.72; I.293). Kauṭilya directs that a pāṇa and a quarter per month be paid to agricultural labour supplemented with food according to work done (Arth. II.24, p. 118). He states that wages in cash were convertible into kind at the rate of 60 pāṇas per āḍbaka (Arth. V.3, p. 249). In Patañjali's time also food with clothing was given to dāsas and karmakaras (yadetad-dāsa-karmakaram ...... bhaktaiḥ cha chelaiḥ cha lapsyāmhe, Bhāṣṭya, II.36). Pāñini mentions workmen receiving daily food as bhākta or bhāktika (IV.4.68). The Jātakas also refer to wages in the form of food, such as yavāgu and bhakta.)
Ch. IV, Section 6. TRADE AND COMMERCE

Pāṇini uses a variety of terms connected with trade, e.g., currency and barter (nimāna), traders (vānija) and trade routes (patha), sale and purchase (kraya-vikraya), shops (āpāna), saleable commodities (pañya), taxes on trade (sulka) and banking and loans (pañya).

VYAVHĀRA (BUSINESS)—Trade and commerce are implied in the general term vyavahāra (II.3.57), also called paṇa (II.3.57). Its main feature is kraya-vikraya (IV.4.13), i.e., sale and purchase. It appears that vyavahāra included larger business such as export and import, while paṇa denoted local sale and purchase, whence saleable goods were called paṇya (IV.4.51).

TRADERS—Traders are called vaṇik (III.3.52) and vānija, (VI.2.13). These terms seem to have been applied to traders without reference to caste, e.g., Madra-vānija, one who traded with the Madra country (VI.2.13).

Merchants were named after the nature of their business and the amount of capital they invested in it, e.g., (1) kraya-vikrayika, whose main occupation was buying and selling (IV.4.13); and (2) vasnika, a merchant who invested his own money in business (IV.4.13); and (3) sāṃsthānika, a member of a commercial guild (sāṃsthāna, IV.4.72). The last was probably the same as sāṛṭbika or sāṛṭbavāha mentioned in the Jātakas. Pāṇini also refers to other classes of traders, e.g., prāstārika, one who deals in minerals; kathine vyavharati, one who deals in forest produce like bamboo (vaṇīṣa) and grasses (vārdbha, IV.4.72, Kāśikā).

The traders were also named after the articles in which they dealt and from the countries visited by them for business (Gantavya-panyam vānije, VI.2.13), e.g., ṛṣva-vānija, a dealer
in horses, and Gāndhāri-vāṇīja, a trader who goes to Gandhāra on business (gatvā vyavaharati, Kāśikā), Kāśmira-vāṇīja, Madra-vāṇīja. These examples of merchants visiting distant provinces on business point to inter-provincial commercial intercourse and activity. The Jātakas often refer to merchants from eastern India going with their caravans to remote destinations in north-west India, e.g., trade relations between Videha and Kashmīra and Gandhāra (III.365), Magadha and Sovīra (Vimānavatthu Aṭṭhakathā, p. 336), Rājagriha and Śrāvasti (Sutta Nīp., vv. 1012-3), Banāras and Śrāvasti (II.294), and Banāras and Ujjain (II.248) [B. C. Law, India as Described in Buddhist and Jain Texts, p. 185]. As a matter of fact the names of merchants envisaged in Pāṇini’s rule would better apply to merchants trading with distant countries.

BUSINESS—A place of business was called āpana (III. 3. 119, etya tasminn-āpananta ityāpanah, Kāśikā) and articles of trade panya and paniṭavya (III. 1. 101). These when properly displayed in shops were called krayya, ‘to be sold’ (Krayyas-tadarthe, VI. 1. 82). Panya is a general term for merchandise, while krayya denotes wares marked out for sale.

The sūtra Tena kriyam (V. 1. 37), ‘purchased with that’, points to the practice of sale and purchase of goods for a price fixed between the buyer and the seller. Pāṇini mentions several coins of gold, silver and copper which served as media of exchange (infra, Sec. 9).

The articles purchased in the market were named after the price paid for them. A variety of epithets are noted as applied to articles purchased for one nishka (V. 1. 20), 2 nishkas, 3 nishkas (V. 1. 30), 1 or 1½ vimśatika coin (V. 1. 32), 1 śatamāna (V. 1. 27), 1 kārṣṭāpaṇa or 1000 kārṣṭāpaṇas (V. 1. 29), a śaṇa coin, or a pāda, or a māsha of copper (V. 1. 34-35), etc. Thus articles with a wide range of values are mentioned, e.g. those valued at one thousand or more silver pieces (sahasra kārṣṭāpaṇas, V. 1. 27), and those of the lowest value like a copper māsha. The system of barter
(nimāṇa, V. 2. 47) was also known (infra, Sec. 7).

EARNEST-MONEY—In settling the sale and purchase of goods it is customary for the buyer to advance earnest-money to the seller as gurantee of good faith. Pāṇini refers to such a contract as satyāpayati (III. 1. 25) or satyā karoti (V. 4. 66) (mayaitat kretavyamiti tathyāṁ karoti, Kāśikā), and to the earnest money as satyamkāra (VI.3.70; cf. Hindi sāī, part of the price paid in advance). The system of satyāpana, paying earnest money extends even to hired workmen, as confectioners engaged to work for a feast.

CAPITAL AND PROFIT—Profit is called lābba (V. 1. 47). Pāṇini draws a clear distinction between the capital invested called mūla, and the profit earned on it (mūlena ānāmya) as mūlya (IV.4.91, paṭādīnām utpattikāraṇaṁ mūlam, mūlaṁ hi saguṇaṁ mūlam, Kāśikā; 'mūla is the cost-price of cloth and mūlya is the cost with profits'). Pāṇini also notes a second meaning of mūlya to denote an object equivalent in value to the price paid (mūlena samam, IV. 4. 91). In the first instance, mūlya is taken as the cost price plus profit, accruing to the seller; in the second case the object is regarded as worth the money paid. Pāṇini refers to a sale transaction named after the amount of profit earned from it (Tadasmin vṛddhyāya-lābba-śulk-opadā diyate, V. 1. 47), e.g. pañchaka, saaptaka, satya or satika, sāhasra, i.e. a deal giving a profit of 5, 7, 100 or 1,000 coins (Kāśikā). Pañchaka, giving 5 as profit, perhaps referred to a capital sum of rupees one hundred, as we know from Kauṭilya mentioning the profit of a middle man to be 5% (Arth. IV. 2).

VASNA—In the Vedic literature vasna denotes the 'price' paid for anything, or its 'value' or the thing as an object of purchase, 'ware' (Vedic Index, II.278). Pāṇini discusses vasna in three sūtras (IV.4.13; V.1.51; V.1.56), where its meaning is sale-price or value realised (mūlya, Kāśikā). In the first

1Cf. Yāj. Smṛiti, II.61; also Mallinātha on Kirāla, XI, 50.
instance a *vasnika* trader was one who only owned a financial interest in the profits of the deal as contrasted with *kraya-vikrayika* (IV. 4. 13) who carried on actual business himself. Next a *vasnika* trader was named according to his *vasna* or share in the sale-proceeds (*soṣyāṁśa-vasna-bhṛtayah*, V. 1. 56), e.g. *sāhasra*, 'whose share of sale-proceeds is one thousand.' This refers to some kind of corporate business as was carried on by the *sāṁsthānika* or *sārbhavāha* traders.

Thirdly a *vasnika* merchant is distinguished from a *dravyaka* (V. 1. 51), the latter was a trader on outward journey conveying merchandise for sale (*dravya*), and the former was so-called because he carried the sale-proceeds on his return journey home. The three stages in the journey of a trader are thus called: (1) *barati*, at the source, (2) *vahati*, in the process of transport, and (3) *āvahati*, at the end of the journey. Thus a caravan merchant carrying goods from Mathurā to Takshaśilā would be called *dravyaka* in three places, viz., at Mathurā whence he was carrying (Pāṇini’s *barati=desantarāṇ prāpayati*, Kāśikā), on the way while transporting (*vahati*), and at Takshaśila where he arrived (*āvahati*). The same man returning from Takshaśilā to Mathurā with the sale-proceeds was called *vasnaka* at those very three stages of the journey. As specific instances of merchandise transported by the *dravyaka* traders, Pāṇini mentions *vaṁśa* (bamboo), *kuṭaja* (Holarrhena antidysenterica), *balbaja* (a coarse grass, Eleusine indica, Hindi *babai*), *mūla* (roots), *aṅkha* (axle), *stbūṇā* (pillar), *aśman* (stone), *aśva* (horses), *iksbu* (sugar-cane) and *khatvā* (bed-steads), whence the traders were called *vaṁśika* or *vaṁśabhārika*, etc. Vasna went out of use after Pāṇini, but survives in Bhojapurī dialect. The *Arthaśāstra* uses the popular *mūlya*. Patañjali has it once in the sense of sale-price (*anyena bi vasnen-aikāṁ gāṁ, krīṇāti, anyena dvau, anyena trān, Bhāṣya, I.95*).

**TAXES ON TRADE**—Śulka denoted such taxes on trade as customs and octroi. Pāṇini mentions that the consignment
was named after the duty paid on it (V.1.47). The custom-house was called śulkaśālā and the income from customs śaulkaśālikā (stock-example on IV.3.75, Ṭhag-āya-sthāne-bhyāh). Ardhā (V. 1. 48) and bhāga (V. 1. 49) are mentioned as amounts of octroi duty, (both denoting half of a kārshāpaṇa), the consignment being called ardhika or bhāgika (also bhāgya).

Pāṇini makes a general reference to taxes levied in the eastern part of India (Prāchāṁ kāra-nāma), amongst which Patañjali includes toll-taxes, e.g. avikātoranā, 'one ram levied per fold of sheep (Kāranāmni cha Prāchāṁ balādau, VI.3.10 Bhāṣya, III. 144). The Kāśikā cites other stock-examples as yūtha-pāṣu, one animal-head per herd of cattle; nadi-dohanī, one pailful milk levied at the ferry. Other similar taxes, but not on trade were drishadi-māshaka, one māshaka coin collected per mill (household); mukute-kārshāpaṇam, one kārshāpaṇa coin per capita; bale-dviṭapikā, two pāda coins per ploughshare, which seems to have been a tax on agriculture. Patañjali considers these to be names of current taxes sanctioned by usage (loka).

TRADE ROUTES—As already stated Pāṇini mentions roads leading from one city to another (Tad-gachcbhati pathi-dutayoh, IV.3.85), and marked into well-defined stages (see illustration on sūtra, III.3.136). Katyāyana mentions different kinds of trade routes, as through forests (kāntārāpatha), jungle-thickets jaṅgalāpatha), on land (sthalāpatha), and in water (vāripathā). The goods gathered (ābṛita) and transported along these routes were called after the route, e.g. kāntāra-pathika, goods coming by way of the forest. The kāntāra-patha seems to be the name of the route across the Vindhya forests which, as we know from Buddhist literature, connected Kośāmbi with Pratisthāna and Bhurukachchha. Ajaṇpatha (goat-track) and saṅkupatha (precipitous route negotiated by spikes) were narrow pathways in mountainous regions (vārttika on V. 1. 77; Bhāṣya, II. 358).
Liquorice (madhuka) and pepper (maricha) were imported by the land route called sthalapatha (Kātyāyana), evidently from the south.

In the Devapathādi-gaṇa (V. 3. 100) Pāṇini refers to various kinds of routes, e.g. vāripatha, sthalapatha, ratnapatha, kariṇa, ajāpatra, saṅkupatha, rājapatha, simbapatha, adding two more, viz. bāṁsapatha and deva-pațha, which relate to air. We get an old record of some of these in the Mahānīddesā e.g. jannupatha (correct reading vaṁṇupatha= Skt. varṇupatha, route through the sandy tract of Sindh-Sagar Doab, leading to Bannu, cf. Vaṁṇupatha Jāt.); ajāpatra (goat-track), men-dha-pațha (ram-track), saṅkupatha (spike-track), chhattapatha (parasol-route), vaṁsanapatha (bamboo-track), sakunāpatha (bird-track, cf. Pāṇini's bāṁsapatha), mūsikapatha ('mouse passage'), dautapatha (cavern-path), and vettachāra (course of reeds) (Mahānīddesam, Vol. I. pp. 154-55; Vol. II, pp. 414-15).

Light is thrown on Pāṇini's ajāpatra by the Brihatkathā ślokasaṅgraha describing ajāpatra during the course of a journey to Suvarṇabhūmi as a very narrow goat-track which could not be crossed by two persons from opposite sides (Brihatkathā ślokasaṅgraha, XVIII.416; Sylvain Lévi, 'Ptolémée, la Nid-desa et la Brihatkathā', Etudes Asiatique, Vol. II, pp. 1-55, Paris 1925). Narrow tracks leading over high mountains and defiles were negotiated with the help of goats and rams to transport merchandise.

Pāṇini’s saṅkupatha refers to even more difficult mountainous ascents which could be negotiated only by scaling the heights with the help of spikes or nails carefully driven into the hill-side. A Jātaka passage also refers to saṅkupatha (vet-tāchāro saṅkupatha pi chinne, Jat. III. 541). Pāṇini’s bāṁsapaṭha corresponds to sakunāpatha of the Mahānīddesā. Kālidāsa also refers to devapatha (= surapatha), ghanapatha and khagapatha mentioned in the order of their relative heights (Rāghuvaṃśa, XIII. 19). DeVapatha originally was a track in the sky, but in the sūtra under reference Pāṇini refers to
devapatha as a technical term denoting the highest passage on the top of the rampart of a city, which derived its name from its height compared to the devapatha in the sky. We are indebted to the Arthasastra for this technical meaning of devapatha implied in Panini's sutra (Arthasastra, II. 3).

Uttarapatha—Panini mentions Uttarapatha and the articles procured (ahrita) along that route as anuttarapathika (Uttarapathen-ahritam cha, V. 1. 77), the latter also denoted the travellers on it (Uttarapathena gachchhata). The Uttarapatha may be identified with the ancient highway from east India to Gandhara and thence towards farther west. The entire Grand Trunk Road within India and as far as the Oxus, was well known to the Greeks as 'Northern Route', a literal rendering of Uttarapatha.

Its Oxo-Caspian portion from India to the West by the Oxus and the Caspian is mentioned by Strabo (II. 73; XI. 509) and Pliny (Tarn, The Greeks in Bactria and India, p. 488, Appendix 14). 'Strabo, speaking of the Oxus, states (XI, 509) that it formed a link in an important chain along which Indian goods were carried to Europe by way of the Caspian and the Black Seas. He cites as one of his authorities Patrocles, who was an admiral in the service of Antiochus I, and thus makes it clear that the route was a popular one early in the 3rd century B.C.' (Cambridge History of India, Vol. I, p. 433). Strabo also wrote that 'The Oxus is sufficiently navigable for the Indian trade to be carried across to it and to be easily brought down the river to the Hyrcanian (sea) and the places beyond as far as the Black Sea by way of the rivers.' (Tarn, op. cit., p. 489).

On the Indian side this route was linked up with Patali-putra and ultimately with the mouth of the Ganges. As Rawlinson writes: 'The first thing which struck Megasthenes on entering India, was the Royal Road from the frontier to Patali-putra, down which the envoy must have travelled to the capital. It was constructed in eight stages, and ran from the frontier town of Peukelaotis to Taxila; from Taxila, across the
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Indus, to the Jiblam; then to the Beas, near the spot where Alexander erected his altars. From here it went to the Sutlej; from the Sutlej to the Jamna; and from the Jamna, probably via Hastinapura, to the Ganges. From the Ganges the road ran to a town called Rhodopha, and from Rhodopha to Kalinipaxa (probably Kānyakubja or Kanauj). From Kanauj it went to the mighty town of Prayāga at the junction of the Ganges and the Jamna, and from Prayāga to Pātaliputra. From the capital it continued its course to the mouth of the Ganges, probably at Tamluk, though Megasthenes never traversed the last stage of the road. At every mile along the road was a stone to indicate the 'by-roads and distances'. (Intercourse between India and the Western World, p. 42; also its Appendix I for the distances between the stages on the Royal Road, p. 64). This great highway passed through important janapadas and cities, such as Bālhika, Kāpiśi, Pushkalāvatī, Takshaśilā, Śākala, Hastinapura, Rathaspā (=Sk. Rhodopha, a name of the Rāmagāṅgā), Kānyakubja, Prayāga, Pātaliputra and Tāmrālipīti. Along this great highway must have passed up and down long caravans transporting merchandise (bhāṇḍa, III. 1. 20). On this route lay the town called Udbhāṇḍa (Ohind) as the destination where the merchandise was unloaded for transhipment across the Indus.

ARTICLES OF TRADE—As names of marketable articles (Tadasya paṇyam IV. 4. 51), Pāṇini mentions lāvana (salt, IV. 4. 52), perfumes like kiśara, tagara, guggulu, uṣira (IV. 4.53) and śalālu (a kind of perfume, IV.4.54; cf. Pāli salala, the sweet scented flower of Pinus devadara, Jāt. V. 420; Sāratthapakāsimi, III. p. 263. The Asṭādhyāyī acquaints us with an interesting list of other economic products, such as silk fabrics (kausēya, IV. 3. 42), wool and woollen stuffs (ūrṇā and aurṇaka, IV. 3. 158), linen and linen goods (umā and auma, IV. 3. 158), hemp (bhāṅgā, V. 2. 4), cotton (tūla, III. 1. 25; karṣāsi, gaṇa of IV. 3. 136); cloth (vastra, III. 1. 21); clothing like upasamāvyāna (I. 1. 36, aśchchhādana, IV. 3. 143),
bhīhatikā (a dress reaching up to feet, V. 4. 6); blankets like paṇya-kambala of a fixed weight and set standard (VI. 2. 42; IV. 1. 22), prāvāra (III. 3. 54) and paṇḍu-kambala (IV. 2. 11) imported from Gandhāra; deer skins (ajina, VI. 2. 194); skins of tigers and leopards (dvaiṣa, vaiyāghra, IV. 2. 12) used as upholstering material for chariots; dye-stuffs (rāga), like lac (lāksha, IV. 2. 2), orpiment (rocbanā, IV. 2. 2), madder (maṇjishtha, VIII. 3. 97) and indigo (-nilī, IV. 1. 42); sacks and grain containers (āvapana), as goni (IV. 1. 42); big and small leather containers (kutu and kutupā, V. 3. 89); leather goods as shoes (upāna, V. 1. 14), straps and thongs (naddhri, III. 2. 182, vārdhra, IV. 3. 151); iron chains (śrīṅkala, V. 2. 79), spikes (ayah-sūla, V. 2. 76), tools and instruments like sickle (dātra, III. 2. 182), ploughshare (kuśi, IV. 1. 42), yoke (yuga), axle (aksba, VI. 3. 104), spade (khatit, III. 2. 184), oar (arittra, III.2.184), loom (tantra, V.2.70) and shuttle (pravani, V.4.160); food stuffs like guḍa (IV.4.103), bhānita (VII.2.18), milk (kśira), curds (dadhi), butter (hāiyāṅga-vīna, V.2.23), vegetables (sāka, VI.2.128), cereals and pulses (dbāyas); utensils and pottery (amatra, IV.2.14; kaulālaka, IV.3.118) of various sizes to cook different quantities (III.2.33); intoxicating drinks like madhya (III.1.100), maireya (VI.2.70), surā (II.4.25) prepared in distilleries (āṣuti, V.2.112) and sold in booths (śundika, IV.3.76) and the costly kāpiṣāyana imported from Kāpiśi in north Afghanistan (IV.2.99); gold and silver ornaments like karnikā, lālāṭikā (IV.3.65); gems (maṇi) like emerald (sasyaka, V.2.68), ruby (lohitaka, V.4.30) and cat’s eye (vādūrya, IV. 3. 84); metals as gold, silver, copper, lead and tin; arms and weapons (ṣastra, III. 2. 182), as spears (ṣakti, IV. 4. 59), javelins (kāśu, V. 3. 90), battle-axe (pāraśvadhā, IV. 4. 58), bows (dhanu), arrows (isbu, VI. 2. 107) and coats of mail (varma, III. 1. 25); musical instruments like lute (viṇā, III. 3. 65), tabor (madžuna) cymbals (jharjbara, IV. 4. 56); and miscellaneous objects like images (pratikṛiti, V. 3. 96), gar-
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land (mālā, VI. 3. 65), perfumery (IV. 4. 53; IV. 4. 54); balance (tulā, IV. 4. 91), weights (māna), measures (pari-
māna), coins; and various conveyances like wagons (śaṅga), chariots (ratba) and boats (nau, IV. 4. 7), etc.

The Kāśikā illustrating Pāṇini VI. 2. 13 (Gantavya-pan-
yāna vāṇja) particularly mentions merchants who dealt in
cows, bulls (go-vāṇja) and horses (aśva-vāṇja). Pāṇini him-
self refers to the famous breed of bulls from the Sālva country,
(IV.2.136) and to the breed of mares from beyond the Indus
(pāre-vaḍava, VI. 2. 42).

There were some articles, trading in which was not ap-
proved, e.g. soma-vikrayī, rasa-vikrayī (Kāśikā on III. 2. 93,
Karmaṇi viṣayā). The selling of soma plant and liquids
as cow’s milk was also banned by the law-books (cf. Manu, X.
86-89).

Trade depended upon provision of necessary stocks called
by Pāṇini as saṁbhāṇḍayate (III.1.20; equal to saṁachayana
of Kātyāyana, and of ware-houses where they were stocked
(bhāṇḍāgāra, IV.4.70).
CH. IV, SECTION 7. EXCHANGE AND BARTER

Pâñinî refers to barter as nimâna (V. 2. 47), i.e. exchange of goods by agreement. What was given in exchange was considered as equivalent in price (mûlya) to what was received (nimeya). The sūtra Saṅkhyâya guṇasa ya nimâna mayat seeks to regulate the grammatical formation expressing the barter ratio, on the pattern that the price of a portion of one thing is equal to so many portions of the other. For example, dvîmayam uδâśvîd yavâñâm, "butter-milk is two-times the value of barley", i.e. two parts of barley is the price of one part of butter-milk (uδâśvît). The comparison must be made with one portion of nimeya (thing to be bought) with several portions of the nimâna. The ratio must be x : 1, but never x : 2, or x : 3, etc., in which x denotes the nimâna.

NATURE OF BARTER TRANSACTIONS—The range of articles covered by barter mostly concerns simple things of ordinary use, such as food, clothing, and domesticated animals. Pâñinî refers to vâsana or a piece of cloth as a medium of exchange, the thing purchased in exchange for cloth being called vâsana (V. 1. 27). In Hindi bâsan (=Skt. vâsana) means household utensils. It is thus indicated that the weavers exchanged pieces of cloth with utensils and other articles they needed. There is also reference to articles purchased for one go-puchcbha (go-puchcbhena krîta, gaupuchcbbhikam, V. 1. 19). Dr. D. R. Bhandarkar takes go-puchcbha literally to be the tail of a cow as a circulating medium, (Anc. Ind. Num., p. 169-70), but go-puchcbha indicated the cow itself as in the analogous English term 'cattle-head'. The idiom had its origin in the ancient custom of transferring the ownership of a cow by holding her tail; the grazing tax levied per
head of cattle is still called *puchchhi* or tail-tax in north India. From the Vedic period the cow had formed a medium of exchange and a measure of value (*Vedic Index*, I. 196, 234). The term *gau-puchchbhi* should thus be taken to have applied to an object received in exchange for one cow. Patañjali mentions an even bigger transaction negotiated in exchange for five cows (*pañchabhir-gobhīḥ kritaḥ pañchaguh, Bhāṣya*, I. 2. 44; I. 216); and also the purchasing of a chariot for five kroṣbṭris (*VII.1.96; III. 273*). The meaning of *kroṣbṭri* in *pañcha-kroṣbṭri-kṛita-ratha* is not clear; it was perhaps the name of a particular stack of grain like *dhānya-gava* (bulk-stack mentioned in *sūtra VI.2.72. Dvi-kambalya, tri-kambalya* cited on IV.1.22 refer to sheep purchased for two or three kambalya measures of wool, one kambalya being equal to 5 seers (*Kāśikā on Pāṇini V.1.3*). The Kāśikā cites *pañca-bāsvā* and *daśāsvā*, i.e. a female slave purchased for the price of five or ten horses (IV. 1. 22).

Mention is also made of *kanisa* (V. 1. 25), *sūrpa* (V. 1. 26) and *khāri* (V. 1. 33) in connection with the purchase of commodities. Dr. D. R. Bhandarkar points out 'As these are clearly measures of capacity, the only inference possible is that such commodities were bought by means of these measures and most probably with grains which were the staple food of the province' (*Anc. Ind. Num.* p. 170). In several examples and counter-examples we find reference to other measures of weight used in bartering transactions, e.g. *dvyañjali, tryañjali*, purchased for two or three handfuls (*dvāhbām aṅjalibhyāṁ kritaḥ, Kāśikā on V.4.102, Dvi-tribhyām aṅjaleḥ*). Similarly, an object purchased for two or three *āchita* measures was called *dvyaḥchitā, tryaḥchitā* (IV.1.22, *āchita= 10 bhāra or 25 maunds*). Pāṇini mentions *saurpa* and *saur-pika* as applied to articles purchased for one *sūrpa* measure (V. 1. 26), to which Patañjali adds *dvi-sūrpa* and *tri-sūrpa* (II. 346, 348). The *gōnī* measure (I. 2. 50) was equal to two *sūrpa* and is mentioned in connection with barter in such
phrases as *pañcha-goniḥ* and *daśa-goniḥ*, 'purchased for 5 or 10 *goniś*’ (I. 226), the articles so purchased being cloth according to the *Kāśikā* (I. 2. 50).

The examples *pañcha-nauḥ, daśa-nauḥ* refer to a big deal in exchange for five or ten boatfuls of merchandise (*Kāśikā* on *Nāvo Dvigoḥ*, V. 4. 99). Patañjali refers to consignments of five hundred boats or five hundred rafts (*pañch-oḍupā-satāni tirṇāni, pañcha-phalaka- satāni tirṇāni*, *Bhāshya*, II. 356), which point to a flourishing riverine traffic in goods which rich merchants (*parama-vāṇija, uttama-vāṇija* on *Pāṇini* V.2.13) must have handled.
CH. IV, SECTION 8. MEASURES AND WEIGHTS

TERMS—The word parimāṇa in the Ashtādhyāyī denotes cubic and gravitational measures, and pramāṇa a lineal measure. According to Patañjali1 unmāna is a measure of weight, parimāṇa of volume or capacity (sarvatomānam), and pramāṇa a lineal measure (āyāma). Pautava used in the Arthasastra (Cf. Pautavādhyaksba, Superintendent of Weights and Measures) is unknown to Pāṇini.

Parimāṇa has a two-fold sense in the Ashtādhyāyī. In its technical (rūḍha) sense it excludes saṅkhyā or number as in sūtra V. 1. 19 where both words are used together; and in a more general sense it includes even saṅkhyā, as in sūtras III. 3. 20 and IV. 3. 156 (where the Kāśikā specially notes the comprehensive meaning of parimāṇa). Parimāṇa thus denoted weights and measures from which the numerals as also measures of time were excluded, as stated by Patañjali on the authority of an old vārttika (jñāpakaṁ tu kāla-parimānānāṁ parimāṇāgraṇḍhaṁ, III. 321; VII. 3. 15). The lineal measures whenever they are mentioned are strictly distinguished as pramāṇa.

SCALE—A scale is called tulā, and articles weighed with a balance tulya (tulayā sammitam, IV.4.91). The string fastened to the horizontal rod in order to lift the scales was called pragrabha in the language of traders (Pre vanijām, III. 3. 52). The measures appear to have been made of wood. The word dravya found earlier in the Atharvaveda (V. 20. 2) and meaning ‘wooden’, is mentioned by Pāṇini to denote a measure (Māne vayah, IV. 3. 162) and is reminiscent of the times when wooden measures were in use. A tradition recorded in gram-

1 Úrdhvamānāṁ kilomānāṁ parimāṇāṁ tu sarvataḥ, Āyāmas tu pramāṇāṁ syāt saṅkhyā bāhyā tu sarvataḥ, Bhāṣya, V.1.19; II.343.
mational literature credits a Nanda king with the standardising of weights and measures for the first time (Nandopakramāṇi mānāni, Kāśikā, II. 4. 21 and VI. 2. 14). This may have been due to meet the needs of a vast empire. By the time of Patañjali, measures like droṇa, khaṇi and aḍbaka, etc., had been fixed as of an approved standard (aktaṇavānaṁ arthānāṁ vāchakā bhavanti naivādbike bhavanti na cha nyūne, Bhāṣya, I.4.13; I.216).

WEIGHTS—Pāṇini mentions the following weights:

(1) Māśa—It occurs as the name of a coin (V. 1. 34), and also denoted a corresponding weight, which was 5 rattis for gold and copper and 2 for silver (Arth. and Manu).

Pāṇini also refers to nishpāva (III. 2. 28), which finds mention in Jain literature (Anuyogadvāra Sūtra, 132) after guṇjā and kākinī and was used for weighing gold, silver, jewels, pearls, etc.

(2) Śāṇa—It is referred to in two sūtras (V. 1. 35; VII. 3. 17) as the name of a coin. According to the Mahābhārata śāṇa was one-eighth of a śatamāṇa or 100 rattis (Vanaparva, 134. 14), and thus weighed 12½ rattis. Charaka refers to śāṇa as one-fourth of a suvarṇa, i.e. four māshakas or 20 rattis (Kalpastrāna, XII. 89), and its half-weight as śāṇārdha for weighing small doses of medicine (Chikitsāsthāna, XXVI, 248).

(3) Bista (IV. 1. 22; V. 1. 31). Pāṇini refers to articles purchased for two or three bistas. The Amarakośa explains bista as a synonym of karsha or aksba used for weighing gold. Charaka treats karsha, suvarṇa and aksba as synonyms. It appears that Pāṇini used bista as a synonym for suvarṇa. Thus bista was equal to 80 rattis.

(4) Aṇjali (V. 4. 102). In such phrases as 'purchased for two or three aṇjalis' (dvya-aṇjali, trya-aṇjali) aṇjali is a definite measure. According to Charaka 16 suvarṇas make one aṇjali, which was also called kuḍava. Kauṭilya makes kuḍava as the basis of calculating higher weights, e.g. four kuḍavas—
one prastha, and four prasthas—one ādhaika (Arth., Vol. II.19). This is the same scale as in Charaka.

(5) Ādhaika (V. 1. 53). It was a weight equal to 16 kuḍavas or 256 karsbas. Charaka makes pātra a synonym of ādhaika (Kalpasthāna, XII.94). Pāṇini mentions both these in sūtra V. 1. 53, with reference to cooks able to handle so much quantity. Special mention is made of fields requiring one pātra of seed for sowing (V. 1. 46, pātrikāṁ kṣetram, pātrikī kṣetrabhaktiḥ).

(6) Kanisa (V. 1. 25; VI. 2. 122). Charaka explains kanisa as equal to 8 prasthas or 2 ādhakas. In the older literature kanisa is said to have denoted a pot or vessel of metal (Vedic Index, 1.130).

(7) Mantha (VI. 2. 122). The exact weight is not indicated in any table, but Pāṇini mentions it after kanisa and before sūrpa as a measure-denoting word, and this makes it highly probable that mantha corresponds to drona with its synonyms of kalaśa and ghaṭa in the table of Charaka. A mantha would thus be equal to 4 kanisas or 8 ādhakas.

(8) Sūrpa (V. 1. 26; VI. 2. 122). It was a measure equal to two dronas (Charaka).

(9) Kbāri (V.1.33). Pāṇini refers to an article purchased for 1½ kbāri called adhyardha-kbārika, and says that in the opinion of the Eastern grammarians kbāri becomes kbāra in a Dvīgu compound (V. 4. 101, Kbāryāḥ Prāchām). Kātyāyana mentions the latter form in the vārttika kbāra-śatādyartham (V. 1. 58). It appears that kbāri was the unit for measuring large heaps of corn, as in the expression kbāra-śatika rāśi and kbāra-sabasrika rāśi, heap of corn on the threshing floor weighing 100 and 1000 kbāris (Bhāshya, II. 353) A kbāri was certainly a higher weight than drona as Patañjali would have it (adbiko dronaḥ kbāryaṁ, II. 387; V. 2. 73). The Arthasāstra defines kbāri equal to 16 dronas (II. 19.). In the table of Charaka 4 dronas make 1 kbāri.

(10) Goṇī (I. 2. 50). A śloka-vārttika interprets goṇī
as a measure (Bṛhaśya, I.2.50 I.226), gotimātramidam gotih). According to Charaka goti is synonymous with khāri.

(11) Bhāra. It is referred to in sūtra VI. 2. 38, in connection with the derivation of mabhā-bhāra. The exact significance is uncertain, but like other words of that sūtra it was a saṁjña word with a definite meaning, and not a common noun. According to the table given in the Amarakośa (I.9. 87) 1 bhāra = 8,000 karsbas or nearly 2½ maunds. This is supported by Kauṭilya defining bhāra as equal to 20 tulās (viniśati-tauliko bhāraḥ, II. 19); a tulā being equal to 100 pelas, a bhāra would be = 2,000 pelas or 2½ maunds. It appears that the quantity weighed at one time by a hand-balance was one tulā or 5 seers. Bhāra appears to be a head-load carried by a human being, and mabhā-bhāra would indicate a quantity much in excess of this, most likely a cart-load.

(12) Āchita (IV.1.22; V.1.53). According to Amara, āchita is a cart-load (sakatobhāra āchitaḥ, II.9.87), consisting of 10 bhāras, which is equal to 20,000 pelas, or 25 maunds. Other measures mentioned are pāyya (III. 1. 129), kulīja (V. 1. 55), shashṭbaka (V. 3. 51), the exact significance of which is not known. The pāyya seems to be the measure called pāi in Punjab and Rajputāna and pāya in the U. P., used for measuring grain and having a capacity of 5 to 7 seers. Its smaller unit of about 3 seers is called pāyali in Bombay.¹ In sūtra VI. 2. 122 Pāṇini regulates the accentuation of pāyya in a numeral compound. Kulīja is mentioned in the Kauśika Sūtra (12 and 43). Shashṭbaka seems to be related to shashṭbāṃsa a sixth part, being the amount of grain taken by the king as tax. Its minimum unit seems to be a drola measure as indicated by the term drola-māpaka, an officer appointed to collect one-sixth share of the produce (Kurudhamma Jāt. III.276). Vaha (III. 3. 119) and kumbha (VI. 2. 102) are also mentioned without being specified as measures, but in the Artha-

¹ Cf. Burmese pyi, a measure, about a quart (B.S.O.S., X.p.39).
śāstra kumbha was 20 dronas and vaha equal to 10 kumbhas.

Paṇa is also stated to be a parimāṇa, but not with reference to the famous coin of that name. It rather signifies bundles of vegetables tied together and sold as a unit, e.g. mūlakapaṇa, harita-paṇa (III.3.66).

MEASURES OF LENGTH

PRAMĀNA—Pramāṇa denotes a measure of length, except in VI.2.4, where it includes weights also, as go-lavaṇa, aśva-lavaṇa, salt for the cow and the horse, and in VI.2.12 where the length of time is also indicated by it as Prāchya-saptasamaḥ, Gāndhāri-saptasamaḥ, meaning a resident of seven years' standing in the Prāchya or Gandhāra country.

Pāṇini mentions the following measures of length:

(1) Aṅguli (V. 4. 86). 8 barley grains (Arth. II. 20, p. 106) = ⅙th of an English inch.

(2) Disṭi and Vitasti (VI. 2. 31). Both are synonymous terms (Bhāṣya, quoting a śloka-vārttika, VI.2.1; III.122). Vitasti in the table of the Arthashastra=12 aṅgulas (II. 20). But disṭi as a measure is of very rare occurrence in Indian literature. The word occurs in the Kharosṭhī documents from Central Asia as disṭi, corresponding to the Iranian measure distay, no doubt equivalent to a span (F. W. Thomas, Some Notes on Central Asian Kharosṭhī Documents, B. S. O. A. S., XI, 1945, p. 547).

Patañjali also mentions the sama measure before disṭi and vitasti (Bhāṣya, V. 2. 37; II. 378), which according to the Arthashastra was equal to 14 aṅgulas. Probably the word śambā in Pāṇini (V. 4. 58) was connected with the sama measure, and indicated that kind of intensive ploughing in which the furrow was deepened to a sama or 14 aṅgulas of depth (śambā karoti).

(3) Purusha. Pāṇini mentions the purusha measure, preceded by a numeral, to denote depth (Purushāt pramāṇe nyatarasyām, IV.1.24), e.g. dvipurushā, dvipurushī; tripurushā,
tripurushi parikbā, a moat 2 or 3 ‘purushas’ deep; or dvipuru-
sham, tripurusham udakam; water 2 or 3 purusha measures
deep (Purusba-hastibhyām-an cha, V.2.38, Kāśikā). Any-
thing equal to 1 purusha measure in depth was called pa-rurusba.

The purusha measure is stated in the Arthaśāstra to be of
three kinds:

(i) 5‘ 3”=84 aṅgulas=1 vyāma=1 khāta purusha,
for measuring ropes, moats and depths;
(ii) 6‘=96 aṅgulas=4 aratni=1 purusha, being the
standard height of a man, probably to measure
recruits for the army;
(iii) 6’ 9”=108 aṅgulas=4½ aratni=1 purusha mea-
sure, for sacrificial altars.

Thus a moat of 2purusha measures was 10½ ft. in depth and
of 3 purushas 15¾ ft. According to Baudhāyana the purusha
measure or altars was slightly bigger: Paṁcāratnih purusho
vyāmaścha (Baudh. S. XXX. 1. p. 389)), i.e. a purusha or
vyāma is equal to 5 aratnis or 7½ ft. (cf. also Padamañjari on
IV. 1. 24, Paṁcāratnih purusha iti Śulva-vidah).

(4) Hastin. A basti measure is to be determined from
the standard measurement of an elephant of the best class at
forty years age, viz. ‘seven aratnis in height, nine aratnis in
length, ten aratnis in circumference’ (Arth. II. 31).

Kauṭilya, refers to the basti measure twice, and at both
places the length of the animal (bastyāyāma) is taken and not
its height (p. 136). It shows that in general practice the
basti measure was based on the length of the animal, which was
9 aratnis=13½ ft.

The height of a rampart in the Mahāsutasoma Jātaka
(V. 477) is stated as 18 cubits (attthārasa-hattha-pākārena),
or 27 feet, which would be equal to 2 basti measures. Even
today a fort-wall is built to be 18 cubits in height.

(5) Kāṇḍa (IV. 1. 23) is referred to as a measure for
measuring the area of fields. The Arthaśāstra in the table of

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field measures refers to 1 *daṇḍa*—six *kaṁsas* or 192 *aṅgulas*, i.e. 12 ft. (Arth. II. 20, p. 107). *Dvikāṇḍi, trikāṇḍi* rājjuh, cited in the Kāśikā shows that *kāṇḍa* was a submultiple of rājju. The Bālamanorāma takes *kāṇḍa* and *daṇḍa* to be synonymous with a length of 16 hāstas or 27 ft. The Jātakas mention the Rajjugābaka officers connected with land-surveying (Kurudhama Jat. III 276). 1 rājju measure was equal to 10 *daṇḍas*. Nivartana an ancient square measure for measuring the area of fields was equal to 3 rājju. When *kāṇḍa* denoted merely a lineal measure it took the suffix *nīp*, as *dvikāṇḍi* rājju, but when a square measure or area of a field (*ksbetrabhakti*) it took *tāp* in the feminine gender, as *dvī-kāṇḍa* *ksbetrabhaktiḥ*.

(6) *Kishku*. It is included in the Gaṇa-pātha of VI. 1. 157 (Pāraskara-prabhritī ni ca saṁjñāyam), which on the authority of Patañjali (III. 96) may be taken as a genuine reading. According to the Arthaśāstra, *kishku* was = 32 *aṅgulas* (2 feet) in ordinary usage, but = 42 *aṅgulas* for sawyers and blacksmiths. It was a measure employed in connection with camping grounds, forts and palaces (Arth. II. 20). It is referred to in the Mahābhārata (Āranyakaparva, 126.29).

(7) *Yojana* (V.1.74), a measure = 4 gorutas or *kroṣas* = 2,000 × 4 yards, or 4.54 British miles. (Cf. Arth. Trans. by Dr. Shamsastri, p. 118 with footnote).

A summary of lineal measures is given below; those in Italics being from Pāṇini.

| 8 Yavas | = 1 Aṅgula | = ¾ in. |
| 12 Aṅgulas | = 1 *Dīṣṭi* or *Vitasti* | = 9 in. |
| 2 Vitastis | = 1 Aratni | = 1½ ft. |
| 42 Aṅgulas | = 1 *Kishku* | = 2’ 7½” |
| 84 Aṅgulas | = 1 *Khāta Paurusha* | = 5 1½ ft. |
| 216 Aṅgulas | = 1 *Hastī Ayāma* | = 13½ ft. |
| 192 Aṅgulas | = 1 Dāṇḍa = *Kāṇḍa* | = 12 ft. |
| 10 Daṇḍas | = 1 Rajju | = 40 yds. |
CH. IV, SECTION 9. COINAGE

The Ārbiya section of the Ashtādhyāyī (Adhyāya V, pāda 1, sūtras 19-37) furnishes some important data in respect of the oldest coinage of India. The general sense governing these sūtras is that of Tena kṛitam (V. 1. 37), ‘purchased with that’, and Tat-arhati (V.1.63), ‘worth that’. An attempt is made here to bring together the available evidence from the sūtras and their commentaries, and to discuss it with a view to identifying the denominations and value of those coins in the light of facts known from ancient Indian numismatic history.

GOLD COINS—Nishka and Suvarna.

1. Nishka. ‘As early as the Rigveda traces are seen of the use of Nishka as a sort of currency, for a singer celebrates the receipt of a hundred Nishkas and a hundred steeds: he could hardly require the Nishkas merely for purposes of personal adornment. Later the use of Nishkas as currency is quite clear.’ (Vedic Index, I. 455). The Śatapatha Brāhmaṇa refers to a nishka of gold (XI. 4. 1. 8). The Jātakas also mention nishka as a gold coin (A. I. N., p. 48).

Pāṇini mentions nishka in the following three sūtras:

(i) Asamāse nishkādibhyah (V.1.20), i.e. the ṭhak suffix is added in the sense of tena Kṛitam, etc. to nishka and others including pāna, pāda, māśa, when not in a compound. For example, nāishkīka means ‘purchased for’ or ‘worth’ one nishka. Similarly pānīka, pādīka and māśīka, denoted an article purchased for these coins.

(ii) Dvi-tri-pūrvān-nishkāt (V. 1. 30). It refers to a transaction concluded for two or three nishkas, for which

1 Cf. D. R. Bhandarkar’s Lectures on Ancient Indian Numismatics, p. 55, referred to here as A.I.N.
special forms were dvi-nishkam, dvi-naishbikam; tri-nishkam, tri-naishbikam.

(iii) Šata-sabarāntāchcha nishkāt (V. 2. 119), i.e. the affix ṭhaṇ comes in the sense of matup, after the words šata and sabasra, when they are prefixed to nishka. Thus in Pānini's time a possessor of one hundred nishkas was called naishka-śatika, and of one thousand nishkas, naishka-sahasrika. These appear to be real titles indicating the degree of opulence (āḍhya-bhāva, III. 2. 56) of the person so designated. The Mbb. also refers to these two degrees of wealth, consisting of 100 and 1000 nishkas (śatena nishka-gaṇitam sahsreṇa cha saṁmitam, Anuśāsanaparva, 13. 43). Patañjali uses the terms nishk-dhana, and šata-nishkadhana (owner of 1 nishka or 100 nishka pieces, II. 414). The Kāśikā adds that it was not usual to add the word suvarṇa before nishka, evidently because nishka was already understood as a gold coin (Kāśikā, V. 2. 110, suvarṇanishka-śatam asy-āst-īty-anabhidhānān-na bhavati). The Śatapatha Brāhmaṇa states that the nishka offered by Uddālaka Āruni to his learned rival Svaidāyana was of gold (Ś. Br. XI. 4. 1. 8). The Kubaka Jātaka refers to a farmer bringing his hundred nishkas of gold to an ascetic (1. 375). According to the Mbb. the unit of wealth was reckoned at 108 nishkas of gold (sāsṭaṁ śatam suvarṇānāṁ nishkam āburdhanaṁ tathā, Dronāparva, 67. 10). The Vessantara Jātaka mentions a thousand nishkas as the amount for the redemption of Vessanta's son (VI. 546).1

Nishka as a gold coin also seems to have had its submultiples. Dr. D. R. Bhandarkar suggested that the 20,000 pādas offered by king Janaka as prize to the most learned Brāhmaṇa in the assembly of philosophers were gold coins related to nishka (A. I. N., p. 60). He also supposed that this pāda coin was the same as that referred to in Pānini's sūtra Paṇa-pāda-māsha-śatādyat, V. 1. 34. While it is likely that king Janaka

1 Dr. Bhandarkar, A.I.N., pp. 48, 49. Also Juṅba Jātaka (No. 456, IV.97) referring to more than a 1,000 gold nishkas.
offered gold pieces called pāda as dakshiṇā it is not certain if pāda of sūtra V. I. 34 was a token coin of the gold nishka. From its juxtaposition with pana it may as well have been related to the silver kārśāpaṇa, in which series it is mentioned by Kaut, tilya (Arth. II. 12, p. 84). The submultiple pāda coin of nishka, however, did exist, as Patañjali refers to it as pannishka and pāda-nishka (Nishke chopṣaṅkhyānam kartayam, sūtra VI. 3. 56; III. 163, 'pāda optionally becomes pad before nishka'). Manu defines nishka as equal in weight to four suvarnas or 320 rattis (chatuh-sauvarṇikko nishkah, Manu, VIII. 137). This would make a pādanishka synonymous with suvarṇa, but since no specimens of either the nishka or suvarṇa have yet come to light, it is not possible to indicate their relative weights. The Kāśikā instances nishka-mālā (VI. 2. 55), a necklace of nishkas, as indicative of wealth in coins (biraṇya-parimāṇa).

2. Suvarṇa. Pānini does not name the suvarṇa coin, but the same is implied in sūtra Hiranya-parimāṇam dhane (VI. 2. 55), which refers to a person's wealth in terms of coined gold, e.g. dvi-suvarṇa-dhanam (Kāśikā).

Kaut, tilya mentions suvarṇa as a weight equal to 1 karsba or 80 guṇjās (=140 grains). Older specimens of punch-marked suvarṇa coins are wanting, but this theoretical weight is confirmed by the suvarṇa coins of the Gupta period which were struck after an indigenous weight standard. From such examples as dvi-suvarṇa-dhana, adhyardha-suvarṇa, dvi-suvarṇa (purchased for 1½ or 2 suvarṇas, V. 1. 29), it is certain that suvarṇa was a coin with a weight of 1 karsba.

When the words biraṇya and suvarṇa are found associated together, the former denotes bullion and the latter coined gold (biraṇṇa-suvaṅga in the Jātakas and the Arthāśāstra, V. 2, p. 245, A. I. N., p. 51).

In another sūtra Pānini refers to pieces of gold equal to a standard weight (Jātarūpebhyah parimāṇe, IV. 3. 153). Obviously such pieces were gold coins, as shown by its examples cited in the Kāśikā, viz. hātako nishkab, hātakam kāarsāpaṇam,
gold pieces or coins called nishka and kārshāpaṇa struck
to a standard weight. Gold kārshāpaṇas are not mentioned
elsewhere; and Kāśiṅka’s reference is either to suvarṇa coins of
one karsha weight, or to the much later gold coins of Kedāra
Kushāṇas, also referred to by it as Kedāra (V.2.120).

Whereas literary evidence supports the existence of a gold
currency, so far not a single specimen of a gold punch-marked
coin of any denomination has been found in any hoard. Patan-
jali is possibly hinting at gold currency when he refers to the
purchase of two droma measures of corn with gold sufficient
for it (dvi-dronsena biranyena dbānyāṁ kriṅāti), or to the
purchase of one thousand horses with the amount of gold
sufficient for it (sahasra-þerimāṇaṁ sāhasram; sāhasreṇa
biranyena aśvān kriṅāti, Bhāṣya, II. 3. 18; I. 452).

3. Suvarṇa-Māsbaka. The māsha coin in gold and copper
weighed 5 rattis and in silver 2 rattis (cf. A. I. N., p. 52; Arth. II.
18. p. 103). Specimens of silver and copper māshas are known,
but suvarṇa-māsbaka occurs only in literature. The Udaya
Jātaka mentions a golden dish with suvarṇa-māsbakas, a silver
dish with the same, and a copper dish with silver kārshāpaṇas, the
three being mentioned in order of their diminishing value
(suvanna-māsaka-pūrāṁ ekāṁ suvanna-þātīṁ, Udaya
Jātaka, IV. 106-8). A silver kārshāpaṇa (32 rattis) was thus
lower in value than a gold māsbaka (5 rattis). Gold and silver
were thus related in the ratio of about one to seven in the period
of the Jātakas.

SILVER COINAGE—Śatamāna. It is referred to in the
sūtra Śatamāna-viṁśatika-sahasra-vasanād-aṁ (V. 1. 27),
i.e. the affix aṁ comes after satamāna, viṁśatika and others
in the prescribed sense, e.g. satamāṇena kritāṁ satamānam,
an article purchased for one satamāna was called satamāna.
From the Śatapatha Brāhmaṇa (V. 5. 5. 16 tasya triṁ śat-
amāṇaṁ biranyāṁ dakshinā; VIII. 2. 3. 2, biranyāṁ dakshinā
suvarṇaṁ śatamāṇaṁ tasyoktam), it is evident that satamāna
was also a gold coin. According to the Vedic Index, māna
in Vedic literature was a measure of weight equivalent to the *krishṇala* or *raktika* (II. 152). Thus the weight of *satamāna* taken literally would be 100 *rattis*.

But the *satamāna* was more properly related to silver coinage. In the *Śatapatha Brāhmaṇa* (XIII. 2. 3. 2) it is stated: 'Gold and silver will be the fee for the sake of variety to correspond to the manifold forms of the deity, and that *dakshinā* will be *Śatamāna*, since a human being lives for one hundred years' (Rajataṁ hiranyam *dakshinā* nānārūpatayā *satamānaṁ* bhavati *satāyur-vai purushah*, ŚB., XIII.4.2. 10). Here is a definite reference to a silver *satamāna* coin of 100 parts, i.e. 100 *ratti* wt. Manu mentions the silver *satamāna* as equal to ten *dharayās* or 320 *rattis* in wt. (VIII. 137), but no actual specimen of a silver punch-marked coin conforms to the extraordinary weight of 560 grains.

The heaviest silver punch-marked pieces so far discovered are the oblong bars found by Sir John Marshall in the Bhir mound at Taxila along with two coins of Alexander the Great and one of Philip Aridaeus, 'fresh from the mint' and therefore assignable to about the middle of fourth century B. C. Their weights range between 155.7 grains (in the case of much worn pieces) to 177.3 grains (Allan, *Anc. Ind. Coins*, p. xiii, also pp. 1-2). Allan connects them, without good reason, with the weight standard of the Achaemenid *siglos* and thinks that they were struck as double *sigloi*. Now, the maximum weight of the Persian *sigloi* is said to be 86.45 grains and that of a double *siglos* could not have exceeded 173 grains, which makes Allan's identification untenable (cf. Durga Prasad, *Science and Culture*, 1938, pp. 462-65). In terms of an Indian weight standard these oblong bars approximate to 100 *ratti* or 180 grains weight, the heaviest one of 177.3 grains being equal to 98.5 *rattis*, a *ratti* weighing 1.8 grs. Taking the literal meaning of *satamāna*, 'of the weight of 100 *māna* or *krishṇalas* as suggested in the *Vedic Index* (II. 152), it would appear that the Takshaśilā bent-bar coins (*śalākā*) represent the ancient
śatamāṇa coins of silver. They are struck with symbols with regular orientation and were part of the oldest punch-marked currency. Kātyāyana mentions śatamāṇa in a vāttika\(^1\) to regularise such formations as adhyardha-śatamāṇam, dvi-śatamāṇam (purchased for 1½ or 2 śatamāṇas) which suggests that the śatamāṇa was a current coin up to the time of Kātyāyana (cf. also Bhāṣya on V. 1. 29).

Śāṇa. Pāṇini refers to a range of prices in terms of śāṇa coins, such as 1½ śāṇa (Śāṇād-vā, V.1.35, adhyardha-śāṇaṁ, adhyardha-śāṇyam), 2 śāṇas (dvi-śāṇam, dvaisāṇam, dvi-śāṇyam), and 3 śāṇas (tri-śāṇam, traśāṇam, tri-śāṇam, V.1.36), to which Patañjali adds paṁcha-śāṇam and paṁcha-śāṇyam (Bhāṣya, II.350). This shows śāṇa to have been quite a popular coin. Pāṇini also mentions śāṇa as a parimāṇa, i.e. weight (Parimāṇāntasyāsamijñā-śāṇayoh, VII. 3. 17), but such examples as dvai-śāṇa, purchased for 2 śāṇas, show that it was the name of a coin. Charaka refers to śāṇa as a weight equal to one-fourth of a suvarṇa or karsba, i.e. 20 ratti. This may have been a gold śāṇa of which we are not certain. But śāṇa as a real silver coin was one-eighth of one śatamāṇa as stated positively in the Mahābhārata (ashtau śāṇāḥ śatamāṇam vahanti, Aranyakāparva, 134.14); its weight therefore was 12½ ratti or 22.5 grs. (Cf. J. N. S. I., XIV, pp. 22-26).

Pāṇini refers to certain taxes levied in east India (VI.3.10), on which the Kāśikā cites sūpe-śāṇaḥ (VI.2.64 and VI.3.10), a special cess at the rate of one śāṇa coin per kitchen (sūpa) or household.

Kārshāpaṇa. Pāṇini refers to kārshāpaṇa in sūtra V. 1. 29 (Vibhāṣā kārshāpaṇa-sahasrābhhyām)\(^2\) regulating the forms

\(^1\) Vār. Suvarṇa-śatamāṇayor-ūpasāṅkhbyānam.


\(^2\) That the word kārshāpaṇa was also included in the Ardhrachādi group (II.4.31) may be stated on the strength of Patañjali (I.480) using both the masculine and neuter forms kārshāpaṇah, kārshāpaṇam.
adhyārdha-kārṣṭhāṇam, dvi-kārṣṭhāṇam, purchased for 1½ or 2 kārṣṭhāṇa coins.

The word kārṣṭhāṇa is unknown in the Samhitā or Brāhmaṇa literature (excepting once in the Sāmavidhāna Br. III.7.9.) and is peculiarly a term of classical Sanskrit coined in the Sūtra period.

Kārṣṭhāṇa was the name of the silver punch-marked coin of which numerous hoards have been found in various parts of India. It was the standard medium of exchange from about the sixth century B.C. downwards. Like the present rupee it had its sub-multiples, of which Pāṇini mentions ¼ as ardha (V. 1. 48, ardha-sābdo rūpākārdhasya rūḍhīḥ, Kāśikā) and bhāga (V. 1. 49 bhāga-sābdo' pi rūpākārdhasya vāchakaḥ); 1/4 as pāda (V. 1. 34); and 1/16 as māsha (V. 1. 34). When Pāṇini refers to big sums (V. 1. 27; 29; 34) without specifying the name of the coin it is the silver kārṣṭhāṇa that is meant as being the standard coin of his time. The Jātakas also show that the kārṣṭhāṇa was then the standard coin of the country (cf. D. R. Bhandarkar, A. I. N. p. 79). In sūtra V. 1. 21 Pāṇini teaches a suffix after 100 (śata) without the name of a coin in the sense of 'purchased therewith'; in sūtra V. 1. 27, after 1000 (sabasra); and in V. 1. 29 after 1,500 (adhyārdha-sabasra) and 2000 (dvi-sabasra), etc. In all these cases the standard coin, viz. the silver kārṣṭhāṇa, is to be understood. The Gaṇgamāla Jātaka likewise mentions big amounts of a hundred thousand and fifty thousand pieces where kārṣṭhāṇa is understood. Similarly, the Arthaśāstra (p. 368) refers in a descending order to śata-sabasra, pañcāśat-sabasra, dasa-sabasra, pañcha-sabasra, sabasra, śata and viṁśati coins, which meant so many silver pañas (kārṣṭhāṇas). The same linguistic form is known to Patañjali who mentions śata-sabasra coins without the word kārṣṭhāṇa (II. 1. 69. 5; I. 404), and refers to a hundred pairs of sāris purchased for one hundred, i.e. 100 silver kārṣṭhāṇas (satena kṛtama satyaṁ śataka-śatam, Bhāṣya, V.1.21; II.3.46). On Pāṇini V.2.45 (Tad-asmīnna-adhi-
kam-iti daśantād-daḥ) Patañjali definitely says that the phrase ekādaśaṁ śatam and ekādaśaṁ sabasram are understood to refer respectively to a hundred and a thousand kārshāpanas exceeded by eleven. Similarly śata in V. 1. 34 prefixed by adhyardha, dvi and tri would refer to 150, 200 and 300 kārshāpanas, and the same standard coin is meant in sūtra V. 4. 2 in such phrases as dvi-śatikāṁ daṇḍitāḥ, fined two hundred (kārshāpanas).

It is worth noting that the Jātakas invariably refer to the name of the current coin as kāhāpāṇa. The Ashtādhyaī¯ uses both names, kārshāpana (V. 1. 29) and pāṇa (V. 1. 34); whereas the Arthasastra uses hundreds of times only the shorter form pāṇa. It is possible that some kind of chronological sequence is indicated here. Kātyāyana records one more name for kārshāpana, viz. prati, an article purchased for one kārshāpana being called pratika (kārshāpanād vā pratiś-cha, V. 1. 25; II. 347). Prati, a much later name for kārshāpana, is also mentioned in the Sabhāparva (pratikam cha śatam vṛiddhyā dadasy-riṇam anugrabham, 5.68, i.e. a relief loan at 1 p. c. interest), and also in the Nasik Cave Ins. of Ushavadāta recording 1 pratika interest on 2000 and ¾ pāḍika on 1000 kāhāpāṇas (Ep. Ind. VIII. 82). [See also J.N.S.I., VII. 32].

The Table of Kārshāpana

In order to understand more clearly the lower denominations of the kārshāpana which Panini has mentioned, a comparative table of kārshāpana and its sub-multiples is given below. Our best source is a passage in the Arthasastra¹ (Arth. II.12, p. 84), and another in the Gaṅgamāla Jātaka², which together with the evidence from the grammatical literature furnish the following names:

¹ पत्मर्पण पादमध्यमागमिति। पादाजीवं तापस्य यायकृमस्य माहकमृष्याभकं काक्रिणी- 
मर्दकाक्रिणीमिति। (अर्थ शास्त्र 2११२)

² तेन हि पत्रस-सहस्त्राणि चतालीस-तिस-वीस-विस-संघ-संघ-वलिकात्-तथा हि एको 
कहा-परम्। चढ़े चतारो मासका, तथैं हि एको मासकी निगुन्धिः। सम्बन्ध माि- 
विशिष्टस्य प्रथममाति ति वुले ग्राम देव एकत्रं महा घनं। (गंगमाल जातक 3।४१०)
<table>
<thead>
<tr>
<th>Division</th>
<th>Pāṇini</th>
<th>Jātakas</th>
<th>Arthaśāstra</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Kārshāpana and Pana</td>
<td>Kabāpana</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>Ardha; also called Bhāga</td>
<td>Aḍḍha</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>Pāda; Chattāro Māsakā.</td>
<td>Pāda</td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>Dvi-Māsha</td>
<td>Dve-Māsakā</td>
</tr>
<tr>
<td>1</td>
<td>16</td>
<td>Māsha</td>
<td>Eka-Māsaka</td>
</tr>
<tr>
<td>1</td>
<td>32</td>
<td>Ardha-Māsha</td>
<td>Aḍḍha-Māsaka</td>
</tr>
<tr>
<td></td>
<td>Kākāni (Vārt. on V. 1. 33)</td>
<td>Kākāni</td>
<td>Kākāni</td>
</tr>
<tr>
<td></td>
<td>Ardha-Kākāni (Vārt.)</td>
<td>Ardha-Kākāni</td>
<td>Ardha-Kākāni</td>
</tr>
</tbody>
</table>

(2) HALF-KĀRSHĀPANA (Ardha and Bhāga)—Pāṇini refers to ardha (V.1.48) as the name of a current coin. Kāśikā explains it as a half kārshāpana. A small transaction involving a profit, income, tax, etc. of an ardha was called ardhika. The Mabāṣupina Jātaka mentions aḍḍha and pāda as current coin names coming after kārshāpana (Kabāpan- aḍḍha-pāda-māsāra-pādinī, Jāt. 1. 340). Kautilya refers to ardhaṇa and Kātyāyana to ardha as a coin by itself (Ṭī han ardha-chha, Vārttika on V. 1. 25); that which was purchased for an ardha was called ardhika or ardhiķī.

Another important name of the ardha coin given in the Ashtādhyāyī is bhāga, to indicate the main sub-multiple of a kārshāpana (Bhāgād yach chha, V. 1. 49; Kāśikā, Bhaga-śabdopī rūpak-ārdhasya vācbakaḥ).

(3) QUARTER-KĀRSHĀPANA—Pāṇini refers to pāda in sūtra V. 1. 34. Patañjali calls it pādika paid as daily wages to a labourer (karmakarāh kurvanti pādikam-abar-lapsyāmaha iti, Bhāshya, I.3.72; I.293). The terms dvipadikā and tripadikā signifying two and three pādas respectively are obviously implied in sūtra V. 4. 1 (see Bhāshya, III. 362 for these names;
also Kāśikā on VI. 2. 65; VI. 3. 10; VI. 4. 130). They do not appear to be independent coins, but simply the pāda coin pre-
ceded by dvi and tri.

(4) ONE-EIGHTH KĀRSHĀPAṆA—Kauṭilya refers to it as ashtabhāga, an actual coin related to the pana (Arth. II.12, p.
84). Manu calls it pādartha (VIII. 404). The Ashtadhyaṃyī implies dvi-māśa in sūtra V. 1. 34; the Arthaśāstra makes it a
unit of weight in the Suvarṇa series (p. 103). The Jātakas are silent about one-eighth kahāpaṇa.

Cunningham thought that the tale of silver coins was
limited to three divisions, the kārshāpaṇa, with its half and its quarter (Coins of Ancient India, p. 46). To this we can now
definitely add the name of one-sixteenth kārshāpaṇa. Dvi-
māśa may also mean two pieces of māśa coins or one double
piece; for purposes of grammatical rules the form of the word
would be the same.

(5) MĀSHA—Sūtra V. 1. 34 mentions māśa after pana and
pāda. Māsha was both a silver and a copper coin. For
purposes of grammatical formations the word-form would
remain the same. A silver māśa was one-sixteenth part of a
kārshāpaṇa and weighed 2 rattis (3.6 grs.), as stated by Manu
(VIII. 135, Dve kṛishnale samadhyito viṣṇeyo raupya-māśa-
kaḥ). Actual specimens of silver māśa coins (raupya-māśa)
have now been found in a hoard at Bhir mound, Takshāsilā,
and at Tathaḥāri in C.P. They are minute coins with a single
symbol stamped on one side, weighing 2 to 3 grains and with a
diameter of .2 inches (J.N.S.I., VIII. 41; XIII, 168).

COPPER CURRENCY—The copper māśa was a sub-multi-
ple of the copper kārshāpaṇa and weighed 5 rattis, i.e. one-
sixteenth of a tāṃrika-pana of 80 rattis. The kārshāpaṇa was
the standard unit of both silver and copper currencies
similar to the suvarṇa of the gold currency. Its lower
divisions in the copper series were ardha-māśaka, kākanī and
ardha-kākanī according to Kauṭilya. Pāṇini refers to
adhyardha-māśa in sūtra V. 1. 34, i.e. one and a half māśa,
which shows his acquaintances with an actual coin called *ardhamāśa*. This *ardha-māśa* was a copper coin.\(^1\) The *āḍhama- māsaka* coin is referred to in the *Jātakas* (*Āḍhama-sāsaka* *Jāt.*).

Pāṇini does not mention the *kākāṇi* and *ardha-kākāṇi*, but Kātyāyana knows them as current coins (vārttika on V. 1. 33).\(^2\) Both *kākāṇi* and *ardha-kākāṇi* are mentioned in the *Arthasastra* (II. 12) as copper pieces, *kākaṇika* being the charge per day for stamping weights and measures (II. 19). The *Jātakas* know of the *kākāṇi* coin, e.g. the Chullaseṭṭhi *Jātaka* states one *kākāṇi* as the price of a dead mouse (I. 120), and the Sālittaka *Jātaka* refers to village boys giving a *kākāṇi* coin to a cripple saying 'Make an elephant,' 'Make a horse' (*Jāt.*, I. 419). It is possible that the *kākāṇi* came into use after Pāṇini's time, otherwise such a singular grammatical formation would not have escaped his notice.

VIMŚATIKA—(a silver punch-marked coin of 20 *māshas*). Pāṇini knows of a heavier *kārshāpaṇa* called *vimśatika* equivalent to 20 *māshas* as against the standard *kārshāpaṇa* of 16 *māshas*. *Vimśatika* is mentioned in the following *sūtras*:

Satamāna-vimśatika-sahasra-vasanād-āṇ (V. 1. 27);  

\(^1\) I once thought that an *āḍhama-sāsaka* of silver (of 1 *ratti* = 1.8 grs. theoretical weight) would be too minute to be handled and did not exist. Recently a number of minute coins were brought to me, obtained by the gold-washers in the Indus near Jahangira. The lot contains several specimens of silver *ardha-māshakas*, weighing 1.518, 1.132, 1.577, 1.22 grs. etc., and .160" dia. in size. One silver specimen weighs .4783 grains and is .102" in size. Nevertheless it is a regular specimen with a symbol consisting of seven globules on one side. It is an *ardhakākāṇi* coin in silver. I am inclined to believe that a *kākāṇi* and an *ardha-kākāṇi* coin in silver also existed. This would be true of the post-Pāṇinian, or the Mauryan epoch. For these and other specimens from Ujjain, see J.N.S.I., XIII, 164-174.

\(^2\) Vārtt. Kākānyāśi-chopasānāḥ kyānam.  
Bhāṣya—Adhyādhrabā-kākāṇikah, dvi-kākāṇikam.  
Vārt.—Kevalāyāśi cha.  
Bhāṣya—Kevalāyāśi-ch-eti vaktavyam, kākāṇikam.  
i.e. an article purchased for one *kākāṇi* coin, or ½ *kākāṇi* or 2 *kākāṇis*.  

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Viṁśatikā khaḥ (V. 1. 32).
The first rule states that the affix an is added to viṁśatika and others in the sense of 'purchased for so much' (and other meanings taught upto V. 1. 63). For example, vaimśatika, 'that which is purchased for a viṁśatika coin'.

The second sūtra enjoins kha affix in the same sense after the word viṁśatika when preceded by the word adhyardha or a numeral in a Dvīgu compound, e.g. adhyardha-viṁśatikīnām, dvi-viṁśatikīnām and tri-viṁśatikīnām, purchased for 1½, 2 and 3 viṁśatika coins.

Again in sūtra V. 1. 24 (Viṁśati-triṁśadbhyām ṝuvunna-asamijñāyām) Pāṇini mentions viṁśatika and triṁśatka as counter-examples which in this context were names (saṁijñā) of coins. Thus Pāṇini knows of these two special coins in a very intimate manner. The viṁśatika as its name implies was a coin of twenty, and the triṁśatka of thirty parts, i.e. māshas.

As to the real nature and identity of the viṁśatika coin, the following evidence throws light on a coinage system based on twenty divisions:

(1) The commentary Samanta-pāśādikā of Buddhaghosha on the Vinaya-Piṭaka tells us that in the time of king Bimbisāra in the city of Rajagriha a kahāpaṇa was equal to twenty māsakas, wherefore one pāda equalled five māsakas.1 This statement is confirmed by Sāratthadiṇāṃ of Sāriputta Thera, a commentary on the Samanta-pāśādikā.2

(2) The Gaṅgāmāla Jātaka (Jāt. III. p. 448), while mentioning the sub-divisions of a kārshāpaṇa, speaks of a four-māshaka piece as being lower in value than a pāda, which is possible only if the pāda coin be equal to five māshakas, being

2 Imīnā va sabba-janaḍadesu kahāpanassā viṣatimo bhūgo māsako ti. (Mr. Chatterji, op. cit., p. 158).
one quarter of a kārśāpana of twenty māshakas. (Dr. Bhandarkar, A.I.N., p. 112).

(3) The Yājñavalkya-Smṛiti mentions a pala weight equal to four or five suvarṇas (I.364) on the basis of which the Mitāksharā notes: Paṅcha-suvarṇa-pala-pakshe viṁśati-
mābhaḥ pāno bhavati (Yāj. Smṛiti, I.365), i.e. in the case of a pala equalling five suvarṇas, the pāṇa has a weight of twenty māshas.

(4) The Kātyāyana-Smṛiti also preserves a tradition that a kārśāpana equalled twenty, and not sixteen māshas. (Bhandarkar, A.I.N. p. 186).

(5) Patañjali cites another teacher (aśvara) stating that 'in times past sixteen māshas made one kārśāpana', implying that in his time the kārśāpana of 20 māshas or viṁśatika was known in his locality. It seems that both viṁśatika and kārśāpana were in circulation in different localities in the same period. It is interesting to note that actual specimens of viṁśatika weight coins and their lower denominations have been found in the Pañcchāla coinage (Cunningham, Coins of Ancient India, p. 81).

The passages from the above sources of different periods show that the viṁśatika was a current coin in certain localities, e.g. Magadhā and Pañcchāla, as the kārśāpana of 16 māshas was in other localities. The Pāli texts definitely describe it as viśati-māsaka kābāpana, whereas Pāṇini calls it simply a viṁśatika, as a specific name (saṁjña) in popular usage. He is thus referring to the viṁśatika and the kārśāpana as two varieties of coins of different values.

ACTUAL SPECIMENS OF VIṄŚATIKA COINS—B. Durga Pd. of Banaras informed me that he obtained heavy kārśāpanaṃs of silver from Rājgir. These coins weigh from 78 to 80 grains. They are now in the Lucknow Museum (acquired as part of the late numismatist’s collection), and from their fabric and symbols it can be said with certainty that they represent an earlier stage than the 32 ratti kārśāpanas.
The period of transition from 20 māshas weight to 16 māshas seems to be the epoch of the Nanda kings who are credited with the standardisation of weights. It were most probably the Nandas who initiated a bold reform in the punch-marked currency in the matter of weight, symbols and fabric. All these factors become evident even by a superficial comparison of the viṁśatika coins with the standard kārshāpaṇas of 16 māshas and 5-symbol groups.

TRIMŚATKA—Besides viṁśatika, Pāṇini also mentions another specific coin named trimśatka (V. 1. 24), a name which is found only in the Aṣṭādhyāyī and not elsewhere. The trimśatka apparently stands for a coin of 30 māshas, or 60 rattis. B. Durga Prasad obtained from Bihar specimens of silver punch-marked coins, weighing 104 grains and 105-7 grains or about 58 rattis, which should be identified as trimśatka (cf. J.U.P.H.S., July, 1939, p. 33.).

The viṁśatika and trimśatka coins also appear in copper, weighing respectively 20×5 = 100 and 30×5 = 150 rattis. As seen in the Pañcāhāla coinage, the heavier issues in copper continued in use much longer than in silver.

The viṁśatika seems to have had its own sub-multiples of 1/2, 1/4, 1/8, 1/16, all related to the weight standard of 40 rattis in silver and 100 rattis in copper.

RŪPA (Punch-marked symbols)—A large number of symbols are found stamped on ancient kārshāpaṇa coins,1 on account of which they have been called punch-marked, corresponding to signati argenti of the Greek historian Quintius Curtius. 'The mode of manufacturing these coins was first to get ready a hammered sheet, which was then cut into strips, and sub-divided into lengths of approximately the

1 The work of correctly identifying these symbols was initiated by Mr. W. Theobald (JASB, 1890 & 1901). Recently B. Durga Prasad illustrated about 564 such symbols from a large number of well preserved coins and described them in his Essay entitled 'Classification and Significance of the Symbols on the Silver Punch-marked Coins of Ancient India', Numismatic Supplement, No. XLV, 1934, p. 9ff.
desired weight, which was adjusted by clipping the corners when necessary." (Smith, Cat. of the Coins in the Indian Museum. p. 134). After this the metallic pieces were subjected to the process of stamping symbols on them by means of a separate punch for each symbol. It is this particular stage in the process of manufacture to which Pāṇini refers in the following sūtra:

Rūpād ābata-praśasīsayor-yāp (V. 2. 120)

The word rūpa takes the affix yāp in the sense of ābata, 'impressed', or praśāsiṣā, praise, e.g. Rūpyo gauḥ, a bull of praiseworthy form; and ābataṁ rūpam asya rūpyo dīnāraḥ, rūpyo kēdāraḥ, rūpyam kārṣāpāṇam.

The first two examples of dīnāra (Denarius) and kēdāra (coins of the Kēdāra Kushāṇas, 3rd-4th century A.D.) do not seem to be in order, as these coins were cast in moulds and not punched. The example rūpyam kārṣāpāṇam was a genuine old example. According to the Kāśikā the symbols on such coins were struck with a punch (nighātikā-tāḍānā-dīnā). A metal piece as long as it was not stamped (ayantrita) had no use as currency.

The word rūpa in Pāṇini’s sūtra being in the singular number, points to one symbol stamped with one punch at a time, i.e. for each symbol separate punching was required. We know from the standard silver coins of 16 māshas that each bears a group of five symbols of great variety, and each figure was stamped with its particular punch. On most of the specimens the two symbols in each group are the sun and a six-armed symbol (ṣhāḍāra), but no definite order seems to have been observed in punching and there is considerable overlapping of symbols. Some of the names of the rūpas or figures on these coins were the same as the names of marks (lakṣanās) used in branding cows, as already pointed out (Ch. IV, Sect. 3).

Sometimes the term rūpa was used for the coin itself, as in the Mahāśupina Jātaka (I.340). Kauṭilya mentions an officer called Rūpadarśaka (Arth. II. 9, p. 69; 245), Exa-
Economic Conditions

miner of Coins. In his comment on a vařttika to Pāṇini’s sūtra I. 4. 52, Patañjali also refers to an officer called Rūpatarka whose duty was to scrutinise the current kārshāpana coins (paśyati Rūpatarkah kārshāpanam, I.337).
CH. IV, SECTION 10. BANKING AND LOANS

WEALTH—Wealth is referred to by several terms, such as dhana, sva, dravya, mula, but a new classical word unknown in the Brāhmaṇa and Aranyaka literature was svapateya (property), corresponding to Pāli sāpateyya, of which Pāṇini gives a rather legal definition as svapatau sādhu (IV.4.104), that in which the owner (sva-pati) has valid title (sādhu-tā).

Pāṇini refers to a wealthy man as ādhyā (III. 2. 56), corresponding to Pāli addo. The Jātakas also refer to ibbhas (Skt. ibhya) who appear to be of the same status as addhas. Wealth was indicated in terms of coined gold or silver, e.g. Pāṇini mentions naishka-satika, one whose wealth amounted to 100 nishkas of gold, and naishka-sahasrika, to 1000 nishkas (V. 2. 119). Pāṇini also refers to persons possessing one hundred (aika-satika) or one thousand (aika-sahasrika, V. 2. 118), evidently kārbāpanas of silver. The Jātakas refer to fabulous treasures of eighteen crores or fifty-four crores, as in the case of setthi Anāthapiṇḍaka.

MONEY-LENDING—Pāṇini mentions a creditor as uttamarnā (I.4.35); a debtor as abhamarnā (III.3.170); loan as rina (IV.3.47); interest as virddhi; repayment as pratidāna (I.4.92); and surety as pratibb (III.2.179; II.3.39).

The Jātakas refer to lending money at interest (inda-dāna) as a means of lawful occupation, together with tillage, trade, and harvesting as four honest callings (Jāt. IV. 422; Cambridge History of India, Vol. I, p. 218). Pāṇini distinguishes interest on a loan as virddhi (V. 1. 47) from usury as kusida (IV.4.31), which is condemned (Prayachchhati garhyam, IV.4.30). The special term kusidika was meant to mark out the usurer for social opprobrium. The odium attaches even to his family, singled out as kusidāyi (wife of a usurer, IV.1.37).
Kātyāyana calls usurious interest *vridhushi* and the usurer *vārdhushika* (IV.4.30.3).

**INTEREST**—Pāṇini mentions a definite rate of interest in the expression *daśaikādaśa*, the creditor who gets back 11 (ekādaśa) by lending 10 (IV.4.31). This amounts to the rate of about 10 percent considered usurious, and is condemned as such (garhya) by Pāṇini. Kauṭilyya takes the lawful rate of interest to be $1\frac{1}{4}\%$ per month, (sapāda-panā dharmaṇyā māṣa-vriddhīḥ ṭana-ṣatasya, Arth. III.11). Manu (VIII.140-43) and Yājñavalkya quote the same rate and call it as one-eightieth (of the principal) per month. Vasishṭha (II.51) states the legal rate to be five *māṣhas* a month for twenty kāṛṣhaṇas. Taking the latter to be a viṁśatika kāṛṣhaṇa of twenty māṣhas, the rate of interest works out to one-eightieth part, the same as in Manu. Nārada and Gautama agree with the above, and so also Vyāsa, if the loan is against a pledge. Thus 15% was regarded as an equitable rate of interest (dharmaṇyā vridhī). Baudhāyana prescribes 20% as interest (J.B.O.R.S., 1920, p. 117). In contrast to this the rate of the daśaikādaśa loans working out to a little less than 11% was considered reprehensible in Pāṇini’s time. Patañjali cites two more examples of usurious loans, in which the lender earned exorbitant amounts as interest and was rightly censured as dvai-gunika and traigunika (IV.4.30; II.331). These must have referred to short term petty loans.

Pāṇini also refers to a much lower rate of interest of half a kāṛṣhaṇa per month called *ardha* and bhāga (V.1.48-49) which was equivalent to 6% per annum, the loan transaction being called ardhika or bhāgika. The Kāśikā explains it either as $\frac{1}{2}$ percent (bhāgikam śatam) or 2½ percent (bhāgikā viṁśatih) per month, which would make the rate of interest vary from 6% per annum to 30%.

Loans were also named from the amount of interest earned on them, e.g. pañchaka, i.e. a loan earning 5 as interest. Patañjali also refers to 7, 8, 9, and 10 as the amount of accru-
ing interest (II.351). Such loans would come under the system called *dāṣaikādaśa* by Pāṇini. For example, a loan of ten rupees which would become rupees fifteen after five months was called a *paṃchaka* loan; similarly *saptaka*, *ashtaka*, *navaka* and *dāṣaka* respectively. These loans applied to agricultural crops, i.e. loans advanced at sowing and repaid at harvesting.

Loans were also called after the periods stipulated for their repayment (*Deyam-riṃe*, IV.3.47), e.g. *sāṃvatsarika*, loan for a year (IV.3.50); *āvarsamaka* loan for six months (IV.3.49).

There is mention of loans to be repaid in particular seasons, e.g. *graismaka* (IV.3.49), loan to be paid back in summer, by the full-moon of Ashadhā marking the close of the financial year. These were probably repaid out of the income from the special crops grown in summer, such as melons, water-melons and vegetables. The next season for repayment was that of the rains (*varsha*), nicknamed as the 'season when peacocks cry' (*kalāpi*); a loan stipulated to be repaid at that time being called *kalāpaka* (IV.3.48). In the section on Agriculture we have referred to the rotation of crops known to Pāṇini and Kauṭilya. By looking at it we find that there is a close connection between the *kalāpaka* loans and the crops harvested in the rainy season and therefore called *vārshika*. Pāṇini refers to *aśvatthaka* (IV.3.46) as another euphemism for loans repayable during the rains. Aśvattha was an old Vedic synonym of the asterism Śrōṇā found in the *Kāṭhaka Samhitā*, a text known to Pāṇini (VII.4.38), and from this was derived *aśvatthaka* to denote a loan repayable in the month of Aśvattha or Śrāvaṇa constellation (IV.3.48). The *Kāśikā* explains *aśvattha* as the season when the trees called *Ficus religiosa* bear fruit (*yasmin-aśvatthāḥ phalanti*).

The next season for settling loan accounts from agricultural produce was Agraḥāyaṇa, when the crops of the
Hemanta season are harvested. These crops (called baimana in Kauṭilya) were sown during the rainy season; they are still one of the two principal crops of the year known as kbarif, producing rice, pulses, sesameum, maize and millet. Pānini mentions such loans as āgrahāyaṇika (also agrahāyaṇaka, IV.3.50), which were to be repaid on Āgrahāyaṇī, the Full-moon day of the month Āgrahāyaṇa. It incidently shows that the month was reckoned to close on the full-moon day, for it would be natural to fix the period of repayment in terms of full and not half-months. We may thus understand how a daśaikāḍaśa debt contracted in the month of Śrāvaṇa, to meet the expenses of sowing the rainy crop, with stipulation to be repaid on the Āgrahāyaṇī day would be called pañchaka, on account of the interest-bearing period being five months.

The other important crop was vāsantika harvested in the spring season. This crop is now called rabī, with barley, wheat, and oil-seeds as its main produce. On account of its association with barley and its straw, the season itself was nicknamed yava-busa, and Pānini refers to loans due for repayment at this time of the year as yava-busaka (IV.3.48).

It appears that the ten-rupee loan referred to by Pānini in the phrase daśaikāḍaśa, became later the norm. By the time of Kātyāyana we find that daśāṛṇa, a loan of ten rupees, had become a regular linguistic expression (VI.1.89.8;III.69). The ten-rupee loan still continues to be the basis of petty agrarian loans under the name of das-ke-bārah (ten-for-twelve system). Kātyāyana also mentions special loans like vatsatarāṛṇa 'contracted for purchasing a young bull'; kambalāṛṇa, 'loan for buying a blanket of standard size', which according to Pānini was manufactured out of a kambaliya measure (five seers) of wool; and vasanāṛṇa, loan for buying cloth. We should understand vasana as a cloth of standard measurement, weight and price so that it could be used as a unit of exchange in such transactions as envisaged in sūtra
V.1.27 (purchased for one vasana). Vasana was most likely the standard śātaka cloth mentioned by Patañjali as costing, one kārśāpana each (V.1.21; II.346).

CORPOREAL INTEREST—According to Gautama there were six special forms of interest, viz. compound interest, periodical interest, stipulated interest, corporeal interest, daily interest, and use of a pledged article (Gautama Smṛti, XI.34-35). Of these Pāṇini knows of periodical interest as in daśaikādaśa; stipulated interest as in pañchaka, saaptaka; compound interest as in pravriddha (VI.2.38); and use of pledged article as in IV.4.89. A reference to corporeal interest may be traced in sūtra II.3.34 (Akatary-rīne pañcchamī) intended to regularise the formation of such linguistic expressions as satād buddhāḥ, i.e. 'bound for a debt of one hundred'. We know it from Kauṭilya that free persons pledged or mortgaged themselves to repay debts contracted by them; this custom was also known in Pāṇini’s time.

USE OF A PLEDGE—Pāṇini knows of this form of interest in sūtra IV.4.89, which refers to dhenuṣhya, as a cow whose milk was pledged to the creditor for satisfaction of the loan advanced by him (yā dhenu-uṭtamarnāya riṇapradānād doba nārthaṁ diyate sā dhenuṣhya, Kāśikā).

MAḤA-PRAVRIDDHA—(VI.2.38). Pāṇini has cited the formation mahā-pravriddha for its particular accent. But the word denotes the limit of interest (vṛiddhi) allowed on a loan. Manu says that the maximum accumulated interest should not exceed the principal sum (VIII.150). Kauṭilya directs that if the interest is allowed to pile up owing either to the absence abroad of the creditor or debtor, or deliberate intention, the amount payable shall be equal to twice of the principal sum (mūlya-dvīgūna, Artha, III. 11, p. 174). This is also endorsed by Śukra stating that the debtor shall not be required to pay more than twice the principal sum in discharge of his debt and interest (IV.5.631-2). Thus the maximum limit of accumulated interest was a sum equal to the principal; and
when the original amount of loan, say a hundred kārṣṭaṇas, had by the adding to it of compound interest (pra-vṛiddha) increased to two hundred kārṣṭaṇas, the loan was considered to have reached its maximum increment (mabhā-pra-vṛiddha).

APAMITYAKA (IV.4.21).—Pāṇini mentions apamityaka as something borrowed with a view to be returned in kind (vyatibāra, III.4.19). The term is explained by Kauṭilya as applicable to grain borrowed with a promise to return an equal quantity (Artb. II.15, p. 94). The use of this word in connection with the borrowing of grain was as old as the Atharvaveda: 'Whatever grain I have borrowed for eating, may I return to redeem my debt' (Apamitya dhānyam yaj-jagbāḥ-āham idam tadagne anṛino bhavāmi, VI.117.8). The apamityaka arrangement was a well-recognised practice of rural economy, with a very ancient origin. Kauṭilya refers in the same context to prāmityaka, i.e. grain borrowed, but without obligation to return (sasya-yāchānam anyataḥ prāmityakam, Artb. II.15). Pāṇini mentions this as yāchtaka (Apamitya-yāchitābhyām kak-kanau, IV.4.21).
CHAPTER V
EDUCATION, LEARNING AND LITERATURE

SECTION 1. EDUCATION

Pāṇini’s grammar was the outcome of a considerable development of language and literature. That linguistic and literary development was in its turn the product of a suitable educational system amply justified by its results. The Ashtādhyāyī throws valuable light on the evolution of different literary forms and types of compositions, educational institutions, students and teachers, methods of instruction, subjects of study, and works then known—a fact of great importance for the literary history of ancient India. Patañjali supplements Pāṇini’s information in many ways.

STUDENTSHIP—The educational system was based upon what is known as the ancient system of Brahmacharya (Tadasya brahmacharyam, V.1.94) which laid more emphasis on life (charyā) than mere learning or instruction. It was based upon a constant personal touch between teacher and pupil bound together by a spiritual tie (vidyā-sambandha; IV.3.77) living in a common home (śālā). The pupil was thus truly the antevasī (IV.3.130) of his āchārya. A student was generally called Brahmachārī (Charanē Brahmacārīṇī, VI.3.86). The religious student belonging to the upper three classes of society was known by the special term varṇī (V.2.134), a new title unknown in the Saṃhitā and Brāhmaṇa literature. As a pupil, he was called chbhātra (IV.4.62, Chbatrādibhṛyo ṇah), because his duty (chbatram śilamsaya) was to be always at his teacher’s service (guru-kāryesv-avahitah) and protect him from harm like an umbrella (tach-chidrāvaranā-pravṛttah, Kāśikā).

Two classes of pupils are distinguished (1) daṇḍa-māṇava,
and (2) anevasi (Na danḍamāṇavāntevāsishu, IV.3.130).
The danḍa-māṇava, also called by the shorter name māṇava (VI.2.69) was a novice, not initiated in the Vedic study (an-richā), as observed by Patañjali (anricho māṇave Babrīchās- charanākhyāyām-iti, V.4.154; II.444). He was named after his distinctive emblem, a wooden staff which he carried (dan-da-pradhānah māṇavaḥ, Kāśikā). Pāṇini mentions the religious staff of the student as āśādha (V.1.110), being named after the wood of the palāśa tree (Butea frondosa) of which it was made. The Tattvabodhini, a late commentary, takes danḍa-māṇavas to be students without upanayana. The Ma-taṅga Jātaka refers to a māṇava as being of tender age (bāla), moving to and fro with a danḍa and wearing sandals (Jāt. IV.379). A class of such young pupils was called māṇavya (IV.2.42).

Students initiated by teachers of the rank of an āchārya, were called antevāsins. Pāṇini calls the ceremony of initiation as āchārya-karana (I.3.36). This was expressed by the formula māṇavakam upanayate. He brings the pupil close to himself as his 'Achārya'. This is further explained by the Kāśikā as ātmanam āchāryakurvan-māṇavakam ātmasamātpam prāpayati, 'converting himself into a teacher he draws close to himself the tender youth as his pupil'. The antevāsin was thus the Brāhmačārī proper, wearing a particular uniform consisting of a deer skin (ajama, VI.2.194) and a kamaṇḍalu (IV.1.71). Patañjali refers to a student marked by the kamaṇḍalu in his hand (kamaṇḍalu-pañi cbbātra, I.347), getting food offered by pious families (I.133, yājyakulāni gatvā agrā- sanādini labhate). An antevāsi Brāhmačārī was considered to be a full-fledged member of his school called Charana, and this bond of comradeship applying in common to all fellow-students was expressed by the phrase sa-brāhmačārī (VI. 2.86).

THE PUPIL'S DUTIES—The Brāhmačārī was bound to his teacher by a spiritual relationship (vidyā-sambandha, IV.3.77),
not less real than blood relationship (yoni-sambandha). Pāṇini refers to the teacher as anūchāna, ‘one who expounds the texts’ (III.2.109), and also pravachaniya, ‘one who orally imparts instruction’ (III.4.68, pravachaniyo guruḥ svādhya-yasya, Kāśikā); and the pupil as śuṣrūṣhu, ‘one who intently listens to the words of his teacher’ (I.3.57; III.2.108). They were always close to each other (uṇasthāniya, III.4.68), the teacher to be served (uṇasthāniyaḥ sisyena guruḥ), and the pupil to be taught (uṇasthāniyo ntevāsi gurud, Kāśikā). Sometimes the father acted as teacher to his son, the pupil being then called pitur-antevasi (VI.3.23). Pāṇini refers to ācārya-putra along with rāja-putra and ritvik-putra (VI.2.133), all three standing on the privileges of their fathers. The teacher’s son was for the pupils like the teacher himself (Kātyāyana, guruved guru-putra iti yathā, I.1.56.1; Bhāshya, I.133).

TEACHERS—Pāṇini mentions the following classes of teachers: (1) Āchārya, (2) Pravaktā, (3) Śrotriya, and (4) Adhyāpaka (II.1.65). The Āchārya was of the highest status. By the particular religious ceremony of upanayana, he became ācārya (ācārya-karana, I.3.36), and the student his antevāsi. This was expressed in the language as mānavakam upanayate. The Atharvaveda puts it clearly thus: ‘the ācārya by drawing the pupil within himself as in a womb, gives him a new birth’ (ācārya upanayanā mano Brahmachāriṇam keśute garbhamantah, XI.5.3). The close association of a teacher and his pupil is shown by the practice of naming the pupil after the ācārya. This is expressed by Pāṇini in the sūtra Āchāryopasārijanaś-chāntevasī (VI.2.36; VI.2.104), ‘the antevāsi is known after his teacher’, e.g. Āpiṣala, Pāṇiniya, the pupils belonging to the schools of Āpiṣali and Pāṇini. Such founders of Schools distinguished as ācāryas, e.g. Āchārya Sākaṭāyana, Āchārya Pāṇini, represented the highest academic degree and distinction.
Pravaktā: The pravaktā appears to be a teacher who was an exponent of the traditional sacred texts, or prokta literature, under the general direction of an āchārya. The three classes of teachers, pravaktṛi, śrotṛiya and adhyāpaka, in sūtra II.1.65, seem to be mentioned in the order of their precedence in the educational system.

Śrotṛiya: Pāṇini defines a śrotṛiya teacher as one who could recite the Chhandas or Veda (Śrotṛiyamś-chhando dhīte, V.2.84). He specialized in committing to memory the Vedic texts in the various forms of recitations (pāṭha), as samhitā, pada, krama, etc. The literary apparatus for conserving the Vedic texts without change of a syllable or accent had been perfected several centuries before Pāṇini, who mentions students called kramaka, who specialized in memorising the krama text (IV.2.61), and padaka, the pada text of the Vedas. Teachers who instructed such pupils were themselves named after the mode of recitation they had mastered (tad-veda), e.g. kramaka, padaka, 'knowers of the krama and pada texts.'

Adhyāpaka: The adhyāpaka (II.1.65) seems to have been a teacher entrusted with the teaching of secular and scientific treatises, whose later designation upādhyāya is often mentioned in the Mahābhāṣya.

DISAPPROVED PUPILS—Several terms express the censure attaching to students who misused their privileges or contravened the rules proper for them, e.g. tīrtha-dhvāṅkṣa, tīrtha-kāka, 'fickle as a crow' in changing his teachers and schools too frequently (II.1.41 with Bhāshya I.391, yo gurukulāni gatvā na chiraiṁ tisbhati sa ucyate tīrtha-kāka iti); khaṭv-āruḍha, 'a pupil who takes to the luxury of a householder by sleeping on a cot', (Khaṭvā kshepe, II.1.26).

In sūtra VI.2.69 (Gotrāntevasi-mañava-Brāhmaṇesha kshepe) Pāṇini refers to both junior (mañava) and senior (antevasi) students who joined their schools under motives deserving of censure, e.g. bhiksa-mañava, 'a novice attracted to the school for its benefit of free boarding' (bhiksaṁ lāp-
sye' hamiti manavo bhavati, Kāśikā). The Vālmīki Rāmāyaṇa refers to the manavas of the Kaṭha-kālāpa Schools as running after delicacies of food (svādu-kāṁāh) given to laziness ( alasāh), and avoiding due service to the teacher under pretext of study (Ayodhyākāṇḍa, 32.18). As instances of elderly students joining the teacher with such malafide motives, Patañjali cites kambala-Chārāyaṇīyāh, pupils joining the school of Chārāyaṇa with an eye on its blankets; odana-Pāṇiniyāh, pupils joining the school of Pāṇini for its worldly advantages, such as provision of rice; ghṛita-Rauḍbhīyāh, pupils joining the school of Rauḍhi for its provision of butter (Bhāsya I.1.73; I.190). To these examples, the Kāśikā adds a worse case, e.g. kumāri-Dākṣāh, pupils joining the school of Daksha for its access to girls (as co-students).

In the above examples Chārāyaṇa is cited by Kauṭilya as an ancient author of Arthaśāstra, and may be identified with the great minister of king Prasenajit of Kosala. Similarly Rauḍhi was a junior contemporary of Pāṇini himself, as shown by the example Pāṇiniyā-Rauḍbhīyāh, in which the names are cited in a chronological order (Kāśikā, VI.2.36; also Bhāsya, IV.1.79; II.233).

NAMING OF STUDENTS—Students derived their names from three factors, viz. (1) name of the subject, or treatise of study (tadadbite); (2) name of the Vedic School (charaṇa) to which they belonged; and (3) name of the teacher under whom they were studying, or whose works they studied.

As examples of (1) Pāṇini mentions yājnīka (IV.3.129) and vaiyākaraṇa (VI.3.7), 'students of the sacrificial ritual and grammar' respectively. Amongst other students taking up special courses, Pāṇini refers to students of Kratu or Soma sacrifices (IV.2.60), e.g. Āgnisṭomika, Vājaśeyika (Kāśikā); and to students specialising in the Anubrāhmaṇa literature and thence called Anubrāhmaṇī (IV.2.62); and others devoted to Vedic recitation such as Kramakāh, Padakāh mentioned above (IV.2.61).
Students were also named after the special seasonal courses which they were pursuing. For example, the books that were taken up for study in the Vasanta (spring) season were also known as Vasanta, and the student who was reading that treatise or course at the assigned time was classed as Vāsaṃti (Vasantādibhyash-ṭhak, IV. 2. 63, vasanta-sabachurito'yan grantho vasantas-tam adbite). We learn from the Smṛitis that the vasanta session in colleges was inaugurated on the Vasanta-panchami day in the month of Māgha, and the course mainly consisted of Vedāṅga texts (Manu, IV.98). Courses were similarly offered for the other seasons like Varṣa, Śarad, Hemanta and Śiśira, and the students of these short term courses were then called Vārshika, Śāradika, Haimantika and Śaiśirika (Ganā-pāṭha to IV.2.63). These seem to be planned on the lines of modern Summer schools.

NAMING OF VEDIC STUDENTS—Students were called after the names of the Chhandas works then studied in the different recensions or Śākbās, in the Vedic schools (charaṇas). According to Pāṇini the names of Chhandas works and the Brāhmaṇa texts attached to each Śākbā were not used as current except with reference to the students or persons learned in them (Chhando-Brahmanāni cha tadvishayāni, IV.2.66, under the context Tadadbite tadveda). The grammatical form undergoes a double process. For example, the original teacher (pratyaksha-kāri, IV.3.104.1) Kaṭha was the promulgator of a Chhandaśa Śākbā text. The relationship between Kaṭha and his work was first expressed by a suffix taught under Tena proktam (IV.3.101). To the word thus formed was added a second suffix to denote a student studying that text. In practice the second affix denoting the student was elided (Proktāl-luk, IV.2.64), with the result that the name of the Śākbā and the name of the Brāhmaṇa work always pointed to the students studying them. This position is emphasized by the fact that the names of Vedic texts could not be used alone except in relation to their students, e.g. Kaṭbāh, the students
of the Kaṭha Śākbā, promulgated (prokta) by the teacher Kaṭha (Kaṭhena proktam adhiyate). The word Kaṭha which ordinarily should have been the name of the book was reserved to denote the entire body of those students and teachers who devoted themselves to its study (adhiyāna) and attained proficiency therein (tad-veda). The Kaṭhas stood for a real school. The same principle of naming held good for hundreds of other Vedic Śākbēs or Saṃhitās and Brāhmaṇas, which had then become established for long not merely as books, but as institutions with a fellowship of teachers and pupils devoted to their study. This is the main purport of the important sūtra Chhando-Brāhmaṇāni cha tadāvishayāṇi. The text of a Vedic Śākbā would grow into a living institution and spread into offshoots claiming numerous teachers and students within its fold. The original teacher was the nucleus round whom there grew up an appropriate literature of exposition like the Brāhmaṇas, to which contributions were made by teachers and pupils of successive generations, expanding their literary heritage. The Charaṇa began as an educational institution following a particular Śākbā text; in course of time it developed its full literature comprising Brāhmaṇa, Āranyaka and Upaniṣad texts, Kalpa or Šrauta Sūtras (cf. Purāṇa-proktesu Brāhmaṇa-Kalpeshu, IV.3.105), and later on even its Dharmaśūtra to which Pāṇini refers in the sūtra Charaṇebhyo Dharmavat (IV.2.46). This represented its normal evolution, but there were many subsidiary schools confined to one or more classes of texts, and justifying their activity by even a Sūtra text (sūtra-charaṇa). A good number of the names of these Vedic schools, or, which is the same thing, of their students, are preserved in the Ashtādhyāyī, constituting a rich record of the Vedic literature existing before Pāṇini, which will be noticed later.

Under the third category were scholars studying the newly discovered scientific treatises, and thus known after the names of the teachers who had composed them (IV.2.64).
For example, Śākaṭāyana and Apiśali were two great Āchāryas who lived before Pāṇini. They were the founders of different grammatical systems named after them, e.g. Apiśala, the work of Apiśali, whose students also were called Apiśalas. Although the mode of indicating the students of such secular works, was grammatically identical with that for the students of Chhandas works, the fact is that such names as Śākaṭāyanīya and Pāṇinīya, as applied to a student, indicated his allegiance to one particular study, rather than to a broad literature such as that of a Vedic school. From the point of view of educational organisation the Charanās were the larger schools promoting the study of the entire Vedic literature and based on a fellowship of teachers and pupils, as distinguished from the more restricted grammatical schools confined to the study of a particular treatise or branch of learning and functioning independently of the Charanās.

EDUCATION OF WOMEN—Both Pāṇini and Patañjali refer to women admitted to Vedic study in the Charanās. The term jāti in sūtra IV.1.63 (Jāter-āstṛi-vishayād-ayopa-dbāt) includes the female members of gotras and charanās (gotraṃ chā charanāni chā, Bhāṣya II.225). Thus a woman student of the Kātha school was called Kāṭhī, and of the Rigvedic Bhrūḍica school Bhrūḍī. It appears that the three principles of naming the male students applied equally to the female students also. For example, Kātyāyana and Patañjali refer to Brāhmaṇa women students studying the grammatical system of Apiśali and thence called Apiśala Brāhmaṇi (Pūrvasūtra nirdeśo vāpiśalam adbita iti, IV.1.14, vār. 3). Kātyāyana here refers to a rule of a previous writer, in all probability Apiśali himself. Similarly Pāṇinīyā Brāhmaṇi (Kāśikā on IV.2.64). Female students were also admitted to the study of Mimāṁsā, e.g. Kāśakṛitsni, a female student studying the Mimāṁsā work of Kāśakṛitsni, son of Kāśakṛitsna (Bhāṣya, 11.206). Pāṇini refers to female students as Cbhātri and their hostels cbhātri-śālā (VI.2.86). The wife
of an āchārya is referred to as āchāryāni (IV.1.49), but āchāryā was the title of female teachers corresponding in status to an āchārya (counter-example in the Kāśikā). Patañjali refers to the female teacher Audameghyā and her pupils (IV.1.78; II.230). The term Kathi-vṛindārikā, the foremost female student of the Katha Sākhā, points to the success of women as students of Vedic schools. Patañjali refers to a female student as adhyetri and a female novice as māṇavikā (IV.193; II.249).

SCHOOL REGULATIONS—The antevasī was to lead the life of a regular Brahmacharī in the house of his teacher. Special hostels for female students had also come into existence (chhbātri-sālā).

Pāṇini refers to the working days of the school as adhyāya (III.3.122; adhiyate sminn-ityadhyāyah, Kāśikā). On this etymology was based the opposite word anadhyāya denoting holidays, about which elaborate instructions are given in the Grihya-sūtras. These rules are anticipated in Pāṇini’s sūtra, Adhyāyiny-adesa-kālāt (IV.4.71), showing that study was to be suspended outside its time and place. It is significant that Pāṇini should have found it necessary to mention students contravening the proper rules by carrying on their study in unapproved places, on which the Kaśikā cites śmāśānika, chātuśpāthika, ‘one who reads in a cremation-ground or a market-place’, and on non-working days, e.g. chāturduśika, āmāvāsyika, i.e. studying on Chaturdāśi and Amāvāsyā days which were set apart for religious purposes like the Darśa- Paurnāmāsa and not for study (Kāśikā on IV.4.71). The opprobrium implied in these terms lasted only for the time being.

Students belonging to the same school were called sabrāh- machārins (Charane Brahmachārini, VI.3.86), and those studying under a common teacher satīrthya (Samānatīrthe vāsi, IV.4.107 and VI.3.87, Tīrthe ye; Kaśikā, samānopadhyā- ya).
In schools following varied curricula, some kind of grouping in the form of classes was inevitable. This grouping was of two kinds: firstly, grouping of such students as were studying the same subjects, and secondly forming bigger congregations of such different groups occasionally for some common purpose, provided their subjects of study were allied (Adhyayana to praṅśāstre khaṇām, II.4.5). For example, Pāñini mentions students of the Krama-pāṭha forming the class Kramakāḥ, and of the Pada-pāṭha Padakāḥ (Kramādibhyo vun, IV.2.61). Instruction in Pada-recitation immediately preceded that of Krama-. The two classes functioned separately in the school-routine, but on special occasions were grouped as a joint class called Padaka-Kramakam, a compound name in singular number. For a common social programme like feasting, the teacher would direct the two allied classes to go together, e.g. Padaka-Kramakam gachchhantu, i.e. ‘Let the Padaka and Kramaka students go’. The Kāśikā cites Kramaka-Vārttikam, showing that after completing the Krama recitation of the Veda, the students took up Vṛitti or grammatical lessons. Patañjali also states that in his time the custom was for students to be trained first in Vedic recitation; the study of grammar therefore must have followed.

GRADATION OF COURSES—The grouping of classes as shown above points to a system of planned courses. The various categories of students like mānava (the novice), antevāsi (the full-fledged Brahmachārī), and charaka (the advanced visiting scholar, IV.3.107) and of teachers like adhyāpaka, pravakta and āchārya, point to different stages in the academic career.

Pāñini has noticed the linguistic forms indicative of stages in academic progress. The stages of secular studies were expressed in terms of the particular treatise studied (Granthānatādibike cha, VI.3.79), e.g. ‘studies the science of astrology upto the chapters Kalā and Muhūrtta, sakalam, samuhurtam jyāntiḥsm adhīte; or reads grammar upto the treatise called
Saṅgraha (sasaṁgraham vyākaraṇam adhīte, Kāśikā). The completion of a course is indicated by the term anta-vachana (II.1.6), i.e. study up to its concluding chapter, for which older examples were, sāgni adhīte, he completes his studies up to the text called Agni (Books V-IX of the Śatapatha Brāhmaṇa dealing with the Fire ritual); or seshṭi-paśu-bandham, up to the text called Ishti (Books I-II of the Śatapatha dealing with the Ishtis or New and Full-Moon sacrifices), and Paśu-bandha (Books III-V of the Śatapatha, dealing with the Soma sacrifices). Completion of a particular topic of study was called vṛitta (VII.2.26, Ṛṣadhyayane vṛittam); e.g., in reply to the question ‘How much has Devadatta read?’, it was stated: Vṛtto guṇo Devadattena, Vṛttaṁ pārayanāṁ Devadattena, ‘Devadatta has finished the study of the topic called guṇa (i.e. strengthening of vowels in grammatical formations); or pārayaṇa (Vedic recitations). Two linguistic forms were current to indicate the progress of studies, either by topics or the prescribed books completed.

As already stated (IV.2.63), the syllabus for the year was divided according to the seasons. A particular course of study was prescribed for each season, and the studies associated with each were named after it, e.g. Vasanta, ‘Spring Lectures’, Grībha, ‘Summer School’, Varṣa, ‘Monsoon Lectures’, Śarad, ‘Autumn Lectures’, etc.

The system of short term courses involving a study of special topics or parts of a subject was also in vogue, as implied in the expression Tadasya brahmacharyam (V.1.94). It regulates the names of students according to the period for which they had got themselves admitted e.g. māsika Brahmachārī, a student for a month; similarly ardha-māsika, a student for half a month, and sāṁvatsarika, a student for one year (Kāśikā). Kātyāyana mentions mahānāmni students, those who restricted themselves to the study of mahānāmni verses (Mahānāmnyo nāma ṛcho vratam tāśāṃ char-yate, Bhāṣya II.360); similarly ādityavratika, a student of
Adityavrata. The Gobhila Grihyasūtra refers to these special vows of studentship (III.1.28; III.2.1-9). The Mahānāmini vow was alternatively called Śakvari vrata. According to the Rauruki Brāhmaṇa, the Mahānāmini verse was regarded as the highest religious study aimed at by students in that ancient system. The mothers wished their new-born babes: 'O darlings, may ye complete the vow to master the Śakvari verses!'

The completing of study was called samāpana (Samāpanāt-sapurvapadāt, V.1.112), e.g. chhandah-samāpaniya, vyākaraṇa-samāpaniya, studentship with the avowed object (pratyojana) of mastering prosody or grammar.

PEDAGOGY—The teacher expounding a subject was called ākhyaṭā. Tution in the prescribed religious manner was uṇayoga (niyama-pūrvakam vidyā-grahaṇam, Kāśikā on I.4.29). According to the commentator learning of secular subjects as dramatic art did not come under the category of uṇayoga, e.g. 'takes instruction about drama from an actor' (naṭasya śṛṇoti). The teacher in his capacity of expounding to his pupil the religious texts of svādhyāya was called pravachaniya (III.4.68, pravachaniyo guruḥ svādhyāyasya). This term was also applied to the subject expounded as pravachaniyo guruṇā svādhyāyaḥ. This has reference to the teacher mentioned by Pāṇini as pravaktā (II.1.65). Pāṇini refers to another class of teachers called anūchāna (III.2.109), who according to Bodhāyana discussed on the Vedāṅgas (aṅgādhyāyi anūchānāh, Bodhāyana Grihyasūtra, I.4).

Preparations for study with a teacher were called anupravachaniya (V.1.111). A teacher was respectfully approached (adbīṣṭa) by the father or guardian with request to undertake the instruction of his ward: 'I pray that you be pleased to admit this tender youth to your instruction' (adbīṣṭḥam bhavantām māṇavakam bhavān uṇanayet,

1 अच हू रोचक ब्राह्मण भवति । कृमाराम हू वै मातर: पायवमाना आहुः: 
शाक्तिरीणां ब्रतं पारविभवं भवतः । गोमिलग्रहोदुङ्क, III 2-7-9
Kāśikā on III. 3. 161). The teacher was named after the period of his instruction (tam adhīṣṭaḥ, V. 1. 80), e.g. māsiko adhyāpakaḥ, 'teacher for a month' (māsam adhīṣṭaḥ satkṛitya vyāpāritaḥ).

The life of the student was subjected to rigorous discipline. The difficulty of study is referred to in such expressions as kāṣṭo' gniḥ, kāṣṭam vyākarṇam, tato pip kāṣṭatarāṇi sāmāṇi, 'hard to master is the Fire ritual (Ṣatapatha, Bks. VI-IX); so is Grammar; but still more difficult are the Śaṃaṇ songs' (Kāśikā, VII. 2. 22).

It is interesting to read in the Ashtādhyāyī about teachers who were strict relentless disciplinarians (dārunādhyāpaka, ghorādhyāpaka). As against them were teachers described as perfect (kāśṭhādhyāpaka) and good (svādhyāpaka) (Pūjanāt pūjitam anudāttam kāśṭhādibhyaḥ, VIII.1.67). Retired teachers were called prāchārya and Old Boys prāntevāsi (Bhāṣya, II.2.18; I.416).

PĀRĀYĀṆĀ (VEDIC RECITATION)—The method of study varied with the nature of its subject. Vedic texts had to be learnt by repetition; the master of such texts was called a Śrotriya (V.2.84). Recitation of Vedic texts without attending to meaning was called pārāyana; one engaged in such study was called pārāyanika (pārāyanīn vartayati, V.1.72). Students gifted with strong memory so as to learn the text by heart without effort (akṛichcbhra) were indicated by such expressions as adhiyan pārāyanam, 'facile in recitation', dhārayan Upanishadam, 'memorising the Upanishad' (In-dhāryoh satarkṛichcbhrini, III.2.130).

There are several sūtras relating to details about recitation. Firstly, there is provision to indicate the number of repetitions (adhyayana) required to memorise the text (V.1.58), e.g. pañccha adhyayana, reciting (āvṛitti) a text five times, repeating its words five times (Pañcha vāra), and in five ways (pañcha rūpa, Kāśikā); similarly saptaka, aṣṭaka, navaka referring to higher numbers. Second-
ly, there were appropriate phrases to express faults in recita-
tion, by way of an individual word pronounced wrongly (pa-
dain mithyā kārayate), or accents in a faulty manner (svarādi
dushtam), and repeating the mistakes (asakrit uchchārayati;
Mithyopapadāt kriño bhyaśe, I.3.71). Finally, students were
tested with reference to the number of mistakes committed in
recitation (Karmādhayayane vrittam, IV.4.63-64), aikānyika,
i.e. one who at the time of examination (parikshā-kāle) com-
mits one mistake (Kāśikā); similarly dvaiyanyika, traiyanyika,
and so on up to ten. The Sanskrit words for numerals up to
ten consist of two syllables. But Pāṇini also teaches the
manner of indicating the lapses when the numeral is of more
than two syllables (babvach, IV.4.64), e.g. dvādaśānyika, tra-
yodiśānyika, chaturdaśānyika, one with 12, 13, or 14 mistakes
in recitation. This method of oral teaching and committing
texts to memory has amply justified itself by the conservation
and transmission of India’s sacred learning through the ages
before it was stored up by writing in manuscripts. The secret
of success of this oral tradition (śruti) lies in the faith that
sacred words by themselves have a value and should be trea-
sured up in memory as abiding stores of knowledge.

Strict regulations characterised the pārāyaṇa of Vedic
texts by pārāyanika students observing the vow (pārāyaṇam
vartayati, V.1.72). Naturally a particular mode of recitation
was selected at one time, such as saṃbīṭā-pārāyaṇa (nirbhujā),
pada-pārāyaṇa (pratīṇa) and krama pārāyaṇa. Each
school had carefully computed the extent of its Vedic text
for the purpose of pārāyaṇa; the Charanavvāba-parīśīṣṭa of
Śaṅkara states the pārāyaṇa text of Rigveda to comprise
10,580 verses (I.10).

The student commenced the pārāyaṇa with a formal
ceremony described in the Grihya texts of Bodhāyana and
others. He slept on a platform (sthaṇḍila) as part of his vow,
for which he was marked as sthaṇḍila (Sthaṇḍilāḥ-chhavītari
vraṭe, IV.2.15). He also observed the vow of silence during
parāyana, being then known as vacanāyama (vachi yamo vrate, III.2.40). He was also to restrain himself in the matter of food, eating sparingly and taking only water, milk or fruits according to his physical endurance, e.g. if he took only milk he was spoken of as payo vratayati (III.1.21), 'observes the vow by living only on milk'. Besides the above regulations Mahidāsa hints at the fact that students often undertook repeated courses of parāyana recitation, and the Kāśikā mentions dvainparāyanikah as an illustration (IV.1.88). Parāyana could also be observed in later life.

INTELLECTUAL APPROACH—This mechanical method of learning by rote gives only a limited picture of the educational system. Yāska sounds a note of protest against too much emphasis being laid on mere memorising of words as means of learning, and Patañjali compares it to dry fuel thrown in a place where there is no fire to ignite it\(^1\) (Bhāṣya I.2.). Pāṇini's own work the Ashtadhyāyī was the result of much hard and scientific thinking applied to the study of words and their significance by analytical methods. The Nirukta of Yāska and the grammatical works of Śāktaṭēyana and Āpiśali were similar products of the scientific mind. The original treatises produced as a result of creative intellectual activity are distinguished by Pāṇini as upajñāta and as being different from the commentaries or expositions (vyākhyāna) of older texts.

Pāṇini uses a number of terms to indicate the various methods employed in learning and education, e.g. extempore composition at the spur of the moment (prakathana, I.3.32); illuminating interpretation (bhāsa, I.3.47); true exposition of knowledge (root vad in the sense of jñāna, I.3.47, samyag-avabhodha); presentation of divergent opinions (vimati, I.3.47, vipralāpa, I.3.50); enunciation of one's doctrines (pratiśra-
vāna, VIII.2.99; or pratijñāna, e.g. nityām śabdaṁ sangirate, 'he affirms that word is eternal', I.3.52); seeking after knowledge (jijñāsate, I.3.57). All these terms are indicative of vāda (debate) and vivāda (discussion) as a method of learning and approach to truth. This method of education is amply testified to in the Upanishads and also in Buddhist literature. Again, Pāṇini also refers to judges at the time of disputation (madhye-kṛitya, I.4.76), silencing of an opponent (nivachane-kṛitya, I.4.76) and restraining him by exposing his views (nigrihyā anuyoga, VIII.2.94), the words nigrāha and anuyoga being regular terms of Nyāya dialectics. Forms of language to arrive at the truth by the process of reasoning (vichārya-māṇānām, VIII.2.97; pramāṇena vastu-paraikṣaṇam, Kāśikā), and firmly establishing one's own position (jñānām, prameya-nīśchayah, I.3.36) are also referred to. The person who came out triumphant in the debate was the recipient of high honours (sammānana, I.3.36), and he was from that time regarded as the leading exponent of that subject or school. As an example the Chāndravṛtti mentions Pāṇini himself as leading in the science of grammar (nayate Pāṇinir-vyākaraṇe, I.4.82). Knowledge transmitted from teacher to pupil benefited by its expansion (tāyana, I.3.38) in the process. We know how the treatise of Pāṇini himself was enriched by his brilliant successors Kātyāyana and Patañjali. Sometimes it so happened that founders of schools became known not so much by their own works as by those of their pupils or followers shedding lustre on them. Pāṇini himself mentions the names of Kalāpin and Vaiśampāyana as teachers of this type whose discourses were so fruitful that they gave rise to different schools of thought, all within the domain of the subject-matter of those discourses (Kalāpi-Vaiśampāyanāntevāsibhyascha, IV.3.104; Dr. R. K. Mookerji, Ancient Hindu Education as Revealed in the Works of Pāṇini, Kātyāyana and Patañjali).

CHARAṆA, THE VEDIC SCHOOL—Charaṇa represents the type of educational institution in which one particular recen-
sion or Śākbā of the Veda was studied by a group of pupils called after the original founder and organized as a corporate body (charaṇa-sabdāḥ śākhānimittikāḥ puruṣabhyo vartate, Kāśiṅga, II.4.3). The various branches of sacred literature were developed under the aegis of the Charaṇa organization, viz. the Chhandas text which was originally enounced by a Ṛishi, its Brāhmaṇa embodying the liturgical, religious, and philosophical doctrines developed in relation to yajña, and later on the Kalpa works dealing with systematised sacrificial ritual better known as Śrautasūtra. This elaboration of literary types had gone on in the Charaṇas prior to the time of Pāṇini (cf. sūtras IV.2.66; IV.3.105). In fact different Vedic Śākbās and Brāhmaṇa works were considered such an integral constituent of a Charaṇa that they were thought of only in terms of the students who studied them and who actually constituted the Charaṇa. The Śākbā no longer remained mere books, but developed into institutions comprising under their aegis such works as the Brāhmaṇas, Āranyakas and Śrauta-sūtras, etc. Pāṇini speaks of a still wider basis, viz. the development of a new type of literature represented in the Dharmasūtras (Charaṇeḥbhyo dharmavat, IV.2.46; Charaṇād-dharmāmnāyayoh, Vār. on IV.3.126). This marked a further stage in the evolution of the Charaṇa, and also marked its final phase, because at the time as Dharma or Law was introduced in the curricula of a Charaṇa many specialised branches of learning were coming into existence independently of and outside the organisation of the Vedic schools. The Nirukta of Yāska and the grammar of Pāṇini are examples of this later development. It is not possible to trace their association with one particular Vedic school. In fact we owe to Patañjali the significant statement made with regard to the Ashtādhyāyī that it was not attached to any particular Vedic school, but was claimed by all Vedic schools as their common study:

र विद्यारिषद तीर्थ शास्त्रम।
(II.1.58; I.400; VI.3.14;III.146).
PARISHAD—Three varieties of Parishads were known to Pāṇini, (1) academic, (2) social and (3) administrative. The first kind of Parishad was an academy of specialist scholars within the Charaṇa whose function was to fix the Śākhā text to be adopted by the Charaṇa with special reference to its phonetical and grammatical points. Pāṇini refers to the Charaṇa-Parishad in sūtra IV.3.123 (Pātrādhvany鸟-parishadas-cha) regulating the term pārishada to denote something that appertained to a parishad (parishadah idam). The Āchārya along with his academy (sa-parishatka āchārya) greeted the student on his first admission (yakṣamāt chaksya iva bhūyāṣṭhitāt śāpyaṇaṣṭhāyat īmir-gobhila Gṛihyasūtra, III.4.28; Drāhyāyanā Gṛihya. III.1.25). Charaka records full details of an academic Parishad (Vimānasthāna, VIII.19-20). Patañjali mentions pārishada as a work which was the product of a Vedic Charaṇa (cf. Sarva-Veda-Pārishadam, quoted above). Its earlier variant in the Nirukta was Pārshada which Yāska mentions as works composed in the Charaṇas (pada-praktītī sarva-charaṇānāṁ pārshadāni, Nirukta, I.17). Patañjali also gives the form pārshada for Pāṇini’s Pārshada works of the Sātyamugri and Rāṇāyanīya schools of the Sāmaveda (Bhāṣya, I.22). As Durgāchārya explains, the Pārshada works were the Prātiśākhya produced in the parśhad (= parishad) of each Charaṇa, and dealing mainly with phonetical and grammatical topics.

There were two other kinds of parishads, viz. social and administrative. The term pārishadya, for a member of a parishad (parishadāni samavaiti, IV.4.44) indicates that the parishad was a social or a cultural club, something like a samāja. The third kind of Parishad was an administrative body, as in the expression parishadadvalo rājā (V.2.112), 'a king governing with his council of ministers The term pārishadya, one eligible (sādhu) for membership of a parishad (Parishado nyah, IV.4.101) takes the parishad in the sense of an administrative body. The fact remains that originally the parishad began as
a body of scholars inside the Vedic schools, which influenced and directed their literary activities and helped in the evolution of those schools.

**WORKING OF A CHARANA**—Pāṇini throws light on the activities and constitution of Charaṇas with reference to the following points:

(1) **Name**—As already pointed out, the name of a Charaṇa was also the name of the students who constituted it. There were two stages in the formation of these names which may have represented actual stages in the evolution of a Charaṇa. First came the founder Rishi who gave the Charaṇa a text as its basis (IV.3.102). Next, the Vedic text attracted to the school students who sought its study. For example, Rishi Tittiri promulgated the Taittirīya Śākhā, of which the students were also called Taittirīyas (Tittirīnā proktān adbhīyatā). Grammatically, the term Taittirīya in the sense of a text (*Tena proktam*, IV.3.101-102) could not be used by itself; it needed another suffix to indicate its students (Chhandho Brāhmaṇāṇi cha tad-vishayāṇi, IV.2.66), but this second suffix did not appear in the formation (*Proktāl luk*, IV.2.64). In practice the word denoting the text did not differ in form from the word denoting its students. It is a curious phenomenon that in forming the names of Charaṇas, the first suffix denoting the text (*prokta*) was retained but lost its meaning, whereas the second suffix denoting the students and professors (*adhyetri-veditri*) was dropped but retained its meaning. It may well be that Pāṇini was here summarizing an actual position so as make theory and practice accord with each other. It was the case of an institution deriving its name from the founder, but later signifying the body of scholars and students who belonged to it.

The names of the Charaṇas in the Ashtādhyāyī and its Gaṇā-pāṭha are shown later.

(2) **Rise (Udaya) and Expansion (Pratishṭhā)**—A Charaṇa was not necessarily bound to a place. For instance,
the Kaṭha and Kālāpa Charaṇas spread from village to village by their popularity, as Patañjali informs us (Grāme grāme Kāṭhakāni Kālāpakanī cha prochyate, IV.3.101; II.315). Pāṇini mentions that the compound names of Charaṇas were used in singular when anuvāda, ‘restatement’, was implied (Anuvāde Charaṇānām, II.4.3). The Kāśikā says that anuvāda is repetition of an already well-known fact (pramāṇāntāvagata-syārtasya sābdena samkīrtana-mātram anuvādah). Kātyāyana explains that the linguistic forms intended by Pāṇini anticipated only the roots sthā and in in past tense. For this Patañjali cites the forms udagāt and pratyāshthāt, referring to the rise (udaya) and expansion, (Pratishtā) of two Charaṇas jointly, like Kaṭha-Kālāpa, Kaṭha-Kauthuma, Mauda-Paippalāda (Bhāṣya, II.4.3; I.474). A person who already knows the fact of the spread of these schools remarks in the course of conversation, ‘The Kaṭha-Kālāpa Charaṇas have made such progress and have established themselves so well’. This statement was of the nature of an anuvāda, i.e. restating what was already a known fact about the popularity of these two schools. The Vedic schools were expanding both geographically and in their scholarly activities, or subjects of learning included within their fold, which is the background of the present sūtra.

(3) Anuvāda (Literary Collaboration)—This term anuvāda is different from the term discussed above. The sūtra Anorakarmakātt (I.3.49) contemplates some kind of literary collaboration in the matter of recitation amongst different Vedic schools; e.g. anuvadate Kaṭhaḥ Kālāpasya, anuvadate Maudaḥ Paippalādasya, i.e. the Kaṭha school follows the method of the Kālāpa school in recitation (yathā Kālāpo dhyāno vadati tathā Kaṭhaḥ, Kāśikā). The Kaṭha and Kālāpa were related to the Krishna Yajurveda and the Mauda and Paippalāda to the Atharvaveda. This example points to intellectual co-operation between different Charaṇas of the same Veda. Pāṇini names some Charaṇas as forming a collective unit, e.g.
Kaṭha-Kālāpāḥ, Kaṭha-Kauthumāḥ, Kauthuma-Laṅgākshāḥ, Mauda-Paippalādāḥ (Kaṛta-Kauja-pādayaścha, VI.2.37). Such union of Charaṇas must have been due to their cultural affinity, or geographical proximity.

(4) Enrolment—The Charaṇas were open to admission of students, which Pāṇini mentions as tad aveta, 'gets admitted to it' (V.1.134), e.g. Kaṭhikām avetāḥ, 'has become a member of the Kaṭha Charaṇa', or as the Kāśikā explains it 'obtained the fellowship of the Kaṭha school' (Kaṭhatvam āptaḥ).

The Kaṭha Charaṇa as a corporate body (Charaṇasamūḥa), was called Kāṭhaka, 'the corporation of the Kaṭha scholars' (Kaṭbānāṃ samūḥah, Charaṇebbyo dharmaṁvat, IV.2.46).

(5) Fellowship—Fellow students belonging to the same Charaṇa as their alma mater were called sa-Brahmachārins (Charaṇe Brahmachāriniḥ, VI.3.86). Academic fellowship had a social significance. Yājñavalkya refers to the custom of entering the name of a person's Charaṇa in legal documents. Patañjali has the following query: 'Kim-sabrahmachārī tvam?', 'From which School are you?', implying that a student was known by the school from which he graduated and also in association with other fellows of the same school. This query, he says, may be put in three possible ways: (1) Who were fellows of the same school? (ke sabrahmachārīnāḥ); (2) Whose fellow-student are you? (keshām sabrahmachāri); (3) Who was your fellow-student? (kah sabrahmachāri tava, II.2.24; I.425). These queries bring out the relative academic distinctions of students in life.

(6) Women Students—Sūtra IV.1.63 (Jāte-rastri- vishayād-ayopadāt) as interpreted by Patañjali shows that a woman could be a member of intellectual fellowships like Charaṇas which were socially assuming the status of jāti or caste (Charaṇa as jāti is admitted in gotraṁ cha charaṇaṁ sabā). The term Kaṭhī, for instance, denoted a female member of the Kaṭha school, an individual regarded as foremost.
of her class being called *Kātha-vrindārikā*, and another deserving of special distinction as *pūjyamāna-Kāthī* (II.1.62). The term *Kātha-mānini* points to proud honour felt owing to academic lineage as a *Kāthī*. *Kāthajātīya* and *Kāthadeśiya*, understood in the light of Pānini V.3.67 (*Īshadasamāptau* etc.) were applied to those who were not full-fledged members of the *Kātha* School, i.e. not endowed with the learning born of academic life therewith but belonging to the fellowship (*jāti*) or the region (*deśa*) of the *Kāthas.*

(7) **Social Honour**—Membership of a *Charanā* carried with it social honour and dignity, of which probably some were not slow to take advantage by assuming superior airs against other persons not possessing that distinction. Pānini hints at this sense of pride in the term *śāghbā*, e.g. *Kāthikayā śāghbate*, 'he glorifies himself in vanity as a *Kātha*.' At times such vanity would result in the disparaging of others, which Pānini refers to as *atyākāra*, e.g. *Kāthikayā atyākurute*, 'being puffed up as a *Kātha* he looks down upon others', (*Gotra-charanāch-chblāghbātyākāra-tadavetesu*, V.1.134).

(8) **Intellectual Ideal**—The *Charanās* were the custodians of the cultural traditions created by generations of their students and teachers. These traditions were recorded in their literature built up through the ages. We have seen how Pānini is acquainted with the various types of literature as the output of the *Charanās*, viz. (1) the Vedic Šākhā texts, (2) Brāhmaṇa works, (3) Kalpa works, (4) the Dharma-sūtras (*Charanebhhyo dharmavat*, IV.2.46). With the development of the *Dharma-sūtra* or legal literature there set in a process of gradual separation between the secular and scientific studies on the one hand and religious and ritualistic on the other. The *Ashtādhyāyī* itself is an example of this process at work, which introduced new subjects of study besides those traditionally comprised within the *Charanās*. For instance, the *parishads* of the Vedic *Charanās* themselves took the lead in promoting such studies, as phonetics, linguistics, grammar, and the like,
which later on became independent of Vedic studies and were
cultivated in their own schools. The Pārshada work of each
Vedic school concerned itself with linguistic and grammatical
questions which gave scope to the rapid growth of these
studies. It is to be remembered that whereas an individual
Charaṇa specialised in its own text or Śākhā of the Veda, and
developed its related Brāhmaṇa and Sūtra, the different Charaṇas of the same Veda possessed in common their Pārshada work
or Prātiśākhyā, conceived as belonging to all the offshoots or
branches (śākbās) of the same Vedic tree (Śākbādibhyo yath',
V.3.103; Śākheva śākbyah).

(9) The Charaṇa as a Saṅgha—The Charaṇas were
organized as autonomous bodies making their own rules and
regulations as an expression of the democratic ideal in the
sphere of learning and education and adopting the method and
procedure of the Saṅghas in their management. Pāṇini cites
the specific instance of the saṅgha of students studying the
Vedic text of the teacher Śākala, and thence called Śākala or
Śākalaka (Śākalād-vā, IV.3.128; Śākalena proktam adhiyate
Śākalāḥ; tesbām saṅgahāḥ). It is obvious that the Śākalas, as also
other Charaṇas, possessed an individual entity for social, econ-
omic or organised life in particular. This is illustrated
by the fact that the name Śākala was also applied to the legend
(aṅkā) and the emblem or heraldic symbol (lakṣaṇa) adopt-
ed by the School on their reals and documents; the same word
also denoted their separate settlement or campus (ghosha).

\(^1\) वृज्ञादीनां शालेवास्य वेदकल्पकोषी व वाहव: शाल्का: याहेय शाल्क्य
प्रतीति प्रातिवास्यम्. दधिकृपं कृतं प्रातिवास्यम्.

\(^2\) Sūtra IV.3.128 (Śākalād-vā) as interpreted in the light of IV.3.127
(Saṅghāṅka-lakṣaṇaśay-vai-yān-śām an); cf. the examples in Kāśikā,
Śākalāḥ ankaḥ, Śakalam lakṣaṇam, Śākalāḥ ghosbaḥ; similarly Śākalakaḥ
CH. V, SECTION 2. LEARNING

AGENCIES OF LEARNING—The various agencies in the spread of learning comprised (1) teachers, (2) authors, (3) regular students, (4) travelling scholars (charakas), (5) educational institutions, (6) learned assemblies and conferences, (7) discourses, (8) expositions and (9) literature. The cumulative work of these agencies resulted in a nation-wide expansion of education and learning.

IDEALS. The ideals of learning must have played an important part in the moulding of educational activities. Both the teacher and the taught (āchāryānte vāsinah) were inspired by the literary and cultural ideals of their age. We get from Pāṇini a graphic picture of the types of literature then developed, viz. Chhandas and Brāhmaṇa works, Vedānga literature like Kalpa and Vyākaraṇa, secular works and poetry, dramaturgical treatises and stories (IV.3.110-111), gāthās and ślokas (III.2.23). Students would prepare themselves for the study of one or other of these different classes of literature (tadadbite). In the sphere of teaching, there were different classes of teachers dealing with the several classes of literature, e.g. āchārya for the esoteric knowledge of the Veda, śrōtṛiya for recitation, pravaktā for prokta literature, ākhyātā imparting religious teaching, anūchāna for the Vedāṅgas, and adhyāpaka carrying on general teaching work. But from the point of view of scholarly attainments a large number of specialists in each branch of learning were coming into existence. In fact from Pāṇini’s account of specialist scholars we learn that each text or subject of knowledge was represented by the learned men who had mastered it (tadveda, IV.2.59). For example, there is mention of experts in the various Soma sacrifices (kratus), named after the particular ritual which they
had mastered, as āgnishtomika, vājapeyika (IV.2.60); the reciters of uktha and the various forms of orthoepic recitations of Chhandas texts, as the krama-pāṭha and pada-pāṭha (IV.2.61); exponents of the Brāhmaṇa and Anubrāhmaṇa works (IV.2.62), and Sūtra works (IV.2.65) dealing with the several classes of scientific literature. The Vedāṅga literature was represented by its specialists, such as vaiyākaraṇa, (grammarians), (VI.3.7), nairuktika, (etymologists), and yājñika, (experts in Kalpa or ritual) (IV.3.129). Patañjali's elaborate list of works in the vārttikas appended to sūtra IV.2.60, shows the tendency towards specialization carried to extremes in his time, mention being made of experts in ornithology (vāyasa-vidyā), bodily signs (aṅga-vidyā), knowledge of cows (go-lakṣaṇa), horses (aśva-lakṣaṇa), military science (kṣattra-vidyā). Multiplication of works had advanced and each is spoken of in terms of its exponent. Even the story literature had its devotees, e.g. Yāvakritika (adept in the story of Yavakrita, (related in the Vanaparva, Chs. 133-38, A.B.O.R.I., XXI.282); Yāyātika (proficient in the legend of Yayāti, cf. examples on VI.2.103), Vāsavadattika (well-versed in the romance of Vāsavadatta), and Saumonottarika (a special student of the romance of Sumanottṛā, related at length in Buddhist literature (Dict. of Pāli Proper Names, I.361). Pāṇini himself refers to special works dealing with ākhyāna material (VI.2.103).

CHARAKA—The peripatetic scholar was called charaka, as distinct from the māṇava and antevāsin who were attached to their schools (V.1.11, Māṇava-charakābhyāṁ khañ). Vaiśampāyana was called a charaka, obviously on the basis of his literary activities from place to place; his pupils following in his footsteps were also known as charakas. The charakas were like post-graduate scholars who after finishing their studies sought higher knowledge by travelling. The expression cbārikaṁ charantā is applied in the Jātakas to advanced students of the Takshaśilā university, who after reaching the end.
of their studies travelled to train themselves in the direct knowledge of country observances (Sonaka Jātaka, V. 247). In the Brihad. Up. we find Bhujyu Lāhyāyani mentioning to Yājñavalkya his wanderings in the Madra country as a charaka (Madresbu charakāḥ paryavrajāma, III.3.1). Yuan Chwang mentions about Pāṇini himself that he travelled widely in search of linguistic material, interrogating learned men in different localities.

AUTHORSHIP—Specialists justified themselves by creative activity in producing advanced literature. Pāṇini makes mention of granthas or works composed (IV.3.87; IV.3.116).

He refers to the following classes of authors: (1) mantrakāra, (2) padakāra, (3) sūtrakāra, (4) gāthākāra and (5) ślokakāra (III.2.23). These terms point to the different types of literature and styles of composition which they represented.

A writer on grammar is named sabdakāra (III.2.23), or śābdiṅa (IV.4.34, sabdaiṁ karotī śābdiko vaiyākaraṇaṅ). The literature of commentaries (vyākhyāna, IV.3.66) was also growing and was the work of learned men who were inspired to produce them by their mastery of the original works. The highest intellectual output of the age was, however, the work of master-minds and original thinkers like Apiśali, Yāśka, Śakaṭāyana and Pāṇini, who discovered and opened up new fields of knowledge. The literary efforts of these geniuses were aptly called upajñā, new knowledge promulgated, or adya āchikhyāṣā, knowledge presented for the first time (sūtras II. 4.21, Upajñopakramanī tadādyāchikhyāṣāyāṁ; IV.3.115; VI.2.14). An indication of the great pains which these pioneers of learning took in order to enrich their subjects is given by Patañjali when he speaks of Pāṇini as mahatā yatnena sūtraṁ praṇayati sma, i.e. 'he planned and composed the sūtras with strenuous effort'. Pāṇini himself speaks of a perfect sūtra as pratisbṇātā, 'immersed', i.e. emerging out of concentrated thought (VIII.3.90, sūtram pratisbṇātam). The simile appears to be taken from the maturity attained by one who had
become a snātaka. He also refers to the linguistic forms expressive of the devotion of an author to his work (bhāsana, jñāna, yatna) expressed by the root vad in the Ātmanepada, as vadate chārvī Lokayate, 'the Chārvī teacher shows himself brilliant in the exposition of the Lokāyata doctrine.' I.3.47).

Pāṇini mentions a type of literary activity called prakāsthana (I.3.32), or extempore composition, e.g. gāthāḥ prakurute (Kāśikā). It appears that the gāthākāra mentioned in sūtra III.2.23 was a person who was expected to compose at the spur of the moment gāthā verses, generally of a eulogistic character. In the Pārīplava ākhyāna of the Sataṭatha Brāhmaṇa the viṇāgāthī, also called viṇāgaṇāgin is said to sing gāthā verses of his own composition (svayam sambhrītā gāthā gāyati, Ś.B. XIII.4.3.5). The word gāthaka derived by Pāṇini from the root gai, to sing (III.1.146) seems to have been originally connected with a gāthā composer who sang the verses to the accompaniment of a lute.

NAMING OF BOOKS—Pāṇini enunciates two general principles for the naming of literary works: (1) after the name of the author (Krite granthe, IV.3.116), e.g. Vārarucchāḥ slokāḥ, the slokas composed by Vararuchi; and (2) after the name of the subject treated (Adhikrītya krite granthe, IV.3.87), e.g. Saubhadra, 'story of Subhadrā'; Gaurimitra, not explained; Yāyāṭa, story of Yayāti. These short stories were meant to popularise the great characters of ancient history. As examples of works named after subects, Pāṇini mentions (1) Śiśukrandiya ('a work based on the cry of the divine child Kṛishṇa at birth'); (2) Yamasabhīya ('relating to the assembly of Yama'); (3) Indrajananīya ('relating to the birth of Indra') (IV.3.88).

Commentaries were named after the topics they expounded (vyākhyātavāyā-nāmnaḥ, IV.3.66), e.g. Supāṁ vyākhyānāḥ Saupaḥ granthaḥ (a book on Nouns); similarly Taiṇa (verbs); Kārta (verbal Nouns); Shātvāṇātvikam (Cerebralisation); Nātanātikam (Accentuation). Pāṇini cites examples of com-
mentarial literature dealing with topics, both big and small; e.g. (1) *kratus* (IV.3.68) such as (a) Āgnishṭomika (dealing with Agnishṭoma sacrifice), (b) Vājapeyika (dealing with Vājapeya sacrifice), (c) Rājasūyika (dealing with Rājasūya sacrifice); (2) Yajñas (smaller sacrifices in the domestic fire, IV.3.68), such as (a) Pākayajñika, (b) Nāvayajñika; (3) Adbyāyas (Chapters of Vedic works, IV.3.69), such as (a) Vāsishtbika Adbyāya (Vāsishtbasya vyākhyānah, commentary of the Seventh Maṇḍala of the Rigveda), (b) Vaiśvamitrikā (Third Maṇḍala); and (4) smaller works, like (i) Pauroḍāśika (relating to the explanation of the mantras used in the preparation of puroḍāsa oblation); (ii) Puroḍāśika (relating to the regulations for the preparation of puroḍāsa); (iii) Chhandasya or Chhāndasa (a book on meters, IV.3.71); (iv) Aistikā (IV.3.72, on the household sacrifices); (v) Pāśuka (animal sacrifices); (vi) Chātur-botrikā (relating to the Chatur-hotri service, performed by the four chief-priests); (vii) Paṇcha-botrikā (on the particular formula called paṇcha-botri, in which five deities are named); (viii) Brāhmaṇika (commentary of a Brāhmaṇa); (ix) Ārchika (of the Rik verses); (x) Prāthamika (probably the Prathamāchika of the Sāmveda); (xi) Adhvarika (relating to the Adhvara or Soma-sacrifice); (xii) Paurāścharaṇikā (relating to a preparatory rite as mentioned in the Sataṭaptha Br.); (xiii) Nāmika (dealing with Nouns) and (xiv) Ākhyātikā (dealing with Verbs; IV.3.72). (xv) Ārgayana (=Rigayana-vyākhyāna, explanatory of the recitation or study of the whole Rigveda, IV.3.73, cf. also Kāsikā on VI.2.151). This extensive literature of commentaries is mentioned in the sūtras, IV.3.68-72. Other explanatory works based on minor texts are cited in the Rig-ayanādi gana (IV.3.73), such as Chhandomāṇa, Chhandobhāṣā, Chhandovicbiti, Nyāya, Punarakta, Vyākarana, Nigama, Vāstuvidyā, Aṅgavidyā, Kshattravidyā, Utpāta, Saṃvatsara, Muhūrta, Nimitta, etc. (Cf. aṅgavijjā, vatthuvijjā, khattavijjā in the Brahmajālasutta, Dīghamikāya, I.21).
Sūtra works had the peculiarity of being named after the number of their chapters (adhyāyas, V.1.58), e.g. Pāṇini’s own work called Ashtāka (‘Eight Chapters’). The Kāśika adds that the work of Kāśakṛitsni consisting of three adhyāyas was called Trika (‘Three Chapters’), and of Vyāghrapād Daśaka (‘Ten Chapters’) (V.1.58). The students studying these texts were also designated as Ashtakāh, Trikāh Daśakāh respectively (IV.2.65, Sūtrāch-cba kopabdāt). A similar principle of naming operated in the case of two Brāhmaṇa work of 30 and 40 chapters (V.1.62), which, as Keith suggests, were the Kaushītakī and the Aitareya Brāhmaṇas respectively (Rīgveda Brāhmaṇas, Intro.). We know at least in the case of the Satapath Śata patha that the adhyāya division was an important factor in the growth of its contents. The first nine books dealing with a complete exposition of the Haviryaśa and Soma sacrifices (Books I-V also called Ishti-Paśubandha, cf. Kāśika on sūtra II.1.6) contained sixty adhyāyas and were known as Shashti-patha (‘Sixty Chapters’). With the addition of the last five books (X-XIV) consisting of forty Chapters the name Śatapatha was finally applied to the work.

PLAN OF A TREATISE—A requisite of literary composition is its proper planning and presentation of subject-matter. This plan is called tantra-yuktī. The work of Kauṭilya has thirty-two Tantra-yuktīs; Charaka and Suśruta also mention them, the former adding three more to the list. The ancient Tamil grammar, the Tolkappiyam, based on the tradition of the Aindra school, enumerates in its Porulāṭikāram section thirty-two principles of which twenty-two agree with those of Kauṭilya. The Mimāṃsakas with their flare for analysis have indicated the principles of a literary composition. Of these they have singled out saṅgati, inherent consistency or internal order, and maṅgala, benedictory opening. These Tantra-yuktīs were also known to Pāṇini. The first of these, viz. Adhikāra, treatment of the matter within the purview or scope of a work is referred to in the sūtra Adhikrītya kṛte granthe
(IV.3.87), i.e. a work that is composed in accordance with the principle of adhikāra, or sense of the relevant. Pāṇini’s own work is model of Viḍhāna or the treatment of topics in their inherent order. Whitney supposed that the Ashtādhyāyī lacked the logical order in the arrangement of its topics, but Barend Faddegon has shown that this assumption is not correct (Studies on Pāṇini’s Grammar, 1936). Buiskool from his Study of the Tripādi Chapters (Tripādi, 1939) holds that Pāṇini’s work was based on a system of thematical groups which are rationally classified and arranged.¹

Other principles of treatment proper for scientific works are also indicated by Pāṇini, e.g. (1) Hetvarthā, the ground of a statement or proposition (as in I.2.53); (2) Upadeśa, the author’s own directions or instruction contained in his work (as in I.3.2); (3) Apadeśa, citation of another’s opinion along with one’s own, for refutation (as in I.2.51-52); (4) cross-reference of which there are so many in the Ashtādhyāyī; (5) Sāṁsāya or Viṣpratisbedhā, doubt arising from two equally forceful alternatives (I.4.2); (6) Vakyādhyāhāra, supplying an ellipsis, mentioned in sūtra VI.1.139; (7) Anumāta, citation of the opinion of another for its acceptance, as in the case of the opinions of other grammarians quoted by Pāṇini; (8) Atisaya-varṇana, detailed description or over-loading with details (as in Indriyam Indra-liṅgam Indra-drishṭam Indra-srisṭham Indra-juṣṭham Indra-dattam iti vā, V.2.93); (9) Nirvachana employing the derivative sense of a word, as in the case of mabāsaṁjñās, like Sarvanāma, Avyaya; (10) Svāsaṁjñā, use of one’s own technical terms as ti, ghu, bha; (11) Pūrvapaksha and (12) Uttarapaksha, arguments for and against a proposition by which its truth may be ascertained (as in the Sūtra-kāṇḍa, I.2.51-56); (13) Atideśa, analogous application, (as in I.2.57, Kālopaṣarjane cha tulyam); and (14) alternative application, which appears in such words as vā, anyatarasyām, ubhayathā,

¹For a simple analysis of the plan of the work adopted by Pāṇini, see Belvalkar, Systems of Sanskrit Grammar, pp. 20-22.
ekēbāṃ, babulam and vibbābha in the Ashtādhyāyī (cf. Patañjali for the rationale of these variant terms, II.1.58; I.400).

THEORY OF MANGALA—Māṅgala means invocation or benediction with which a treatise is to be commenced. The invocation of the Divine was made to ensure the success of the undertaking. Pāñini, as one of the greatest authors has also commenced his work, the Ashtādhyāyī, with a similar invocation, indicated in his use of the word vipriddhi at its beginning, though it meant an alteration in the order of the words which should have read Ādaich vipriddhiḥ, and not Vipriddhir-ādaich (I.1.1). Patañjali raises this point and obviates the objection by invoking the practice of maṅgala. He says that Pāñini as a maṅgalika āchārya, chose to begin his treatise with vipriddhi, a word that ensures the growth of the work and the longevity of its readers (Bhāṣya, I.40). Patañjali takes recourse to the same practice of maṅgala to justify the use of vakāra in sūtra Bhūvādayo dhātavaḥ (I.3.1). He further extends it to the middle and end of a work (maṅgaladīni maṅgalamadhyāni maṅgalāntāni hi śāstrāni prathante, I.3.1; I.252). This seems to hold good in the case of the Ashtādhyāyī, for it has been suggested that the sūtra Śiva-śam-arīṣṭasya kare (IV.4.143) represents Pāñini’s use of maṅgala also in the middle of his treatise. Only a few aphorisms later, sūtra Tasmai hitam (V. 1.5), a benedictory expression (‘Good be to all concerned!’), seems to be deliberately used by Pāñini to name two of his most important chapters (fourth and fifth), viz. Taddhita, dealing with hundreds of grammatical formations (uṛṭtis).

Pāñini also uses the benedictory term udaya in the last but one sūtra of the Ashtādhyāyī. The use of udaya in place of shorter para points to his faith in the practice of maṅgala (udāttaparasyeti vaktavya udaya- grābānī maṅgalārtham, Kāśikā, VIII.4.67). The word udaya of this sūtra was taken by him from the Rīk Prātiśākhya, which uses it as a synonym of para (cf. rīkāra udaye, II.32). It is impossible to agree with Sköld who argues that the sūtra a a concluding Pāñini’s
great work, coming as it does after the maṅgala-denoting word udaya, is a later interpolation (Papers on Pāṇini, p. 8). This assumption is not quite tenable considering that Kātyāyana devotes four vārttikas to it, and Patañjali also comments on them as authentic. Both of them conclude their works with the observation Bhagavatapāṇineḥ siddham. Patañjali, in his comment on siddha, the first word of the opening vārttika of Kātyāyana, makes that teacher also subscribe to the theory of maṅgala (as a māṅgalika āchārya, Bhāṣya, I.7).

In the Pārshada or Prātisākhya tradition of the Charanas Om was pronounced at the commencement of svādhyāya. Pāṇini says that for this purpose it was to be uttered with a ṭuta accent (Om-abhyādāne, VIII.2.87).

WRITING—Writing was known in the time of Pāṇini and even earlier according to Goldstücker who thinks that Vedic literature was available to Pāṇini even in Mss. (Goldstücker, Pāṇini, pp. 11-47). Though teaching was oral in those days, and study from manuscripts was not encouraged on principle as the proper method of learning, Pāṇini hints at the use of writing in several significant expressions. These are (1) grantha, (2) lipikara, a writer, (3) Yavanāni lipi, and (4) the marks of numerals imprinted on the ears of cattle to indicate their owners, as already shown (VI.3.115).

(1) Lipikara (III.2.21) as well as its variant form libikara, denoted a writer. The term lipi with its variant was a standing term for writing in the Maurya period and earlier. Dhammalipi, with its alternative form dharmaṇidi, stands for the Edicts of Asoka engraved on rocks in the third century B.C. An engraver is there referred to as lipikara (M. R. E., II) Kauṭilya also knows the term: ‘A king shall learn the lipi (alphabet) and saṅkhyāna (numbers, Arth. I.5). He also refers to saṃjñā-lipi, ‘Code Writing’ (Arth., I.12) used at the Espionage Institute. In the Behistun inscription we find dipli for engraved writing. Thus it is certain that lipi in the time of Pāṇini meant writing and script.
(2) Branding of kine with numerals. Pāṇini refers to the marking of certain signs on the ears of cattle to indicate ownership. Among several signs thus branded (sūtra VI.3.115), the terms ashta and pańcha stood for the written figures of the numerals 8 and 5 (Goldstücker, Pāṇini, p. 44).

(3) Yavanānī (IV.1.49). Kātyāyana’s vārttika mentioning the līpi of the Yavanas (Yavanāl-līpyām) is only an explanation of Pāṇini’s use of the term Yavanānī. It is unwarranted to assume that he is supplying some new information not known to Pāṇini. Such an assumption goes against the very style of Kātyāyana’s other vārtikas on this sūtra, designed to explain and not supplement the words of Pāṇini’s rule, as bimānī, aranyānī, yavānī. Yavanānī as the name of a script occurs in the list of scripts in the Samavāyānga sūtra (Sama-vāya XVIII) under the form Javanāniyā (cf. also the same list in Paṇṇavaṇa sūtra). Weber interpreted Yavanānī as Greek writing (Ind. St., IV.89). Keith also holds that Yavanānī līpi meant ‘Greek (Ionian) writing’ (Hist. of Sans. Lit., p. 425).

Goldstücker and Spooner took Yavanānī to refer to the Persian cuneiform writing which Keith refutes as highly improbable since there is no evidence to show that the word Yavana ever meant the Persians (J.R.A.S., 1915, p. 432). Darius (B. C. 521-B. C. 485) in his Old-Persian Inscriptions refers to the country Yauna and to its inhabitants as Yauna (Behistun Inscription, names of the twenty-three provinces), which shows that the terms cannot be taken to mean Persia or the Persians. Most scholars agree in taking them as Ionia and Ionian Greeks. Aśoka likewise uses in his inscriptions the word Yona for Yavana and not for the Persians. The suggestion that Yavanānī was the name of the Aramaic writing discovered in a stone inscription at Takshaśila, likewise remains unsupported by any proof. Herodotus mentions a contingent of Indian soldiers in the army of Xerxes fighting in Greece and there were Greek colonists settled in Bactria even before Alexander. Thus Pāṇini’s knowledge of the word for Greek writing can be naturally understood.
CH. V SECTION 3. LITERATURE

CLASSES OF LITERATURE—Pāṇini classifies literature on the basis of the character of the creative effort producing it. This is indicated by the following terms:

(1) Drishta (IV.2.7). Literature that is revealed or seen. Under this class he mentions the Sāmans named after their seers or Rishis, e.g. Kāleya (IV.2.8) and Vāmadevyā (IV.2.9).

He also must have known the Sambitās of the Rigveda and Yajurveda, and their divisions like Śūkta (V.2.59), Adhyāya and Anuvāka (V.2.60).

(2) Prokta (IV.3.101). Literature promulgated or enounced by Rishis, as founders of the different Vedic Charanās. Under this class were included the Chhandas works (IV.2.66), or Sākhās, e.g. the Sākhā works of the Taittirīyas (IV.3.102), Kaṭhas (IV.3.107) and Kālāpās (IV.3.108); and the older Brāhmaṇas (IV.3.105). As pointed out above the Prokta works were connected with the teachers and students devoted to their study in the Charanās. This complete identity of the name of a Vedic text with that of its students held good for Sākhā and Brāhmaṇa works only (IV.2.66). For example, in the School of the Taittirīyas, the original Sākhā and its Brāhmaṇa alone would be entitled to a name in accordance with the rule of tad-vishayatā, as Taittirīya Sākhā and Taittirīya Brāhmaṇa. But in course of time the Aranyaka and Upanishad portions were also developed as constituent parts of the Brāhmaṇas, and the name Taittirīya was applied to them also.

A third kind of Prokta works developed in the Vedic schools was that of the Kalpas, or Śrutasūtras, classed as Vedāṅga works. Kātyāyana and Patañjali definitely state that the rule of tad-vishayatā did not apply to Kalpa works, but an exception was made in the case of only two such Kalpa books, viz.
those of Kāśyapa and Kauśika, who are mentioned by Pāṇini as Rishis (IV.3.103). The schools of Kāśyapa and Kauśika were known as Kaśyapīnāḥ and Kauśikīnāḥ (Kāśyapa-Kauśika-grahaṇaṁ cha Kalpe niyamārtham, Vār. 6 on IV.2.66).

Another variety of Prokta literature mentioned by Pāṇini consisted of two special kinds of sūtra works, viz. (1) the Bhikshusūtras of Pārāśaryya and Karmanda, and (2) the Naṭasūtras of Śilālin and Kṛiśāsva (IV.3.110-11). It is surprising that the strict principle of tad-visbayatā which applied to Vedic works should have been extended to these four works of later origin and secular character. The examples cited by Patañjali, Pārāśarīno bhikshavaḥ, Śailālino naṭāh, show that these treatises were connected with their own schools with a succession of teachers and pupils (adhyetri veditri), like other orthodox sacred works. The Pārāśara and Śailālaka Charaṇas were originally related to the Rigveda, but their activity later on centred round new subjects of study dealt with in their Bhikshusūtras and Naṭasūtras. Probably the Naṭasūtras of Śilālin were the original sources of the material in Bharata's Nātyaśāstra. The Vedic schools lent their authority to the secular subjects promoted by them, which were thus given the rank of Chhandas works (Bhikshu-Naṭa-sūtryoś-Chhandastvam, Kāśikā), and the status of Vedic schools applied to them (Atrāpi tad-visbayatā chetyanuvartishyate, Bhāṣya, II.286). That Pāṇini looked upon the dramaturgical works as āmnāya of sacred authority associated with the Charaṇas, is borne out by the reference to Nātya in sūtra IV.3.129, (cf. naṭa śabdādapi dharmāmnāyayoreva bhavati, Kāśikā). The Bhikshusūtra of Karmanda and the Naṭasūtra of Kṛiśāsva were no doubt the product of the Vedic Charaṇas (aṭrāpi tad-vishayatārtham chhando-grahaṇam, Kāśikā, IV.3.111). It is not known to which Veda these latter belonged.

(3) Uṭpajñāta (IV.3.115). Literature bringing to light new knowledge expounded for the first time (ādyā āchikhyāsā, II.4.21), came under this class, e.g. the works of
such original authors as Āpiśali, Pāṇini, Vyādi and Kāśakṛitsna (IV.3.115). Upajñāta formed a special class under Prokta literature, since the grammatical treatises of Āpiśali, Pāṇini, etc, are both regarded as Prokta and Upajñāta (Pāṇinīnā proktam, Pāṇinīnā upajñātam, both were Pāṇinīyam). This is just what should have been expected in the transitional period. Such texts combined certain features of the Chhandas Prokta works and other features of independent texts cultivated outside the Charaṇas. The most distinctive feature was the principle of individual authorship, which did not operate in the case of the Prokta class of Vedic texts, but was applied to Upajñāta works being the exclusive fruit of the creative efforts of their authors. Special scientific treatises, mostly the Vedāṅga literature, were being written outside the Charaṇas, as a result of the intense intellectual activity on the part of their authors. The works of Yāska and Śākaṭāyana, Audavrajī and Pāṇini were of this category and named after the first exponents (e.g. Pāṇinīnopajñātam Pāṇinīyam akālakam vyākaraṇam, Kāśikā, IV.3.115).

The school-denoting (adhyetṛi-vedītri) suffix was elided in this case also (Proktāl-uk, IV.2.64). Thus both the treatise of Pāṇini and its teachers and students were called Pāṇinīya. Although in its effect on the formation of names of the text and its school there was no difference, but from the institutional point of view the difference was remarkable between the method of study as applied to the new works like those of Pāṇini on the one hand and the traditional Charaṇa literature on the other. The followers of new sciences were not organized into the same sort of educational fraternity as in the case of the Śākhā works. Moreover, the Pāṇinīya treatise and the Pāṇinīya students did not belong to one particular Charaṇa, but were connected with Vedic schools in general.

Sūtra IV.2.65 states that the students of the new sūtra works were also named after the number of chapters in the texts studied by them, such as Ashtakāh, Daśakāh, Trīkāh. Thus all the Pāṇinīyas to whichever Vedic school they belonged would
be called *Ashṭakāḥ*.

As a sequel to intensive efforts at compilation and computation this special phase of naming texts had been evolved much earlier, as names like *Sūta-patḥa*, and *Shāśṭīapatḥa* testify. Pāṇini himself refers to two Brāhmaṇa works with 30 and 40 *adhyāyas*, and on that account known as *Trāṁśa* (=Kausūrī-kā) and *Cātavāriśiśa* (=Aitareya) (V.1.62).

(4) *Kṛta* (IV.3.87; IV.3.116). This class of literature comprised ordinary works, termed *grantha*, which were named after their subject-matter (*Adhikrītya kṛite granthe*, IV.3.87) or by an adjective derived from the author's name (*Kṛite granthe*, IV.3.116). The rise of the *slokā* metre and with it the emergence of the classical poet (*slokakāra*, III.2.23) rapidly brought into being a new type of *kāvyā* and *nātaka* literature as a medium of literary effort, and these were put under the *Kṛita* class. For example, *Saubhadra* (a book based on the story of Subhadrā); *Yāyāta* (on the legend of Yayāti); and *Vāraruchā ślokāḥ* (a book of verses composed by Vararuchi), all later examples recorded in the *Kāśikā*. Pāṇini himself cites *Śisūkrandiya, Indrajānaṇiṇiya* (works relating to the birth of Kṛishṇa and Indra) as instances of *Kṛita* works.

*Kṛita* is to be distinguished from *Upaniṇāta* in that the former referred to a book composed by a certain author; whereas the latter always had reference to a topic promulgated by a person. As Maxmuller puts it: 'A work which has only been taught and promulgated by a person, is not to be called his book (grantha), but bears its own title, such as "grammar", or, whatever else it may be, together with an adjective derived from the author's name. Pāṇini's grammar, for instance, is not to be called *Pāṇinīyo granthāḥ*, but *Pāṇinīyam Vyākaraṇam*, because it is a canonical work revealed to Pāṇini, but not invented by him." (Hist. of Skt. Literature, p. 361).

(5) *Vyākhyāna* (IV.3.66). Literature of Exposition and Commentaries. It comprised miscellaneous works on religious and secular subjects. These were not to be reckoned as original
works, but were called for by the practical needs of interpreting and conserving Vedic texts, performance of rituals, and also to advance the knowledge embodied in the Vedāṅgas, works of philosophy and miscellaneous subjects, such as astrology (Jyotish), divination (Āṅgavidyā), military science (Kṣatravidyā), etc. These included a vast and varied range of literature, like the extensive works on Soma-Kratus and smaller handbooks on Purodāsa, explanations of special parts (Adhyāyas) of the Rīgveda, specialised grammatical works like Nāmika and Ākhyātika (IV.3.72). The literature of Commentaries added to the volume and variety of Sanskrit literature by the contributions made to it by authors of different capacities, competent to deal with such scientific subjects as grammar and etymology, and others to treat such minor topics as portents (utpāta, IV.3.73), and fortune-telling (nimitta), its text being called naimitta, (IV.3.73) and an interpreter of prognostics as naimittika, (IV.2.60). Pāṇini refers to foretelling in sūtra I.4.39 (Rādhibhyor-yāsya vipraśṇah).

Works Known to Pāṇini

VEDIC TEXTS—The extent of Pāṇini’s acquaintance with Vedic texts is known by (1) works mentioned by name, and (2) texts that provided him material for his Grammar. Thieme, tracing Pāṇini’s references to their original sources, has shown that Pāṇini derived his grammatical material from the texts of the Rīgveda, Maitrāyaṇi Sāṁhitā, Kāṭhaka Sāṁhitā, Taṭṭtirīya Sāṁhitā and Atharvaveda, probably also from the Sāmaveda. To these may also be added the Śākalya Pada-pāṭha of the Rīgveda which has supplied him with material for sūtras I.1.16-18 (P. Thieme, Pāṇini And The Veda, p. 63). Thieme further points out that some of the Vedic forms used by Pāṇini cannot be traced to any extant Vedic works. Possibly they were derived from some text or Śākib of the Black Yajurveda which was known in his time but now lost to us (ib., p. 64). The Atharvaveda used by Pāṇini is believed to be in its
Paippalāda recension (ib., p. 66).

Goldstücker held that Pāṇini did not know the Atharva-veda (Pāṇini, p. 108). According to Weber this view is not tenable, since Pāṇini has actually utilised the material from this Veda (Thieme, ib., p. 73). Pāṇini mentions Ātharvanikas (students of Atharvan, VI.4.174), and includes the name Atharvan and Ātharvana in the Vasantādi-gaṇa (Bhāshya, II.320), on which Patañjali says that the Ātharvanika students were studying an Āmnāya (i.e. Śākhā) and a Dharma (i.e. Dharmasūtra) of their own.

Goldstücker had taken the view that the Vājasaneyī Samhitā and the Śatapatha Brāhmaṇa were also unknown to Pāṇini. Thieme thinks that Pāṇini did not gather any material from the White Yajurveda, but this should not mean that Pāṇini’s grammar was anterior to the Vājasaneyī Samhitā and the Śatapatha Brāhmaṇa (Thieme, ib., p. 74; K. B. Pathak, A.B.O.R.I., IX.84). Pāṇini refers to Vājasaneyā and Vājasaneyin in the Gana-pātha Śaunakādi (IV.3.106).

**TERMS INDICATIVE OF TEXTS**—Pāṇini has used in his sūtras the following terms associated with certain texts: (1) Chhandas, (2) Mantra, (3) Rich, (4) Yajus, (5) Brāhmaṇa, and (6) Nigama. Chhandas denoted the sacred literature, as distinguished from Bhāsbā, the spoken language. Chhandas included both the Samhitā and the Brāhmaṇa literature. The term Mantra had a more restricted scope, being applied to a sacred formula whether in verse (rich) or in prose (yajush), as opposed to the Brāhmaṇa. Thus the particular linguistic forms noted for Mantras do not occur in the Brāhmaṇas. The term Rich stands in Pāṇini for a Vedic stanza, as opposed to a formula in prose which was called Yajush. Brāhmaṇa stands for the Brāhmaṇa works, and a-mantra of sūtra III.1.35 also pointed to non-mantra literature or the Brāhmaṇas. The word Nigama denoted linguistic and exegetical tradition as embodied in the Vedic literature.

**VEDIC ŚĀKHĀS**—The Śākhās or different recensions, as we
have seen, formed the basis upon which the Charaṇaṣas or Vedic Schools were based. They were known also as Chhandas texts and as Āmnāya (Bhāṣya, II.319, Charaṇād dharmāmnāyayoh). The Brāhmāṇa works in addition to the Chhandas works formed the principal subjects of study in a Vedic Charaṇa or School as stated in the sūtra, Chhando-Brāhmaṇāṇi cha tad-vishayāni, (IV.2.66).

ṚGGVEDA—The following Schools of the Rigveda were known to Pāṇini:

(1) Śākala. Pāṇini knew the Pada-pātha of the Ṛigveda arranged by Śākalya (I.1.16). He also refers to students studying the Prokta work of Śākalya (Śākalād-vā, IV.3.128). The Śākalas formed an important School of the Ṛigveda. The present recension of the Rīk Samhitā is that of the Śākalas, and belongs specially to that branch of this School which bears the name of the Śaśiśirīyas. The Rīk Prātiśākbya proclaims its affiliation to the Śaśiśirīya Śākha in its introductory verses. Pāṇini refers to the Śaśiśirīyas in the Gaṇa-pātha to IV.2.138. According to Weber, tradition makes the Śākalas intimately connected with the Śunakas, and to Śaunaka in particular a number of accessory works of the Rigveda are attributed (Hist. of Ind. Lit. p. 33). Pāṇini mentions the antevasins of both these schools, Śākālas and Śunakas, under the compound word Śākala-Śunakāḥ (Kārta-Kaujaṇādi gaṇa, VI.2.37), indicating their intimate relationship as offshoots of the same school.

The Śākalas again in their development branched off into five divisions founded by the disciples of Śākalya, named as (1) Mudgala, (2) Gālava, (3) Vātsyya, (4) Śaliya, and (5) Śaśiśirīya.

Pāṇini refers to a Krama-pātha in sūtra IV.2.61, which appears to imply the Krama-pātha of the Rīk-Samhitā traced to its author named Paṇchāla Bābhṛavya. A Bābhṛavya is mentioned in sūtra IV.1.106 as belonging to the Kauṣika gotra. In the Gaṇa-pātha of Kārta-Kaujaṇādi (VI.2.37) Bābhṛavya’s students are referred to along with those of Śaunaka as Śunaka-
Bābhrawāḥ, evidently emplying that they were both followers of the same Šākhā of the Rīgveda. In the later text of the Matsya Purāṇa (21.30) is recorded the tradition that Bābhrawya was the author of the Krama-pātha, and also that he was the minister of King Brahmadatta of Dakshina-Pañchāla.

(2) Bāshkala. Another important recension of the Rīgveda was represented by the Bāshkalas according to the Charaṇa-Vyūha (Weber, H.I.L., p. 32). This recension is not directly mentioned by Pāṇini, but one of the disciples of Bāshkala was Parāśara who founded the Pārāśarī Śākhā. Patañjali refers to a Kalpa work of this school, the students being known as Pārāśara-kalpika (Bhāṣya on IV.2.60). Pāṇini had this Vedic School in mind when he mentioned the Bhiṣṣu-sūtras of Pārāśarya developed as a special branch of study under the auspices of the Pārāśara Charaṇa, the followers of which, having embraced the ascetic life, were known as Pārāśarin Bhikhsus (Pārāśarinah bhikṣhabavah, IV.3.110). It may be noted that the Pārāśarya School showed its originality in producing the Bhiṣṣu-sūtras as a class of Prokta literature, and not any Chhāndasa works for which they depended on the Bāshkala School.

(3) Śilālin. Pāṇini mentions Śilālin as the author of Naṭa-sūtras, his students forming the Vedic School of Dancing designated as Šailālinah naṭāḥ (IV.3.110). The Šailālakas were originally a Rīgvedic Charaṇa with their own Brāhmaṇa, cited as the Šailālika Brāhmaṇa in the Āpastamba Śrauta-Sūtra (Keith, Āpastamba and the Bahūriccha Brāhmaṇa, J.R.A.S., 1915, p. 498). Kātyāyana also knows of the students of this Vedic school as Šailālāḥ (VI.4.144). Thus it will be seen that the students of dramaturgy were called Šailālinah while those of orthodox Vedic studies were known by the simpler name of Šailālāḥ. The growth of a secular text like the Naṭa-sūtra under the auspices of a Vedic School shows the scope that Vedic literature gave to new intellectual development not directly connected with religion.

(4) Bahūriccha. Pāṇini mentions the Āmnāya and Dharma
of the Bāhrvichya School as Bāhrvichya (IV.3.129), and refers to Bāhrvichya as the name of a Charana (Antargana-sūtra, anrichobhā mānave Bāhrvichas-charanākhyāyām, V.4.154). That this school once enjoyed wide distribution, is shown by Patañjali speaking in terms of the Bāhrvichas while referring to the Rigveda recensions (ekaviniṣṭidā Bāhrvichyām, I.9). The Bāhrvichas are referred to in the Satapatha Brāhmaṇa (XI.5.1.10) and quoted a dozen times in the Āpastamba Śrauta Sūtra. None of these citations can be traced to the two Rigveda Brāhmaṇas known to us, viz. Aitareya and Kaushitaki, and Keith was led to observe that ‘It is perfectly certain that he (Āpastamba) meant some definite work which he may have had before him and in all probability all his quotations come from it’ (Keith, Rigveda Brāhmaṇas, p. 496). It is unfortunate that neither the Samhitā, nor the Brāhmaṇa of this school has survived. According to Kumārila the Bāhrvichas were governed by the Grihya-sūtra of Vasishṭha (Tantravārttika, I.3.11). Keith thought that the Bāhrvichya School was identical with Pāṇiḍya, but they are mentioned as two separate Schools in the Kaushitaki Brāhmaṇa.

(5) Śaunaka. The Śaunaka School had its Chhandas text (Śaunikādibhyaś-Chhandasi, IV.3.106), the students being called Śaunakināḥ. As already pointed out the Śaunaka School was intimately connected with the Śākalaś. To Śaunaka in particular a number of writings on the Rigveda are attributed (Weber, H.I.L., p. 33).

Pāṇini also refers to Pāila (II.4.59), although his association with a Vedic text is not mentioned. Pāila is known as a redactor of the Rigveda, and as following the tradition of Vyāsa. The School of Pāila had two offshoots, viz. the School of Bāshkali and that of Māṇḍukeya, the latter being mentioned in the Kārta-Kaujapādi gana together with Sāvarṇi.

YAJURVEDA—The Kṛṣṇa Yajurveda is referred to by Pāṇini several times. Amongst teachers of this School he mentions Tittiri, Varatantu, Khaṇḍika, Ukha, (IV.3.102), Kaṭha
and Kalāpin (IV.3.107-108). The original teacher and founder of this School was Vaiśampāyana whose direct disciples are called Vaiśampāyanantiveśin (IV.3.104). These had the privilege of personal contact with the teacher (pratyaksha-kāriṇaḥ, according to the Kāśikā). Each of these became the founder of a school and promulgated its own text. Weber has pointed out: ‘Of the many schools which are allotted to the Black Yajus, all probably did not extend to the Śaṁhitā and Brāhmaṇa; some probably embraced the Sūtras only. This is likewise the case with the other Vedas.’ (H.I.L., p. 88). The following Schools may be noticed:—

(1) Taippīrīya (IV.3.102). Pāṇini mentions Tittiri as the founder of the Taippīrīya School. The Taippīrīyas had close connection with the Kāthas since the last sections of the Taippīrīya Brāhmaṇa are named Kāṭhaka (Bhagavaddatta, Vaidika Vāṁmaya kā Itihāsa, p. 197).

(2) Aukhiyās (IV.3.102). The Taippīrīyas grew into two Schools, the Aukhiyās and the Khāṇḍikīyas (cf. Charanavyūha, II.1). The Ātreyas referred to in II.4.65 as a counter-example and in IV.1.117 as a gotra name were a branch of the Aukhiyās.

(3) Khāṇḍikīya (IV.3.102). It was a branch of the Taippīrīyas from which grew later the Schools of Āpastamba, Hiraṇyakesin and Bhāradvāja (Charanavyūha).

(4) Vāratantaviya (IV.3.102). This School existed independently in the time of Pāṇini, although not a single text of the same has survived.

(5) Vaiśampāyana and Charaka. Pāṇini mentions the followers of the Charaka School as Charakas (IV.3.107). The Kāśikā informs that Charaka was the name of Vaiśampāyana (Charaka iti Vaiśampāyanasyākhyā, IV.3.104). Charaka was originally used in the sense of a “Travelling Scholar”, from the root chara, “to wander about for instruction” (Weber, H.I.L., p. 87). In the Śatapatha Brāhmaṇa the adherents of the Charaka branch of the Black Yajus are designated Charakādāh-
varyus. Vaiśampāyana stands out as the pre-eminent Vedic teacher, whom Śabaraszvamī following an old tradition describes as the originator of all the Śākhās of the Kṛṣṇa Yajurveda (Smārtyate cha, Vaiśampāyanaḥ sarva-śākhādhyāyī, Mimāṃsā Bhāṣya, I.1.30). The Kāśikā mentions the names of nine pupils of Vaiśampāyana who were grouped territorially. Patañjali, referring to the three Prāchya (Eastern), three Udīchya (Northern) and three Madhyama (Meridional) Charaṇas, alludes to the Schools of Vaiśampāyana as established by his disciples (Bhāṣya, II.301; IV.2.138, madhya-madhyamāṁ cbān-Charane).

(6) & (7). Schools of Ālambi and Pālaṅga. These were the two eastern disciples of Vaiśampāyana Charaka who founded the Alambin and Palaṅgin Schools.

(8) Kāmalināḥ. It is the name of the third eastern School of the Charakas. The Purāṇas mention the founder as Kāmalāyani (Brahmāṇḍa Purāṇa, I.33.6).

(9) Kaṭha (IV.3.107). Pāṇini mentions the Kaṭhas separately in IV.3.107; they were the Udīchya disciples of Vaiśampāyana and probably belonged to the Panjab. In the time of Patañjali, the Kaṭha School had attained wide celebrity (grāme grāme Kāṭhakam Kāḷāpakaṁ cha prochyate, Bhāṣya, IV.3.101; II.315), and their text was considered to be of high authority (Kaṭhāṁ mahat suvibitam, IV.2.66; II.285).

Pāṇini mentions the compound names Kaṭha-Kāḷāpāḥ and Kaṭha-Kaṭhumāḥ in the Gana-pātha of VI.2.37, which indicates that these Schools were closely connected by their texts. The Samhitā of the Kaṭha School is extant. In the Charaṇa-vyūha two more local branches of the Kaṭha School are mentioned, viz. Prāchya-Kaṭhas and Kapishṭhala-Kaṭhas. Pāṇini derives some material from the text of the Kaṭhaka School (Devasummayor-Yajushi Kāṭhake, VII.4.38). He also mentions Kapishṭhala as a gotra name (VIII.3.91, Kapishṭhala gotre), which seems to have been applied to an offshoot of the Kaṭha School. Most of the Vedic Charaṇas were founded by
Rishis whose names were also used for gotra appellations. Megasthenes mentions the Kambistholoi (=Kapishthala) as a people in the Panjab through whose territory the river Hydromates flowed. This would place the Kapishthalas in the country of the Kaṭhas (Kathioi) who resisted Alexander's march through their country. It does not seem to have any connection with the place-name Kapisthala or Kaithal in the Panjab (VIII.3.91, counter-example). The Samhitā of the Kapishthalas is extant to this day.

(10) Kālāpa (IV.3.108). Kalāpin, a disciple of Vaiśampāyana, belonged to the Udichya country. The pupils of his School were known as Kālāpaś (Kalāpinō'n). Kalāpin appears to be himself a teacher of outstanding merit, since Pāṇini tells us that not only he himself but also his disciples became founders of new Vedic schools. Of the pupils of Kalāpin, the Kāśikā mentions four, viz. Haridru, Chhagali, Tumburu and Ulapa, who severally became founders of new Čaranaṇas.

(11) Śyāmāyana. He was a pupil of Vaiśampāyana who belonged to the north (Udichya). The followers of his School were known as Śyāmāyaninah. Śyāmāyana occurs as a gotra name in the Aśvādi-gana (IV.1.110). The School is counted as one of the six sub-divisions of the Maitrāyaṇīyas.

(12), (13) & (14). According to the Kāśikā the three Schools of the Charakas belonging to the Middle Country (Madhyamīya Čaranaṇas) were founded by Richāba, Ārunī and Tāṇḍya. The School of Ārunī, may be the same as that of Uddālaka Ārunī, who along with his son, according to Patañjali, belonged to the Bharata country (II.4.66; I.493).

(15), (16), (17) & (18). Schools of Haridru, Tumburu, Ulapa and Chhagalin. These were the four disciples of Kalāpī who founded independent Schools named after them as Hāridravinaḥ, Taumburavinaḥ, Aulapinah, and Chhāgaleynah. The School of Chhagalin is specifically mentioned in sūtra IV.3.109 (Chhagalino ḏbinuk). Of the others little is known except that Yāska has once quoted from a text called Hāridra-
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vi̱ka which may have been a Brāhmaṇa of this Charaṇa. All these four names occur together in the Mānava Grihyapari-
śisṭa.

(19) Khāḍāyana. Pāṇini mentions the School of
Khāḍāyana in the Saunakaṇḍi-gaṇa, and both Kātyāyana and
Pataṇjali take it to be a genuine reading. Pataṇjali says that
Kāṭha was an antevāśi of Vaiśampāyana, and Khāḍāyana that of
Kāṭha. Kātyāyana makes the important observation that
Pāṇini's intention in mentioning the pupils of Vaiśampāyana
and of Kalāpin separately was to restrict himself only to such
names as denoted the seers (pratyakṣa-kāra), i.e. only persons
by whom a Vedic text had been promulgated (Kalāpi-
Khāḍāyana gṛahaṇam jñāpakan Vaiśampāyanaṁantevāśishnu
pratyakṣakāra-gṛahaṇasya, Vār. on IV.3.104). Kātyāyana
also states that only Chhandas works were called after the name
of the Charaṇa or its founder, and not ordinary secular com-
positions like the ślokas of Tittiri which were called Taittiriya.

SUKLA-YAJURVEDA—The name Vājasaneyā stands
second in the Saunakaṇḍa group (IV.3.106) which seeks to
regulate the form Vājasaneyin to denote the Chhandas text of
this School.

SĀMAVEDA—The Saṃhitā of this Veda existed in two
forms, viz. the ārchi̱ka (the rich-text marked with saṃ-
accents) and the geya or songs. The ārchi̱ka is referred to in
śūtra IV.3.72, and the geya in śūtra III.4.68 which the Kāśi̱kā
interprets with reference to the saṃ songs. Pāṇini mentions
Chhandogya in the specific sense of the text belonging to the
Chhandoga School of the Sāmaveda (IV.3.129). In śūtra
VI.2.37, Pāṇini refers to Kāṛta students named after their teac-
cher Kṛita, who according to the Vishnu Purāṇa (IV.19.50-52)
was a Paurava prince, and disciple of the Sāmaveda teacher
Hiranyanābha, king of Kosala. Kṛita is credited with the pro-
mulgation through his disciples of twenty-four Saṃhitās which
were in circulation in eastern parts of India (yaś-chaturviṃ-
śatiṁ Prāchya-Sāmagānāṁ Saṁhitās-chakāra). He did for
the Sāmaveda what Vaiśampāyana had done for the Yajurveda. The Kārta-Kaujaṭādi-gaṇa mentions the names of about thirty Vedic Schools and the compound words indicate some kind of literary collaboration which made these pair names current in the language. Examples of such collaboration are preserved in the compound words Kaṭha-Kālāpam, Kaṭha-Kauthumam (mentioned as examples of II.4.3, Anuvāde Charaṇānām); and Mauda-Paippalāda (Schools of the Atharvaveda, as examples of sūtra I.3.49 Anorakarmakāt); Kauthumam- Laugākṣhāḥ (both Schools of Sāmaveda; its Kauthumī Saṁhitā being now extant); and Bābhraṇa-Śaḷaṅkāyaṇāḥ (the latter a School of the Sāma-
veda in the Vāhika country or Panjab, Weber, H.I.L., p. 77 and p. 219 f. n.)

The compound name Bābhraṇa-Śaḷaṅkāya-
yana representing a Rigvedic School of Paṇḍhāla and a Sāmaveda School of Vāhika, is also known to Patañjali who observes: 'Why should you come between the Bābhraṇas and the Śaḷaṅka-
yanas?' (Kīṁ te Bābhraṇa-Śaḷaṅkāyaṇāṁ antareṇa gateneti, Bhāṣya, II.3.4; I.444). The Śaḷaṅkāyanas also became known as Trīkāḥ, probably because of their being divided into three sub-schools (Bhāṣya, V.1.57-58).

Amongst other Sāmaveda teachers Pāṇini mentions Śauchivṛkshi and Śātyamugri (sūtra IV.1.81), of whom the female descendants were called Śauchivṛkshi, Śauchivṛkshyā, and Śātyamugri, Śātyamugryā respectively. Śauchivṛkshi appears as an ancient authority cited in the Śrautasūtra of Maśaka

1 Also Khaḍīra Gṛiḥya Sūtra, III.2.31, Kārsyaṁ tu Kaṭha-Kauthumāḥ, referring to a rule of anadhyāya approved both by the Kaṭhas and the Kauthumas.

2 Also included in Naḍādi-gaṇa, IV.1.99, with the gaṇa-sūtra Šaḷaṅku Šaḷaṅkam cba; the name Šaḷaṅki being given to Pāṇini himself in later writings; cf. also reference to the students of Šaḷaṅki, Šaḷaṅker-yūnaiḥbhātrāḥ Šaḷaṅkāḥ, Bhāṣya, (IV.1.90; II.244).

3 Bābhraṇa of Prāchya and Śaḷaṅkāyaṇa of Udichya were geographically separated and Patañjali's remark should have been addressed to a follower of an intervening Vedic School of the Bharata Janaṇapada, most likely of Āruṇī mentioned above.
(Weber, H. I. L., p. 77). The Sātyamugris seem to have been a sub-division of the great Rāṇayāniya School of the Sāmaveda, to whom Patañjali refers in connection with a phonetic peculiarity, viz. ardha ekāra and ardha okāra recognised in their Pārshada or Prātiśākhya work, (Bhāṣya, I.22; also Āpiśali Śikṣā). The name of Rāṇayani occurs in the Pailādi-gaṇa (II.4.59), and there can be no doubt that they were known to Pāṇini who knew one of their sub-divisions, the Sātyamugris.

Kāṇṭheviddhi (‘a descendant of Kaṇṭheviddhi’) mentioned after the names of the above teachers (IV.1.81) was possibly also a teacher of the Sāmaveda, whose name occurs as an authority in the Vaiṣṇava Brāhmaṇa of the Sāmaveda (Vedic Index, I.146).

ATHARVAVEDA—Pāṇini mentions Atharvaṇika as a student devoted to the study of a work called Atharvan which was enounced by the Rishi Atharvan (VI.4.174). Patañjali accepts Atharvan and Ātharvaṇa as genuine readings in the Vasantādi-gaṇa (IV.2.63), which according to Pāṇini were names of texts for study (Tadadhīte taḍveda). Patañjali definitely mentions the Āmnāya and Dharma of the Atharvaṇikas. The compound name Mauda-Paippalādāh in the Kārta-Kaujapādi-gaṇa represented two Schools of the Atharvaveda. Thieme attributes definite knowledge of the Atharvaveda to Pāṇini who mentions the form ailayit (III.1.51) found only in AV., VI.16.3 (Thieme, op. cit. p. 64). The Jājalaś, a School of the Atharvaveda founded by Jājali, are mentioned by Kātyāyana in a vārttika to sūtra VI.4.144.

OTHER VEDIC SCHOOLS—Pāṇini also mentions by name certain other Vedic Schools, whose exact affiliations are not known, e.g. Taitila-Kadrū in sūtra VI.2.42 contains an allusion to the students of ācchārya Titilin, also mentioned by Kātyāyana in the aforesaid vārttika to VI.4.144 (Kāśikā, Taitili-Jājalināvāchāryaḥ, tatkrito grantha upachārāt Taitili-Jājaliśabdābhīyām abhidhiyate, taṁ grantham adhiyate Taitilāh, Jājalaḥ). Patañjali mentions Krauḍāḥ and Kāṅkatāh as names.
of Schools (IV.2.66; II.286), of which the former appear to be students of Krauḍi mentioned in the Kraudyādi-gaṇa (IV.1.80). The Kāśikata Brāhmaṇa is referred to in the Apastamba Śrauta-sūtra (XIV.20.4) along with other unknown texts (Keith, J.R.A.S., 1915, p. 498). The Schools of Karmanda and Kṛiṣṭāsva which are known only from Pāṇini (IV.3.111), and those of Kāśyapa and Kauśika (IV.3.103) were confined to their sūtra works only, showing to what extent specialisation under the Vedic Čharaṇas had advanced. The Kauśikas belonged to the Atharvaveda, but the affiliations of the other three are not known.

BRĀHMANA LITERATURE—The Brāhmaṇa works were on a footing with the Sākhās in one respect, viz. they were represented by Vedic Schools comprising students who studied those texts. It is possible that some Vedic Schools did not evolve their own independent Chhandas texts or Sākhās, but depended on their compilations of Brāhmaṇa texts only. Of the names of Vedic Samhitās given above, many are traced in citations as Brāhmaṇa works. Similarly the activity of some Schools as pointed out above was confined to the composition of sūtra works only.

BRĀHMANAS OF THIRTY AND FORTY ADHYĀyas—Pāṇini mentions two Brāhmaṇa works by the names of ‘Thirty and Forty Adhyāyas’, called Traiṁśa and Chātvārīṁśa respectively (Trīṁśach-chaṭvārīṁśator-Brāhmaṇe sāmjñāyāṁ ḍaṇ, V.1.62). The Kaushitaki Brāhmaṇa is of 30 and the Aitareya of 40 adhyāyas. As Keith states: ‘The Kaushitaki Brāhmaṇa and the Aitareya were both known to Pāṇini, who in his grammar (V.1.62) mentions the formation of the names of Brāhmaṇas with thirty and forty Adhyāyas. The same conclusion as to their relation to Pāṇini is clearly proved by their language which is decidedly older than the Bhāṣā of Pāṇini, as Liebich has shown in detail for its verbal forms, and as is not disputed by any scholar.’ (Keith, Rigveda Brāhmaṇas, H.O.S., Vol. 25, p. 42).
OLDER BRĀHMAṆA WORKS—In sūtra IV.3.105 Pāṇini refers to Brāhmaṇa and Kalpa works enounced by older Rishis (Purāṇa-prokteshu Brāhmaṇa-Kalpeshu). As examples of older Brāhmaṇa works, Patañjali mentions the Brāhmaṇa works of the Bhāllavins and the Śātyāyanins (IV.2.104; II.296), to which the Kāśikā adds that of the Aitareyins. The Bhāllavins were a well-known school of the Sāmaṇeda, and Śātyāyana figures in the Varṇa list of Jaimini whose Brāhmaṇa work known as the Jaininiya Brāhmaṇa is still extant. Of all the lost Brāhmaṇa works that of Śātyāyana has been quoted most frequently (B. K. Ghosh, Fragments of Lost Brāhmaṇas, p. ii).

Talavakāra, a pupil of Jaimini, re-edited his teacher’s work, which then became known as the Talavakāra Brāhmaṇa. It may be noted that Talavakāra is included in the Saunakādi-gana (IV.3.106), as an author of a Chhandas work or Vedic Śākē.

The Hāridravika and the Śailāli Brāhmaṇas were also older works known to Pāṇini, since Haridru as a pupil of Vaiśāmpāyana is implied in IV.3.104, and the name of Śilālin occurs in sūtra IV.3.110. The Hāridravika Brāhmaṇa was also known to Yāśka (Nirukta, X.5).

Attention may also be drawn to Pāṇini’s mention of the name Māshaśarāvin whose descendants were called Māshaśarāvayaḥ according to the suffix added to words of the Bāhvādi group (IV.1.96). In the Chāṇḍraṛitti, Māshaśarāvin is one word, and so also in Hemachandra and Vardhamāna (Māshaśarāvīna risbeḥ, verse 206), but in the Kāśikā it is wrongly split up. The Drāhyāyana and Lātyāyana Śrauta-Sūtras cite an old authority saying that the Māshaśarāvins were organized as a Vedic school having their own Brāhmaṇa work (B. K. Ghosh, Frag. of Lost Brāhmaṇas, p. 112).

YĀJNAVALKA - BRĀHMAṆA—On sūtra IV. 3. 105 (Purāṇa-prokteshu Brāhmaṇa-Kalpeshu) Kātyāyana has a vārttika, Yājñavalkyādibbyah pratisbedhas - tulyakālatvāt. 'Among the Brāhmaṇas and Kalpas proclaimed by the old,
there is an exception with regard to Yājñavalkya and others, on account of contemporaneity and therefore Yājñavalkya’s Brāhmaṇas are called, not Yājñavalkināḥ but Yājñavalkāni Brāhmaṇāni. This passage has often been discussed. The Kāśika considers Yājñavalkya as a recent author (achira-kāla). Kaiyata clearly interprets the vārttika in the sense that the Brāhmaṇas of Yājñavalkya were of the same age as those of the older authors like Śātyāyana, and in order that they may not come under the scope of Pāṇini’s rule, Pāṇini should have made an exception in their case. In his opinion this omission on the part of Pāṇini to exclude the name of Yājñavalkya from the operation of sūtra IV.3.105 is now made good by Kātyāyana. Patañjali has not made himself quite explicit on the point, but in his remark, etānyapi tulyakālāni, the force of api becomes justified only when we understand Yājñavalkya as an ancient writer. Both Goldstücker and Eggeling accept this view (Pāṇini, p. 132; SB., Vol.I, Intro.). In view of this if we accept Yājñavalkya as an ancient teacher coeval in time with Śātyāyana and other older authors of Brāhmaṇa works, the question remains why did not Yajñavalkya also found a Vedic school similar to other older seers and why the principle of Tad-visbayatā which, according to Pāṇini, was an invariable feature of the Chhandas and Brāhmaṇa texts, and in some cases also of the Kalpa sūtras of older Rishis, as Kāśyapīnāḥ, Kauśikīnāḥ, did not apply to the Brāhmaṇa texts promulgated by Yājñavalkya. Another vārttika on sūtra IV.2.66 ordains that the adhyetri-veditri suffix is not added after the name of Yājñavalkya and others (Yājñavalkyadibhyah prathishedbhah, II. 285). The question arises why the Yājñavalkya Brāhmaṇas, if they were old, were not represented by their Charaṇa students like the other older Brāhmaṇas. The answer to this question largely depends on what we understand by Yājñavalkāni Brāhmaṇāni; or as Eggeling has put it: ‘whether or not the Yājñavalkāni Brāhmaṇāni form part of the text of the Śatapatha which has come down to us, and what exact portions of that
text we have to understand by this designation’. He was inclined to the view that we should look for them in certain portions of the last Book (or Books) in which Yājñavalkya figures so prominently. Weber in his modified opinion accepted ‘that it is to this Yājñavalkiya-kāṇḍa (XIV Book of Śatapatha) that the vārttika to Pāṇini (IV.3.105) refers when it speaks of the Yājñavalkāni Brāhmaṇāni as not purāṇa-prokta, but tulyakāla, i.e. ‘of the same age as Pāṇini’. (H.I.L., p. 129). Weber was, however, not disposed to regard Yājñavalkya himself or the Śatapatha Brāhmaṇa as being of the same age with Pāṇini. The last Kāṇḍa was so named not because it was produced by Yājñavalkya himself, but because it gives prominence to him.

THE GENESIS OF THE ŚATAPATHA—The whole of the Śatapatha Brāhmaṇa of 100 adhyāyas is now generally attributed to Yājñavalkya, but the fact remains that the present text of the ŚB. was a composite work made up of different portions of ritualistic texts. The grammatical literature throws some light on this textual problem of the ŚB. Its first nine Books consist of two broad divisions, Books I-V deal with Ishṭis and Paśubandha, being a complete exposition of Havir-Yājña and Soma sacrifices. These were subjects of special study as shown by the example seshti-paśubandbam adhīte (Kāśikā, II.1.6). In these Books Yājñavalkya is cited as an authority. The next four Books deal with the Fire-ritual (Agnicayana) and refer to Śaṅḍilya more frequently than to Yājñavalkya. These Books were also separate subjects of study as shown in the expression sāgni adhīte (II.1.6, Kāśikā); or kaśṭo’gniḥ, ‘difficult to master is the Agni text’ (VII.2.22). These nine Books contain sixty adhyāyas, and may be identified with Śhashtipatha mentioned by Patañjali in an old Kārikā (II.284). Book X (Agnirahasya) deals with the same subject as the preceding four kāṇḍas; and here also Śaṅḍilya and not Yājñavalkya figures as authority. The XI Book is called Saṅgraha, as it contains a summary of the preceding ritual. Kāṇḍas XII-XIV treat of miscellaneous subjects and are called Parishishta or Appendices. The last of
these contains the famous philosophical discourse of Yājñavalkya. The text so constituted finds corroboration from the Mahābhārata which speaks of Yājñavalkya as the author of certain portions of the Śatapatha described as (a) Rahasya (Ritual, Book X), (b) Saṅgraha (Book XI) and (c) Pariśesha (Books XII-XIV; Śāntiparvan, 318.16). Saṅgraha mentioned by Pāṇini in the Uktādī-gaṇa (IV.2.60) as the name of a treatise, seems to refer to the XI Book of the Śatapatha. A student of Saṅgraha was known as Sāṅgrabika. These portions of the Śatapatha, viz. Agni-Rahasya, Saṅgraha, and Pariśesha may be taken to be what were known as the Yājñavalka-Brāhmaṇas. The term Madhyama was applied to Book XII, showing that the Books preceding and following it were parts of one whole. The ŚB. was rather a voluminous text. Those who mastered its earlier portions consisting of 60 Chs. were designated as Shaṅtipathika; while students studying its 100 Chs. were called Śatapathika. The names Shaṅtipatha and Śatapatha appear analogous to Bhārata and Mahābhārata existing side by side for some time.

From their very nature the last five Books of 40 Chs. could not form the basis of an independent Charana text, and therefore the rule of tad-vishayatā did not apply to them. These later portions attributed to Yājñavalkya were not given the same status as that of the older established works of Śātyāyana and Bhāllavīn. Kātyāyana, however, as a follower of the Mādhyanandina School of the Śukla Yajurveda and of its Brāhmaṇa work the Śatapatha, did not consider the last five Books or 40 Chs. as of less authenticity in his time. He, therefore, joins issue with Pāṇini for not treating the Yājñavalkya Brāhmaṇas as purāṇa-prokta.

ANUBRĀHMAṆA (Supplementary Brāhmaṇas). These supplementary texts formed special subjects of study by students whom Pāṇini calls Anubrāhmaṇi (Anubrāhmaṇad inīḥ, IV.2.62). The Kaśikā explains Anubrāhmaṇa as a work taking after a Brāhmaṇa (Brāhmaṇa-sādriśo’yaṃ granthāḥ).
Bhaṭṭa Bhāskara in his commentary on the Taittirīya Śamhitā (I.8.1) refers to a portion of the Taittirīya Brāhmaṇa (I.6.11.1) as Anubrāhmaṇa (Weber, H.I.L., p. 82, note). Books XIV and XV of the Śāṅkhāyana Śrautasūtra were sometimes reckoned as parts of the Kaushitaki Brāhmaṇa, which were incorporated into its Kalpa by Suyajña. The commentator Anartiya Brahmadatta calls them Anubrāhmaṇa (Śāṅkh. S., XIV.2.3; Bhagavaddatta, Vaidika Vānmaya, I.113). Professor Caland discovered a special Brāhmaṇa work called Anvākhyāna, which belongs to the Vādhūla Sūtra and contains secondary Brāhmaṇas which may also be considered as Anubrāhmaṇa (Bhagavaddatta, op. cit., II.p.34). (Cf. Baubh. G. S., III.1.21-24).

UPANISHAD—It has been argued that Pāṇini does not refer to the Upanishads. So far as he is concerned, the word Upanishad forming part of the Rigayanādi group (IV.3.73) serves the same purpose as if it were read in a sūtra. On the basis of linguistic evidence Liebich had come to the conclusion that ‘Not only the Aitareya Brāhmaṇa, but also the Bṛhadāraṇyaka Upanishad are certainly older than Pāṇini.’ (Pāṇini, p. 37). The fact is that Pāṇini shows an acquaintance not only with the Aitareya and Kaushitaki Brāhmaṇas (cf. V.1.62) and the Anubrāhmaṇas of a later date, but also with the Śrauta Sūtras (IV.3.105) and the Dharma Sūtras which were developed as special subjects of study inside Charanās (IV.2.46). Pāṇini actually mentions the term Upanishad in one of the sūtras (Jiviko-panishadāvapamye, I.4.79), where it denotes ‘that which is secret.’ This accords with its meaning known to Kauṭilya under the head Auṭanishadikam. A term used originally as the name of esoteric religions texts, had acquired a pejorative sense by the time of Pāṇini. Keith also concludes on the basis of sūtra I.4.79 that Pāṇini was acquainted with the Upanishads (Tait. S., H.O.S., p. clxvii).

KALPA LITERATURE—Pāṇini refers to Kalpa works promulgated by ancient authors (Purāṇa-prokta Kalpa, IV.3.105), of which the Paiṅgi Kalpa and the Aruṇaparājī Kalpa are cited
as examples. Pāṇini refers to works of two older Rishis named Kāśyapa and Kauśika (Kāśyapa-Kauśikābhīṣyāṁ rīṣibhyāṁ niṁīḥ, IV.3.103), which Kātyāyana takes to be Kalpa works. These were studied in Vedic C ā r a n a s by students called after them Kāśyāpiṇah and Kauśikinah. It is also pointed out that the literary activity of these two old Schools was confined to their Kalpa Sūtras only round which centred a group of their students and teachers (Kāśyapa-Kauśika-grahaṇāṁ cha Kalhe- niyamārtham, II.286). We know of a Kauśika Sūtra of the Atharvaveda.

Patañjali in addition knows of a Parāśara Kalpa, which must have belonged to the Parāśara School of the Rigveda mentioned by Pāṇini.

But the exigencies of sacrificial religion required special treatises bearing on different parts of the ritual, and Pāṇini mentions several types of commentaries written with the avowed purpose of bringing sacrificial ritual within the easy reach of priests. Special commentaries are mentioned on important Soma sacrifices, and on the different kinds of yajñas, such as the Pākayajña, Haviryajña, etc. (IV.3.68). The preparation of the sacrificial cake offered to the deities was of great practical importance and special handbooks called Purodāśika explaining its details were written. Similarly others known as Paurodāśika were compiled with a view to explain the particular mantras that were used in the Purodāsa ceremony (IV.3.70). Commentaries on the Adhvara sacrifices were called Ādhvarika, and those which treated of preparatory ceremonies preceding regular sacrifices were known as Paurāścharaṇika (IV.3.72). The significance of the commentary called Prāthamika is not clear; possibly it treated of Puraścharaṇa rites (IV.3.72). Illustrating the word dvyačaḥ of this sūtra the Kāśikā gives two interesting examples, viz., Aisṭika and Pāṣuka, the former was a commentary on the Darśa-Paurṇamāsa Isṭīs and the latter on the animal sacrifices. These two are covered respectively by Books I-II and
III-V of the Śatapatha Brāhmaṇa. It appears that the course of sacrificial studies was planned topically, for on sūtra II.1.6
the Kāśika speaks of a student studying the portions known as
Išṭi-paśubandha (seshti-paśubandham adhīte). The ad-
vanced course in sacrificial lore included the Fire ritual or
Agnichayana (Books VI-IX of Śatapatha) and the expression
sāgni adhīte pointed to the final stage in the study of that sub-
ject.

LITERATURE ON RECITATION—Proper recitation of
Vedic texts (pārāyaṇa, V.1.72) required methodical training.
It involved mastery of the Pada and Krama texts as implied in
Pāṇini’s words Padaka and Kramaka to denote students devoted
to such studies (IV.2.61). Pāṇini also refers to the Pada text
of the Rigveda by Śākalya (I.1.16), and to a work known as
Ārgayana, which was a commentary on the methods and details
of the Pārāyaṇa of the Rigveda.

There are names of other phonetical works treating of
Vedic pronunciation and recitation. The Ukthādi-gaṇa
(IV.2.60) refers to students of Samhitā, Pada, and Krama. The
word Krametara, was applied to the recitation of texts ‘other
than Krama’. The technical term for instruction and exercise
in recitation was charchā (III.3.105; also in the Ukthādi
group). The Charaṇavyūha refers to instruction in recitation
depending on (1) charchā (exercise), (2) śrāvaka (the teacher
reciting), (3) charchaka (the pupil repeating), and (4)
śravanīyapāra (completion of recitation). A student who
qualified in charchā (regulated recitation) was called charchika
(IV.2.60).

Pāṇini uses Pada-vyākhyāna for a text explanatory of the
Pada-pātha, and its derivative Pāda-vyākhyāna denoted a com-
mentary on such a text (Rigayanādi-gaṇa, IV.3.73). Such a
commentary was intended to explain every word of the Vedic
text, similar to the style of the Śatapatha Brāhmaṇa explaining
the first eighteen Books of the Yajurveda. These commentaries
were also known as Anupada works, of which a student was
called anupadika (IV.3.60). Saunaka mentions the Anupada work of the Yajurveda, which Mahiddasa defines as the work which explained the text word for word (Anupade anyat-padam kartavyam). One of the Samya sutras is Anupadasutra in ten prapathakas, which explains the obscure passages of the Paunchaviniya Brahmana and of the Shadviniya Brahmana, step by step (Weber, H.I.L., p. 80).

UKTHA—The Ukttha treatise mentioned at the head of the Uktthadi group (IV.2.60) of which the students were called aukthika, appears to be a work partaking of the nature of PArshada works of the Samaveda. Pataijnali writes: 'What are Uktthas? Samans are the Uktthas. If so, all chanters of Samans will be called aukthika. No, there is no fault if we take Ukttha in the sense of a work dealing with Ukttha' (tad-arthyat tachchabdyam, Bharya, IV.2.60; II.283). Kaiyata following Pataijnali informs us that one of the Sama-lakshaNa treatises was known as Ukttha. A selection of Rik verses for the purpose of recitation suited to each particular occasion bears the name sastra to be recited by the Hotri priest, and a similar selection of different Samans made into a group to be recited by the Udgata priest was called Ukttha (from vach, to speak) (Weber, H.I.L., p. 67). It must have been the task of the Samaveda teachers to fix rules for the making of Ukttha songs. The texts which dealt with this subject were also called Ukttha, and must have been considered important among the lakshaNa works of the Samaveda.

JYOTISHA—Some works on Jyotisha were possibly known, as we find reference in the sutras to belief in divination from bodily signs (III.2.53), and also to fortune-telling by soothsayers (I.4.39, Radhikshyor-yasya viprasnah). The mention of upata, sanivatsara, muburta and nimitta as subjects of study in the Rigayanadi-ganya (IV.3.73) indicates the study of astronomy and omens. Early Buddhist literature is full of references to divining by means of signs (nimittam) and fortune-telling from marks on the body (lakkhanam, the word being
used in an identical sense by Pāṇini in III.2.52-53), which were forbidden for monks. Five topics of study included in the Rigayanādi group (IV.3.73) are also found in the Brahma-
āṭā Sutta, viz. (1) Nimitta, (2) Uppadā (= uṭṭāda in the gaṇa), (3) Aṅgavijjā, (Aṅgavidyā), (4) Vattthuvijjā (determining whether the site for a proposed house is lucky or not; Vāstuvidyā in the gaṇa), and (5) Kbatavijjā (= Kṣatravidyā of the Gaṇa-pāṭha which is also mentioned in the list of sciences in the Cbh. Up., VII.1.4) (cf. Brahmajāla Sutta, Rhys Davids Trans. pp. 16-18, f.n.). Buddhaghosa renders Uppadā as 'the portents of the great ones, thunderbolts falling, and so on' caused by divine agency (cf. Jātaka, I.374; and commentary on Uppadā). Kauṭilya mentions the naimittikas and māhūr-
tikas (Arth., p. 23), and Megasthenes also refers to experts who 'gathered together at the beginning of the year to forewarn the assembled multitudes about droughts and wet weather, and also about propitious winds', (Diod. II.40, M'Crindle, Frag.I). These latter correspond to the Sānvatsarikas of Pāṇini (IV.3. 73, Gaṇa-pāṭha).

PHILOSOPHICAL LITERATURE—The Pāṇinian epoch was already preceded by intense philosophical activity. The implications of his reference to philosophers of the Āstika, Nāstika, and Daśātika schools (IV.4.60) have been shown above, the last one being represented by the followers of Maskarī Gōśāla, and the second by such thinkers as the Lokâyatikas. The Lokāyata doctrine was of high antiquity and its second place in the Uktāddi-gaṇa may be an authentic reading. Nyāya, mentioned thrice (III.3.122; III.3.37, IV.4.92), stands not for the philosophical system of that name, but for justice or customary law; however, some knowledge of its dialectical terminol-
ogy is foreshadowed in the sūtra Nigrihyānuyoge VIII.2.94 (cf. Nyāya, V.2.1; V.2.23. For nigriya as a term of vāda or dispu-
tation, cf. also Āranyaka-parva, 132.13; 17). The term Mimāṁ-
sā occurs in the Gaṇa-pāṭha in relation to its students called Mimāṁsaka, which points to the subject being studied as a
system of philosophy (IV.2.61, also III.1.6, mīmāṁsāte).

BHIKSHU SŪTRAS—Pāṇini refers to two Vedic Schools of Bhikṣu sūtras founded by Pārāśarya and Karmanda (IV.3.110-111), their students being called Pārāśriṇaḥ and Karmandinah respectively. Weber sees in it an allusion to pre-Buddhist Brahmancial mendicants (H.I.L., p. 305, footnote). We know nothing of the work of Karmanda, but the sūtras of Pārāśarya may have been the Vedanta sūtras which were based on the philosophical doctrine developed in the Upanishads. On the other hand it is also probable that the Bhikṣu-sūtras of Pārāśarya referred to some Sāṅkhya treatise. Pañchaśikha is spoken of a Bhikṣu and of Parāśara gotra (Śantiparva, 320. 24), and being a historical teacher of outstanding merit in the Sāṅkhya tradition is believed to have written a work in prose Sūtras in which his doctrine leaned more towards Vedānta. (Keith, Sāṅkhya System, p. 49). The Chinese tradition makes him the author of the Sbastitantra itself (ib. p. 48).

In either case these early texts must be regarded as the product of a school rather than that of an individual author. The School gave a name both to its members and literary productions. As Pāṇini informs us, all Chhandas and Brāhmaṇa works, two Kalpa-sūtras, two Bhikṣu-sūtras, and two Nāṭa-sūtras derived their names after the founders of schools, which is the essence of the tad-vishayatā principle. Texts attributed to individual authors like Āpiṣali and Pāṇini naturally did not admit of growth like those produced in the Vedic schools, which latter incorporated the subsequent graftings on the original text. We may recall that the Pārāśarya school was originally affiliated to a Charaṇa of the Rīgveda in the Śākhā of the Bāshkalas. Parāśara (father of Pārāśarya) is also mentioned as the founder of a School of Kalpa-sūtras of which the students were called Pārāśarakalpika, as stated by Patañjali (IV.2.60; II.284). These latter were called Pārāśaraḥ in distinction to those studying the Bhikṣu-sūtras and called Pārāśarínaḥ.

NĀṬA-SŪTRAS—The word Nāṭya occurring in sūtra (IV.3.
129) refers to some treatise for the use of actors. As the Kāśikā explains, the Nāṭya text had the status of an āmmāya pointing to its growth under a Vedic Chārāṇa. We have already referred to the development of Nāṭa-sūtras in Pāṇini’s time under the Schools of Śīlālin and Kṛiṣāśva (IV.3.110-111). The present treatise on dramaturgy known as the Nāṭya sāstra of Bharata describes the Natas as Sañjālakas. The corresponding Vedic term used by Pāṇini is Śailālinah Nāṭaḥ. It seems that Bharata’s Nāṭyasāstra was the product of the dramatic school of Śīlālin which originated in the Rigvedic Chārāṇa founded by that teacher, who was also the author of a Brāhmaṇa work called Śailāli Brāhmaṇa cited in the Āpastamba Śrauta Sūtra VI.4.7.

Patañjali speaking for later times refers to Naṭa teachers (ākbyātā) of dance initiating novices (ārambhakāḥ) in the art not through texts (granthārtha), but by their direct method of stage-acting (I.4.29; I.329, ātaśchopayogo yadārambhakā raṅgāṁ gachchhantu nāṭasya śrosbyāmah). This instruction, however, did not merit the honorific epithet upāyoga, a term reserved for instruction under the approved religious system of teachers and initiated pupils.

Pāṇini mentions nāṇḍikara (III.2.21), a person who sings the Nāndi or prologue to a drama.

ĀKHYĀNA AND KĀVYAS—Pāṇini refers to ślokas and gāthās, and to their authors as ślokakāra and gāthākāra (III.2.23). He also mentions Ākhyāna or the literature of stories (VI.2.103), as examples of which Patañjali and the Kāśikā cite texts dealing with the legends of Rāma (i.e. Parasurāma) and Yayāti, each consisting of two parts, called Pūrvadhirāma, Aparadhirāma, and Pūrva-yāyāta, Apara-yāyāta respectively. The latter pair of names occurs in the colophon of the Yayāti legend in the Mahābhārata (Ādiparva, Poona, Chs. 70-80 Pūrva-yāyāta, and 81-88 Uttara-yāyāta).

As to kāvyas Pāṇini mentions (1) Śisukrandiya, (2) Yamasabhīya, and (3) Indrajanaṇiya as actual works (IV.3.
The name Śisukrandiya suggests that the poem related to the Birth of Krishṇa, literally 'a work dealing with the crying of child (śisu, Krishṇa at the time of birth).' The second name was probably that of a drama dealing with the subject of Yama's Assembly (Yama-saṁbhā). The third name Indrajananiya was that of a work dealing with the subject of Indra's birth and his slaying of the demon Vṛitra, being an ancient legend in which Tvashṭā and Dadhichi also played a part.

MAHĀBHĀRATA—Pāṇini knows of a Bhārata and a Mahābhārata, (VI.2.38), and refers to its three principal characters, Vāsudeva, Arjuna (IV.3.98) and Yudhishtīra (VIII.3.95). This admittedly old reference to the Epic throws light on its evolution. In a well-known passage of the Āsvalāyana Grihya-sūtra, the two names, Bhārata and Mahābhārata are similarly mentioned together (III.4.). Utgikar after examining the passage critically observed that 'the mention of the Bhārata and the Mbb. in the ĀG Sūtra is to be held as textually genuine and justified by other important considerations' (Mbb. in ĀG Sūtra, Proc. 1st Oriental Conf., Vol. II, p. 60). The Bhārata was the original work of about 24,000 stanzas attributed to Vyāsa, which was preserved and popularised by the bards. The Bṛṣigus, later, expanded the Bhārata adding to it considerable political, philosophical and religious matter (Dharma and Nīti) and legends (Upākhyānas) (V. S. Sukthankar, The Bṛṣigus and the Bhārata, a text-historical study, ABORI, XVIII, pp. 15-76). Āsvalāyana's mention of the Epic as a text to be recited may be due to the fact that Āsvalāyana was a direct pupil of Śaunaka whose name is closely associated with the final redaction of the Mahābhārata.
Ch. V, Section 4. GRAMMATICAL DATA

VYĀKARĀNA—The Ashtādhyāyī extant as the only early Vedāṅga text on Vyākaraṇa supplies some reliable data regarding the history of grammatical studies in ancient India.

Grammar is called both Śabda and Vyākaraṇa, and a grammarian śabdakāra (III.2.23) and vaiyākaraṇa (VI.3.7).

PREVIOUS GRAMMATIANS—The period between Yāska and Patañjali witnessed intensive creative activity in the field of grammar. No less than sixty-four teachers are cited as authority in the Prātiśākhyaas, Nirukta and Ashtādhyāyī (cf. Max Muller, History of Skt. Lit., p. 142, where a list is given.) Yāska regards Nirukta as a study supplementary to grammar (Vyākaraṇasya kārtṣnyam), which position remained unchanged until the time of Patañjali who found grammar to be the foremost of the Vedāṅgas.

Pāṇini mentions by name the following authorities (pūrvā-
chāryas) whose works he had most probably consulted:

(1) Śākataṅyana (III.4.111; VIII.3.18; VIII.4.50), a grammarian, who is quoted by Yāska in support of the view that all nouns are derived from verbs. His dominant position is indicated by an illustration preserved even in the Pāṇinian system, e.g. Anusākataṅyana vaiyākaraṇāḥ (Kāśikā on I.4.86), 'all grammarians rank next to Śākataṅyana'.

(2) Śākalya (I.1.16; VI.1.127; VIII.3.19; VIII.4.51), said to be the author of the Padapāṭha of the Rigveda; the iti used by him in the Padapāṭha is mentioned by Pāṇini as anārṣka, non-Vedic (I.1.16), and is also referred to by the term upasthita (VI.1.129). Pāṇini mentions a padakāra in sūtra III.2.23, who may be Śākalya.

(3) Āpiśali (VI.1.91). He was an important predecessor of Pāṇini. Patañjali refers to his students in the compound
APIṣALA-PANIṆIYA-VYĀDIYA-GAUTAMĪYĀH, stating that these names were arranged in a chronological sequence (VI.2.36; III.125). The KĀŚIKĀ records that ĀPIṢALI’s treatise dealt with long and short vowels (ĀPIṢALY-UPAJṆĀM GRUṆĀGHAVAM, VI.2.14).

(4) GĀRGYA (VII.3.99; VIII.3.20; VIII.4.67). His view is cited by YĀŚKA on nouns being verbal derivatives. The RIK and YAJU PRATĪṢĀKHYAS also refer to him.

(5) GĀLĀVA (VI.3.61; VII.1.74). His name occurs in the NIRUKTA and the AITAREYA ĀRANYAKA (V.3). The ŚAIŚIRI ŚIKṢĀ refers to GĀLĀVA as a pupil of ŚAUNAKA, and to ŚĀKAṬĀYANA of ŚAIŚIRI (PT. BHAGAVADDATTA, VAḌIKĀ VAṆṆAYA, I. 83).

(6) BHĀRADVĀJA (VII.2.63). This school continued its activity much longer, as PATAṆJALI refers to its VĀRTTIKAS several times. BHĀRADVĀJA is also cited in the RIK and the TAṬTIRĪYA PRATĪṢĀKHYAS.

(7) KĀŚYAPA (I.2.25; VIII.4.67); he is also cited in the YAJU and the TAṬTIRĪYA PRATĪṢĀKHYAS. (Cf. SĀNTIPARVA, 342-89).

(8-10) SENAKA (V.4.112); SPHOṬAYANA (VI.1.123); CBĀKRĀVARMAṆA (VI.1.130). The names of these teachers are not found outside the ASṬĀḌHYĀYĪ.

PANIṆI also refers to the views of Teachers in general ĀCHĀRYĀṆĀM, (VII.3.49; VII.4.52); including both the Eastern (PRĀCḤĀM) and the Northern (UDĪCHĀM) grammarians.

PURVĀCHĀRYA-SŪTRAS—PANIṆI by incorporating the grammatical contributions of previous writers into his system practically threw them into oblivion. There are, however, a few exceptions. KĀṬYĀYANA refers to a pūrva-sūtra in his VĀRTTIKA on IV.1.14 (II.205), and the comments of PATAṆJALI on it suggest that PANIṆI’s sūṭra (ANUṆASARJANĀT) was borrowed from an older grammarian. PATAṆJALI quotes a KĀṚKĀ referring to a pūrva-sūṭra in which VARṆĀ was designated as AKṢHARA (BHĀṢHYA, I.36).

KAIYĀTA in his comment on II.3.17 gives an alternative
reading of the sūtra as it existed in the grammar of Āpiśali (Manyakarmanų-anādara upamāne vibhāsbāpṛānīshv-iti Āpiśalir-adbite sma). The source of Kaiyāta appears to be some older commentary. Again, Patañjali in his comment on a vārttika to sūtra I.3.22 makes an illustrative statement, viz. Astiśin sakāram ātishṭhate, which is borrowed by the Kāśikā. The Nyāsa attributes this peculiarity of taking the root as as only s (sakārmātram) to ācārya Āpiśali. Patañjali commenting on a sloka vārttika referring to Āpiśali-vidbi (IV.2.45; II.281) quotes a sūtra of that grammarian, Dhenuranañī (kam utpādayati), which proves that the anubandha in nāṇi retained by Pāṇini was in fact invented by his predecessors. The grammar of Āpiśali must have continued along with that of Pāṇini up to the time of Patañjali at least. Kātyāyana refers to students studying the work of Āpiśali (Pūrva-sūtranirdeso vā Āpiśalamladbita iti, Kāt. IV.1.14.3), and Patañjali even speaks of female Brāhmaṇa students of the Āpiśali school (Āpiśala Brāhmaṇi). The Kāśikā notes a different reading of Pāṇini’s sūtra VII.3.95, which even Patañjali had not noticed (Āpiśalāś- turustuṣamyañamah sārvadhātukāsu cbchbandasiti pathanti, Kāśikā).

A sūtra of Kāśakritsṇa was known to Kātyāyana according to Kaiyāta (Kāśakritsṇasya 'Pratyottara-.padayoh' iti sūtram, II.1.51, vār). His grammatical work was named after him as Kāśakritsna, which consisted of three adhyāyas (Bhāṣya, I.12; Kāśikā V.1.58). Again, Kātyāyana’s Rauḍhyādi for Pāṇini’s Krauḍyādi (IV.1.80) was according to Kaiyāta taken from some pūrva-sūtra. These references to previous grammarians are, however, few and do not give sufficient data for assessing Pāṇini’s indebtedness to them. The ancient illustration Paṅcha-vyākaranāḥ, (Kāśikā on a vārt. to IV.2.60), ‘a student of Five Grammars’, must have had in view the grammatical treatises of Śakaṭāyana, Āpiśali, Bhārddvāja (=Indra system), Pāṇini and Kāśakritna, these names being obtained by omitting Chandra, Amara and Jainendra.
from the traditional list of eight.

GRAMMATICAL TERMS BEFORE PĀNINI (PŪRV-ĀCHĀRYA-SAMJNĀS)—Some of the technical grammatical terms from Pānini’s predecessors were preserved in his time and later, as seen specially in the vārttikas of Kātyāyana. A list of such technical terms, some of which have also been used by Pānini in the Ashtādhyāyī, is given below:

1. Adyatānī—Luñ (vārt. on II.4.3; III.2.102).
3. Ātmaneubhāsa—Ātmanepada (Bhāṣya, VI.3.7-8).
4. Ārdhadhātukā—Ārdhadhātuka (II.4.35; I.484).
5. Ān—tā (III.343,387; VII.3.120).
6. Upagrāha—Ātmenepada (Kaiyāta on vārt. 5 on III.2.127; II.130).
7. Upachāra—the s in place of visarga in ayaskumbha, etc. (Kāt. on IV.1.1., Pat. II.193, explained by Nāgeśa; also Kāśikā, VIII.3.48). The term is known to the Rīk Prātiṣākhyā and also Atharva Prātiṣākhyā, Viśvabandhu edn., III.1.7).
8. Upāsthitā—anārsha iti, i.e. iti of Padapātha. This term is used by Pānini without explaining it (VI.1.129). Patañjali explains its meaning as anārsha iti of I.1.16. This seems to be a technical term peculiar to the Rīk Prātiṣākhyā (X.12, Upāsthitam seti-karaṇam. Cf. also vārt. on VI.1.130).
11. Charkarita—yañ-luṇanta (Bhāṣya on VI.1.6 and VII.4.92, quoting a verse explained by Haradatta; also Nirukta, II.28; and Dhātu-pātha at the end of Adādiganā).
12. Chekriyita—yañ (Pat. II.232; Kaiyāta; a term for intensive).
13. Du—Shaṭ samjnā (vārt. 43 on I.4.1; 304).

15. Dhruvavyārthā—akarmaka. Pāṇini uses it in III.4.76 without explaining its meaning (cf. śloka-vārttika on I.4.50, dhruvayuktī, which the Pradīpa explains as akarmaka).

16. Nāma—Prātīpadika, an old popular samijnā used by Nirukta I.1; and also Pāṇini, IV.3.72 who refers to it in connection with the name of a treatise called Nāmika.


18. Parokṣā—liś or Parokṣa-bhūta (śloka-vārt. on I.2.18; I.199; Kaiyāta).

19. Prakrama—uraḥ-kanṭha-sirah, places of utterance or stbāna (vārt. on I.2.30, explained by Patañjali, I.207).

20. Pratikanṭha—nipātana, an irregular formation (Rīk. Prāt., I.54). Pāṇini has used it in connection with a taddhita suffix, pratikanṭhaṅ gṛihnāti, pratikanṭikāḥ, IV.4.40, where it is juxtaposed with paurvapadika and anttārapadika and may denote a grammarian or his work dealing with the subject of nipātana, words of irregular formations such as prishodarādi, which according to Pāṇini should be learnt in the same regular form in which they were taught (yathopadishta, VI.3.109).


22. Prasava—pumān, masculine (Bhāṣya, I.245).

23. Prasaraṇa—samprasārana (vārt. 14 on I.1.3; I.50).

24. La—luk (Bhāṣya, V.2.37; as explained by Haradatta on II.2.37, lukah esha pūrvāchārya-saṁjnā).

25. Laḥ—lakāras. Pāṇini uses the term in III.4.69 (cf. the śloka-vārttika on I.4.51; I.335). The system of lakāras appears to be Pāṇini's own creation in place of the older terms like Bhavanti (Laṭ), Svastani (=Lūṭ, Kāṭ. on III.3.15), Bhavishyanti—Lūṭ, Kat. III.3.15), Naigami (probably Let, cf. Atharva Prāt., II.3.2), Preshanī (Loṭ. Atharva Prāt., II.1.11;
II.3.21), Hyastāni (Laṅ, Atharva Prāt., III.2.5), and Adyātana (Luṅ, Kāt. II.4.3.2; III.2.102.6; VI.4.114.3; and Atharva Prāt., II.2.6).

26. Vyakti—liṅga (used by Pāṇini in the sūtra-kāṇḍa, I.2.51, but not explained, as perhaps it was not necessary for he has rejected the sūtra).

27. Vināma—yatva (Kāt. on Śivasūtra 3-4; I. 25).

28. Vṛddha—gotra; Patañjali points out that Pāṇini has borrowed this term from an earlier grammar (Bhāṣya, I.248 on I.2.68), and Kāśikā also cites an old sūtra in which it had been used (Aptiṣyam antaritānti vṛiddham, I.2.65). Kātyāyana also uses it in a vārt. on IV.1.90, and his definition of gotra on IV.1.163 appears to be cited from an earlier grammar.

29. Saṁkrama—a term for kit and nit suffixes, prohibiting guṇa and vṛiddhi (Bhāṣya, I.48 and I.1.3 as explained by Nāgeśa). The word is not met with elsewhere (Kielhorn, I.A., XVI.102; cf. Kāśikā, I.1.6, saṁkrama nāma guṇa-vṛiddhi-pratiśedha-visbayaḥ).

30. Sandhyakṣara—e, o, ai, au (Kāt. on Śivasūtras 3-4; I.2.4; where the other term samanākṣara for the simple vowels is also used).

31. Sasthāna—jihvāmūliya (Kāt. II.4.54.8, as explained by Kaiyaṭa).

32. Hṛāda—ānurāna-gbosha, sound vibrations following the uttering of a letter (Kāt. brādavirāmaḥ sambitā, I.4.109. 7; I.355).

SYLLABUS OF GRAMMATICAL STUDIES—The early grammatical literature sheds light on the syllabus and method of its study. Kātyāyana raising the question as to what constitutes grammar, replies that word-forms (laksbya) and rules of formation (laksbaṇa) together make up grammar. The earlier method was naturally that of learning each word by itself, as Patañjali has observed (Pratipadoktanāṁ sabdanāṁ sabda-pārāyaṇam provācha, I.5). Formulation of rules came later. The composition of grammar in the form of sūtras as
lakṣaṇas or rules attained its culmination in Pāṇini, who also refers to students following the earlier method of studying individual words and called Prātiṣṭhikā (IV.4.40; where Prātiṣṭhā = prātipadika). Both these methods seem to have obtained simultaneously up to the time of Patañjali, who speaks of students called lākṣṭhyika (studying words) and lākṣbaṇika (studying rules) (IV.2.60). Pāṇini himself refers to two principal divisions comprising between them the full course on grammar, viz. Nāmika treating of nouns, and Ākhyātika of verbs (IV.3.72). The Kāśikā refers to commentaries on nouns (Sāuṣṭra), Verbs (Ṭaiṇa) and Verbal Nouns (Kārta, IV.3.66). These commentaries were meant as aids to the topical study of nouns (Subanta), Verbs (Ṭīṇanta) and Verbal Nouns (Kṛidanta). In the first two the order of Pāṇinian sūtras must have been readjusted. Perhaps these names carry back the tradition of the arrangement of grammatical words as found in the Prakriyākaumudi and Siddhāntakaumudi to a period anterior to the Kāśikā. Some key-words throwing light on grammatical syllabus are mentioned by Patañjali. He refers to a work called Sāmastika which dealt with compounds, corresponding to Book II, Chaps. 1-2 of the Ashtādhyāyī. In place of the term Samāsta, known to the Atharva Prātiṣākhya (III.4.3), Pāṇini uses Samāsa.

Patañjali mentions Nātānatika as a work dealing with Accents (Bbāsbya, II.295; Kāśikā, IV.3.67). Nata and Anata were pre-Pāṇinian terms, Nata standing for Anudātta and Anata for Udātta. Pāṇini uses the term Sannatara (II.2.40), in place of the older term Nata. The Nātānatika chapter counted as a separate topic in the syllabus. Book VI of Pāṇini, Chapters 1 and 2, are equivalent to Nātānatika of the older grammars. The Kāśikā refers to this topic also as Sauvara (VII.3.4).

The Kāśikā (IV.3.67) cites the names of two more chapters viz. (1) Sāṁbita, dealing with Sāṁbita or Sāṁdhi, euphonic combinations, corresponding to VI.1.72-134 and VIII.4.40-63; and (2) Shātva-ṇatvika, dealing with cerebrali-
zation of dental *na* and *sa*, corresponding to *Aṣṭādhyāyī* VIII. 3.55 to VIII.4.39. This Pāṇinian chapter is a model of compact topical treatment in a grammar. The *Rikṭantra* of the Sāmaveda also includes a similar but loosely strung section on cerebralization.

Another important chapter dealt with the vowel changes in words caused by the presence of suffixes, and described as *Guna* and *Vṛddhi*. These chapters were known as *Guna-guna* (*Ukthādi gaṇa*, IV.2.60; *aguna*, *Vṛddhi*) of which the students were called *gaṇaguna*ka. The *Kāśikā* also acquaints us with some theoretical studies like *Guna-mukhya*, dealing with *Pradhāna* and *Upasarjana* (IV.3.88), and *Sabdarthasambhandhiya* (IV.3.88). Completing the prescribed course of study was called *vṛttta* (*Nerabhayane vṛttam*, VII.2.26), e.g. *vṛttta* *guna* *Devadattena*; 'Devadatta has mastered *Guna*' as part of his grammatical studies.

The *Kāśikā* informs us that the subject of lengthening and shortening of vowels formed the subject of a treatise called *Guru-lāghavān*, first promulgated by *Āpiśali* (*Āpiśalyupajña* *Guru-lāghavam*, VI.2.14; IV.3.115). That treatise is now lost, but its contents seem to have been used in Pāṇini's work (cf. Keith, *H.S.L.*, p. XXV).

**PĀNINI AND LOKA (CURRENT LANGUAGE)**—Pāṇini's regard for current language bearing on grammatical formations is reflected in the *sūtra-kāṇḍa*, I.2.51-58. Generally reluctant to express his opinion on controversial matters which engaged the attention of previous grammarians and etymologists, Pāṇini here shows an exception by presenting the *pūrva-paksha* and the *siddhānta* in defence of his fundamental grammatical position, i.e. his article of faith as a grammarian. He stoutly defends *Samijñā* or *LOKA*, i.e. current social and linguistic usage, as the best guide and standard to decide theoretical definitions and questions. The authority of *Samijñā* or usage of words must always supersede that of *Yoga* or meaning dependent on derivation (*samijñā-pramāṇa*, I.2.53-55). It may be asked whether
the treatise on grammar should also deal with such matters as determining the exact significance of time-denoting words, social grades, etc.; as for example, 'How much is a droma?'; 'What is a yojana distance?'; 'What are the relative positions of a principal and agent?'; etc. There were enthusiasts who thought that in the absence of exactly knowing which twenty-four hours constitute adya, 'today', grammatical rules cannot be correctly applied. Pāṇini utters a note of warning against such extreme theorists and invokes the invariable authority of usage, both linguistic and social (Tad-asishyaṁ sanīṇā-pramāṇatvāt, I.2.53). For example, it may be a fact that the name Pañchāla was given to a country because of the first settlement of the Pañchāla Kshatriya tribe in that region. This 'land-taking' stage was now a thing of the past. Pañchāla was now understood as the name of a janapada without reference to the Kshatriyas who inhabited it. A grammarian should face facts. It is unnecessary to seek the derivation of Pañchāla janapada from the Pañchāla tribe. Similar is the case with hundreds of other place-names which were originally derived from historical conditions which no longer existed and so those names lost their original derivative sense. This point of view gives to the grammarian a realistic outlook by which he is able to build up from a living language its system of grammar.

Thus, instead of tying himself down to the treatment of age-old topics, such as accentuation, cerebralization, vocalization, letter-coalescence, formation of compounds and declension of nouns and verbs, Pāṇini extended the scope of his investigation to include all kinds of words taken from the different departments of language and current usage. The result of this approach is visible in Pāṇini's exhaustive treatment of the Kridanta and Taddbita suffixes. He investigated in great detail the manifold vṛittis or meanings expressed by words through suffixes. Yāska informs us that the subtle distinctions of meanings of words are not always free from doubt (viṣaya-
vatyo hi vr̥ttayo bhavanti, Nir. II.1). In his linguistic laboratory, as it were, Pāṇini collected and classified all possible meanings in which words were used, and grouped them under suitable headings as *bita, sampādi, arha, alamartha* (VI.2.155), *kṛita, rakta, vikāra* (VI.3.39), *aṅka, saṅgha, lakṣhaṇa, dhārma*, and several hundreds of others. The activities of all grades of persons in society, such as a musician, hunter, shoe-maker, cook, salesman, trader, ferryman, author, mendicant, devotee, farmer, cowherd, prince, councillor, etc., were analysed and taken note of grammatically. He thus viewed *Loka* in all its comprehensiveness as the primary source of material for a living grammar. This attitude towards the reality of life resulted in the secularization of knowledge and is patent in the Ashtādhyāyī which for the most part served the *Bhāṣā* or the spoken language of Pāṇini's time and was not tied to the chariot-wheels of Vedic schools. Kātyāyana and Patañjali also frequently appeal to current usage as the final authority (*Loka-vijnānāt siddham, I.1.21; I.77; I.1.65; I.171*).

SANSKRIT AS A SPOKEN LANGUAGE—The question whether Sanskrit was the spoken language in Pāṇini's time or only a literary language is often raised. Grierson with his eyes fixed more on the language of the Aśokan inscriptions argued that if Pāṇini was legislating for the spoken language of his days, how could it have so changed by the time of Aśoka in such a short time (*Ind. Ant., Vol.XXII,222*). On the other hand Goldstücker, Keith and Leibich (*Pāṇini, p. 48*) hold that Pāṇini's Sanskrit was the spoken language used by the cultured classes of his time. Grierson does not appear to have wholly taken into account the internal evidence of the Ashtādhyāyī. As Keith puts it: 'Pāṇini has rules which are meaningless for any thing but a vernacular, apart from the fact that the term *Bhāṣā* which he applies to the speech he teaches has the natural sense of a spoken language.' (*H.S.L., p. 9*). Thus Pāṇini includes in his purview linguistic forms relating to questions and answers (*praśna, III.2.117; prīṣṭa-prativāchana, III.2.*
120), praise and censure (prasaïnas-kuṭsā), calling from a distance (dūrād-dbūte), greeting (VIII.2.83-86), expressions in oxtone for censuring an opponent worsted in argumentation (nigrihyānuyoga), terms of threat (bhartsana, VIII.2.95), mental deliberation (vichāryamaṇa, VIII.2.97), censuring a lapse in polite conduct (ksbiyā), benediction (āśīh), bidding (praiṣha, VIII.2.104), narration (ākhyāna, VIII.2.105), friendly persuasion (āmantraṇa, VIII.1.33), haste (parīpsā, VIII.1.42), permission (anujñāiṣaṇa, VIII.1.43 as nanu gachchhāmi bhoḥ 'May I go, Sir'), communicating something in a harsh manner (ayathābhīpretākhyāna, III.4.59), etc. We have also the parenthetical use of manye, 'I think', (I.4.106; VIII.1.46) when denoting derision or sneering in colloquial language, and other similar forms of living speech as kādāta-modata, 'eat and be merry'; asinīta-pibata, 'eat and drink'; pabhata-bhrijjata, 'cook and fry', etc. An expression like bbhindhi-lavan, 'Pour the salt', must have been derived from the cries of busy cooks in a kitchen on festive occasions. This extraordinary penetration into popular life and language accounts for Pāṇini's extensive linguistic material which made him notice even such minute details as the names of wells on the left and right banks of the river Beas (IV.2.74).

He notes variations of idiom in Sanskrit spoken in the North and the East, and also quotes forms prevailing in the local dialects of the janapadas, e.g. names of towns in the Uśinara country and names of Brāhmaṇa and Rājanya members of the saṅgha organization in the Vāhika region (V.3.114).

The term Bhāṣā as used by Pāṇini is the language distinguished from the language of the sacred texts, viz. Chhandas and Brāhmaṇa literature. Patañjali states the true position when he says that Sanskrit was the standard speech of the Śisṭas, i.e. cultured persons, who even without instruction were capable of using the correct speech. He does not deny the co-existence of the speech of the common people called Apabhreamaṇa of which there were variations (ekaikasya
India As Known to Pāṇini

śabdasya bahavo'pabhramśah, I.5). Patañjali could speak the language which was the medium of his literary expression, but a common herdsman would use one of the Prākrit dialects. Kātyāyana definitely mentions Loka (ordinary language of the Śishtas) as the standard of grammatical norm, and at the same time refers in a vārt. to the existence of Prakrit roots like āṇpāyati and others (I.3.1.12; I.269). Sanskrit and Prakrit should not be thought of as exclusive of each other in point of time. 'The matter is really to be viewed not in the light of a contrast between actual spoken language and a Hochsprache. It is rather a matter of class speeches; Yāska spoke Sanskrit much as he wrote it, and the officials of Aśoka equally conversed in a speech essentially similar to that in which they wrote, while contemporaneously lower classes of the population spoke in dialects which were far further advanced in phonetic change'. (Keith, H.S.L., p. XXVI).

PĀṆINĪ'S GENIUS FOR SYNTHESIS—Pāṇini shows a scientific and balanced judgment which could reconcile the opposite views and controversies regarding important topics of grammar and their method of treatment.

Thus the most acute grammatical controversy in his days was that concerning the derivation of nouns from verbs. The Nairuktas and the Śākaṭāyana school held the view that nouns were derived from verbs. On the other hand, Gārgya, who was probably a Nairukta, and the grammarians maintained that it was not necessary to trace each and every noun to a verb (Nāmaṁ-ākhyatajāniti Śaṅkayana nairukta-anuvācha, Yāska, I.12; Bhāṣya, II.138, Nāma cha dhātujaṁāba Nirukto Vyākaraṇe Śaṅkaṭasya cha tokam). Yāska himself subscribed to the theory of verbal derivation of nouns, but he disapproved of the ridiculous attempts made at times by the followers of Śaṅkāyana to invent fanciful derivations of nouns from verbs (Nirukto, I.13): 'The etymologist who indulges in improper and unauthorized derivation of words deserves censure; the scientific principle thereof cannot be faulty'.
Pāṇini's view on the subject represents a synthesis. Kātyāyana and Patañjali state that Pāṇini regarded the Unādi formations as not derived from any root and suffix (avyutpānna prātipadika; Prātipadika-vijñānorācha Pāṇineḥ siddham, VII.1.2.5; III.241, Unādayo vyutpannya prātipadikāni). Words of regular derivation from verbs and suffix form the subject of Pāṇini's Kridanta section. Others which do not admit of such regular analysis and derivation were considered by him to belong to the Unādi class. Pāṇini's attitude towards the Unādi suffixes is one of silent approval. In the sūtra Unādayo babulam (III.3.1) he takes a passing notice of the Unādi suffixes, but he refrains from discussing in his usual manner the characteristic features and details of the Unādi system. It appears that the Unādis were the product of the Śākataśaya school. To ascribe them to Pāṇini would militate against the system for which he stands.

SOURCE OF MEANING—Kātyāyana acquaints us with two views held about the factors which give to the words their proper meaning. He says that the application of a word to a particular object rests on the root-meaning underlying it, e.g. gau is so called because it moves, but all objects which move do not get the name gau. Yāska uses this argument as the pūrva-paksba view for rejecting the derivative theory (Nirukta, I.12). The other reason according to Kātyāyana is the application of a word to an object as seen in popular usage (Darsbhanaṁ hetubh, I.2.68; I.2.250). We have seen that Pāṇini recognises both these views when he says that Samjñā and Yoga both contribute to the meanings of words in their own way (II.1.53, 55).

JĀTI AND VYAKTI—This controversy centred round the question whether a word denotes a class (Jāti) or an individual (Vyakti). As indicated by Kātyāyana, Vājapyāyana held the view that a word denotes the class, whereas Vyādi took the other view that it stood for the individual (Bhāṣya, I.242; I.2.244). Patañjali credits Pāṇini with the reconciling of the two opposite views; e.g. sūtra I.2.58 is based on the ākṛti (class) view, and sūtra I.2.64 on the dravya (individual) view of mean-
ing (Bhāshya, I.6).

ONOMATOPOEIA—Yāska gives two views on the subject: "Onomatopoeia does not exist," says Aupamanyava. His own view was that the names of birds are very often in imitation of their sounds. Pāṇini has accepted this principle of anukarana, as applied to avyakta speech, i.e. articulation which is not in the form of distinct syllables (avyaktānukaranat, V.4.57).

PREFIXES—Yāska says that Śākatāyana considered the prefixes as mere signs or symbols of meaning (dyotaka), but Gārgya held that they carry a meaning of their own (I.3). Pāṇini sees no conflict between these views. Prefixes like adbi and pari are deemed by him as anarthaka (I.4.93), evidently implying, as Patañjali points out, that there were other prefixes which were not devoid of meaning.

DHĀTU AS KRIYĀ- AND BHĀVA-DENOTING—The question whether the verbs denote 'becoming' (Kriyā) or 'being' (Bhāva) was an important one for the grammarians on the ground of its bearing on the eternity of words. Patañjali says that Pāṇini accepted both views in sūtra Bhūvādayo dhātavaḥ (I.3.1; I. 258). Taken separately sūtra II.3.14 supports that verbs refer to bhāva and sūtra II.3.15 to kriyā.

ETERNITY OF WORDS—This doctrine is the basis of the philosophy of Grammar. Kātyāyana in his vārt. on IV.4.1 refers to two opposite schools, viz. naityasabdika and kāryasaabdika (Bhāshya, II.329). The Rīk Prātiṣākhyā refers to the two views regarding the eternity and not-eternity of letters (XIII.14). Yāska quotes the opinion of Audumbarāyana holding that words vanish with their utterance (Indriyanityānī vachanām Audumbarāyanaḥ, Nirukta, I.2). Patañjali reveals in his discussion that Pāṇini as well as Kātyāyana were advocates of the eternity of words, but that does not preclude the grammatical operations of lopa and āgama affecting words. Pāṇini defines lopa or elision as adaraśana (I.1.60), which Patañjali explains as antaradbāna, i.e. disappearance. On the
contrary, the Tait. Prāt. held that lopa is vināśa or annihilation, (I.57), a view based on the non-eternity of words. Similarly, Pāṇini’s ādeśa was previously known as vikāra (Kāt. I.31).

From the above examples it may be inferred that between two extreme views, Pāṇini always preferred to follow the golden mean, or as we might put it, the MAJJHIMAPAṬIPADĀ, the Middle Path, which was the keynote of the period in which he was born.
CHAPTER VI

RELIGION

SECTION 1. DEITIES

The religious conditions in Pāṇini mainly relate to yajña or sacrifice, and worship of various Vedic deities with oblations and performance of appropriate rituals by different classes of priests. Names of officiating priests and dakshinā or payments for their service are also mentioned (V.1.69; V.1.95). At the same time there are definite indications of popular phases of religious beliefs and practices as elaborated in devotion to gods and asterisms, worship of images and the growth of religious ascetic orders.

DEITIES. Pāṇini mentions the following Vedic deities, both singly and in pairs: (1) Agni (IV.1.37), (2) Indra, (3) Varuṇa, (4) Bhava, (5) Śarva, (6) Rudra, (7) Mṛīda (IV.1.49), (8) Vṛṣṭakapi, (IV.1.37), (9) Pūshā, (10) Aryamā (VI.4.12), (11) Tvashṭā (VI.4.11), (12) Sūrya (III.1.114), and (13) Nāsatya (VI.3.75). The last name is derived by Pāṇini as na asatyāḥ, 'who are the opposite of non-truth'. The Mahābhārata mentions Nāsatya and Dasra as the twin Aśvins born of the nose (nāsā) of Sārījñā, wife of Sūrya (Anuśāsana-parva, 150.17). The derivation from nāsā is in fact mentioned by Yāṣka as a probable explanation of the word (nāsikāprabhavau babhuvatāti vā, VI.13). But Pāṇini accepted the etymology of this word given by Aurnavābha whose opinion is quoted by Yāṣka (satya eva nāsatyāv-ity-Aurnavābhah, Nirukta, VI.13).

Indra is also referred to as Marutvān (IV.2.32). Pāṇini refers to Prajāpati under the symbolical name of Ka. Patañjali says that Ka is not a pronoun, but the proper name of a deity (saṃijñā chaishā tatrabbhavatāh, II.275), so that the dative
case of Ka would be Kāya, not kasmai. Reference is also made to the deity called Vāstoshpati who presided over a house or homestead and was as old as the Rigveda. Pāṇini's mention of Ğrihamedha (IV.2.32) under the context 'This is its deity' (IV.2.24) shows that Ğrihamedha was also looked upon as a deity. In the same context mention is also made of Soma, Vāyu, Mahendra and Apāmnapti (IV.2.27), which last was a name of Agni as sprung from water to whom special oblations were offered.

Of the pairs of deities (devatā-dvandva, VI.2.141) a long list is found in the Ashtādhyāyī, e.g. Agni and Varuṇa (VI.3.27), Agni and Soma (IV.2.32; VI.3.27), Dyau and Prithivī (IV.2.32; VI.3.29-30) Ushā and Suryā (VI.3.31), the twin agricultural deities Śunāśira, and other combinations with Rudra and Pūshā (VI.2.142). Even Manthin, a Soma-vessel (Somagrāha) is mentioned in the context of 'twin deities' (VI.2.142).

Of the female deities the older goddesses mentioned are Indrāṇi, Varuṇāṇi, (IV.1.49), Agnāyī, Vṛishākapāyī (IV.1.37), Prithivī always referred to as a pair with Dyaus, and Ushas for whom oblations were prepared as for an independent deity (IV.2.31).

POST-VEDIC DEITIES. The most important of these is goddess Pārvatī four of whose names are mentioned, viz. (1) Bhavānī, (2) Śarvaṇi, (3) Rudrāṇi and (4) Mṛidāṇi (IV.1.49). This worship was a feature of the Sūtra period. The Vedas refer to their male counterparts such as Bhava, Šarva, Rudra and Mṛida. The Šatapatha Brāhmaṇa mentions Rudra, Šarva, and Bhava as forms of Agni (VI.1.3.18), and makes the important statement that the name Šarva was popular in the Prāchya country, and Bhava in the Vāhika region (Šarva iti yathā Prāchya āchakshate, Bhava iti yathā Vāhikāh, SB., I.7.3.8). It may, therefore, be inferred that the names Šarvaṇi and Bhavānī were local designations of the one and the same Mother Goddess. Similarly Rudrāṇi

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and Mṛḍāṇi may have been other local epithets of the same deity.

Aditya referred to in sūtra IV.1.85 is to be taken as the name of the classical sun-god rather than of the Vedic Ādityas. In fact a new feature of the Pāṇinian pantheon is the emergence of time-denoting words raised to the status of deities (IV. 2.34). For instance, oblation was prepared to worship the deity named Māsa, 'Month', and called Māṣika; and similarly for the deity Saṁvatsara, 'Year', and called Saṁvatsarika. There was also worship of the 'Seasons' as deities, e.g. Vasanta or Spring, the oblation being called Vāsantaṁ bauhiḥ. Pāṇini himself refers to Ritu, 'Season' as a deity (IV.2.31), in whose honour some worship was prescribed. This process of deification extended even to stars. This is indicated by the mention of Prasūṭhāpāda, a name of Bhāḍrapāda, as a devatā or deity (IV.2.35). But the whole system of adopting personal names after the names of asterisms, for which detailed rules are given (IV.3.34, 36, 37), was due to the fact that the stars became objects of adoration and worship. Names like Rohiniśeṇa, Bharaniśeṇa and Śatabhishaksena implied in the sūtra Nakṣatrāntā (VIII.3.100) point to a belief in the beneficent influence of deities presiding over these asterisms.

BHAKTI. The new phase of religious belief found its expression in the cult of Bhakti or theistic devotion to particular gods and goddesses. Such names as Varunadatta and Aryamadatta, which were shortened as per sūtra V.3.84, point to the belief that gods like Varuṇa and Aryaṁ, if propitiated by the parents, would grant the boon of a son to be named after them. Pāṇini admits that the name-ending datta denoted a benediction from a god or a higher power of which the personal name became a symbolic expression (Kāraṅd-datta-śruta-yorevāsibi, VI.2.148). This religious approach is further exemplified in Pāṇini’s reference to bhakti to Vāsudeva and Arjuna (IV.3.98). Patañjali clearly remarks that Vāsudeva was here not a mere Kshatriya name but the personal name of
Krishṇa whose bhakta or worshipper was called Vāsudevaka. We should, however, admit that bhakti in this context (IV.3.95-100) has also a secular significance in some sūtras, e.g. āpūṣika, one who loves eating cakes (example to IV.3.96). The reference to the bhakti of Mahāraja or Kubera proves on the other hand that Pāṇini surely had religious bhakti also in mind (Mahāraja-ṭhaṇi, IV.3.97).

MAHĀRAJA. Besides referring to the bhakti shown to Mahāraja as stated above, Pāṇini also mentions that Mahāraja was a devatā (IV.2.35), to whom oblations were offered. According to Patañjali bali offered to Mahāraja was called mahāraja-bali (I.388, cf. also Kāśikā, II.1.36). This deity may be identified with those mentioned as a group of Four Great Kings, Chattāro Mahārajāno, who dwell in the Chātummahārajika or the lowest deva world as guardians of the four quarters. In Jātaka VI.265, Vessavāna is called a Mahāraja and in the Mahāsutasoma Jātaka Śakra and the other three Lokapālas are called Mahārajāno (VI.259). They also stand at the head of the list of gods and other superhuman beings in the Ātāntīya Sutta (Dict. Pāli Proper Names, I.242; 861). From bhakti to Mahāraja deity, it is clear that Vāsudeva as an object of bhakti is also to be taken as a deity as stated by Patañjali.

VĀSUDEVĀ-CULT. Pāṇini’s reference to Vāsudeva as the object of bhakti throws light on the antiquity of the bhakti cult. Kāiyata describes Vāsudeva as paramātma-devatā-viśesha. Keith accepts the accuracy of this identification and considers the remark of Patañjali, viz. saṁjñā chaishā tatra-bhavataḥ, to be ‘the most satisfactory proof of the identity of Vāsudeva with Vishṇu, for except through such identification no one could dream of putting Vāsudeva on the same plane as Ka’ (J.R.A.S., 1908, p. 848). Patañjali’s reference to the staging of Bali-bandhana, Vishṇu’s famous exploit, and the slaying of Kamāsa, Krishṇa’s great deed, were regarded by Weber himself as hinting at the early belief in the existence of Krishṇa-Vāsudeva and his identification with Vishṇu (ib. p.
847). If in the second century B.C. these exploits formed part of the Vishnu legend they must have been considerably older (cf. the example, Jaghāna Kaṁsaṁ kila Vāsudevaḥ, Bhāṣya quoting it as a past event, II.119). Patañjali also refers to the Vyūha of Krishṇa with his three acolytes: Janārdaya-tvātmachaturthā eva, (Bhāṣya, III.43, on sūtra VI. 3.5). He also mentions Krishṇa and Saṁkarṣaṇa as joint leaders of an army (Saṁkarṣaṇa-dvitiyasya vālami Krishṇasya vardhatām, I.426), and refers to the existence of temples dedicated to Keśava and Rāma besides those of Kubera (Prāṣade Dhanapati-Rāma-Keśavānām, I.436). In sūtra VIII.1.15 Pāṇini states that the word dvandva signifies a pair of persons jointly famous (abhivyakti), on which the Kāśikā cites as an example Saṁkarṣaṇa-Vāsudevan (dvāvyabhivyaktau sāhacharyena). Devotional worship to Saṁkarṣaṇa and Vāsudeva in connection with a religious shrine is proved by epigraphic evidence of second century B.C. (Nagari Ins., E.L., XXII, p. 198 ff.). The Arthaśāstra not only refers to the legend of Krishṇa and Kaṁsa (XIV.3) but also prescribed the building of temples sacred to god Apratihata, i.e. Vishnu (II. 4). These examples, although of the Maurya-Śuṅga epoch, show that Krishṇa’s divinity was already established as a result of centuries of religious development. Patañjali’s reference to the Śiva-Bhāgavata religion (II. 387) is also proof of the early antiquity of the Bhāgavata cult, for the Śaivas following the Bhakti cult must have been so named after the Bhāgavatas. Although the evidence from the Gaṇa-pātha is not unassailable, it must be mentioned that the Gaṇaśva group (II.4.13) reads Bhāgavati-Bhāgavatāmi, as a compound word in singular number mentioning a female and a male follower of the Bhāgavata religion. Grierson also maintained the antiquity of the Bhāgavata religion in Pāṇini’s time on the basis of his knowledge of Vāsudeva as a deity (J.R.A.S., 1909, p. 1122). Sir R. G. Bhandarkar agrees with this view. (J.R.A.S., 1910, p. 170, Vāsudeva of Pāṇini, IV.3.98).
IMAGES.—Figurines, including divine images are included under the general term pratikṣa (V.3.96). Pāṇini, however, knew of a more specific word, archā (V.2.101), which accords with Patañjali’s usage (Mauryaih biranyārthibhiḥ archāḥ prakalpitāh, V.3.99, Bhāṣya, II.429). Its derivative archāvān (V.2.101) should have signified the owner of an image.

An important sūtra, ṇivikārthe chaḍanya (V.3.99) intended to regulate the formation of names of divine images, proves beyond doubt Pāṇini’s knowledge of images of deities in his time. Regarding the naming of images there are the following possibilities covered by Pāṇini’s rule and Patañjali’s rather involved argument on it:

(1) There may be images installed in temples or open shrines, which are not of individual ownership, and hence not for any ones’ livelihood (jīvikā), or for sale (pañya), but are for worship (pūjārthā). These images remain outside the purview of Pāṇini’s rule. How they were named, whether Śiva or Śivaka we are left to guess, but there is all the probability that they were named without the kan suffix, as Śiva, Skanda, etc.

(2) In the second place there may be images in the possession of devalakas or owners and custodians of shrines. They may be either fixed in one place or carried from place to place. The former would cover for all practical purposes the images of class 1 above, which would then be objects of Pāṇini’s rule and the deity would be named Śiva (without kan suffix). Both chala and achala images with the devalakas would serve for worship (pūjārthā), be a source of livelihood (jīvikārthā) to their care-takers, but be not for sale (pañya). All these are the object of Pāṇini’s rule, and they would be named as Śiva, Skanda (without ka).

1 Archā means ‘image of a god’; cf. dirgha-nāśikī archā, tuṅga-nāśiki archā (IV.1.54; II.222); also Lüder’s discussion of its use in the Mora Well Inscription, Ep. Ind., XXIV. p. 198.
(3) The third class of images would be those displayed for sale (panya); these were not for worship (pujärthā), although they were a means of livelihood to their owners (jīvī-kārtha). These would be counter-examples of Pāṇini’s sūtra, and named as Śivaka, Skandaka, etc.

(4) Here Patañjali joins issue with Pāṇini. On the basis of some reliable historical information which he had he contends as to how the sūtra will fare in the case of images which the Mauryan kings, ‘greedy of gold’ (biranyārthbibhiḥ), had ordered to be set up (prakalpitabh) and most probably also to be sold, and which thus served simultaneously the triple purpose of jīvikā, panya and pujā.¹ Kauṭilya supplies the much needed commentary on this extraordinary Mauryan measure to replenish their exchequer.² The Devatādhyaksha is directed to raise money (ājivet, biranyopahārena, kośam kuryāt, Arth. V.2) by manipulating the worship of divine images and exploiting the credulousness of the people, such as organising fairs and festivals in the holy shrines of deities (daivata-chaitya), improvising shows of miraculous nāga images with changing number of hoods, and spreading the news of other miracles, etc. (Arth. V.2). According to Patañjali these particular images would not be covered by Pāṇini’s rule (bhavet tāsu na syāt), and although they might have found a place in the shrines for worship, they would not get the name Śiva, Skanda, etc.

(5) As a way out of the conundrum, Patañjali dismisses the case of the Mauryan images which were both for sale and for worship, and he points to contemporary images under actual worship (yās-tvetāḥ samprati pujārthabh tāsu bhavish-

¹ अपण्य इत्युक्तम् तत्रवृद्धे न सिद्धेति। धिव : स्कन्द : विशाल है। फिं काेरण।
मौर्याभिव्रक्षवाचिरा : प्रकल्पिता।।। भवेतस्मृत न स्थान्।।। यासवेता : संग्रह गुजावरी-
स्तासु मृक्षेति। (Bhāṣya, V.3.99; II.429).

² Hiranyārthi, according to Patañjali on vār. arthācchāsānimihite on sūtra V.2.135, denoted one who was bereft of wealth or gold, and consequently longed for it.
which were suitable examples of Pāṇini’s rule and be
designated as Śiva, Skanda, etc. (without  
without suffix).¹

Images of Śiva and Vaiśravana were also known to Kauṭilya
(II.4) as being installed in temples. Some of these deities
were worshipped in pairs, e.g. Śiva-Vaiśravana, Skanda-Viśā-
khau, Brahma-Prajāpati (Gaṇa-pañha to II.4.14, and also a
vārttika on VI.3.26). As pointed out by Patañjali these joint
names were post-Vedic (na chaite Vede sabaniṃvāpa-nirdishṭāḥ,
VI.3.26; III.149). Śiva and Vaiśravana were the two main
deities associated in the development of the popular cult of the
Yakshas, Nāgas and other godlings. We have seen that Pāṇini
refers to the worship of Mahārāja, which was but another
name of Vessavana-Kubera, who headed the group of the Four
Great Kings or Regents of the Four Quarters and was the king of
the Yakhas in the North. Pāṇini also mentions the descend-
dants of Dhṛtarājan (VI.4.135) who may be identified as the
Lokapāla Dhatarattha ruling in the East at the head of the
Gandhabbas.

DEMONS—The counterpart of the gods were the demons
who are dreaded as much as the former were loved. In men-
tioning them Pāṇini is obviously drawing on older literature
rather than recording contemporary beliefs. Diti (IV.1.85)

¹ Images

<table>
<thead>
<tr>
<th>Jivika</th>
<th>Panya or not</th>
<th>For pājā or not</th>
<th>name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Images installed in shrines</td>
<td>no जीविका</td>
<td>अपूर्ण</td>
<td>पूर्ण</td>
</tr>
<tr>
<td>2. Devalaka images</td>
<td>जीविकार्थ</td>
<td>गच्छन</td>
<td>पूर्ण</td>
</tr>
<tr>
<td>3. Images for sale</td>
<td>जीविकार्थ</td>
<td>गच्छन</td>
<td>पूर्ण</td>
</tr>
<tr>
<td>4. Images under the Mauryas</td>
<td>हिरण्यार्थ</td>
<td>पूर्ण</td>
<td>पूर्ण</td>
</tr>
<tr>
<td>5. Images in Patañjali’s time</td>
<td>जीविकार्थ</td>
<td>अपूर्ण</td>
<td>पूर्ण</td>
</tr>
</tbody>
</table>
mother of the Daityas, Kadrū (IV.1.72), Asuras (IV.4.123), Rākshasas and the Yātus (IV.4.121) are referred to, but in connection with older linguistic forms. The term āsurī māyā (IV.4.123) similarly appears to be an old word signifying thaumaturgy or the asura-vidyā (cf. Āśv. Śr., X.7, and ŚB., XIII.4.3.11). The female demon Kusitāyī, wife of Kusita (IV.1.37) occurs in the Maitrāyaṇī Samhitā (III.2.6). The planet Rāhu is referred to as an enemy of the moon (Vidbhūtu- tuda, III.2.35).

YAKSHAS—In sūtra V.3.84 Pāṇini refers to Śevala, Supari, Viśāla, Varuṇa and Aryamā. These were names of tutelary deities. It has been shown above (ante, p. 188) that Viśāla was the name of a Yaksṭa according to the Sabhāparva, 10.16. Supari and Śevala also appear to be minor godlings, probably Yokshas. According to the Ātmanātiya Sutta (Dīghanikāya) Varuṇa was a Yaksṭa also. Aryamā, too, was most probably a minor deity of popular religion associated with child-birth.
THE YĀJNIKAS—Yāska quotes the opinions of the Yājñikas along with those of the Nairuktas. Pāṇini also refers to the āmnāya or tradition of the Yājñikas whose school was called Yājñikya (IV.3.129). The Yājñika literature was of remote antiquity. Patañjali refers to difficult Yājñika texts, e.g. sthūla-prisbatīm anadvābīm, which could not be rightly explained without the aid of grammar (I.1). He also mentions their treatises (Yājñika-sāstra, I.9). It appears from the Ashṭādhyāyī that the Yajñā doctrine both in its theory and practice held full sway in his time. He records minute details regarding the peculiarities of pronunciation of such formulas as the Subrahmaṇyā (I.2.37), Nyūṅkha (I.2.34) and Yājyā verses (VIII.2.90). His references relate not merely to academic discussions, but to actual practices of the Yajñā ritual (yajñā-karmaṇī, I.2.34; VIII.2.88).

YĀJNIKA LITERATURE—Besides the Brāhmaṇas and the Anuḥbrahmaṇas (IV.2.62), a vast body of specialised yājñika literature in the form of explanatory texts (vyākhyāṇa) of the kratus or Soma sacrifices and other yajñas had come into existence (IV.3.68); for example, the treatise giving an exposition of Agnishṭoma was called Āgnisṭomika; similarly there were texts called Vājapeyika and Rājasīyika. Particularly interesting is Pāṇini’s reference to two-fold texts, one called Purodāṣika, ’a book on purodāśa’, containing detailed instructions about the manner of preparing the sacrificial rice-cake, and another called Paurodāṣika (IV.3.70) which was a commentary of the mantras recited at preparing the purodāśa cake.¹ These mantras

¹The Purodāṣa verses in the Yajurveda, Adhy. I, deal with the following stages, vibin nirvāpati (verse 9), prakṣhati (12), avabanti (14), parāpunati (16), tāṇḍulan pinashti (20), pranitābhiḥ samyauti (21), and kapāleshu śrāpayati (22).
occur in the _Yajurveda_, Adh. I, and their commentary is found in the _Sātapatha_, Book I, which is thus a _Pāuroḍāsika_ text. These special handbooks arose to meet the practical needs of priests at the _yajña_.

**YAJAMĀNA (SACRIFICER)**—The sacrificer was called _yajamāna_ (III.2.128) for the period of the sacrifice, after which he was on that basis called _yajvä_ (III.2.103). There were also other terms derived from the performance of special sacrifices, as _agnishtoma-yājī_ (III.2.85). A person devoted (_tach-chbhila_) to the constant performance of _yajnas_ was called _yāyajūka_ (III.2.166; _iṣyā-sīlo_ _yāyajūkaḥ_, _Amara_). For the period of the sacrifice, the _yajamāna_ observed the vow of restraining himself from wordy speech, hence called _vācbam-yama_ (_Vāchi yamo vrata_, III.2.40), and of sleeping on a raised platform on the _vedi_, hence called _stbandila_ (IV.2.15) or _sthandila-sāyī_ (III.2.80). The son or the student of the _yajamāna_ when he came to be of age as competent to perform the sacrificial act was called _alamkarmīna_, sitting by his side and assisting him (_yadyasya putro vāntevasī vālam-karmīnaḥ syāt-sa daksibiṇata āśino jhubyaḍ iti_, _Baud Šr., XXII.20_). *Karma in this sūtra* meant _yajña_ (cf. _Yajur_., I.1; _Sātapatha_, I.1.21, _yajño vai karma_).

**ĀSPADA**—Social status (_pratisṭhā_) amongst the Brāhmaṇās was termed _āspada_ (Āspadāṁ _pratisṭhāyām_, VI.1.146), a term still current. The _āspadas_ were derived from the various sacrificial performances, such as _Vājapeyī_, _Agnihotri_, etc. An _Ahitāgni_ (II.2.37) was one who had consecrated the Three Śrauta Fires. One who had ceremoniously lived in the place set apart for the _Āvasatha_ Fire, was called _Āvasathīka_ (IV.4.74), a word still seen in modern _Avasthī_. Inside the _yajña-bhūmi_, the special place built for the _yajamāna_ is called _āvasatha_ (also _agni-śarana_, because of the _āvasathyāya agni_ consecrated there), and it was obligatory for him to stay in the _āvasatha_ room for the duration of the sacrifice.
NAMES OF YAJÑAS—(Yajńākhyā, V.1.95). Yajña is derived from yaj, 'to worship' (III.3.90). Ijyā is another term used by Pāṇini (III.3.98). Amongst the four Vedas the Yajurveda deals with sacrifices which are of three kinds, Ishtī, Paśubandha and Soma.¹ Pāṇini makes a general reference to all the Kratus or Soma sacrifices mentioned in the Adhvaryuveda which was but another name of Yajurveda (Adhvaryukratur-anatupānsakam, II.4.4). A distinction is made between Kratus and Yajñas, as both are mentioned separately in sûtra IV.3.68. Yajña was a general term which included the Ishtīs like Darśa and Paurṇamāsā, Yajñas as Pākayajñā, Navayajñā, and such variations as Paṇchāudana, Saptāudana, etc., as well as such well known Kratus as Agnishtoma, Rājasūya, and Vājapeya. But Kratus was used specially for the Soma sacrifices (II.4.4, Kāśikā, kratusābdah soma-yajñeshubh rūḍhah). The Soma juice forms the oblation in the Kratus. The Kratus are further subdivided into those called Abīna² which are Soma yāgas lasting from one to eleven days, and Sattra which continued from twelve days to a hundred or a thousand years, the Dvādaśāha being regarded as both an abīna and a sattra. There are Kratus governed by fixed time durations as ekāha, dasāha, etc. (subject to kālādhikāra, V.1.95). Agnishtoma, Vājapeya, Rājasūya were kratus, but not sattras.³ Names of the sessions of Soma sacrifices continuing for prescribed periods, were compounded with the names of Yajamānas, e.g. Garga-trivṛatra, i.e. a Soma session of the Garga family lasting for three days; similarly Charaka-

¹ In the Ishtī as Darśa and Paurṇamāsā, the oblation is thrown with Svābā, in the other two with Vaushat (Upabhoga hūma: śvāhakapradāna: jñātvarī; nityadhōma: vajñakarapradāna: yajñapurohīrašākṣavatā vajñatvarī).¹
² Sūtra V.4.145, and vārt. on IV.2.42 abhāh khah kratau, abhāh sāmubah kratah abinah.
³ Agnishtoma and Vājapeya, each lasts for one day only with a preliminary course (pūrvāṅga) of four days, and the Rājasūya for about four days.
trirātra, Kusurabindu-saptarātra, etc. (DVigau kratu, VI.2.97).

Of special sacrifices, Pañini mentions Agnishaṭoma (VIII. 3.82), Jyotishṭoma and Āyuṣṭoma (VIII.3.83), the latter performed to obtain longevity, and making with the former a part of the Abhiplava ceremony. The Agnishaṭoma with its three pressings (savanas) and twelve stotras forms the norm (prakṛiti) and the Vājapecya and the Jyotishṭoma are its modifications (vikṛiti). Rājasūya (III.1.114), a vikṛiti of the Agnishaṭoma, and Turāyaṇa (V.1.72) are also mentioned. Turāyaṇa was a modification of the Paurnamāsa, and the Yaśmaṇa performing it was called Taurāyanika (V.1.722). The Śāṅkabāyana Br. speaks of Turāyaṇa as a yajña performed for the attainment of heaven (sa esba svargakāmasya yajñāḥ, IV.11, cf. Āraṇyakaparva, 13.21). According to the Kāt. Sr. (XXIV. 7.1-8) this sattra commenced on the fifth day of Vaiśākha Śukla or Chaitra Śukla and lasted for one year (saṁvatsaraṁ yajate). It was regarded as a vikṛiti of Dvādasāha sattra. Kuṇḍapāyya and Saṅchāyya were the names of special Soma kratu (III.1.130), the former being a vikṛiti of Dvādasāha and a sattra lasting for one year, which was originally performed by the Kuṇḍapāyin Rishis (cf. Rig., VIII.17.13, where a person is so named).

Reference is also made to Dirghasattrā or sacrifices extending over long periods of time, as a hundred or a thousand years (VII.3.1). No doubt the Brāhmaṇa texts describe such yajñas, e.g. Viśvaśṛj, a yajña lasting for one thousand years (sahasra-sama sattra) described in the Panchaviniśa Brāhmaṇa, but we have the testimony of Patañjali saying that such long sacrifices were not actually performed (loke aprayuktāḥ), and that only the Yājñikas described them in their works as part of inherited tradition (kevalam ṛṣi̇-sampradāyo dharma iti kṛitvā Yājñikāḥ sāstrenānuvidadhate, Bhāṣya, I.9, and vār. Aprayukte dirghasattravat).

SOMA—Pressing of Soma was known as sutya (III.3.99), and
one who pressed it as Somasut (III.2.90). After the ceremony the yajamána who pressed the Soma was called sutvā (III.2.103), corresponding to the other title yajvā, 'one performing a sacrifice'.

The drinking of Soma depended on the fulfilment of certain spiritual and material conditions. According to Pāṇini he who had the requisite qualification to drink Soma was called somya (Somam arhati yah, IV.4.137). In the opinion of the Yājñika school as quoted by Patañjali, that person was entitled to drink Soma in whose family there was no social stigma in the ten preceding generations (Evaṁ bi Yājñikāḥ paṭhanti, Daśapurus'anukāṁ yasya grihe śūdrā na vidyeraṁ sa Somain pibediti, Bhāṣya, IV.1.93; II.248). Manu looks at the problem from an economic point of view: 'He who owns food to last for three years or more so as to maintain his dependants, is entitled to drink Soma (sa somam pātum arhati, Manu, XI.7; also Kāśikā, VII.3.16). 'He should lay by the minimum prescribed store lest his labour be wasted' (XI.8). In the Soma ceremony the priests (yājakas) might press the Soma plant, but the credit of performing the Soma yajña belonged to the actual yajamāna who was in reality the beneficiary (pradbāña kartā) of that sacrifice. A special expression was current to designate him as sunvan (Suño yajña-saṁyoge, III.2.132). On the other hand in a sattra, i.e. a Soma yāga lasting for more than twelve days, the number of priests ranges from 17 to 25 (saṁdasa-varāḥ paṁchavisati-paramāḥ), all of them enjoy the status of yajamānas (sarve yajamānāḥ, sarve rītvijāḥ), all are abītāgnis, all sharing the fruits of the yajña equally, and since it is a corporate endeavour no one pays or expects any fee, and all of them perform the act of pressing the Soma juice. This arrangement is reflected in the phrase sarve sunvantah sarve yajamānāḥ sattriṇah uchyante (Kāśikā on III.2.132, Suño yajña-saṁyoge).

NAMES OF FIRES (AGNYĀKHYĀ, III.2.92)—Agni as an agent carrying the offering of the sacrificer to the gods is
spoken of as havyavāhana (III.2.66), and to the manes as kavyavāhana (III.2.65). In these two capacities it receives the offerings with the formula Svābā and Svadbā, respectively (II.3.16). The former was called Chitya āgni (III.1.132) used for performing the Śrauta sacrifices. Of the Three Śrauta Fires (śrautāgniayah), mention is made of Gārhapatyā (IV.4.90), and of the Dakśiṇāgni under the special name of Ānāyyya which was brought from the Household Fire and not retained (Ānāyyo' nitye, III.1.127; with Bhāṣya II.89).

The word ānāyya is of uncommon interest. The Śrautāgni is kindled with arañī and perpetually maintained by an āhitāgni as Gārhapatyā āgni in the vedi of that name. The other two altars are Aḥavaniya and Dakśiṇāgni. The intending sacrificer takes the āgni from his Gārhapatyā altar to the other two. In that case both are called ānāyya temporarily, since after the oblations are over the fires in the Aḥavaniya and Dakśiṇāgni lose their sacred character. But besides the Gārhapatyā Fire there were other recognised sources for feeding the Dakśiṇāgni; for example, as a temporary measure the Dakśiṇāgni could be borrowed from a frying-place (bhṛāṣṭra), a Vaiṣya-kula, or from a new home where the proper śrautāgni had not yet been installed. In such a contingency the word ānāyya denoted only the Dakśiṇāgni. (ānāyyo Dakśiṇāgnih; rūḍhireshā, Kāśikā).

The three stages in the kindling of the Fire are appropriately referred to as parichāyya, its showy assemblage and adornment in the beginning (alaṅkaraṇa; cf. parichāyyam chinvīta grāmakāmaḥ, Śat. Br. V.4.11.3); upachāyya, its augmenting or blazing forth (samvardhana) in the middle; and samuḥya (III.1.132), its final form consisting of ashes and rubbish swept or heaped together, for which the graphic phrase samuḥya-purīsha was current (Ś. Br. VI.7.2.8; Kāt. Sr. XVI.5.9.10).

Special kinds of vediś which were made twice or thrice the usual size, were known as dvistāvā, tristāvā (V.4.84). The normal size of the platform in the Darsa-Paurṇamaśa was
27 ft. × 13½ ft. (36 vitastis long and 18 broad). On this platform different fire-altars were built, each being called a sthāṇḍila (IV.2.15; same as kuṇḍa in smārta yajñas). These altars were made of different shapes referred to in the sūtra Karmanya-agnyaākhyāyām (III.2.92), e.g. śyena-chit, kamika-chit (Kāśikā), droma-chit (square), ratha-chakra-chit (round), prāūga-chit (triangular), ubhayataḥ prāūga-chit (double triangle; Kāṭ. Śrauta, XVI.5.9). These were special agnis, the arranging of which was called agni-chityā (III.1.132). The altars were piled up (chityā, III.1.132) with bricks, which were given special names after the particular mantras used for building them (Tadvānāsām upadbhāno mantra itīṣṭakāsū luk cha matoḥ, IV.4.125). Important words occurring in the mantras used for laying the bricks were selected as their names, e.g. Varchasyā, Tejasyā, Payasyā and Retasyā, ancient words for particular bricks. Pāṇini mentions in particular the bricks called Āsvinī (IV.4.126). One who consecrated these sacrificial Fires was known as agni-chit (III.2.91).

OTHER ACCESSORIES—Yajña required a number of accessory articles of which some are mentioned in the Ashtadhyāyi. That place in the yajña was called samistāva (III.3.31) where the Chhandoga singers sang the hymns in the Soma Kratus, a sort of stuti-bhūmi (Amara). Another portion was the avaskara for throwing refuse (IV.3.28), also called utkara. The kuśa grass, necessary for sacrificial ceremonies, is referred to as pavitra which had become a samijnā word (Pravah sanijnāyām, III.2.185; cf. Yaju. I. 2, 3, 12). The Soma plant was required for Soma sacrifices. Pataṅjali mentions pūlika grass as a substitute for Soma, but observes that Soma had not become obsolete (na cha tatra somo bhūtaśūrvo bhavati, I.1.56, I.137).

The sacrificial utensils (yajña-pātra, I.3.64), specially the cups for drinking Soma, were arranged in pairs which is given as one of the meanings of the word dvandva (yajña-pātra-prayoga, VIII.1.15). Two Soma-cups (grabas) are named,
kshullaka-vaiśvadeva (cf. Kāt. Śr. IX.4.1) and mabhā-vaiśvadeva (Kshullakaścha Vaiśhvadeve, VI.2.39, cf. Kat. Śr. X.6.2. for mabhāvaiśvadeva). Oblation is mentioned as bavi, a special form of which was known as sānināyya (III.1.129), which is said to consist of curd from the cow’s milking of the previous evening (sāyanidobha) taken with fresh milk of the following morning (prātardobha) and offered together to Indra in the New Moon sacrifice (saṁ+ni, to mix).¹

PRIESTS.—The generic term rītivij (III.2.59) was applied to all classes of priests employed at a sacrifice. The priests must have been Brāhmaṇas as in the Vedic period (Vedic Index, I.112). This is suggested by the epithet ārtvijīna (V.1.71) denoting a person qualified in priestly duties (rītvik-karmār-bati, Kātyāyana) which according to Patañjali was applied to a member of a Brāhmaṇa family. The Shadviśa Br. explains ārtvijīna as one who is able to expound those Vedic texts which are used in yajñas (esba ārtvijīno ya etam vedam anubrūte, I.3.16). According to Patañjali an ārtvijīna should be able to utter the Vedic speech according to its proper pada, svara and akshara (Bhāṣya, I.3). A priest with reference to his duties on behalf of the yajamāna was called yājaka; sūtra II.2.9. implies that the word yājaka was compounded with another denoting the sacrificer, e.g. Brāhmaṇa-yājaka, Kshatriya-yājaka.

Selection of priests must have depended on their special knowledge of the ritual for which they were invited. Pāṇini refers to the emergence of experts who made a special study of the complicated ritual of Soma-kratus like Agnishṭoma and Vājapeya, and were named Āgnishṭomika, Vājapeyika after

¹There are three oblations in the Dārśa sacrifice, the first is the sacrificial cake for Agni (āgneya purodāsa), the second curds for Indra (aindram dadbi), and the third milk for Indra (aindram payah). The last two make up the sānināyya yāga in which the deity is single but the oblations to him being different are added and offered together. Firstly curd is taken in the jābū and then milk is poured on it.
those rituals (Kratūkthādisūtrāntāthbak, IV.2.60). For such important sacrifices the invitations would naturally be issued to them. Along with their pupils these masters cultivated advanced studies of those specialized Kratu texts (kratu visheśavāchibhyashthbak pratyayobbavati taḍādhitetadvedetyasmin visbaye, Kāśikā).

In the ritual as given in the Brāhmaṇas, the number of priests is sixteen, classed in four groups (Vedic Index, I.113). Of those connected with the Rigveda, Pāṇini mentions Hotā, Praśātā (VI.4.11), and Grāvastut (III.2.177), the Praśātā known as Maitrāvaruṇa also. The Grāvastut praised the grāvā or stones for pressing Soma. The Hotā recited the yājyā and anuvākyā verses.

Of the Sāmveda priests, Pāṇini refers to Udgātā in sūtra V.1.129, and to his assistant Pratihartā in its gana.

The duties of the various priests were indicated by the addition of suffixes to their names, those of the Udgātā being called aundgātra (V.1.129) and of the Adhvaryu, ādhvaryava (IV.3.123). Adhvaryu’s assistant Neshtā (VI.4.11) belonged to the Soma ritual whose duty it was to lead forward the wife of the sacrificer. The importance of the Adhvaryu increased with the growth of the complicated ritual in which differences of opinion also arose in course of time. It appears that the followers of each special recension of the Yajurveda adopted the ritualistic peculiarities of their own School. The insistence on the two-fold variations of ritual according to locality and śākṣā (āmnāya) resulted in the growth of special Adhvaryus who were designated by particular names. This is reflected in sūtra VI.2.10, Adhvaryu-kashāyayar-jātāu, e.g. Prāchyaḍhvarya, priests belonging to east India who were affiliated to the Śukla Yajurveda. The followers of the special schools

\[1\] होताः, मेन्द्राघण, अच्छावाक, ग्रावस्तुतः ।
\[2\] उद्वगताः, प्रस्तोताः, प्रतिहताः, ग्रावस्तुतः ।
\[3\] अध्वर्याः, प्रतिष्ठाताः, नेब्धा, उ ग्रावतः ।
\[4\] ब्रह्मा, ब्राह्मणाच्छली, आग्निघ्र, पोताः ।
of the Krishna Yajurveda were distinguished by the names of their sākhās, as Kaṭhādḥvaryu, Kalāpādhvaryu, etc.

Of Atharvaaveda priests, Pāṇini mentions Brahmā (V.1. 136), Agnīdh (VIII.2.92) and Pota (VI.4.11). Brahmā must have emerged as the general supervisor of the ritual, as is indicated by his duties (karma) designated by the special term Brahmata (V.2.136). The epithet Mahā-Brahmā 'Chief of the Brāhmaṇas (V.4.105, in which Brahman—Brāhmaṇa) seems to have been derived from the privileged position of the Brahman priest, who as early as the Rigveda (I. 162.5) was called suvīpra, a sage or priest of profound knowledge acting as superintendent of the whole ceremony.

The sons of ritvij have been specially noticed as Ritvik-putra and Hotub-putra (VI.2.133). These names were derived from sons who followed the calling of their fathers.

RECITATION OF MANTRAS—Yajña implies the invoking of deities with recitation of mantras (mantrakaraṇa I.3.25). Recitation in concert (sabochchhāraṇa) marked by clear tone and accent was called samuchchhāraṇa (I.3.48). Invocation of deities was nibava and abhibava (III.3.72).

YĀJYĀ VERSES—Pāṇini refers to the technical details of repeating the Yājyā mantras in a sacrifice (Yajña-karman, VIII. 2.88-92). The Yājyās were all selected hymns from the Rigveda and enumerated in the Hattrå-kāṇḍa of the Āsvalayāna and other Śrautasūtras. The Hotā priest recites the Yājyā and Puronuvākyā verses as often as the Adhvaryu commences a set of oblations. The latter priest does not recite any mantra; he only gives directions (praisha) to the Hotā whose privilege it is to recite the appropriate mantra ending with the formula Vaushat, on hearing which the Adhvaryu throws the oblation into the fire.

This complicated ceremony is arranged as follows:

(1) Puronuvākyā and Anrubhūbi. It is the first praisha or direction that the Adhvaryu gives to the Hotā to recite the preliminary laudatory verses called Puronuvākyā in praise
of the deity who is to be invoked. According to sūtra VIII.2.91 the formula must be uttered with a planta accent, as अग्निभाष्य ।

(2) In response to this praisha the Hotā recites the Puronuvākyā verse, the last letter of which is followed by a praṇava pronounced with planta accent (VIII.2.89), e.g. अपणेतासि सिन्नतो ।।। According to the Satapatha, Puronuvākyā is used for invoking the deity and the Yājñā for giving the oblation (bhumati vā anuvākyayā, prayachebhati yājñayā, I.7.2.17). After the Hotā has repeated the puronuvākyā verse, the actual yājñā is recited (atha yadunuvākyām anucchya yājñayā yajati, Satapatha, XI.4.1.12). Both form one pair. In some cases, as pointed out by the Satapatha, the puronuvākyā was dropped (atha yad-apunarvākyakā bhavanti, XI.4.1.12), and therefore its praisha (anubrûbi) was not counted in the set of five directive formulas comprising 17 letters.

(3) Āśravana. The Adhvaryu, Agnīdh and Hotā priests having taken their seats round the Vedi, the Adhvaryu calls upon the Agnīdh (cf. Agnimindha of Rigveda I.162.5), an assistant of Brahmā, whose duty it was to guard the sacrifice against the Asuras. He sat near the utkara and held a wooden sword (sphya) in hand. The order to him (agnīt-preshaṇa, also called āśravana) consisted of the formula जात्शाक्षय with its variant in some sākhās as जो 3 शा 3 वच (Agnīt-preshane parasya cha, VIII.2.92). This praisha signified ‘Please notify the sacrifice to the gods, as all is well’.

(4) Pratyāśravana. To this the Agnīdh responded by a pratyāśravana formula, astu श्राहद pronounced with planta accent (sūtra VIII.2.91), the meaning being ‘Let the gods be notified; everything is O.K.’ (cf. Āsv. Śr. I.4, astu śrausbaḥ ity-aṅkāram plāvayan).

1 The following verse interpolated in the Bhīshma-stavarāja of the Śāntiparva refers to the Yājñā verses:

चतुर्भिर्व्रत चतुर्भिर्व्रत हायायांचिंद्रिमात्र |
हृतेत च पुनात्त्वयो तत्स्ये होमालम्ये नमः | ॥

(Verse added after 47.27 in the Critical edition)
(5) Yājya-praisba. Thus getting a line-clear from the Agnīdh, the Adhvaryu turns to the Hotā with the directive 'Yaja', on hearing which the Hotā begins to recite the Yājya. There is no pluta in the Yaja formula, which is uttered in monophone (ekaśrutī).

(6) Āgūrta formula (also called abhīgūrta, cf. Rīg. I.162. 6; Haug, Aitareya Br., Intr., XVIII) consists of the words yē ॥ yajamāne ॥ 'We who are assembled here all give our approving help to promote the yajña' (Ye yajñakarmāṇi, VIII.2.88) which always precedes the Yājya verse.

(7) Ishta or Yājya. As said above select verses from the Rīgveda for invoking particular deities are called Yājya, which constitute the actual mantras for throwing the oblation. Their last syllable is pluta (Yājyāntah, VIII.2.90). The Yājya is preceded by Ye yajāmaha and followed by the formula Vausbaṭ, e.g. ॥ yē yajamāne said ॥ somāṇaṁ aksamyaṇaṁ ye yajāmaha ॥

(8) Vausbaṭkāra—As seen above, it was added after each Yājya verse and pronounced by the Hotā as pluta and in a very loud voice (Uchchaistaraṁ vā vausbaṭkāraḥ, I.2.35; cf. Ait. Br. III.1.7, śanaistaraṁ asya rīcham uktvocchaistaraṁ vasbaṭ kuryāt; i.e. the yājya verse to be repeated with a very low and the vausbaṭkāra with a very loud voice). As soon as Vausbaṭ is uttered the Adhvaryu throws the oblation into the fire. Vausbaṭ (I.2.35; II.3.16) and Vausbaṭ (VIII.2.91) were variants of one and the same word, just as aśṭāṣṭaṛavya and aśṭāṣṭaśvatya were variants in the different Sākbās.

(9) Vitam and (10) Anuvusbaṭkāra (I.2.35; VIII.2.91). In the Soma yāga after the yājya verse and vausbaṭkāra, another formula is repeated, e.g. samśayaṁ bṛhiḥ ॥ wo ॥ pāt 'O Agni, taste the Soma!'. According to the Aitareya (III. 1.5) in this way the deities are satisfied by a repeated request
to them to drink the remaining Soma juice. The Vībha for-
mula is called vītam and the vashat added to it anuvashaṭkāra (Haug, Ait. Br., p. XVIII).

ĀVĀHANA—In the Darśa-Paurṇamāṣa Isṭhis, there are five oblations (Paṁcha-prayājas) which constitute the first part (pūrvāṅga) of the sacrifice (Prayājānuyājav Yajñāṅge, VII.3. 62) and three secondary oblations called anuyājas. In a Paśu-yāga their number is raised to eleven. Of the five prayājas, the last one is svabhākāra oblation, when the deity is invoked by the formula āvaha, for which Pāṇini prescribes pluta accent, e.g. अनिमास बहू (VIII.2.91).

MONOTONE (EKAŚRUTI)—The strict rule of reciting Vedic mantras with correct three-fold accent (traisvarya) was gradually being relaxed. Pāṇini, like the Kātyāyana Śrautasūtra (I.8.16-19), was making a note of the tendencies current in his time when he says that the mantras were recited with monotone (ekaśruti; ekatāra in Kāṭ. Sr., I.8.18) in the yajñas, excepting the few cases of Jaṇa, Śaman songs and the special Nyūṅkha accents (Yajñakarmāṇyajapa-nyūṅkha-

1 Five prayājas, viz. समिथो यजति, तनुपातं यजति, बहींजयति, इत्यद् यजति स्वाहाकारं यजति (Śatapatha, I.5.3.1-13, comparing them with 5 seasons). On account of the five oblations or ājyābutis, accompanied by their appropriate invocations the Yajña is referred to in the Śāntiparva as daśārdha-bavirākrītim, 'whose form is made whole by five havis (47.27).

2 Trayo'nyūnya-chaṭvāro patnī-saṁyājāh, Śat. Br. XI.4.1.11. The Kāśikā seems to be mistaken in stating that there were 5 anuyājas and 3 patnī-saṁyājas. In the Paśubandha sacrifices the number of prayājas and anuyājas is eleven each. The 4 patnī-saṁyājas were offered by the Yajamāna's wife after the anuyāja in the Darśa-Paurṇamāṣa Isṭi. The 8 patnī-saṁyājas are, however, prescribed, as an option, by the Bandh. Śr., 24.29.

3 The Jaṇa mantra is Yajurveda, II.10, Mayiddamindra indriyam, etc., uttered by the Yajamāna with three-fold accents (Kāṭ. Śr. III.4.18).

4 Nyūṅkha is a recitation by the Hotā at the morning libation of a Soma yāga, comprised of 16 okāras, e.g.

आरे ॐ ओ ओ ओ ओ ओ ओ ओ ओ ओ ओ ओ ओ ओ ओ ओ ओ ओ ओ ओ ओ ओ ओ ओ ओ ओ ओ ओ ओ
sāmasu, I.2.34). Jaimini made a vigorous attempt to restore the old practice of reciting Vedic mantras with their threefold accent whether for study or for ritual purposes (Mīmāṁsā, XII.3.20-24; D. V. Garge, Jaimini, Śabara and the Science of Grammar, A.B.O.R.I., XXX,254-5). But it seems to have been a losing battle against heavy odds. The Tait. Pr. also records the practice of monotone (sārvam ekamayam, T. Pr. XV.9).

SUBRAHMĀNYĀ—The Subrahmaṇyā formula also had its definite rules of accentuation (I.2.37-38). It was a loud invocation addressed to Indra in the Jyotishṭoma and other Soma sacrifices (cf. Kullūka on Manu, IX.126; Kāt. Śr. IX.1.12; Haug, Ait. Br., p. 260) ¹.

Uṣṇayaj was the special name (III.2.73) of the eleven short formulas (samudram gachchha svābā, etc.) given in the Yajurveda VI.21. Reference is made to the sāmidhenis, the eleven verses of the Rīgveda, III.27.1-11, used for enkindling the fire. The first and the last are each repeated thrice and thus we make fifteen sāmidhenis for the Dārśa-Paurnāṣa Ishtis. Of these Rīg. III.27.4 is called sāmidhyamānavatī and III.27.11 samiddhvatī by the words sāmidhyamānah and 

असौ असौ स्वः स्वयत्वस्य पत्नी। सरस्वती तद्वृण्ठे बयो धो भानो गो धो। ऋ ।

The first word in each half-ṛich is written with 16 nyūṅka okāras added after its second vowel, comprising three plutas and thirteen ardhaokāras.

¹ The Śaḍviṃśa Brāhmaṇa I.1.8-28 explains in detail the several parts of the Subrahmaṇyā formula (nīgada) as follows:

The remaining formula (nīgada-iesba) is repeated

देवा ब्रह्माण आच्छदातागच्छदाताति

(cf. Pāṇini, I.2.38).

Here brahmāṇah is explained as manushya-devaḥ referring to Brāhmaṇas who are full of reverence and learning (iṣṇuvāṁso'nācchānāḥ, Śad. Br. 1.1.28).
samindhate used in them. Sometimes extra verses are brought in from outside, e.g. ekaviniśatim anubrūyāt pratishtābhikāmasya, i.e. the person desirous of stability should use 21 sāmidhenīs. In such cases the extra verses should be accommodated between samidyamānavati and samiddhavati, and all the verses between them are therefore called dhāyyās (sūtra, III.1.129).

The mention of these minute details shows that Pāṇini was in touch with a living tradition of the sacrificial ritual or yajñas. The title pūtakratu seems to have assumed a new significance, denoting the man whose mind was purified by the potions of Soma drunk at the Kratus. His wife, Patnī, who was his partner in the sacrifices (yajña-samīyoga, IV.1.33) shared in this distinction and was thence called pūtakratāyī (IV.1.36).

The institution of yajñas had a vital economic interest for the officiating priests in that they received the dakshinā or sacrificial fee about the distribution of which instructions are contained in the law-books. We are told that the particular sacrificial guerdon was called after the name of the sacrifice for which it was paid (Tasya cha dakshinā yajnākhyeyebhyah, V.1.95). Examples are cited of the particular fees paid at the Rājasūya, Vājapeya and Agnishtoma sacrifices, called āgnishtomikī, etc., of which minimum units must have come to be fixed. The word dakshinā was applied to one whose merits entitled him to receive the proper dakshinā (V.1.69).

The social relationships arising out of sacrifices as between priests and yajamāna constituted one of the happiest features of domestic life. Patañjali refers to these as srauvva sambandha (I.119) distinguished from those of blood (yauna), economic life (ārtha), and academic relationships (maukha). He also refers to certain priests marked by red turbans on their heads (lobitoshrīśā ritvijah, I.1.27 I.826) officiating for the Vṛddyas (Kāt. Śr., XXII.3.15).
CH. VI, SECTION 3. ASCETICS

Pāṇini refers to religious mendicants as bhikshus (III.2.168) from their obligatory duty of begging; whence they were also known as bhikṣhācara (III.2.17). The ordinary beggar was known as bhikṣāka (III.2.155). Pāṇini mentions both Brāhmanical ascetics and heretical sects. As to the former he mentions those following the Bhikṣhu-sūtras promulgated by Pārāśarya (IV.3.110), and Karmanda (IV.3.111); of the latter reference is made to Maskarī mendicants (maskarī parivrajaka, VI.1.154) who were most probably the followers of Makkhali Gosāla. The term tāpasa (V.2.103) or tapasvin (V.2.102) was applied to an ascetic practising penance. This was denoted by the special root tapasyati (III.1.15). The several epithets like śami, dami, yogi, viveki and tyāgi (III.2.142) were indicative of the stages of spiritual culture. There are also two other terms dānta and sānta (VII.2.27), signifying control of the senses and the mind. The use of the term yogi points to Yoga as a system of spiritual discipline then known.

A mendicant subsisted on what he obtained by begging. The word sarvāṇnīna was applied to a person who accepted all kinds of food in his begging rounds (V.2.9). The Kāśikā states that a monk indiscriminately accepting alms from persons was so called. Some ascetics lived by gleaning corn (Uñchhāti, IV.4.32). The uñchhāvyitti ascetics held stock of corn to last for some time. In sūtra VI.2.9. Pāṇini explains the word śārada as 'new'. Literally śārada should denote that which belongs to the Šarad season. The transition of meaning can be understood from Manu stating that a muni should gather his stock of corn twice a year, which was called vāsanta and śārada respectively after the names of the two crops harvested annually.
(Manu, VI.11). It is further laid down that he should renew his clothing and corn in the month of Āśvayuja, i.e. the beginning of autumn (Manu, VI.15). These fresh stocks obtained in Śārad were responsible for the secondary meaning of śārada as 'new'. The word naikaṭika (nikaṭe vasati, IV.4.73) is taken by the commentators to refer to a monk who had become a Vānaprastha, and in obedience to the rules of his order took his abode near the village outside it. Similarly kaukkutika is taken by the Kāsikā as a mendicant who walks with his gaze fixed to the ground to avoid harming life (IV.4.46).

There were also sham ascetics, called dāṇḍājinika (V.2.76) i.e. one who passes for an ascetic by the outward signs of staff and deer-skin only.

AYAHŚŪLA—Pāṇini refers to a class of false ascetics known as āyahśūlik, 'who flourished by the method of āyahśūla or iron spikes' (V.2.76). Patañjali’s comment is of some historical interest. 'If āyahśūla literally means an iron spike, the word so formed will apply to a Śiva-Bhāgavata which is not the intention of Pāṇini’s sūtra. Therefore the term āyahśūla indicates the practice of violent methods (rabhasa) to recruit followers as distinguished from the softer method of persuasion and instruction' (mṛidu upāya, Bhāṣya, V.2.76). Patañjali here gives the information that there was a sect of the Śiva-Bhāgavatas who worshipped Śiva as Bhagavān and whose outward sign was an iron trident (Ind. Ant., 1912, p. 272). As opposed to them the āyahśūlik Śaivas pierced their tongue or arms or other parts of the body with iron prongs and extracted forced sympathy.

MASKARIN—Pāṇini mentions Maskarin as a parivrājaka (VI.1.154, Maskara-maskarinau venu-parivrājakayoh). Here Maskarin is taken to be the name of Maskarī Gośālā, the founder of the Ājīvika order and a contemporary of the Buddha. Patañjali enlightens us on this point as follows: 'A Maskarin parivrājaka is not so-called because there is a maskara (bamboostaff) in his hand. What else is then the explanation? Do not
perform actions, but seek peace as the highest end'. This is their teaching, who are therefore called Maskarins' (Mā kṛita karmāṇi mā kṛita karmāṇi, sāntirvāḥ sreyasītyābāto Maskarī parivrājakaḥ, Bhāṣya, III.96). No doubt Patañjali's reference is to the philosophy of inaction taught by the great teacher Makkhali Gosāla whose identity with Maskarī thus become a certainty. He was a Determinist who ascribed every cause to fate or destiny (niyati). He held that the attainment of any given condition or character does not depend either on one's own acts, or on the acts of another, or on human effort. There is no such thing as power, energy, human strength or vigour. All beings are bent this way and that by their fate. In his system chance (yadṛichchāh) has no place, but everything is ordered by an immutable Fate (Niyati) (Dict. of Pāli Proper Names, II.398). According to Buddhist books Makkhali was considered by the Buddha as the most dangerous of the heretical teachers.

The identification of Maskarī with the founder of the Ājīvika sect, if accepted as is highly probable, is of the utmost importance for the relative chronology of Pāṇini himself. Another evidence in the Ashtādhyāyī supports Pāṇini's knowledge of the philosophical school of Makkhali. He refers to three kinds of philosophic beliefs (matī), viz. Āstika, Nāstika and Daishṭika (IV.4.60). Matī here corresponds to dīṭṭhi of the Buddhists signifying a philosophic doctrine. The Āstika philosophers were those whom the Buddhist books call Issarakāraṇavādi or the Theists, who held that everything in the universe traces itself to Īśvara as the supreme cause (ayaṁ loko issaranimmīto, Mehta, Pre-Buddhist India, p. 333). The Nāstika philosophers correspond to those who are called Natthikadīṭṭhi in Buddhist works (C. D. Chatterji, A Hist. Character in the Reign of Aśoka, Bhandarkar Com. Vol., p. 330). These included the Annihilationist school of another great teacher Ajita Keśakambalī (ītā para lokagatānāma n'atthi, ayaṁ loko ucchijjati, Jāt., V.239). This was a materialistic
doctrine famous as the Lokāyata school. The third category of thinkers who are mentioned as Daishṭika by Pāṇini certainly refer to the followers of the determinist philosophy preached by Makkhalī Gōśāla who repudiated the efficacy of karma as a means for improving the lot of human beings.

In the canonical scriptures of the Jains, Makkhalī Gōśāla has been mentioned as Gōśāla Maṅkhalīputta (Uvāsaga Dasāo, Hoernle, p. 97), while in the Sanskrit Buddhist texts he figures under the name of Maskari Gōśāliputra (Divyāvadāna, p. 143) (Chatterji, op. cit. p. 331, who concludes that Makkhalī was undoubtedly a Maskari ascetic). The views of this teacher are echoed in the Brahmanical literary tradition under the name of Maṅki who discarded paurusba in favour of a belief in destiny alone (Suddbhaṁ bi daivamevedaṁ haṭhe naivāsti paurusbam) and preached nirveda (cf. the doctrine of Śānti attributed to Maskari in the Bhāṣya) as the best principle (Śāntiparvan, Ch. 177, vv. 1-14).

As Mr. C. D. Chatterji has shown there were various traditions about the accurate form of Gōśāla’s name; Maṅkhalī was the form according to the Jaina Prakrit and a tradition in the Bhagavati Sūtra makes him the son of a mendicant or beggar (Maṅkham, Bhag. Sūtra, XV.1). We have no doubt that Maṅki of the Mahābhārata represents the name Maṅkhalī in an abbreviated form. Pāṇini explains Gōśāla as one ‘born in a cowshed’ (sūtra, IV.3.35), which accords with the traditional explanation of this part of Makkhalī’s name.

ŚRAMANA—Pāṇini refers to Śramaṇas and unmarried female ascetics (kumārī śramaṇā, II.1.70). This sūtra is connected with another in the Ashtādhyāyī, viz., Kumāraschā (VI.2.26) which regulates the accent of the word kumāra in such compound words as kumāra-śramaṇa and others of this class. This gana also mentions kumāra-pravrajita, and kumāra-tāpasi, a girl embracing the life of a wanderer, and a girl taking to penance. In the oldest Śrutasūtra literature the meaning of śramaṇa is an ascetic in general; for example, in Baudhāyana
a muni is described as śramaṇa and asked to offer puroḍāsa to Agni standing in knee-deep waters of the Sarasvatī (Baud. ŚŚ., XVI.30, ASB, edit., p. 276).

Patañjali, however, states that the Śramaṇas and the Brāhmaṇas belonged to different religious groups whose opposition was of a permanent nature (yesbhām cha virodhaḥ sāsvatikāḥ, Pāṇini, II.4.9, ityasyāvakāśah, Śramaṇa-Brāhmaṇaḥ, Bhāṣya, I.476 on sūtra II.4.12). It shows that Śramaṇa in grammatical literature referred to non-Brahmanical ascetics.

Early Buddhist literature distinguishes between Brāhmaṇas and Śramaṇas as distinct ascetic orders. King Alābu addresses the Bodhisattva as Samaṇa (Jāt., III.40). The Udāna says that there were very many and various sectaries of Śramaṇa and Brāhmaṇa, all Parivrājakas, followers of different Diṭṭhis, i.e. Darśanas or Systems, and organisations (sambhulā nāṇātīthiyā Samaṇa-Brāhmaṇaḥ paribbajakā nāṇātīthiḥ bikā nāṇātīthi-nissayanissitā, P. T. S. edition, p. 66-67). The Aṅguttara (IV.35) mentions two classes of ascetics whom it calls Parivrājakas, viz. (1) Brāhmaṇa and (2) Annatītthiya, i.e. other non-Brahmanical ascetics. The Greek writers of Alexander’s time also noticed these two classes of ascetics, the Brāhmaṇas and Śramaṇas (Strabo, XV.1.59, M’Crindle, 1901, p. 65, footnote). In the inscriptions of Asoka the Brāhmaṇa and the Śramaṇa ascetics are separately mentioned as worthy of equal honour.

The reference to monk’s garment (chīvara), and the verb saṁchīvarayate, ‘he dons the monk’s robe’ (III.1.20) again smack of the institution of Buddhist monks, as chīvara signified only monk’s dress (cf. tiechīvara, Jāt., III.471; paṁsukūla chīvara, Jāt., IV.114).

The word Arbat was applied to a person worthy of reverence (Arbaḥ praśāṁsāyāṁ, III.2.133). The state of being an Arbat was ārbanṭya (arbato num cha, Gaṇa-sūtra, V.1.24). Pāṇini refers to a class of ascetics called yāyāvara (III.2.176),
According to the Baudhāyana Dharmasūtra, 'To be a yāyāvara means that one proceeds by the most excellent livelihood' (vṛttyā varayā yāti, III.1.4), and 'the word sālīna is used for them because they dwell in houses (sālā, III.1.3). Most probably it referred to those house-holders who like Janaka lived in their home although following the ascetic discipline. The Śrautasūtra of Baudhāyana adds that, even when itinerant, the Yāyāvara mendicants halted on the way and performed fire oblations (XXIV.31, तथोदाहरर्नित्यायावराऽहृ व नामपर्य भास्तेअववज्य अष्ट्येते समस्तमज्जुहः).
CH. VI, SECTION 4. RELIGIOUS BELIEFS & PRACTICES

The other aspects of religious life included domestic rites, vows like Chāndrāyana (V.1.72), and Japa or repetition of mantras (I.2.34). One who took the vow of restraint of speech was called vāchairiyama (III.2.40), and similarly the vow to sleep on hard ground sthāndila (IV.2.15). These epithets applied to one observing pārāyana, a Brahmachārī or a bhikshu (IV.2.15). One who silently performed Japa as a habit (tat śīla) was called janajapūka (III.2.166). Such muttering would sometimes be for mere show or a sham practice (bhāvagarbāyām, janajapyate, III.1.24). Reference is also made to the offering of bali, probably to different deities (II.1.36), e.g. Mahārāja-bali offered to the Mahārāja class of deities like Kubera. Special food stuffs selected for preparing bali were called bāleya (V.1.13).

Srāddha—Reference has already been made to the fire kavyavāhana (III.2.65) to carry oblations to the manes. The Pitris are mentioned as devatās, deities to whom oblations called pitryam were offered (IV.2.31). The srāddha ceremony held in the Śarat season (the Pitṛpaksba in Aśvina) has been mentioned as sāradika srāddha (IV.3.12). One who dined at a srāddha was marked out as srāddhi, srāddbika (srāddham-anena bhuktam, V.2.85), but Kātyāyana points out that the epithet was applied to that person only for that particular day (II.389). The necessity for this term seems to have arisen from the fact that the srāddha-bhoji was required to perform some purificatory rites on that day. A srāddbika Brahmachārī would be marked out from other students and would get leave from his class for performing japa, etc.

Religious tonsure was in vogue (Madrāt parivāpane, V.4.67), the tonsurer being called madraṁkara or madrakāra (III.2.44).

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BELIEFS—Belief in divination from bodily signs is mentioned in sūtra III.2.52 (Lakṣaṅe jāyā-ṇatyoshtak as read with III.2.53). The marks on the body of the husband or the wife were believed to have effect in respect of each other, e.g. jāyāghnas-tilakālakah, 'the black mole indicative of wife's death'; patighnī pāṇirekha, 'the line on hand indicative of husband's death'. Probably this topic came under Aṅgavidyā to which references is found in the Rgayanādi gāṇa (IV.3.73), in the Brahmajāla sutta of the Dīghanikāya and some Jaina Āgamas.

Questioning a foreteller about future good luck was called vipraśna. The sūtra Rādhikashyor-yasya vipraśnah (I.4.39) deals with its linguistic form e.g. Devadattāya īksbate, 'the astrologer is busy calculating about the future of Devadatta'.

Mantras to captivate the heart of others (vaśikaraṇa) were known as bṛidyā (bṛidaya-bandhana rishi, IV.4.96, in which rishi=mantra or veda).¹

The idea that certain days (punyāba, V.4.90) and nights are auspicious (punyarātra, V.4.87) was also prevalent. The idea that good actions lead to merit is also referred to (Saptamāh punyam, VI.2.152), e.g. veda-punyam, adhyayana-punyam. Good and bad actions originated from their doers called punyakrit, sukarmanakrit, or pāpakrit (III.2.89). Transgression of moral conduct was kshiya (=dharma-vyatikrama, ācāra-bhedā), expressed by a special linguistic form, using the exclamatory particle ba (VIII.1.60), and pronouncing the verb with pluta accent, e.g. svar hṛsteṇ yatih 3 upādyayām vedāḥ gamaṅgī 'Fie on the pupil himself riding in a chariot and making the teacher drag on foot!'; svar hiṁsāṁ bhūtaṁ 3 upādyayām sasthūrā pāpyāti 'Fie on the pupil himself feasting on rice and suffering the teacher to live on groats!' (VIII.2.104).

Heinous sins (mahāpātakas) like bharunabatiya (VI.4.

¹Para-bṛidayatī yena baddhyate vaśikriyate sa vaśikaraṇa-mantro bṛidyā ity-uchyate, Kāśikā.
174) and brahmahatya (III.2.87) are mentioned (cf. Manu, XI.54).

Amongst moral virtues, Pāṇini mentions praṇā, śraddhā, tapa, tyāga, viveka, dharma, śama, dama (VII.2.27; III.2.142). Persons endowed with high moral character were recipients of social honour as śāmi, dami, tyāgi, vivekī, dha-rmī, tapasvī. Persons who performed meritorious actions relating to life in this world and in the other (Iṣṭa and Pūrta) were honoured as iṣṭī, pūrtī (V.2.88). Religious gifts constituted a pious act (dharma) and the use of one’s wealth for such objects was called upayoga. These benefactions were expressed by such linguistic forms, as sabrasram prakurute, sabrasram vinayate (I.3.32; I.3.36).

DHARMA—The word dharma has a two-fold meaning in the Ashṭādhyāyī; firstly dharma denoted custom or āchāra, as in the Dharmasūtras (cf. Kāśikā on sūtra IV.4.47). That which was in accordance with custom was called dharmya (IV.4.92, dharmādanaṇpetam). Pāṇini explains dharmya as approved by local usage or custom (VI.2.65; cf. Kāśika, dharmyam ityāchāraniyataṁ deyam ucyate). Even the charges levied as legal dues, e.g. toll-tax, are called dharmya, because they were sanctioned by usage. Secondly dharma denoted religious or moral duties, as in the expression dhammaṁ charati, dhārmikaḥ (IV.4.41).
CH. VI, SECTION 5. PHILOSOPHY

INTELLECTUAL FERMENT—The philosophic thought of ancient India in the period from about the eighth century B.C. was marked by a new awakening and intellectual upheaval in her history. It led to the foundation of various schools centering round different doctrines as to the ultimate cause and nature of the world and soul. The atmosphere was charged with the keenest intellectual ferment as if a new god of wisdom had become manifest.

JNA—Patañjali takes the word Jña to mean Brāhmaṇas as embodiments of jñāna or spiritual knowledge and refers to their descendants who carried on the ancient philosophic tradition. The term probably originated in the Upanishads (Jñāh kālakālo guṇi sarva-vid yah, Śv. Up., VI.2). Patañjali also mentions Jña as a deity named Jñā Devatā, to whom householders were to offer special oblations (Jñā devatāyasa sthāliḥpākasya Jñāḥ sthāliḥpākah, Bhāṣṭya, VI.4.163; III.232). Pāṇini mentions Jñāḥ (III.1.135) as an independent word signifying 'One who knows'. It appears as if the monosyllabic Jña stood for the ideal of the Sophistic movement beginning in the Upanishads and reaching its climax in the time of the Buddha and Mahāvīra. Patañjali refers to celebrated families of these Sophists as jñānāṁ Brāhmaṇānāṁ āpātyam, descendants of Brāhmaṇas who followed the Jña deity and were themselves known as Jña. (Bhāṣṭya, IV.1.1; II.190).

Pāṇini refers to a philosophical doctrine promulgated by a thinker as mati (IV.4.60), corresponding to Buddhist diṭṭhi, and the means of knowledge as matya (matasya karaṇam, IV.4.97).

DIFFERENT SCHOOLS OF THOUGHT—Pāṇini classifies the views of various philosophical thinkers under three cate-
gories according to the basic points of view implied in their teachings. They were (1) Āstika, (2) Nāstika and (3) Daishṭika (Aṣṭi nāṣṭi disḥṭan matih, IV.4.60). A list of principal philosophic doctrines or matis is preserved in the Svet. Up. I.2 (also Charaka, Sūtrasthāna, ch. 25; Suśruta, Sārīrasthāna, 1.11). At the head of the list appears Kāla or Time as the cause of the world, known as Kālavāda (Mūla- paryāya Jātaka, II.pp.260-61). It occurs in the Mahābhārata in a more elaborate form (Śāntiparva, 220. 29-110). According to Pāṇini, the time-denoting words had attained the status of a deity (devatā) fit to be worshipped (IV.2.34). Stars and Seasons (IV.2.31, Ritur-devatāsyā ritavyam) were similarly deified.

Next is Svabhāva, a view which had its counterpart in the Buddhist Akiriya-vāda or doctrine of Non-causation advocated by Pūraṇa Kassapa (cf. Śāntiparva, 215.15-16). Yadrichchhā or fortuitous origin was represented by the Abetuvādins who put forward the hypothesis of chance (cf. Śāntiparva, 168.21-22; also called paryāya-vāda). The Niyativāda corresponds to the Determinist school of Makkhalī Gosāla (cf. Śāntiparva, ch. 171). The view of the Bbūtas (the four material elements) creating the world was represented in the materialistic doctrine of the Lokāyata school. The Annihilationist school of Ajita Keśakambali (Uchchhedavādins) took the same view (cbātum-mahābhūtiko’yam puruso). Yoni or the privileges and incidence of birth as a potent factor directing the world of men and animals was probably represented by the Militarist doctrine which believed in the efficacy of force to rectify human ills. (Khattavijjā-vāda, Jāt., V.240; cf. Śāntiparva, ch. 173 for Yonivāda doctrine). Lastly, Purusha or Devamahimā or Power of the Creator was taken to be the cause of the cosmos, a view termed in the Jātakas as Issarakāraṇavāda (Jāt., V.238). The Svet. Up. advocating Purushavāda, refers to other thinkers, like the advocates of Svabhāva and Kāla, as parim- ubhyamāna, i.e. holding erroneous views.
These distinctions of philosophical thought mentioned in the Śvet. Up. and the Maha-Bodhi Jātaka (Jāt. V, p. 228 ff.) are presupposed in Pāṇini. For example, Pāṇini’s Āstika mati is the Theistic school of Purusha or Issarakāraṇavāda. We know that orthodox Brahmanical thought laid great stress on this view which was developed in the earliest Śāṅkhya and attained its climax in the Vedānta sūtras. Pāṇini also mentions by name the Bhikshusūtras of Pārāśarya (IV.3.110), which probably denoted the earliest Vedānta treatises written in sūtra form. The nucleus of such a text did exist in Pāṇini’s time. The Purusha or Adhyātma school ultimately absorbed other minor doctrines as Prāṇa, Jyoti, etc., by evolving a synthesis of all such causes in Purusha, and in course of time other views on matter and creation aligned themselves with that view, so that Āstikavāda as expressed in a number of orthodox schools became the most predominant pattern of Indian philosophy.

Pāṇini’s Nāstika mati represents the views of those who were opposed to the school of Purusha and they included amongst them rather earlier philosophers of various denominations, such as the believers in Svabhāva (Non-causationists), Yadṛichchhā (Fortuitous Originists, Abetuvādin), Bhūtas (Materialists) of which Ajita Keśakambalin was the famous exponent (cf. Śāntiparva, 172.13-18), and Niyati (Determinist). Of these Nāstika schools Pāṇini has noted the name of Maskarī (Makkhali Gosāla) and his Dishta-mati or the view of Niyatīvāda, which as we have discussed above was based on the repudiation of action (kiriya) and human edeavour (viriya). Patañjali states the pivotal points of their doctrine in explicit words (Bhāṣya, VI.1.154; III.96). The Mahābhārata deals at length with the philosophic approach of such thinkers, citing five main points of their belief, viz. equanimity or indifference towards creatures (sarva-sāmya), immobility or absence

\[ 1 \text{ भा कृत कर्माणि मा कृत कर्माणि शान्तिवें: शेषसीतलाहतो मस्तकी परि-} \]
\[ \\text{ब्राम्यः!} \]
of endeavour (anāyāsa), straightforward utterance (satya-vākyya), complete disregard of action leading to cynical peace (nirveda) and indifference to seeking knowledge (avivitsā, Śaṅtiparva, 171.2). There Maṅkhali is presented as the sage Maṅki who cheated of his two bulls by a cruel fate dismisses all effort as stupid (Śuddham hi daivamevedamato naivāsti paunrsham, Śaṅtiparva, 171.12). The followers of this school were the Daishtikas or Determinists.

LOKĀYATA—The name of this school which was identical with the theory of elements as the prime cause (Bhūtavāda and Uchchhedavāda) is not found in any sūtra, but occupies the second place in the Ukṭbādi-gaṇa (IV.2.60). A teacher and a student of this doctrine were both known as Lokāyatika. There is a strong possibility that the Lokāyata School was known to Pāṇini. Kauṭilya refers to the Lokāyatas (Arth. p. 6). The antiquity of the school is also suggested by a reference in the Dīghanikāya, and by the mention of a Brāhmaṇa well-versed in the Lokāyata doctrine asking the Buddha a series of questions (Samyuttanikāya; Dict. Pali Proper Names, II.787). A Jātaka passage refers to Lokāyatika doctrine (na seve Lokāyatikam, VI.286). The Kāmasūtra has preserved an intensely worldly-wise saying of the Lokāyatikas, Varam sāṁsāvyikānisskādaśāṁsāyikāh kārśhāpaṇa iti Laukāyatikāh (Kām., I.2.30). 'A silver Kārśhāpana in hand is worth more than a gold Nishka in the offering', with which may be compared the modern saying 'A bird in hand is worth two in the bush'.

There is an interesting reference in Patañjali, Varnīkā Bhāgūri Lokayatasya, 'the view-point of Bhāgūri is a specimen of the Lokāyata doctrine (III.325; VII.3.45), which shows that Bhāgūri was an exponent of the Lokāyata school. (Cf. also varttikā Bhāgūri Lokayatasya, i.e., the way of life preached by Bhāgūri is that of Lokāyata, III.326). The Chārvākas of the Lokāyata school are mentioned in an old grammatical illustration as models of dialectical proficiency (jnāna, I.3.46) and convincing exposition of their doctrines (saṁmānana,
I.3.36, Kāśikā and Chāndra, I.4.82). Chārvī or Chārvāka was not a proper name but an epithet derived from their brilliant discourses. A Lokāyatika appears as a friend of Dur-yodhana. Jābali, a counsellor of Daśaratha, was also a follower of Lokāyata. The antiquity of the Lokāyata School being thus indicated, it must be one of those comprised in the Nāstika mati of Pāṇini.

Of the terms of Yoga philosophy Pāṇini mentions yama, nīyama, saṁyama (III.3.63), yogī (III.2.142); of Nyāya, nigrīhyānuyoga (VIII.2.94) which were the same as nigrāha (Nyāya, I.2.19; V.2.1) and anuyoga (ibid V.2.23) meaning defeat and censuring of an opponent. Parimāṇḍala in sūtra VI.2.182 seems to be the same technical term as Vaiṣeshika VII.1.20, signifying an atom.

OTHER PHILOSOPHICAL TERMS—Ātmā: Pāṇini uses the term Ātmā in such expressions as ātmā-priti, ātmā-māna and ātmanīna (ātmane hitam, V.1.9). Sva was the word for ātman as Self. Jīva in such terms as jīva-nāsāṁ naśyati (III.4.43) means 'life'. The Rigvedic word aksbetravid (Rigveda, X.32.7, aksbetravit kṣbetravidāṁ by-aprāt) occurs as aksbetrājña in Pāṇini; and a new word, aksbaitrājña, had come into existence to denote absence of self-knowledge (VII.3.30).

Prāṇabhrīt or prāṇin, 'one endowed with prāṇa' included both men and animals, as distinguished from herbs and trees or the plant kingdom (IV.3.135). Pāṇini also distinguishes animate kingdom, chittavat (I.3.88) from achitta or the inanimate world (IV.2.47).

Kātyāyana in one place invokes the doctrine of sarvachetanāvatva (III.1.7; II.15), implying that in the higher philosophic sense which may also influence grammatical operations
the distinction of animate and inanimate does not exist. Pāṇini, however, seems to have taken a more practical view. Patañjali was probably referring to old definitions when he advocated the view of the two-fold nature of ātma (II.8). He adds that our physical being (śarirātmā) acts and the effect of pleasure and pain is felt by the antarātmā, and conversely our mind acts and the effects of sukha and dukkha are felt by the physical body. What in Pāṇini’s time was called svānta (VII.2.18) seems to be the same as antarātmā, referring to mind as the internal organ of Self or Sva. Pāṇini also refers both to the gross body as experiencing pleasure (kartuḥ śarirā-
sukham III.3.116), and to its experience by the mind (sukha-
vedanā III.1.18). Sukha is clearly defined as pleasant ex-
erience (ānulomya, V.4.63) and dukkha as unpleasant (prātilomya, V.4.64), same as anukūla-vedaniya and pratikūla-
vedaniya of the Nyāya school. The definition Sva-tantrah 
Karśa (I.4.54), held good both in grammar and as reflecting a 
philosophical doctrine.

INDRA AND INDRIYA—Indra, the famous Vedic deity is 
referred to in the Ashtādhyāyī by his older synonyms as Maru-
vtat (IV.2.32), Maghavan (IV.4.128), Vritrahaṅ (III.2.87). 
Pāṇini also records the synonym Mahendra (IV.2.29), a word 
used only thrice in the Yajurveda in a late prose formula (VII. 
39-40; XXVI.10). The conception of Mahendra seems to 
have arisen out of that of the Chief Vital Air (Madhya Prāṇa) 
enkindling others through the five sense-organs (Śatapatha, 
VI.1.1.2), symbolised as a group of Five-Indras (cf. Udyoga- 
parva, 33.103, Pāṇḍoh putrāḥ paṅcha Paṅchendra-kalpāḥ). 
But the reference to the new metaphysical meaning of Indra 
as Self is truly remarkable (V.2.93). This new meaning had 
been evolved in the religio-philosophical cogitations of the 
Brāhmaṇas where new adhyātma interpretations of the hymns 
were being discussed. Pāṇini derives Indriya, 'sense-organs', 
from the word Indra meaning 'Self'. He sums up the various 
derivations in five clauses of equal rank, and also provides for
other possible views by adding the phrase *iti vā* in the *sūtra*.¹ We learn from Yāska that the derivation of Indra was a major point of discussion in which eminent teachers like Āgrāyaṇa and Aupmanyavā had participated. The fifteen different etymologies of Indra compiled by Yāska (*Nirukta*, X.8; cf. H. Sköld, *The Nirukta*, p. 210) were taken from different Brāhmaṇa and Āranyaka passages, some of which can still be traced (cf. my article 'Studies in the Grammatical Speculations of Pāṇini', *J.U.P.H.S.*, April, 1936, pp. 95-104). Pāṇini also refers to them as shown below.

(i) *Indra-liṅgam*; the sense-organs are the outer sign of Indra. According to the Kāśikā Indra here is Ātmā and this meaning goes back to the *Maitr. Up.*, VI.8. So long as the organs function, Indra resides within the body. Indra is the life-giver of the Indriyas: 'Verily, in the beginning there was the Asat named the Rishis who were doubtless the Vital Airs, Prāṇāḥ. The invisible Prāṇa incarnated in the body; he is Indra, propelling by his power the senses which thereby stand as proof of his existence' (*Śatapatha*, VI.1.1.2). Thus the functioning sense-organs are the visible symbols of life within (*Indra-liṅgam*).

(2) *Indra-dṛishṭam*; the senses were ‘seen’ or experienced by Indra. Yāska ascribes this opinion to Aupmanyavā (*Idam darśanād iti Aupamanyavabh*), a view also expressed in the Aitareya Āranyaka (*Idam adarśaṁ tasmād Indro nāma*, III.14). This Aupmanyavā was a grammarian mentioned by Yāska as holding a different view about the onomatopoeic derivation of names (III.18). It is likely that Pāṇini took this etymology from Aupmanyavā. *Idam* in the above two citations stands for the non-self, or senses.

(3) *Indra-srisṭam*; the organs were ‘created or produced by Indra.’ Yāska attributes this view to the teacher Āgrāyaṇa

¹ इन्द्रियम् इन्द्रियिन्म इन्द्रियित्म इन्द्रियित्म इन्द्रियित्म इन्द्रियित्म इन्द्रियित्म इन्द्रियित्म इन्द्रियित्म इति वा ।

(५.१२१६२)
(Idaṁ karaṇād iti Āgrāyaṇaḥ, X.8), and a similar suggestion is made in the Aittareya Up. (II.1, Tā etā devatāḥ śrisṭāḥ).

(4) Indra-jushtam; ‘loved by Indra’, who feels delighted in the company of the senses. The indriyas are the receptacles of Soma which is Indra’s delightful drink. The Aittareya Br. (II.26) describes the sense-organs as the Soma-cups (Somagraba), and since Indra loves his sweet mead he is never so happy as when he is in the company of the senses (cf. Indra as indau ramate, Nir.). The epithet Indra-jushtā is thus appropriate in view of the intimate relationship between the Self and the sense-organs.

(5) Indra-dattam; ‘assigned to their respective objects of enjoyment by Indra’ (ātmanā vishyebbyo dattam yathā-yathāṁ grahaṇāya, Kāśikā). The same view is found in the Aittareya Up., describing the primeval Self as assigning to the senses their respective functions in the human person (purushe): ‘He said to them: Enter into your respective abodes.’ Pāṇini’s Indra-dattam is in relation to this old legend.

(6) Iti Vā. This part of the sūtra provides for an unknown quantity and puts the grammarian’s seal of approval on such other derivations as were taught by ancient teachers but not included in the above list of five.1 The Kāśikā brings out the spirit of the words by stating that the word iti points to the manner of derivation which thus made room for other similar etymologies also, all of them being of equal force. For Pāṇini to be so liberal with words is rather exceptional and points to the synthetic spirit in which he had conceived his work.

PARALOKA (OTHER WORLD)—A belief in the other world and in the continuity of Self in after life was an article of faith with the people who so conducted themselves in this life as to attain happiness in the next world (Sidhyater-apāralaukike VI.1.49). The sūtra Lipsyamāna-siddhau cha

1 For seventeen similar crude derivations of Indra, see Fatah Singh, Vedic Etymology (Kota, 1952), p. 94.
(III.3.7) refers to the attainment of supreme objective (siddhi) which, according to the commentators, was Svarga. In the Vedas Svarga is called Nāka. The word nāka is derived in the Brāhmaṇas (ŚB., VIII.4.1.24) from na, 'not', and aka, 'pain', because those who go there are free from sorrow (Vedic Index, I.439). Yāska and with him Pāṇini splitting the word into na and aka (VI.3.75) retain its association with the final abode of happiness, as heaven was believed to be in the earlier literature.

Pāṇini also mentions Niśśreyasa (V.4.77) which in the Upanishads denoted supreme bliss or beatitude into which the soul entered. On the contrary, the word Nirvāṇa was also known to the Ashtādhyāyī (VIII.2.50). It denoted something negative, i.e. extinction, as of a lamp or flame of fire. The term was possibly associated with Buddhism, as indicated in Kāśika's example nirvāṇo bhikṣuh.
CHAPTER VII

POLITY AND ADMINISTRATION

1. Monarchy

TITLES AND TERMS—Pāṇini refers to a monarchical state as Rājya (VI.2.130), derived from rājan or king, as distinguished from Saṅgha or Republic. In a well-known passage of the Aitareya Brāhmaṇa, Rājya occurs as one of the several classes of sovereignty to which rulers were consecrated at the time of their coronation (VIII.15). The term Īśvara in the Ashtādhyaṁyī denotes a rājā with reference to his supreme power, as in sūtras I.4.97, and II.3.9 (Yasya cheśvaravachanaṁ tatra saṁtami), which relate to grammatical formations for naming the king of a country. In early literature Īśvara meant an earthly king and not 'God'. Patañjali cites an old example, adhi Brahmadatte Paṅchalāḥ, i.e. 'the Paṅchālas are under the kingship of Brahmadatta'. In the Bhāṣya, rājā of sūtra II.4.23 is taken as a synonym of ina and īśvara (I.177). The Nīganṭu makes rāṣṭrī, arya, niyutvān and ina as names of īśvara. Of these arya is referred to by Pāṇini as a synonym of svāmī (III.1.103). The latter word is derived to denote one who possesses aśvarya or sovereignty (Śvāminn-aśvarye, V.2.126). Patañjali points out that the idea of aśvarya is inherent in the word itself and is not the result of any suffix (nāyam pratyayārthah, II.400). It appears that svāmī implying aśvarya primarily denoted a king.

Another title of rājā in Pāṇini is bhūpati (VI.2.19), and here also aśvarya is an attribute of his overlordship (patyāu-aśvarye, VI.2.18). Bhūpati, therefore, means 'lord of the earth'. The word adhipati mentioned along with svāmī and īśvara (II.3.39) occurs in the coronation formula of the Aitareya Br. in a form of sovereignty called ādhipatya. Jaya-

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swal understood it as overlordship over neighbouring states, who paid tribute to the Adhipati (cf. Ādi, 103.1; 105.11-15, 21). The words Samrāj and Mahārāja were old kingly titles, of which the former is mentioned in sūtra VIII.3.25, and the latter although mentioned twice (IV.2.35; IV.3.97) does not refer to a king, but to one of the Chatur-Mahārājika gods.

The king’s relationship to territory (bhūmi and prthivi) is indicated in his titles sārvabhauma and pārthiva based on his sovereignty or aśvarya (Tasyeśvarah sarvabhūmi-prthivi-bhyām aṇañau, V.1.41-42). One’s own kingdom was called prthivi; but sarvabhūmi denoted the whole country and was the same as mahāprthivi of the Mahāgovinda sutta of the Dīgha-Nikāya. The Sārvabhauma after conquest of the earth and annexation became entitled to perform an aśvamedha (Āpas. Śr., XXX.1.1; cf. Bharata Sārvabhauma, Ādi, 69.45-47). The title also occurs in the list of the Ait. Br.

COUNCIL OF MINISTERS (PARISHAD)—Pāṇini is acquainted with the parishad as a recognized institution of his time of which he mentions three kinds, (1) social (IV.4.44), (2) literary (IV.3.123), and (3) political (V.2.112). A member of a parishad was called pārishada and pārishadāya (IV.4.101). He must be duly qualified or eligible for it (sādhū). One who joined the meeting of a parishad was called pārishadāya (parishadāṁ samavaiti, IV.4.44). This parishad or social congregation was like the samāja. Parishad as a political institution is mentioned in sūtra V.2.112 (Rajah-krisby-āsuti-parishado valach) prescribing the form parishadvala, which the commentators apply to a king with his Council of Ministers (parishadvalo rājā). The Buddhist literature, Kautṣilya and Aśoka inscriptions contain references to this institution. In the Mahāsilava Jātaka, the king’s Parishad consisting of ministers (amachchas) is spoken of as perfectly disciplined to act harmoniously with the will of the king (evāṁ suvinītā kir’assa parisā, Jāt. I.264). Aśoka in Rock Edicts III and VI mentions the Parishad which was summoned to consider urgent matters
(achāyike). An authoritative account of the constitution of the Mantri-Parishad is given in Kauṭilya who describes it as a well-established institution invested with definite constitutional powers in relation to the king and the business of the State (Arth. I.11., p. 26-29).

The particularly happy expression Parishadvalo rājā, 'King-in-Council', current in the political terminology of Pāṇini's time, shows the importance which was attached to the Parishad with reference to the constitutional position of the king in relation to his ministers.

Rājakṛitvā (III.2.95)—This was another important term of political vocabulary mentioned by Pāṇini in sūtra Rājani yudhi kriñāḥ (III.2.95), signifying the institution of rājānaṁ kṛitavān 'one who is a king-maker'. In the Vedic period the Ratnins or High State Functionaries are spoken of as rājakṛits, 'king-makers' (Atharva, III.5.6-7). This political epithet continued up to the Buddhist period: 'The Pali canon employs 'king-maker' as a synonym for ministers (rājakattāro, Dīghanikāya, Mahāgovinda Suttanta). The Rāmāyaṇa in describing the ministers who put their resolution before Bharata, calls them 'king-makers' (Ayodhyākāṇḍa, 79.1, sametya rāja- kartāro Bharataṁ vākyam-abruvan; Comm. rājakartārah—mantriṇaḥ, Hindu Polity, II.116).

CHIEF MINISTER—A fact of great constitutional significance with respect to the working of the Hindu monarchy in that early period is mentioned by Pāṇini in the following sūtra:

Miśraṁ chānusārgam asāṅdhau (VI.2.154).

'The word miśra has an acute accent on the final vowel after an instrumental case, when it is not joined with any preposition, and does not mean an agreement with oath (saṅdhi)'.

On this Kāśikā says: 'Why do we say, not denoting an agreement with oath? Observe Brāhmaṇa-miśro rājā, Brāhmaṇāḥ saha samhitā aikārthyaṁ āpannaḥ. Saṅdhiriti hi paṇabandhaṁ-aikārthyaṁ uchyate'. As Vasu renders the mean-
ing of the Kāśikā: 'The word saṁdhi here means a contract formed by reciprocal promises; 'If you do this thing for me, I will do this for you.' Others say, it means close proximity, without losing identity and thus differs from miśra in which two things are compounded into one. Therefore, though the King and the Brāhmaṇa may be in close proximity as regards space (deśa-pratyāsattau), they both retain their individuality; hence the counter-example Brāhmaṇa-miśro rāja'. Thus the word miśra points to joint authority between the king and his ministers who shared it in common according to constitutional usage.

This technical meaning of saṁdhi is recorded in the Arthaśāstra, which defines it as paṇabandhah saṁdhiḥ, 'an agreement with oath is saṁdhi' (Artha. VII.1, p. 263, Trans. p. 293). The agreement of a king with a Brāhmaṇa in accordance with the oath of loyalty to the constitution was a feature of Hindu polity. The king, according to Manu (VII. 58), must consult his Chief Minister, who should be a learned Brāhmaṇa, about secret counsels dealing with the six limbs of state-craft (śādguṇya, Hindu Polity, 11.119). According to Kauṭilya also the king's Chief Minister should be a Brāhmaṇa: 'The king (Kṣattra) who is supported by a Brāhmaṇa, and who has the advantage of the advice of other mantrins, and who is governed by the Śāstras, conquers territories unacquired before (Artha. I.8,p.16). It is virtually a restate-

ment of the Vedic dictum Brahmaṇa kṣatrena cha śiṅḥ pari-
grihitā bhavati, also embodied in Manu (IX.322).

In actual practice also, the alliance of a Kshatriya king with a Brāhmaṇa prime-minister or chancellor was the prevalent political arrangement from about the Śaiśunāga period to the reign of Aśoka. The names of some of the great minis-
ters were as well-known as those of the rulers; for example, we find mention of Varshakāra, chief minister of Ajātāsatru, Dirgha Chārayāna of king Viḍūḍabha of Kosala, Yaugandharā-
yaṇa of Udayana, Chāṇakya of Chandragupta and also Bindu-
sāra, Rādhagupta of Aśoka, Piśuna of Pālaka of Avanti (Artha. Comm.), Bharata Rohaka of Chaṇḍa Pradyota, Āchārya Ghoṭamukha of Amśūmān of Avanti (Bhagvaddatta, History of India, p. 258), Kaṇiṅka Bhārdvāja of Parantapa, king of Kosala (Artha. Comm.), and Bābhrravya of king Brahmadatta of Paṁchāla (Matsya Purāṇa, XXI.30). As Jayaswal has observed, the system of noting historically the Prime Ministers’ name occurs as a marked feature in Buddhist records (Imperial History of India, p. 17). All these ministers occupied positions of the highest responsibility in the administration and were bound by constitutional ties to the king whose policies they directed so completely.

Pāṇini mentions another political term, Ārya-Brāhmaṇa (Āryo Brāhmaṇa-kumārayoh, VI.2.58), ‘Honourable Brāhmaṇa’, used with reference to the Chief Minister. In the next sutra, Rāja cha (VI.2.59), Pāṇini refers to Rāja-Brāhmaṇa, which as a Karmadharaya compound, would apply to a king of the Brāhmaṇa caste, but as a counter-example would refer to the Brāhmaṇa of the King. The King’s Brāhmaṇa was the same as the king’s minister mentioned in Brāhmaṇa-miśro rājā. ASHAḌAKSHIŅA (V.4.7, SECRET COUNSEL)—It literally means ‘that which is not seen by six eyes’. The Kāśikā explains it to mean deliberation between two persons only, and not more (ashaḍakṣiṇo mantrah, yo dvābhāmeva kriyate, na babubhiḥ). In the political evolution of the Mantri-Parishad and with the emergence of the office of the Prime Minister, there was a tendency to form a smaller body inside the Parishad for more effective and responsible deliberation. As to the number of ministers constituting this Inner Body, Kauṭilya supplies valuable information recording the views of earlier political thinkers like Piśuna, Pārāśara, Viśālāksha and Bhāradvāja. Kauṭilya states that the number of ministers should be three or four (Artha. I.15, p. 28). In this matter the most forceful view was that of Kaṇiṅka Bhāradvāja, the severe theorist who advocated the system of one-minister cabinet
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(Gubyam eko mantrayeteti Bhārdvājaḥ, Arth. I.15, p. 27). This was the ashađakṣīṇa mantra referred to by Pāṇini, i.e. the secret counsel of the king and the chief minister only, in which 'six eyes' had not participated. It signified the same thing as shat-karaṇo bhidyate mantraḥ of later literature. Bhārdvāja held that a plethora of councillors betrayed the secret (mantri-paramparā mantram bhinatti, Artha. I.15; cited in the Kāśikā on V.2.10). This view was disputed by Viśālākṣha who, perhaps true to the veiled suggestion of his name, was in favour of admitting more ministers to the secret sessions of the council.

The ashađakṣīṇa business must have related to urgent and important matters of state. Pāṇini refers to ātyayika (Vinayādi gaṇa, V.4.34), urgent business, to which Aśoka also refers in R.E. VI, and so also Kauṭilya: 'Summoning the ministers and the council, the king shall speak to them on urgent matters (ātyayike kārye mantriṇo mantra-parishadāṁ chāhūya brūyāt, Arth., I.15). Here mantriṇah refers to the Inner Cabinet, and Mantri-Parishad to the fuller Council of Ministers. The ashađakṣīṇa deliberations belonged to the former.

Similarly, in the Gaṇa-pāṭha IV.3.118 an act or resolution of the Parishad is called pārishatka.

RĀJA-SABHĀ (II.4.23)—As distinguished from the Parishad, the General Assembly was represented by the Rāja-sabhā. Tradition makes Bindusāra having a Council of five hundred members. As examples of Rāja-sabhā, Patañjali cites Chandragupta-sabhā and Pushyamitra-sabhā (Bhāṣyā, I.177).

The implication of Pāṇini's next sūtra, asālā cha ('that which is not a building', II.4.24) interpreted with the rule under discussion is that the term Rāja-sabhā, and also its specific names, such as Chandragupta-sabhā, had a two-fold significance, firstly the body of members and secondly the building where the assembly held its session. Even in the Vedic literature we find that Sabhā was the name of an 'assembly' as well as of the 'hall' where the assembly was held (Vedic Index, II.
426). The example Chandragupta-sabbā although certainly post-Pāṇinian denoted both the assembly or Great Synod of that emperor and the magnificent pillared hall which has been discovered in the excavations at Pāṭaliputra. The pillared assembly hall was a Vedic model as the word Sabhā-sthānu (Vedic Index, II.426) shows. Chandragupta built his sabbā with stone pillars. In this connection we may refer to the expression Kāśṭha-sabhā indicative of wooden architecture of earlier times. Chandra and Kāśikā cite it as a counter-example. It is known that the earliest Indian architecture in stone was preceded by that in wood, from which the technical patterns and ornamentation of early Indian art were certainly derived. Therefore, an assembly hall made of wood (kāśṭha-sabhā) was a fact of the pre-Maurya period.

According to Ludwig the Vedic Sabhā was an assembly not of all the people but of the Brāhmaṇas and Maghavans or the rich aristocrats (Vedic Index, II.426). The word sabhēya, 'worthy of the assembly' is taken by Keith to support this view. Vedic sabhēya (IV.4.106) corresponds to sabbhyā of classical Sanskrit (sabhāyām sādhuḥ sabhīyaḥ, IV.4.105), which must have been applied only to those who were privileged to become members of the Sabhā.

Pāṇini mentions the office and duties of Purohita as Paurohitya (V.1.128). The Purohitādi-gaṇa includes Rājā and also Senapati implied in the phrase ātyanta of the sūtra. According to Kauṭilya, next in rank to the Chief Minister was the Purohita; after him came the Senapati; and then the Yuvārāja (Arth. V.3, p. 247). A Purohita was to be learned both in the Veda and in politics (Daṇḍaniti).

MAHISHI (QUEEN, IV.4.48)—The queen had an official position in Hindu polity. She was crowned jointly with the king. Pāṇini mentions the chief queen as Mahisī (Ān mahisyādibhyāḥ, IV.4.48) and the special term Māhisā must have referred to her allowances in the Civil List, which was a charge fixed by convention (dharmyam, āchāra-yuktam).
In the same gana after Mahishī comes Prajāvatī, mother of princes, and her salary is called prājāvata. Kautilya also mentions both the Chief Queen and the mother of princes (Rājamaḥisī, kumāra-mātrī) in the Civil List, the former receiving 48,000 and the latter 12,000 silver pānas per year (Artha. V.3, p. 247). The Chief Queen (Ajja-mahesi) is frequently mentioned in the Jātakas (V.22; VI.31) and distinguished from pājāpatī (I.398; Sanskrit prajāvatī), a title applied to all other queens except the Chief Queen.

Pāṇini mentions the phrase asūryam-ḥasyā applied to women who lived in the seclusion of the palace where they could not see even the sun. The commentators interpret the term as rājadārāh or the royal harem, which corresponds to Asoka's orodhana (Skt. avarodhana).

CROWN PRINCE.—The general word for 'prince' in the Ashtādhyāyī is rāja-putra (IV.2.39) and rāja-kumāra (VI.2.59). The word rāja-kumāra has two meanings (1) a boy king and (2) prince, the latter being a counter-example to the sūtra Rājā cha (rājūṇah kumārah). Of all his sons the king selected the son of the Chief Queen, as the crown-prince or Yuvarāja. In this connection Pāṇini makes an important reference to Ārya-kumāra, i.e. Chief Prince, who was invested with the title Ārya (āryaschāsau kumāraścha) (Āryo Brāhmaṇa-kumārayoh, VI.2.58). Ārya appears to be a political title both in Ārya-Brāhmaṇa and Ārya-kumāra. Samudragupta was addressed as Ārya by his father at the time of his selection to the throne (āryo hityupaguḥya, Allahabad Pillar Inscription). In the Jātakas the crown prince is called uparājā. In one instance, of the two brothers one is made uparājā and the younger one senāpati; on the death of the king the uparājā becomes rājā, and the senāpati becomes uparājā (Jāt. VI.30).

RĀJA-KUMĀRA.—This expression especially taught in sūtra VI.2.59, denotes a boy-king, i.e. a prince who was required under special circumstances to succeed to the throne as a
minor. It should be noted that a boy-king, although permitted to succeed in his minority, was formally consecrated as king only when he attained the age of majority.

PERSONAL AND PALACE STAFF.—The King, in keeping with his royal dignity, maintained a full contingent of personal and household staff which consisted of body-guards, the chamberlain, ecclesiastical staff, toilet attendants, and inferior servants who were in charge of royal paraphernalia. The *Ashtādhyāyī* acquaints us with each one of these classes of officers.

PERSONAL BODY-GUARDS.—The king's A.D.C. or staff for the protection of his person (*ātma-raksitaka*, Arth. II.21, p. 42) is mentioned by Pāṇini as Rāja-pratyenās (*Shasthī pratyenasi*, VI.2.60). Pratynec is mentioned along with Ugra and Sūta-grāmanī in the *Bṛhadāraṇyaka Upaniṣad* (IV.3.43-44), denoting there a police-officer. 'The sense must be that of the humbler 'servants' of the king' (*Vedic Index*, II.34). It was a responsible task for which, Kautilya directs special precautions to be taken. Pāṇini informs us about the status of dignitaries appointed as king's body-guard. In *sūtra* VI.2.27 (*Ādih pratyenasi*) he explains the formation *kumāra-pratyenaṁ*, i.e. a prince serving as an A.D.C. It must have been a position of honour to which princes of the royal blood were usually appointed. An assemblage of princes is mentioned as *rāja-putraka* (IV.2.39).

CHAMBERLAIN.—This official is called Dauvārika (VII.3.4, *Dvārādīnāṁ cha; dvāre niyuktāḥ*). His importance is indicated by his pay fixed at 24,000 silver kārṣṭāpanas in the *Arthasastra* (dauvārika . . . sannidhātāraḥ chaturvimśati-sāhasrāḥ, V.3).

OFFICERS TO GREET THE KING.—These were: (1) Svāgatika, the officer who pronounced welcome to the king at his appearance (Svāgatādīnāṁ cha, VII.3.7; svāgatam ityāha); (2) Sauvastika (svastitīyāha, Dvārādi gana, the officer who recites svasti-vāchana to the king). To this Kātyāyana
adds three more: (3) Saukha-śāyanika, the person who enquires of the king if he had slept well (sukhaśayanam prichchhati). This is the same as Pāṇini’s Saukha-śāyyika (sukhaśāyyaya jivati, Vetānādi gana, IV.4.12). In the Lobakum-bhi Jātaka we find mention of Brāhmaṇas coming at dawn to enquire about the health of the king of Kosala (arunāgamana-velayā Brāhmaṇā āgantvā rājānam sukhasayitām pruchchhīnṣu, III.43). (4) Saukha-rātrika, the officer who asks whether the king spent a comfortable night. (5) Sausanāṭika, the officer who greets the king after his toilet (susnātaṁ prichchhati). The sausnāṭika in relation to the king is referred to by Kālidāsa (Raghuvaṃśa, VI.61).

TOILET ATTENDANTS—Both male and female attendants are mentioned in connection with king’s toilet, e.g. pari-shechaka, snāpaka, utsādaka, udvartaka (Yājakādi gana, II.2.9; VI.2.151); pralepikā, vilepikā, anulepikā (Mabishyādi gana, IV.4.48). The allowances (dharmya) paid to the latter were called after them pralepika, vailepika and ānulepika respectively. Patañjali makes a special reference to vailepika as a customary payment to a female attendant who applied unguents (VI.3.37; III. 156). The expression snātānulipta shows that ānulepa denoted unguents applied after bath (Arth., IV.6; p.217). The Kalpasūtra refers to these terms in describing the king’s toilet (Kalpasūtra, S.B.E., pp. 242-3).

RĀJA-YUDHVĀ—That text also states that the king entered the hall for gymnastic exercises and there engaged in wrestling (mallayuddha). Pāṇini refers to rāja-yudhvā (III.2.95), a term applied to the wrestler who gives exercise to the king (rājānam yodhitavān iti rāja-yudhvā). This list of attendants incidentally has reference to the king’s daily routine, as laid down in the Artha Śāstra.
CH. VII, SECTION 2. GOVERNMENT

GOVERNMENT—The king was at the head of government in a monarchical or Ekarāja State. He was assisted in his work by a ministerial council or Parishad, and also possessed a larger body called Sabhā as we have already seen. The number of ministers comprising the Parishad is not known from Pāṇini, but, as Kauṭilya states, it must have depended on the needs of administration. The Chief Minister (Ārya-Brāhmaṇa), the Chief priest (Purobhita), the Crown-Prince (Āryakumāra, same as Ārya-putra of the Minor Rock Edict at Brahmagiri), and the Commander of the Army (Senāpati) have received mention in the Āśṭādhya, being important officers represented in the language through special terms.

ADMINISTRATIVE OFFICERS—Pāṇini mentions government servants of several grades who appear to have been organized into a Civil Service. The term āyukta was a general term for government servants (II.3.40) engaged in routine work (āsevā). Kauṭilya refers to āyukta purushas of a king (Arth. I.15, p. 27), and so do the Jātakas (yuttakapurisā rāño, Jāt., V.14). When they were assigned special jobs they were called niyukta after their assignments (Tatra niyuktaḥ, IV.4.69). As examples of niyukta officers, the Kāśikā mentions Koshṭhāgārika, store-keeper employed in the royal storehouses (Agārāntāt-ثان, IV.4.70), who according to Kauṭilya was of the grade of a superintendent. Other special officers whose names ended in agāra were Devāgārika for temples, and Bhāндāgarika for stores (Kāśikā on IV.4.70). These must have been officers known from olden times (cf. also Kauṭilya). Personal attendants, such as cbbatradbāra, bearer of the royal umbrella, tūnīdbāra, bearer of the quiver of arrows, and bhrīngāradbāra, bearer of the king's spittoon, were of the niyukta class (Ani niyukte, VI.2.75).
The most important officers constituting the steel-frame of administration were the Adhyakshas mentioned in sūtra VI.2.67 (Vibhashādhyakṣhe). They were Heads of Government Departments. In Kauṭilya’s administrative system, the Adhyakshas play an important part as presiding over the different departments of administration. The Arthaśāstra enumerates about twenty-five Adhyakshas. As examples of Adhyakshas, the Kaśika cites Aśvādhyakṣa and Gavādhyakṣa (IV.4.69), mentioned also by Kauṭilya. The Kāśikā refers to other niyukta officers, such as Ākarika, those for mines; Śaulkaśālikā for customs, Āpanika for market-places, Gaułmika for forests, who were of the Adhyakṣa cadre according to Kauṭilya.

YUKTA—The Yuktas were a class of subordinate officers of whom Pāṇini mentions Yuktārobi (VI.2.81), which is the same as yuktāroka of Kauṭilya (Artha. V.3. p. 248). His remuneration was fixed not as regular pay, but as an honorarium (pūjā-vētana) of 500 to 1000 kārśbāpanas per year. His duties are not exactly defined but he may have been entrusted with the special task of breaking ungovernable elephants and horses (avidhēya-bastyaśvārobaṇa-samarthāḥ, Gaṇapati Śāstri). The Śāmaṇṇapabala-sutta mentions hattbāroba and asāroba amongst skilled workmen of the times. Under the Adhyakshas was placed the entire civil service consisting of subordinate officers or Yuktas. They were a regular feature of the Mauryan administration referred to both in the Asokan Edicts (R.E.3II) and the Arthaśāstra (II.Ś, sarvādbhikaraṇeṣhu yukto-payukta-tatpurushānām). Pāṇini’s mention of both the Adhyakshas and Yuktas points to the fact that these officers had become parts of the administrative system a few centuries before Kauṭilya.

Pāṇini mentions some other subordinate officers, e.g. goḷāla, cowherds; tantipāla, goatherds; and yavapāla, guards of barley fields (Go-tanti-yavam pāle, VI.2.78). Tantipāla is mentioned also in the Virāṭaparva (XI.8) having other pāla officers
working under him. The Pālas of Pāṇini (Pāle, VI.2.78) form a class of officers, of whom Kauṭilya mentions nadipāla, dravyapāla, vanapāla, nāgavananapāla, antapāla, durgapāla, and the Mahābhārata refers to sabbapāla (Ādi., 222.16), in addition to gopāla and tantipāla, known also to Pāṇini. The Sasa Jātaka refers to khettapāla and Khettagoḍaka (Jāt., III.54) and the Sihahamma Jātaka to khettarakkhakā, those watching barley and rice fields (II.110), which corresponds to Pāṇini’s yava-pāla. Later we get vibārapāla, ārāmapāla and dharmapāla in the Buddhist tradition.

As specific instances of Yukta officers the Kāśikā mentions go-sāṅkhyā and aśva-sāṅkhyā who acted as census officers of royal cattle and horses and whose business it was to register their number, age and branding marks. Details of such a census of royal cattle held in the kingdom of Duryodhana occur in the Ghoshayātrāparva (Vanaparva, chs. 239-40).

Kṣhetarakara, an officer for surveying fields, and līpiḥkara, a scribe (III.2.21, with the variant form lībikara, were both subordinate officials known in the Mauryan administration also.

DUTA—The Dūta or emissary was named after the name of the country to which he was deputed (Tad-gachchhati pathi-dutayoh, IV.3.85). The term pratishkasha also denoted a messenger (VI.1.152). Couriers were called jaṅghākara (III.2.21), corresponding to jaṅghārika of Kauṭilya (Arth. II.1, p. 46). Pāṇini refers to a special term yaujanika, to denote a courier travelling one yojana (yojanaṁ gachchhati, V.1.74), to which Kātyāyana adds yaujanasatika, i.e. a courier who is deputed on an errand of a hundred yojanas. This is in complete agreement with Kauṭilya who refers to the speed of Mauryan courier service in terms of the distances they travelled from one yojana to a hundred yojanas. The remuneration prescribed was ten pānas for each yojana travelled up to 10 yojanas, and thereafter twice as much in a rising scale from eleven to one hundred yojanas (Arth., V.3, p. 248).
A similar courier service was maintained in Achaemenian Iran, under king Xerxes and other emperors almost contemporaneous with Pāṇini’s time.

The message delivered orally by a dūta was called vāchika (Vācho vyāhītārtībhāyān, V.4.35), and the action taken on it kārmaṇa (Tad-yuktāt karmano’ū, V.4.36; vāchikān śrutvā tathaiva yat-karma kriyate, Kāśikā). Pāṇini refers to an officer called kartri-kara (III.2.21), an obscure word unrecorded in literature, but in Pali kartā denoted the king’s agent or messenger (Stede, Pali Dict., Jāt., VI.259, etc.), whence the person who selected or appointed him must have been so called. ĀKRANDA—Pāṇini mentions special couriers called ākrandika (IV.4.38), deputed to an ākranda (ākrandān dhāvati). The Kāśikā takes it as a place of moaning or suffering (ārtāyana) which does not make sense. Kauṭilya defines ākranda as a friendly king in the rear of the vijigishu (Arth. II.62, p. 31.) Kullūka on Manu VII.207 explains the word clearly saying that a hostile king in the rear was called pārshnigrāha and a friendly king in the rear who would act as a countercheck to the enemy at the back was known as ākranda (Śānti, 69.19). Thus a messenger deputed to an ākranda king was called ākrandika.

One who considered himself strong enough to proceed against an enemy, because of his secure position in the political Mandala, was called abhyamitrīya or abhyamitrīṇa (abhyamitram aṅgāmī, V.2.17).

IDEALS OF ADMINISTRATION—The ideal of the State was good government (saurājya). Good government means state under a king (rāja), after whom it was called rājanvān (Rājanvān saurājye, VIII.2.14). This points to the theory advocated both in Kauṭilya and in the Jātakas, according to which the institution of kingship emerged out of the people’s desire to escape from the miseries attendant on ‘no government’ (the state of mātsya-nyāya). The people decided to elect a king, and thus making themselves rājanvān they realised the condition of peaceful society. The evils of kingless society
arājaka rāṣṭra are described in the epics (cf. Ayodhyākāṇḍa, ch. 67; Śāntiparva, ch. 68).

FUNCTIONS OF GOVERNMENT—The successful working of government in a monarchy depends on the qualities and personal character of the king and his ministers. Training of the king in disciplined life was termed Vainayika (V.4.34). This is exactly the term used by Kauṭilya who deals with the training of princes in the chapter called Vinayādhikārika. He considers Vinaya as the foundation of successful governance.

The Vinayādī gāṇa includes important terms relating to a variety of governmental functions of which the following may be noted: (1) Sāmayika, that which appertains to Samayās or established contractual relationships; (2) Sāmayāchārika, the subject of customary law or usage—the term forms the subject of a Section in the Arthaśāstra (Book V, Sec. 5)—and as stated by Āpastamba was the basis of dharma (Athātah sāmayāchārikān dhabrām vyākhyāsyāmah, Hindu Polity, II. 106); (3) Aūpayika, everything concerning ways and means (Arthī. II.10, p. 74); Vyāvahārika, transaction of law; (4) Atyayika urgent business, mentioned both by Kauṭilya (I.15, p. 29) and Aśoka (R.E.VI) as already seen, which required immediate attention of the king and his ministers; (5) Sāmut-karshika, problems of development; (6) Sāmpradānīka, affairs relating to royal charities; (7) Aupachārika, State ceremonial; (8) Sāmācharika, the business of correct procedure. Obviously the author of the Gana-pātha is here in touch with living tradition borrowing these terms from actual administration.

MISCELLANEOUS DETAILS—We have already noticed the maintenance of a Civil List with respect to the allowances of the king’s household, ministerial staff, and other government servants. Pāṇini, according to the requirements of grammar, mentions only a few names, e.g., the Chief Queen, mother of princes and some of their personal attendants (IV.4.48), but that should be taken as part of a regular system which is elaborated in the Arthaśāstra. Salaried staff is termed by
Pāṇini as vaitanika (IV.4.12). We learn from the Mahā-bhārata that salary was disbursed on a monthly basis (Sabhā-parva, 61.22). Patañjali also refers to bhṛitaka māsa, or month as the unit of time for payment of wages (II.275), and bhṛitya-bharaniya or wages of employees (Bhāshya, I.370). The term karmanya (V.1.100) indicated efficiency arising out of adequately remunerated work, as noted by Kauṭilya (etāvatā karmanya bhavanti, Arth. V.3, p. 247). Bribery is referred to (V.1.47); e.g. work for which a sum of rupees five was paid as bribe (upadā) was called pañchaka. The Kāśikā mentions the amounts of such bribes running up to a hundred or a thousand rupees. Reference is also made to the fabrication of accounts, avastāra (III.3.120), a term also known to the Arthaśāstra with reference to corruption prevailing in government offices (Arth., II.8, p. 65) which resulted in the embezzlement of government money (kośa-kshaya).

Secret means employed in the espionage office were called upanishat, a pejorative sense of the rigid word Upanishad which denoted occult or mystic doctrine (I.4.79). Kauṭilya uses Aupanishadikam in the same sense (Artha., XV). The adoption of such third degree methods was termed upanishatkriya. The Gana-pātha (IV.4.12) also mentions aupanisha-dika, a spy making his living by secret means called upanishat (apanishadā jīvati). In this connection attention may be drawn to the term vishya, which according to Pāṇini denoted a person marked out for administering poison (vishena vadhyah, IV.4.91). This refers to the nefarious practice of rasadāḥ, who formed a branch of the secret service, (Artha., I.12, p. 21; V.3, 248).

SOURCES OF REVENUE—Pāṇini makes a general reference to sources of revenue as āya-sthāna; the object of the sūtra is to teach that the name of the revenue is derived from the name of the source producing that income (Ṭhagāyasthānebhyah, IV.3.75). It appears that in the account registers maintained for revenue receipts income was entered according to its source.
For example, Patañjali mentions śaulkika, revenue derived from toll-taxes, cf. śaulkaśālika in Kāṣikā; saulmika, forest plantations; āpanika, market-places (IV.2.104.13; II.295); to which the Kāṣikā adds ākarika, income from mines. Pāṇini himself refers to the payment of imposts called śulka, (V.1.47). Toll-tax was described in terms of its amount, e.g. pañchaka, goods on which a toll of rupees five was paid (tad asmin śulkaḥ diyate, V.1.47).

Specific mention is made of śaudika, or income derived from excise (Śundikādibhyo'ṇ, IV.3.76). Kautūlya states that the excise department was maintained as a State monopoly. Special regulations are given there to control the revenue from drinking booths. Śundika was the name of distilling plant, so called from the elongated condenser tube (śundikā) attached to the pot. Several specimens of them have been found at Takshaśilā from Kushāna levels.

In the Śundikādi gaṇa we find reference to other heads of income, as platforms (sthūndila), probably let out in market-places, wells (udapāna), stone quarries (upala), ferries (tīrtha), land (bhūmi), grasses (trīṇa) and dry leaves (pame), the last two items indicating to what limits the sources of revenue were exploited. Even now, contracts in respect of forest produce are given by government for collection of leaves, weeds and grasses.

SPECIAL TAXES IN EASTERN INDIA—There is a provision in sūtra VI.3.10 to regulate the names of certain special taxes in the eastern parts of India (Kāranāmni cha Prāchāṁ balādau). Four examples are given by the Kāṣikā: (1) Sūpeśāṇah, a levy of one śaṇa coin (this coin is known from two sūtras of Pāṇini and was equal to one-eighth of a Śatamāṇa) realised per kitchen or household; (2) Mukute-kārshāpaṇam, one kārshāpana coin per capita (mukuta); (3) Drishadi-māśbakah, one māśbaka coin collected from each hand-mill in a family; (4) Hale-dvipādikā and Hale-tripadikā, an imposum of two or three pāda coins on each bala or plough-measure.
of land. These appear to have been customary levies imposed by the king on special occasions to meet emergent expenditure. Some of these taxes in modern terms are pāg (per head), tāg (per adult or poll-tax), bār (per plough), etc. It may be noted that Pāṇini does not name them by the usual word kara for 'tax', but they were known by the more emphatic word kāra. Pāṇini mentions a special class of officers named Kāra-kāra (III.2.21), who, it appears, were entrusted with the raising of these taxes.

ACCOUNTING—Ganaña was the term used for accounting, and vīgaṇana for discharge of accounts (I.3.36). The Superintendent of accounts (gāṇanika) and the clerks (kārmika) are mentioned by Kauṭilya in connection with the annual audit by the Accounts Office (Arth. II.7, p. 64). In the Ashtādhyāyī these two officers are mentioned in the Gana-pātha, kāraṇika in IV.2.116 and kārmika in V.2.116. Falsification of accounts was called avastāra (III.3.120). The Kāśikā reveals the importance of the Heads of the Accounts Office (ganakas) when it refers to them as controlling all other officers from their desks in the accounts office (Tishṭhantomuśāsati ganaṅkāh, III.2.126).
CH. VII, SECTION 3. LAW AND JUSTICE

DHARMA AND NYÄYA—The word Dharma in Pāṇini has a two-fold meaning, firstly an act of religious merit, e.g. one who performs dharma is called dhārmika (IV.4.41); secondly it means custom or usage as in sūtra IV.4.92, according to which an act which does not deviate from dharma or usage is called dharmya (dharmād-anapeta). Pāṇini refers to payments fixed by long usage as dharmya (IV.4.47; VI.2.65). This second meaning of dharma crystallised in the earliest law, of which the oldest compilations were known as Dharmasūtras. Āpastamba commences his work with the statement: Ṭhātaḥ samayāchārikān Dharmān vyākhyāsyāmah (Āpas., Db. S., I.1.1), 'We shall now propound Dharmas or laws based on custom'. Dharma as a subject of study had been developed under the Vedic Charaṇas from before the time of Pāṇini, who refers to this subject in the sūtra Charanēbhya Dharmavat (IV.2.46), showing that the Vedic schools possessed distinctive texts dealing with Dharma, which were none else than the Dharmasūtras. Kātyāyana explains it (IV.3.120.11) by saying that a Charaṇa had two-fold texts: (1) Āmnāya or sacred tradition compiled as religious canon, and (2) Dharma or customary law compiled from actual life.

Pāṇini takes Nyāya as abhresha, non-deviation from traditional practice (III.3.37). An action in accordance with custom or usage was called nyāyya (IV.4.92), which was analogous to dharmya.

COURT—Matters concerning Civil Law were termed Vyāvaḥarika (V.4.34, Vinayādi gaṇa). Dharma-pati, master of law, also occurs in a gaṇa (IV.1.84). The arbitrator chosen by the parties to a dispute was called stheya (I.3.23, vivāda-padana-nirṇetā Kāśikā). The plaintiff or complainant was known
as parivādī (III.2.142) or parivādaka (III.2.146). A witness was sākshi, whom Pāṇini defines as one who is an 'eye-witness' (Sākṣaṅa-drasṛṭari samijñaṅyāṁ, V.2.91). Later on those who possessed hearsay evidence were also called sākshi (Samakṣa-daṅsanāt sākṣaṁ; śravaṇād-vā, Vishnuudharmottara, VIII.13). According to the sūtra Svāmīśvara, etc. (II.3.39) a witness was named according to the transaction or object in connection with which he was an eye-witness, e.g. a witness in relation to cows was called go-sākshi, and his evidence would be of use only on that particular point in the complaint.

The practice of administering oaths to witnesses was also known. Sūtra V.4.66, Satyād-asāpathe, prescribes a two-fold linguistic formation from the word satya: (1) satyā-karoti was used in connection with the payment of earnest money to settle a bargain; (2) satyanā karoti was used in connection with the taking of oath. Manu informs us that this form of oath was reserved for witnesses of the Brāhmaṇa caste (satyena sāpayed vipram, VIII.113). For example, it was enough for a Brāhmaṇa to declare solemnly: 'I shall state the truth', and then to proceed with his evidence. The form of the oath for other castes was different and of a more materialistic nature. This nice distinction known to Pāṇini must have been developed in the Dharmasūtras, whence the tradition came down to the Snyūtis.

A surety was called pratibhū in relation to the loan for which he was bound as surety (II.3.39; III.2.179).

CIVIL LAW—Of the various items of Vyavahāra, only inheritance is referred to in the sūtras. One who inherits is called dāyāda, and the property which he inherits dāyādya (Dāyādyamān dāyāde VI.2.5). The dāyāda was designated according to the object in which he had beneficiary interest, e.g. if of several claimants one had an interest in cows, he alone was called go-dāyāda (II.3.39).

A co-sharer is referred to as aṁśaka, i.e., entitled to a share in the property (Aṁśaṁ hūrī, V.2.69; cf. Manu, IX., 150-53.
for division of āṁśas). The force of the suffix in the word hārīn (āvaśyake niṁiḥ) would make āṁśaka an heir with legal sanction. Both dāyāda and āṁśa are technical terms known to the Dharmaśūtras (cf. Vasishṭha Dhi.S., 17. 25; 17. 48, 49, 51, 52).

CRIMINAL LAW—Crime was called sāhasikya (I.3.32). Various forms of crime are referred to, e.g. theft (steya, V.1. 125), robbery (luṇṭāka, III.2.155) and way-laying (paripantaṁ cha tisṭṭhati, IV.4.36). The word aikāgārika means a thief, who waits for an opportunity to enter a house when lonely. Buddhist texts use the term in a different sense, i.e., a monk who begged his food from one house only. In the Majjhima Nikāya Gautama describes himself as an ekāgārika, dvyāgārika and saptāgārika (Mahāsīhanāda Suttanta).

Various forms of the use of defamatory language and of expressing censure are given.

Punishment both by way of fines and physical torture is mentioned. The former was called dāṇḍa, as in sūtra V.4.2 which regulates the expression for indicating the amount of fine, e.g. a fine of two pāda coins was mentioned as dvipadikāṁ dāṇḍitah; similarly dvīṣatikāṁ dāṇḍitah, a fine of 200 kārṣṭa-paṇas. An accused adjudged for punishment was called dāṇḍya (V.1.66, dāṇḍam arbatis; cf. Yāska, II.2 referring to one fit for clubbing and called musalya). Mutilation of limbs was called cbheda, and the criminal so punished cbhaidika (V.1.64). Capital punishment was sirsba-cbchbeda (V.1.65). Heinous crimes as infanticide and murder (kumāra-gbāta, sirsba-gbāta, III.2.51) are mentioned; so also destroying an embryo (bhraunabhatya, VI.4.174), and killing a Brāhmaṇa (Brahmabā, III.2.87). Kauṭilya was in favour of stern administration of criminal justice and mentions ucbchbeda or death (II.13, p. 87) and cbbeda or mutilation of limbs as punishments for serious crimes (Artha., IV.11, p. 229).
FOUR-FOLD DIVISION—The organisation of the army as known to Pāṇini was based on the traditional four-fold division, viz. infantry, chariots, horses and elephants. These were known as senāṅga, or limbs of the army (II.4.2; cf. bastyārobāḥ rathinahśādinaścha padātayaścha, Udyogaparva, 30.25). There is a grammatical rule saying that the names of army-divisions when compounded take singular number, e.g., a combination of charioteers and horsemen was called rathikāśvāroham; and of the former and foot-soldiers as rathika-pādātam. The compounds must have had their origin from the prescribed grouping of these different units for the purpose of military operations. An infantry division was called padāti (VI.3.52). Special mention is made of the infantry units organised in the Sālva country (IV.2.135). As against the padāti soldiers or footmen were the mounted ones called sādi (VI.2.41; cf. sādi-padāti-yūnām, Bhīshmaparva, 60.20). Pāṇini makes special mention of dromedary riders or camel corps (ushṭra-sādi, VI.2.40). Mule and camel corps together are referred to as ushṭra-vāmi (VI.2.40). Army was sometimes named in terms of caste, e.g., Brāhmaṇa-senā, a Brāhmaṇa battalion (Kāśikā on II.4.25).

A big army required, besides its fighting services, a hierarchy of civil officers to manage its organisation, e.g. clerks, accountants and men in charge of supply. The accountants in charge of infantry and chariots are named as pattiganaṅka and ratha-ganaṅka with a special suffix to denote their functions in connection with military accounts (V.1.129, Udgaṭrādi gana). Pritanā is obviously mentioned as a Vedic word in pritanāshāt (VIII.3.109).

FIGHTING SERVICES—The army to be effective must be
properly manned and officered. A cavalry commander was called *aśvāpāti* (IV.1.84). The commander of the army as a whole was *senāpāti*, whose rank according to Kauṭilya was one of the highest in the realm mentioned along with the chief-minister and the crown-prince in the civil list. An ordinary soldier who served in the army was known as *sainika* or *sainīya* (IV.4.45). A soldier with a marching army or bound for field operations was distinguished as *senācbhara* (III.2.17). The principle underlying the nomenclature of the various classes of fighting forces was the same as found at present in such words as musketeers, lancers, riflemen, etc. Pāṇini says that the fighter is named after the weapon which he wields (*Prahaṇanam*, IV.4.57), e.g. *āśika* (swordswoman), *prāsaka* (lancer), *dbānuschka* (bowman). He makes special reference to those fighting with a battle-axe (*pāraśvadbhika*, IV.4.58), and spear (*sāktika*, IV.4.59). Patañjali says that in forming the names of armed persons no suffix is necessary, for example *kunta* would denote both a lance and a lancer (cf. *kuntān praveśaya*, II.218). Amazonian soldiers also seem to be known, as *sāktiki, yāshṭikī*, mentioned by Patañjali (II.209), but since neither Pāṇini nor Kātyāyana makes provision for the addition of a female suffix after *ikak*, it is doubtful if the institution of women warriors was known before the Mauryan period. Kauṭilya mentions them in connection with the emperor’s palace-guards (*strī-gaṇair-dhanvibhiḥ, Arth. I.20, p. 12*), and it is possible that it was an innovation of Chandragupta. Special mention is made of contingents of armoured soldiers organised as *kāvachika* units (*kavachinām samūbah*, IV.2.41). *Kavachabara*, ‘one who wears the coat of mail’, was a term denoting the age at which a youth was admitted to arms (III.2.10). The armour seems to have become a part of regular military uniform for which a special root (*sainvarmayati*, III.1.25, dons the armour) had come into use.

**PARISKANDA**—According to Pāṇini the word was pronounced as *pariskanda* in the Prāchya-Bharata region (Kuru-
Pañcbāla), and parishkanda elsewhere (VIII.3.75). The word occurs in the Vrātya hymn of the Atharvaveda (XV.2.6, et. seq.) denoting in the dual, the two footmen running beside a chariot (Vedic Index, I.497). The Mahābhārata also refers to footmen protecting the wheels of a chariot on either side (rathānāṁ chakra-raksbāścha, Bhishmaparva, 18.16). The Greeks also found them as forming part of the full equipment of a chariot in the Indian army in the fourth century B.C. It is said of war-chariots that each of them 'was drawn by four horses and carried six men, of whom two were shield-bearers, two archers posted on each side of the chariot, and the other two, charioteers, as well as men-at-arms, for when the fighting was at close-quarters they dropped the reins and hurled dart after dart against the enemy.' (McCrindle, Alexander's Invasion, p. 260). The two shield-bearers correspond to the two footmen running by the side of the wheels, and called chakra-raksha or parishkanda.

ARMS—The general term for weapons is prabarana (IV.4.57), also mentioned in the Arthaśāstra. Of names of weapons mention is made of bow (dhanush, III.2.21), spear (śakti, IV.4.59), battle-axe (parasvadha, IV.4.58), long and short lances (kāśū and kāsūṭāri, V.3.90; brasvā kāsūḥ kāsūṭāri; kāśūrīti śaktirāyuḍabavishesa ucbaye, Kāśikā) a special kind of missile called beti (III.3.97), and sword (asi; also called kauksbeyaka from its scabbard or kuki, IV.2.96). Short lances were effectively used in ancient cavalry units of the Scythians and Parthians both on their advancing and retreating tactics. In the army led by Xerxes against Hellas, the Gandhārians are described by Herodotus as bearing short spears, which seem to have been kāsūṭāri (Raychaudhury, Polit. Hist., 1950, p. 242). A bow was also called kārmuka, which Pāṇini derives from karman or action in the field (V.1.103). Sāyana derives it from krīmuka, name of a tree (Śatapatha, VI.6.2.11). According to Kauṭilya a kārmuka bow was made of the wood of tāla or palmyra tree (Arth., II.10,
This agrees with Pāṇini who also refers to a bow made of tāla, and itself called tāla (Tālād dhanubhi, IV.3.152, tālān dhanubh; also mentioned in the Mahābhārata tālamayain dhanubh). Pāṇini mentions a specially big kind of bow called maheshvāsa (VI.2.38). According to Kauṭilya a bow was equal to five cubits or seven and a half feet (Arth., X.5, p. 372). This appears to have been the size of the big bows called maheshvāsa in Pāṇini and known much earlier. The Indian soldiers under Puru in the battle of the Vītastā are stated by the Greeks to have used long bows, one end of which rested on the ground and was held by the archer’s foot, who shot with its string long and heavy arrows with such force as no breast-plate could withstand.

The arrows were fitted with barbs (patra) to make them strike with deadlier effect. Pāṇini refers to the use of barbed arrows (saṭatra), causing extreme pain (Saṭatra-nishpatrād atiyathane, V.4.61). This is confirmed by the account of Plutarch of the arrow with which Alexander was wounded in the fortress of the Malloi (Mālavas). He also gives the measurement of the barb: 'An archer let fly an arrow which transfixed his cuirass and pierced to the bones around his breast and there stuck fast, the shaft as it projected from the wound aggravating the pain (cf. Pāṇini’s atiyathana), while the iron of the barb measured four fingers in breadth and five in length'. (McCrindle, Alexander, 1901, p. 207).

ART OF WAR—The Āyuḍhajīvins were warrior tribes organised on a military basis into Saṅghas, occupying mostly Vāhika or the Panjab. Their members were known as āyuḍhīya, 'making a living by the profession of arms' (Āyuḍhena jivati, IV.4.14). We know that these soldiers put up the stoutest resistance against the Greeks in the fourth century B.C. The Aśvakāyanas of Maṣaṅkāvatī and the Mālavas, all āyuḍhajīvins, constituted the finest soldiery, which extorted the admiration of the foreigners. The Kshudrakas and the Mālavas (Gaṇa-pātha of IV.2.45), we are informed by Kātyā-
yana, pooled their military strength in a confederate army called the Kshaudraka-Malavi Senā. The foot-soldiers (padāti) of the Sālva country have been especially noted (IV.2.135).

Pāṇini also refers to military sports or tournaments (prabaraṇa-krīḍā, IV.2.57), in which young men participated for display of archery and swordsmanship. Pāṇini states that the names of battles were derived from a two-fold factor, viz. the names of combatants (yoddhāri) and the objective (prayojana) for which they fought (IV.2.56). The Kāśikā cites āhimāla, a battle fought by the Ahimāla soldiers (āhimāla yoddhāro'sya saṁgrāmasya); syāndanāśva, fight by contingents of chariots and horses; Saubhadra and Gaurimitra, a battle for the sake of Subhadrā and Gaurimitrā. Attacking with an army was termed abhisheṇayati (III.1.25; VIII.3.65); encircling parisheṇayati; and retreating pradrāva (III.3.27).

ANUŚATIKA—Pāṇini refers to Anuśatika (VII.3.20), who was an officer of the Commissariat, according to the Śukraniti. He was an assistant of the Satānika, or commandant of 100 soldiers. 5 footmen were placed under a Pattipāla, 30 under a Gaulmika, and 100 under a Satānika (Śukra, II.140). The Anuśatika looked to army stores and recruitment.1

1 तथाविषेषोऽनुशतिक: षतानीकरस्य साधक: ।
जानाति युद्दसभारं कार्ययोग्यं वहनिकम् ॥ शुक्रनिति २१४४
CH. VII, PART 2. REPUBLICS IN PÂÑINI

SECTION 5. POLITICAL SANGHA OR GAÑA

JANAPADA AND JANAPADINS—The country was divided into Janapadas demarcated from one another by boundaries (Janapada-tadavadhyaścha, IV.2.124). In Pânini Janapada stands for country, and Janapadin for its citizens. The derivative meaning of the term Janapada points to the early stage of land-taking by the Jana for a settled way of life. This process of the first settlement on land had completed its final stage prior to the time of Pânini. The Janapadas which were originally named after the peoples settled in them, dropped their tribal significance and figured as territorial units or regions. Pânini testifies to this process (Śutrakāṇḍa, I.2.51-57) by stating that the names of the Janapadas did not take after their original settlers, but were then current as independent proper names for territorial units. He even goes to the extent of arguing that if the derivative meaning of such geographical names as Pañchāla was insisted upon, there might be cases in which with the disappearance of the derivative cause, the name of the country itself formed on that basis should disappear (Lub-yogāprakhyānāt, I.2.54; Yoga-pramāṇe cha tadabhave' darśanāṁ syāt, I.2.55). This appears to be only a rational attempt to meet the views of extreme etymologists; it does not mean that in Pânini's time the essential relationship between the Janapadas and the Janapadin rulers had in any way weakened. We find that Pânini later on makes that relationship a real basis for his sūtras. For example, the sūtra, Janapade luh (IV.2.81) alludes to the name of a Janapada derived from its inhabitants but without any extra affix. Moreover, we find from Pânini's own statement that in the majority of the ancient Janapadas their origi-
nal Kshatriya settlers still held sway and the political power was concentrated in their hands.

In this connection *sūtra* IV.1.168, *Janaṇapada-śabdāt kṣhatriyād-aṅ*ī, is important. Grammatically it teaches that the affix *aṅ*ī comes in the sense of a descendant after a word which is both the name of a country and a Kshatriya tribe. Here the identity of the *Janaṇapadas* and the powerful Kshatriya clans settled there is repeated. These ruling Kshatriyas inhabiting the *Janaṇapadas* were, as we are informed by Kātyāyana, governed by two-fold constitutions; some were monarchies and others were *Saṅghas* or republics (*kṣhatriyād-ekarjāt saṅgha-pratisheṭdbārtham*, IV.1.168.1). As monarchical states, Pāṇini mentions the following: Sālveya, Ğāndhāri, Magadha, Kaliṅga, Sūramasa, Kosala, Ajāda, Kuru, Sālva, Pratyagratha, Kālakūta, Aśmaka, Kamboja, Avanti and Kunti. Besides these names included in the *sūtras*, there might be others which were implied in Pāṇini’s rules, of which Patañjali mentions Videha, Paṇḍhāla, Aṅga, Dārva, Nipa, Sauvīra and Ambabṛha, the latter two being mentioned in the Ashtādhyāyī in a different context. The kings who ruled over these *Janaṇapadas* were Kshatriyas, and the same word denoted both a descendant of the Kshatriyas, *i.e.*, a citizen and their king (*Kṣhatriya-samāna-śabdāt janaṇapādāt tasya rājany-apatyayavat*, IV.1.168.3). For example, Paṇḍhāla was the name of a Kshatriya descendant of the Paṇḍhāla tribe and also of the king of that *Janaṇada*. Similarly, Paṇḍhālāḥ in the plural was the name of the country as well as the name of the Kshatriya clan. Although a *Janaṇada* consisted of other castes also besides the ruling Kshatriya caste, still the political sovereignty was in the hands of the dominant Kshatriya clan who had founded that *Janaṇada*. This was a fact so patently recognized that Kātyāyana questions the advisability of including the word Kshatriya in *sūtra* IV.1.168. His point is that only the descendants of the ruling Kshatriya tribe were designated by the *apatya*-denoting suffix added after the name of a *Janaṇada*.
(Kṣhatriya-grahānānarthākya choktām, IV.1.168.2). Patañjali definitely states that such words as Kṣaundrakya and Mālavya denoted only a member of the Kṣhatriya caste, and not other sections of the population, such as the labourers or slaves living there (II.269). No doubt, there were Brāhmaṇas and other castes also inhabiting these Janapadas, but the political power was centred in the hands of the Kṣhatriyas, and only in exceptional cases of any other caste.

SANGHA—We have seen above that Kātyāyana takes Saṅgha as a form of government distinct from Ekarāja, where sovereignty vested in one (ekādhīna), and not in the many as in the Saṅgha (ganādbhīna). This meaning is also borne out by the rules of Pāṇini. Pāṇini speaks of Saṅgha as a generic term, applied to the following. Firstly, Saṅgha means 'a multitude', as in the expression grāmya-paśu-saṅgha, a herd of domestic cattle. In the same sense it is also applied to a multitude of human beings. Secondly, a Saṅgha was a term for a Nikāya, which is defined by Pāṇini as a corporate body where the distinction of upper and lower does not exist (Saṅhe chānauttarādḥarye, III.3.42). This applied to a religious Saṅgha functioning as a fraternity without distinctions of high (uttara) and low (adhara). Thirdly, there is the sūtra, Saṅgh-odghau gana-prāsamsayoh (III.3.86), which speaks of the political Saṅgha technically known as Gana. Saṅgha and Gana were used as synonymous words for a republic. Pāṇini speaks of the Yaudheyas as a Saṅgha, whereas they refer to themselves as a Gana on their coins, albeit in the post-Pāṇinian period.

THE RELIGIOUS SANGHA—Pāṇini mentions the religious Saṅgha as Nikāya, as we have seen. The religious Saṅgha was a perfect copy of the political model except in one important respect. We shall presently see that in the Kṣhatriya tribes organised as Saṅghas, the political power vested in the hands of those families which were eligible for regular coronation (abhisbeka-maṅgala) and consecrated to rulership.
by that ceremony (*abhishikta-vāśyās*). Other castes in the *Gana* did not share the political power, although they owed allegiance to the *Janapada* and the *Janapadins* (IV.3.100). This distinction between castes did not obtain in the sphere of religious *Saṅgha* based on equality. In fact, the different orders in the religious *Saṅgha* or Church were known as *Nikāyas*, of which the Buddhist *Saṅgha* in course of time developed eighteen. Not only Buddha, but other religious teachers who were his contemporaries, *e.g.* Purāṇa Kassapa, Makkhali Gosāla, and others have been called *Saṅghīno*, heads of *Saṅghas*, *Gaṇīno*, heads of *Gaṇas* and *Gaṇāchāriyo*, teachers of *Gaṇas*. The *Saṅgha* spirit in Pāṇini's time had influenced every sphere of public life, political, economic, religious, social and educational. Like the political *Saṅghas*, even *Gotras* and *Charaṇas* had their *aṅka* and *lakṣaṇa*. 
RĀJANYA AS THE RULING CASTE IN A GAṆA—The term Rājanyā denoted the Kshatriya descendants of a rājā, whereas the others were called rājana (IV.1.137. For example, in the Andhaka-Vrishṇi Saṅgha, only some members bore the title rājanyā, as the descendants of Śvāphalaka, Chaitraka, Śini and Vāsudeva, whereas others like the Dvaipyas (inhabitants of the islands near the sea-coast) and Haimāyanas did not have that status although they too belonged to that Saṅgha (VI.2.34; Andhaka-Vrishṇayāḥ ete na tu rājanyāḥ). The Kāśikā defines rājanyā as abhisibkta-vāṁśya Kshatriyas, i.e., leaders of families consecrated to rulership. It appears from this that not all the members of a Saṅgha were entitled to exercise political power, which was the privilege of only the governing class. It appears that the descendants of the pioneer Kshatriyas who had settled on land and founded the Janapada state, treated political sovereignty as their privilege which was transmitted in their families from generation to generation. In spite of the growth of population in a Janapada, the centre of power was not altered and the main authority continued to vest in Kshatriya hands. These Kshatriyas in a Saṅgha bore the title rājā which was applied to the head of each family who represented his kula in the Saṅgha assembly. The constitutional practice in the Sabhāparva (grīhele grībe hi rājānaḥ, 14.2) had reference to this feature of Saṅgha polity, the opposite of which was a Samrāṭ government (samrāj-śabdo hi kritsnabhāk). Kauṭilya speaks of Saṅghas as rāja-śabd-oppajivināḥ (Arth., XI.1, p. 378), i.e., 'those whose members bore the title rājā. The Lichchhavis are said to have comprised 7,707 rājans living in Vesāli, and it is stated in the Lalita-vistara that each one of them thought: 'I am king, I am king,' (Ekaika eva manyate abhim rājā abhimrājety). Pāṇini mentions the Vṛijis, of whose confederation
the Lichchhavis formed part. There is a reference in the Jātakas to the Lichchhavi rulers consecrated to rulership by sprinkling sacred water on them (cf. Vesāli-nagare Gāna-rājakulānām abhiseka-maṅgala-pokkharāṇi, Jāt., IV.148). A similar custom prevailed amongst the abhishiktā-vaṁśya rājanyos of the Andhaka-Vṛishnis and other Saṅghas, which justified their designation abhishikhta vaṁśya.

KU1A—The phrase Gāna-rājakula used in connection with the Saṅgha of the Vṛijis shows that the political Saṅgha called Gāna was composed of various rājakulas or royal families and that the heads of these rājakulas constituted the governing body of that Gāna. This is confirmed by the Mahābhārata which says that the members of a Gāna were equals of one another in respect of birth and family (Jātya cha sadriṣah sarve kulena sadriṣas-tathā, Śāntiparva, 107.30). Kautilya also states that kula was the unit of a Saṅgha.

The kula basis of the tribes appears to be vitally connected with a number of Pāṇinian sūtras dealing with gotrāpatya and yuvan descendants. Apart from those names which were Rishi gotras Pāṇini also includes a number of tribal names in the lists dealt with in the Gotrāpatya chapter. For example, in the very first sūtra (IV.1.98) Kuṇja and Bradhna were not names of Rishi gotras but of Vṛātas, a class of rudimentary Saṅghas of the Āyudhajīvī pattern (V.3.113). The need for distinguishing the gotra-descendant from the yuvan-descendants should be understood clearly. In fact in the social as well as the political sphere, the family was the unit of representation, which was exercised through the head of each family, called Kula-Vṛiddha (Śāntiparva, 107.27). In grammatical literature, Pāṇini refers to him as Vṛiddha, which was a pre-Pāṇinian term for Gotra (Vṛiddha-śabdah pūrvāchārya-sañijñā gotrasya, Kāśikā; also Patañjali, I.248 on sūtra I.2.68; Kātyāyana IV.1.90.5). Pāṇini in his grammar substituted Vṛiddha mostly by Gotra, stating that all the descendants of an ancestor in a family except the son of the founder were called Gotra (Apatyam
pantra-prabhriti gotram, IV.1.162). During his life-time the eldest male member who represented the family was the Gotra and the junior members were called Yuvan. Pāṇini also uses a third term, viz. Vāṁśiya, to designate him; this also appears to be a pre-Paninian sanjñā incidentally retained (IV.1.163). Each individual was given his personal name and a Gotra name. The latter came in for special attention by the grammarians owing to its importance in social and political life. According to Pāṇini only one member in the family at a time was to retain the title Gotra, the rest were called Yuvan. This implies that only one person, usually the eldest male member, represented his Kula on all important occasions and functions.

The family basis of Gana polity preserved the hereditary character of its rulership vesting in the same families. The number and names of these families comprising the ruling class were carefully preserved as in the case of the Lichchhavis whose number is stated to be 7,707 in Pāli literature. In the capital of the Cheta state mention is made of 60,000 khattiyas all of whom were styled rājano (Jāt., VI.511), and must have represented so many Kshatriya members constituting that State. The craze for constituting new republics had reached its climax in the Vābika country and north-west India where clans consisting of as many as one hundred families only organized themselves as Ganas, as in the case of the hundred sons of Sāvitrī establishing themselves as a Kshatriya clan under the name of Sāvitrī-putras with the title rājā applied to each one of them (Vanaparwa, 297.58; Karṇaparwa, V.49; and Pāṇini in the Dāmanyādi group, V.3.116).

BHAKTI—Pāṇini takes bhakti to denote loyalty of the citizen to the State whether a kingdom or a republic, i.e. of the Jana-padins to their Janapada (sūtra IV.3.100, Jana-padināṁ jana-padavat sarvam, etc.). The Kāśikā mentions, as examples of this kind of bhakti or civic loyalty, (1) Āṅgaka (Āṅgāḥ jana-pado bhaktirasya), (2) Vāṅgaka, (3) Saubmaka, (4) Pauṇḍraka, (5) Madraka and (6) Vṛijika.
We may also consider such terms as Sraugbnaḥ, Māthuraḥ, one owning loyalty (bhakti) to the township of Srughna or Mathurā, as indicative of the civic devotion of a citizen to his city. Such formations as Prāchya-sapta-samah, ‘a Prāchya for 7 years’, Gāndhāri-sapta-samah, ‘a Gāndhāri for 7 years’ (Dvīgav āramāne, VI.2.12, as explained by the Kāśikā) indicate citizenship acquired by domicile for stated periods.

PARTY SYSTEM—Pāṇini refers to dvandva denoting two rival parties, and to vyutkramanā denoting their rivalry for power (VIII.1.15). The Kāśikā explains it as the division of members into parties sitting separately in the House (dvivarga-sambandhena ṭrīthagavasthitā dvandvam vyutkrāntā ityutkyante, VIII.1.15). There were three terms to denote a party-member, viz. (1) vargya, (IV.3.54), (2) grihya, and (3) pakṣhya (III.1.119). Vagga as a technical term of the Saṅgha vocabulary had the same Pāṇinian meaning and denoted a party, as shown by the Buddha’s teaching (sukbā saṅghassa sāmaggi neva Bhikkave vaggena saṅgha-kammapi kātavyam (Mahāvagga). The Party was named after its Leader (Vargya-dayaścha, VI.2.131), e.g. Vāsudeva-vargya, Vāsudeva-pakṣhya, Arjuna-vargya, Arjuna-pakṣhya. Division of members out of allegiance to their respective parties was termed vyāśraya (V.4.48; nānā-pakṣha-samāsraya). This was indicated by a special linguistic formation, i.e. Devā Arjunato’bhavan, ‘the Devas ranged themselves on the side of Arjuna’ and Ādityāḥ Karnato’bhavan, ‘the Ādityas ranged themselves on the side of Karna’. The existence of party-system in the working of the Ganas is especially mentioned in the case of the Andhaka-Vrīshni Saṅgha (IV.2.34). Patañjali in commenting on Kātyāyana IV.2.104.11 mentions the party of Vāsudeva and that of Akrūra.

EXECUTIVE—In sūtra V.1.58, Pāṇini refers to the numerical strength of a Saṅgha which Patañjali explains as consisting of five, ten, or twenty members (pañchakah, dasakah, viṃsakah saṅghah, V.1.58 and 59). In sūtra V.1.60, he speaks of a varga
comprising five members called \textit{pañchad-varga} or \textit{pañchaka-varga}, and of another \textit{varga} comprising ten members and named \textit{daśad-varga} or \textit{daśaka-varga} (\textit{Pañchad-daśatau varge vā}). This seems to refer to the Executive of a \textit{Saṅgha}.

In the \textit{Antagaḍadasāo}, recounting the subjects ruled by Krishna Vāsudeva at Dwārāvati, reference is made to the ten principal Dāśārhas headed by Samudravijaya (\textit{Samuddavijaya-pāmokhaṇaṁ daśāṁhaṁ Daśarāṇaṁ}), and to five Mahāvīras with Baladeva as their leader (P. L. Vaidya’s edition of \textit{Antagaḍadasāo}, p. 4). The Dāśārhas were a clan forming part of the Andhaka-Vṛishṇi \textit{Saṅgha}; a reference to ten of them with a Leader implies an Executive Body corresponding to the \textit{Daśaka Saṅgha} of Patañjali on Pāṇini’s rule. Similarly the reference to Baladeva and his four deputies constituting the Pañchaka-Mahāvīras corresponds to the Inner Group called \textit{Pañchaka Saṅgha}. The \textit{Mahāvagga} (IX.4.1) also speaks of five kinds of \textit{Saṅghas}, namely, those which had a \textit{Varga} of four, five, ten, twenty or more members.

The \textit{sūtra Pañchad-daśatau varge vā} (V.1.60) is of deeper significance. \textit{Varga} here means quorum, or minimum number. It is stated in the \textit{Mahāvagga} (V.13.2) that the Buddha vested the power of \textit{uśasāṁpadā} by means of a regular process, in the \textit{Saṅgha} or the whole body of Bhikkhus; but in the outlying localities (\textit{ṭaṁśantimā janapadā} IX.4.1), where the requisite number of monks was not available (\textit{Avanti-Dakkhinaṁpatho appabhikkhole hoti}), the quorum for initiation was to be ten (\textit{na ūna-dasa-vaggena uṇasamāpdaṁdabbo}, 1.31.2) and for other matters five (\textit{pañcha-vaggeda gaṇa}). This was permitting \textit{vagga-kammatā} in place of \textit{saṅgha-kammatā} and interdicting the practice of \textit{duvagga} and \textit{tivagga gaṇas}. The Pāṇinian terms \textit{pañchad-varga} and \textit{daśad-varga} seem to have reference to such a contingency.

VOTING—Vote is termed \textit{chhandas} in the \textit{Ashtādhyāyī} (IV. 4.93). Decisions reached as a result of voting (\textit{Chhandaso, nirmita}) were called \textit{chhandasya} (IV.4.93). We read in the
Telapatta Jataka that the ministers and the citizens of Taksha-silā decided to elect the Bodhisattva as their king with one vote (Atha sabbe amachchā cha nāgarā cha ekachchhandhā hutvā, Jātaka, I.399).

QUORUM—The idea of quorum was known. Pāṇini refers to gana-titha as the person whose attendance completes the Gaṇa (Gaṇasya pūraṇaḥ, V.2.52; similarly saṁghatithaḥ and pūgatithaḥ). The rule of quorum was strictly observed. The Mahāvagga refers to a gaṇa-pūraka who acted as the ‘whip’ to secure a complete quorum (III.3.6).

STATE EMBLEMS—Aṅka and Lakṣaṇa. As mentioned in sūtra IV.3.127 (Saṁghāṅka-lakṣaṇesu-aṅ-yaṅ-īnām aṅ), a Saṁgha had its aṅka and lakṣaṇa. The lakṣaṇa denoted the heraldic symbols or marks of a Saṁgha which they employed on their coins, seals and banners, etc. Pāṇini himself refers to symbols marked on cattle as lakṣaṇa. On the tribal coins we find a great variety of symbols and these represent the lakṣaṇas of the Saṁghas which issued them. The Mahābhārata takes aṅka as a synonym of lakṣaṇa in describing the census (smāraṇa) of the royal cattle by branding them with proper marks (Vanaparva, 240.5). But in Pāṇini’s sūtra, aṅka seems to stand for the legend adopted by the States, like Mālavānām jayaḥ or Yaudheyag-aṇasya jayaḥ, as found on their coins. Lakṣaṇa is the same as lāučbana or heraldic crest of later Sanskrit.

JAYA—In the sūtra, Jayāḥ karaṇam (VI.1.202) Pāṇini refers to jaya as a technical term implying an instrument of victory (jayanti teneti jayaḥ, Kāśikā), which was distinguished from the other word jaya denoting victory by an acute accent on its initial vowel. This term is found on many Gaṇa coins and must be interpreted in the new light received from Pāṇini’s rule. For example, the formula Yaudheyag-aṇasya jayaḥ on the coins of the Yaudheya republic, proclaims the coin as the symbol of Yaudheya authority. The issuing of coins was an exclusive prerogative of their sovereignty over that territory.
CH. VII, SECTION 7. ĀYUDHAJĪVĪ SANGHAS

ĀYUDHAJĪVĪ SANGHAS—Pāṇini refers to a number of Sanghas as āyudha jīvin (V.3.114-117), meaning those who lived by the profession of arms. In sūtra IV.4.14, Āyudbhāch-bhba cha, one who earns his living by means of arms (āyudhena jīvati) is called āyudhīya or āyudhika. Kautilya refers to two kinds of janapadas, (1) āyudhīya-prāyaḥ (explained as āyudhajīvi-Kshatriyādi-pracurāḥ), those mostly comprising soldiers, and (2) Śreni-prāyaḥ comprising guilds of craftsmen, traders and agriculturists. The former (and also his āstropajīvins) correspond to Pāṇini's āyudhajīvi Sāṅghas, which were the same as the yodhājīvas of Pali literature.

FOUR KINDS OF ĀYUDHAJĪVINS—Pāṇini classified his material of the āyudhajīvin Sāṅghas under several heads, viz. (1) Sāṅghas in Vāhīka (V.3.114); (2) of Parvata (IV.3.91) or mountainous country; (3) Pūgas organised under their Grāmaṇi into some form of Sāṅgha government (V.3.112); and lastly (4) Vṛataś living by degradation and violence (V.3.113; V.2.21), and having only a semblance of Sāṅgha. The most advanced āyudhajīvin Sāṅghas belonged to the Vāhīka country (V.3.114), which comprised the region from the Indus to the Beas and the Sutlej (Karnāparva, 44.7; Hindu Polity, 1.34). These were the Yaudheyas, Kshudrakas, Mālavas, etc.

MOUNTAINEERS—A very important group of martial Sāṅghas comprised those occupying Parvata or some mountainous region in the north-west. According to the true import of Pāṇini's rule, those whose ancestors once lived in the Parvata region continued to retain their original appellation of the ancestral homeland (abhijana), although for the time being they might have migrated elsewhere (Āyudhajīvibhya-
śchbhaḥ parvate, IV.3.91; so'syābhijana iti vartate, Kāśika). Evidently this Parvata region must have been outside the plains of the Vāhīka country, which brings us to the highlands of north-west as the home-land of the āyudhajīvins. The Kāśikā mentions the Hṛdgoliyas of Hṛdgola, probably Hi-lo of Yuan Chwang (modern Hiḍḍā south of Jalalabad); Andhakavartīyāḥ of Andhakavarta, perhaps Andkhui, a district in the north-east of Afghanistan (Imp. Gaz., Afghanistan, p. 80), and Rohitagiriyas of Rohitagiri, which last is important as reminiscent of Roha, old name of Afghanistan. All this portion of the country is up to the present day peopled by hardy and warlike mountaineers. The Mārkandeya Purāṇa refers to mountain-dwellers (parvataśrayināḥ) of the west, including such names as the Nībāras (Nigrāhāra of Vāyu, same as Nagrahāra or Jalalabad where Hṛdgola or Hiḍḍā is situated) and the Hamsamārgas (modern Hunza in the north of Dardistan). Thus the country of the mountaineers extended from Kashmir to Afghanistan and most of the people settled in these mountains and their valleys were of the āyudhajīvin class. The Bhīshmaparva especially mentions the Girigaharas, dwellers of mountain caves, as a people of the north-west (Bhishmaparva, 9.68; cf. Pratīchyāḥ Pārvatīyāḥ, Udyoga, 30,24), and this epithet appropriately applies to the tribes of the north-west. They were the same as the saṅghāḥ girichārināḥ and girigahvaravāsināḥ (Dronaparva, 93.48). Arrian mentions these mountainous Indians as fighting in the army of Darius against Alexander at Arbela (Anabasis, III,8.3-6). It was these Parvatīya Āyudhajīvins that offered stout resistance to Alexander in Bactria and Gandhāra. The approximate location of these Parvatīyas should be sought for in the region of the Hindukush on both sides of it. Roha, of medieval geographers, Rohitagiri of Pāṇini, the ten maṇḍalas of Lohita (Sabhā, 24.16) and Rohitagirīyas of the Kāśikā, all together point to the mountainous regions of central and north-east Afghanistan as being the Parvata country, which name survives in Kohistan. We may
now form a clear conception of the geographical distribution of the three types of Saṅghas in Pāṇini: (1) the Āyudhajīvins of Vāhīka from the Indus upto the Beas and the Sutlej, of whom a special group occupying the mountainous Kangra region was called Trigarta-Shashṭha (V.3.116); (2) Pūgas, under the leadership of grāmanīs, settled on the right bank of the Indus (Sindhukūlāṣrita grāmanīyāḥ, Sahāparva, 32.9), corresponding in all probability to the present day “Tribal Area” to the west of the Indus; (3) Parvatiyas, or the Highlanders of Afghanistan and the Hindukush, who included also the tribes of Dardistan. These contained many living only in the Vṛāta stage of existence. It is evident that the Saṅghas in the innermost belt were the best organised of all and lived in a higher stage of civilization owing to Aryan contact and proximity and those in the outlying parts were much less civilised.

PŪGA AND VRĀTA—The Vāhīka land and the Parvata country were reeking with āyudhajīvin tribes governed by constitutions of different types. The highest form of government evolved amongst them was the Saṅgha. Under the Saṅgha polity also there were several stages of development. Some were only aristocratic oligarchies; others were of the Rājanya variety whose descendants are to be seen most likely in the Rāṇas of the Panjab Hill States; and still others were politically so well organised as to associate the whole Janapada with the sovereign right of issuing coins.

But besides Saṅgha there were other elementary forms of democratic institutions in existence amongst those āyudhajīvins, three of which as Śreni, Pūga and Vṛāta are particularly noteworthy. The word Śreni possessed a political significance also as shown by the expression Kshatriya-śreni found in the Artha-śāstra for a class of Vārtā-śastropajīvins. The Mahābhārata also knows of Śreni as a political institution. It mentions Śrenis fighting on the side of Duryodhana (Śrenayō bahu-sāhasrāḥ sainśapatakaganāscha ye, Karṇaparva, V.40). These must be corporations of fighting Kshatriyas. Pāṇini’s sūtra
II.1.59, Śrenyādayaḥ kritādibhiḥ, shows the political development at work among the Āyuḍhaṭivān peoples organising themselves into new Śrenis and Pūgas. Bands of āyuḍhaṭivīn warriors were coming under the general influence of political awakening and emerging into organised political life. The linguistic formation such as aśrenayaḥ śrenayaḥ kritāḥ Śrenikritāḥ points to these new political developments. Similarly Pūga-bhūtāḥ, (āpūgāḥ pūgā bhūtāḥ, 'those who were not organised as pūga became so organised'), and Eka-bhūtāḥ, 'tribes organising themselves as one political unit under a common ruler' (ekādhīna) or king.

PŪGA—Pūga was less developed than a regular āyuḍhaṭīvī Saṅgha, but better organised than a Vṛāṭa. The Kāśikā makes Pūga a species of Saṅgha composed of members of different castes without any regular occupation, but probably of a peaceful character intent on earning money (nānā-jātiyā aniyatavrittaya arthakāma-pradbānāḥ Saṅghāḥ Pūgāḥ, V.3.112). Pāṇini mentions Pūga along with Saṅgha and Gaṇa in connection with a quorum, the member whose presence imparted to the Pūga its completeness being mentioned as Pūgatitha (pūgasya pūranāḥ, V.2.52). This shows that the method of deliberation prevailing in the Pūga was similar to that in the well organised Saṅghas and Gaṇas.

Grāmaṇi Constitution of Pūgas. Sūtra V.3.112 is important as throwing light on the nature and constitution of Pūgas. It shows that Pūgas derived their names in two ways; some were named after their Leader or Grāmaṇi, and some from other circumstances (Pūgāṅīyo’graṃanī-पूर्वात, V.3.112). The Kāśikā mentions Lohadhvaja, Chātaka and Śibi as Pūgas whose names were not derived from those of their leaders. But Devadattaka and Yajñadattaka are given as typical names of Pūgas called after the name of their Grāmaṇi. Thus those who recognised Devadatta as their Grāmaṇi were called Devadattakāḥ. This fact is significant, as we know that the organisation of a corporate band of persons under one
leader is still the prevailing custom in the North-West. Many of the Pathan tribes or *khels* are named after their ancestral leaders corresponding to ancient *Grāmiṇīs*. Isazai, Usufzai, both living on the banks of the Indus, are names of this type. The name of the *Pūga* as derived from its original *Grāmanī* founder continued later on through generations.

The association of *Pūga* with *Grāmanī* in Pāṇini’s *sūtra* points to their definite geographical area. We are told in the *Mahābhārata* that the warlike *Grāmanīyas*, i.e. clans named after their *grāmanīs*, lived on the banks of the Indus and they fought against Nakula in his western campaign (*Sindhu-kūlāśritā ye cha Grāmanīyā mahābalāh*, Sabhāparva, 32.9). We may thus locate the *Pūga* type of *Saṅghas* organised under *Grāmanī* leaders in the tribal area to the west of the Indus. Pāṇini names some of these war-like tribes of the North-West Frontier, e.g. Asani (*Parśvādi* group, V.3.117) perhaps, Shinwāris with their parent-stock of the Kārshbuns, to be identified with Kārshāpaṇas in the same *gana*; the Āprītas or Aparītas (*IV.2.53*), same as Greek *Āparytai*, (*Camb. Hist.*, p. 339), modern Afridis. The Pathans are an ancient people, settled in their original homeland, the country of Vedic Pakthas, or *Pakteys* (country Paktyike) mentioned as being in the northwest of India by Herodotus (*Ved. Ind.*, I. 464), from which Pakhtun is derived. Several ancient Sanskrit names in the *gana*s correspond to names of these clans, e.g., the Pavindas (*Asvādi gana*, *IV.1.110*) corresponding to modern Powindas settled in the Gomal valley, armed tribesmen formerly occupying the Wana plain (*N.W.F.P. Gaz.*, p. 253), and the Vānavyas (*Naḍādi* group, *IV.1.99*; people of the Vanāyu country), corresponding to the people of the wide open Wānā Valley in the north of Gomal river.

These clans (*Pūgas*) are still governed by their Council of Elders, which according to the Frontier Crimes Regulation has a determining voice in the adjudication of criminal cases, and which represents survivals of the old form of *Saṅgha*
government which obtained amongst them.

Kumāra-Pūgas. In sūtra VI.2.28 there is a reference to Youth Organisations of these Pūgas, with the prefix kumāra added to their names, e.g., Kumāra-Chātakāh, Kumāra-Lobadhvajāh, Kumāra-Balāhakāh, Kumāra-Jimūtāh (Kāśikā). These must have been organised under the auspices of their parent body or the Elders. Kauṭilya also mentions these two divisions as Saṁghamukhyas and Kumārakas distinctly existing inside Saṅgha organizations (Arth., XI.1, p. 378). It is clear that the terms kumāra and saṁghamukhya correspond to what Pāṇini has designated as the yuva members and vriddhas. Both the Yuvan and Vriddha members of each family received social and political recognition in the Kula as well as the Saṅgha.

VRĀTA—The Vṛatas were bands of war-like roving aboriginal tribes, with whom the Aryans came into conflict. The Rigveda refers to the Aryan heroes as vṛataśāh (VI.75.9). From Pāṇini it appears that the Vṛatas lived in an elementary stage of Saṅgha government. The Kāśikā defines Vṛata as a Saṅgha living by violence (utsedha-jīvinah saṅghā vṛataḥ, V.3.113). Pāṇini refers to Vṛata in a two-fold sense, the other being depredation or physical violence by which those people made a living (Vṛataṇa jīvati, V.2.21), from which they were known as Vṛatīnas. This was the general name given them by Lātyāyana also. According to Weber they were non-Brahmanical western tribes comprised of yaudhas or warriors (Weber, H.I.L., p. 78; Vedic Index, II.344, agrees with this). Since Pāṇini’s time up to now the predatory habits (utsedha) of these tribes have continued. For example, the Zakkakhel clan of the Afridis are notorious as the most active bands of thieves on the Frontier (N.W.F.P. Gaz., p. 236). The Kāśikā explains vṛata as physical violence, and the word utsedha used there corresponds to prasedha of the Lātyāyana Śrautasūtra used for the Vṛāyas (Vṛāyaḥ prasedhamānā yānti, VIII.6 7; commentary, lokam āsedhantah praśayantah). The object of
śūtra V.3.113 (Vṛata-chṛphañor-astriyām) is to regulate the formation of the names of Vṛatas of which the Kāśikā cites two examples, viz., Kapotapākāḥ and Vṛībimataḥ. The Mahābhārata regards the Dārvābhīsaras and Darads as Vṛatas (Dronaparva, 93.44; Vulgate).

VṛATAS—VṛĀTYAS—The Vṛatas seem to have been the same as Vṛātyas (cf. Sāyaṇa explaining vṛata of Tāṇḍya XVII. 1.5; as vṛātya-samudāya). The Šrautasūtras give details regarding Vṛātyas as to their modes of life, belongings and dress. They are said to have used a kind of very small wagon covered with a plank for seat and useful for driving along trackless paths (vipatha; also phalakāstirṇa, from which Hindi phirak a dialectical word still current), a stringless bow not using arrows but probably sling balls or pellets, bellow-like skin quivers (bhastrā or kalāpa) as used by the Sakas, a silver disc round neck, goat-skin or postin (āvika), tilted cornate turban, and a kind of cloth woven with black thread (vāsah krishṇa-dasām kadrā Kātyāyana Sr., XXI.134), or of a different colour, but fringed with streaks of strong block colour (XXI.135) and called kadrū (krishṇa-sūtrotaṁ tat-kadrākhyam, com.) Pāṇini's reference to Taitila-kadrū (VI.2.42) is very likely to the kadrū cloth of the Taitila country. Kauṭilya mentions Taitila as a breed of horses which from its association with other names of north-western countries as Kambhoja, Sindhu, Bāhlika, Sauvīra and Vānāyu (Wana Valley) should be taken as being imported from north-west India (Arth, II.30, p. 133). This gives an indication of the place of origin of the Taitila-kadrū, if the rendering of kadrū as the name of a fabric in use amongst the Vṛātyas be correct.

The Vṛātyas were more backward in their political organisation than the Pūgas. They were subordinate to a leader distinguished by his nishka ornament of silver (nīshko rājataḥ, Kātyāyana, XXI.138; Vedic Index, II.344). Like the Pūgas, their leader also seems to have been called a Grāmaṇī (V.3.112). In the Sānyutta Nikāya, a yodhäuser gāmaṇi discourses with
the Buddha (IV.308-09). From his talk it appears that there were many old ācāryas among them who themselves being soldiers held out to those dying in action the hope of becoming one with the Sarañjita Devas (the gods of “Passionate Delight”, D.P.P.N., II.1068). This agrees with the description of the Lātyāyana Śr. which draws a distinction between the yaudhas (warriors) and the arbants or teachers or priests wearing red turbans. (cf. Patañjali’s lobītoshnīshāh ritvijāh, Bhāshya, I.1.27; I.86; also Kāt. Śr., XXII.3.15).

VRĀTYA-STOMAS—Earnest attempts were made to reclaim these people to the Aryan fold by the performance of some easy rituals called Vṛātya-stoma, considered adequate to purify them (mṛijānāh yanti, Kāt. Śr., XXII.4.26), to put an end to their stigma (vṛātyastomeneshtvā vṛātya-bhāvād virameyuh, ib., XXII.4.29), and to entitle them to social intercourse (vyayabāryā bhavanti, ib. XXII.4.30). It is possible that the converted Vṛātyas who had been admitted to the Brāhmaṇa or Kshatriya fold were spoken of as Brāhmaṇa-kritā, and Kshatriya-kritā, expressions read along with Śreni-kritā, Pūga-kritā, etc. in the Śrenyādī gana (II.1.59).

These social formations indicate a vigorous movement to absorb in the Hindu society elements that were at one time outside the Aryan pail. In Pāṇini’s time social movements of this type were in brisk operation as evidenced by certain words in the Ashṭādhyāyī. Sometimes even after the transition of a particular people from the Vṛāta stage to that of a Saṅgha, pockets of Vṛāta soldiery continued to exist. This was true of the Andhaka-Vrishni Saṅgha, about which Kṛishṇa says that ‘contingents, 18,000 strong, are organised still as Vṛātas in our Kula organisation’ (ashṭādaśa-sahasrāṇi vṛātānam santi naḥ kule, Sabhāparva, 13.55).

FOUR-FOLD VRĀTYA-STOMAS—The Vṛātya-stoma ritual was made an extremely simple affair, allowing much latitude to its performer. Naturally the Vṛātas could not been expected to handle elaborate ritual. It is therefore laid down that
the Vṛātya-stoma sacrifice can be performed in ordinary fire (laukika agni, com. on Kāt. I.1.14), and with such ingredients as could be obtained in each locality (yathādravye janapade, ib. XXII.2.22). One can easily perceive that the four kinds of Vṛātya-stomas were prescribed for corresponding elements of the Vṛāta population:

(1) For cultural leaders in Vṛātya society (vṛātya-gañasya ye sampādayeyuḥ, Kāt., XXII.4.3). These were the same as are designated āchāryas in the Samyutta Nikāya (cited above).

(2) For those who actually lived by violence, (called nindita and nṛṣaṁsa (Kāt., XXII.44), corresponding to the utsedha-jivins of grammatical literature.

(3) For youngsters (tritiyana kanishtbāḥ, Kāt., XXII.4.5; =Yuvānāḥ), who had not yet developed criminal habits. We are at once reminded of Pāṇini VI.2.28 referring to Kumāra-Pūga. This shows two things, viz. existence of juvenile groups amongst the Vṛāyas, and similarity in the political texture of Pūgas and Vṛātas as crude Saṅgha organisations.

(4) The last Vṛātya-stoma converted the elderly members of a Vṛātya community, jyesṭhāḥ (Kat., XXII.4.6) also called sthavira (XXII.4.7), corresponding to what Pāṇini calls Vṛiddha in distinction to the Yuvan members in the families. It is thus clear that this four-fold programme aimed at working on more than one front at a time to accelerate the process of Aryanisation of the Vṛātya elements in the population.
Ch. VII, Section 8. NAMES OF REPUBLICS

ĀYUDHAJĪVĪ SANGHAS—Pāṇini mentioned the āyudhajīvī Saṅghas by name in sūtras V.3.115-17 and in the three gaṇas of these sūtras, Dāmanyādi, Parśvādi and Yaudheyādi. The chapter opens with a reference to such Saṅghas in the Vāhika-country, the cradle-land of martial tribes who cultivated military art as a way of life. Mostly they were Kshatriyas. But sūtra V.3.114 (Āyudhajīvi-saṅghāṇī-ūyaḍ Vahikeshva-Brāhmanāṇa-Rājanyāṭ) shows that some of them were Brāhmaṇas also, e.g. the Gopālavas, and others called Rājanyas, which most likely correspond to those Hill States whose ruling classes designate themselves at present as Rāṇās. The Śālaṅkayanas are stated by the Kāśikā to have belonged to the Rājanya class, and they seem to be an ancient community, as even Patañjali mentions them by the name of Trika (V.1.58; II.352), probably on account of their League of Three States (on the analogy of Shashṭha as applied to the League of Six Trigartas, V.3.116).

NAMES OF SANGHAS IN THE SŪTRAS—The following āyudhajīvī Saṅghas are mentioned in the sūtras:

1. Vṛika (V.3.115). An individual member of this Saṅgha was called Vārkenya, and the whole Saṅgha Vṛika. This name standing alone in the sūtra with a suffix peculiar from the rest is hitherto untraced. It is stated to be āyudhajīvin, but not necessarily associated with Vāhika. It should probably be identified with Varkaṇa, the Old-Persian form in the Behistun inscription of Darius, mentioned along with Pārthava or the Parthians (Behistun Ins., Col. II.1.16). There is a striking similarity between the Sanskrit and Old-Persian forms of the name, e.g. Vārkenya equal to Varkaṇa in the singular number, and Vṛikāh equal to Varkā in the plural as in the expression Sakā Hauma-Varkā. The country of the Vṛikas seems to have
been the same as Hyrcania lying to the north of Parthia and on the eastern corner of the Caspian (mod. Persian Gurgan, from *vṛika=*gurg, in the valley of the river of that name in the fertile district of Astarabad (Sanjana Studies, p. 251; Enc. Br., 17. 366). The Persians distinguished the Varkas and in fact all the northern warlike equestrian people as Sacas (Persepolis Tomb Insc., Sakā para-daraia). The name *Vṛika* was known throughout the north-west as shown by its derivatives found in the several languages near Pāṇini’s homeland, e.g. Ishkashmī *werk*, Yidghā *wurk*, wurg, etc. The title Bakanapati or Barkanapati, the chief of Varkaṇas, is applied to a Śaka governor of Mathurā who was associated with the foundation and repair of the Devakula of Wima Kadphises (J.R.A.S., 1924, p. 402; J.B.O.R.S., XVI, p. 258), whom Jayaswal identified as a Hyrkanian Saka. Pāṇini’s acquaintance with a branch of the Śakas is not surprising, since he uses the Śaka word *kanthā* meaning ‘town’ in six *sūtras*. The Śakas were a very ancient race referred to in the Old-Persian inscriptions of Darius and settled both in Śakasthāna and on the borders of Parthia which were connected with Bāhlīka and Gandhāra. Kātyāyana also has the expression Śaka-Parthava in a vārttika showing that in the fourth century B.C. he knew of the Śakas and the Parthians, probably by way of commerce, previous to their political invasions. The Virks are also a section of the Jāts in the Punjab, who originally seem to have been Scythians.

2. *Dāmanī (V.3.116).* There is a strong resemblance between the name of this Saṅgha and a powerful warlike tribe still known as Damani and settled in the north-western portion of Baluchistan known as Chagai lying to the south of the Chagai Hills (Imp. Gaz., Vol. X, p. 117).

3. *Trigarta-Shashṭha (V.3.116),* the League of the Six Trigartas. Trigarta stands for ‘Three Valleys’, viz., those of the rivers Ravi, Beas and Sutlej. The Trigartas represented a second cluster of mountainous Saṅghas being counted amongst *Parvatāsrayinah* (Mārk. Purāṇa, 57.57), along with the Nihāras,
Dārvas, Karṇa-Prāvarānas, etc., who formed the north-western group. In earlier times this region, as now, was split up into a number of States. The Kāśikā mentions the Six Members of this Confederacy as follows:


These are not identified. Brāhmaṇagupta may be Bhramor. Jānakis are mentioned as helpmates of king Suśarmā of Trigarta (Aceptar, 61.17; Udyoga., 4.17).

4. Yaudheya (V.3.117). Panini’s reference to Yaudheyas is the earliest known. The Yaudheyas have a long history as shown by their inscriptions and coins of different ages, and were existing upto the time of Samudragupta. Their coins are found in the East Panjab and all over the country between the Sutlej and the Jumna, covering a period of about four centuries, 2nd century B.C. to 2nd century A.D. The Mahābhārata mentions Rohitaka as the capital of the Bahudhānyaka country, where a mint-site of the Yaudheyas of Bahudhānyaka was found by the late Dr. Birbal Sahni. Sunet mentioned as Saunetra by Panini was a centre of the Yaudheyas where their coins, moulds and sealings have been found. The Yaudheyas do not seem to have come into conflict with Alexander, since they are not named by the Greek writers. The Johiyya Rajputs who are found on the banks of the Sutlej along the Bahawalpur frontier may be identified as their modern descendants (A.S.R., XIV., p. 114).

5. Parsu (V.3.117). The whole tribe was called Parśavaḥ, and a single member Parśava. The Parsus may be identified with the Persians. The Parsus are also known to Vedic literature (Rgveda, VIII.6.46) where Lüdewig and Weber identify them with the Persians. Keith discussing Panini’s reference to the Parsus proposes the same identification and thinks ‘that the Indians and Iranians were early connected’ (Ved. Ind., I.505).

Gandhāra, Panini’s homeland, and Parsa, both occur as
names of two provinces in the Behistun Inscription, brought under the common sovereignty of Darius (521-486 B.C.), which promoted their mutual intercourse. Pāṇini knows Gāndhāri as a kingdom (IV.1.169). It seems that soon after the death of Darius Gandhāra became independent, as would appear from the manner of its mention by Pāṇini as an independent janaṭapada. Pāṇini’s Pārśava is nearer to the Old-Persian form Pārsa (cf. the Behistun Inscription) denoting both the country and its inhabitants, and king Darius calls himself a Pārsa, Pārṣabyā ṭusa, ‘Persian, son of a Persian’ (Susa inscription, J.A.O.S., 51.222).

Baudhāyana also mentions the Gandhāris along with the Sāpras amongst western peoples (Baudhāyana Śr., 18.44, p. 397; Vedic Index, II.489).

ĀYUDHJĪVĪ SANGHAS IN THE GAṆA-PĀṬHA—The three gaṇas, Dāmanyādi, Parśvādi and Yaudheyādi give some more names of Āyudhajīvī Saṅghas:

1. Dāmanyādi group (V.3.116). The names which are supported both by the commentary on Chandra and the Kāśikā are Aulapi, Audaki, Āchyutanti (or Achyutadanti), Kākādanti, Sārvaseni, Bindu, Tulabha (Kāśikā Ulabha), Mauṇjāyana and Sāvitrīputra. Of these only the Sāvitrīputras are mentioned in the Mahābāhārata (Vanaparva, 297.58; Karṇaparva, V.49) and should be located in the Panjāb adjacent to the Uśīnaras. The Sārvasenis (also Kāśikā, VIII.1.5; VI.2.33; cf. Bhīṣmaparva, 10.59) seem to be a branch of the Sarvasenas mentioned in the Śaṇḍikādi gaṇa (IV.3.72), like Gāndhāri-Gandhāra, Sālva-Sālveya. As pointed out by Przyluski kāra in Madrakāra meant ‘army’ or ‘troops’, being an Old-Iranian word. It is the same as Skt. senā (ante, p. 57). The Madrakāras were a division of the Sālvas (IV.1.173). In medieval tradition the Sālvas were known as Kārakukshiḍas (Hemachandra, Abhidhānachintāmaṇi, IV.23), a significant name derived from their territory containing rich pockets of kāras or soldiery. This is just the idea of Sārvaseni also,
and it appears that this was the region of north Rajasthan, where we have already located the Sālvas (ante, p. 55). This is confirmed by the Kāśikā counting it amongst three rainless areas, viz. Trigarta, Sauvīra and Sārvāseni. (Kāśikā VIII.1.5; VI.2.33). Mauñjāyanā (V.3.116; IV.1.99) seems to be Munjān in the Upper Oxus region, the home of the Ghalcha dialect called Munjānī (cf. Mauñjāyanī in IV.1.73 gana). The Baijavāpis seem to be a genuine reading in the gana, being included in the commentary on Chandra also. The name occurs in the Raivatarkādi (IV.3.131) and Sutaṅgamādi gana (IV.2.80), and is mentioned in the Bhāṣyā (II.4.81; I.496), Charaka (I.1.10), and the Sataṭapatha (XIV. 5.5.20, Baijavāpāyana).

2. Parśvādi (V.3.117). There are twelve names in this gana common to both Chandra and Kāśikā, only the name Viṣāla is new in the Kāśikā and may be an interpolation. The first three names Parśu, Rakshas and Asura are mentioned by Patañjali as forming part of this gana and must be names of actual peoples and not mythical (Bhāṣyā, II.270). The following is the full list of the Saṅghas in this group:

(1) Bāblika. Identified with Balkh in the extreme north of Afghanistan, which must have been organised as an āyudhajīvi Saṅga in Pāṇini’s time. It was reckoned as a satrapy of the empire of Darius, a little before Pāṇini’s time.

(2) Asura. It is a generic name but in this case may be identified with the name of the Assyrians, whose country formed part of the Persian empire in the fifth century B.C. and is mentioned in the Behistun inscription as Old-Persian Aṭhūrā, and in Susian as Aṣṣura.

(3) Piśācha, literally a people who were consumers of raw flesh. Grierson has conclusively shown that the inhabitants of the North-Western Frontier, i.e., of Gilgit, Chitral and Kafiristan, were of Piśācha tribe, where cannibalism, eating raw flesh, once prevailed and he also observes that in the south of the Kafir country, round about Laghman, are the
Pashai Kafirs whom Dr. Hoernle proposed to identify with Piśācha as a phonetically sound equation (Piśācha, J.R.A.S., 1950, pp. 285-88). Discussing the question "Who were the Piśāchas?", he comes to the conclusion that they were originally a real people, probably of Aryan origin, who inhabited the north-west of India and the neighbouring parts of the Himalayas, and were closely connected with the Khaṣas, Nāgas, and Yakshas. Pargiter agreeing with Grierson's identification of the Piśāchas has observed that 'there can be no reasonable doubt that their character as demons or goblins was a later perversion of their real nature' (J.R.A.S., 1912, p. 712). The existence of the Paisāchī Prakrit is so well attested to by literary references that there can be no reasonable doubt about its speakers being real human beings.

(4) Rakshas. By adding the anus suffix in a pleonastic sense (svārthā) prescribed by this very sūtra (V.3.117) we get the word form Rākshasa. They also appear to have been an actual people, probably of the north-west group and of the same racial character as the Piśāchas. The Rākshasas, Nāgas and the Piśāchas fight also in the Bhārata war on both sides (Pargiter, J.R.A.S., 1908, p. 331). We find an important tribe named Rakshānis settled in Chagai district of North Baluchistan (Imp. Gaz., X.117).

(5) Marut, unidentified, but possibly connected with the Pathan tribe called the Marwats, now settled in the Marwat Tahsil of Bannu district (Imp. Gaz., VI.394).

(6) Aśani and (7) Kārshāpāṇa. The juxtaposition of these two names seems to be significant, for we find two corresponding Pathan tribes, Shinwari and Karshabun, belonging to the same stock (Imp. Gaz., N.W.F.P., p. 79). The preservation of a caste system, and the sanctity of the cow among the Shins, settled in the eastern Hindu-Kush region, north of Landi Kotal, point to their former religion being Hinduism. The mountain villages where Shins are in majority retain a trace of former idolatry in the sacred stones set up in one form or an-
other, in almost every hamlet (Afghanistan Gazetteer, p. 49). The change in religion has not yet brought about the seclusion of Shin women, who mix freely with men on all occasions, a survival of the days of their freedom.

(8) Sātvata and (9) Dāsārha. The Sātvata and the Dāsārha clans are stated in the Mahābhārata to have formed part of the Andhaka-Vrishni Saṅgha.

(10) Vayasa and (11) Vasu are names not identified.

3. Kauḍbeyādi group, is repeated twice in the Ashṭā-dhyāyi (IV.1.178 and V.3.117), a phenomenon somewhat unusual, as observed by the author of the Nyāsa (Vichitrā hi gaṇānāṁ kṛir- gaṇakāraṣyeti puṇah paṭhitah). Nine names are common to both lists and they alone seem to be genuine:

(1) Kauḍbeya, as explained above.

(2) Šaubhreya, probably named after an original ancestor called Šubhra referred to in sūtra IV.1.123 (Śubhrādibhyas-cha). The name was possibly connected with the Sabarcae of Curtius, who are named as Sabagrae by Orosius. After the battle with the Oxydrakai (Kshudrakas) near the old junction of the Ravi with the Chenab, Alexander 'marched towards the Sabarcae, a powerful Indian tribe where the form of government was democratic and not regal (Curtius). Their army consisted of 60,000 foot and 6,000 cavalry attended by 500 chariots. They had elected three generals renowned for their valour and military skill;' (M'Crindle's Alexander, p. 252). The above description points to the Sabarcae having been an āyudbhīvī Saṅgha, which the Saubhreyas of Pāṇini were. In this case the Greeks particularly noted the form of their government which was democratic and not regal.

The territory of this Saṅgha lay on the lower course of the Chenab after it met the Ravi. The tribe was settled near the river by which Alexander was returning with his fleet after his battle with the Kshudraka-Mālavas. Both banks of the river were thickly studded with their villages (Alexander, p. 252).
(3) Śaukreya. Probably the Scythian tribe Sakaraṇuloi, mentioned as Saruka, along with Pasionoi (Prāchīni) in the Puṇyaśālā Ins. at Mathurā.

(4) Vārteya, may be identified with the Indian tribe Oretai, settled to the west of the river Porali which now falls into the Sonmiani Bay, west of Karachi (cf. Saunāmaneya in Subhrādi gaṇa IV.1.123; also IV.1.86). According to Curtius the tribe had long maintained its independence in those parts and it negotiated peace with Alexander through their leaders, which reflects its Saṅgha character (Alexander, p. 169).

On the east of the river Arabis (old name of Porali) was another independent tribe which the Greeks called Arabitai, corresponding to Sanskrit Ārabhata (the home of Ārabhata vṛitti), a word unknown in Pāṇinian geography, but both of them as the Greeks noted, lay within the geographical limits of India.

(5) Dhārteya unidentified, probably the same as the Dārteyas (Ved. Ind., I.353). The Greek writers mention Dyrta as a town of the Assakenoi or the Āsvakāyanas of Massaga, and this may have been the capital of the Dārteyas.

(6) Jyābāneya, a war-like tribe whose bow-string served as arrow. The Vṛāyas of the Tāṇḍya Br. (XVII.1.24) and the Śrautasūtras appear to be the same as Pāṇini's āyudha-jīvī Saṅghas of Vṛāta type. Amongst them we have a feature called jyā-brođa, a kind of bow not for shooting arrows (anishbudhanushka, Lāṭ. Sr., VIII.7; and ayogyā dhanu, Kāṭ. Sr., XXII. 4.13), which seems to be a contrivance for hurling sling balls, most probably a pellet-bow. The Jyābāneyas seem to be a section of these Vṛāyas. The Mabābhārata specifically mentions the Mountaineers (Pārvatīyas) as experts in fighting by hurling stone-blocks as big as elephant heads, and secondly by shooting stone-balls with slings (kshepaniya, Dronaparva, 121. 34-35).

(7) Trigarta. It is mentioned here again although its
constituent states (Trigarta-Shashṭhas) have been referred to only in the preceding sūtra V.3.116.

(8) Bharata. This gana alone mentions the Bharatas as an āyudhjīvī Saṅgha. It must be some old tradition, otherwise Pāṇini locates them in the Kuru region, on the borderland of the Udichya and Prāchya divisions of India. According to another sūtra the Kurus lived under a regal form of government. It seems that these Bharatas lived round about Kurukshetra as a Saṅgha in Pāṇini’s time.

(9) Uśīnara already mentioned as a division of Vāhīka. It is likely that it was under the Saṅgha government.

The above survey of the names of the āyudhjīvī Saṅghas as found in sūtras and the Gaṇa-pāṭha shows the dominant fact that the Saṅghas were clustured in the north-west regions of India and the Punjab, that they were mostly āyudhajīvins or martial tribes, a feature retained by most of them to this day, and that they were living in different stages of political evolution, ranging from the Vṛatas and Pūgas to Śrenis and Saṅghas, as represented by the wild Piśāchas at one end and the highly organised Yaudheyas on the other.

SOME MORE REPUBLICS—Besides the āyudhajīvī Saṅghas stated as such in the Ashtādhyāyi, there were some other communities in Pāṇini’s time, which as we know from other sources were republics. These were:

(1) Vṛiji (IV.2.131). They are known as Vajji in Buddhist literature and said to have included eight confederate clans of whom the Lichchhavis and the Videhas were the most important, both being described as republics in Buddha’s time (Buddhist India, p. 25).

(2) Rājanya (IV.2.53). They are mentioned also by Kātyāyana and Patañjali and in the Mahābhārata. The abundance of their coins in Hoshiarpur district points to it as their region (vīshaya or dēsa). According to Pāṇini the country occupied by the Rājanyas was called Rājanyakā. It appears
that in the period after Alexander which witnessed large-scale tribal movements, a branch of the Rājanyas had moved to the region of Mathurā where also their coins have been found.

(3) Mahārāja. Pāṇini refers to bhakti shown to Mahārāja in sūtra IV.3.97. So far as the word form is concerned it is the same for the name of Mahārāja as a people and as a deity. The existence of a Mahārāja Janaṇapada is proved by their coins found in the Panjab. Traces of the ancient name are probably still preserved in the collection of four large villages in the Moga Tashil of Ferozpur district which is the headquarters of a Pargana and still called Mahārāja, held by the Maharajkī clan of Jats. The Maharajkians who own the surrounding country as Jagirdars form a distinct community, physically robust and opposed to subordination (Punjab Gazetteer, I.453).

(4) Andhaka-Vṛishṇi (VI.2.34). The Pūrāṇas make them identical with the Sātvatas whom Pāṇini mentions as a Saṅgha in the Gaṇa-paṭha. The Mahābhārata refers to them as a Saṅgha and so does Kauṭilya. Pāṇini refers to Rājanya leaders amongst the Andhaka-Vṛishṇis, which as explained by the Kāśikā denoted members of such families as were entitled to be consecrated to rulership (abhishikta-vamśya). The chief feature of the Andhaka-Vṛishṇi constitution appears to be a full-fledged party system. The party of Akrūra and that of Vāsudeva are referred to by Patañjali showing that the followers of each leader were designated in accordance with their respective party leaders, e.g. Akrūra-vargya, Akrūra-vargīṇa, and Vāsudeva-vargya, Vāsudeva-vargīṇa (II.295).

(5) Bharga (IV.1.178). Pāṇini refers to the Bhargas as a Kshatriya tribe. The Buddhist records mention them as a republic.

**Names of Some Important Tribes**—Some tribes in the Gaṇa-paṭha deserve to be mentioned as being of considerable importance. We are indebted to the Greek historians of Alexander for the information that most of these were republics.
(1) Kshudraka (IV.2.45) identified by Sir R. G. Bhandarkar with the Oxydrakai of Greek writers. Curtius refers to them as Sudraca (M’Crindle, Alexander’s Invasion, p. 238).

(2) Malava (Gk. Malloi). According to the Greek writers both these communities were settled in the region where the Ravi joins the Chenab. They are said to have offered the stoutest resistance to the Greek invaders.

(3) Vasati (IV.2.53; Rājanyādi gaṇa) identified with Greek Ossadioi, settled somewhere in the region of the confluence of the Chenab and Sutlej with the Indus.

(4) Aprita (Rājanyādi gaṇa). These are to be identified with the Aparytai of Herodotus (C.H.I., p. 339), the ancestors of the Afridis, whose own pronunciation of the name is Aṇḍiti. Their country is called Aṇḍiti-Tirah.

(5) Madhumant.—Pāṇini mentions Madhumat as the name of a country in the region of Gandhāra (Kachcbhādi, IV.2.133; Sindhvādi, IV.3.93). The name occurs in sūtra IV.2.86 also as a deśa-nāma. The Mahabhārata mentions the Madhumantaḥ as a people of the north-west (Bhishmaparva, IX.53). The Madhumants are clearly the Mohmands, who occupy the territory to the north of the Kabul river, their home-land Dīrbajaur covering an area of 1200 sq. miles (Afghanistan Gaz., p. 225). On the map one can at once notice the relative position of these two powerful tribes who were close neighbours. What appear to be the ancient names of Dīr and Tirah are preserved in Patañjali, who refers to Dvīravatiko deśaḥ, Triravatiko deśaḥ as pair names (Bhāṣya, I.4.1; I.301; II.1.20; I.382). The former is Dīr (land of the two rivers) so called from the Mohmand homeland between the Kunar and Panj-kora rivers. Similarly the extensive Afridi-Tirah was Trīravatika, from the three rivers Kabul, Bara and Indus (Kubhā-Varā-Sindhu) which enclose it.

(6)-(8) Hastināyana, Aśvayana, Āsvakāyana. The first is mentioned in sūtra VI.4.174, the second in IV.1.110, and the third in the Nāḍādi gaṇa (IV.1.99).
While describing Alexander's campaign from Kapisa towards the Indus through Gandhāra, the Greek historians mention three important war-like peoples, viz. the Astakēnoi, with capital at Peukelaotis, the Aspasioi in the valley of the Kunar or Chitral river, and the Assakēnoi settled between the Swat and the Panjkora rivers, with capital at Massaga, and more specially in the mountainous regions of the Swat. The Paninian evidence throws light on these three names for the first time:

(a) Aspasioi—Āśvāyana; in Alishang or Kunar Valley.
(b) Assakenoi—Āśvakāyana; in the Swat valley and highlands, with capital at Maśakāvatī.
(c) Astakenoi—Hāstināyana; near the confluence of the Swat with the Kabul, with capital at Pushkalāvatī.

The Āśvāyanas and the Āśvakāyanas were the bravest fighters of all, being strongly entrenched in their mountainous fortresses. Alexander himself directed the operations against them. The Āśvakayana capital at Massaga or Maśakāvatī is given in the Bhāṣya as the name of a river (IV.2.71), that should be looked for in that portion of the Suvāstu in its lower reaches where Mazaga or Massanagar is situated on it at a distance of 24 miles from Bajaur in the Yusufzai country. In times of danger the Āśvakāyanas withdrew into the impregnable defences of their hilly fortress which the Greeks have named Aornos. It appears to be the same as Varana of the Asbt-ādbyāyī (see ante, p. 69, for its identification with modern Uṇrā on the Indus). The Greeks also mention another of their towns, viz. Arigaeon, which commanded the road between the Kunar and the Panjkira valleys, and is comparable with Ārjunāva of the Kāśikā (rījunāvāṁ nīvāso deśaḥ, IV.2.69).
CHAPTER VIII

CHRONOLOGICAL CONSIDERATIONS

Our study of the historical material preserved in the \textit{Ash\text人居环境}, its geographical and cultural data, glimpses of social life and religious institutions, may help us to ascertain its chronological position.

\textit{Previous Views}—The question of Pāṇini's date has been discussed by many previous writers with different conclusions. We may profitably consider them. Goldstücker in his well-known work held that Pāṇini must have lived in the seventh century before the Christian era at the latest. He rightly observed: 'The investigation of the relative position which Pāṇini holds in ancient Sanskrit literature is more likely to lead to a solid result, than speculations as to the real date of his life.' (Pāṇini, \textit{His Place in Sanskrit Literature}, p. 67). His position was that Pāṇini lived after Yāska and before the Buddha. Sir R. G. Bhandarkar held the same view mainly on the ground that Pāṇini does not show acquaintance with South India. Pathak assigns him to the last quarter of the seventh century B.C., just before the appearance of Mahāvīra, the junior contemporary of Gautama Buddha. (\textit{A.B.O.R.I.}, XI, p. 83). D. R. Bhandarkar proposed seventh century B.C. in his 1918 Carmichael Lectures (p. 141), which he later changed to about the middle of sixth century B.C. (A.I.N., 1921, p. 46). Charpentier thinks that the date should be 550 B.C. (\textit{J.R.A.S.}, 1913, p. 672-74). His revised view was: 'As for the date of Pāṇini I have suggested, sometime ago, that it should be placed somewhere about 500 B.C. and I feel more and more convinced that such a suggestion is mainly correct.' (\textit{J.R.A.S.}, 1928, p. 345). H. C. Raychaudhry holds: 'In all probability Pāṇini lived after the Persian conquest of Gandhāra in the latter half of the sixth century B.C., but before the fourth
century B.C. With a date in the fifth century B.C. all the evidence accommodates itself. (Early History of the Vaishnava Sect, 1936, p. 30). Grierson believed that a century or 150 years at the most elapsed between Pāṇini and the Aśokan inscriptions, which represent the spoken dialect of the day. This would place Pāṇini about 400 B.C. Macdonell's latest view (India's Past) was that Pāṇini did not live later than 500 B.C. Bohtlingk, however, makes Pāṇini more modern by dating him to about 350 B.C. Weber placed him subsequent to Alexander's invasion. It is unfortunate that a scholar of his depth and mastery over grammatical intricacies should through a grievous misunderstanding of the kārikā on sūtra IV.2.45 about Apisali and Kshudraka-Mālavas, have advocated a specious argument about the relative dates of Apisali, Pāṇini and Alexander (H.I.L., p. 222; see V. S. Agrawala, Patañjali on the Kshudraka-Mālavas, Poona Orientalist, Vol. I, No. 4, Jan. 1937, pp. 1-7). Liebich's opinion on this point is that we have not yet sufficient ground to come to a definite conclusion, but that in all probability Pāṇini came after the Buddha and before the commencement of the Christian era, and that he was nearer the earlier than the later unit. It would thus appear that the range of Pāṇini's date is in the opinion of scholars limited to a period of three centuries between the seventh and the fourth century B.C. We may now try to examine this question more closely within these two limits on the basis of the data set forth above.

LITERARY ARGUMENT—As Liebich has summed up, the literary argument of Goldstücker leads to the following result: the Āranyakas, Upanishads, Prātiṣākhyas, Vājasaneyī Sainhīta, Satapatha Brāhmaṇa, Atharvaveda, and the six philosophical systems were unknown to Pāṇini, but he knew the Rigveda, Sāmaveda and Kṛṣṇa Yajurveda. He holds that Pāṇini lived after Yāska. This argument does not bear scrutiny. Thieme from his critical study of Pāṇini's Vedic material has shown that the Vedic texts undoubtedly used by Pāṇini included the RV.
Chronological Considerations

MS., KS., TS., AV., and most probably the SV. (Pāṇini and the Veda, 1935, p. 63); he further opines that Śākalya’s Padapāṭha of the Rigveda and the Paippalāda Śākhā of the Atharvaveda were also known to him. To take another significant example, Goldstücker had come to the conclusion that Pāṇini did not know the Upanishad literature, and hence his time should be antedated to the Upanishadic period. This position cannot be maintained since Pāṇini knew the word Upanishad in a pejorative sense (I.4.79) which must have taken considerable time to develop after the close of the Upanishadic age. On the basis of this sūtra Keith also accepted Pāṇini's knowledge of the Upanishads (Tait. S., Eng. Trans., p. clxvii). But Pāṇini’s literary horizon is not confined to Vedic texts only; it goes much further to include those several stages of literary and linguistic evolution at the end of which his own work came into existence. The Chapter on Literary Data has set forth this evidence exhaustively, and in that light we may vouchsafe that the process of literary evolution inside the Vedic Charaṇas had already brought into existence such literary types as the Kalpa Sūtras and the Dharma Sūtras. Outside the Charaṇas much of the Vedāṅga literature as Vyākaraṇa, with its special commentaries on Nouns and Verbs (Nāmika and Ākhyātika, IV.3.72) and a vast body of Yājñika literature and its commentaries had been compiled. Pāṇini also knows of the Mahābhārata (referred to for the first time in the Āśvalāyana Gṛihya Sūtra), the text of which must have taken shape by his time (Utgikar, Bhandarkar Commemoration Volume, p. 340). Further, he refers to later literary types, as sloka and their authors the slokakāra, to secular subjects like Naṭasūtras, and even to classical Sanskrit works, such as Śisukrandīya, Yamasabbiya, and Indrajananīya, which were the earliest examples of classical poetry and are mentioned for the first time by Pāṇini. Pāṇini thus witnessed the rise of classical Sanskrit poetry and the sūtra and sloka forms of literature flourishing together in his time. Moreover, the style of his sūtras is much more
finished, as he himself would call it (pratisbhatam sūtram),
than that of some of the Dharma- and Grihya-sūtras. We must
therefore abandon Goldstücker’s estimate of Pāṇini’s time.
PĀṆIṆI AND THE SOUTH—The argument that Pāṇini
did not know of South India should not be pressed too far.
Firstly, Yāska whom even Goldstücker considers prior to Pāṇini
shows acquaintance with southern social customs and grammatic-
al usage. As pointed out by Keith, Yāska “already mentions
a southern use of the Vedic word vijāmātri for a son-in-law who
pays to his father-in-law the price of the bride (vijāmāteti
śasvad Dākṣiṇāyāḥ kṛitaṁpatim āchakhate, Nirukta, VI.9;
Keith, His. of Sans. Lit., p. 15). Secondly, the Deccan was
the home of Sanskrit as early as Kātyāyana’s time whom Patañ-
jali regards as a southerner on account of his partiality for the
use of Taddhita (cf. priya-taddhitāh Dākṣiṇātyāḥ). Kātyā-
yana is not far removed in time from Pāṇini. According to
Eggeling: ‘As regards the dates of Kātyāyana and Patañjali I
accept with Professor Bühler and others, as by far the most
probable the fourth and the middle of the second century B.C.,
respectively (Śaṭapatha Br. Intro.). Thirdly, Pāṇini besides
referring to the sea and the islands lying near the coast and in
mid-ocean, actually mentions that portion of the country which
lies between the tropics as antarayana desa (VIII.4.25). It can
refer only to the Deccan lying south of the Tropic of Cancer,
which passes through Kachchha and Avanti. Pāṇini also knows
of Aśmaka on the Godāvari (modern Paithana) which was
south of Avanti. He also refers to Kaliṅga on the eastern
coast which too lay within the tropics. We thus see that
Pāṇini’s silence about the south is not quite so absolute as pre-
sumed by Sir R. G. Bhandarkar.
PĀṆIṆI AND MASKARI—It has been shown above that
Pāṇini’s reference to Maskarī Parivrājaka in the light of Patañ-
jali’s explanation of that name connecting it with the Karm-
āpavāda doctrine, points to the teacher Maṅkhalī Gosāla, whose
doctrine of Determinism, Daishṭika Mati, also finds mention in
Pāṇini. Dr. Hoernle holds that Gosāla lived about 500 B.C. (Ājivikas, Hasting’s Ency. of Religion and Ethics, I.259 seq.). According to the Bhagvati Sūtra, Gosāla founded his order at Śāvatthī sixteen years before his death. Charpentier agreeing generally with Hoernle thinks that the date of Maṅkhali’s decease should be moved a little later (J.R.A.S., 1913, p. 674). This suggests the upper limit of Pāṇini’s time at about 500 B.C.

PĀṆINI AND BUDDHISM—The fact that Maṅkhali Gosāla was a contemporary of the Buddha and also known to Pāṇini helps us to understand some of the sūtras dealing with a few terms which have greater association with Buddhism, e.g. Nirvāṇa (VIII.2.50); Kumārī Śramaṇā (maiden nuns, II.1.70); cbivarayate in the sense of ‘donning the monk’s robe’ as explained by the Kāśikā (sāinchibivarayate bhikṣuḥ, III.1.20), and the religious Saṅgha called Nikāya which did not know the distinction of upper and lower (uttarādibhaya). Such a Saṅgha was a typical Buddhist institution. It had been the custom among the primitive religious wanderers to be organised under a head who was called master (Satthā). But the Buddhist sect after his decease developed on different lines, which was looked upon by contemporaries as somewhat strange. The headship was abolished, all members of the Saṅgha were on a footing of equality. The principle of obedience to a Master was watered down to respect and reverence for elders and politeness for equals. For the discharge of the functions of its collective life, the whole body of monks constituted a perfectly democratic community. This is exactly the nature of the new religious Saṅgha envisaged in the significant Paninian term anuttarādbharya, III.3.42). The political Saṅgha called Gaṇa, although professing to be democratic, worked on a different model in which some were rājānaḥ and the others commoners. These institutions mark out a date for Pāṇini after the Buddha.

ŚRAVISHTHĀ AS THE FIRST NAKSHATRA—In a list of ten nakshatras in sūtra IV.3.34, Pāṇini puts Śravishthā as the
first. Although the other stars in the sūtra are not strictly in the order of the ecliptic, the commencement of the list with Śravīśṭhā appears to have a reason for it. Śravīśṭhā was the first star in the calendar of the Vedāṅga Jyotisha which must have been compiled during the period when other Vedāṅga works including Vyākaraṇa were also written. As the subject is full of technical difficulties it would be safer to go by the opinion of experts in the matter. The relative positions of the nakṣatra lists together with their significance is stated by G. R. Kaye as follows: 'The early lists all begin with Kṛittiṅā, but the Mahābhārata puts Śrāvaṇa first. The Jyotisha Vedāṅga begins with Śravīśṭhā; the Sūryaprajñāpti with Abhijit, the Sūrya Siddhanta with Aśvinī. But here Aśvinī is definitely equated with the vernal equinox, while Abhijit, Śrāvaṇa and Śravīśṭhā, which are continuous, are equated with the winter solstice...'. (The Nakshatras And Precession, Indian Antiquary, Vol. 50, p. 47).

According to Tilak, as quoted by Kaye, it was stated by Garga that Kṛittiṅā was first for purposes of ritual, while for the purpose of the calendar Śravīśṭhā was put first, the same as we find in Pāṇini's list. Leaving aside the question of the Kṛittiṅās standing at the head of the asterisms and the possible basis of this phenomenon in the coincidence of the vernal equinox with Kṛittiṅās at a certain epoch connected more properly with Vedic chronology, we must consider the implications of the reference to Śravīśṭhā as the first of the Nakshatras. The generally accepted theory is that the Nakshatras were 27 or 28 constellations that roughly marked out the ecliptic. The winter solstice was at the first point of the Dhanishṭhā in the period of the Vedāṅga Jyotish when Dhanishṭhā was put first. Later on it travelled to the preceding Nakshatra Śrāvaṇa, and at the time when this happened the asterism Śrāvaṇa was reckoned as the first in the calendar.

It is the latter phenomenon, viz. the recording of the Nakshatra Śrāvaṇa at the head of the list that is definitely
alluded to in a passage of the *Mahābhārata* of considerable historical interest. Fleet discussed the epic evidence, *Śravanādīnī rikṣāṇi* (the Nakshatras begin with Śravaṇa, Āsvamedhaparva, 44.2) to show that 'the winter solstice had travelled westwards from the first point of Śravishṭhā (Dhanishṭhā), where it was placed by the astronomy which was preserved in the Jyotisha-Vedāṅga, and was in the preceding Nakshatra Śravaṇa (J.R.A.S., 1916, p. 570). Prof. Keith carrying the discussion further admitted the correctness of Fleet's view and pointed out that the passage had been much earlier discussed by Hopkins with the same result in the *J.A.O.S.* for 1903 (J.R.A.S., 1917, p. 133). It is, however, interesting to note that a passage in the Vanaparva refers to the Dhanishṭhādi reckoning of the stars (Vanaparva, 230.10) as done by Pāṇini.

The important question to be discussed in this connection is the determining of the time when the transition of the winter solstice from Dhanishṭhā to Śravaṇa took place. This would naturally mark the lower limit of Pāṇini's date, since in his enumeration of stars (IV.3.34) he put Dhanishṭhā at the head of the list. It may be mentioned in this connection that the *Mahābhārata* attributes to Viśvāmitra the new arrangement of asterisms by substituting Śravaṇa for Dhanishṭhā. Prof. Keith taking Viśvāmitra as an astronomical reformer takes that reform to have consisted in putting Śravaṇa at the beginning of the asterisms in place of Dhanishṭhā (J.R.A.S., 1917, p. 39).

Prof. Jogesh Chandra Ray has investigated the time of the transition of the winter solstice from the first point of the Dhanishṭhā to the star Śravaṇa on the basis of astronomical calculations in his paper entitled 'The First Point of Āsvini' (1934). His conclusion is that the Nakshatra Śravishṭhā is the star *Beta Delphini*, and that it was in the fourteenth century B.C., or in the year B.C. 1372 when the sun, moon and the star Śravishṭhā were in conjunction at the time of the winter solstice, and since one Nakshatra period changing at the rate of about one degree in 70 years takes somewhat less than a
thousand years (about 933 years), it was in the fifth century B.C. that Śravaṇa occupied a position in relation to the winter solstice similar to that occupied by the Śravishṭhā previously. Counting from B.C. 1372, the precession amounted to one Nakshatra-space in B.C. 405, and the nearest year in which new moon happened on the day of the winter solstice was 401 B.C. At this time Śravaṇa was observed as the star of the winter solstice and recorded by astronomers as being the first in the list of Nakshatras, a fact implied in the statement of the Ādhyātma Ṛgīṇa (Śravānādīnī Ṛikṣāṇē) and interpreted in this light by Fleet, Keith and others. In case the date 401 B.C. represents the year of Śravaṇa Nakshatra coinciding with the winter solstice, the literature and authors referring to Śravishṭhā as the first of the Nakshatras must be placed anterior to that date. With reference to the question of Pāṇini’s date this gives us a reliable basis to fix the lower limit of his date at about 400 B.C. The upper limit as stated already may be circa 500 B.C. from the date of Makkhali Gosāla referred to as Maskārī in the Ashtādhīyāyī.

THE NANDA TRADITION—There is a strong tradition preserved in both the Buddhist and Brahanical literatures that Pāṇini was a contemporary of some Nanda king. Tārānātha, in his History of Buddhism compiled from older sources (1608 A.D.) states that Pāṇini lived in the time of a Nanda king. Somadeva (1063-1081) in the Kathāsārītāgāra and Kshemendra in the Brāhatkatāmanājari (11th century) also associate Pāṇini with king Nanda and his capital Pātaliputra. The newly discovered Manjuśrī-Mūlakalpa, which Jayaswal placed roughly at about 800 A.D., confirms the tradition that ‘king Nanda’s great friend was a Brāhmaṇa, Pāṇini by name’ (Jayaswal’s edition, p. 14), and also adds that in the capital of Magadha there were Brāhmaṇa controversialists who gathered at the king’s court. Yuan Chwang from his record of the tradition as handed down in Pāṇini’s birth-place, Śalātura, states that Pāṇini after finishing his work sent it to the supreme
ruler, who exceedingly prized it and issued an edict that throughout the kingdom it should be used and taught to others (Siyuki, p. 115). Although the name of the king and that of the town of Pāṭaliputra are not mentioned, he confirms the tradition of Pāṇini’s connection with a royal court and of the patronage bestowed upon him in recognition of his work. Rājaśekhara (900 A.D.) connects Pāṇini with the Śāstrakāra Parīkṣhā of Pāṭaliputra which as we have shown corresponds with the account of the Great Synod or the literary assembly held under royal patronage which Megasthenes found functioning at Pāṭaliputra as an old institution (M’Crindle’s Megasthenes, Frag. XXXIII; Strabo, XV.1). A tradition which is thus testified by different sources, Greek, Chinese, Indian, seems to be based on truth. The contact between Udichya (Northern) and Prāchya (Eastern) scholars was a feature of intellectual life of ancient India from the time of the Upanishads, as in the case of Uddālaka Aruṇi of Paṅchāla proceeding to the Madra country in search of higher knowledge. Pāṇini also shared in this kind of intellectual intercourse. We have seen the same thing in the career of Chāṇakya who visited Pāṭaliputra in quest of disputation (ante, p. 20).

An important factor in determining Pāṇini’s time would be the name and time of the Nanda king known to Pāṇini. This question is of admitted difficulty owing to confusion in the chronology of the Nandas. There are, however, two points more or less fixed: (1) the year 326 B.C. as the final year of the last Nanda king, ruling over the country of the Prasii and Gangiridāe as reported to Alexander. He was overthrown by Chandragupta Maurya. The other date is obtained by reckoning from the fifth year of king Kharvela who in the Hathi-gumpha inscription dated in the year 165 of the era of Rājā Muriya refers to Nandarāja in connection with a canal excavated by him 300 years earlier. Another passage in the same inscription records that king Nanda carried away to Magadha the statue of the first Jina. We thus find King Nanda ruling
in Pātaliputra about the year 465 B.C. This Nanda king can be no other than Nandivardhana (Early History of India, p. 44). Of the kings of Śiṣunāga dynasty as given in the Purāṇas Nandivardhana and Mahānanda occur as the last two kings after whom came the base-born Nandas. With the point 465 B.C. falling within the reign of king Nanda, we arrive at a tolerably fixed period for the reigns of these two Nanda kings as c. 473 B.C. to 403 B.C. Mahāpadma Nanda and his sons appear to have followed from about 403 B.C. to 323 B.C. According to Tārānātha, Nanda the patron of Pāṇini was the father of Mahāpadma. It is thus evident that the Nanda king, the reputed contemporary and patron of Pāṇini of the popular stories is Mahānanda, son and successor of Nandivardhana, or the Nandarāja of the Hathigumpha inscription. In view of the joint period of the reigns of Nandivardhana and Mahānandin as stated above, we may assume the dates c. 446 to 403 B.C. for the reign of Mahānandin.

The above hypothesis of Pāṇini’s date based on the traditional account of his contemporaneity with a Nanda king fits with the other known facts about him. The various lines of arguments in connection with Pāṇini’s chronology seem to converge at this particular point, viz. the middle of the fifth century B.C.

It is worth noting that grammatical literature also has preserved some references to the Nanda tradition. In the illustration Nandopakramāṇi māṇāni (Kāśikā on II.4.21) we have an allusion that the weights and measures of the country were standardised for the first time by king Nanda. Again in sūtra VI.2.133 Pāṇini says that the word putra coming after the word rājā does not take an initial acute accent. The commentators agree that the word rājan includes here also the specific names of individual kings, and in this connection they remember the name of king Nanda, whose son is referred to as Nanda-putra. We have the testimony not only of Khārveda that the name of the king ruling in 465 B.C. was Nanda, but
the form is also supported by the Jaina tradition and the Bhavishya Purāṇa as pointed out by Jayaswal (J.B.O.R.S., 1917). We may identify Nanda-putra with Mahānandin, son and successor of King Nanda or Nanda-rāja, or Nandivardhana. POLITICAL DATA—Pāṇini refers to Magadha as one of the monarchies, but it was not yet an empire. In his time the Udichya country was made up of a number of kingships like Gandhāra and numerous republics as the Yaudheyas and Kshudraka-Mālavas, etc. We know it as a fact that none of those kings who ever sat on the throne of Rājagriha or Pāṭaliputra from Bimbisāra up to the last Nanda king dethroned by Chandragupta, ever extended his empire so far as the Vāhika country. The Greeks under Alexander found the Nandas east of the Beas. In the Prāchya country, Pāṇini mentions Magadha, Kosala, Avanti, Kaliṅga and Sūramasa as separate States (Janapadas), which as stated by Kātyāyana (vārttika on sūtra, IV.1. 168) were monarchies (Ekarāja).

It was not yet the resounding epoch of Magadhan imperialism. Ajātaśatru as a Magadhan king, had annexed only the kingdoms of Kāśi and Kosala. It was only a passing phase. The last two rulers of this dynasty, Nandivardhana and Mahānandin, did not make any annexations. The Purāṇas state that it was only Mahāpadma Nanda who annexed the leading Kshatriya states of the time, viz. the Aikshvākus of Kosala, Pañchālas, Kāśis, Haihayas, Kaliṅgas, Aśmakas, Kurus, Maithilas, Śūrasenas and Vitihotras, and made himself the sole sovereign (ekrāṭ) or emperor. Therefore the period, when Pāṇini spoke of the kingdoms of Kuru, Kosala, Magadha, Kaliṅga, Avanti and Aśmaka, specifically as so many small monarchical states must have preceded the time of Mahāpadma Nanda, before about 400 B.C. Thus the political data of the Ashṭādhyāyī must relate to the epoch circa 450 to 400 B.C.

REFERENCE TO YAVANĀNIC—Pāṇini’s reference to Yavana and Yavanāni writing, possesses distinct value for his date. The term Yauna (=Skt. Yavana) for Ionia and the
Ionian Greeks is first used in the inscriptions of Darius I (516 B.C.). It must have been after this that the term *Yavana* came into circulation in parts of India which also formed part of the Achaemenian empire. It would not be right to suppose (as Benfey, Burnell, Weber and Wackernagel have done) that the Macedonian Greeks who first came into India with Alexander about two centuries later first became known as Yavanas. In fact the Yavanas had been known much before Alexander who already found in the Kabul valley a colony of Nysian Greeks. In the Old-Persian Inscriptions of Darius (521-485 B.C.) we first find the term *Yauna* denoting Ionia and an Ionian, and *Yaunā*, Ionians, corresponding to Sanskrit *Yavanaḥ* and *Yavanāḥ* (Sukumar Sen, *Old Persian Inscriptions*, p. 223). Both Ionia and Gandhāra, the home of Pāṇini, formed part of the empire of Darius and also continued under the reign of Xerxes, who recruited to his army a contingent of Indians from Gandhāra in his expedition against Greece about the year 479 B.C. Thus was furnished a firsthand opportunity for the Indians to become acquainted with the Greeks even before Alexander. As Prof. Keith has observed: 'If it is borne in mind that Pāṇini was a native of Gandhāra according to Hiuen Tsiang, a view confirmed by the references in his grammar, it will not seem far-fetched to consider that it was most probably from the older tradition that the name Yavanāṇi was derived' (*Aitareya Āranyaka*, p. 23). The word *lipi* borrowed from the Achaemenian *dipti* meaning 'edict' is conspicuous by absence in the Buddhist canonical works and seems to have been borrowed from Achaemenian Iran. It may further be assumed that the *Yavanāṇi lipti* was known only in Gandhāra and the north-west at that time (*ante*, p. 312).

**PĀṆINI AND THE PARŚUS**—Pāṇini refers to a people called Parśus as a military community (*Āyudhjivī Saṅgha*, V.3. 117). The term *Parśu* corresponds to the Old-Persian form *Pārsa* as given in the Behistun inscription. The Babylonian form
of the name in the same Inscription is Par-su which comes closer to Pāṇini’s Par-su (Behistun Ins., British Museum, pp. 159-166). It appears that Par-su was the name of a country as noted in the Babylonian version, and Pārśava was a designation of an individual member of that Saṅgha, a form of the name which corresponds to Babylonian Par-sa-a-a. A part of India was already a province of the Achaemenian empire under Cyrus and Darius, which it enriched with its military and material resources. Indians were already serving in the army of Xerxes and fighting his battles about 487 B.C., while that very small part of India paid as much revenue as the total revenue of the Persian empire. There was thus an intimate intercourse between north-western India and Persia, and Pāṇini as one born in that region must have had direct knowledge of such intercourse. Not only Gandhāra but also Sindhu corrupted into Persian Hindu in the inscriptions of Darius (corresponding to the Sind-Sagar Doab of the Western Panjab) came under the occupation of the Achaemenians at one time (cf. Hamadan Plate Ins., J.R.A.S., 1926, pp. 633-6; Jour. Cama Ins., 1927; Memoir A.S.I., No. 34). (Cf. ante, p. 445).

Similarly, there is also the possibility that another Persian tribe came to be known in India in Pāṇini’s time who refers to Vṛikas as an āyudhajivi Saṅgha, a community that lived by the profession of arms. An individual member of this tribe was called in Sanskrit Vārkenya, a term which seems to correspond to Varakāṇa of the Behistun Inscription. The whole tribe was called Vṛikāḥ, which corresponds to the form Varkā in the plural number in the name Saka-Haumavarkā in the Naksh-i-Rustam Inscription. The Vṛikas thus appear to be a section of the war-like Saka tribes. (Cf. ante, pp. 443-44).

Pāṇini notices kantu-ending place-names as being common in Varṇu (Bannu valley) and the Uśinara country between the lower course of the Chenab and Ravi, and also instances some particular names such as Chihaṇa-kantham and
Maḍura-kantham, which rather appear as loan-words (ante, pp. 67-68). In fact kanthā was a Scythian word for 'town', preserved in such names as Samarkand, Khokan, Chimkent, etc.

The above data point to somewhat closer contacts between India and Persia during the reigns of the Achaemenian emperors Darius (522-486 B.C.) and Xerxes (485-465 B.C.) as a result of their Indian conquests. This explains the use in India of such terms as Yavana, Parītu, Vrika, Kanthā. To these we may add two others, viz. jābāla (goat-herd) and hailībila (poison), mentioned by Pāṇini (VI.2.38) which were really Semitic loan-wards.

This evidence points to Pāṇini's date somewhere after the time of these Achaemenian emperors.

**THE KSHUDRAKA-MĀLVAS**—On account of Pāṇini's reference to the Kshudrakas and the Mālavas in the formation Kshaudraka-Mālavī Senā in the gana-sūtra of sūtra IV.2.45, Weber argued that this reference brings down the time of Pāṇini (and also his predecessor Āpiṣali) to after Alexander's invasion which was resisted by those two Indian tribes, whom the Greeks noted as Oxydrakai and Malloi. He argued that the Kshudrakas and the Mālavas had been usually at war with each other and a foreign invasion welded them to fight a common foe through a united army called Kshaudraka-Mālavī-Senā. These united forces, opposing Alexander are said by Curtius to have comprised 90,000 foot-soldiers, all fit for active service, together with 10,000 cavalry, and 900 war chariots (Alexander's Invasion, p. 234).

So far as Āpiṣali is concerned Weber misunderstood the text relating to Āpiṣali-vidbi (quoted by Patañjali), which has no connection with the Kshudraka-Mālavas and is concerned only with the formation ādhenuvām. Its purpose was restricted to showing the prevalence of Tadantavidbi in the Sāmūbika suffixes.

Secondly, the confederate military arrangement between
the Kshudrakas and the Mālavas was not a temporary make-shift, but permanent arrangement so as to find its way into current language in the phrase Khaudraka-Mālavī Senā as a special grammatical formation. There is therefore every likelihood that Pāṇini himself had composed the Gaṇa-sūtra Kshudraka- Mālavāt Senā-saṁiṇīyāyām, on the basis of his personal knowledge of such an army. In fact the details given by the Greek writers rather indicate that this joint army had existed before Alexander and was not the outcome of any emergency. Curtius definitely states that the Kshudrakas and the Mālavas in accordance with their custom had selected as their head a brave warrior of the nation of the Kshudrakas who was an experienced general (Alexander's Invasion, p. 236). Unfortunately, at the time of giving battle to Alexander the events took a turn just opposite to what Weber would have us believe. Diodoros expressly states that the Kshudraka-Mālavas could not agree as to the choice of a leader and ceased in consequence to keep the field together (Alex. Inv., p. 236, f.n.). Curtius almost confirms this version of Diodoros by saying that 'overnight a dissension arose amongst them and they retired to their mountain recesses.' He goes one step further to acquaint us with the subsequent course of events saying that most of the army took shelter in the fortified city of the Kshudrakas which was besieged by Alexander, and this was followed by the most heroic resistance and the fiercest attack that the Greek army had experienced so far, in which Alexander himself received a deadly wound. Obviously after their separation from the Mālavas, the Kshudrakas bore the brunt of the battle singly. Finally, peace was negotiated on behalf of the fighters by deputing one hundred ambassadors whom the Greeks received with uncommon hospitality and honour that would be rather unusual in the case of a crushed enemy. The grammatical illustration which Patañjali repeats thrice in the Bhāṣya (Ekaṅkhiṅh Kṣudrakair-jitam, asahāyair-ityarthabhaḥ, I.83; I.321; II.412) presents a true picture of the events as preserved on the Indian
side, namely that the Kshudrakas were matched alone against the invaders and emerged triumphant.

It is thus certain both on the testimony of Pāṇini and the Greek writers that the league of the Kshudraka-Mālava army had been in existence long before Alexander.

The numerous Āyudbjivi Saṅghas in the Panjub and North-West India point to political conditions as existed before the rise of Mauryan Imperialism. Pāṇini treats of the development of Saṅgha polity as if it were at its zenith. Gradually Saṅghas began to decline and the march of the Greeks through their land completely exposed their political weakness. This made the Saṅghas unpopular and created a movement for their unification of which indications are found in Kauṭilya’s Arthaśāstra. Pāṇini lived in the peak period of the Saṅghas, and an interval of about a century should be allowed for their decline against the rise of a centralised monarchy or empire. This would assign a date to Pāṇini a hundred years before the rise of Mauryan imperialism.

PĀṆINI AND KAUṬILIYA—It has been argued that Kauṭilya writes a language which, though archaic in certain respects is decidedly later than the language of the Asbṭādhyāyī (Thieme, Pāṇini and the Veda, p. 80). From the foregoing studies it is apparent that the works of both authors know of many similar institutions. Sometimes the Arthaśāstra appears as the best commentary on Pāṇini in regard to certain specific and peculiar terms referred to by both, e.g. Maireya, Kāpiśāyana, Devapatha, Ākranda, Yuktārohi, Upanishad, Vinaya, Parishad, Vishya, Śvāganika, Āpamitayaka, Yāchitaka, Ārya-kṛita, Yaujana-satika Dūta, Asbudakshīna, Vyusha, Vaiyushta transactions, Purusha and Hastī measures, Kedāra, Parikheyī, Mābisba, Adhyaksha, Yukta, Avakraya, etc. In the foregoing studies we have oft-times dealt with institutions of all kinds which are not only similar but sometimes identical in the Asbṭādhyāyī and the Arthaśāstra. The common evidence of the names of punch-marked coins, as well as weights
and measures, as noticed in the body of this work, furnishes some striking parallels between Pāṇini and Kauṭilya. As Thieme puts it, Kauṭilya was junior to Pāṇini and the period of one century may reasonably be allowed to have intervened between the two.

EVIDENCE OF COINS—The numismatic data of the Ashtādhyāyī show that it is older than the Arthasastra. For instance, Pāṇini’s (1) Nīśka, (2) Suvarṇa, (3) Śāna, (4) Śatamāna, point to older coinage not known to Kauṭilya. Similarly Kauṭilya does not know of the significant coin names Viṁśatika and Trimśataka mentioned in the Ashtādhyāyī, of which actual examples have been found (ante, 270-71). The evidence of Pāṇini’s Śatamāna coin is of great importance in this connection. The Śatamāna coinage must have been in mintage and circulation in the time of Pāṇini. Its beginnings may be placed a few centuries earlier. It is significant to note in this connection that the reference to Śatamāna in the Sata-patha Brāhmaṇa is found only in those Books which are associated with the name of Yājñavalkya, e.g. in Kāṇḍa V in which Yājñavalkya is quoted as authority and in Kāṇḍas XII, XIII and XIV. There is not a single reference to the Śatamāna coin in the Agnichayana Books (VI-X) in which Śaṅḍilya to the exclusion of Yājñavalkya figures as the principal authority. This accords with the view that Yājñavalkya was considered as a late Brāhmaṇa-writer in comparison with the earlier works of Aitareya and Śaṭyāyana, etc. The chronological inference is that the period of currency of the Śatamāna coin was confined to a few centuries (c. eighth-fifth cent. B.C.) from which Kauṭilya was removed in time, but which were nearer to the epoch of the Taṇtirīya and Jaiminiya Brāhmaṇas and portions of the Sata-patha Brāhmaṇa, which alone mention this coin.

Another coin-name of much more precise chronological value is the heavy type of Kārshāpaṇa, called Viṁśatika, which was 20 māṣbas or 40 rattis in weight. The silver Karshāpaṇa minted by the Mauryan administration, as shown by actual
finds, and as mentioned in the *Arthasastra* weighed only 16 māsas. Panini on the other hand seems to know both classes of silver coins, *viz.* the Viṁśatika of heavier weight as its name signifies, and the Karśāpana of standard weight, which although unspecified was most likely of 32 rattis as stated in Manu and Kauṭilya. We have therefore to assign a stage to Panini in which Viṁśatika and Karśāpana were current coins at one and the same time. This held good in the fifth century B.C. in the time of the Nandas. The heavier Karśāpana of 20 māsas (*visatimaśo karśāpano*) was current in Rājagriha during Bimbisāra’s reign. It was the local currency of different Janapadas. The Nandas felt called upon to introduce for the first time a uniform system of weights and measures and standard coinage for their empire extending from Kalinga to Pañchāla. This system is known in medical works as Māgadhā māna as distinguished from the Kāliṅga māna which continued as a separate system. The coinage of the Nandas showed the following new features: (1) a standard Karśāpana of 16 māsas in place of Viṁśatika of 20 māsas; (2) punching of obverse and reverse symbols on two sides of a coin instead of on the same side as before; (3) increasing the number of obverse symbols to 5 in each group, instead of 4 as on Viṁśatika and earlier coins; (4) introducing the Sun and Six-armed (*Shadara*) symbols as constant in the five-symbol groups; (5) simplifying the forms, but greatly adding to the variety of the symbols punched. The new Karśāpana of 32 rattis of the Nandas may be actually identified in the thin and broad flat pieces with clear symbols punched on them, which are known from actual hoards. The thick and small variety in which peacock- or crescent-on-hill symbols appear belongs to the Maurya period. The distinction of the earlier and later Karśāpanas is best seen in the form of their six-armed symbols, those having an oval as a constituent are earlier than those with an arrow or taurine.

On the basis of his numismatic data Panini thus belongs to the period of transition between the age of Bimbisāra and
Chronological Considerations

Kauṭilya, i.e. between the sixth and the fourth century B.C. A date in the fifth century B.C. admirably reconciles the coin-references of the Ashtaḍhyāyī.

PERSONAL NAMES—The evidence of personal names current in Pāṇini's time also points to the above chronological position. The Gotra-names were current in the Brāhmaṇas and the Upanishads, whereas in the Maurya period two other features appeared, viz. contraction of personal names and star-names, i.e. personal names derived from the names of stars. The Ashtaḍhyāyī represents a stage between the two when the Gotra-names and the Nakṣatra-names were in use side by side. The Gotra-nāma was an old Vedic custom, whereas the Nakṣatra-nāma was a new feature approved by the Grihya-sūtras. There is no scope for contraction in a Gotra-name, and so the rules of contraction detailed by Pāṇini applied to names other than Gotra names. In this respect the early Buddhist literature shows an equal preference for Gotra- and Nakṣatra-names and is thus closer in time to Pāṇini.

PĀṆINI AND THE JĀTAKAS—In many respects Pāṇini's language is earlier than that of the Jātakas, but in some cases the coincidence between the two is striking and helpful for chronology. Attention may be drawn here especially to the material for mounting chariots, viz. dvāipa, vaiyāghra and pāṇḍukambala, which are mentioned in Pāṇini and the Jātakas (ante, p. 150). The expressions cited above represent older conditions, and as a matter of fact these words occur in the Gāthā portions of the Jātakas which are admittedly earlier than the prose portions. A date in the fifth century B.C. would explain the linguistic similarities between the Ashtaḍhyāyī and the Jātakas.

PĀṆINI AND THE MADHYAMAPATHA—Pāṇini is always distinguished by his unique balance of judgment in reconciling opposite views and looking at both sides of a grammatical controversy.

While examining the grammatical data of Pāṇini we have
already drawn detailed attention to about half a dozen instances of this spirit of synthesis (ante, pp. 352-5). In such controverses as Mahā-Sāmiñās and Krittrima-Sāmiñās, Jāti and Vyakti, Anukarana, Upasarga as Vācbaka and Dyotaka, Dhaiṅ as Kriyā and Bhāva, Vyutpatti and Ayvyutpatti of words, etc., Pāṇini’s position is not exclusive, but reconciles the two extremes. In this respect Pāṇini’s work can be said to be a true product of its age, the epoch of Majjhima Paṭipadā, the best representative of which was another master-mind, the Buddha himself. Those who accepted the path of the golden mean as the ideal course to follow avoided insistence on extreme views, and we actually find Pāṇini avoiding the mistakes of his predecessors like Śakaṭāyana who over-emphasized the verbal derivation of all nouns. Pāṇini presents his material throughout the Ashtādhbyāyi with an all-comprehensive outlook and synthesis which made his work so popular and acceptable.

SUMMARY—We may now summarise these considerations. The various dates assigned by scholars to Pāṇini range from the seventh to the fourth century B.C. The majority of scholars are inclined towards the fifth and the fourth century B.C. The view taken in this work is that a date nearer the fifth century B.C. appears more probable on the basis of the available data. It takes Pāṇini to be a contemporary of the Nanda king named Mahānanda and thus assigns him to the middle of the fifth century B.C.

The literary argument offers a corrective to the extreme views of Goldstücker about the types of literature and literary works known to Pāṇini. Weber’s argument for a date after Alexander’s invasion based on references to Yavanānī script and to the confederated army of the Kshudraka-Mālavas has been duly answered. Sir R. G. Bhandarkar’s argument based on Pāṇini’s supposed ignorance of the south has also been largely met by the fact that Pāṇini’s geographical horizon extended from Kamboja (Pamir) to Aśmaka on the Godāvari, and from Sauvīra (Sind) in the west to Kaliṅga and Sūramasa (Sūrmā
valley of Assam) in the east, and also included that part of South India which lies within the tropics (VIII.4.25) and also some islands situated in mid-ocean.

The references to such specifically Buddhist terms as Masakari, Kumari-Sramaṇa (maiden nuns), Nikaya and Nirvana, suggest that Panini came after the Buddha.

The argument from numismatic data and the nature of current personal names given in the Astadhyayi points in the direction that Panini lived in the same cultural epoch as produced the earliest Pali canon.

Moreover, the striking resemblance of several technical terms between Panini and Kautilya, indicates that Panini preceded Kautilya but was not far removed from his time.

The astronomical argument is based on the fact that in the list of ten star-names given in sutra IV.3.34 Sravishthā begins the list. This points to the astronomical reckoning of the Vedanga Jyotisha in which Sravishthā was the first of the nakshatras. This position of Sravishthā continued from B.C. 1372 to about 401 B.C., i.e. the close of the fifth century B.C. After this the asterism of Sravana was taken to commence the star-list. This gives us a definite lower limit for Panini’s time.

The concensus of this varied evidence is in favour of assigning to Panini a date about the middle of the fifth century B.C. This chronological pointer available for the Astadhyayi and its distinguished author is somewhat singular in comparison to what we possess for so many other works and masterminds in the literary history of ancient India.
APPENDIX I

JANAPADA AND THE GREEK CITY-STATE

JANAPADA ANALOGOUS TO CITY-STATE—The Charana, Gotra and Janapada are three typical Panninian institutions of educational, social and political life respectively. It is not without significance that the term Janapada is conspicuous by absence in the Vedic Samhitās. It occurs only in the latest phase of the Brāhmaṇa period, and found its full development in the period of the Ashṭādhyāyī. A comparative study of human societies affords innumerable analogies, and we find unmistakable parallels between the Janapada State in India and the City-State in Greece. Both flourished at about the same period. In Greece a large number of City-States represented so many isolated communities, which were self-contained and had their own systems of government, but all of them had very similar social and religious customs and institutions. A few like Athens and Sparta were more important than others.

JANAPADAS IN INDIA—In India the number of Janapada States was quite large. Pannini gives a rich picture of Janapadas extending from Kamboja to Asmaka and Sauvīra to Sūrāmasa, of which the geographical aspect has been dealt with in Chapter II and illustrated in the accompanying maps. The Janapada experiment in India was on a much larger scale than in the case of Greek city-states with regard to their extension both in place and time. The fuller lists of Indian Janapadas containing about 175 names, are preserved in the Bhuvanakosha chapters of the Purāṇas (Vāyu, ch. 45; Matsya, ch. 114; Mārkaṇḍeya, ch. 57; Brāhmaṇḍa, ch. 49; Vāmana, ch. 13; cf. D. C. Sircar, Text of the Puranic List of Peoples, I.H.Q., XXX, 1945, pp. 297-314). Almost all Janapada names in
Pāṇini are traceable to that list. The territorial divisions envisaged there are (1) Madhya, (2) Prāchya, (3) Udīchya, (4) Dakshiṇāpatha, (5) Aparānta, (6) Vindhya-prishṭha, and (7) Parvata, and the Janapada names are grouped accordingly, which affords a clear picture of the States spread in all parts of the country. The Parvatasrayin Janaṇapadas of the Purāṇas find pointed mention in Pāṇini as āyudha-jīvins of the Parvata country (IV.3.91), i.e., military high-landers settled in the north-west of India and in the Trigarta country, as explained above (ante, pp. 434-6).

BOUNDARIES—In Greece the city-states were scattered mostly amongst hills and valleys and separated by well-defined boundaries. In India also the Janaṇapadas had demarcated boundaries to which Pāṇini refers as tadavadhi (IV.2.124). The Kaśikā observes that other Janaṇapadas formed boundaries of a Janaṇapada surrounding it on all sides (tad-avadhiraṇi janaṇapada eva gṛihyate). A chain of Janaṇapadas occupied the entire stretch of land, and some of them were big enough to admit of several territorial divisions of which the names are regulated by sūtras VI.2.103 and VII.3.12; e.g., the Sindhu divided Pūrva-Gandhāra with capital at Takshaśilā from Apara-Gandhāra with its chief town Pushkalāvatī; similarly Pūrva-Madra, Apara-Madra, and Pūrva-Paṇchāla, Uttara-Paṇchāla, and Dakshina-Paṇchāla.

ACROPOLIS—But it is more in the development of the Janaṇapada State through the ages that we find a striking parallel with the Greek City-State. The polis or the city was the nerve-centre of the City-State, and it was opposed to the open village. The "fluid" term polis signified the acropolis or the fortified town. In India also each Janaṇapada had its fortified town or capital. An interesting list of sixteen Mahājanapadas with their names of capitals is well-known in the Buddhist texts, and similarly twenty-five Janaṇapadas in the Jaina literature together with names of their capitals.

EVOLUTION OF THE CITY-STATE AND THE JANANAPA-
Appendix 1

PADA—In the evolution of the City-State there were four well-defined stages known as Genos, Phratries, Phulai and Polis. The *polis* grew out of small beginnings, 'from the clan—the *genos*, the patriarchal clan, "the first unit of society"—and passes through the associations of families, the phratries, and the military groupings of clans, the *phulai* tribes, to the political organism which grew out of a settled life and synoecism' (Glotz, *The Greek City and Its Institutions*, Foreword by Henri Berr, p. ix).

The last mentioned political organism was the City-State. The analogy holds true in the case of the evolution of the Janapada State in India, which had its humble beginnings in the clan or Jana; the Jana developed a number of individual units called families or Kula, and the associations of families formed the ruling Kshatriya tribes which wielded political power and are termed Janapadins in Pāṇini (IV.3.100). The Janapadins were, according to the Kāśikā, the ruling class in the Janapada (Janapada-svāminah kshatriyāḥ). This was the stage when the Janapada State emerged in its full-fledged development. The correspondence of the Janapada and the City-State may be set forth below:


ABHIJANA—We can now see why in the whole of the Vedic literature there is no reference to the Janapada institution, whereas the Jana finds repeated mention. The Bharata Jana tracing itself to a common ancestor was a compact clan. It must have expanded and the outcome was the increasing importance of independent families or Kulas, which ultimately developed into Gotras and Vanīsas. The clan was not yet settled in any particular area, but with the growth of independent families it tended to lose its mobility and ultimately the tribe or Jana came to be tied down to an abode, called
Abhijana in Panini (IV.3.90), literally 'the region that had come under the "land-taking" of a Jana'.

JANAPADIN—The territory of the Jana became the Janapada, whence the original settlers who formed the governing class were called Janapadins. In the Janapada there came to live also other peoples or aliens who were distinguished from the privileged class of rulers or Janapadins proper. The latter were consecrated to rulership and designated as abhishikta vanśya. In sûtra VI.2.34, Panini refers to the Rājanyas of the Andhaka-Vrishni Saṁgha, and, as clearly stated by the Kāśikā, the consecrated Kshatriyas of that confederacy formed the object of the grammatical rule. The evidence of the Lichchhavis of the Vṛijī Janapada is well-known; the waters of their maṅgala-pushakarnī were used for the consecration of 7,707 Rājans and were closely guarded against others. It is, however, clear that in its later stages the Janapada, irrespective of the fact whether it was republican (more strictly oligarchical as in Greece) or monarchical (i.e. gaṇādbha or ekarāja, IV.1.168, vārt.) consisted of a very mixed population. Patañjali explicitly says that members of the ruling Kshatriya class in the Mālavā republic were called Mālaya, and in the Kshudraka Kshaudrakya, but the slaves and free labourers amongst them were excluded from its application.¹ In practice the name of the ruler in a monarchical state and the name of the Kshatriya members who constituted the privileged aristocracy (called apanya) were both derived from the name of the Janapada (Kshatriya-samāna-śābdāj-janapadāt tāsya rājany-apanyavat, vārt. on IV.1.168). Thus the king of Pāṅchāla and a Kshatriya descendant of Pāṅchāla were both called Pāṅchāla.

JANAPADA, A CULTURAL UNIT—The stages of evolution from Jana to Janapada have yet to be clearly formulated

¹ 'इदे ताहि चौदकारामतयां मालवामाससारमिति। अत्रायि कार्ययय: मालवः
इति नेतसायां दसे वा भवति कर्मकरे वा। कि ताहि। तेनमेव कृतमिति॥
(Bhāshya, IV. 1. 168; II 269).
Appendix I

and studied on the basis of literary evidence which is extensive. The *Atharvaveda* speaks of small homogeneous communities of people differentiated from one another (*babudhā janam*), speaking different tongues (*vivāchasān*) and following diverse faiths (*nānā-dharmānam*, *Prithivī Sūkta*, XII.1.45). Soon new factors operated leading to the discovery of fresh centres of population and development of new routes, towns and professions depending on internal trade and commerce. All this contributed to the growth of regional consciousness and the emergence of the *Janapada* life. The *Janapada* was not merely a geographical term. It was more of a social, cultural and political phenomenon that found cumulative expression in the *Janapada*. Each State was free to choose its form of government—a state of circumstances envisaged in such expressions as *eka-kritāḥ* (i.e., *ekādhīna* or *rājādhīna*), *śrenī-kritāḥ*, *pūga-kritāḥ* II.1.59); each was sovereign and independent so long as its freedom was respected by the neighbouring states; each was free to follow its intellectual and cultural life; each had its own language and local gods. The Buddha permitted the spread of his teachings in the local dialect of each *Janapada* and also drew attention to the continued worship of the traditional *chaityas* and deities. In the Greek cities close connection existed in the beginning between political organisation and religion. ‘Every city had its deity as had every family’ (*Glotz*, op. cit., p. 19). In India homage to the traditional *chaityas* and deities, such as Yakshas and Nāgas, was obligatory on all persons in the community, but with the emergence of new faiths like Buddhism and the Bhāgavata religion, the religious tie became less rigid and the “cultus” of the clan came to be replaced by a personal religion. The grammatical literature points to instances of linguistic peculiarities of *Janapadas*, e.g., of Kamboja, Surāśṭra and Prāchya (*Bhāṣya*, I.9). Pāṇini refers to the particular domestic culture prevailing in the Kuru Janapada for which the linguistic expression *Kuru-gārhaapatam* (VI.2.42) had become cur-
rent. We have already drawn attention to its import. Kātyāyana adds to it Vṛjī-गर्भापतम, which perhaps refers to the system of family government prevailing amongst the Lichchhavis. The Mahābhārata referring to the Kula system of polity mentions its two salient features; firstly there was a Rāja in each household (gribe gribe hi rājānāḥ, Sabhāparva, 14.2); and secondly in the Kula polity some one became supreme at one time, and somebody else at another (Sabhā., 14.6). This refers to periodical election to the headship of the oligarchical State; the system was called Pārameshṭhya (ib., 14.5). It is also stated that in the Vṛjī Janapada the social life of its citizens was regulated by the Gaṇa in certain matters such as marriage. The general rule was that no marriage should be contracted outside Vaiśālī and even outside its districts. The Śākyans also were very fastidious about the purity of their blood. Similar care in the matter was taken by citizens in Greek city-states.

FORMS OF GOVERNMENT—The Janapada states in India had different systems of government just as the city-states in Greece. Pāṇini refers to several of them, e.g. Gaṇa or Saṅgha, Avayavas (IV.1.71) or member states of a Union, Leagues or Confederacies as in the case of Trigarta-Śabṭha (V.3.116), Rājanyas (VI.2.34), Dvandva or Vyutkramaṇa (VIII.1.15) i.e., Party System, Janapadins, Abbhisikta-Vaiṇśya Kshatriyas, Pūga, Śreṇi, Grāmaṇi, Vrātas, Kumāra-Pūga, (VI.2.88), Parisbādvala Rājā (V.2.112), Samdhi-miśra Rājā (VI.2.154), Ayudhajīvins and Parватīyas (V.3.91; IV.2.143), etc. The political significance of these terms has been explained in their proper places. Just as bands of mercenary armed soldiers existed in many Ayudhajīvī Saṅghas, similarly they existed in Greece and many were enlisted in Alexander’s army recruited from the Greek cities and the highlands in Thrace. The code of honour with these fighters also offers scope for comparative study.

COMMON ANCESTRY—The city-states were formed of
small communities of men who generally traced themselves to a common ancestry. The same fiction prevailed in the Janapadas in which the entire Kshatriya class of the Janapadins believed themselves to have descended from an original founder who was almost deified. So long the clan was compact this memory of a common forefather was rooted in truth. For example, the Sāvitrīputrakas mentioned by Pāṇini in the Gana-pātha to V.3.116 (Dāmanyādi) formed a clan consisting of one hundred 'sons', all descended from Sāvitrī and Satyavān (Sāvitrīyāḥ... tad vai putraśatam jajñē, Aranyaka., 28.3.12). 'Putra' in such cases certainly means 'descendant' and 'one hundred' was an indefinite number. They all bore the title of Rājā and all were Kshatriyas, each family in turn multiplying through its sons and grandsons (te chaṇi sarve rājānāḥ kṣat\-\textiti{\v{r}}iyāḥ putra-pautilañ\textiti{\v{r}}ah, Karna., 4.47). But such a claim for the whole tribe could only be a fiction, maintained seriously through generations. In many cases the names of eponymous founders of the Janapadas were invented, e.g. Aṅga, Vaṅga, Kaliṅga, Suhma and Pudrā are stated to be the five sons of Dirghatamas, and each the founder of a Janapada (Ādi., 98.32).

**JANAPADA CULTURE**—The city-state transformed the mental, social, religious and political outlook of the Greeks leading to an unparalleled flowering of the national genius as was seldom seen in world history. The religious and philosophical contributions of the citizens in the Janapadas constitute brilliant chapters in the history of Indian thought. The intellectual and metaphysical ferment during the Janapada period is well reflected in the Pali and Ardha-Māgadhī literatures and some of the sublime dialogues recorded in the Śānti-parvan are like the Brahmajāla-sutta of Sanskrit literature and bear witness to the moral and intellectual upheaval in the Janapadas. In one respect the change was all too marked, even for India, and it was the gradual secularisation of education and learning which were previously subservient to the
Vedic Charanas. The foundations of most of the scientific and philosophical systems of India were laid in this period. As has been shown in detail, a mass of literature known to Pāṇini had been developed outside the aegis of the Vedic schools, grammar itself being such a subject cultivated by independent master-minds who were a glory to their Janapadas. It is stated for the Greek city-state that Homeric education there was replaced by a type of education which took its colour and shape from the practical and economic needs of the new city. The fact has its exact parallel in the Indian Janapada, where new factors brought into being a new ideal of education serving the needs of trade and economic life. Art and industry were for the first time accorded a place of honour. Yāska had noted this significant change:

यथा जानपदीयु विद्या: पुरुषसिद्धो भवति।

'Proficiency in the arts required by the life of the Janapada confers on persons a title to distinction' (Nirukta, I.1.5). Pāṇini explains these Jānapadīs as so many vṛttis (IV.1.42), i.e. skilled arts and professions devoted to producing the necessities of life. The Pali literature and Pāṇini record a number of such Silpas flourishing with bee-hive activity in the Janapadas.

CITIZENSHIP—Citizens of a common Janapada were known as Sa-janapada (VI.3.85), a term having the same importance as Sa-brahmachāri in the case of the Charana institution to designate all its students (VI.3.86). The Charana appellation, the Janapada appellation and the Gotra appellation—these three were important distinctions of an individual in the Janapada period.

LOYALTY (BHAKTI)—Loyalty of the citizen to his polis and to its laws and rulers was the hall-mark of Greek life and counted as one of its cardinal virtues. Its noblest expression is found in the life of Socrates himself: "As to his parents and his master, so to the laws and his country, he must not
return injury for injury, nor blow for blow. "Country is more than a mother: for her sake all things must be endured", Glotz, op. cit. p. 140). The Janapada State was for the citizen his mother—Mātā bhūmiḥ putro abam prithivyāḥ (Atharva, XII. 1.12)—and the Janapada Dharmas or its laws must receive his complete loyalty. Pāṇini designates it as Bhakti, i.e., the political and moral allegiance of the citizen both to the Janapada and its Janapadins (IV.3.100). A citizen of the Aṅga Janapada was called Aṅgaka with reference to his Bhakti to the Aṅga State; and similarly to the Aṅga Kshatriyas, the abhishiktavanisya rulers of that Janapada of which the citizen was himself an integral part. The two-fold Bhakti is here significantly distinguished, viz. to the State in theory and to its government in practical life.

LAW (DHARMA)—The new conception of law in the city-state was inspired by religious respect and marked by moral grandeur considered to be of divine origin. It is almost identical with the new interpretation of Dharma given to it in the Mahābhārata:

नमो धर्माय भव्ने धर्माय धार्मिति प्रजा। (Udyoga., 137.9).

It is not the place to enter into details about the new ethico-social meaning of Dharma, but it is clearly intended by Pāṇini in such a term as Dhārmika, Dharmanī charati, (IV. 4.41), where charati is explained as āsevā, habitual moral conduct or practice of virtue, and Dharma, that which is righteous, just, virtuous, moral and accordant with social and universal law (Dharmad-anapeta, IV.4.92). Dharma at once denoted both justice and virtue. The ideal of the Janapada State was the highest development of virtue and its object was to produce the perfect citizen. This ideal is embodied in the famous words of king Aśvapati of Kekaya which he uttered in the presence of such citizens as were householders possessing magnificent mansions (mahāsāla), supplied with all the luxuries that Janapada life would provide, but who still chose the path of virtue and learning (mahāsrotriya):
'Within my realm (Janapada) there is no thief,
No miser, nor a drinking man,
None altarless, none ignorant,
No man unchaste, no wife unchaste.'

(Chhāṇḍogya Up., V.11.5)

Reason was cultivated as the ideal of individual perfection in the city-state, and we find a similar ideal embodied in the new word Prajñā, which is explained in several discourses of the Mahābhārata, the Vidura-niti being a summary of those ideals of virtue and common-sense which were cultivated by the Janapada citizens. The rulers also must be Prājñā (Śānti, 67.27). The sum total of all virtues and of the legal, social and moral ordinances which governed the life of the citizens and the Janapada polity was called Vainayika, to which both Pāṇini (V.4.34) and the Śāntiparva (68.4) refer. The Vainayika functions of the Janapada state are described at length in the Mahābhārata in a chapter with the epic strain 'Yadi rājā na pālayet' (Śānti., 68.1-61).

DEFENCE (Gupti)—The defence of the city-state was of the utmost concern to its rulers as well as the citizens. "The people ought to fight for the laws as for the walls of its city," said Heraclitus (Glotz, op. cit., p. 139). The Mahābhārata discusses in detail the defence of the Janapada (kathān rakshyo janapado, Śānti, 69.1) and lays great stress on Gupti or the military preparedness of the fortified city and its citizens. It refers to parikhā, prākāra, etc. as parts of that defensive system which Pāṇini also mentions. The evidence in the epic is naturally more elaborate, mentioning a full contingent of military and civil institutions needed for the defence of the realm, e.g. durga, gulma, nagara, pura, sākhrānagara, ārāmā, udāyā, nagaropavana, āpana, vibhāra, sabbhā, āvasatha, chatvara, rāṣṭra, balamukhyas, sasyābbihāra, san-
krama, prakāṇṭhi, ākāśa- janani, kaḍangā-dvāraka, dvāras, sātaknī, bhāṇḍāgara, āyudhāgara, dhānyāgara, aśvāgara, gajāgara, balādhikarana, all leading to the complete defence of the Janapada and its pura (Śānti, 69.1-71). We are told by the Greek historians of Alexander how the impregnable nature of the defences of the Massaga and Aornos forts (Māsakāvatī and Varanā) helped the heroic Āsvakāyanas of Gandhāra in offering resistance to the invaders.

ASSEMBLY AND COUNCIL—Each Janapada, whether a kingly state or a Saṅgha, had its assembly (Sabhā) and a governing council (Parishad). In order to become a member of the Assembly the Greek citizen was required to have attained the age of eighteen years when he was enrolled on the register of the deme, but since usually two years of military service had first to be done, it was seldom that a man appeared in the Assembly before he was twenty. Pāṇini also refers to the qualification of a citizen to become a member of the Sabhā whence he was called Sabhya, having become privileged to be enrolled as a member and attend the meeting of the Sabhā (Sabhyā yah, IV.4.105; Sabhyāṁ sādhuḥ, where sādhu specially means yogya, qualified). A Kshatriya young man, when eighteen years of age acquired the privilege of becoming a kavacha-bara (cf. Vayasi cha, III.2.10, kavachabaraḥ kṣatriya-kumāraḥ), 'fit for military duty,' and at the age of twenty-one became privileged for all political rights and duties. The new word Sabhya was equivalent in meaning to the Vedic Sabhēya which Pāṇini records as an old Chhāndasa term (IV.4.106). Sabhā had a two-fold meaning, i.e. the assembly and the assembly-hall (Śālā, II.4.23-24).

In the ancient democracies of Greek which did not know the representative system, politics was for the mass of the citizens a regular preoccupation, a constant duty (Glotz, ib., p. 175). There were 42,000 citizens of Athens in 431 B.C., all did not attend and rarely were more than 2,000 or 3,000 citizens seen on the Pnyx. Certain resolutions were supposed
to be taken by the “entire people”; actually, in these cases, 6,000 votes constituted a quorum (Glotz, ib., p. 153). We do not have many details of such matters for the Sabhā in the Indian Janapadas. But we are told that there were 60,000 Khatriyas in the capital of the Cheta State, all of whom were styled rājāno (Jāt., VI.311). It at least means that they were all citizens entitled to the membership of their Sabhā. Amongst the Lichchhavis there were 7,707 rājāno. No information is available about the quorum in the Sabhā, but in one instance the number of the Deva-jana i.e., the Deva host functioning as the Jana is stated to be 6,000 (sbaṭ-sāhasrāḥ, Atharva, XI.5.2), and again as 3,000 (Brīh. Up., III.9.1). The former seems to refer to the quorum of the Jana as a whole, and the latter to the Prithag-Devāḥ (Atharva, XI.5.2.), i.e., the approximate number of members individually attending their Sabhā. These numbers, obviously lacking any other reasonable explanation, seem to have been taken from the procedure as it prevailed in the Janapada assemblies of men. The Vrîshnyandhaka heroes assembled in a body in an emergent meeting of their Sabhā are actually compared to the gods seated in the Sudharmā hall (Ādi., 212.15). Elaborate seating arrangements were made for the members (ib., 212.13-14).

The Sabhā must have held regular sessions on fixed days, and also emergent meetings convened to consider unforeseen events, as for example, the abduction of Subhadrā by Arjuna. Under the stress of public events, when there was urgent necessity, the Sabhāpāla officer convened an assembly of panic and tumult, summoning the citizens of the town by sounding the war drum (sāmnābikī bherī, Ādi., 212.11).

The Sabhā as an institution existed both in the ekarāja states and the ganaś. In the former it was named after the name of the king (II.4.23), as Chandragupta-sabhā.

SYMPOLITIES—Under pressure of political events, neighbouring and kindred cities or groups of people united in larger communities. This led to confederations of the most
diverse nature. Union was accomplished in all cases by the adoption of a common constitution. This was given the name of sympolity in the Greek city-states. The sympolities which are known to us present so many forms, so many gradations, that it is often puzzling to know how to define them, or one hesitates for the appropriate name. Almost the same political phenomena prevailed in the case of the *Janapada* states in the time of Pāṇini. He seems to have surveyed these diverse sympolities and arranged the different political terms in the *sūtra Śreṇīyādayāḥ kritādibhiḥ* (II.1.59) The first three terms Śreṇī, Eka and Pūga have reference to three types of states, the diverse nature of their constitutional modifications being indicated by words in the *Kritādi gaṇa*. The constitutional variety and gradation may be set forth as follows for the Śreṇī:

1. Śreṇī-kṛita, formed or organised into a śreṇi under external pressure of events.
2. Śreṇī-mita, groups of people, with a śreṇi constitution to a limited extent only.
3. Śreṇī-mata, united with the approval of the constituent groups, each of the confederating units retaining the status of a śreṇi.
4. Śreṇī-bhūta, fully welded or confederated as one śreṇi, with the spontaneous urge of members.
5. Śreṇī-ukta, having only the formal designation of a śreṇi, otherwise retaining the independence of each group in the union.
6. Śreṇī-samājñāta, probably similar to an administration in which only a few officials like magistrates, mabattaras, were accepted in common by the contracting parties to the union.
7. Śreṇī-samāmnāta, a union as śreṇi, in which a common constitution was adopted by several *Janapadas* by incorporating some parts of one with some of the other.
9. Śrenī-samākhyāta, completely and fully merged or brought into a common relationship with one another.

9. Śrenī-samabhāvita, welded as a unit by the mingling or transference of populations, perhaps akin to synecism in the city-states.

10. Śrenī-avadhārita, śrenis forming unions in only a limited or restricted manner.

11. Śrenī-nirākṛita, śreni that had seceded from the union or hegemony of states to which it formerly belonged.

12. Śrenī-avakālāpita, a state that was ripe to form a union by virtue of its strength of arms.

13. Śrenī-upākṛita, a smaller state becoming a partner with a bigger Janapada and earning some advantage for it by this deal.

14. Śrenī-upākṛita, brought near or driven to form a union as a reaction to the menacing growth of some neighbouring state.

We may have two more groups of similar terms for Pūga and Eka forms of government.¹

The word-meanings given to the various terms of the gana Kritadi are more or less hypothetical and the determining of precise political significance must await further clarification. This much, however, is indicated that they refer to political unions or constitutional forms of diverse nature and extent, by which new states were created out of old ones, embracing new groups, losing some part of their

¹ पूगा—पूगा-कृत, पूगा-मित, पूगा-मत, पूगा-भूत, पूगा-उक्त, पूगा-समाजात, पूगा-समाजात, पूगा-समाह्यात, पूगा-सम्बित, पूगा-अबधारित, पूगा-निराकृत, पूगा-अव-कलित, पूगा-उपकृत, पूगा उपाख्यात।

एका—एका-कृत, एका-मित, एका-मत, एका-भूत, एका-उक्त, एका-समाजात, एका-समाजात, एका-समाह्यात, एका-सम्बित, एका-अबधारित, एका-निराकृत, एका-अव-कलित, एका उपकृत, एका-उपाख्यात।
autonomy, or effacing their frontiers to form into bigger unions, or organising into military bands (pūgas) of varying camaraderie and cohesion.

AVAYAVAS—Pāṇini refers to this term in sūtra IV.1.173; its meaning cannot be said to be beyond doubt. The Kāśikā mentions six Avayavas of the Sālva state, viz., Udumbara, Tilakhala, Madrakāra, Yugandhara, Bhuliṅga, and Śaradaṅḍa, to which Patañjali adds three more, viz., Ajamīḍha, Ajakranda and Budha (Bhāṣya, II.269). Their territories were far flung over Rajputana and the Panjab without any geographical contiguity. It seems that the Avayavas were Sālva citizens who were detached from the main body and quartered on other Janapadas as an occupying colony where they enjoyed all the privileges of the new state, but at the same time considered themselves to be part and parcel (avayava) of the parent state of the Sālva Kshatriyas. Thus they were “the Sālva people of Udumbara,” “the Sālva people of Tilakhala,” etc., but constitutionally a section of the Sālva Janapada. Such a system was known in Athenian democracy where the cleruchs (persons sent out from Athens as occupation forces) were quartered in thousands on the soil of other cities, and were designated as “the Athenian people of Imbros,” “the Athenian people dwelling in Scyros,” etc. (Glotz. ib. p. 282).
APPENDIX II

A CRITICAL TEXT OF THE GEOGRAPHICAL GAṆAS

The material of place-names in the _Ashtādhyāyī_ has been discussed above (pp. 34-74, 434-454). It is proposed to present here a critical text of the _Gaṇa-pātha_ relating to place-names (ante, p. 72). A study of the comparative material of the _Gaṇa_ in other grammatical systems shows beyond doubt that the basis of the Paṅjinian _Gaṇa-pātha_ is sound and that its text was adopted in the subsequent systems and preserved in so many recensions for about a thousand years with tolerable textual purity.

The critical text of the geographical _Gaṇa_ is here presented on the basis of the following material:

2. _Chandra Vyākaraṇa_ with its own _Vṛitti_ which has preserved quite a substantial portion of the Paṅjinian _Gaṇa-pātha_ (c. 450 A.D.); available in the excellent edition by Dr. Liebich.
3. _Jainendra Vyākaraṇa_ of Pūjyapāda Devanandi (c. 550-600 A.D.), of which the _Gaṇa-pātha_ is preserved in the _Mahāvṛitti_ of Abhayanandi. A complete transcription from several manuscripts was made available by the Bharatiya Jñānapitha of Kashi.
4. _Jainā Śākaṭāyana_ Vyākaraṇa of Pālyakīrti, a contemporary of king Amoghavarsha (817-877); the commentary _Amogha-vṛitti_ of the author is a voluminous work so far unpublished, but was accessible to me in a Devanāgarī transcript based on a Kannada palm-leaf Ms. by the courtesy of the Syādvāda Vidyālaya, Kashi.

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5. Sarasvatikāñṭhābhāraṇa of Bhoja (c. 1018-1053 A.D.) [edited by T. R. Chintamani, Madras University Skt. Series].

6. Siddhabaimasabdānuśāsana of Hemachandra (1088-1172), with his own Bṛihad-vṛitti (c. 1130 A.D.).

7. Gaṇaratnamahodadbhi of Vardhamāna (1140 A.D.)

Critical editions of the above, except 7 by Eggeling, are wanting, and should in course of time be undertaken. It would then be possible to effect further improvements in the collated text.

The statistical results of the reconstituted text are interesting:

1. Janapada Names ........ 35
2. Vishaya Names .......... 43
3. Saṅgha Names .......... 33

Total ........ 111

4. Towns and Villages Constituted Böhtlingk's

<table>
<thead>
<tr>
<th>(a)</th>
<th>(i) 6 Chāturarthika gaṇas</th>
<th>109</th>
<th>189</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ii) 17 Chāturarthika gaṇas in sūtra IV.2.80</td>
<td>228</td>
<td>430</td>
<td></td>
</tr>
<tr>
<td>(b) 6 Āsishika gaṇas</td>
<td>123</td>
<td>194</td>
<td></td>
</tr>
<tr>
<td>(c) Abhijana place-names, 2 gaṇas</td>
<td>21</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>(d) Prastha-ending names, 2 gaṇas</td>
<td>16</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>(e) Kanthā-ending names, 1 gaṇa</td>
<td>7</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

Total ........ 504 ........ 859

The total number of place-names in the 17 gaṇas of sūtra IV.2.80 as listed in Böhtlingk's edition of the Ashṭādhyāyī (Leipzig, 1887),* and generally in the printed editions of the Kāśikā is 430, which in the reconstituted text is reduced to.

* The text of the Gaṇa-pātha as printed in the Word-Index to Pāṇini-Sūtra-Pāṭha and Pāṇiśīthaśas, by Pathak and Chittrao (Bhandarkar Oriental Institute, Poona, 1935), closely follows that of Böhtlingk.
228. We had in arriving at our text tabulated in parallel columns the names as found in the six grammatical systems under purview and also the *Gaṇaratnamabodadhi*; the un-authentic or spurious words as well as the later accretions themselves sprang into relief and were eliminated and relegated to footnote, as Variants and Additions. It is now proposed to subject the entire *Gaṇa-pāṭha* to a similar critical collation and present the results in a separate volume with requisite details, including the equally important material of the Gotra lists which have been left over from the present study.

The number of names in the 34 *gaṇas* under Chāturar-thika, Śaishika and Abhijana suffixes and Prastha-and Kanthā-ending names is 504 in the collated text as against 859 of the *Gaṇa-pāṭha* printed in Böhtlingk’s edition, or what may be called the Vulgate text of the *Gaṇa-pāṭha*.

The general soundness of the collated text can be demonstrated by the fact that the number 500 is just what has been mentioned by the Greek writers as the number of cities between the Jhelum and the Beas (*ante*, p. 73), or the Vāhika region of Pāṇini. A city is defined as a town with a population of 10,000 and over. In the limited area between the upper courses of the Jhelum, the Chenab and the Ravi there were as many as thirty-seven cities, with a minimum population of 5,000 inhabitants, while many contained upwards of 10,000. Megasthenes wrote about the cities of Mauryan India that their 'number is so great that it cannot be stated with precision' (M’Crindle, *Megasthenes and Arrian*, p. 209). The significance of these figures may be better understood if we remember that in the undivided India of 1941 there were only 57 cities, the number increasing to 75 in 1951. On the other hand in France 455 towns, besides Paris, have more than 9,000 inhabitants.

The printed editions of the *Gaṇa-pāṭha* led to the statement (*ante*, p. 74) that the two *gaṇas*, *Saṅkalādi* (IV.2.75), *Arihanādi*, etc., (IV.2.80) alone give about 500 names. The
correct figure in the collated text of these two sūtras is only 260. However, the grand figure of 500 recorded by the Greek geographers of Alexander's campaign now finds solid support from the Ashtādhyāyī presenting us with an exhaustive list of the important towns and villages of north-west India. The agreement between these two figures shows the perfection of Pāṇini's method in surveying his linguistic data. The great teacher, in the words of Yuan Chwang, wandered about asking for knowledge and collected a multitude of words. During the course of his fact-finding mission he seems to have omitted nothing of value, and also evolved a simple and clear scheme of classification by which this vast and complex material of geographical names was reduced to order and made an integral part of his grammar.

There now remains the task of identifying the mass of these names. The names of castes and sub-castes and family surnames in the Panjab offer an attractive field, since they are mostly derived from names of places which were once their home-towns (nivāsa and abhijana). The human and linguistic material of Pāṇini's time cannot have totally disappeared; its survival in a changed form is the only natural process of evolution. For example, Saharāliye, a sub-caste of the Agrawala community in the Panjab, trace their original seat to Saharālā in Ludhiana Dist., and these may be connected with Pāṇini's Sarālaka (Takshaśilādi, IV.3.93) and its derivative Sārālaka. Similarly Batrā, a sub-caste of the Khattris, points to Vātrak (Rājanyādi, IV.2.53); Chope, a sub-caste of the Aroras, to Chaupayata (Bhaurikyādi, IV.2.54); Balūje, amongst the Aroras, to Vālījyaka (IV.2.54), etc. Archaeological survey and digging may also help to some extent, since geographical places of antiquity often survive as so many sites.

The sūtra Vishayo deśe (IV.2.52) calls for comment. What was the exact significance of Vishaya? Jainendra, Sākaṭāyana and Hemachandra take it as rāṣṭra, and Vardhamāna as Janapada, which is the same thing. The Kāṣikā takes
it as grāma-samudāya. Kātyāyana and Patañjali interpret Vishaya as being identical with Janaḍada in some cases, but their comments give the impression that even such geographical units as were not a Janaḍada were called Vishaya. For Pāṇini, if vishaya and janaḍada were identical, he would not treat of the former under a separate heading (IV.2.52-54).

The truth seems to be that Vishaya denoted sphere of influence, 'lands', 'possessions', and as such was distinct from nīvāsa or the actual settlement of the people whose possession it was. A Vishaya included both a bigger unit having the status of a Janaḍada, or a smaller area which was but an estate. In the words of the Rājanyādi gaṇa, Vishaya denoted Janaḍadas, while in those of the Bhauriki and Aishukāri gaṇas (IV.2.54) it was the landed property, their share of estate, ṭhikāṇā or zamindāri which was the source of their livelihood. The suffixes vidhal and bhaktal (i.e. vidha and bhakta) denoted food, division, share, property. Vidhā (food) seems to be derived from vidha having such a meaning, and bhakta is well-known as denoting 'source of livelihood or maintenance.' The villages (grāma-samudāya) which were the zamindāri of the Bhaurikis were called Bhauriki-vidha, and similarly Aishukāri-bhakta without any reference to the polity that prevailed there.

The position in the post Paninian period was as follows. (1) In the case of big Janaḍadas, the distinction between the word-forms for Janaḍada and Vishaya was lost, both being called Aṅgāḥ, Vaṅgāḥ, Suhmāḥ, Puṇḍrāḥ, etc. (2) In some Janaḍadas like Rājanya, the distinction was retained, as Rājanyaka denoted a Vishaya and Rājanyāḥ the Janaḍada of the Rājanya tribe. Similarly Vāsātaḥ, Vasātayah, Gāndhāraḥ, Gāndhārayaḥ, Saibah, Sibiyāḥ. (3) Other smaller units were only Vishayas or estates, like Bailvavanaka, Ātmakāmeyaka, Bhaurikividha and Aishukāri-bhakta.
Appendix II

[ GEOGRAPHICAL LISTS

MATERIAL

I.  जनपद — कण्ठादि (शैविक)। महादि। सिन्धवादि (अभिजन)।

II.  विषय— ऐशुकायादि। भौरिकायादि। दास्यादि।

III.  संब— रामनादि। शर्मादि। चींद्रादि।

IV.  देशवाची (ग्राम, नगर)—

(a)  चातुर्यादि—प्रारिहणादि। अद्वादि। उत्करादि। कृषिणादि। कलादि। कालादि। कुमारदि। कुमारादि। कृषिकाळादि। तुलादि। नहादि। पलादि। प्रगदिन्। प्रेमादि। बलादि। मर्मादि। वरणादि। वराहादि। सत्यादि। संकलादि। संकायादि। सुर्गमादि। सुजात्वादि।

(b)  शैविक—कालादि। कालादि। गहादि। चूमादि। नामादि। पलादि।

(c)  अभिजन— शारिकादि। तस्मिनादि।

(d)  प्रक्षाल— कृषिणादि। मलादि।

(e)  कन्या— हस्तादि।

(f)  गिरि, वन, नदी— किशुलकादि। कोटरादि। अजिरादि। शारादि।

I.  JANAPADA NAMES

(१)  कण्ठादि (४१२,१३३)

(शैविक श्रेणी कामादि)

१ कण्ठ, २ सिन्धू, ३ वर्ष, ४ गम्यार, ५ ममुदु, ६ कम्भोज, ७ कस्मीर, ८ साल्व, ९ कुड़ा, १० रंग, ११ अनुयाद, १२ हीर, १३ अनूप, १४ अजजाह, १५ विजापक, १६ कुलत।

(१)  Kachchhādi. Ref.—K(āsikā) IV.2.133; Ch(andra) III.2.48; J(ainendra) III.2.112; Ś(ākāṭāyana) III.1.46; Bh(oja) IV.3.71; H(emachandra) VI.3.58; V(ardhamāna) 327; P(atanjali).

Var(iants)— 4 Gandhāri (Bh.); 5 Madhura, Madhurat (J.); 8 Śālva (Ch.); 11 Anukhanda (K.), a misreading, since K. reads Anushanda IV. 2.100; also Anushandha (H.); 14 Ajapāda (Ch.), Ajāvaha (J.); 15 Virūpaka (Ch.), Vijñāpaka (J.), Bijāvaka (Bh.); 16 Kulūna (K.), Kulī (Ch.), Kalūtara (Ś.), Kulīka (Bh.), also Kula, Kulva (V.). In J. Kamboja, Kaśmira, Śālva missing. Sindhv-anta names (as Para-Sindhu, Sthala-Sindhu, Saktu-Sindhu) in Bh. and V. (cf. K. VII.3.19), missing in K. Ch. Ś. but found in Bh. H. V. Also Yaudheya, Sasthāla (H.). P. authenticates in this the reading of Kuru (IV.2.130), Rāṣku (IV.2.100).
II. VISHAYA

(4) ऐपुकारि गण (४/२१५४)
[विषयों देखें, ऐपुकारि भनत:]

१ ऐपुकारि, २ सारस्यायन, ३ चाण्डायण, ४ द्राचायण, ५ क्यालायण, ६ जोलायण, ७ लाडायण, ८ सीवी, ९ दासमियायण, १० बौद्धायण, ११ दासमियाण,

(2) Bhargádi—K. IV.1.178; Ch. II.4.106; J. III.1.158; Š. II.4.107; Bṛh. IV.1.179; H. VI.1.123; V. 202.
Var.—2 Karúśa (J.), also Karúśa (H.); Sálva (Ch. V.), Selvā (J.);
7 Urasā (Ś. H.). V. adds Bharata, Uśīnara,

(3) Sindhiyádi—K. IV.3.93; Ch. III.3.61; J. III.3.67; Š. III.1.201; Bṛh.
IV.3.212; H. VI.3.276; V. 351-52.
Var.—2 Varṣa (J.); Salva (J. H.), Šálva (Ch. Š. V.); 7 Gandhári (Bh.); 8 Kishkindha (J. H.), 9 Urasā (Ś. Bh. V.), Urasā (H.); 11 Gandikā (Ch.), Gandikā (Ś.), Gābdikā (J. H.). Ch. reads Takshaśilādi also in this.
J. adds Paśchāla, Kaimedura, Kāṇḍakāra, Grāmaṇi; H. Grāmaṇi,
Kāṇḍavakara, Kulūja; and K. Kuluna, Dirasā, but all are spurious to this Gaṇa.

(4) Aishukāri Gaṇa—K. IV.2.54; Ch. III.1.63; J. III.2.47; Š. II.4.189; Bh.
IV.2.89-91; H. VI.2.68; V. 268-69.
Var.—2 Sārasāyana (J. H.); 4 also Dvyakshāyaṇa (H.); 5 also Tryakshāyaṇa (H.); 6 Aulāyana (Ś. H.), Alāyana (J.); 7 Tādāyata (J.),
Kūḍāyana (H. also V.), Kāṇḍāyana (Bh.). 9 K. Ch. Ś. H. V. also read Dāsamitrī (Ch. Dāsamitri) 10. Sauḍrāṇa (K.), Sauḍrākanāyaṇa (Ś. H. V.); 11. only in K. Ch. V, and hence doubtful; 12 Śāyāṇa (Ch.),
Tapanda (J.), with additional variants as Sāyāṇi (K.) Sāpiṇḍi (J.), Śāyāṇa (Bh.), Śāyāṇyāṇa (V.), Śāyāṇa and Śāṇḍ (H.); 13. omitted in Ch. J. Bh.; 14. Saubhadrāyaṇa (Ch.) but H. cites Saubhadrāyaṇa-bhakta of Ch., J. S. omit it, śāyābhra (Bh.); 15. Vaśyamānava (Bh. also V.);
16. Ch. J. H. omit; 17. Vaśyadheva (J.), also Viśadeva (K.); 18. Ch. omits. H. adds flimsy variants as Gaurukāyana, Mālukāyana, and K. as Alāyata, Aulālayatā, all to be rejected.

Vishayo deśe of Pāṇini denoted an estate of a tribe or clan; but grāma-
(5) Mārīkī gana (412154)  
[विवरण देख, मौरिकिविषः]

१ मौैरिकि, २ मौैलिकि, ३ चौैटयत, ४ काणेय, ५ वाणिजक, ६ वाणिज्यक, ७ सौैकयत, ८ सौैकयत, ९ सौैचयत.

(६) राजन्यादि (412153)  
[विवरण देख; बुध राजन्यकम्]

१ राजन्य, २ दैवयादि, ३ शालकालय, ४ जालंघरायन, ५ आतमकामिय, ६ अन्नरीपुन्त, ७ बसाति, ८ बैैलवन, ९ शैैलप, १० उत्तमप, ११ आजुनायन, १२ सम्प्रिय, १३ वाैसि, १४ उणुनाम, १५ आपैर्ति, १६ तैैतित.

samudāya according to K., which J. and H. take as equivalent to rāṣhtra, and V. as Janapada.

(5) Bhaurikyādī—K. IV.2.54; Ch. III.1.63; J. III.2.47; Ś. II.4.189; Bh. IV.2.88; H. VI.2.68; V.267.

Var.—3 Chodayata (Ś.); 5 Vāṇejava (J.), Ch. Ś. omit; 6 Vālikāja (Ś. V.), Vālikāda (H.); 7 Saikyata (K., also Ch.); 8 Vaikayata (K.), Vaiyat (J.); 9 K. omits, Chaupagata (J.); Ś. omits 5, and adds Vaidayata, Kshaitayata (also H. V.).

(6) Rājanyādī—K. IV.2.53; Ch. III.1.62; J. III.2.46; Ś. II.4.190; Bh. IV.2.86-87; H. VI.2.66; V. 265-6.

Var.—2 Devayāna (K. Bh.), also Devayāta (H.), Devayātaya (V.); 4 Jālandhara (Ś.), also Jānāndharyāya (H.); 6 Ambariputra (Ś.), also Ambari-Āmbari (H.); 7 Vātsaka (J.), H. omits; 8 Bailvata (Ch.), omitted in J. Ś.; 9 omitted in J. Ś., Šailūshaja (H.), Šailūshaka (V.); 10 also Audunbara (H.), J. omits; 11 Ś omits; 12 Sāmipriya (Bh.); 13 Dākṣāyana (V.); 14 also Īruṇānabhi (H.); 15 Āvrita is undoubtedly the correct reading (=Afridis), but Ch. omits, and others record incorrectly, Āvriti (J.), Āvṛitā (Ś.), Anṛita (Bh. V.), Āvṛita and Āvṛitaka (H.); 16 Some original form of Vineila (K. Bh.), Tailala (Ś. H.), Tailvala (V.), Bailvala (K.), which seems to have been Taitila, Add. Avrīḍa, Vātrakā (K.); Vātrava Kāntala, Bābhravya, Vaiśvadhenava, Vaiśvamānava, Vaiśvadeva, Vupḍādeva (Ś., last four contaminated from Aishukāri gana); Viṅkarna Vasana, Bābhravya, Mālava, Trigarta, Vairāți (Bh.); Vātrava, Bābhravya, Kauntāla, Viraṭa, Mālava, Trigarta (H.); Traigarta, Vasana, Kauttāla (V.). Some original form like Vātrakā seems to have been included. P. authenticates 2 (Daivyātāvat-grhānaṁ vaiśayikeshu, IV.2.92; II.291) and 5, 6, 7, 8 (IV.1.52; II.282). The group of Mālava, Trigarta, Viraṭa was taken from Chāndravṛitti by Bh. and H.
III. SAṅGHAS

(7) Dāmamyādi (513.116)
[वायुसिद्धि स्वार्य्य ५; दामनीया]

१ दामनि, २ आलोके, ३ काकृदिनि, ४ अवशेषः, ५ शाबद्विति, ६ सावेशसिनि, ७ बैनदरि, ८ मोहजानि, ९ तुलनि, १० सावेशसिनु, ११ ब्रजवापि, १२ आदिकि।

(8) पद्माविदि (513.117)
[वायुसिद्धि स्वार्य्यः अयु, चार्धकः]

१ पर्वू, २ अरूप, ३ रक्षस, ४ वाल्लिक, ५ वसु, ६ मल्लु, ७ दशरहि, ८ पिकाच, ९ अवधि, १० कार्वीप, ११ सत्तु, १२ वसु।

(9) योधे्याविदि (413.178)

१ योधे्य, २ श्रीभेद, ३ श्रीवेय, ४ व्यावाण्य, ५ वाल्लिक, ६ धातुरेय, ७ निगर, ८ भरत, ९ उष्ण

IV. PLACE- NAMES

(a) Chāiturathika

(10) अरीहणाविदि (412.801)
[चातुरथिक कुल । आरीहणकम]

१ अरीहण, २ दुष्यण, ३ खदिर, ४ मगल, ५ उल्ल, ६ सम्प्रदाय, ७ कोट्राण

(7) Dāmamyādi—K. V.3.116; Ch. IV.3.92; J. IV.2.5; S. III.4.145; Bh. V.3.151-52; H. VII.3.67; V.192.

Var.—2 also Aupali (H.); 3 Kākandaki (Ch. B. H.), Kākandi (Ś. H.), Kākadantaki also (V.), 5 Śatruntapi (Ś. V.), Śākuntaki (Ch. J. Ś. Bh. V.); 7 Bindu (K. Ch. J. H. V.); 8 Mauñjyāyani (Bh.); 11 Devavāpi (K.); 12 Audañki (Ś. Bh. V.), Autaki (K.). Ākidanti, Kākaranti, Ulabha, Kokatanti, Apachyutaki, Karki, Pinḍi are spurious readings in K.; similarly Audameghi, Aupabindi, Kahindi, Kakundaki in H.; Auḍavi in Bh. V.; Āvidanti in V. J. and Ś. include the Trigarta-Shasāṇas also in this Gaṇa.

(8) Parsvādi—K. V.3.117; Ch. IV.3.93; J. IV.2.6; S. III.4.145; Bh. V.3.153; V. 197.

Var.—4 Balhika (V.); 9 Karshāpana (V.); 11 Satvantu (Ch.). J. includes Yaudheyādi also under Parsvādi.

(9) Yaudheyādi—K. IV.1.178; Ch. IV.3.93; J. IV.2.6 and III.1.158; S. III.4.145; Bh. V.3.154; H. VII.3.65 and also in Bhargādi VI.1.123; V. missing.

Var.—3 Šaukneya (K.), Saukreya (J. III.1.158 com., missing in IV.2.6); 4 Grāvāneya (K. undoubtedly a corrupt reading), Jyāvāneya (Bh. H.); 5 Ghārteya (Ś. H. Bh.; Bh. also correctly Vārteya). Bh. reads 7-9 in Parsvādi, and H. in Bhargādi VI.1.123.

(10) Aṛihaṇādi—K. IV.2.80; Ch. III.1.68 (first two words only); J. III.2.60; S. II.4.202; Bh. IV.2.110-11; H. VI.2.83; V. 286-89.
Appendix II

[GEOGRAPHICAL LISTS]

(11) Aśmādī (4218018)

[वातुराधिक र: आगमर:]

1. अस्मान् 2. यूष, 3. उष, 4. मीन, 5. वर्ष, 6. बुध, 7. मुख, 8. कांड, 9. नग, 
10 शिक्रा।

(12) Utkaraḍī (421910)

[वातुराधिक च: उकरयम:]

1.उकर, 2. साक, 3. पिपल, 4. अस्मान्, 5. अर्क, 6. पण, 7. खलाजिन, 8. अभिन्, 
9. विक, 10. कितव, 11 आलप।

Var.—1 Arikaṇa (Bh.); 2 also Druvaṇa (Ch.), Duguṇa (Ś.), 
Druhaṇa (Bh. H. V.); 3 Kharadi (Ś.); 4 H. V. Ś. add Bhalandana; 5 
Ulunda (J. Ś. H.); 6 Sāmpārāyana (J.), Ś. omits, Khāvuruṇa and 
Khāpurūṇa (H.); 7 Krauḍaṭyana (J.), Koshtyana (Ś.), Kaustyuṇa 
(H., also Kauḍayana), Aushyayana (Bh., also V.); 8 J. omits, but P. 
treats it as an authentic reading (Bhāstraṇa-grahanu naiavīsikesu 
IV.2.92; II.291); 9 Chaithrayaṇa (J.), Ś. omits, Śvitrāyani (H.), 
also Śvaṭrāyana (V.); 11 Rāyasphosa (J. Ś.); 15 Khāṇḍayana (J.) 
Khāṭurūṇa (Ś.), Khāṇurūṇa (H.); 16 Khaṇḍa Viṇaṇa as two words 
(K.) Khaṇṭu Dhiṇa (Ś.), Rakṣaṇu, Khaṇḍu and Viṇaṇa separately 
(H.), Khaṇḍu, Viṇaṇa and Khāṇḍavīṇa (V.), possibly these two were 
separate names; 17 Kaḷaśkrītisna (H.V.), Ś. omits; 18 Aumbavati (Ś. an 
obvious corrupt reading); 19 Ś. (Kanarese transcript) omits; 22 Bailvaka 
(K., the form by adding suffix), Ś. omits, Bilva (Bh. H. V.), 
Tālīva J. 23 also Maiṭāyana, Gomāṭyaṇa (K.), Dhaumatyaṇa (Ś. V.), 
also Gaumatyaṇa (V.); 24 Saumāṭyana (J. H.), also Sauṣṭyana (H.). Ś Bh. 
omit, cf. Sausuka a Vāhika town in P. (IV.2.104); 25 Ś. omits; 26 J. Ś. H. 
omit, may be doubtful; 27 J. omits, Badīra (Ś.); 28 Vipārśva (Ś.); 30 
J. Ś. omit, Jambu (K.); 31 J. Ś. omit.

Add. Viśaya, Vāyasa (J.); Yajñadatta, Krauḍayana (Ś.); Yajñadatta, 
Sambarūṇa, Sāmbarūṇa (H.); Yajñadatta, Kanala, Dalteṛi, Kauḍaṭyana 
(V.).

(11) Aśmādī—K. IV.2.80; J. III.2.60; Ś. II.4.202; Bh. IV.2.120; 
H. VI.2.78; V. 271.

Var.—2 also Yūsha (K. Ś. Bh. H.); 3 Rūsha (K.), Ūtha (J.); 6 
Vṛndā (J.); 7 Gudā (J.), Guhā (Ś. H.), V. adds Gahva and Guhā; 
Kanda (Ś. also V.), Kanda (H.) K. adds Rusha, Nada, Nakha, Kāṭa, 
Pāma, all uncertain.

(12) Utkaraḍī—K. IV.2.90; Ch. III.1.68 (only first two words); J. 
III.2.71; Bh. IV.2.134-36; H. VI.2.91; V.301-3.

501
(13) क्रस्यादि (४१२१८०१३)
[चातुर्भिक कः। क्रस्यकः]

१ क्रस्य, २ भ्योगश, ३ शर, ४ निलिन, ५ विनाय, ६ विनाय (?) ७ परिगूढ, ८ उपगूढ, ९ उपराष्मन्, १० स्वूलवाहु, ११ खविर, १२ शक्रारा, १३ अनुधुह, १४ परिवेश, १५ वेणु, १६ वीण।

(१४) कणीदि (४२१८०१३)
(चातुर्भिक पिन्। कणीपिनि)

१ कण, २ वसिष्ट, ३ अक्कलू, ४ दुपद, ५ अनुहुरा, ६ पांचजन्य, ७ कुतिळा ८ कुम्भ, ९ जीवन्त, १० जित्वन्, ११ अण्डीवत्, १२ सिक्।

(१६) कालादि (४२१८०१५)
(चातुर्भिक इल:। कालिल:)?

१ काल, २ वात, ३ अद्वत्त, ४ पलास, ५ पीरुष, ६ विस, ७ तुष, ८ कर्म, ९ कर्मुर, १० कंठ, ११ गुहा, १२ नद, १३ वन, १४ बर्बुल।

Var.—J. gives only 13 words, as against 43 of K. which may be an inflated version. Bh. H. V. of course follow K. A critical edition of K. can alone throw further light on the original text of this gaṇa.

(15) Rishyādi—K. IV.2.80.3; J. III.2.60; Ś. II.4.202; Bh. VI.2.114-15; H. VI.2.94; V. 293.

Var.—3 Śirā (K.); 4 mentioned in P. (IV.2.104; II.294); 5 Nivāsa, Nidhāna, Nivāta in K. point to one original; 6 Nivadha (K. J.), Nibandha (Bh. H. V.), Vivaddha (K. J.), all derived from one original; 10 Shūla and Bāhu (V.), H. reads as one word and also separately, also Shūlavāha (J.). The list closed with Viraṇa in J.; Ś. also Khaṇḍu; K. Bh. H. V. add Kardama, Parivṛtta, Amśa; others Araṇu (Araṇu), Asani, which group is doubtful.

(16) Kāṇādi—K. IV.2.80; J. III.2.60; Ś. IV.2.202; Bh. IV.2.129; H. VI.2.90; V. 291.

Var.—2 Vaśishṭha (J. V.); 3 Arkalūsha was one name as read in the Bidādi gaṇa in K. and other systems as J. Ś. H., wrongly split here, but Bh. H. V. read both separately and as one word; 4 Duḍapa (K.), Bh. omits; 5 Anaḍuhyā (K.), Ānuduhyā (Ś.), 8 Kumbhi (K. V.), the latter also Kumbha, Kunti; 9 Jivanti (K.); K. adds Jñāvat; Ś. Bh. H. V. add Ākani, Ānaka, Ākani, Ākana; Ś. H. V. Jaitra.

(17) Kāśādi—K. IV.2.80; J. III.2.60; Ś. II.4.202; Bh. IV.2.117; VI.2.82; V. 296-7.

Var.—2 Vāsa (J. Ś. Bh. V.), Paśa (Bh. H. V.); Piyūkṣā (Ś. H.), Ś. omits; 8 Kāḍama (J.); 10 Karkaṭa (J.); 11 Gūha (K.); 12 Nāda (Ś.), Nala (H.); 14 Vadhūla (K.), Varghūla (J.), Bandhūla (Bh.), Vartūla (H.), Vachchhūla (V.).

Add. Śākaṭika (J.), Śīpāla (Ś. H. V.), Kapittha (Ś. H. V.), Madhura, Jātu (V.).

$02$
Appendix II

(17) Kumudādī (4128014) [Geographical Lists] (Kumudikāmī]

1 Kumud, 2 Shārkarā, 3 Nāyīśrēṣṭha, 4 Dvākāt, 5 Gātē, 6 Bījē, 7 Abhadrē, 8 Bālē,
9 Pārīkṣā, 10 Dvāri, 11 Varas, 12 Kyōp, 13 Vīkātē.

(18) Kumudādī (4128017) [Geographical Lists] (Kumudikāmī]

1 Kumud, 2 Gōmosth, 3 Rṣkharē, 4 Dvāprām, 5 Abhadrē, 6 Shālēmīlī, 7 Mūntīṭhīl, 8 Kyōp, 6 Mūtukānē.

(19) Kṛṣṇādī (4128012) [Geographical Lists] (Kṛṣṇāvēryā]

1 Kṛṣṇā, 2 Aśīśt, 3 Bēndamō, 4 Vīkātē, 5 Rōmet, 6 Bālē, 7 Kyōp,
8 Bērandē, 9 Sukārē, 10 Pātē, 11 Sūdēś, 12 Purāc, 13 Gūm, 14 Arjīn,
15 Viṇatē, 17 Vīkūṭh, 18 Aśikes, 18 Apey, 20 Māndāyī.

(17) Kumudādī—K. IV.2.80; J. III.2.60; Š. II.4.202; Bh. IV.2.116;
H. VI.2.96; V.294.95.
Var.—2 Shākara (J.), Š omits; 4 Itkaṭa, Utkaṭa (K.) also Utkaṭa (Bh.);
6 Š omits; 7 Bilvaja (Š.); 9 Parivāsa (Š.); 10 Š. omits; 11 Yavāsha
(K. H.), 13 Vikanta (Š.).

(18) Kumudādī—K. IV.2.80; J. III.2.60; Š. II.4.202; Bh. IV.2.133;
H. VI.2.97; V.285.
Var.—2 Gomatha (K.), Gomada (Š.), but Gomatha (Bh. H. V.) is
also authenticated by Ch. (III.1.68); 4 Dāśāgrāma (Š. H.); 8 Kuṭa (H.),
Kumutā (Bh.); 9 J. Bh. V. Ch. omit, Muchakūrṇi (Š. also H.); K. adds
Kunda, Madhukarṇa, Suchikarṇa, Sirīsha.

(19) Kṛṣṇāvēdī—K. IV.2.80.2; J. III.2.60; Š. II.4.202; Bh. IV.2.112-13;
H. VI.2.93; V. 290-91.
Var.—3 Vaiṣya (Š.), Veshya (H.), also Vepya (J.), all corrupt read-
ings; 5 also Lomaka (J. Š. H. V.); 6 Śavala (J. H.), Kabala
(Š.), also Śivala (H.), also Suvachala (Bh. H. V.), all corrupt readings; 7 J. omits,
Kuṭa (Bh.); 8 Varvāra (K.), Barbala (Š.), Bh. H. omit; 9 Sūkara (H.),
also Sukara (K.), Dūraka (Š.), Pūgara, Dhūkara, Pūkara (H., who often
gives the most inflated version); 10 Pūtara (J. also V.), also Pūkara (V.),
Pūraka, Pūraga (Š.); 11 Sudrīśa (Bh.), also Sarāndrīśa (H.); 12 Puragā (Bh.
Š. H.), J. omits, also Pūgara, Purāra (V.); 14 Dhūmara (Š. also H.); 15
also Ajinata (V.); 16 Vinatā (v. I. Vaniṭa, K.), Vīnīṭa (H.), K. Bh. H. V.
also give Avanata, but J. Š. omit, which shows that originally there was only
one word, 17 J. omits 17 to 20, Vikūṭyā (Š.), Vikūḍyāsa (Bh.), Vikayūṇa,
Vikutāṇkuśa (H.), Vikutāṇkaśa (V.); 18 also Iraś (Š.), Uras (Bh.), Iraś,
Uras, Arushya (H.); 19 Avayāsa (J.), Aya (Bh.), also Sāyas (H.), 20
Madgala (Š.), also Mudghala (H.), V. adds Parāsara, Āsiyas, Dāśi,
Satula, Veshya, Iraś, Aras, Dhukera, Asura, Abhijana, all spurious variants.
Š adds Abhijana.
(20) तृणादि (४२११८०१६)
[चातुर्कथिक स। तृणादि]
1 तृण, 2 नड, 3 बुस, 4 परण, 5 वर्ण, 6 बरण, 7 अर्धन, 8 विषा।

(21) नडादि (४२११९१)
[चातुर्कथिक छ। कुकच। नडादि]
1 नड, 2 पस्थ, 3 बिल्व, 4 वेणु, 5 वेन, 6 वेतस, 7 नृण, 8 इलू, 9 काष्ठ,
10 कपोल, 11 भुंजा, 12 तथापि।

(22) पक्षादि (४२११८०१२)
[चातुर्कथिक फू। पक्षादि]
1 पक्ष, 2 पत, 3 वंदक, 4 काब्जिक, 5 विष, 6 अतितवनु, 7 पत्थ, 8 कुम्म,
9 सीरक, 10 सरक, 11 सरस, 12 समल, 13 रोमन, 14 लोमन, 15 हंसक,
16 लोमक, 17 सक्कनक, 18 हसन, 19 वल, 20 यमल।

(23) प्रगदिन् आदि (४२११८०१५)
[चातुर्कथिक घ। प्रगदिन्]
1 प्रगदिन्, 2 मगदिन्, 3 कलिव, 4 खडिव, 5 गडिव, 6 चूडार, 7 माजार,
8 कोविवार।

(20) त्रिनादि—K. IV.2.80; J. III.2.60; Ś. II.4.202; Bh. IV.2.118; H. VI.2.81; V.298; Ch. III.1.68 (only first two words, त्रिनादि, नादादि).
Var.—2 Nada (Ś. H.); 3 Tusa (H.); 4 Arña (Bh.); 5 Charana (K.),
Varaṇa (J. Ś. V.); 7 Arṇa (K. Ś.), Arṇas (H.), Bh. omits, also
Arṇa (V.), Jana (K., Bh. H.), Janaka (J.), Arṇa, Arjuna, Jana seem to
be variants of one original word; 8 Bala (K. Bh.), Phala (J.), also Bala,
Bula (V.); Lava (K.), Pula (Ś. H.), Phala (V.) are other variants; Vana
in K. Ś. H. V. seems to be an addition.
(21) Naḍādī—K. IV.2.91; J. III.2.72; Bh. IV.2.137-38; H. VI.2.92;
V.270.
Var.—7 Tri (J. H. V.).
(22) Pakṣadī—K. IV.2.80; J. III.2.60; Ś. II.4.202; Bh. IV.2.126-28;
H. VI.2.89; V.278-80.
Var.—2 Tusa (J.); 3 Āṇḍa (K. V.); 4 Pilika (Ś.), Kambilika (V.);
5 Chitrā (J., also H.); 9-12 also in IV.2.80,9 (Sakhyādi) where they
may be exotic; 15-16 omitted in Bh.; 17 Sakandaka (K.); 18-19 seem to
be the original of the confused Astibala, Hasta (K.), Hastabila (J.),
Bilahasta, Hastin (Bh.), Bilahasti, Hasta (V.), Bilahasta, Hastin (H.); 20
Paṅgala (J.); Ś. omits 18-20.
(23) Pragadinnādi—K. IV.2.80; J. III.2.60; Ś. II.4.202; Bh. IV.2.131;
H. VI.2.84; V.274; J. Ś., H. V. read Saṅkaśādi and Pragadinnādi together.
(२४) प्रेक्षादि (४१२८०१७)
[वातुर्विख्य इति: प्रेक्षा]
१ प्रेक्षा, २ फलक, ३ बलसुका, ४ ध्रुवक, ५ जंगका, ६ स्मृतिक, ७ इवाक, ८ करक, ९ कुष।

(२५) बलादि (४१२८०११)
[वातुर्विख्य या बलया]
१ बल, २ बुल, ३ मुल, ४ उल, ५ डुल, ६ नल, ७ बन, ८ कुल।

(२६) मध्यादि (४१२८६)
[वातुर्विख्य मधुपू तथा मधुमान्]
१ मधु, २ बिस, ३ स्वायाण, ४ कृषि (अरीट), ५ इलु, ६ वेशु, ७ रस, ८ स्वायाण, ९ करक, १० अरीट, ११ करीर, १२ हिम, १३ किश्त्र, १४ शार्वण, १५ मलु, १६ बाबवाट, १७ एक, १८ इस्क, १९ तवावाल, २० रुट्ट, २१, आसार, २२ आसार, २३ शालका, २४ आमियी, २५ ज्वाला (वीडा), २६ बेटा।

Var.—२ also Śāradin (K.), Śādīn (J.); ३ Kālira (J.), Kaṭīda (Ś.), Palita (V.); ४ Khaḍira (J.), Kāthipha (Ś.), Khaṇḍita (V.); ५ Gādira (J.), Ś. omits, so also V., ६ Čhūdra (H.); ७ Māṇjāra (J.), Mājāra, Maḍāra (H.), Mandāra, Maḍāra (V.). H. also adds Kaṭiva, Kaṭīda, Kaṭīpa.

(२४) Prekshā—K. IV.2.80; J. III.2.60; Ś. II.4.202; Bh. IV.2.119; H. VI.2.80; V. 299.

Var.—२ Hālakā (V., also K.); ३ Vandyakā (Ś.), Bandhuka (J.); ४ Dhruvaka (J.), also Dhuvakā (J. Ś. H. V.); ५ Kṣiprakā (Ś.); ७ Iruṇu (K.), Iktaka (J. Bh.); ८ Samikā (K. J.); ९ Kupakā (K.), Kapi (J.); K. adds Karkatā, Sukatā, Sarikā, Suka, Māhā, all spurious.

(२५) Balādi—K. IV.2.80; J. III.2.60; Ś. II.4.202; Bh. IV.2.125; H. VI.2.86; V.277.

Var.—२ Pūla (J.), Pula (H.), Chula (V.), Nula (Ś. Kanersee Ms. Devanāgarī transcript, but printed edition Vula); ३ Tula (K.), Mūla (J.), also Pula (V.); ५ Dala (J.), Dulpal (Bh.); ६ K. alone Kavala, others Nala; ७ Vacha (J.); ८ Krala (J.), Kula (Bh.), no doubt the original reading was Kula, cf. Kulyā in Ch.

(२६) Madhuvā—K. IV.2.86; J. III.2.67; Ś. II.4.196; Bh. IV.2.148-49; H. VI.2.73; V.300.

Var.—२ Viśa (J.); ४ Muṣṭi (K.), Prithi (J.), Uṣṭi (Ś.), Rishi (H.), Arīṣṭa (Bh. V.); ७ omitted in J. Ś. H. Roma (Bh. V.); ८ Rishya (Bh. V.), J. Ś. H. omit; ९ Kukundhu (Ś.) ११ Sārīra (Ś.), Kīrīra (K.); १३ Kīsara (H.), Kīsarā (H.), Kīsara (Bh.); १४ Sāryāna (J.), Sāryāna (Ś.), Sārapa (H.), Āsāryāna (Bh.), Sāryāna (V.); १५ J. omits, Bhuvat (Ś.), Ruvat (H.), also Maruva (K.); १६ Vārdāki (J.), Pārda (Ś.), Pārda (H. also Pārdāki), Vārdāli (Bh. V.); १७ Sāru (H.); १९ J. omits, Akhaśilā (Ś. H.); २० Sakti (K.), Śuki (J.); २३ Sālakā (J.), Śakali (Ś. H.); २४ Āmighi (K.),

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(27) वराणादि (४.२१८२)
[चातुर्दशक प्रत्ययस्त्यलूपः, वराण]

१ वरण, २ गोदी, ३ आलिखायन, ४ पर्णी, ५ गृंगी, ६ शाल्मलिः, ७ अवलयी, ८ मुरा, ९ उमजिने, १० गुप्त, ११ जलयल, १२ उरण, १३ कुटकबरी. १४ लिपिः।

(28) वराणादि (४.२.१८०१.६)
[चातुर्दशक कक्षा, वराहकम्]

१ वराह, २ पला, ३ विरिष, ४ विनद, ५ स्पूल, ६ विदग्ध, ७ विके, ८ बाह, ९ संदिर, १० शकरा।

(29) सक्षादि (४.२.१८०१.९)
[चातुर्दशक डऱ्डा, साक्षेयः]

१ संख्य, २ संख्यद्व, ३ वापुद्व, ४ गोवित्त, ५ मल्ल, ६ चववाच्च, ७ चमल, ८ अवस्थित, ९ कर्कित, १० सीकर, ११ सरक, १२ सरस, १३ समल।

Amihi (Ś.), 25 Khadā (K. Bh. V.), Pidā (Ś. H. V.); 26. Vēta (H. V.), Veda (Ś.), Vatā (Bh.), also Vata (V.), Veyivena (J.). J. V. add Valmika.

(27) Varanādī—K. IV.2.82; Ch. III.1.68 (only first two words); J. III.2.63; Bh. IV.2.144-45; H. VI.2.69.

Var.—2 Pūrva Godau, Purvena Godau, Aparena Gadau (K.), Goda (Bh. H.); 3 Ânâśāyana-parṇa (H.); 5-6 Śrīṅiga-Sālmali (J. one word, so also H. but Śrīṅga-); 7 Jālapada (K.), Jālapadā (H.); 12 Urasā (J.), Urasā (Bh.). K. J. call it an ākṛiti-gaṇa, because of which several other names were added in Bh., but H. preserves a purer text. K. adds Parṇi, Vâniki, Vânika unknown to H.

(28) Varāhādī—K. IV.2.80; J. III.2.60; Ś. IV. 2.202; Bh. IV.2.32; H. VI.2.95; V. 284.

Var.—3 Ś. H. omit; 4 J. Ś. omit; 5 Sthūṇa (K.); 6 Nidagdha (J.); also Vijagdha (K. J. Ś. H.); 7 Bhagna (Ś.), 8 Bahu (J.); 10 Sarkara (J.), Ś. omits. For 4, 6 Kanarese transcript has Vinada, Ninada. Ś. has Ayas, Arusa, Maudgalya here from Kriśūvādi (IV.2.80.2).

(29) Sakhyādī—K. IV.2.80; J. III.2.60; Ś. II.4.202; Bh. IV.2.121-122; H. VI.2.88; V. 272-73.

Var.—2 Datta (J. Bh. also H.), Vāsavadatta (J. V.); 3 Vādatta (Ś. also H.), Agnidaatta (also J. Bh. H. V.); 4 Gopila (J.), Gophila (Ś. H. V.); Gobhila (Bh.); 5 J. omits; 7 Chakravāka (J. Ś. Bh. H. V.); 9 Karavāra (K.), Vira (Ś.), J. omits; 10 Sarkapāla (J.), Siraka (Ś. H.), Kasara (Bh.); 11 Saraka (Ś. H. V.), Kasura (Bh.), J. omits 11-13; 12 Sarala (Ś.); possibly all names 10-13 represent variants of one original form. K. adds Charka, Vakrapāla, Usūra, Surasa, Roha, Tamāla, Kadala, Saptala, all belonging to an inflated text.
Appendix II

(30) संकलादिः (४१२१७५)
[वातुर्विक अनु, सांकलः पीक्षकः]

१ संकल, २ पुकल, २ उड़ुप, ४ उद्धर, ५ उत्तर, ६ उत्तम, ७ निपान, ८ सूरक्य, ९ तुल, १० सुमूत, ११ सुनेन, १२ सुमिगल, १३ सितकता, १४ पूर्वक, १५ पूलास, १६ कुलास, १७ पलास, १८ निवेश, १९ गम्भीर, २० इतर, २१ शार्मन, २२ अगुन्, २३ लोमन्, २४ बेमन, २५ वशन, २६ बहुल, २७ सबोज, २८ अभिमित्त, २९ गोमूत, ३० राजभूत, ३१ मल, ३२ माल।

(31) संकलादिः (४२१८०११०)
[वातुर्विक: व्या। सांकाशः]

१ संकाश, २ कमिल, ३ कस्मर, ४ दूरसेन, ५ सुपिवन, ६ शुपरि, ७ शुप, ८ अपज्ञ, ९ फूल, १० पुलिन, ११ तीर्थ, १२ अगस्त, १३ विरल्ल, १४ विकर, १५ नासिक।

(32) सूतङ्गादिः (४१२१८०११४)
[वातुर्विक: इमा। सीतामिकः]

१ सूतङ्ग, २ सुनिचिक्षा, ३ विद्वचिक्षा, ४ महापुत्र, ५ श्वेत, ६ गड़िक, ७ शुक, ८ शिर, ९ बीजविधिक, १० वस्तु, ११ अर्थ, १२ अभ्यासः

(30) Saṃkalādī—K. IV.2.75; Bh. IV.2.100-04; missing in J. Ś. H. V.
Var.—4 Udyāta (Bh.); 10 Subhūma, Subhrīta (Bh.); 12 Sumaṅgala (Bh.); 14 Patikī (K.), Puṭika (Bh.); 16 Tulāsā, Mūlāsā (Bh.); 20 also Gabhīra (Bh.); 22 Śarīra (Bh.); 23 Heman (Bh.); 30 Gobhrīta (Bh.); 31 Raṭābhṛita (Bh.); 34 Pāla (Bh.). K. adds after 18 Gavesha, after 31 Grihābhṛīta. Bh. adds Kapāla, Utpīsha, Utpala, Śātāhata, Nihata (Niyata), Karavāna, all of which seem to be part of an inflated text.

(31) Saṃkāśādī—K. IV.2.80; J. III.2.60; Ś. II.4.202; Bh. IV.2.103; H. VI.2.84; V. 274.
Var.—2 Kampīla (H.); 3 Kāśmīra (J.), Kaśmīra (Bh. H. V.), Ś. omits, but Kaśmara of K. seems to be the correct reading; 4 Śūra (Ś. H., also Śūrasena), Śūra (V., also J.); 5 V. omits, J. also Supatha, Bh. also Supanṭhī, Suvanṭhin and Suvanṭhin (H.); 6 original doubtful, Sakṭhača (K.), Manmatha (J.), Suparyapa (Ś.), Sakarnaka (Bh.), Sakarnā (H. also Supari); 7 Yūṭha (J.), Ś. omits, Yūpat (Bh.); 9 Kuṭa (Bh.), H. also Kuṭa, Kuṇṭa, J. also Kūla; 10 Malina (K. J. also Bh. H., may have been the original reading), Ś. omits; 11 Ś. omits; 12 Ağastya (Ś., also H.); 13 Virata (K.), Chiranta (Ś. V.), but Viranta seems to be the genuine reading (its derivative Vairantya); 14 Chikāra (K.), V. omits. Also some other words in Bh. H. V. all inflated texts. K. also reading Arhāsa, Anōga in others.

(32) Sutaṅgamādī—K. IV.2.80; J. III.2.60; Ś. II.4.202; Bh. IV.2.130; H. VI.2.85; V.282-83.
Var.—2 Munivitta (H.); 3 Mahācittā (Ś., also Bh. V.), also Mahācittā (J.), also Mahāvittā (H.); 6 Anōḍika (J.), Gadika (Ś. H.), also
(33) Suvaśṭāvādi (412.177)

[चातुर्विक अङ्गः। सुवास्तुः-अङ्गः—ग्रीस्वात्वः]

1 सुवास्तु, 2 वर्णः, 3 मूडः, 4 खंडः, 5 सेवालिनः, 6 कुटिलिनः, 7 शिखरिनः,
8 गर्तः, 9 कर्कशः, 10 शारीकर्जः, 11 कृष्णकर्जः, 12 कर्किण्युमा०, 13 गोहः, 14 अहिसकः

IV. PLACE-NAMES
(c) Saivēka

(34) Kāśyapādi (412.195)

[शंपिक इकाः; कवि-इकाः—काश्यपः]

1 कविः, 2 उहीम, 3 पुकार, 4 पुकाल, 5 मोदन, 6 कूमिः, 7 कुडिः, 8 नगः,
9 माहिष्मली, 10 वर्मीत, 11 कुडचः

(35) Kāśyapādi (412.196)

[शंपिक बिठ. ठु; काशिकी काशिका]

1 काशिः, 2 बैदः, 3 सांवातिः, 4 संवाहः, 5 अब्रुः, 6 मोदमान, 7 श्वालाव,
8 हृदिकर्जः, 9 कृष्णमानः, 10 हिरणः, 11 कर्जः, 12 गोवासनः, 13 मौरिकः,
14 मौरिठयः, 15 अरिस्तः, 16 स्वेदिस्तः, 17 देयमतः, 18 सावृमितः, 19 दासमितः,
20 बास्रामः, 21 शोवावतानः, 22 युवराजः, 23 उपराजः, 24 सियुमितः, 25 देवराजः

Khaṇḍika (V.); 9 Baijavāpis form part of the Dāmanyādi gaṇa (V.3.116)
and are known to the Maitrāyaṇi Saṁhitā.

(33) Suvāstv-ādi—K. IV.2.77; Bh. IV.2.106-07; missing in Ch. J. Ś. H. V.

Var.—5 Śāivalin (Bh.); 10 Śāstakarna (Bh.); 11 Krishṇa and Karka
(K., an obvious wrong splitting and reading); 13 Gāha (Bh.); 14 Abhisaktha
(Bh.). Bh. adds Taṇḍu, Śephālika, Daksha-vikarna.

(34) Kātryādi—K. IV.2.95; Ch. III.2.5; J. III.2.76; Ś. III.1.4-5;
Bh. IV.3.6-7; H. VI.3.10-11; V.3.115.

Var.—1 Katri (Ch. V.); 2 also Umbi (J.), also Umpi, Aumbhi (H.);
4 also Podana (J.), Pudana (V.), Paudana (H.), Ś. omits; 6 Ch. J. Ś.
omit, hence reading doubtful, Kumbhi (K. H.), 7 Kuṇḍinī (Ch. Ś. Bh. H. V.),
Kuṇḍinī (J.); 8 Nagari (Ch. J. V.); 10 K. also Ācharmanvati, but Varmanī is supported by all others; 11 Kulyā (K.),
Kuṇḍyā (Ś. H. V.). H. adds Kuṇyā, Ukṣhyā, Bhāṇḍyā, Grāmudkūndyā
Trīnyā, Vanyā, Palyā, Pulyā, Mulyā, all trash readings.V. adds Valyā, Vanyā,
Mulyā, Trīnyā, Bhāṇḍyā, Vulyā.

(35) Kāśyādi—K. IV.2.116; Ch. III.2.33; J. III.2.93; Ś. III.1.29; Bh.
IV.3.46-49; H. VI.3.35; V. 322-24.

Var.—1 Kāśī (S.); 2 Bedi (Ch.), Vedi (J. Ś.), Chedi (Bh. H. V. also 
J. in K.); 3 Sarinā (K. undoubtedly corrupt), Sarināti (Ch.); 4 Sarināha

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Appendix II

(GEOGRAPHICAL LISTS)

(36) गहादि (४२५१३८)
[व्यासमवं देशवचनिमयः शैविकः: ४। १११०ः]

१ गाह, २ मध्य, ३ अंग, ४ बंग, ५ मग, ६ कास्मस्थ्, ७ शाहाबान, ८ काँदरिणि, ९ शैविक, १० शौभं, ११ आमुरि, १२ आहिभि, १३ आमिर्ष्र, १४ आसाक्ष्र, १५ कमुदिनि, १६ व्यादि, १७ वैजि, १८ आसिदिमः

(37) धूमादि (४२८१२७)
[शैविकः बुद्धः। धीमकः]

१ धूम, २ खण्ड, ३ शालादि, ४ अर्जुनादि, ५ दाबानरस्थलिः, ६ माहकस्थलिः, ७ धीरस्थलिः, ८ मािस्थलिः, ९ राजस्थलिः, १० राजस्थ, ११ सरसात, १२ मालादि, १३ मद्रासू, १४ शाबा, १५ आंकील, १६ याम्ख्याव, १७ व्यादि, १८ संस्कृती, १९ बोध, २० वाचक, २१ विदेश, २२ आन्त, २३ माध, २४ पाषेय, २५ धोष, २६ वाण, २७ निम्न, २८ पल्लि, २९ आगाम, ३० धाराम, ३१ अत्यन्त, ३२ कूल, ३३ समूद्र, ३४ कुष्ठि, ३५ अन्तरी, ३६ होष, ३७ अशुष्ट, ३८ उज्जवलिः, ३९ दशिणाङ्क, ४० साकल

(Ś. Bh. H. V.); ६ Mohamāna (K. a corrupt reading); ७ Saṅkulada (J., Svākulaśa (Ś. H.); ८ Hastīkarṇa (J.), Hastīka (Ś.); ९ Kudāman (K., a corrupt reading, i.e. Kunāman), Kulanām (Ch.), Kaunāma (H.), Kenāma in Ś. (printed text) but omitted in Devanāgarī transcription of Kanerese Ms.; १२ Godhāśa (K.), Gauvāśana (Ś.), Gauvāśana (H. also v.l. in V.); १३ Bhāraṅgi (Ch. Bh. H. V.), Bhaurīngi (J.), Tārāṅgi (Ś. H., also v.l. in V.); १४ Sārāṅgi (Ch.), omitted in Ś. Bh. H. V. group, but seems to be genuine (cf. IV.1.173, a member of the Śālva state), १५ Śakamitra (J.; Sādhāmitra (Ch. J. H. V.), Sudāmitra (Bh. V.), Chhāgmitra (Ś. H. V.), J. omits; १९ Dāsāmitra (Ś. also H.); २० Dāsagráma (V., also Dasagrama); २१ Saudhāvataṇa (K. Bh.), omitted in Kanarese transcript, but Saudhvāvatana in printed ed. Ch. adds Kāchi, Gopavana; J. Tāranga, Govāhana; Bh. Modana and Amitra; V. Modana and Aritra (said to be Bhoja-samānita).

(36) Gahādi—K. IV.2.138; Ch. III.2.58; J. III.2.115; Ś. III.1.50; Bh. IV.3.81-92; H. VI.3.63; V.317.

Var.—The text of this gana combines place-names with other nouns; of a total of 48 words only 18 have been selected, first 15 of which are read in the Chandra-vrītti. ७ Khadāyani (Ch. J. Bh. H.), Bhidāyanī (Ś., a corrupt reading); ८ Kāveraṇi (K.), Kāreraṇi (Ś.), also Lāveraṇi (J. H.); १५ Khesavadhīrtvi (Ch. H. V.), Kshaimavṛddhi (Ś.), Kshaimavṛddhi (Bh.).

(37) Dhūmādi—K. IV.2.27; Ch. III.2.41; J. III.2.106; Bh. IV.3.59-61; H. VI.3.46; V.329-33. Ś. omits it.

Var.—२ Shādānḍa (Ch. V.), Shaṇḍa (J. Bh.), Shadānḍa (H.), Shadānḍa (H. V.); ४ Ārjunāda (K.), Ārjunāva (Ch. J. Bh., V. calls it a Vāhika-grāma); ८ Prasṭhali (J.); ९ omitted in J.; ११ also Sātrasāha (H.); १२ Bhakshārthali (K.), Bhekshālī (J.), Bhakshyādi, Bhakshyāli (H.); १३ Madra—
(३८) नवादिद् (४१२१७)
[वैशिष्ट धक्। नादेयः]

१ नवी, २ मही, ३ बाराणसी, ४ भारतसी, ५ कौतार्क, ६ बनकौतार्क, ७ काश्यकरी, ८ काश्यकरी, ९ पुर्वनगरी, १० पावा, ११ मावा, १२ साल्वा, १३ दार्श, १४ सेतकी।

(३९) पल्लवादिद् (४१५१२०)
[वैशिष्ट अनुः पल्लवः]

१ पल्लवी, २ परिवर्त्, ३ यहल्लोम, ४ रोम, ५ कल्कृत, ६ पठऱचर, ७ बाह्यक, ८ कमलभित्त, ९ बसहुकीत, १० नैकती, ११ परिला, १२ सूर्यसे, १३ गोमती, १४ उद्दाम, १५ गोपी।

(४०) आभिजन्या
(४०) तस्सविलादिद् (४३१९३)
[तस्सविलादिद् इति अनुः तस्सविलितः]

१ तस्सविला, २ वस्तोदरण, ३ कोमेएर, ४ कांडवारण, ५ ग्रामणी, ६ सरलक, kula (Ch. H.), Madrasthala (J.), 14 Mitrakula (Ch.), Garta (Bh. V.), H. omits; 15 Aṇjikula (Ch. H.), Aṇjalikula (J.), Ājikula (Bh.); 18 Samhīya (K.), also Sarṇiṣṭya (Ch. V.), Sarṇiṣṭya (Bh.); 19 Parvata (J.), Barbada (H.); 20 Garta (Ch. H.), Bh. splits Varcha and Garta, and so also V., Garbha (J.), also Varja (H.); 23 Pādūrā (J.); 24 also Pāthheya (Bh. H. V.); 26 Shishya (K. H.); 27 omitted in Ch. J., 28 Vala (K.), Valli (Ch.), Palli (J.), Vaniyapalli (H.); 29 also Arājā (H.); 31 Ch. Avayāt tirthhe, Avayāt tirthhe (V.), Avayā (H.), Abhayā (J.), Avayāta tirtha (K.) as two words; 35 Antariya (Bh.); 36 Dvipā (Bh.).

K. adds Mānuvali, Valli, Surajini; J. Mānavasthali; Bh. Mānavasthali (also H. V.); H. Mānakasthali, Ānākasthali, Māṇavakasthali, Śakunti, Vanāda, Imkānta (?), Vadūra, Khādūra.

(३८) Nadyādi—K. IV.2.97; Ch. III.2.6; J. III.2.77; Ś. III.1.1; Bh. IV.3.9; H. VI.3.2; V.314-15.

Var.—6 J. Bh. omit; 7 Ch. omits, Kāspari (Ś.); 8 Ch. omits; 9 Pūrvanagara (Ś, also Bh. H.); 10 Pāthā (Bh.); 11 Vāmā (Ch.), Māyā (Bh.); 12 Mālyā (Ś. H., also Bh.), Śilvā (Ch. V.); 13 Ch. omits; Daurvā (Bh.); 14 Vāsenaki (K.), Saitava (J.), Senaki (Ś.), Saitiki (Bh.), seems to be the same as Setavyā, Ś. V. add Vanavāsi.

(३९) Paladyādi—K. IV.2.110; Ch. III.2.20 (only 7, 10, 13, 15); J III.2.87; Bh. IV.3.29-33; H. VI.3.25-26; V.325.

Var.—1 H. omits; 2 H. omits; 3 Sakrilloma (Bh. V. who cites Vāmana's reading Yakrilloman); 5 Kalakūta (K.), J. Bh. H. omit, hence reading doubtful, although it occurs in Pāṇini (IV.1.173); K. J. Bh. V. also read Kalakūta which may have been the original reading here; 8 H. omits; 9 Bāhukūta (K.), H. omits; 10 Naitaki (K.), Naiketi (J. H.); 11 H. omits; 14 Udayāna (K.), H. omits. 19 Gaushṭhi (J.). Ch. reads 6, 7, 10, 15.

(४०) Takshaśilādi—K. IV.3.93; Ch. III.3.41; Bh. IV.3.213-214; V.351.
Appendix II

GEOGRAPHICAL LISTS

7 Kasi, 8 Chitr, 5 Sambit, 10 Sihkara, 11 Kothukara, 12 Bavor, 13 Avasan.

(41) Shrondikadi (413192):
[Somasthavijnan: Aya: Shrondikya:]
1 Shrondik, 2 Sarvakh, 3 Sarsen, 4 Vak, 5 Shat, 6 Vah, 7 Shap, 8 Vopa.

(d) Prastha-ending names

(42) Karkarid (61287):
[Karkaprasya: Mochiprasya:]
1 Karka, 2 Madi, 3 Makari, 4 Karkh, 5 Sham, 6 Kori, 7 Vatik, 8 Koval, 9 Bard.

(43) Maladri (61288):
[Malaprasya: Shaalapurasya:]
1 Malala, 2 Shaala, 3 Vhona, 4 Braha, 5 Shom, 6 Koohi, 7 Eck, 8 Kaam.

(e) Kantha-ending names

(44) Chithranadri (612125):
1 Chithran, 2 Mard, 3 Vintul, 4 Patra, 5 Bandalikaran, 6 Kukut, 7 Vilayan.

Var.—3 Kaimeuda (J.), Kairmedura (Bh. V.); 4 Kandava (Ch.), Kandakara (J.), Kandadhara (Bh. V.); 6 Chhagalaka and Sakala (Ch.), Chhagalala (Bh. V.); 10 Simhakoshtha (K.); Karanakoshtha (K.), Karna (Ch.), Kroshtukarna (Bh.). Ch. combines this gana with Sindhvadi; J. reads only 3, 4, 5; H. casually refers to this gana in the Brihadvritti of Sindhvadi but does not read it; V. includes this in Sindhvadi.

(41) Shandikadi—K. IV.3.92; Ch. III.3.60; J. III.3.66; S. III.1.201; Bh. IV.3.211; H. VII.3.215.

Var.—1 Shandika (Bh.); 5 Saata (K. J. S. Bh.); 6 Raka (K. S. H.), Raha (Bh.), Chana (J.); Ch. Bh. add Kuchavara, H. Kuchavara; J. Godha, H. Charana and Shaakara.

(42) Karkyadi—K. VI.2.87, relates to accent, and is not found in other systems.

(43) Maladi—K. VI.2.88, not found elsewhere.
After 5 is read Kshama, which may be a variant of the same name.

(44) Chhanadri—K. VI.2.125.
Var.—2 also Madura; 5 also Vaitalikani; 7 also Chikkanaga.
(f) Mountains (गिरि)

(४५) किषुलकादि (६१३११६७)

१ किषुलकः, २ शाल्पकः, ३ अंजन, ४ मजन, ५ लोहित, ६ कुबकः।

Forests (वन)

(४६) कोटरादि (६१३११६७)

१ कोटर, २ मिथकः, ३ पुरण, ४ सिध्धकः, ५ सारिकः।

Rivers, etc.

(४७) अजिरादि (६१३११६९)

१ अजिर, २ खंदर, ३ पुलिन, ४ हुसः-कारणदव, ५ चकवाकः।

(४८) शरादि (६१३११२०)

[मली संज्ञाणां दीर्घः। शरावली ।]

१ शर, २ बंस, ३ घूम, ४ अहिः, ५ कपि, ६ मणि, ७ मुनि, ८ शुचि।

(४५) किषुलकादि—क. VI.3.117; Ch. V.2.132; J. IV.3.220; Ś. II.2.95; Bh. VI.2.166; H. VI.2.77.

Var.—1 Kiṃśuka (Bh.); 2 Śālva (Ś.), Ch. omits 2, 5, 6; Sālavaka (Bh.); 4 Bhāṇjana (H.); Ś. reads only 2, 3.
(४६) Koṭarādि—K. VI.3.117; Ch. V.2.132; J. IV.3.220; Bh. VI.2.165; H. III.2.76.

Var.—2 Mithaka (Bh.); 3 Puraka (K.), Ch. J. Ś. omit; 4 Ś. omits; 5 Ch. J. Ś. H. omit, Sārika (Bh.).
(४७) Ajirādि—K. VI.3.119; J. IV.3.223; Ś. II.2.96; Bh. VI.2.167; H. III.2.78.

Var.—3 Alina (J.), Sthalina (Bh.); 4 only Kāraṇḍava (J.), Malaya, Kāraṇḍava (Bh.). H. says it is an ākṛiti gāṇa. Ś. reads only 1, 2.
(४८) Śarādि—K. VI.3.120; Ch. V.2.134; J. IV.3.223; Ś. II.2.96; Bh. VI.2.167; H. III.2.78; V. 143.

Var.—5 Kavi (Bh.); 7 Manya (Bh.). K. Ś. Bh. V. add Hanu. Ch. calls it an ākṛiti gāṇa. H. Bh. V. add Kuśa; H. also Vārda, Veṭa; V. also Rishi. Ś. omits 2, 3, 7.
KEY TO PLATE SHOWING PUNCH-MARKED COINS

Figs. 1-5. Śatamāṇa coin (pp. 261-2). Bent-bar silver punch-marked coins from Takshaśilā. Wt. 175 to 178 grs. or 100 rattis. Pāṇini V.1.27.

Fig. 6. Trimiśatka coin (p. 271); Pāṇini V.1.24. Silver punch-marked from Lucknow, with 14 symbols, obverse (big) and reverse (small) punched on one side only. Wt. 105.7 grs. = 57.7 rattis, i.e. 60 ratti or 30 māsha standard, as the name implies. Coinage of the ancient Kosala Janapada, as also No. 7.

Fig. 7. Trimiśatka coin, as No. 6. From Partabgarh. Wt. 104.4 grs. with 1 obverse and 5 reverse symbols punched on the same side.

Fig. 8. Vinisatika coin (pp. 268-70); Pāṇini V.1.27; 32. From Madhuri, Shahabad Dt., coinage of Magadha Janapada current in the time of King Bimbisāra (6th cent. B.C.). Wt. 40 rattis (Visatamāso Kabāpano). Two prominent symbols on one side only.

Fig. 9. Vinisatika coin. From Bhabhua, Bihar. Wt. 40.2 rattis. Obverse symbols, Sun, Six-armed symbol with 3 ovals and 3 arrow-heads, Bull and Lion; more evolved than No. 8, and hence of the time of Pāṇini (5th cent. B.C.).

Fig. 10. Vinisatika coin of alloyed silver. From Madhuri. Wt. 68.4 grs. = 38 rattis. Four obverse symbols, two bigger, two smaller, two of them being identical; transitional stage between Nos. 8 and 9. Tri-Vinisatika (120 rattis), Dei-Vinisatika (80 rattis) and Adhyārdha-Vinisatika (60 rattis) (Kāśikā on V.1.32) and also Ardha-Vinisatika seem to have been actual coins (J.N.S.I., Vol. XV, Pt. p. 38).

Fig. 11. Silver punch-marked coin from Patna, identified as Pāda-Śatamāṇa or one quarter of Śatamāṇa. Wt. 45 grs. = 25 rattis. Size .8″×.8″.

Fig. 12. Silver punch-marked coin from Partabgarh, identified as Ardha-Śatamāṇa or one-half Śatamāṇa. Wt. 44.98 rattis = 80.95 grs. Two obverse symbols and one small symbol punched on one side only.

Figs. 13-20. Silver punch-marked coins or Kārshapāṇas (pp. 263-5) of the wt. standard of 32 rattis; actual wt. is more often a little less owing
to wear and tear. They bear on the obverse a regular group of five symbols (ṛūpa, V.2.120) of which two are constant, viz., Sun and Six-armed symbol, which is often designated by numismatists as a Sbāgara Chakra. This symbol holds the key to the age of the coin by the varying form of its spokes, consisting on some of three ovals and three taurines (No. 15), on others of three ovals and three arrow-heads (Nos. 13, 14, 18), and on some of three taurines and three arrow-heads (Nos. 19, 20). The first variety (Early) may be assigned to the fifth, the second (Intermediate) to the fourth, and the last (Late) to the third century B.C. (Maurya Period). The coin shown as Fig. 17 is specially noteworthy, as on it the Sun and Six-armed symbols have been replaced by a group of three human figures. This specimen comes from Charssadda in the Peshawar district (ancient Pushkalāvatī, capital of Apara-Gandhāra).

Fig. 21. A punch-marked Kārśāpaṇa coin of copper with traces of thin silver plating on it, having a regular group of five symbols and a wt. standard of 32 rattis. These specimens seem to represent the debased coinage of the Mauryan administration introduced to replenish the exchequer or meet some unusual drain on the currency.

Fig. 22. A Half-Kārśāpaṇa, 16 rattis (actual 14.6 rattis) in wt., called Ardha and Bbāga in the Ashtadhyāyī (V.1.48-49; p. 266) and Ardha by Kauṭilya and Kātyayana (VI.1.25).

Fig. 23. Rāṇḍya Māśha (p. 267), minute silver punch-marked coin of 2 rattī wt.:3.5 grs. From Takshasila. Stamped with a single symbol on one side. The Kāśikā also refers to Adhyardha-Māshaka (1½ Māshaka coin of 3 rattis), Dvi-Māshaka (2-Māshaka coin of 4 rattis) and Tri-Māshaka (3-Māshaka coin of 6 rattis) (Kāśikā, V.1.34; J.N.S.I., Vol. XV, Pt. 1, p. 39).
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