JOURNAL
OF
THE INDIAN SOCIETY
OF
ORIENTAL ART

VOL XI 1943

ABANINDRANATH TAGORE
STELLA KRAMRISCH
EDITORS

Vol. XI **CONTENTS** 1943

KALPAVṚKṢA
THE WISH FULFILLING TREE

by V. S. AGRAWALA

Indian art conveys its meaning in a distinct symbol language. The lotus, the full vase, (pūrṇaghata) the Svastika, the wheel (cakra), the three jewels (triratna), and the Kalpavṛkṣa, part as it were of an alphabet, are being used with perfect mastery as elements of decoration ; they have not only invested art, Buddhist and Brahmanic, with endless beauty but also show it as a vehicle of ideas. These symbols formed an integral part of Indian thought for ages serving like pegs for religious and and metaphysical ideas. Their meaning was ingrained in the consciousness of the people, and the art-connoisseur carried within him a subconscious reaction to these symbol forms which intensified his appreciation of an art which was rich both in external narration as well as inward meaning.

The Lotus has been extolled as the prime symbol of creation, the seat and substratum of universal creative force which springs from the navel or centre of the primeval creator. Simplified to a concise Sūtra of art, it is expressed as Brahmā, the genius of creation, seated on a full-blown lotus with a long stalk springing from the navel of Viṣṇu. That the elaborate Paurāṇic cosmogony could be treated with such mastery of form gives a vantage ground to the artist. As the lotus floats above water, so the created cosmos emerged to the surface of the primeval deep or 'chaos', which originally was the confused mass out of which the order of the universe was evolved. The Greek word chaos is the same as Vedic 'Kha'. 'Kham' represented the great chasm or vacuum out of which was born the 'Kam', or the Plenum. 'Kha' is the navel from which the cosmic lotus takes its birth. Again 'Kha' represents the centre of

the Wheel of which the spokes and the peripheral frame mark the universe.

The symbols of the lotus and the Cakra are primarily Vedic symbols. And so is the full vase or the Pūrṇaghaṭa in which, as the seer of the Atharvaveda sings, the gods filled in one place immortality and life, prosperity and food, and many a good thing besides. Their opposites, the principles of non-life and non-riches, also lurk, with divine sufferance, in some unperceived corner of this Pūrṇa Kumbha. But what is essential and auspicious for life is the brimming and overflowing aspect of the Pūrṇa Kumbha symbolising the growth and creative fertility in every phase of man's being on this earth. The Pūrṇa Kumbha is verily the human body or Man himself containing within him the fullest range of divine blessings and the choicest gifts to which the soul aspires. With such a perfect symbol to express the idea of fulness and prosperity the Indian artist felt enraptured, and with his genius for the beautiful he portrayed that idea in the form of a full vase overladen with foliage and adorned with girdles of flowery garlands on the neck, shoulder and base. A comprehensive study of the Pūrṇaghaṭa and its variations as found in Indian art would be interesting. The same is the case with other symbols which enriched art as elements of decoration and at the same time gave to it deeper philosophic meaning. Not only trees and creepers but also animals and birds of various forms, e.g., Siṃha, Vṛṣa, Haṃsa and Suparṇa, lion, bull, swan and 'bird', constantly appear in Indian art contributing to its richness, gaiety and freshness as it would be from a living contact with nature.

The symbol of the Kalpavṛkṣa has been popular both as regards its representation in sculpture and painting and description in ancient poetry and literature. It is variously known as Kalpataru, Kalpadruma, Devataru, etc., and from the point of view of art the Kalpavallī and the Kalpalatā are but extensions of the same motif treated with luxuriance. The central idea of the Kalpavṛkṣa is that it is the Wishing Tree which fulfils all desires. It was produced as one of the fourteen gems at the time of the gigantic churning of the ocean by the Devas and the Asuras. The auspicious conch and the auspicious cow—Pāñcajanya and Kāmadhenu—were also produced along with the Wishing Tree and they too went to the gods. They are kindred symbols with

the Kalpavṛkṣa as bestowing fruition of human desires, and have been employed in Indian art and poetry with remarkable success. The phrase 'Kāmadughā' is frequent in the Vedas and is applied variously to speech (Vāk), Sarasvatī, the goddess of learning, Aditi, the mother of the gods, and Pṛthivī, the Great Mother personified (Mahīmātā). The Wishing Tree also is called Kāmadugha as it grants all desires and fulfils all wishes. So long as a man is under its shade, whatever he conceives he realizes. Wealth, women and all kinds of enjoyment issue forth from its fructifying boughs.

The Mind is the Kalpavṛkṣa or the Wishing Tree which gives us every thing for the mere thought of it. In a very real sense the Mind is the most powerful creator, the perennial source of all our enjoyments, and the inexhaustible fountain from which pleasure (rasa) constantly oozes out. Thought (saṅkalpa) is the nature and power of the Mīnd which makes life teem with innumerable blessings. The artists made full use of a rich conception like this, and employed the Kalpavṛkṣa as one of the symbols which adorned art both in respect of beauty of form and depth of meaning.

At Bharhut bounteous curves of lotus creepers run in continuous bands, each bough or bud of which carries beautiful ornaments, earrings, 'kuṇḍalas' for the ears of the Prākāra-vapra design,[1] necklaces set with pearls and beads, armlets and anklets and spiral rings of various designs, delicate scarfs with flower-patterns woven in their texture, and 'sāris' with 'patli' ends of 'gomūtrikā' designs[2]. The Kalpalatā decoration producing such ornaments is a conspicuous feature of early Indian art and it is very often repeated leaving a pleasant effect on the mind.

The motif is developed and continued later in the art of the Gupta period and even afterwards. The deep-cut foliage decorations and creepers with intertwining tendrils are a familiar feature of Gupta art, and in some of them objects of enjoyment are carved as the products of the

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1. For the meaning of the Prakāra-vapra design earrings, see ABORI, XXXIII, p.p. 19-22.

2. Pāṇini in the Gaṇasūtra 'gomūtra ścchādane' on Sūtra V. 4. 3. refers to a cloth called 'gomūtrikā' which seems to be the 'sāri' worn by men and women in the reliefs at Bharhut and Sanchi; it seems to have derived its name from the particular 'gomūtra' form of its front pendant portion.

Wishing Tree. In a beautiful pillar from Garhwa a creeper with youthful maidens springing from its branches has entwining leaves and offshoots. The pillar is illustrated by Cunningham (ASR. Vol. X. Pl. VI and on p. 7).[1]

Recently, Sivaramamurti drew attention to the Kalpavṛkṣa-Kalpavallī motif explaining it in the light of a few literary references from Kālidāsa[2]. The conception of an idyllic land or clime in which all kinds of human enjoyments are available to man as in a garden of paradise, is of old standing in Indian literature. We read in the story of the Mahāvāṇija Jātaka (No. 493) that a group of merchants who had set out in search of a treasure came to a mighty banyan tree with cool and pleasant shade. From its eastward branch pure and clear water trickled for them ; they washed and drank their fill. One of the branches on the south gave them all things to eat :

'Both rice and meat out in a stream it brings,
Thick porridge ginger lentle soup and many other things.'
From the western branch—
'Outcame a bevy of fair girls all pranked in brave array,
And O the robes of many hues, jewels, and rings in plenty !
Each merchant had a pretty maid, each of the five and twenty.'
From the northern branch likewise—
'...outcame a stream of gold,
Silver in handfuls, precious rings and jewels manifold.
And robes of fine Benares cloth and blankets thick and thin,
The merchants then to roll them up in bundles did begin.'

This Tree which produced water streams, food, pretty maids and good things is the ideal Kalpavṛkṣa so often extolled in literature. The following Pāli gāthā sums up the virtues of this auspicious tree—

वारिदा पुरिमा साखा अन्नपानश्च दक्खिणा।
नारिदा पश्चिमा साखा सब्बकामे च उत्तरा॥ (Fausboell. Jāt. IV. 352)

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1. Its present whereabouts are unknown, but I am indebted to Mr. A. G. Shirreff, I.C.S., for an old outline drawing of it which is reproduced here with his kind permission.

2. Journal of Oriental Research, Vol. XIV, Pt. III, pp. 180-182.

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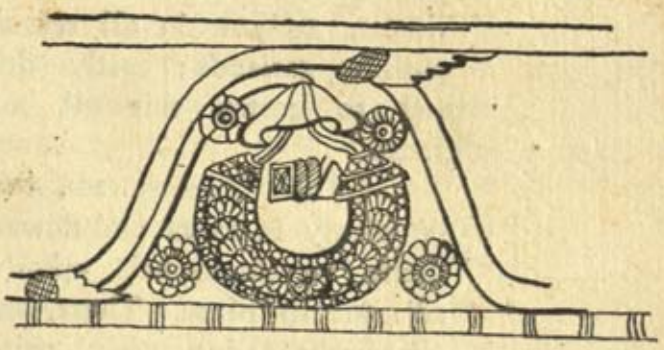

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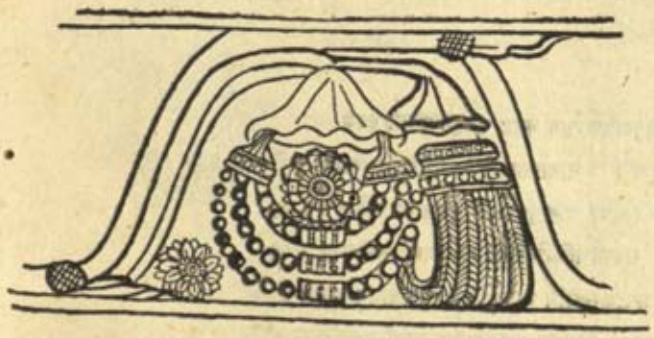

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The idea that the tree deity gave the merchants water to drink, food to eat, beds to lie on, maidens to attend them and all treasures, has an irresistible appeal of which both the poets and the artists took full advantage to embellish their works. In the epic literature and in the Purāṇas the conception of the Wishing Tree producing all desires is extended to the idyllic land of Uttarakuru where Elysian conditions prevail, leading to an exceedingly delightful life of the inmates.

In the Rāmāyaṇa, Sugrīva directs the monkey chiefs to go in quest of Sītā in the northern direction. There, at the end of the earth they would find the land of the Uttarakurus. "Flowers of gold as resplendent as fire are seen there in eternal bloom imbued with divine fragrance. The beautiful trees produce garments of various kinds and costly gems which are pleasant for men and women to use in all seasons; beds with beautiful coverlets and pleasing garlands; costly drinks and food of many descriptions; and to crown this all, maidens endowed with beauty, virtue and youth."[1]

In the Mahābhārata, the Elysian land of Uttarakuru with all kinds of plenty in fruits and flowers and with trees producing all objects of desire (sarvakamaphalā vṛkṣāḥ) is conceived in the northern direction adjacent to Meru. There, as fruits from trees, are produced : garments, ornaments and youthful pairs of men and women (mithunāni) who draw sustenance from the nectar-like milk of the milky trees and are perfectly matched to each other in beauty, dress and appearance. The human beings in that region are happy and contented like gods being free

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(१) जातरूपमयैश्चापि हुताशनसमप्रभैः। नित्यपुष्पफलास्तत्र नगाः पत्ररथाकुलाः ॥४३
दिव्यगन्धरसस्पर्शाः सर्वान् कामान् स्रवन्ति च। नानाकाराणि वासांसि फलन्त्यन्ये नगोत्तमाः ॥४४
मूल्यवैदूर्यचित्राणि भूषणानि तथैव च। स्त्रीणां यान्यनुरूपाणि पुरुषाणां तथैव च ॥४५
सर्वर्तुसुखसेव्यानि फलन्त्यन्ये नगोत्तमाः। महार्हमणिचित्राणि फलन्त्यन्ये नगोत्तमाः ॥४६
शयनानि प्रसूयन्ते चित्रास्तरणवन्ति च। मनःकान्तानि माल्यानि फलन्त्यपरे द्रुमाः ॥४७
पानानि च महार्हाणि भक्ष्याणि विविधानि च। वितरन्ति गुणसम्पन्ना रूपयौवनलक्षिताः ॥४८

(Kiṣkindhā kāṇḍa, ch, 43. verses 43-48.)

from all sorrows and ailments, and they do not suffer the pangs of separation.[1]

It appears that this description of Uttarakuru was an inherent part of the Bhuvanakośa as we find it repeated in a similar context in the Vāyupurāṇa (Chap. 45 verses 11-50). The description in the Purāṇa, besides recording what the Epic contains is much more elaborate, and we find there reference to streams of 'madhu' and 'maireya', of butter and curds, to mountains of delicious food, to groves furnished with beds, seats, cosmetics, garlands, etc. and to a great many other items of pleasure. In that region there is sweet music of every description rising from lute, flute and tabors, and hundreds and thousands of Kalpavṛkṣas produce fine and beautiful garments agreable to wear.

A representation of the Uttarakuru land is probably what we find at Sanchi carved on the western face of the western pillar of the south gateway of the Great Stūpa (Marshall, 'Monuments of Sanchi', Vol. I, p. 144 ; Vol. II, Pl. XIXa). In several undulating bands of a lotus creeper (one of which is reproduced on p. 5, Figure 1) are youthful couples engaged in music and pleasure surrounded by birds and animals and seated under the shades of boughs overladen with costly ornaments of many kinds.

This representation is so close to the literary tradition given in the Epics that it appears to suggest a conscious treatment by the artist of a theme which literary tradition had made popular. The sculptors at

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(१) उत्तराः कुरवो राजन् पुण्याः सिद्धनिषेविताः ॥२
तत्र वृक्षा मधुफला नित्यपुष्पफलोपमाः। पुष्पाणि च सुगंधीनि रसवन्ति फलानि च ॥३
सर्वकामफलास्तत्र केचिद्वृक्षा जनाधिप। अपरे चीरिणो नाम वृक्षास्तत्र नराधिप ॥४
ये चरन्ति सदा चीरं षड्रसं चामृतोपमम्। वस्त्राणि च प्रसूयन्ते फलेष्वाभरणानि च ॥५
मिथुनानि च जायन्ते स्त्रियाप्सरसोपमाः। तेषां तु चीरिणां चीरं पिबन्त्यमृतसन्निभम् ॥८
मिथुनं जायते काले समं तच्च प्रवर्धते। तुल्यरूपगुणोपेतं समवेषं तथैव च ॥९

(Bhīṣmaparvan, 7, 2-11)

Sanchi and Bharhut (p. 5. Figs. 2-5) have carved time and again the lotus creepers as producing ornaments (muktāvaidūryacitrāṇi bhūṣanāṇi). Kālidāsa in the Kumārasambhava, VIII. 68, refers to necklaces (hārayaṣṭi) hanging from the top of Kalpavṛkṣa trees. In the Meghadūta he mentions the Kalpavṛkṣa as the one complete source of all objects of adornment and toilet used by the women in Alakā for example ; beautiful fabrics, wine causing love glances in the eyes, flowers and tender leaves, a variety of ornaments, and lac dye for painting the feet are the Kalpavṛkṣa products used for female beauty make-up (abalā-maṇḍana.)[1]

Again the poet refers to the Kalpavṛkṣa 'madhu' named 'anaṅgadīpaka' (also called 'ratiphala' in Meghadūta II, 3) which was served in cups of scarlet coloured gems ('lohitārka-maṅi-bhājana,' Kumār. 8. 75). The conception of fine garments produced from the Kalpataru is found not only in Kālidāsa ('kalpataru-lambi aṃśuka, Kumār. 8.71), but also in Bāṇabhaṭṭa who refers several times to the 'Kalpadruma dukūla' or the 'Kalpalatā dukūla' which was diaphanous and transparent like the slough of a snake and so light as to be tossed about even by the air of human breath (धौते निश्वासहार्ये निर्मोकशुचिनी कल्पलतादुकूले, Kādambarī text, ed. Vaidya, p. 201, 206).[2]

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(१) वासश्चित्तं मधुनयनयोर्विभ्रमादेशदक्षं, पुष्पोद्भेदं सह किसलयैर्भूषणानां विकल्पान् ।
लाक्षारागं चरणकमलन्यासयोग्यं च यस्यामिक: सृते सकलमबलामण्डनं कल्पवृक्ष: ॥

Megha. II. 11,

2. From the above literary tradition we find that the Kalpavṛkṣa was considered as the source of the following objects of decoration and enjoyment :

Ornaments : 'hārayaṣṭi', 'ābharaṇa', bhūṣaṇa-vikalpa.

Garments : 'kalpatarulambi aṃśuka' (Kumār. 8, 71) ; 'citra vāsa' (Megh. II. 11) ; 'maṅgalya kṣauma' (Śak. IV), 'Kāsika' cloth and blankets of Uḍḍiyāna or Gandhāra country, known as Pāṇḍukabala in the Jātakas and in Pāṇini.

Cosmetics for the body and feet : 'lakṣārāga', 'vicchitti', etc.

Wine and drinks : 'madhu' (Megh. II, 11) ; 'anaṅgadīpaka' ; (Kumār. VIII. 75) and 'ratiphala' (Megh. II. 3) ; 'mahārhāṇi pānāṇi' (Kiṣkindhā, 43. 48) ; 'maireya' (Vāyu, ch. 45).

Beds : 'citrāstaraṇavanti śayanāni' (Kiṣkindhā. 43. 47).

Garlands : 'manaḥkānta mālya', (Kiṣ. 43. 47).

Food : 'vividha bhakṣya (Kiṣ. 43-48) ; 'bahu sālimaṃsodana' (Jāt. IV. 352).

Maidens and Couples : 'guṇasampannā rūpayauvanalakṣitā striyaḥ' (Kiṣ. 43. 48) ; 'nāriyo samlaṅkatā' (Jāt. IV. 352) ; 'mithunāni' and 'apsarasopamāḥ striyaḥ'. (Bhīṣma. 7. 8.)

Water in regaling streams (Mahāvāṇija Jāt. IV. 351).

ON THE CANONS OF IMAGE-MAKING PIṄGALĀMATA, CH. IV

by P. C. BAGCHI

I

A few years ago I published and discussed a chapter of the Tāntrik text entitled the Brahmayāmala-tantra which deals with the canons of Brahmanical iconometry ('Journal of the Indian Society of Oriental Art,' 1935). I had taken a copy of the text from a palm-leaf manuscript in the Durbar Library of Nepal dated 1052 A. D.; I had also copied another text of the same school, the Piṅgalāmata, of which a chapter also deals with the canons of image-making.

The present text is called Piṅgalāmata. The manuscript which is preserved in the Durbar Library of Nepal is on palm-leaf. It was copied in the Nepal Saṃvat 294, i. e. 1174 A. D. during the reign of King Rudradeva (Saṃvat 294 caitra-śukla-purṇamāsyāṃ samadine uttaraphālguṇa nakṣatre śrī-parameśvara-paramabhaṭṭāraka-mahārājādhirāja-śrīmad-Rudradevasya vijaya-rājye śrīmad-mahāvijayakarathyāyāṃ śrī-candana-maṇḍapī-rāthyā-nivāsinā śrī-śivācārya-vijayadhara-varmeṇa likhāpitam lekhaka Paśupatinā likhitaṃ). For a further description of the manuscript see H. P. Shastri, 'Catalogue of the Palm-leaf manuscripts, Nepal II', p. 69 and Bagchi, 'Studies in the Tantras', p. 7, pp. 105-109. The colophon of the manuscript throws light on the reign of king Rudradeva about whom we know very little. Rudradeva was on the throne for a very short time. He abdicated in favour of his son, became a Buddhist monk and lived a retired life in a Buddhist monastery. He ruled sometime between Nepal Saṃvat 286 (=1166 A. D.) and Saṃvat 296 (.=1176 A. D.). Our manuscript gives for the first time a positive date for his reign.

The Piṅgalāmata is a supplement of the Brahmayāmala. I have tried to show elsewhere that the Piṅgalāmata and the Jayadrathayāmala

presuppose the existence of the Brahmayāmala. The Jayadrathayāmala is mentioned in a Kambuja Inscription of 802 A. D. It must have been composed in the 6th-7th centuries A. D. The Brahmayāmala belongs to an earlier period. The Piṅgalāmata belongs to the same period as the Jayadrathayāmala ('Studies in the Tantras', pp. 7ff). In the same connection I also tried to determine the age in which the eighteen Āgamas of the Śaiva school had come into existence. That age was not later than the sixth century A. D.

I am unable to say as yet what was the exact relation between the South Indian Śaivāgamas and these earlier Āgamas some of which are still preserved in very old manuscripts. Gopinath Rao utilised for his study of Indian Iconography and Iconometry only five Āgamas, viz. Suprabheda, Kāmika, Kiraṇa, Aṃśubheda and Vaikhānasa. Of these only, the Kiraṇāgama, belongs to the list of the eighteen old Āgamas but even then it is difficult to say without a comparative study if the South Indian Kiraṇāgama is the same text or a later version of it. The tradition however must have been the same.

The Tantras therefore deserve a closer attention than hitherto paid to them for our study. As they were directly concerned with the worship of deities the canons of measurement of the images of Brahmanical gods and goddesses must have originated with them. Non-sectarian texts had much less interest in them and whenever they give such canons they borrow them from the sectarian literature. Dr. J. N. Banerjea in 'The Development of Hindu Iconography', pp. 336 ff., would however attach greater importance to the Bṛhatsaṃhitā than to the Āgama literature in matters concerning the canons of image-making. The Bṛhatsaṃhitā was compiled towards the middle of the sixth century and Utpala's commentary on it in the 10th. It is not known how far Varāhamihira was responsible for the composition of the whole of the Bṛhatsaṃhitā including the section on the canons of Iconometry. It does not mention the 'tālamāna' or the measurement by 'tāla' whereas all other works including the Tantras give details on the 'tālamāna.' This is an argument which Dr. Banerjea puts forward in favour of the priority of the Bṛhatsamhitā. But Utpala also, who did not write before the second half of the 10th century, does not mention the 'tālamāna'. The Śaivāgamas are certainly older than the 10th century. There is a manuscript of the

Kiraṇāgama dated 924 A. D. and another of the Pārameśvara-tantra dated 859 A. D. ('Studies in the Tantras', p. 5, n. 1). There is a manuscript of the Kubjikātantra in the collection of the Royal Asiatic Society of Bengal written in the late Gupta script (6th-7th cent.) and the Kubjikā, according to the orthodox Tantrik tradition is much later than the Āgamas. The tradition of the Tantras therefore seems to be much older than hitherto admitted. The materials for the iconometrical portion of the Bṛhatsaṃhitā must have been drawn from the sectarian literature like the Tantras.

Chapter IV of the Piṅgalāmata deals with iconometry as well as with the iconography of a number of gods and goddesses. The chapter is entitled Pratimādhikāra. The iconometrical portion, as will be found from the summary of the text given below, is more comprehensive than the corresponding chapter in the Brahmayāmala. It gives two kinds of measurements : one is called the 'dvāramāna' or the measurement according to the height of the temple doors and the other is called 'karamāna', or the measurement according to the length of the arms

The doors of a temple are of three types : the door of minimum height, that of medium height and that of maximum height. The images accordingly are also of three types : Kanyasā, Madhyamā and Jyeṣṭhā. This is the 'dvāramāna' measurement and it was followed in the case of the bigger images. Of the three types only the first is described by the Bṛhatsaṃhitā and the Hayaśīrṣa Pañcarātra. According to our text the height of the Kanyasā variety of image is to be determined thus : "Divide the height of the smallest door of the temple into 8 parts. Leave out one part and divide the rest into three. (Of these three parts again) leave one for the pedestal. The image occupies the remaining two". The pedestal is therefore (1-1/8)÷3=7/24th part of the height of the smallest door and its double, the height of the image, 7/12th part of its height. The Hayaśīrsa Pañcarātra which is quoted by Dr. Banerjea expresses this in the following words "the height of the door (shrine door) should be divided into 8 equal parts, two of these parts should constitute the height of the image and one part of it divided into three parts, the height of pedestal, which is neither two high nor too low".

dvārocchrayasya yanmānamaṣṭadhā tattu kārayet/
bhāgadvayena pratimāṃ tribhāgī kṛtvā tat punaḥ/
piṇḍikā bhāgataḥ kāryā nātinīcā na cocchritā//

The passage seems to be defective so far as its meaning is concerned. A second line has been dropped and that contained instruction about leaving 1/8th of the height of the door. Otherwise two parts of eight divisions would be meaningless. The instruction concerns only large images. But even if we take the door of the shrine as 16 ft. high the image would be only 4 ft. The instruction on the measurement of the pedestal also is meaningless.

The instruction contained in the Bṛhatsaṃhitā in this regard is clearer :

devāgāra-dvārasyaṣṭāṃśonasya yastṛtīyo'ṃśaḥ/
tat pindikāpramāṇaṃ pratimā taddviguṇaparimāṇā//

Dr. Banerjea translates it thus : "The height of the pedestal of the image should be three parts of the height of the shrine-door less the 8th part when the latter is divided into eight parts and the same of the image should be twice the height of the pedestal". The translation requires a little modification : "the height of the pedestal of the image should be 1/3 of the height of the shrine-door less the 8th part. [i.e. (1-1/8) ÷ 3 = 7/24th part of the door] when the latter is divided into eight parts and the same of the image should be twice the height of the pedestal (i. e. = 7/12th part of the door]". This perfectly agrees with the instruction contained in the Piṅgalāmata.

This clearly shows that a very important line has been dropped from the passage of the Hayaśīrṣa Pañcarātra. This line may probably be found in the Matsyapurāṇa as quoted by Dr. Banerjea (ibid. p. 354, n. 2) : 'bhāgamekaṃ tatastyaktvā pariśiṣṭantu yad bhavet'. The passage of the Hayaśīrṣa Pañcarātra would then stand thus : "the height of the door is to be divided into 8 parts. (Leave out one part and divide the rest into three portions). Two of these should constitute the height of the image, the other, that of the pedestal".

We have been so far speaking only of one type of image which is measured according to the height of the lowest door, the Kanyasā. The other two varieties, the Madhyamā and the Jyeṣṭhā, are not referred to in the sources described above. They are measured, as will be seen

from the text, according to the heights of the middle-sized and the highest doors of the temple.

The classification of the images according to 'dvāramāna' into Jyeṣṭhā, Madhyamā and Kanyasā is not known from any other source. It may have some relation with the threefold classification of images into Pravara, Sama and Nyūna as given in the Bṛhatsaṃhitā but its basis of measurement is different. The threefold classification of the Brahmayāmala into Divyādhika, Divya and Divyādivya is similar to the classification given in the Bṛhatsaṃhitā. The classification of the Brahmayāmala is based on 'tālamāna'. The three classes of images mentioned in it are respectively of 11, 10 and 9 tālas, i. e. 132, 120, and 108 aṅgulas in height. The later tālamāna classification into Uttamadaśatāla (124 aṅg.), Madhyama—(120 aṅg.) and Adhama—(116 aṅg.) is based on the same principle.

It is clear that the threefold classification of the Piṅgalāmata into Jyeṣṭhā, Madhyamā and Kanyasā is not based on the 'tālāmāna'. Although the Bṛhatsaṃhitā does not mention the 'tālamāna' its Sama class seems to be the same as the Divya of the Brahmayāmala (120 aṅg.) and the Madhyama-daśatāla of the later texts (120 aṅg.). This is the normal measure in all the three cases. The other two are determined in relation to it, Nyūna, Adhama or Divyādivya being inferior to it in measure and the Pravara Uttama or Divyādhika being superior to it in measure. But so far as the classification of the Piṅgalāmata is concerned there is no such common basis of measurement. Each of the three types, Jyeṣṭhā and Kanyasā being independent of the other and the basis being one or other of the three types of doors.

Whether the Bṛhatsaṃhitā mentions it or not its classification presupposes the 'karamāna'. The 'karamāna', the measurement according to the length of the arms, is also mentioned in the Piṅgalāmata. It says that the 'karamāna' may be taken both as an absolute and a relative unit of measurement. In the former case 'trasareṇu' is the theoretical unit. It is defined in our text as those particles of dust which may be seen when the rays of the sun fall in a shady corner (malāntaregate sūrye ye dṛṣṭāstrasareṇavaḥ). The Bṛhatsaṃhitā uses the word 'paramāṇu' instead of 'trasareṇu' but it defines the word almost in identical language : 'Jālāntaragate bhānau yat sūkṣmaṃ dṛśyate rajaḥ/ prathamaṃ tat prāmāṇam

paramāṇu pracakṣate'// "the subtle particles of dust that are seen when the sun's rays enter a cobweb are called paramāṇu—the very first unit of measurement". But this is not Varāhamihira's own definition. He has taken Manu's definition verbatim ('Manusaṃhitā' VIII. 132) : 'jālāntaragate bhānau yat sūkṣmam dṛśyate rajaḥ / prathamaṃ tat pramāṇam trasareṇuṃ pracakṣate / /. Varāhamihira has substituted the word 'paramāṇu' for 'trasareṇu' of Manu but the Piṅgalāmata is faithful to the old tradition.

In the 'karamāna' measurement of the Piṅgalāmata 'kara' is the highest unit. It is 24 'aṅgulas'. The word 'tāla' is given as its synonym. The next lower unit is the 'vitasti' which is 12 aṅg. The synonyms of the word vitasti are 'mukha', 'pradeśa' and 'ardha-kara'. Although the word 'tāla' is known no special importance is attached to it. Another word for kara is 'hasta'. It is also called 'saṅkhyā' in our text.

The 'karamāna' is also known as a relative unit of measurement in the Piṅgalāmata. According to it 1 'hasta' (kara) is made of 24 of one's own thumbs : "svaiḥ svaiḥ jyeṣṭhāṅgulaṃ (aiḥ ?) devi caturviṃśe tu hastakam". Dr. Banerjea has drawn attention to various texts which refer to this relative standard of measurement ('Pratimālakṣaṅaṃ,' pp. 26 ff.). The Pratimālakṣaṇaṃ defines it as 'svenāṅgulipramāṇa'. G. Rao defines it as 'dehalabdha-aṅgula' or 'dehāṅgula' on the basis of texts studied by him, the Śukranītisāra as 'sva-sva-muṣṭeścaturthāṃśa', and the Bṛhatsaṃhitā as 'svairaṅgulapramāṇaṃ'. Utpala explains the last as the 108th part of the block of wood or slab of stone from which the image without the pedestal has to be carved. This relates to 'navatāla' images of 108 aṅg. G. Rao says that the 'aṅgula' can be derived by dividing the image into 124, 120 and 116 parts according as it is either Uttama-daśatāla, Madhyama or Adhama. But how to measure the block of wood and the proposed pedestal ? This can be done only in relation to the height of the temple door without having recourse to other units of measurement. But the 'dvāramāna' measurement was applicable only in the case of larger images.

The 'aṅgula' as a relative unit of measurement, may then be the 'aṅgula' of the donor or of the artist. But that also leads to absolute units of measurement, divergences in the 'aṅgulas' of different men being negligible. These divergences could not be so great as to give rise to three classes of images referred to. From actual measurements of images Dr. Banerjea has concluded that the "dehāṅgula is in some cases the same as

the breadth measurement of the middle digit of the medius of the images." I believe that the Piṅgalāmata throws light on this point. It says that the 'kara' is 24 times one's own thumb (jyeṣṭhāṅgula). This must be taken as the width of the upper digit of the thumb. This method of aṅgula measurement is still current. 'Aṅgula' therefore is the breadth measurement of the upper digit of one's own thumb.

But that also is a relative measurement only in theory. In practice it must have been a standardised unit of measurement. It therefore seems that of the two kinds of 'aṅgula' measurement the 'dehalabdha aṅgula' was used in working out the details of the images of which the height was primarily determined by the height of the temple door and the other the 'svenāṅguli' which was the width of the upper digit of the thumb of the artist or of the donor was in use for the measurement of smaller images. The latter was the same as the absolute 'aṅgula' for all practical purposes.

This is made more clear from what the Piṅgalāmata says about the measure of the three kinds of images, the Jyeṣṭhā, Madhyamā and Kanyasā in terms of 'karamāna'. They are respectively as high as 1080 aṅg., 720 aṅg., and 360 aṅg.. Such big images could not be conveniently measured by the standardised 'aṅgula' unit but by the 'dehalabdha aṅgula' of the image only. This could be obtained according to the present text by dividing the height of the image into $9 \times 12 = 108$ portions. This excludes not only the pedestal but also the 'mukuṭa', 'kirīṭa' and the 'pāda' (see infra under 'dirghamāna').

The Piṅgalāmata in some cases makes use of words that are indicative of numbers such as : netra for 2, vasu for 8, vāmā for 10, māsa for 12, guṇa for 3, tri-guṇa for $3 \times 3 = 9$, ṛtu for 6, ravi (= āditya) for 12 and paṅkti for 10 (?). Dr. Banerjea has collected such words from the later sources ('Development of Hindu Iconography' p. 352, n. 2) but none of the words used in our text is found in his list excepting probably paṅkti to mean 10. It should be noted here that the word 'netra' is used here not in the later sense of 3 but designates 2.

II

The Piṅgalāmata begins by giving a description of the trees that are to be selected in the forest for the purpose of image-making. The trees recommended are 'candana, śāla, nimba, arjuna, panasa, śrī-phala,

rakta-candana, simṣapā, tindusa, kāma (?), khadira, piyāśāla, sarala,' and 'devadāru'. It is said that the wood selected must be substantial. It must not have knots, cavities or any other defects. Trees which are on the road-side, on the funeral ground or on the barren lands (ukṣita) should not be selected. When the tree has been properly examined and selected, the ground in its front has to be properly cleansed, and a sacrifice to be performed on the spot. The devotee then awaits a dream. As soon as he gets it, he goes to the wood, fells the tree and cuts it into pieces according to the measure of the temple door and then brings it to his atelier (karmaśālā).

1. Dvāramāna—or measurement according to the height of the temple door : Divide the height of the smallest door of the temple into 8 (vasu) parts. Leave out one part and divide the rest into three. (Of these three parts again) leave one for the pedestal. The image occupies the remaining two. This is the 'kanyasā' kind of image.

The 'madhyamā' variety is as follows : Divide the height of the middle-sized door into ten (vāmā ?) parts. Leave out one part and divide the rest into three parts. (Of these three again) leave one for the pedestal. The image occupies the remaining two.

Divide the height of the biggest door of the temple into twelve (māsa) parts. Leave out one part and divide the rest into three parts. (Of these three parts again) leave one for the pedestal. The image occupies the remaining two. This is the 'jyeṣṭhā' variety.

2. Karamāna—or measurement according to the length of the arms : When the rays of the sun fall in a dark corner what we see are the 'trasareṇu' or the trembling particles of dust.

8 trasareṇu	make	1 aṇu
8 aṇu	make	1 keśāgra
8 keśāgra	make	1 līkṣā
8 līkṣā	make	1 yūka
8 yūka	make	1 yava
8 yava	make	1 aṅgula
2 aṅgula	make	1 kalā
6 kalā	make	1 vitasti
2 vitasti	make	1 kara.

Measurement by such units is called 'karamāna.' This is the general

definition of 'karamāna'. According to another opinion 1 'hasta' (kara) is made of 24 of one's own thumbs. The measure of 1 'hasta' or more (?) is called Saṅkhyā. Thus the 'kanyasā' variety is of 3×5=15 'kara-saṅkhyā' (15×24=360 aṅg.) ; the 'madhyamā' variety is of 3×10=30 'kara-saṅkhyā' (30×24=720 aṅg.), and the 'jyeṣṭhā' variety is of 9×5=45 'piṇḍa', i. e. 'kara-saṅkhyā' (45×24=1080 aṅg.). The images of 1 to 12 aṅg. should be worshipped in the house and the larger images worshipped in the temples.

3. Dīrghamāna or measurement of the height

The height of the image is divided into nine portions, each portion is called a 'tāla'. 1 'tāla' is 6×2=12 aṅg. Its synonyms are 'mukha, vitasti, pradeśa' and 'ardhakara'. The mukuṭa (crown) is two (netra) 'tāla' (24 aṅg.). The 'kirīṭa' (crest) is excluded from the 9 'tāla' measure.

The face is 1/2 hasta (12 aṅg.), the neck is 2 (netra) or 2×2=4 aṅg. ; the distance from the region of the heart (hṛt) to the navel is 1 tāla (12 aṅg) ; that from the navel to the 'muṣka' (penis) 1 tāla (12 aṅg.) ; the thigh is 2 tāla 1 kalā (26 aṅg.) and the shin (from the knee to the ankle) 2 mukha (tāla) or 24 aṅg. The knee cap (jānupalī ?) is 2 netra (4 aṅg.), whereas the ankle is also 2 kalā (4 aṅg.). The foot is 1 golaka (2 aṅg.), 1 yava. Such is the measurement of the height. It is 9 tāla excluding the height of the foot.

4. Mukha or the measurement of the face

The face is divided into three parts The first consists of the forehead (lalāṭa) and nose (ghrāṇacakra). The forehead is 2 golaka (4 aṅg.) in height and 4 aṅg. in width. The ears situated at the ends of the 'apāṅga' (outer corner of the eye) are each 2 golaka (4 aṅg.) in width. Their measurement is taken sideways. In length they are half of that, i. e., 2 aṅg. (?) . The ear lobes (udraka) are 8 yava, 'kakunī' (kakubhī, upper portion of the ear ?) is half of that, i.e., 4 yava. The sides are adorned with ornaments according to choice. The eyelashes (bhrū) are each sideways 3 aṅg. in length. The space between the two eyelashes is at the root 1 yava. The ends of the eyelashes are like bows and are each $1\frac{1}{2} + \frac{1}{2} = 2$ yav. in thickness.

The height of the 'nāsāgra' (top of the nose) is 2 aṅg. Its sides are

each 1 yava...The two hollows of the eyes (puṭa) are each two aṅgulas (tāraka) in width...the eyes (akṣi) are each sideways 1/2 + 1/4 = 3/4 tāraka, i. e. 1½ aṅg. in width...The cheek (kapola) on all sides is 4 aṅg. The cheek (gaṇḍa) should be raised to 1 tāraka, i. e., 2 aṅg. and 1 yav. The jaw (hanu) is 6 aṅg. in length and 1 golaka (2 aṅg.) in width. The hollow (garta ?) is 1 aṅg. and the 'gojī' is 1/2 aṅg. It is also called 'adha' (? i.e. lower point of the chin). The 'adhara' (lower lip) is 1 aṅgula (netrārdha). Its outline (rekhā) is ½ yav. in width. The 'uttara' (upper lip) is ½ aṅg. and its outline (rekhā) is ½ yav. in width. The space between the two lips is 2 yav. The 'sṛtkarṇa' (the lateral ends of the mouth) are each 1 yav. The width of the mouth is sideways 4 aṅg. The upper 'gojī' below the nose is 2 yav., it is 1/2 yav. in width.

5. Sections of the face

The face (vaktra) is divided into several sections. The first is the hair-line (keśa-sūtra), the second is the line of the septum of the nose (vaṃśa-sūtra), the third is the nose-line (nāsā-sūtra) and the fourth is the chin-line (cibu-sūtra). The ears and the 'apāṅga' therefore are included in the upper section. The fifth is the Brahmasūtra which is the line of the joint of the eye-brows, the chin and the top of the nose. The hairy part of the head measures, from ear to ear, 8 kalā, i.e., 16 aṅg. The hair line (keśa-sutra) is 9×2= 18 aṅg. (nava netra).

6. The vertical sections of the body

The middle line (madhya-sūtra) connects chin, heart, navel and the end of the 'muṣka'. There are two other lines, from the 'kakunīs' to the nipples of the breasts. The two horizontal lines of the armpits are each 5 saṅkhyā (tāla), i.e., 60 ang.. The nipples of the breasts and the middle of the heart ; the navel and the hips (kaṭi) are in one sidewise line. The 'kūrparas' (middle of the arms) are removed from this by 1 kalā (2 aṅg.). The knee, the ankle (gulpha), and the end of the foot (pādāgra) are in one line.

7. The parts of the body (pratyavayava)

The distance from the neck to the top of the shoulder is ½ hasta or 12 aṅg. The space between the top of the shoulder and the armpit is 8 golaka, i.e., 16 aṅgula. The upper arm (bāhu) is 6×2=12 aṅg. (ṣannetra)

from its root. The inner side of the upper arm is 11 aṅg. (rudra). The lower arm (upabāhu) is 9×2=18 aṅg. in length. The joint of the two arms (sandhi) is ½ golaka, i.e., 1 aṅg. excluding the sidewise measure. The sidewise measure of the lower arm at its back is 2 aṅg. ; at the root it is 2 aṅg. 7 yav. (netra...muni yava). 'Aprabāhu' is sidewise 4 aṇg. ; the 'kalāpī' is 1 aṅg. and the 'sandhi' (joint) is everywhere 3 times the former. So far about the lower arm.

Now about the fingers. From the wrist (maṇibandha) to the end of the fingers it is 1 tāla, i.e., 12 aṅg. The kara (? palm) is 7 ang. sideways in the middle ; at the root it is 5 aṅg. 5 yav. (bhūta yava). Its width, higher up, is 6 aṅg. The middle finger is 5 aṅg. ; the 'anāmā' (ring finger) and 'tarjanī' (forefinger) are each 5½ aṅg. ; the little finger and the thumb are of equal heights, 3½ aṅg. each ; the space between the forefinger and the thumb is 1 golaka (2 aṅg.). The length of the fingers is to be determined with reference to the 'deśinī' (i.e. 'tarjanī' or the forefinger).

The root or 'granthi' of the middle finger is 2 yav. ; its two middle digits (parva) are each 1 kalā less 3 yava., i. e. 13 yava. The other two digits (parva) are each 1 kalā less 4 yava, i. e. 12 yava. Each of the upper 'granthi' (knots) is one portion less than the previous one. Of the 'tarjanī' and the 'anāmikā' the knots at the roots are equal. The first digits are each 12 yav. ; the second knots are 1½ yav. each ; The middle digits are each 11½ yav., the upper knots are each one portion less than the previous ones. The upper digits are each 10 yav.

The first and the middle knots (granthi) of the little finger (kaniṣṭhā) are each 1 yav. ; the upper knot is ½ yav. ; The middle digit is 8 yav. ; the lower and the upper one are half of that, i. e. 4 yav. each.

The knot at the root of the thumb (aṅguṣṭha) is 4 yav. ; the first digit of the thumb is 11 yav. ; the second knot is 4 yav. and the upper digit is 12 yava.

The periphery of the first digit of the middle finger is at its root 3×3=9 yava (triguṇa). The middle digit is 1 yava less than that. That of the upper digit is 2 yava less than the middle one.

The periphery of the 'tarjanī' and the 'anāmā' is at the root 3×3=9

yav. each ; in the middle 1 yūka less than that. The periphery of its upper digit is 1 yava less, i. e., 8 yava.

The periphery of the little finger at the root is 3×3=9 yava ; that of its middle digit is 2 līkṣā less and that of its upper digit 4 līksā less.

The periphery of the thumb at the root is 3 kalā (i. e. 6 aṅg., or 48 yava); that of its middle digit is 2 kalā 2 yava (34 yava). It is 1 yava or 2 yavas less gradually as you go higher up.

The nails are to be made at the ends of the upper digits. They are a little depressed at their roots and raised in the middle. They have the colour of the morning sun and are sharp like steel. They are to be made nice looking.

In the second place make the arms below the neck. The two breasts are 6 (ṛtu) golaka, i. e. 12 aṅg. in a little sidewise line (from the arms) on the right and on the left. The two waists are 3 kalā, i. e. 6 aṅg. in a sidewise line. The upper part [of the thighs ?] is 1 tāla, i. e. 12 aṅg. ; the distance of the middle line (madhyasūtra) from it is 3 golaka, i.e., 6 aṅg. The 'maṇḍalas' are 2 yava each ; the middle of the chin 1 yava ; from the heart line up to the chin 4½ aṅg. ; below the breasts 3 aṅg. ; the two sides up to the waist line are 3 kalā, i. e. 6 aṅg. ; from the heart line the sides (?) are upwards 3 kalā, i. e. 6 aṅg., and downwards 3 kalā, i. e. 6 aṅg. ; the middle is 5 aṅg. sidewise up to the breast line. Such are the spaces between the two waists on two sides. The sidewise measure up to the end of the waist line is 5½ aṅg. ; higher up it is 2 kalā, i. e. 4 aṅg. up to the middle line.

A line has to be imagined through the middle of the navel and the penis. The two sides are each 3×2=6 aṅg. distant from this line. The navel is a 'dakṣiṇāvarta' ring ; it is 1½ yav. ; the two testicles are 2 aṅg. in length ; their periphery is 2 kalā, i. e. 4 aṅg. ; the penis is 2 golaka, i. e. 4 aṅg. in length. Its periphery is 3 kalā, i. e. 6 aṅg. ; at the middle and the end it is 2 golaka, i. e. 4 aṅg. The thighs are at the root 1 tāla, i. e. 12 aṅg. in width. Up to the knee it is to be divided into 12 (ravi) parts. The width is ½ aṅg. less in each section than the previous one ; so, at the end it is 3 kalā, i. e. 6 aṅg. in width. The circumference is everywhere three times of it and the sidewise measure is 2 golaka, i. e. 4 aṅg. The joint (sandhi) is 1 aṅg. ; its periphery is 11 golaka, i. e. 22 aṅg. ; below it

the shank (jaṅghā) is raised by 10 (paṅkti) kalā, i. e. 20 aṅg. ; in the middle its periphery is 12 kalā, i.e. 24 aṅg. ; the lower portion is divided into 10 parts ; in each part 1 aṅg. is left out so that at the end it is 7 golaka, i.e. 14 aṅg. ; the foot, in the middle, is 2 kalā 1 aṅg., i. e. 5 aṅg. ; the forefoot (agrapāda) is 3 kalā, i. e. 6 aṅg. ; the heel (pārṣṇika) is 2 kalā, i. e. 4 aṅg., the spaces between the gulpha (ankle) and the heels are each 2 kalā, i. e. 4 aṅg.

The big toe (aṅguṣṭha) is 3 aṅg. ; the 'deśinī' is less : the 'madhyamā' is 1 kalā 6 yav., i. e. 18 yava ; the 'nirṇāmā' is 20 yav., and the kanyā is 18 yav. The five toes together are 6 aṅg. (in width ?). They should have the appearance of a serpent's head. The protuberance (unnāha) of the big toe is 5 aṅg. ; that of the 'deśinī' is 3 aṅg., that of the 'madhyamā' is 3-$\frac{1}{2}$ aṅg.=21 yav. ; that of the 'nirṇāmā is 18$\frac{3}{4}$ yav. and that of the 'kanyā' is 16 5/64 yav.

The height (periphery) of the head is 36 aṅg. ; the periphery of the thigh is 50 aṅg. ; that of its lower portion is 42 aṅg., that of the navel region is 23 kalā i. e. 46 aṅg. Below it the periphery is 24 kalā i, e. 48 aṅg. ; that of the waist region is 50 aṅg. Its appearance should be beautiful.

8. Images of irregular proportions

So far the characteristics of the images of compassionate gods only have been described. There are also images of irregular proportions. Irregular lines are to be conceived in their case (viṣamaṃ sūtrakalpanā). They are to be determined according to their positions. Their weapons are the bow and other things. They have for seats the lotuses and other symbols. They may be either standing, lying down or in an oblique position. They may be deformed, dreadful, goblin-like, hump-backed, of confused strength. This includes also those that are placed at the beginning of dramatical performances with some purpose. The images of such deities and of many others, tall, short-statured and emaciated are irregular images (visaṃsa) ...

9. The images of female deities

[The instructions are of a general character and need not be summarised here. Some portions of the text are also very corrupt and cannot be followed.]

III

THE TEXT.

श्रीगणेशाय नमः

पिङ्गलोवाच—

वनान्युपवनं देव काष्ठ्यजान्वे (?) तु सूचितम् ।
तत् कथं विधिमाख्याहि वृक्षाणां लक्षणं यथा ॥
व्यक्तानां लक्षणं नोक्तं मानोन्मानप्रमाणकम् ।
काम्ये कर्मणि सौम्ये च कथं तत् क्रियते विभो ॥

भैरव उवाच—

वनान्युपवनं देवि प्राविशेत् प्राग्विधानतः ।
तत्रावलोकयेद् वृक्षान् ग्राह्याग्राह्यं तु यत्नितः (?यत्नतः) ॥
चन्दनं चन्दनं चैव सालं निम्बार्जुनं मतम् ।
पनसं श्रीफलं चैव रक्तचन्दन शिंशपा ॥
तिन्दुसा काम-खदिरा पीयासालं तथैव च ।
सरलं देवदारू च ये चान्ये सारमध्यगाः ॥
निर्दोषा ग्रन्थिहीनाश्च हीरकोटरवर्जिताः ।
उषरे वार्त्मिके जाता चिते जाता यदोक्षिताः ॥
वर्ज्या ह्येते तथान्येऽपि चान्यदोषसमन्विताः ।
सुपरीक्ष्य द्रुं चादौ सुदृढं व्याधिवर्जितम् ॥
तस्याधस्तात् समं कृत्वा भूमिं यत्नेन लेपयेत् ।
जपनं तत्र कुर्वीत यथायोग्यं दुरार्थिभिः ।
द्रुमं वस्त्रेण संच्छाद्य होमं कुर्यात्तु शक्तितः ।
दिग्बलिञ्च ततो दद्यात् श्रावयेत् स्थानवासिनः ॥
ॐ श्रोनिकेतनमस्तुस्तुभ्यं (?) देवद्रुष्टवनस्पते ।
संक्रमान्युदितः स्थानाङ्गुणवद्यन्मनोरमम् ॥

अनया श्राचणविद्यया (?) गन्धपुष्पधूपबलिम्
दद्यात् संक्रामितो भवति ।
चरुभुक् सम्यक् सन्नद्धः स्वपेद् वै प्राग्विधानतः ।
ॐ श्रीँ ह्रीँ ह्रूँ वौषट् । स्वप्नमाणवकः ।
कथेत् स्वप्नं प्रभाते तु पूर्ववद्विधिना प्रिये ।
तीक्ष्णायसमयं गृह्य कुठारं चास्त्रमन्वितम् ॥
घृताक्तं मृत्युजिन्मन्त्रैर्मुखं तस्य तु मन्त्रयेत् ।
आदौ सुचिह्नितं कृत्वा वक्त्रांगं शिरःपादकम् ॥
अधः शिरोर्द्धं पादं स्याद्यतः पादप उच्यते ।
प्रासादस्य यथा द्वारं तथा चक्रं प्रकल्पयेत् ॥
प्रागीशोत्तरतः पात्यः सौम्यकर्मफलार्थिभिः ।
पतने शयनं पूर्वं कृत्वा मन्त्रेण देशिकः ।
ॐ नमः शिवाय नमो नमः ।
सा याश्रयाय स्वाहा पतने शयने विद्या ।
शाखाच्छेदे कृते पश्चादस्त्रैर्भागविकल्पना ॥
कर्मशालां च आनीते आकारकरणं भवेत् ।
अव्यक्तं वा प्रकर्त्तव्यं व्यक्ताव्यक्तं तथैव च ॥
पूर्ववच्च विधानेन स्थिरमेतत् प्रकीर्तितम् ।
व्यक्तं वाथ प्रकर्त्तव्यं लक्षणं रुद्रपूर्वकम् ॥
द्विविधं तत् समाख्यातं द्वारहस्तकृतात्मना ।
द्वारमानैः प्रकर्त्तव्यं त्रिविधं तत्र लक्षणम् ॥
प्रासादस्याधमं द्वारं वसुभागकृतोच्छ्रयम् ।
भागमेकं परित्यज्य पुनः शेषं त्रिधा कुरु ॥
एकं पीठगतं कृत्वा द्विभागे प्रतिमा भवेत् ।
कन्यसैषा समाख्याता मध्यमा शृणु साम्प्रतम् ॥
वामाद्यैर्भाजितं द्वारं भागं त्यज्य पुनस्त्रिधा ।
भागैकेन भवेत् पीठं द्विभागात् प्रतिमोच्यते ॥
प्रासादस्योत्तमं द्वारं गुणवद्भाजयेत् समम् ।
एकं पीठगतं कृत्वा द्विभागे प्रतिमा भवेत् ॥
ज्येष्ठा सैव समाख्याता करमान तथोच्यते ।

मलान्तरगते सूर्ये ये दृष्टास्रसरेणवः ।
रेण्वष्टधाविक्रेतु अणुरष्ट विधीयते ।
केशाग्रं तु तदष्टाभिः केशाग्रै स्तेस्तुलीक्षकम् ।
लीक्षाष्टौ तु भवेत् यका यूकाष्टकं यवं विदुः ।
यवाष्टौ चांगुलं देवि ह्ययात्तत् कलोच्यते ।
षष्टकलाभिवितस्तिं वै तद्वयात् करलक्षणम् ।
तेन मानेन या संख्या करमानस्तदुच्यते ।
सामान्यै तद्विनिर्दिष्टं करमानमतोऽन्यथा ।
स्वैः स्वैः ज्येष्ठाङ्गुलं देवि चतुर्विंशे तु हस्तकम् ।
एकहस्तात् समारभ्य नवान्तं यावगोचरम् ।
लिङ्गवन्मानमध्वानां तद्वत् संख्या प्रकीर्त्तिता ।
महाप्रतिममन्यच्च त्रिधा देवि यथा शृणु ।
त्रिपञ्चकरसंख्यातं महाप्रतिमकन्यसम् ।
त्रिदशानां करैर्देवि महाप्रतिम मध्यमम् ।
नवपञ्चभि पिण्डैन महाज्येष्ठमुदाहृतम् ।
एकांगुलात् समारभ्य यावत् तद् द्वादशांगुलम् ।
गृहे तत् पूजयेत् भद्रे उर्द्धं प्रासादगं भवेत् ।
द्वारमाने तु यद्रूपं करमानान् पूजोपि वा ।
तेषां यत् दीर्घमानं स्याद् विभज्य नवभागिका ।
षण्णेत्रं तु भवेत्तालं पर्यायं तस्य चोच्यते ।
तालं मुखं वितस्तिं च प्रादेशार्द्धं करैव च ।
अङ्गुलादिवितस्त्यं तैः प्रमाणाद्यमिहोच्यते ।
नेत्रयुक्तालमुकुटं किरीटिनं चैतद्विना ।
हस्तार्द्धं वदनं भद्रे द्विनेत्रं गल उच्यते ।
हत्तालेन तथा नाभि मुष्कान्तं तालनाभितः ।
कलान्वितं द्वितालं स्यादूरूजंघे मुखद्वये ।
तेन होने च कर्त्तव्ये जानुपाली द्विनेत्रके ।
गुल्फौ कलाद्वये कुर्यात् पादौ स्यात् सप्तगोलकौ ।
यवाधिकौ विनिर्दिष्टौ दीर्घमानं प्रकीर्त्तितम् ।
सजूटं तद्विना तेन नवतालं पादौ विना ।

मुखं त्रिभाजिकं कल्प्यं ललाट घ्राणचक्रम्।
द्वौ द्वौ गोलकमानेन दीर्घत्वेन तु सुन्दरि।
त्रिधा तिर्यक ललाटं स्याच्चतुरंगुलमानतः।
अपांगान्ते स्थितौ कर्णौ खल्वयातौ द्विगोलकौ।
दीर्घत्वेन तदर्द्धं स्यात् तिर्य्यग्मानं प्रकल्पयेत्।
द्वियवंशष्कुली तस्य तद्वर्त्तिं प्रकल्पयेत्।
यवाष्टकौ च उद्रकौ तस्यार्द्धं ककुभौ भवेत्।
पाशौ द्विगोलकाकारौ प्रकृतिस्थावुदाहृतौ।
सालंकारौ तु पाशौ स्याद्यद्वच्छातोऽनुरूपतः।
ललाटे च भ्रुवोर्मानं तिर्यग्दैर्घ्यात् त्रिरङ्गुलम्।
तदनन्तरं कलार्द्धं स्यात् मूले स्थूले यवद्वयम्।
सार्द्धं यवार्द्धं च नयेदग्रं धनुर्यथा।
द्वयङ्गुलोच्छ्रयनासाग्रं पार्श्वौ च सयवौ भवेत्।
निष्पाविद्यालिवद्वावाह्यौ पुटौ तारकविस्तृतौ॥
पुटान्ते द्वार्द्धं दीर्घ च चापार्द्धं सदृशे शुभे।
क्रमाद्धीनाग्रवंसां न नासा भ्रूवान्तगोचरम् (?)।
तारकार्द्धार्द्धमानेन मूले तारं तु निम्नकम्।
तिर्यग्दैर्घ्याक्षिणी कार्ये नेत्रवच्चार्द्धं विस्तृते।
तारावत्तारकं देवि ज्योतिवज्योतिरूच्यते।
यवार्द्धार्द्धार्द्धं गारेखा तस्याप्यर्द्धाधगाभवेत्।
मीनोदरवक्त्रे कार्ये तदग्रे च यवाग्रवत्।
यवमूले च मूलस्यात् त्रयक्षं तरलतारकम्।
मण्डलं तु कपोलाभ्यां समन्ताच्चतुरंगुलम्।
गण्डोन्नतं प्रकर्त्तव्यं सयवं तारकमेव च।
हनुपट्टं गुलं दैर्घ्ये गोलकं चायामम् भवेत्।
अंगुलेन स्मृतो गर्त्तो गोजो तलार्द्धमंगुले।
अधः संज्ञा च तस्यैव नेत्रार्द्धं चाधरं विदुः।
रेखा तस्यैव कर्त्तव्या यवार्द्धेन तु सुन्दरि।
अर्द्धांगुलोत्तरौष्ठं तु यववक्त्रस्य रेखया।
तदनन्तरं द्वियवं भद्रे सत्कर्णे च तथा यवम्।

चतुरंगुलं तु विस्तारं तिर्यग्वक्त्रं प्रकीर्त्तितम्।
ऊर्द्ध गोज्ञी तु नासाधो द्वियवं चार्द्ध विस्तृतम्।
तुर्यसूत्रनिपातेन तिर्यग्मानेन वक्त्रकम्।
प्रथमं केशसूत्रं तु द्वितीयं वंश उच्यते।
नासासूत्रं तृतीयं तु चतुर्थं चिबुरुच्यते।
ऊर्द्ध तद्वत् प्रकर्त्तव्यं कर्णौ चापांगयोरपि।
भ्रूसन्धौ चिबुनासाग्रे पञ्चमं ब्रह्मसूत्रकम्।
केशिनं वा शिरोमानं कर्णान्तं तु कलाष्टकम्।
केशसूत्रावदुर्यावन्नवनेत्रं विधीयते।
मुखमेवंविधं सौम्यं शरीरावयवं शृणु।
चिबुद्वन्नाभिमुष्कान्तं सूत्रं कृत्वा तु मध्यतः।
ककुनीस्तनकौसी च सूत्रद्वयं प्रसाधयेत्।
कक्षौ कटौ तथा द्वे च पञ्चसंख्योर्द्ध गा स्थिता।
शिखरौ स्तनौ द्वन्मध्ये नाभौ कटौ प्रसारयेत्।
तिर्यक्सूत्रं तथाभूतं कुपरौ च कलाधिके।
जानुगे च तथा गुल्फः पादाग्रे मूलस्तथा।
समसूत्रा समस्येदं प्रत्यावयवमुच्यते।
ग्रीवायार्द्ध करोनाहस्तस्यार्द्ध कं स्कन्धयोर्वहिः।
स्कन्धकक्षान्तरेनाहो वसुगोलकमानतः।
अष्टनेत्रौ स्मृतौ बाहू षण्णेत्रं बाहुमूलतः।
रुद्रवदंगुलैर्मध्ये पंक्तिवदग्रतो भवेत्।
उपबाहुस्मृतौ दीर्घौ नवनेत्र प्रमाणतः।
गोलकार्द्ध भवेत् संधिस्तिर्यग्मानविवर्जितः।
तस्माच्चैवोपबाहुस्तु तिर्यक् पश्चाद्वयंगुलो (?) भवेत्।
मूले नेत्रान्तरं भूयो मुनियवस्तुर्यांगुलम्।
गोलकैकान्तरं ह्येकं यवह्रासां नयेत् क्रमात्।
अग्रबाहुस्तथातिर्यक् चतुरंगुलको भवेत्।
कलाप्येकांगुलं सन्धिर्नाह स्त्रिगुण सर्वतः
उपबाहुः समाख्यातः करौ सम्यग्निबोध मे।
मणिबन्धात्तालदैर्घ्य कर चांगुलसप्तकम्।

तिर्यग्मध्यं गुलं पञ्च मूलेभूतयवान्वितम् ।
रसांगुलोर्द्धं तश्चैव विस्तरं परिकल्पयेत् ।
मध्यमायास्त्वंगुलं पञ्च दीर्घमानं प्रकीर्त्तितम् ।
अनामा तर्जनी चैव सार्द्धे वै चतुरंगुले ।
कनिष्ठांगुष्टके चैव सार्द्धांगुल त्रये समे ।
तर्जन्याधः स्मृतोंगुष्ठो गोलकान्तरमानतः ।
देशिनी पूर्वगं यावदुच्छ्रितं तत् प्रकल्पयेत् ।
मध्यमायास्तु यन्मूलं द्वियवं ग्रन्थिरूच्यते ।
त्रियवोनं कला पर्व मध्यग्रन्थिपर्व द्वयम् ।
तुर्यं नूनं कला भद्रे मध्यपर्वं प्रकल्पयेत् ।
यवां सं चोर्द्धगं ग्रन्थि अंसोनं रुद्रचोर्द्धगं ।
तर्जन्यनामिके ग्रन्थिमूले यवसमं भवेत् ।
यवद्वादशकं पर्व मूले चैव प्रकल्पयेत् ।
यवसार्द्धे भवेद् ग्रन्थिस्तस्योर्द्धं वरवर्णिनि ।
यवैकादशकं सार्द्धं मध्यपर्व विनिर्दिशेत् ।
यवोर्द्धे चोर्द्धगो ग्रन्थि अंसूनं दशचोर्द्धगम् ।
कन्यसायास्तु यो ग्रन्थिर्यववन्मूलमध्यगः ।
यवार्द्धो चोर्द्धगो ग्रन्थिपर्वमूलं यवग्रहैः ।
वसुवन्मध्यपर्वस्तु सार्द्धस्तस्योर्द्धगो भवेत् ।
अंगुष्ठस्य तु यो ग्रन्थिर्मूले यवचतुष्टयम् ।
यवैकादशकः पर्व प्रथमो सः प्रकीर्त्तितः ।
यवस्तस्य प्रकर्त्तव्यो द्वितीयो ग्रन्थिश्चोर्द्धगं ।
तस्योर्द्धगस्तु यः पर्वो यवद्वादशको भवेत् ।
मध्यमायास्तु यः पर्वो मूले त्रिगुणवेष्टनः ।
मध्यपर्वो यवूनस्तु त्रिगुणं वेष्टनं भवेत् ।
द्वियवूनं ग्रीवं कृत्वा चोर्द्धगोन्नाहो कीर्त्तितः ।
अनामा तर्जनीमूले त्रिगुणोन्नाहः पूर्ववत् ।
मध्ये तद्वद्भवेदुन्नाहः किं तु स्याद्यूकवर्जितः ।
द्वियवूनो भवेदुन्नाहस्त्रिगुनश्चोर्द्धपर्वगः ।
कन्यामूले उन्नाहः स्यात् पूर्ववत् त्रिगुणो भवेत् ।

द्विलीक्षनो भवेदुन्नाहस्त्रिगुणो मध्यपर्वगः।
चतुर्लीक्षूनोर्द्धगो यः पर्वस्त्रिगुणवेष्टः।
अंगुष्ठस्य तु यन्मूले त्रिकला वेष्टनं भवेत्।
द्विकलो मध्यपर्वे तु ततोर्द्धे द्वियवाधिकम्।
यवूनं द्वियवूनं च क्रमोर्द्धं वेष्टनं भवेत्।
ऊर्द्धपर्वार्द्धगान् देवि नखान् सर्वत्र कल्पयेत्।
मूलनिम्नान्नखाः सर्वे मध्योन्नतारुणप्रभाः।
अयोतीक्ष्णासिता सर्वे लक्षं वै शोभनं यथा।
एकेनापिहिसिद्धेन द्वितीयो वाहु सिद्धयति।
कन्ठं कूर्यातदधस्तान्तु चुबुकौ ऋतुगोलकौ।
किञ्चित्तिर्यग्गतौ तौ च वामदक्षिणयोरपि।
तदूर्द्धे चिकलौ कक्षौ किञ्चित्तिर्यग्गतौ समौ।
ऊर्द्धं तालसमं देवि मध्यसूत्राग्निगोलकम्।
द्वियवौ मण्डलौ तौ तु यवमात्रौ मध्यचवुकौ।
हृत्सूत्राच्चुबुकौर्द्धं तु द्विकलार्द्धांगुलं भवेत्।
स्तनोधस्तंयगुलं भवेद् तिर्यग्धृन्मूलगोचरम् (?)।
कक्षसूत्रावधिर्यावत् पार्श्वौ त्रिकलौ भवेत्।
हृदिरभ्यन्तरे सूत्रं कृत्वा मानं च कल्पयेत्।
तस्योर्द्धं त्रिकलं विद्यादधस्तात् त्रिकलं कुरु।
मध्याद्भूतांगुलं तिर्यक्स्तनसूत्रान्तगोचरे।
तस्मात् कक्षान्तरं तद्वदूभयोः पार्श्वयोरपि।
नाभौ तिर्यग्मध्यसूत्रात साद्धं भूतांगुलं प्रिये।
पुनस्तद्वद् भवत्युक्षौ (?) कक्षरेखावसानतः।
तस्योर्द्धे द्विकलं मानं मध्यसूत्रावधिर्भवेत्।
हृत्सूत्रादधस्तद्वदुभयोः संप्रकल्पयेत्।
निम्नमध्यं यथा लक्षं नान्यथा च तनूदरः।
नाभिमुष्कान्तरे सूत्रं कृत्वा तिर्यक् प्रकल्पयेत्।
त्रिकलं त्रिकलं मानं द्वौ कक्षौ कठिविस्तरौ।
नाभिः प्रदक्षिणावर्त्ता यवं साद्धं भ्रमाद्भवेत्।
नितम्बस्थौ तु वृषणौ द्वयंगुलं दीर्घमिष्यते।

वेष्टनं द्विकलं तस्य लिङ्गो दीर्घो द्विगोलकम्।
त्रिकलं वेष्टनं तस्य अग्रो द्विगोलकम्।
तालमानं भवेदूरू मलदेशे तु विस्तरम्।
तस्याधो रविवह्न्याज्यो यावज्जान्वन्तगोचरम्।
मूलादर्द्धांगुलं त्यज्य भागे भागे प्रकल्पयेत्।
तावद् यावद् भवेदग्रे गोलकत्रयमेवहि।
सर्वं तन्त्रिगुणोन्नाहं तिर्यक्पाली द्विगोलिका।
सन्धिरेकांगुला तत्र वेष्टनं रुद्रगोलकैः।
तस्याधस्तात् कलापंक्ति नाहो जंघा प्रकीर्त्तितः।
मध्ये सूर्यकला नाहस्तस्याधो दशभाजितम्।
एकैकमंगुलं त्यक्तो नाहश्चात्र परस्परम्।
तावद्यावन्नयेदग्रं यावत् स्यात् सप्तगोलकम्।
पादं मध्ये भवेत् तिर्यक् सांगुलं द्विकलं पुनः।
त्रिकलं चाग्रपादे तु पार्ष्णिका द्विकलं बुधः।
पार्ष्णिगुल्फान्तराश्चैव द्विकलं तद्वदेवहि।
स एव त्रंयगुलोंगुष्ठस्तद्धीना देशिनी भवेत्।
रसयवकला मध्यानिर्नामो विंशतिर्यवैः।
यवाष्टादशकैः कन्या दीर्घमानमुदाहृतम्।
पञ्चांगुलैर्भवेन्नाहो मूलांगुष्ठे ततोर्द्धतः।
षडंगुलं पुनः पञ्चलक्षं सर्वं शिरो यथा।
देशिनी त्रंयगुलो नाहो मूलमध्ये यथा कला।
पुनश्चोर्द्धं त्रंयगुलो नाहो शेषान्यान् शृणु साम्प्रतम्।
तर्जन्यष्टांशहीनस्तु मध्यमानाह कीर्त्तितः।
मध्यादष्टाङ्गहीनश्च निर्नामानाह उच्यते।
अनामाष्टांश हीनस्तु कन्यानाहं प्रकल्पयेत्।
मूलनिम्ननखाः सर्वे मध्योन्नतारुणप्रभाः।
मुखोन्नतशिता कार्या लक्षशोभा यथा भवेत्।
शिरोनाहो भवेत्तस्य नेत्राष्टादशकेन तु।
पञ्चविंशतिभिर्नेत्रैरुरः संवेष्टनं भवेत्।
एक विंशतिभिर्नेत्रैस्तदधो वेष्टनं च यत्।

त्रयोविंशकला नाहो तस्याधश्चतुर्विंशकः ।
पञ्चाशददंगुलो नाहः कटिस्याच्छोभनं यथा ।
सूत्रैः सूत्रसमां कृत्वा यथास्थानसमीपगाः ।
करवीरौ तु पुटौ तुल्यौ ज्योतीसृक्कणिरेव च ।
ककुनी चबुकौ तद्वत् समसूत्रमुदाहृतौ ।
प्रतिमाया प्रसन्नाया लक्षणं तदुदाहृतम् ।
विषमायान्यथा देवि विषमं सूत्रकल्पना ।
स्थानकेन विनिर्दिष्टा सायुधा धनुमादितः ।
आसनस्था च पद्माद्या दण्डान्ता सुतिर्यंगाः ।
विकृता क्रूरवेताला कुब्जा विभ्रान्तविक्रमाः ।
नाट्यारम्भस्थिता चान्या यथाशयहेतुतः ।
एवमाद्यास्त्वन्येकाश्च दीर्घहस्वा कृशातुराः ।
विषमास्ता विनिर्दिष्टा यास्त्वन्याद्धं समासमाः ।
स्त्रियारूपं प्रवक्ष्यामि लक्षलक्षणयोरपि ।
तस्या दैर्घ्यात् कलां गृह्य ऊर्द्धाद्धैर्घ्यान्तथैव च ।
कटिस्थं कल्पयेन्नाहं जघने विस्तरे यतः ।
मध्यदैर्घ्यत् कलां गृह्य तिर्यंगेकांगुलं यथा ।
स्तनौ द्वौ कल्पयेद् वृत्तौ समन्ताच्चतुरंगुलौ ।
कन्टकूर्पाधो यन्मानं तयो गृह्यांगुलांगुलम् ।
इषुयवौ मण्डलौ तौ स्तियवौ मध्यचूबुकौ ।
हनुभ्यां मूलदेशे तु पृथुला गृह्य चांगुलम् ।
तद्द्विधाभाज्यन्यस्तव्यं ललाटे चक्रदीर्घता ।
नासोन्नताद् यवं चैकं गृह्य भ्रूर्युग्मयो न्यसेत् ।
मूलस्थौल्याश्चकं देवि परतः पूर्ववद्यथा ।
गण्डोन्नताच्च दत्वशं गृह्यातं (?) नेत्रयो न्यसेत् ।
दैर्घ्यात् तदर्द्धं विस्तारं कर्णौ लवांशगोलकौ ।
तत् पृथुत्वात् च संगृह्य स्वभावस्थोदितो मया ।
भूषणोत्तानं तन्मानं तु घोण्यास्तस्तनो नवा (?) ।
ललाटं तुर्यभाज्ये तिर्यक कर्णान्तगोचरे ।
कचसूत्रायतं कार्यं तत् प्रमाणान्न संशयः ।

स्कन्धौ हीनौ प्रकर्त्तव्यौ गोलकार्द्धेन नान्यथा ।
वाहो दैर्घ्यात् कलां गृह्यस्फिचौ (?) वृत्तस्यकारणम् ।
ग्रीवार्द्धगोलकार्द्धीना पृथुस्त्वा दीर्घतो न्यसेत् ।
प्रवाहुकान्तथा गृह्य दैर्घ्यं गोलकमानतः ।
ऊर्ध्वोरर्द्धांगुलं न्यस्य जानुनी च तथैव च ।
पृथुत्वान्धमिदं न्यस्य यवोनं वार्द्धमंगुलम् ।
पादौ चोर्द्धौ प्रकर्त्तव्यौ अंगुलार्द्धेन सुन्दरि ।
तलपादौ समौ कार्यौ पार्ष्णीगुल्फौ तथैव च ।
अंगुलीनां खनाहान्तु गृह्याष्टांशं च सुन्दरि ।
दीर्घत्वेन न्यसेत् प्राज्ञः करयोस्तद्वदेवहि ।
शेषमन्यं यथोद्दिष्टं लक्षणं प्राक्प्रचोदितम् ।
लक्षं च संप्रवक्ष्यामि स्त्रीमाणे च यथा भवेत् ।
किञ्चित् ततो भवेत् स्कन्धौ सुमध्या च कृशोदरी ।
सुकपोला सुनासा च सुप्रसन्ना मृदुत्वचा ।
अलकावर्तससंयुक्ता विम्बोष्ठादधरा शुभा ।
किञ्चिदारक्ततरला विशाला नेत्रयुक्ष्मला ।
नितम्बे किंकिणीभार लालना ललनालसा ॥

[The text is corrupt in many places. I have not tried to introduce any correction. Except in some places the sense can be correctly made out]

ART FROM THE POINT OF VIEW OF THE ARTIST

by CHAITANYADEV CHATTOPADHYAYA

Art may be known in two ways ; the one way is that of the artist, the other is that of the spectator. The enjoyment of the spectator proceeds from merely seeing, the artist enjoys in creating. The difference between the giver and the recipient which exists in ordinary life is also present in respect of these two kinds of men, the artist and the spectator. This difference has wholly vanished in modern times, specially in our country. This is the most serious problem of contemporary Indian art.

In every age, only very few persons possess creative genius. Artists are at all times a minority as compared with the number of spectators. But, for this very reason, in matters concerning art it is the artist's opinion which should always be accepted, because art or creation of beauty is the highest and most difficult activity in life and not all are capable of such kind of work.

The function of the artist is to endow life with a new form, to transform his fellowmen, to put before this world full of conflict and contention a signal of release, to proclaim to it a message of assurance and joy : to present to it the beautiful pattern of life, strong and enduring, fierce and serene.

One who is merely a spectator and derives his highest joy in beholding the beauty of a work produced by an artist, who knows nothing of the how and why of the creation of beauty, who never felt impelled to artistic activity by any kind of original impulse, whose only reaction to art is a passive sensation of pleasure—if the taste of such a man prevail in art then we must think that art has really fallen on evil days. In the present-day art of our country it is the taste of the spectator that is prevailing.

That is the reason why a kind of spurious art has become current

today ; sheer fashionableness is being practised in the name of art. Through the tyranny and hackneyed taste of these commonplace so-called lovers of art, art is degenerating into an article of drawing-room furniture. We see that modern artists are at a loss in a maze of views and opinions ; this is the most serious disaster in the sphere of art. Modern artists, estranged from the traditions of India, in their effort to conceal the gaps in their training and the imperfections of their education are running after the crowd who have even less sense of beauty and feeling ; they are eager to establish themselves by advertisements and by a loud appeal to the vexed, dispossessed, self-deceived mass of this age with their vulgar and undeveloped instincts ; that is why a kind of superior affectation and showy style are so prominent in modern Indian art.

It is because art is judged from the spectator's point of view that the aim of philosophy, of religion, of nationalism, of history and of science—all this has passed for the aim of art. Artists nowadays in India are gratifying the absurd whims of so-called scholars, and readers of ancient history and poetry. In short, one of the many reasons which have romanticised the art of today in our country is the practice of appreciating art from the view-point of the spectator.

Like the human body, civilisation has its health and disorders as well. The highest skill and strength of a people, the nobler tendencies of its art come to an expression when its life has not weakened being subject to unnatural conditions. It is then that a sense of vigour, naturalness and certitude born from an accepted scale of values by the people and by the artist become manifest in art.

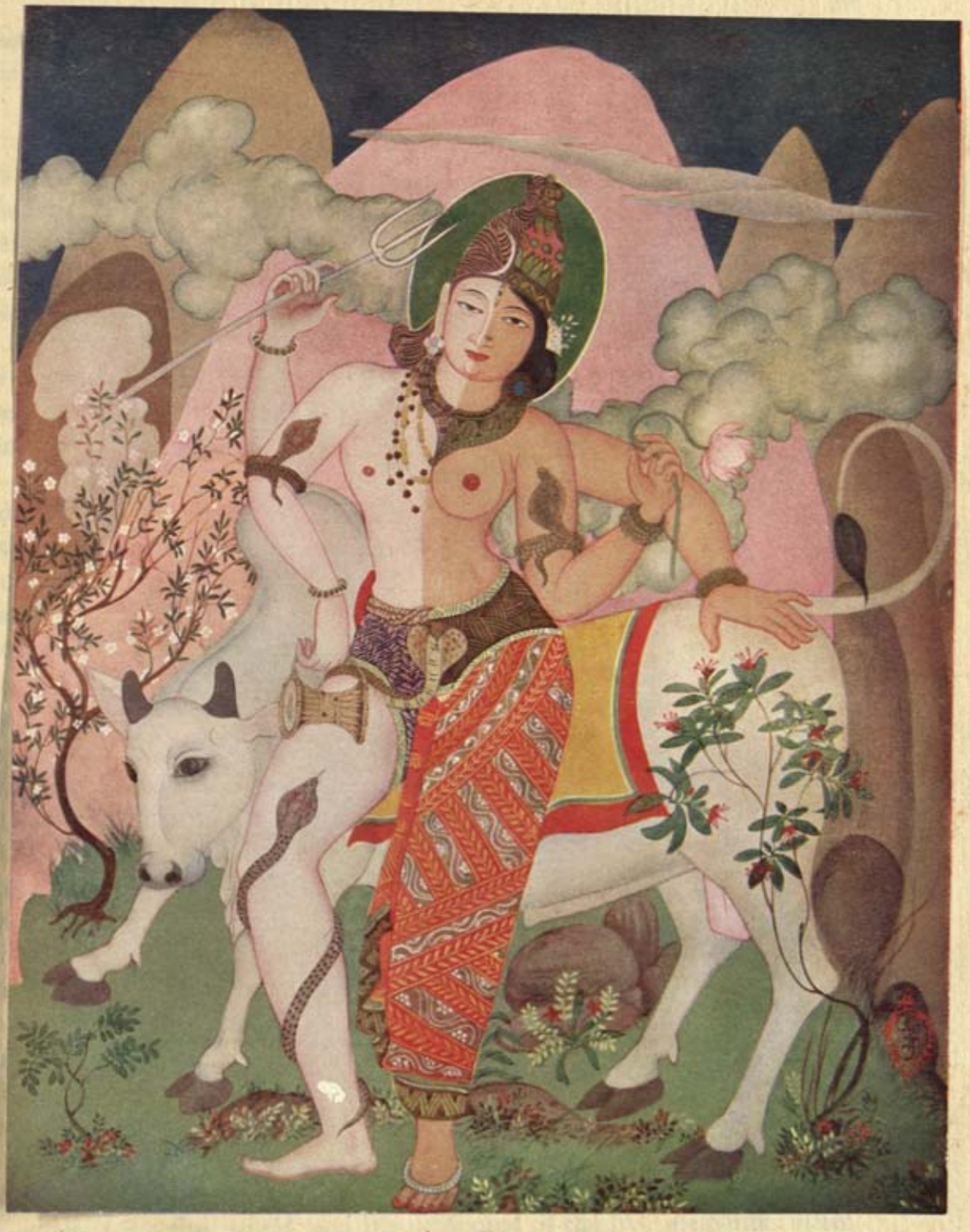
There was a time in our country when the highest skill and ability of our people were represented in art. The Vedas, ancient Indian paintings, architecture and sculpture, the Hindu temples and Buddhist monasteries—all are examples of a consistent and noble art. To realize the divinity in life and its transforming power, this is the fundamental aspiration and knowledge of the artist. The non-existence of this kind of aspiration and knowledge is the remarkable feature of modern art in this country.

The kind of romantic art or the representation of sentimentalism current as they are today in India are symptoms of disorder. In certain pathological states the present appears to be extremely painful ; the mind

does not feel contented with that which is and so creates in its afflicted fantasy the unreal or the remote. By this kind of romantic art or representation of sentimentalism we mean the illusion created by an emphasis on false realities charged with emotions in disorder. Such imagination or creative impulse does not indicate health ; it rather suggests poverty of feeling and resentment at being deprived of the abundance of life.

We had deviated from the tradition and current of the higher forms of our art and had been obliged to live in the dark for quite a long period of time. The advent of Abanindranath Tagore in the first decade of the twentieth century and the revival he brought about of Indian arts and crafts mark the dawn of a new morning. This event may also be regarded as a clear sign of our desire to regain our integrity. In this first decade of the history of the art of 'young India', in this twilight of a new morning, we find in the works of our artists a desire of exploration, but also a mistiness spread over scenes drawn from nature, and one can see signs of groping in uncertainty in their execution of shapes and forms. It is like the slow, dragging walk of a convalescent depending on his stick, or like the first attempt at walking of a baby, its swaying movements, its uncertain footsteps. A sense of want of ease due to lack of habit is also evident. For this reason the first chapter of modern Indian art is emotional or romantic. Due to the predominance of this groping character and incertitude, this kind of art is not self contained ; it has also a strong literary flavour.

The functions of one kind of art have been imposed upon art of another kind. There is nothing surprising in this as it was an age of self-exploration. In the case of Abanindranath who had been reared in the midst of plenty and was endowed with an extremely sensitive, luxurious mind, it is but natural that his art should be influenced by the desires and passions, manners and customs of men of a past culture, specially because at that time there was no current standard of great art in our country. Unnaturalness, imitation and vulgarity were the prevailing forces in his social surroundings. For this reason he had to forsake the present and turn toward the past. He had to enter through the help of books into a very remote, prehistoric or mythologic world and take his joy there. If for once, by means of literature, entrance into this world is achieved one believes that one can paint with new colours,



dream of an even more remote world and one can also disregard, as some of his pupils did, the fulness and beauty of life on the pretext of good taste.

The paintings of Abanindranath in the first and middle periods of his career are re-creations of a dream-picture of Moghul and Rajput life derived from books, illustrations of the Arabian Nights or Omar Khaiyyam. Influences of ancient and mediaeval literature, novels, lyrics, mythology, history, etc., are evident in them. The wondrous beauty that is in the form of the men and women around us today as ever, this we scarcely come across in the paintings of the school of Abanindranath Tagore.

It is the nature of romantic art to represent a beauty which is exotic and remote as conceived by a mind nourished upon the study of literature or other modes of expression. In the classification of art, Abanindranath, the founder of the art of 'young India' will be recognised as a romantic artist.

If we regard the advent of Abanindranath as the sprouting of the seed of modern Indian art, then the great responsibility of nurturing this seedling and rearing it into a tree must rest on the artists who succeeded him. To discharge this responsibility, contemporary artists must at the outset forsake the current fashion of regarding art from the spectator's stand-point. Artists would have to remember that art is a means of realisation of the ultimate Self ; it is the form of our approach. Like hermits they must be preoccupied in purifying their selves. They must do what artists had been doing all these ages, i. e. achieving perfection in some technique of art and mastering it fully.

To artists the staple of art is body, form and shape. Beauty is not perceptible to the eye without a body, a form, a shape. Until the vision of a thinker or an artist attains a definite, limited and beautiful form or body, it cannot be regarded as art. On the other hand, a copy of forms and shapes of ordinary and natural life cannot be called art. Art is that presentation of life and the world which is begotten of a happy union of the mind of the artist with that of nature and the entire universe. His extra-ordinarines remains in his execution, his skill and technique. Upon the just combination of skill or technique and the clarity of mind depends the expression of the uniqueness and beauty of form of all works of art, architecture, sculpture, music, painting, etc. Hence in order to understand art fully we will have to judge three principal factors : (1) the artist, (2) the world and life composed of the five elements : ether,

air, fire, water and earth and endowed with a visible form, and (3) the warm union of the two and the resulting internal and external reactions of the artist.

However much we may ask as to who is the creator of the world, we receive one answer : the creator is non-existent to the physical eye or invisible. The same is the answer with regard to our body—there is no artist who made it and who could be named. Yet art is manifest in it. But from the representation of art we can very easily conclude that some one called an artist must be existent. In solving any problem of art our chief consideration is the primordial Being which constitutes the artist in his art ; we must then consider what type of man the artist is and how many types of artists there are in this heterogeneous multitude of human beings and also in what proportion is the form and quality of art dependant on the growth and make-up of the mind and body of the artist.

We call a man an artist who possess great skill and ability, who is calm, tranquil and fearless and is able to solve all kinds of complex problems ; who with excellent skill can present a simple, beatific and charming form before a terrified and vexed humanity shackled with the fetters of life and death. In short, religion, philosophy, literature, science, ethics are all one and the same voice of assurance for man and express the artistic impulse, the impulse of the acceptance of life. That is to say the artist has a transparent personality so that one can easily see through him. The artist has a distinctive point of view from which vantage-ground all the forces and fundamental elements, all the pristine impulses of nature may be observed as well as the variety of religions, philosophies and ethics may be studied and their real nature comprehended.

The artist is an exponent of abundant, expansive power (śakti). He feels an inundation of energy in his mind and just as to a child play is good, so to the artist the superfluous and the playful are good. This play of the artist is as it were the child-likeness on the part of the creator.

Whatever object of the world the artist lays his hand upon becomes beautiful.

To call an object beautiful or non-beautiful is to approve or disapprove of it, to ascribe one's sense of values to it, to project upon it the fulness and love of life in one's own mind.

The artist's outlook on life is normal, so too are the activities of his mind and body ; his personal notion of good and evil is also normal. Normality means living and acting in conformity with the laws of the universe. To understand the import of the term 'artist' we must realise his difference from the common or sub-normal man. This difference is included in the term 'rūpabheda' or distinctive form used in the aesthetics of our country.

The majority of the people in the world constitute an average type ; they are bound by social and temporal conditions ; owing to their ignorance and lack of realisation they are accustomed to accept the modes of life derived from others to be divinely ordained ; they are more in favour of the preservation, than of the knowledge of life. Their common outlook is crude, opaque, roughly suited for working purposes ; it has not at all any sense of certitude ; it is wholly deficient in a conception of good and evil. The common mass are victims of conflicting impulses and qualities of their character ; their will-power and passion being weak they are not strong enough to influence others ; it is their nature to be led by others. To them the artist appears to be a citizen of a topsy-turvy world ; so that in order to judge of the good and the bad in art, it is incumbent upon us to have a clear knowledge of our work and our inner and outer activities.

The primary element in art is Rasa[1]. It is difficult to explain or describe Rasa. Its function is to rouse an ideal feeling of energy in our mind. This impulse of inspiration first appears in the mind of the artist at an auspicious moment and carries him away and makes him play whether he be willing or not, and either obliges him to dream or intoxicates him with an overflow of emotion. For this reason there is a two-fold expression of art : the one as if dreaming, a vision of subtle splendour ; and the other a dancing, rhythmic expression. The nature of this world composed of the five elements has rhythmic and dancing qualities. The primordial and original impulse (hladinī śakti) is called the energy of the joy of inspiration which apppearing in the mind of the artist charges

1. Rasa means Sap, cf. the French 'savoir', the Latin 'sapientia'.

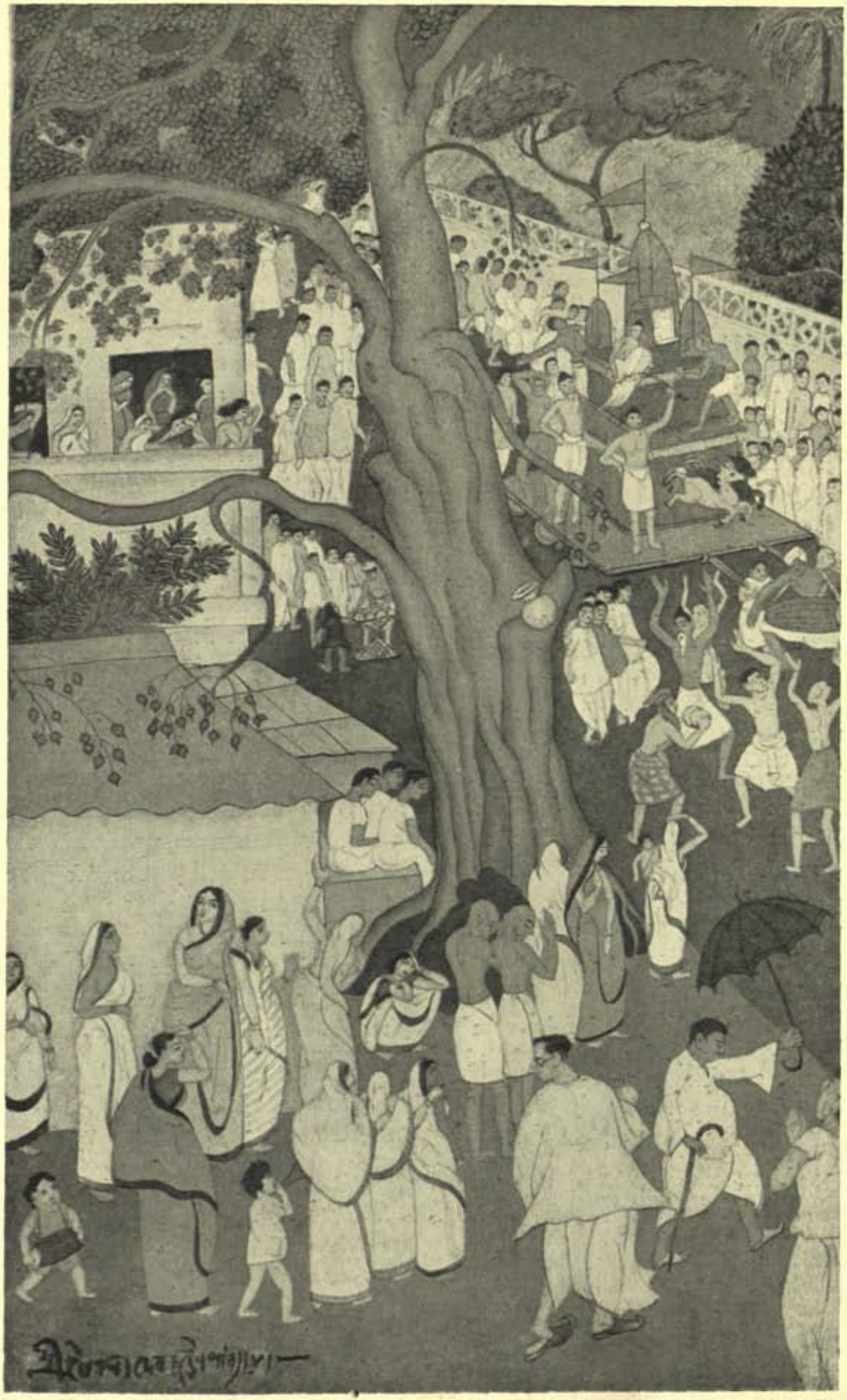
his nerves and his senses with a kind of activity never felt heretofore, and endows all his functions with Rasa and rhythm.

But though there is a certain difference between a state of dream and a state of fine frenzy, both of them release the various creative forces in our mind. The splendour of vision gives us imagination, the power of inventing similes and metaphors, the power of producing poetry; frenzy begets out of our passion music and dance. The primal sexual impulse of the average man belongs to the category of wild dance; yet even in his visions or dreams there is no lack of sexual impulse. The difference betwen these two states is one of degree only. There are certain states of frenzy in which there is a kind of peaceful tranquillity, there is felt an alteration of the sense of space and time. In all the great works of art in the world are found the qualities of serenity and simplicity due to concentration and the highest awareness of causality and there come into play in an ordered manner the noblest faculties of the mind and its inspirational energy. Such art is potent with calm activity and has a consciousness of the Real and knows no weariness.

The state of fine frenzy and the strongest resurgence of this energy are felt in the spring. In such an eternal spring the artist has his being. Beauty, adornment and grace are the realisation of a vow performed, an integration of the inner consciousness, a co-ordination of the strongest instincts, a stable equilibrium;—the simplification of logic and geometry is also a resultant of this enhanced energy. On the other hand, the mere sight of this simplification and strength is apt to give rise to in the spectator's mind of a sense of enhanced energy.

Ugliness means lack of this feeling; it indicates infirmity attaching to a creative act, opposition or a false co-ordination of impulses, feeble will, i. e. a lack of the power of integration.

That state of delight which we have designated as frenzy is the realisation of inspired energy, a state of consciousness when the sense of time and space undergoes a change; when an impossible distance can be traversed by the eye and it is only at this time that very remote objects come within the range of sight; one's vision is spread out over a large field; the sense which perceives the minutest can penetrate the heart of illusion; the power to fathom the depth by means of a



small indication, the faculty of understanding, become awake and the latent divine energy is roused. The onset of this inspirational energy makes itself felt in the quickening of the nerves, in changeableness and love of change, in delight of the self and in a love of perilous adventure without any fear.

Every genuine artist is a man of strong and sublimated desires, with abundant energy, virile and passionate. Our presiding god of beauty, Paśupati, Śiva, Lord of the 'animals', the souls in bondage, appears seated upon a bull.

The creation of poetry or painting, music or any other achievement of man's effort is in a way allied to procreation. Chastity is a consideration of the artist or the religious aspirant because all creative impulse suffers diminution through an excessive procreative activity.

It is not the function of the artist to portray a thing as it actually is in nature ; he should paint it stronger, simpler and fuller than it is for a kind of eternal youthfulness, and abiding intoxication are distinctive characteristics of his life. In them it has its simplicity and steadiness.

If in the future we would like to surpass the whirl of passions, vulgarity and sentimentalism, if life and art are to attain nobler qualities then we must realise that a peaceful tranquillity, simplicity and severity are always indissolubly associated with noble taste. The prime conditions of the ideal expressions of art is that there must be purity, animation of the rational faculties, equilibrium of the three inner qualities (guṇa), concentration, and an aversion to all kind of sentimentality, evasion, excessive decoration, external prettiness and showiness. Artists must live a life which would reflect the sublime forms created by art. Like the simplification of logic the beauty of great art is associated with strength which is the blending of the sublimity of the deity with the magnitude of the demon ; this is severely simple. Such art abjures all exaggeration of details, complexity and indistinctness.

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Pl. I. ARDHANĀRĪŚVARA by Chaitanyadev Chattopadhyaya. (Kindly lent by U. P. Mookerjee)
Pl. II. RATHAYĀTRĀ by Chaitanyadev Chattopadhyaya.

THE 32 SCIENCES AND THE 64 ARTS

by DURGĀDATTA TRIPĀTHĪ

Looking at the programme of study in ancient India we can realise how complete and comprehensive is the scope of traditional sciences. Much material about sciences and arts can be found in the Epics such as the Rāmāyaṇa and the Mahābhārata, in the mythological books, the Purāṇas, and in poetical works. A brief classification of them is given by Śukrācārya in his 'Nītisāra'. Although theoretically sciences and arts are innumerable, thirty-two prominent sciences (vijñāna) and sixty-four prominent arts (kalā) are generally classified. Śukrācārya defines the difference between a science (vidyā) and an art (kalā) saying : "that which can be entirely explained with the help of words is a science, while that which even a dumb man can do is an art."

यद् यत् स्याद् वाचिकं सम्यक् कर्म विद्याभिसंज्ञकम् ।
शक्तो मूकोऽपि यत् कर्त्तुं कलासंज्ञन्तु तत् स्मृतम् ॥

THE THIRTY TWO SCIENCES

The thirty two sciences are as follows :

'Primordial Knowledge' (Veda) is conveyed through four different forms : (1) metres (Ṛk), (2) substance (Yajus), (3) sound (Sāma) and (4) subtle correspondences (Atharva).

Corresponding to these four different forms are four 'applied aspects of Primordial Knowledge', the Upavedas : (5) 'Knowledge of Longevity' (i. e. Medicine, Āyurveda) ; (6) Knowledge of weapons' (Military art, Dhanurveda) ; (7) 'Knowledge of the Heavenly songs' (Music, Gandharva Veda) ; and (8) 'Knowledge of the Natural laws' (i. e. Magic, Tantra).

There are six appendices of Primordial Knowledge (Vedāṅga) :

(9) Śikṣā, recitation ; (10) Kalpa, ritual ; (11) Vyākaraṇa, philology and grammar ; (12) Nirukta, symbolic etymologies ; (13) Chanda, poetical metres ; and (14) Jyotiṣa, astrology.

There are six orthodox 'points of view on the doctrine' (darśana) : (15) Mīmāṃsā (or Pūrva-Mīmāṃsā) 'the primary scholastic point of view', interprets Knowledge (Veda) as a guide to ritual action ; (16) Nyāya, logic ; (17) Sāṅkhya, (Numbers), the cosmological point of view, studies the twenty-five 'forms of existence' (tattva) ; (18) Vedānta (the End of Knowledge), the metaphysical interpretation of the Vedas ; (19) Yoga (Identification), the point of view of re-integration, i.e. the actual realization of the metaphysical definitions of Vedānta ; (20) Vaiśeṣika (Study of the particular), the naturalistic (or "scientific") point of view.

(21) Itihāsa ('As it happened'), the Epics ; (22) Purāṇa (the ancient books), mythological books (there are eighteen Purāṇas) ; (23) Smṛti ('Remembered'), traditional moral code and legislation ; (24) Nāstika-mata (the opinion "nothing else is"), anti-traditional philosophies ; (25) Artha śāstra (the rules of wealth), economics-politics ; (26) Kāma śāstra (the rules of lust), erotics ; (27) Śilpa śāstra (the rules of building, etc.), architecture and the arts ; (28) Kāvya : Poetics ; (29) Deśa bhāṣā (Local languages), living languages ; (30) Avasarokti : ready made answers to philosophical difficulties ; (31) Yavana mata (Ionian philosophy), foreign philosophies. ; (32) Deśādi dharma, local and familial religions and rites.

The Vedas are divided into two parts :

One 'Hermetic part,' the Saṃhitā, and a 'Sacerdotal part', the Brāhmaṇa.

A. In the Hermetic part, the Saṃhitā, are collected the rhythmic-formulae, the 'mantras' used in 'japa' (repetition of mantras, or rosary) and also in 'homa' (ritual oblations), 'pūjana' (worship), and other rituals by which deities can be propitiated.

B. In the Sacerdotal part, the Brāhmaṇa, is explained the use of mantras and the technique of their employment.

1. The 'Knowledge of Metres', the Ṛg Veda, is the Veda in which is collected the greatest number of Hermetic-rhythmic-formulae (mantra) in verse form, the rhythm (chanda) mostly used being the Gāyatrī metre. These rhythmic-formulae are used mostly in ritual sacrifices (yajñya), and for oblation (hautra).

2. In the 'Knowledge of Substance', the Yajur Veda, are found sequences of rhythmic-formulae, but without regular metre. These are uttered by the Adhvaryu (the priest who performs the sacrificial preparatory rites).

3. The 'Knowledge of Sound' (Sāma Veda) is made of rhythmic-formulae in the shape of hymns chanted for certain rituals. During the sacrifices these are sung by the chanter and other attendants.

4. The "Knowledge of Subtle correspondences' (Atharva Veda) is that part of or the Primordial Knowledge in which are found the mantras by which deities can be evoked. Its name is also sometimes given as Atharvāṅgirasa. These four aspects of Primordial Knowledge, the four Vedas, are considered eternal, without beginning, supra-human, and self-proven.

These four Vedas are divided into many branches, many of which are now lost, the only valid transmission of which is oral transmission.

. . .

For each of the four Knowledges (Veda) there is an 'applied Knowledge', an Upaveda. The 'Knowledge of Longevity' (i.e. the Āyurveda, or medical science) is the applied aspect of the Knowledge of Metres, i.e. the Upaveda of Ṛgveda. In it are described the symptoms of diseases, their cause and their cure. The man who regulates his habits according to the rules of this science remains healthy and sees the length of his life increased. Hence its name Āyurveda, "the knowledge of long life".

The 'Knowledge of weapons', Dhanurveda, or military art, is the applied aspect of the Knowledge of substance, i.e. the Upaveda of Yajurveda. Here are explained the various possibilities for the making of arms and projectiles, the means for throwing them, and all the kinds of war tactics.

The 'Knowledge of Heavenly songs', the Gandharva Veda, is the applied aspect of the Knowledge of Sound, i.e. the Upaveda of Sāma-Veda. In it are given the rules for producing the seven notes, Ṣaḍja (C), Ṛṣabha (D), etc., either on string instruments (vīṇā) or vocally, in their three possible relative positions, higher (udatta), lower (anudatta) or 'in one pitch' (svarita), following regulated rhythms.

The 'Knowledge of [natural] laws', Tantra, is the applied aspect of the 'Knowledge of subtle correspondences', i.e. the Upaveda of Atharva Veda. It gives the rhythmic formulae (mantra) by which many sorts of subtle entities may be worshipped ; it explains the benefits to be obtained from these beings, the rites to be used to worship them or to drive them away ; it explains also how to obtain and how to counteract the six magical powers : death-dealing, creating discord, instigating discouragement, hypnotizing (bringing under one's control), petrifying (rendering unconscious and insentient) and appeasing.

* * *

The six appendices of the Primordial Knowledge (Vedāṅga) are :

1. Recitation (Śikṣā), which deals with the method of reciting, with internal as well as external control, according to the difference of pitch (raised, lowered, etc.), of rhythm (fast, slow, etc.), and of place (gutturals, palatals, etc.). By Śikṣā is also meant the teaching and transmission of the sacred books. The Śikṣās are found in each Veda and are of many kinds and in great number ; they are called 'the organ of smelling' of Knowledge (Veda).

2. Kalpa, ritual, is of two kinds : one heard, or primordial (śrauta) is part of the Primordial Knowledge, the Veda, and the other revealed, or traditional (smārta), is based upon the later Revelation, the Smṛti.

The 'Primordial Ritual' (śrauta kalpa) explains the technique for the performance of the ritual described in the Sacerdotal part of Veda, the Brāhmaṇa. The 'Traditional Ritual' (smārta kalpa) describes the rites of sacraments (saṃskāra), the investiture of the sacred thread for example. All the branches of this Traditional Ritual are separated in different Sūtras ; these are called 'the hands (the organ of touch)' of Knowledge (Veda).

3. Vyākaraṇa, grammar, explains the use of words according to differences of roots (dhātu), suffixes (pratyaya), euphonic coalition (sandhi), compound words (samāsa), gender (liṅga), etc.. On this basis we can find out whether words are correctly used (śuddhi) or incorrectly (aśuddhi). In ritual utterance, it is essential to know which words are correct and which incorrect. Grammar is the mouth, 'the organ of speech', of Knowledge.

In ancient times there were several grammars current under the names of Aindra, Candra, Kāśakṛtsna, etc., but now the names alone remain ; only the grammar of Pāṇini is in use.

4. Nirukta, symbolic etymology, gives the etymology of words, and analyses the significance of their different elements. In Nirukta, sentences are collected and classified according to their meaning. It explains the symbolic meaning of Vedic words. It is therefore called the 'ear' of Knowledge (Veda). Formerly there were several Niruktas but now only that of Yāskācārya is available.

5. Chanda, the science of Rhythms, gives us, under the form of axioms, the principles of poetical composition according to the different syllabic feet such as Ma-gaṇa (3 longs), etc. It distinguishes two kinds of metres : Vedic metres such as Gāyatrī, and profane metres such as Āryā.

Rhythms, Chandas, are called the 'feet' of Knowledge (Veda), the most important of the books of Chanda is the Piṅgalakṛta sūtra.

6. Jyotiṣa, or astrology, with the help of the 'Hermetic part of Veda' (Saṃhitā), of observations about the rising of zodiacal signs, and of calculation, determines, from the position of constellations and planets, the different periods of time. Because it gives the knowledge of time with the help of the 'lunar houses' (jyoti) it is called Jyotiṣa. The exact knowledge of time is indispensable for the performance of sacrifices and other rites. This science is thus called the 'eyes' of Knowledge (Veda). The most famous book on the 'astrological appendix of Primordial Knowledge' (Jyotiṣa Vedāṅga) is that written by Lagadhācārya.

* * *

The six 'philosophical systems', or 'points of view' (darśana) from which the traditional doctrine can be approached, are :

1. Mīmāṃsā, 'the first scholastic point of view' which tells us how to interpret the meaning of the text of Veda through the critical methods of apurva (no precedent), niyama (choice of an alternative), parisaṅkhyā (limitation to what is expressly enumerated or mentioned), arthavāda (illustrations not to be taken literally) and other methods of criticism. This Mīmāṃsā is also called Pūrva Mīmāṃsā, or First Mīmāṃsā, and, without its help, it is not possible to establish the coherence between certain

passages of the Vedas. Its great exponent was Jaimini, the disciple of Vedavyāsa Bādarāyaṇa, and the author of the "Athāto Dharmajijñāsā" and other sūtras on the scholastical science. Śabara Swāmī made the commentary to these sūtras, and among other exponents of this science, was Kumārila Bhaṭṭa.

2. Nyāya, Logic, discusses, with the help of deduction and 'means of proofs' (tangible, etc.), the fact of Existence in its six aspects, substance (dravya), quality (guṇa), action (karma), generality (sāmānya), particular (viśeṣa), and correlation (samavāya), as well as non-existence (abhāva). In Logic (Nyāya) are utilized two different methods, one of which is called Logic proper, the other Naturalism (Vaiśeṣika), but, since the difference is relatively small between these two methods, Śukrācārya includes them both in Logic. The great exponent of Logic was Gautama, and that of Vaiśeṣika was Kaṇāḍa.

According to Logic, final realization can be achieved through knowledge of the sixteen 'elements of existence' (tattva), the means of proof (pramāṇa) and the objects of proofs. Kaṇāḍa admits the possibility of liberation through knowledge of the six aspects : substance (dravya), quality (guṇa), etc.. Gautama accepts four means of proofs, i.e. direct perception (pratyakṣa), inference (anumāna), analogy (upamāna) and word (śabda) ; but Kaṇāḍa, accepting only two kinds of proofs, direct perception and inference, says that the others are implied in them.

According to Gautama, among the fifteen 'elements of existence' (tattva) twelve are demonstrable (prameya) ; these are : self (ātman), body (śarīra), senses (indriya), aim (artha, i.e. viṣaya, purpose), intellect (buddhi), mind (manas), inclination (pravṛtti), defect (doṣa) condition after death (pretya bhāva), result (phala), pain (duḥkha), and final beatitude (apavarga).

Kaṇāḍa recognizes, besides the six aspects of existence enumerated above, a seventh stage which is non-existence (abhāva). Among these :

substance (dravya) is of nine kinds : Earth, Water, Fire, Air, Ether, Time (kāla), Space (diśa), Self (ātmā), and Intellect (buddhi).

Qualities (guṇa) are twenty-four ; shape, taste, smell, touch, number (saṅkhyā), dimension (parimāṇa), difference, unity, fraction, proximity (paratva), opposition (aparatva), superiority (gurutva), velocity (dravatva),

body, word, intellect, pleasure, pain, desire, enmity, effort, 'conformity to eternal law' (dharma), and 'divergence from eternal law' (adharma).

Action (karma) is of five kinds : throwing up (utkṣepaṇa), throwing down (avakṣepaṇa), contraction (ākuñcana), expansion (prasāraṇa), displacement (gamana).

Generality (sāmānya) is of two kinds : beyond (para), or not-beyond (apara) according as to whether its limit can be perceived or not.

There is no end of the particular (viśeṣa). Correlation (samavāya) is only one.

Non-existence (abhāva) is of four kinds ; non-existence in the past (prāgabhāva), non-existence by annihilation (pradhvaṃsābhāva), non-existence in something else (anyonyābhāva), and absolute non-existence at all times (atyantābhāva).

3. Sāṅkhya (numbers) studies, from the cosmological point of view, the twenty-five 'principles of existence' (tattva). It is so called because it considers these elements as limited in number. Its chief exponent was Kapila who, in his Sāṅkhya-sūtras, exposed its principles. He considers the aim of human life (puruṣārtha) to be complete detachment from suffering, which can be either spiritual (ādhyātmika), supernatural (ādhidaivika) or physical (ādhibhautika).

The twenty-five 'principles of existence' are, according to Sāṅkhya :

1. 'Supreme Person' (Puruṣa), or the principle in opposition to Prakṛti, Nature. Puruṣa, ever unchanging, is neither the evolver of anything nor evolved from anything.

2. From Root Nature (Mūla Prakṛti) are manifested in hierarchy :

3. The 'first principle of existence', Mahat tattva. i.e. Universal Intellect (समष्टि बुद्धि),

4. The 'principle of individual existence' (Ahaṃkāra).

5-9. The Tanmātras, the five spheres of perception, speech (śabda) touch (sparśa), shape (rūpa), taste (rasa), smell (gandha).

10-14 And from them five distinct perceived aspects of the universe, or elements (mahābhūta) called Ether, Air, Fire, Water and Earth.

To these corespond :

15-19. Five organs of action : vocal organ, hands, feet, sex, anus.

20-24. And five organs of perception : ear, skin, eye, tongue, nose.

25. Mind.

The Sāṅkhya reconizes three means of proof : perception, inference, and word.

The metaphysical 'End of Knowledge' (Vedānta) recognizes only one true reality, the Principle, the Brahman, envisaged as an immense (bṛhat) shape of Truth-Consciousness-Bliss, either one in kind or multiple in kind (sajātīya, vijātīya). It describes it as self moving (svagata), pervading all kinds (sarva-vidha), undifferentiated (bheda-rahita) ,non-dual (advaita), eternal (nitya), and supreme (niratiśaya).

In comparison with the Brahman, all the universe is mere appearance, belief in it being the effect of Illusion (Māyā) in the guise of Ignorance, (avidyā). By Ignorance only does the world appear real, like the rope which appears to be snake.

ब्रह्मैकमद्वितीयं स्यन्नाना नेहास्ति किञ्चन ।
मायिकं सर्वमज्ञानाज्ज्ञाति वेदान्तिनां मतम् ॥

"The Principle is one without second, there is here no sort of multiplicity. In the opinion of the metaphysicians (Vedāntin) all is illusory and appears merely by Ignorance."

The chief exponent of Vedānta is ever the All Powerful, the Universal refuge (Nārāyaṇa), the Pervader Viṣṇu. Among written treatises the Vedānta sūtra of the Arch-seer Bādarāyaṇa is the most celebrated.

Yoga details the means necessary to control the inclinations of the mental (citta). The inclinations of the inner faculties (antaḥkāraṇa) controlled through the observance of certain restrictions (yama), observances (niyama), sitting postures (āsana), respiratory control (prāṇāyāma), emptying the mind from external objects (pratyāhāra), then concentrating it (dhāraṇā), maintaining it concentrated (dhyāna), and dissolving it into the object of its concentration (saṃādhi).

The five restrictions (yama) are : non-violence (ahiṃsā), truth (satya), non-stealing (asteya), chastity (brahmācāryya) and renunciation (aparigraha).

The five observances (niyama) are : purification (śauca), contentment (santoṣa), penance (tapasyā), study (svadhyāya), Divine contemplation (Īśvara-praṇidhāna). The sitting postures (āsana)

are many: padmāsana (lotus posture), svastika-āsana (svastika posture) etc.

Respiratory control (prāṇāyāma) has also many ways corresponding to differences in the rhythm of inhaling, exhaling, and holding the breath.

In the state of identification (samādhi), Supreme Person and Nature (Puruṣa and Prakṛti) being perceived as separate, dealings with Nature (Prakṛti) can be stopped, and, thus liberation (mukti) realized.

By the realization of Yoga, the eight magical powers (siddhi) can be obtained : e. g. becoming very small (aṇimā), etc., and through these extraordinary things can be done. But these magical powers are obstacles on the path of supreme power ; and wise men are not entrapped by their seeming brilliance, and concentrate all their efforts on the realization of the supreme power : final liberation (mokṣa). To practice yoga from books, without understanding perfectly or without the help of a responsible guide (guru), is extremely dangerous.

1. The Epics (Itihāsa), such as the Mahābhārata, the Rāmāśvamedha, etc., while relating the story of some king or hero, unfold the history and the knowledge of ancient ages.

2. The Ancient Books (Purāṇas), the books of mythology, follow Itihāsa. The Purāṇas mainly describe the formation (sarga) and desagregation (pratisarga) of the Universe, the genealogies, the cyclic periods (manvantara), each corresponding to the rule of one Manu, the story of the great dynasties (vaṇśānucarita).

The names of the eighteen Purāṇas and their respective number of stanzas (ślokas), according to the Brahmavaivarta Purāṇa are as follows ;

Brahmā Purāṇa	10,000	Brahmavaivarta Purāṇa	18,000
Padma Purāṇa	59,000	Liṅga Purāṇa	11,000
Viṣṇu Purāṇa	23,000	Varāha Purāṇa	24,000
Śiva Purāṇa	24,000	Skanda Purāṇa	81,000
Śrīmadbhāgavata Purāṇa	18,000	Vāmana Purāṇa	10,000
Nārada Purāṇa	25,000	Kūrma Purāṇa	17,000
Mārkaṅḍeya Purāṇa	9,000	Matsya Purāṇa	18,000
Agni Purāṇa	15,400	Garuḍa Purāṇa	19,000
Bhaviṣya Purāṇa	14,500	Brahmāṇḍa Purāṇa	12,000

The Devībhāgavata is considered by some to be one of the Purāṇas in the place of the Śrīmadbhāgavata.

The total number of stanzas is 432, 900.

Besides the main eighteen Purāṇas, are many Upapurāṇas (secondary Purāṇas) composed by the Arch-seers (ṛṣi).

The names of the Upapurāṇas are : Sanatkumāra, Narasinha, Brihannāradīya, Śiva or Śivadharma, Durvāsana, Kāpila, Mānava, Auśanasa, Vāruṇa, Kālikā, Sāmba, Nandikeśvara, Saura, Pārāśara, Āditya, Brahmāṇḍa, Māheśvara, Bhāgavata, Vāsiṣṭha, Kaurma, Bhārgava, Ādi, Mudgala, Kalki, Devī, Mahābhāgavata, Bṛhaddharma, Parānanda and Paśupati.

Modern scholars have as yet paid little attention to the Purāṇas ; they have often been spoken of as meaningless tall stories. Yet they are a very rich source of information regarding social regulations, history and civilization. The English scholar Pargiter has made some attempts in this direction, but because of a wrong approach, his efforts brought no result.

In the Smṛtis, the traditional moral codes, are explained the rules of life for the priestly (Brāhmaṇa), warrior (Kṣatriya), trader (Vaiśya) and working (Śūdra) class and other secondary castes, and duties during the four stages of life : celibate student, householder, hermit, and Sannyāsi, in conformity to the rules laid down by the Vedas. In the Smṛtis is also included Arthaśāstra or the traditional economics and politics.

To decide questions of duty or morals, the authority of the Smṛti comes directly after that of the Veda. There are many Smṛtis but the twenty chief ones are : Manu, Atri, Hārīta, Yājñavalkya, Uśanā, Aṅgirā, Yama, Āpastamba, Sanvarta, Kātyāyana, Bṛhaspati, Parāśara, Vyāsa, Śaṅkha, Likhita, Dakṣa, Gautama, Śātātapa and Vaśiṣṭha.

Next comes Nāstika Mata, "heterodox philosophy". Here predominance is given to reason. In opposition to all orthodox philosophy this system does not recognize the existence of God, nor Knowledge (Veda) as the origin of the world. It considers everything to be natural (svābhāvika) ; it believes that everything, of its own accord, becomes what it is. It is Manu who defines as heterodox (nāstika) those who reject the existence of Primordial Knowledge (Veda) नास्तिको वेद निन्दकः "An heterodox is he who denies Veda". His point of view is that knowledge of Divinity, of evil and good, heaven and hell, is obtained from the Primordial Knowledge, the Veda. Only from Primordial Tradition (Veda) or from Later Revelation (Smṛti) and other such

scripture as are based upon Veda, can we get proof, tangible or by inference of the existence of Divinity. This implies that one who denies the existence of a Primordial Tradition, Veda, can, logically, have no belief in God or in other worlds. Other names for this point of view are atheism, philosophy of Cārvāka, materialism (lokāyatika), etc.

Heterodox philosophy accepts only direct perception as a means of proof. It recognizes only four elements, earth, air fire and water. Just as the wild fig kept for some time by itself ferments and becomes intoxicant, so the body, mixture of earth and other elements, develops the power of consciousness. The self (ātman) is the union of the body with consciousness ; independently of the body there is nothing named self. Death is liberation. The aim of human existence (puruṣārtha) is comfort and pleasure. Modern western civilization is an example of Śūdra philosophy put into practice. In the culture of ancient times, the study of heterodox philosophy was considered an essential ; its chief exponent is Bṛhaspati.

Arthaśāstra, the rules of wealth, comes next. There it is explained how a king should manage his affairs and his kingdom without being in opposition with the rules of Vedas and Smṛtis. In it are also described the proper ways of administration of wealth. Thus both politics and economics enter into this science.

Kāmaśāstra, the rules of lust, comes next. The Erotic science differentiates between the various types of men classified as the hare-type, deer-type, horse-type, elephant-type, etc., and, according to type, their differences as lovers : faithless, deceitful, etc. It likewise gives the difference between types of women, lotus-type, (Padminī), artistic type (Citriṇī), mother of pearl-type (Śaṅkhinī), and elephant-type (Hastinī), and their qualities as mistress, as one's own wife, as another's wife, as loose woman, etc. Such subjects as mutual affection, etc., are also described. The rule of lust, Kāmaśāstra, can help us greatly to understand the psychology of men and women.

The rules of building, Śilpa śāstra, come next. This science defines the ways of building and repairing palaces, forts, houses, gardens, wells, reservoirs, tanks, etc. Civil engineering is also included and the art of making images (mūrti kalā), so that both architecture and sculpture come into this scripture. Its peculiarity is that it also describes the

influence of the buildings on their inhabitants, according to the ways they are built and their proportions. A few books of this Śāstra exist, but it is a matter of regret that, as a rule hardly any one studies them.

Kāvya, poetics, is the combination of sound and meaning to express emotions (rasa) such as love, etc. (there are nine rasas), embellished with ornaments such as rhyme and comparison (upamā), and void of defects, such as harshness.

The aim of the institution of poetry is not only to charm for a moment or gain renown, but also :

काव्यं यशसेऽर्थं कृते व्यवहारविदे शिवेतरक्षतये ।
सद्यः परनिर्वृतये कान्तासम्मिततयोपदेशयुजे ॥

"poetry [helps] to acquire fame and riches, to know how to behave, to suppress ill-luck, to please quickly, to teach as does a lovely woman".

The ancient poets of India have gathered an immense and unparallelled collection of stories of great deeds in the literary as well as the popular languages, deeds which brought to the sensitive hearts of those ancient days storms of emotion and which, were they properly retold, would still have a profound effect.

The science of living languages (deśabhāṣā) or dialects (daiśikī), follows. This science deals with the words used by the various inhabitants of different countries.

Avasarokti, the art of ready made answers comes next. According to the definitions of the dictionary and other authoritative books, this art explains which words can be used in each circumstance to express one's meaning with perfect clarity. It is of great value in teaching ; very learned people even are sometimes unable to find correct answers quickly to difficult questions. This helps them greatly.

Yavanamata, barbarian (Ionian) philosophy, is next defined in the following way :

ईश्वरः कारणं यत्राद्यश्योऽस्ति जगतः सदा, श्रुतिस्मृती विना धर्माधर्मौ स्तस्तच्च यावनम्, श्रुत्यादि-भिन्न धर्मोस्ति यत्र तद्यावनंमतम् ।

"Where Divinity is not seen as the cause, the world is considered permanent. Where without Vedas or Smṛtis good and bad is discussed, these are the barbarians. Where there are moral laws different

from those of the Primordial Traditions (Veda) these are the barbarian philosophies".

These philosophies, while they do not assert, like Cārvāka, that the world has no cause, and accept the idea of God, believe him as unknown and unknowable ; furthermore, while believing in morals they do not accept the Vedas and Smṛtis as the moral guides ; and thus these philosophies teach religious forms in opposition to those taught by the Vedas. These are called barbarian philosophies, or the philosophies of the Ionians (Yavanas), their most characteristic school.

The word Yavana is later often used in the sense of 'foreign' ; but many believe that Yavana originally meant Ionian, and refers to the Ionians (Yunanians), the ancient Greeks.

Deśādidharma, popular religions and rites, is finally named by Śukrācārya as the thirty-second science. Its object is described as follows :

कल्पित श्रुतिमूलो वाऽमूलो लोकैधृ तः सदा ।
देशादि धर्मः सर्वे यो देशे देशे कुले कुले ॥

"That which is at all times believed by people whether on the basis of traditional scriptures or without scripture, this is popular religion ; it is known to exist in all sorts of countries and among all sorts of races".

We must understand by 'popular religions and rites' those religious practices which appear to have been in use from time immemorial in different countries, families and castes, whether they be based on the Primordial Knowledge (Veda) or later Revelations (Smṛti) and other scriptures, or not.

These vary not only with country and race but even with family, caste, etc.. Much importance is attached to the observance of these customary morals. Full of doubts on the outcome of war, the fair Arjuna, troubled, asked the Dark Lord, Kṛṣṇa :

दोषैरेतैः कुलघ्नानां वर्णसंकरकारकैः । उत्साद्यन्ते जाति धर्माः कुलधर्माश्च शाश्वताः ॥ उत्सन्न कुलधर्माणां मनुष्याणां जनार्दन । नरके नियतं वासो भवतीत्यनुशुश्रुम ॥

"From these faults which lead to the mixture of castes, the family virtue and the caste virtue of these family-destroyers is destroyed. O Tormentor of men (Janārdana) ! I have heard that those men whose family virtues have been destroyed dwell in Hell for ever".

Manu, Yājñavalkya, and others, strongly warned the kings, that should a king impose his rule upon any other country,

यस्मिन्देशे य आचारो व्यवहारः कुल स्थितिः । तथैव परिपाल्योऽसौ यदा वशमुपागतः ॥

"One should, while ruling a country which has come in one's power, respect the morals, customs and family system prevalent in that country". Whatever may be the religion and customs, the family and caste regulations of the vanquished country at that time, the king should respect them when he establishes his rule.

Thus have been related in detail the thirty-two sciences. We shall now summarily describe the sixty-four arts.

THE SIXTY-FOUR ARTS

According to the Śukranīti, as has been said before, the number of arts (kalā) is unlimited ; their very names cannot be counted. But, among them, sixty-four are more prominent and a short account of them will be given here.

In his commentary on Vātsyāyana's 'Kāmasūtra', Jayamaṅgala describes two kinds of arts or crafts : first, those which are related to the art of love and its scriptures, and secondly, those related to magic (tantra). In each of them there are sixty-four arts or crafts, some of which are common to both kinds, while others differ.

Of the arts of love, twenty-four are related to action ; twenty connected with gambling ; sixteen with the management of sexual pleasures ; and four are higher arts, making a total of sixty-four main arts. Other minor arts of which the description is available number five hundred and eighteen in all.

Of the crafts related to magic (tantra), there are likewise sixty-four in common use. Śrīdhāra Svāmī, in his commentary on the Bhāgavata-Purāṇa has also enumerated these crafts, and some of the crafts described by Śukrācārya in his 'Nītisāra' coincide with those given among the arts of love.

We shall first give the names of the arts and crafts as enumerated in the commentary of Jayamaṅgala and, afterwards, give a brief description of them according to their order in the Śukranītisāra.

The arts according to Jayamangala are as follows :

1. Singing गीत
2. Playing of instruments वाद्य
3. Dancing नृत्य
4. Painting आलेख्य
5. Making of printing blocks or the cutting out of shapes, in paper, or leaves for applying sandal paste to the forehead विशेषकछेद्य
6. Drawing ritual and symbolic figures on the ground with coloured rice or barley, and flowers in all sorts of patterns तण्डुल कुसुमावलि विकार
7. Flower carpets पुष्पास्तरण
8. Colouring the teeth, clothes and parts of the body दशनवसनाङ्गराग
9. Jewelling of the floor (some part of the flooring of a house is set with pearls and jewels) मणि भूमिका कर्म
10. Arranging couches शयन रचन
11. Playing of music on water bowls उदक वाद्य
12. Battle of water ; throwing water at each other by hand or with syringes उदकाघात
13. Witchcraft on images ; the preparation of many different things or drugs, to use with spells to weaken one's enemy and to harm him चित्राश्च योगाः
14. Composing of flower garlands माल्य ग्रथन कि कल्प
15. Head-ornament of flowers (for women) शेखरका पीड़योजन
16. Costume ; the decoration of the body with cloth, ornaments, flowers, etc. नेपथ्य प्रयोग
17. Ear ornaments in mother of pearl, ivory, etc. कर्ण पत्र भङ्ग
18. Perfumery, preparation of scented incense गन्ध युक्ति
19. Jewel making भूषण योजन
20. Illusionism ऐन्द्र जाल
21. Preparation of aphrodisiac drugs कौचुमार योग
22. Dexterity of hand ; precision in handwork हस्त लाघव
23. Vegetable cooking ; the process of preparing vegetables, jams, syrups, sweets विचित्रशाकयपभक्ष्यविकार क्रिया
24. Preparing drinks, sherbets, alcoholic drinks, etc. पानकरसरा गासव-योजन
25. Needle-work (including fringe-making and knitting) सूचीवान कर्म
26. String play (marionette play) सूत्र क्रीड़ा

27. Drum-lute (vīṇā-ḍamaru) playing वीणा डमरु वाद्य
28. Riddles प्रहेलिका
29. Diction प्रतिमाला
30. Difficult pronounciations ; the reading of verses whose meanings and pronounciation are both difficult दुर्वाचक योग
31. Reading aloud (पुस्तक वाचन)
32. Visualizing the narrative of a drama नाटकाख्यायिका दर्शन
33. Completing problems of rhyme काव्य समस्या पूरण
34. Vannery ; the weaving of leaves, grasses, rattan cane, etc. into mats, stools, chairs, beds पट्टिका वेत्र वान विकल्प
35. Sculpture ; carving wood, stone, chiselling metal, etc. तक्षकर्म
36. Wood work ; carpentry तक्षण
37. Planning houses वास्तु विद्या
38. Examining precious stones or coins रूप्यरत्नपरीक्षा
39. Metallurgy ; the mixing and purifying of metals धातुवाद
40. Knowledge of the shapes and colours of precious stones, and their mining मणिरागाकार ज्ञान
41. Knowledge of medicinal trees वृक्षायुर्वेदयोग
42. Cock-fighting ; how to organize fights between frogs, partridges, cocks, etc. मेषकुक्कुटलावक युद्ध-विधि
43. Talking birds ; teaching parrots, Mainas, and other birds to talk शुक सारिका प्रलापन
44. Massaging, shampooing, the rubbing in of unguents with the help of hands and feet उत्सादन-सवाहन-केश-मर्दन-कौशल
45. Secret speech ; to speak in such ways that only those who know them can understand उक्षर मुष्टिका-कथन
46. Barbarian's deceit ; hieroglyphics or code writing म्लेच्छित विकल्प
47. Science of dialects देश भाषा-विज्ञान
48. Toy flower-chariots पुष्प शकटिका
49. Knowledge of omens निमित्त-ज्ञान
50. Principles of mechanics ; the making of all kinds of machines यन्त्र-मातृका
51. Memorizing धारण मातृका
52. Reading together संपाठ्य
53. Impromptu rhyming ; improving the rhymes missing in any verse मानसो काव्यक्रिया

54. Lexicon dictionary अभिधान कोष
55. Knowledge of poetic metres छन्दोज्ञान
56. Application of rules : knowing the use of poetic ornament क्रिया कल्प
57. Disguise ; to disguise one's forms and way of speaking छलिकत योग
58. Tailoring वस्त्रागोपन
59. All kinds of dice gambling द्यविशेष
60. Game of Domino आकर्षकीड़ा
61. Making children play बालक्रिड़नक
62. Knowledge of good manners वैनयिकी ज्ञान
63. Science of Victory ; knowing the way to be victorious, namely the science of weapons वैजयिकी ज्ञान
64. Gymnastics व्यायाम विद्या

The Arts in the Śukra-Nītisāra :

According to Śukrācārya, all the crafts have not separate names ; they can be described only by their aim, for it is the difference in practice that makes the separate arts. When an individual practises a certain craft, his caste is that of the name of his craft.

1. Dancing :

The first of all the arts is dancing नृत्य. To move with grace and expression is called dancing ; action, brilliance, magnificence, emotion, sympathy and all the moods (rasa) can be expressed in dance. Dancing is of two kinds : 'dramatic' (nṛtya)' and 'non-dramatic' (anṛtya). Representation of the actions of the inhabitants of heaven, hell and earth is called 'dramatic' dance, and without imitation it is called 'non-dramatic'.

In each season of the rains, many have seen the peacock dance enthralled by the roar of the thunder. Dance is a natural thing which, when the heart is full of joy, manifests itself outwardly, and artists give the shape of art to this natural dance by painting its innumerable expressions. In the wild society of forest tribes or in the polite society of civilized cities dance, in some form or other, is found everywhere. In ancient times the learning of this art was considered essential even for princes. The story of Arjuna in the Mahābhārata is famous : how during his concealment under the name of Bṛhannala, he taught dancing

to Uttarā, daughter of King Virāṭ. In South India, even today, this ancient art still partly survives and in Kathākali we see a reflection of it.

2. Playing of instruments : The making of all kinds of musical instruments, and knowing how to play them, is an art. There are four main types of instruments :

(a). String (तत) (b). Flutes (वसुरी) (c). Drums (अनतद्ध) and (d). Massive percussion (घन) (cymbals, gongs, bells, etc.) instruments.

(a). Instruments in which strings or wires are used are called string instruments (tata). Such are today the Vīṇā, the Tambūrā, Sāraṅgī, Belā, Sarode, etc.

(b). Instruments whose inside is hollow and in which air is used are called wind instruments (suṣira). Such are : flutes (bānsurī, alagojā), clarionets (śahnāī), the brass instruments, harmonium, conches (śaṅkha), etc.

(c). Those instruments in which parchment or leather is struck are called drums (avanaddha). Such are the Ḍhola, Nagāḍā, Mṛdaṅga, Tablā, Dafa, Khañjaḍī, etc.

(d). Those instruments played by striking one part against another are called percussion instruments (ghana). Such are cymbals (jhāñjha), rattles (mañjīrā), castanets (kartāl), etc.

This art is connected with that of singing ; without instruments, sweetness lacks in the song.

In ancient times the main instruments in India were string instruments, the Vīṇās ; mention of these is found in the most ancient Sanskrit books. Every Hindu has heard of the Vīṇā of Sarasvatī and of that of Nārada, of the flute of Sire Kṛṣṇa and of the small drum of Śiva.

There are numerous Sanskrit books on instrumental technique describing the different instruments and methods for making and repairing them.

On auspicious occasions, such as coronations, pilgrimages, festivals, marriages, initiations, etc., all kinds of instruments have been played in all times. Also in war, many varieties of instruments were used to raise the courage of the army.

3. Costume

To dress men or women with clothes and ornaments of a lovely shape is an 'art'.

4. Changing one's appearance (metamorphosis)

To appear under all sorts of different forms is an 'art'. Use of this art was made by Hanumān when, at the time of his first meeting with Rāmacandra, he took on the appearance of a Brāhmaṇa.

5. Arranging of couches

To fix couches and coverings beautifully, and to arrange flowers in all sorts of ways, is an 'art'.

6. Gambling

To entertain people by gambling and other such amusements is an 'art'. In ancient times, all kinds of gambling were practised. Amongst them the game of dice is the most famous. Nala, Yudhiṣṭhira, Śakunī, were all accomplished players.

7. Sexual enjoyment

Knowledge of sexual enjoyment through different bodily postures (āsana) is an 'art'.

A description of the above seven arts is given in the Knowledge of Celestial Music, the "Gandharva Veda".

8. Agreeable Drinks

To make liquors and wines distilled from all kinds of flowers is an 'art'.

9. Surgery

To remove pain from a thorn prick or to remove the thorn, to open the veins or to lance boils is an 'art'.

10. Cooking with aromatic substances

To cook all kinds of food with the juice of 'hing', 'asafoetida', and other aromatic plants, is an 'art'. Even such men as King Nala and Bhīmasena were proficient in it. See Mahābhārata.

11. Horticulture

The planting of trees, bamboos, creepers, to take care of trees and make them produce fruit and flowers, is an 'art'. In ancient books much is written about marvellous parks and gardens and from them we know that, even in very ancient times, this art was highly developed.

12. Metallurgy

To mine stones, gold, silver and other metals, and purify them is an 'art'.

13. Sweet making

To make all possible preparations of sugarcane-syrup, molasses, sugar loaf, crystallized sugar, powdered sugar, sugar candy, etc., is an 'art.'

14. Medicinal use of metals

To know how to mix gold and other metals with all kinds of medicinal plants is an 'art'.

15. Analytic metallurgy

To know how to separate mixed metals is an 'art'.

16. Synthetic metallurgy

The primary mixing of metals is an 'art'.

17. Salt extraction

The science of extracting salt from the sea, or from mud or other substances is an 'art'.

These ten arts are related to medicine and are therefore included in Āyurveda, the science of long-life.

18. Archery

To aim the weapon at a target and to throw it with the proper special movements of the feet or other parts of the body is an 'art'.

19. Wrestling

The fighting of two wrestlers by manœuvering the different parts of the body is an 'art'. From ancient times to this day, India has been outstanding in this art. The Dark Lord, Sire Kṛṣṇa in the court of King Kansa beat famous wrestlers like Cāṇūra and Muṣṭika. The Mahābhārata tells the story of the wrestling of Bhīmasena and Jarāsandha which lasted for several days. Fisticuffs (bāhuyuddha) is a particular form of wrestling. In this form fighters fight with no weapon of any kind save their fists alone. Śukrācārya condemns those who die in fisticuff contests : मृतस्य तस्य न स्वर्गो यशो नेहापि विद्यते । बलदर्पविनाशान्तं नियुद्धं यशसे रिपो ॥ न कस्यचिद्वि कुर्याद्वै प्राणान्तं बाहुयुद्धकम् । "For him who dies in these prize fights there is no heaven nor even fame in this world. Fight should be for the sake of glory, aiming at the destruction of the pride and strength of the adversary. One should not, in fisticuffs, fight to death."

20. Boxing : the fight where, directly or in return, a man suddenly strikes at his opponent with terrific blows of the fist delivered in many different ways, or catches him in an unguarded position, holds him there and pummels him, etc., is called 'nipiran' (making to suffer); the

protection against such 'nipiran' practised by one's opponent is called 'counter-action' (pratikriya). Hence, to protect oneself while dealing one's opponent terrific blows with the fists is an 'art'.

21. Mechanical warfare ; To throw weapons by all sorts of mechanical devices onto an objective, and to direct the strategy of the army with sound and other signals is an 'art'.

We learn from this that in ancient times weapons must have been thrown by machines, but seeing the great destruction they could cause, their use was restricted. Manu thus prohibits the making of large machines.

22. The making use in warfare of elephants, horses, chariots, etc., according to their respective speed is an 'art'. These five arts are connected with the knowledge of weapons, Dhanurveda, the applied Knowledge (Upaveda) concerned with military art.

23. Postures : (आसन) To establish favourable contacts with supernatural beings by the use of the psychic effect of different bodily postures (āsana) and finger postures (mudrā) is an 'art'.

The art of mudrās is almost lost today, most people do not even believe in it, yet few individuals who know it can still be found. In ancient times it had great renown and in many Sanskrit Tantras and Āgamas descriptions of mudrās can be found. Hypnotists are seen who make use of mudrās ; through them they induce the passage of their own will-power into the subject of their experiment.

24. Manège : To drive a chariot and to teach horses, elephants, etc., their paces is an 'art'. The study of this art was at all times considered an essential part of the education of princes. Had Arjuna not been accomplished in this art, when Duryodhana came to steal the cows of Virāṭ, how could he have offered them a contest in chariot driving ? In the Mahābhārata war, how could the Dark Lord, Sire Kṛṣṇa have driven the chariot of Arjuna, or Śalya that of Karṇa ?

25. Pot fashioning : To make pots of earth, wood, stone, brass and other metals is an 'art'.

26. Painting and Drawing : Drawing and painting was so widespread that in every part of the country, in every house, it was practised. And it is still customary to-day, almost everywhere, to have the image of Gaṇeśa or other deities painted above the lintels of houses. On the occasion

of certain social functions such as weddings, the women of the house make pictures and designs on the walls and the ground. In South India it is also still customary to draw a design, often very elaborate, before the threshold of the front door. In ancient times, the women were very, expert in this art. Citralekhā, the friend of Uśā, daughter of Vāṇāsura had a most expert hand, and having seen someone once only, she could afterwards make a perfect likeness of him.

There are six parts to painting :

(a). Differentiation in shape (mixing of colours, brush strokes) रूपभेद

(b). Proportionate measurement प्रमाण

(c). Unity of expression and beauty भाव लावण्य योजना

(d). Likeness सादृश्य

(e). Harmony of colours वर्णिका

(f). Com'position' भङ्ग

27. Architecture : The making of tanks, wells, monuments, buildings, etc., and the levelling of earth is an 'art'.

28. Instruments : The making of instruments to measure time, etc., and all sorts of instruments, is an 'art'.

There were various instruments in ancient times for the measurement of time : water clocks, solar quadrants and devices with sand, of which the modern hour glass is a relic. Although these instruments have almost gone out of use, on account of modern watches, astrologers still use the water clock to determine, starting from sun-rise, the auspicious time for marriages, etc., and we may still see, under the porch of some old Rājā, a bell sounded to mark the time according to an old water clock, an hour glass or sun-dial quadrant. With such machines the ancient astrologers managed to have an accurate knowledge of the divisions of time, necessary for the making of horoscopes.

29. Dyeing : to colour clothes and other things, in different shades, or by mixing different colours, is an 'art'.

30. Steam engines : To recover the steam born of water, air and fire and to utilize it for various works is an 'art'.

जलवाय्वग्निसंयोगनिरोधैश्च क्रिया कला

"The work done by controlling the combination of water, air and fire is an 'art'.

31. Conveyances : To produce boats and chariots and other means

of travel on land and water is an 'art'. While assuredly ancient peoples knew how to make vehicles for land travel, horse carriages, bullock carts, etc., of the best materials, equally they knew how to make many kinds of ships, strong, beautiful and practical. We even find mention of the use of ships in the Vedas. Great trade was done with these ships with far distant countries, and taxes were imposed on goods coming and going in these conveyances.

32. Rope making : To make ropes of cotton, wire, or jute is an 'art'.

33. Tailoring : To cut garments of any kind of cloth is an 'art'. This art also was most highly developed from the most ancient times, and very beautiful, strong and fine clothing was made which was never surpassed in any country.

34. Precious stones : To recognize precious stones and pierce them is an 'art'. In ancient times, the people of India could distinguish stones, and knew their influence, on those who wore them. To counteract the evil effect of certain planets, the scriptures teach that certain stones should be worn.

35. Metallurgy : To know the purity of gold and silver is an 'art'.

36. Imitation jewellery : To produce imitations of gold, silver, pearls, or jewels is an 'art'. We are told of the ancient alchemists who were able to imitate gold, silver, etc. Precious stones were also imitated in ancient times. With sugar, such diamonds were made that even jewel experts could not easily detect them.

37. Jewellery : To make ornaments of gold and silver and to do gilding and enamelling is an 'art'.

स्वर्णाद्यलङ्कार कृतिः कला लेपादि सत्कृतिः

"To make ornaments of gold or other metals gilded etc., is an 'art'.

38. Leather work : To skin a dead animal and cure its hide, and

39. Tanning : to soften leather and make therefrom useful and necessary articles is an 'art'.

40. Dairying : to know all the processes of dairying, from the milking of cows or buffalos, the scalding of curds, to the churning and clarifying of butter, is an 'art.'

41. Dress-making : to stitch shirts and clothes is an 'art'.

42. Natation : to swim, using all kinds of bodily movements with the feet, arms, etc., is an 'art'.

43. Domestic science : to know how to clean household utensils is an 'art'.

44. Laundry : to clean clothes by expert washing is an 'art'.

45. Barbering : to shave well is an 'art'.

46. Oil extraction : to extract oil from sesamum, linseed, castor oil seed, ground-nuts, etc., is an 'art'.

47. Agriculture : to plough a furrow is an 'art', and

48. Tree climbing is also an 'art'.

49. Service : to know how to serve others in a manner pleasing to them is an 'art'.

50. Vannery : to make baskets of bamboo, palm leaves, date fibre, jute, is an 'art'.

51. Glass blowing : to make recipients and other objects of glass is an 'art'.

52. Irrigation : to give water to the fields is an 'art', and

53. Channel making : to collect water from small streams and swamps and bring it for long distances to where it is required is an 'art'.

54. Utensil making : to know how to fashion utensils from iron is an 'art'.

55. Saddlery : to make the proper riding saddles for elephants, horses, bullocks, camels, etc., is an 'art.'

56. Nursery : to take care of children,

57. to feed them

58. to make all sorts of toys for them is an 'art.'

59. Punishing : to decide upon the punishment proportionate to the guilt is an 'art'. According to the guilt, whipping, flogging, casting down from cliffs, trampling by elephants, impaling, suspending by ropes, all sorts of punishments were decreed.

60. Calligraphy : to write beautifully the script of many countries is an 'art'.

61. Keeping Betel leaves fresh for many days and prevent decay is an 'art'.

Thus we have sixty-one arts. But there are two further arts, which can be considered the soul of all the other arts.

62. Skill (आदान) : this is said to be the quickness with which any work is done. And

63. Patience (प्रतिदान) which is the capacity to persevere with a work for a long time. Without these two qualities no art can be good.

Thus briefly are the sixty-three arts.

The nature of men varies ; some have tendencies in one direction, others in another. He who has a tendency in one direction, with practice becomes proficient in it.

Hence Śukrācārya wrote :

यां यां कलां समाश्रित्य निपुणो यो हि मानवः। नैपुण्यकरणे सम्यक् तां तां कुर्यात् स एव हि।

The man who has become proficient in the practice of a craft, he should always practise it for the sake of efficiency".

ON THE ANTIQUITY OF IMAGE-WORSHIP IN INDIA

by B. M. BARUA

The worship of idols as cult images is as old as the Indus Valley civilisation, and this is unmistakably proved by figurines of deities on early Indian seals unearthed at Mohenjo-daro and Harappa. In the considered opinion of Sir John Marshall "the people of Mohenjo-daro had not only reached the stage of anthropomorphising their deities, but were worshipping them in that form as well as in the aniconic".[1] Mackay traces images of certain household gods in many of the numerous terracotta figurines.[2] Ramaprasad Chanda went so far as to observe that "excavations at Harappa and Mohenjo-daro have brought to light ample evidence to show that the worship of human and superhuman beings in Yoga posture, both seated and standing, prevailed in the Indus Valley in the Chalcolithic period."[3]. And one may readily agree with J. N. Banerjea in thinking that the ideology which underlay many of the Indus valley divinities "does not correspond to the same at the root of such Vedic deities as Indra, Mitra, Agni, Varuṇa and others," in spite of the fact that "apparent reproductions of mythical scenes on these prehistoric objects might also have contained the germs of different mythologies of the later period.

Dr. J. N. Banerjea's thesis 'The Development of Hindu Iconography' contains the latest pronouncement on the evidence of the Vedas and Vedic texts concerning the prevalence and antiquity of image-worship in India as well as on the trend and ultimate form of the controversies that have been conducted thereon by

1. 'Mohenjo-daro and the Indus Valley Civilisation', vol. I. p. 59.
2. 'Further Excavations at Mohenjo-daro', Vol. I. pp. 258-59.
3. 'Mediaeval Indian Sculptures in the British Museum', p. 9.

the previous scholars. I need not reiterate the points raised by Dr. Banerjea and discussed threadbare by a competent body of Vedic scholars. Here my concern is to draw attention of the scholars and researchers interested in the problem of the antiquity of image worship to certain references in Sanskrit and Pāli texts. The interest of the references I propose to consider lies not only in the fact that they throw light on the state of things which existed in India before and at the time of the rise of Buddhism but also in the fact that they help us to understand the nature of the perishable material used before King Aśoka came to substitute stone for it.

The prose treatise of the 'Arthaśāstra' recommends the allocation of such tutelary deities as Aparājita, Apratihata, Jayanta, Vaijayanta, Śiva, Vaiśravaṇa (Kuvera), Aśvins, Śrī and Madirā in separate chambers of a fort. Among them, Jayanta finds mention in Āpastamba's 'Gṛhya-sūtra' (vii 20-3) and Śrī in several ancient texts, Vedic and Buddhist. The goddess Madirā may be identified with Āpastamba's Miḍhūṣī, while Śiva is no other then Īśāna mentioned in Āpastamba's work (ib., vii. 20-3).[1] The Jaina 'Uttarādhyayana-sūtra' mentions by name Vijaya, Vaijayanta, Jayanta, Aparājita and Sarvārthasiddha as five classes of superior gods (anuttarā surā).[2] The 'Jñātādharmakathāsūtra' makes mention of Indra, Skanda, Rudra, Śiva, Vaiśravaṇa, and Nāgas.[3] The 'Arthaśāstra' refers also "to the figures of the goddesses and altars which were to be carved on wood door-frames of the royal underground chamber", "to the images and flags of the gods (deva-dhvaja-pratimābhiḥ), and to going frequently for the worship of the shrines (caityas), stūpas and images of deities (ib. xiii. 2). Manu, too, recommends the circum-ambulation of images of deities (iv. 139) and going on 'parvan' days for the worship of images for protection (iv. 153), and penalises the destruction of images, flags and posts in a temple (ix. 285). The Devalakas as a class of temple priests are condemned (iii. 152). Dr. Banerjea rightly opines that the data furnished thus by the Arthaśāstra' and 'Manusaṃhitā' go to prove "the prevalence of image worship in India of the 1st and 2nd centuries B. C., if not of an earlier period."

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1. 'The Development of Hindu Iconography', p. 96.
2, 3. 'Arthaśāstra', edited by Shama Sastri, p. 55-6.

The worship of images was undoubtedly prevalent in India of pre-Aśokan and pre-Buddhistic times. Pāṇini in his 'Aṣṭādhyāyī', devotes five aphorisms (v. 3. 96-100) to the topic of 'pratikṛti', a word which may be taken to mean an image, a portrait, in short a figure or concrete representation. In the very first of the five aphorisms, he defines a 'pratikṛti' as figuration in the likeness of something or some being ('ive pratikṛtau'.) By the second aphorism he lays down the rule governing the naming of the concrete representation of a likeness (saṃjñāyām); in the third, he speaks of figuration in human or anthropomorphic forms (manuṣye). The fourth 'sūtra' bears testimony to the use of the images as a means of livelihood, though not as articles of trade ('jīvikārthe cāpaṇye',) while the fifth one refers to the 'pratikṛti' of the heavenward path and the like (devapathādibhyaḥ.) As the commentators rightly point out, the fourth aphorism distinctly speaks of the profession of the Devalakas who used to beg alms from door to door by showing images or portraits of deities to the people.

One of the 'anuṣṭubh' verses cited in the prose 'Arthaśāstra' (IV. 13) prescribes that a thoughtless man who indulges in sexual connexion with (female) brutes should be fined 12 'paṇas', and that the amount should be doubled in the case of a person who commits the same offence with the idols of goddesses :

"Maithune dvādaśapaṇaḥ tiryagyoniṣvanātmanaḥ । daivata-pratimānāṃ ca gamane dviguṇas smṛtaḥ॥".

This stands at the end of other prescriptions in prose providing punishment in varying degrees for a culprit who commits adultery with women of different social grades and ranks.

As for the bearing of the quoted 'śloka' on the age to which it may be referred, attention may be drawn to the first 'pārājika' rule of the 'Bhikkhu-Pātimokkha' which is embodied and annotated in such an ancient Pāli text as the 'Suttavibhaṅga'. The 'Pātimokkha' code prescribes almost in the same language an extreme form of punishment for a male member of the Saṅgha who indulges in sexual connexion with women, nay, even with female brutes : "Yo pana bhikkhu···methunaṃ dhammaṃ paṭiseveyya antamaso tiracchānagatāyapi pārājiko hoti asaṃvāso".

To the same effect it is enjoined in the 'Vinaya Mahāvagga' (cattāri akaraṇīyāni) :

"Upasampannena bhikkhunā methuno dhammo na paṭisevitabbo antamaso' tiracchānagatāyapi".

With regard to persons having sexual connexion with the idols of goddesses, it is laid down in the 'Suttavibhaṅga' (Vinaya Piṭaka, III, p. 36) that a Bhikkhu committing this act with a female portrait in painting on plaster (lepacittaṃ) or a female figure in wood (dāru-dhītalikā) is equally liable to expulsion from the Saṅgha under the Pārājika section of the Pātimokkha code.

The Pāli scholiast Buddhaghoṣa defines 'lepacittaṃ' as 'cittakammarūpaṃ', a (female) portrait in a piece of painting (lepacittavatthumhi lepacittannāma cittakammarūpaṃ). Similarly he defines 'dāru-dhītalikā' as a female figure (itthīrūpaṃ) carved in wood (dārudhītalikavatthumhi dārudhītalikā nāma kaṭṭharūpaṃ). To this he adds that the same rule applies "just as in the case of these two (viz., 'lepacittaṃ' and 'dārudhītalikā',) so also in that of female figures carved in ivory, made of or drawn on cloth, or carved in iron and such other substances". ("yathā ca imesu dvīsu evaṃ aññesu pi dantarūpa-potthakarūpa loharūpādisu anupādinnakesu itthīrūpesu" ('Samantapāsādikā', i, p. 278). The Pāli 'potthaka' is the same word as the Sk. 'pusta' which according to the 'Amarakoṣa' (Śūdravarga, 76), means painting or relief work on plaster and such other works ('tulye pustaṃ lepādi-karmam',) while the words 'pāñcālikā' and 'putrikā' (corresponding to the Pāli 'dhītalikā' or 'dhitalikā) denote dolls or idols made of cloth, or carved in ivory and such other substances (ib., 77). As the commentators point out, by other works are meant the making of dolls or idols with such materials as earth, wood, cloth, skin, iron, and jewels. The Pāli 'lepacittaṃ' is evidently the same technical term of Indian art as the Sanskrit 'lepyacitram' which is met with in much later works as the 'Hayaśīrṣa-pañcarātra'[1]. The 'lepyacitra' is aptly distinguished from the 'lekhya'. The 'caraṇacitra' or 'karaṇacitra' praised by the Buddha as the most superb of all pictorial art of his time may be cited as an example of 'lekhya citra.' The 'lepacitta' or 'lepyacitra', literally as well as technically denotes a form of painting for which the ground (vatthu) had to be prepared by means of plaster on wall, wood, cloth, or some such substance.

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1. 'The Development of Hindu Iconography', p. 241.

CHAMBĀ RUMĀL

by KALYAN KUMAR GANGULI

Chambā rumāls are cotton textiles decorated with figures and designs embroidered with silk threads of various colours. The rumāls are oblong or square and their side length is usually between 2 and 3 feet ; fairly large pieces (5′ square, etc.) are also fully embroidered. They derive their name from Chambā, the place of their origin, an Indian state in the south western Himalayas, within the province of the Punjab. This, along with a number of other Himalayan states like Kāṅgrā, Baśohli, Jammu, etc., came to be noted for the schools of painting which flourished there during the last two or three centuries, These paintings are known as belonging to the Pāhāṛī or Hill schools of Indian painting.

The rumāls bear a close affinity to certain paintings of the Pāhāṛī school. The cloth which serves as the ground is usually a piece of hand spun and hand woven cotton often used after a certain amount of bleaching. The outlines of the figures and patterns are first drawn by an artist and finally a thread is run along them in one direction. Then, once again the thread is run along filling up the gaps between the stitches. This process makes the lines continuous and similar on both the sides. The space within the drawn outline, however, is first filled up with close, overlapping parallel stitches. Front and back are almost alike.

Some motives of the rumāls have parallels in the Kanthās and Bāluchar Sāḍis of Bengal and the shawls of Kashmir ; the wavy floral scrolls and the life-tree, known as 'kalkā' are common to the Chambā rumals, the Kashmir shawls as well as the Bāluchar Sāḍis. In the latter, human figures preponderate whereas the Kashmir shawls show them but rarely and then mainly in embroidered and not in woven specimens. The scheme of decoration in the Kanthās is of a specific order although the

Kalkā again is a very commonly used motif in the decoration of the corners. Besides this, there are geometrical and pictorial patterns consisting of human beings, animals and plants.

The Kanthās have little in common with the sophisticated rumāls, shawls and the Bāluchar Sāḍis. They are made of waste, worn out cloth ; even the threads used in making the embroidery of the Kanthās are taken from the ends of the used cloth. The patterns or the motifs, whether these are human beings, animals, trees or any other object, are generally arranged round a central lotus. Little regard is shown to any kind of perspective, and though the effect becomes to some extent pictorial, the Kanthās can in no way be compared to any picture.

The decoration of the Chambā rumāls is essentially pictorial. The ground of the rumāls is plain, it is formed by the white or cream cloth itself. The figures are bound by lines and their surfaces are filled up completely with the colour of the embroidery. Dr. Kramrisch observes that the rumāls are translations of painting into embroidery[1]. They resemble very closely the Kāṅgrā paintings among those of the western Himalayan hill schools.

Kāṅgrā painting is a provincial expression of Rājput painting in which has been traced the survival of Indian pictorial traditions from very early times. The themes of Rājput painting have a wide range. In the Pāhāṛī schools the subjects thats enjoyed widespread popularity were from the epics, the Rāmāyaṇa and the Mahābhārata, and the Purāṇas principally depicting the life story of Kṛṣṇa, and others depicting Rāgas and Rāgiṇīs, etc. In the rumāls also we find the same subjects, the scenes from the Rāmāyaṇa and the Mahābhārata, but none rivals the popularity of the Vaiṣṇavite theme of the Kṛṣṇa līlā. Among the Rāmāyaṇa motifs are frequent the seated figures of Rāma and Sītā installed in an arched pavilion situated in a wide courtyard ornamented with trees; the coronation of Rāma or the epic battle of Rāma's forces with those of Rāvaṇa, taking place on the sea side beside the walled city of Laṅkā. Of the episodes taken from the life of Kṛṣṇa the scene of his birth in the prison of Kaṅsa, his journey on Vāsudeva's lap from Mathurā to Gokul, miracles

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1. 'Kanthā' by St. Kramrisch, JISOA, vol. VII.

of his early life, his sports with the Gopinīs of Vṛndāvana and his return back to Mathurā, are often shown in the same rumāl; of the miracles of his early life those af Govardhana dhāraṇa, Kālīyadamana, Śakaṭa bhaṅga, Yamalārjuna, and the destruction of demons like Putanā and Dhenuka, etc. are very common. His sports with the cow-boys of Vṛndāvana known as Goṣṭha līlā also have their place in many of the rumāls but none of these subjects has the popularity of the Rāsa līlā.

Rāsa līlā indicates Śrī Kṛṣṇa's sports with the milk-maids or the Gopinīs of Vṛndāvana. The Bhāgavata Purāṇa tells that Kṛṣṇa had taken a pledge to dance with the Gopinīs. On a full moon (purṇimā) night of a cloudless autumn season he remembered his promise and began to play on his flute calling the Gopinīs near him. The flute had an irresistible charm for the maids of Gokul who left their homes and their husbands and assembled on the bank of the Jamunā to attend the call of the flute. Kṛṣṇa, however, put them to test to be sure of their devotion and through suffering the Gopinīs proved themselves purified and worthy of dancing with Kṛṣṇa. Rādhā was his chief favourite with whom, hand in hand, he began to dance and the other Gopinīs danced round them in the form of a circle, the Maṇḍala. Kṛṣṇa by power of yoga multiplied his form and each Gopinī in the Maṇḍala found herself next to Kṛṣṇa.

The circular motif created by the dancing cordon appears to have a peculiar significance. In the Kanthās the motifs usually are laid round a large circle of the form of a lotus which generally covers the central space. It is as if the lotus keeps the otherwise not always connected figures related to its own shape and bound up with it.

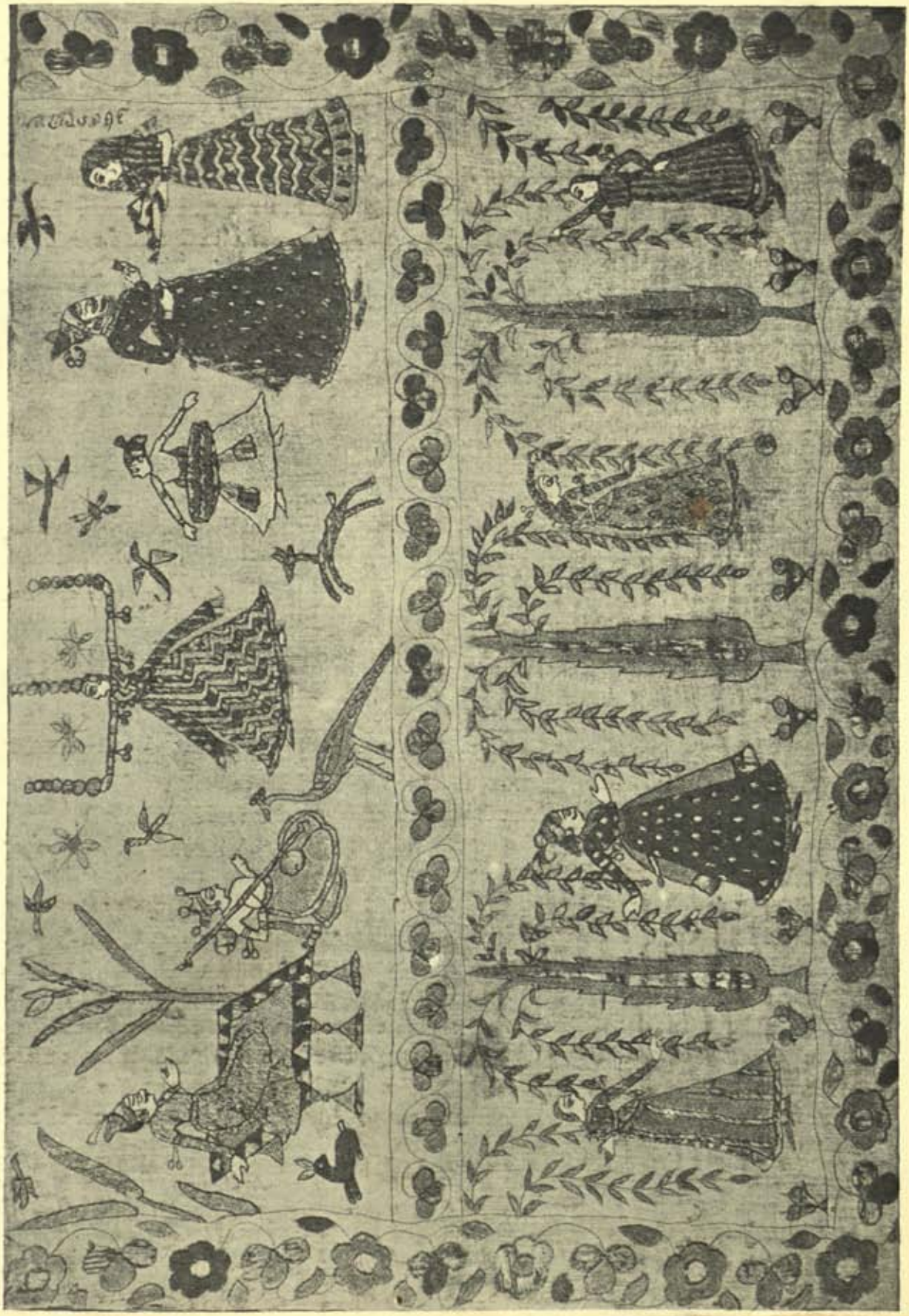
In the Rāsa scenes the case appears to be almost the same,. At the centre of the Rāsa scene there is Kṛṣṇa or Kṛṣṇa dancing with Rādhā. Round this couple dance the Gopinīs and Kṛṣṇa's multiples forming a close circular pattern. Animals, birds, female figures, find a place in the entire scheme, arranged according to each individual motif's relation to the main circle. There are rumāls in which more than one event of Kṛṣṇa's life are shown. In such rumāls also the scene of Rāsa finds a prominent place and the other incidents of his life are arranged around it.

In other, less formal, designs, the Rāsa dance is shown without the Gopinīs forming a closed circle. Their figures fill the entire space within the border (Pl. III).

Usually the entire face of a whole rumāl is considered as one compartment bound on four sides by a border. Not infrequently, however, the surface of the rumāl is divided into more than one compartment. Sometimes these are parallel oblong rows (Pl. IV ; only half of the rumāl being reproduced). In one such compartment a male figure with turban and 'chogā' is seated on a six legged stool attending to the dancing performance of a girl who balances a number of superposed pots on her outstretched arms and on the head. Two musicians, one with a drum, (mṛdaṅga) and the other with a lute (vīṇā) are playing to the dancer. On the right hand side of them are a male and a female figure talking to each other. Besides these there are a few plants and animals including birds neatly arranged around the dancer. The lower panel is subdivided into smaller compartments by broad leafed trees. Division of the surface of the rumāl is frequent where the life story of Kṛṣṇa is depicted, each incident being shown in an independent panel. This is also common in the scroll 'paṭs' of Bengal. There too, the life story of Kṛṣṇa, usually shown in successive panels, is a very popular theme.

Among the recurrent motifs the following may be enumerated : trees with pavements round their trunks, arched shapes depicting clouds, pavilions and courts with surrounding walls, rooms with arched porticoes, balcony windows with faces of women and always trees, flowering plants, peacocks, deers and varieties of birds and animals interspersed everywhere. The outline of the figures are usually drawn in threads of black colour. The coloured, glossy silk threads which cover the surfaces are mellow : pink, red, sky blue, light yellow, deep yellow, silver white, orange, brown, light green, white and grey. The human faces are seen in three quarter profile or profile and back views also occur.

The costumes worn by the figures are rich and varied. Male figures, most often than not, wear some sort of a head cover. Figures of Kṛṣṇa are distinguished by his peculiar peacock feather crown. Various types of turbans are worn by different classes of men ; conical caps with a fillet around grace the heads of cowboys. On the upper portion



of the body, Kṛṣṇa has a yellow piece of cloth slung round. Other figures are mostly clad in some sort of tailored and stitched garment. A tight garment, called the 'jāmā' fastened at the side, at the shoulder and above the waist, is very common. A long coat, tight fitting over the chest and with a wide, skirt-like end is also frequently met with. This type of coat is usually known as 'achkān'. Garments of the lower portion of the body comprise of the 'dhotī' and 'pāijāmās' of different types. Male figures wear as ornaments, earrings usually known as 'bālā' or 'birbali'; armlets called 'bhuj-band' and bracelets called 'kaṅkaṇ' and anklets in case of figures of Kṛṣṇa. Women wear scarfs called 'orḥnī', a tight fitting bodice called "āṅgiyā", or a full sleeve, shirt like garment called 'kurtī' or 'pānjābī'; wide, gathered skirts called 'ghāgrā' of different types, and a 'pāijāmā' often worn under the 'ghāgrā'. The 'ghāgrās' worn by the girls in the Rāsalīlā dance (Pl. III) illustrated here, appear to have an opening at the front and an additional piece of cloth like the 'kochā' which covers this opening. The 'pāijāmā' and this slit skirt can be seen where the figures are shown in poses of dancing. Many of the female figures are shown wearing a 'sāḍī'. The 'sāḍī' is worn like a skirt having a 'kochā' or tuft in front and the ends are drawn over the head and across the breast. The ornaments of the female figures consist of 'karṇ-phul' or earrings, 'hāra' or necklace, 'bhuj-bandh' or armlets and 'kaṅkaṇa' or bracelets. The 'bhuj-bandh' or armlets have often tassels hanging from them.

The figures of the animals, trees, clouds, the architecture, pavilions and porticos, the motifs like the Kālīyadamana, Goṣṭhalīlā, and Rāsalīlā, and the costume and ornaments of the figures bear a close resemblance to those in the paintings of the Kāṅgrā school.

Of the Kṛṣṇa Līlā scenes, a large rumāl, a part of which has been reproduced here, is of considerable interest (Pl. V). At the centre of the scene is shown a dwarfish tree with a square pavement round its trunk. On the left of the tree there are portions of a palace with people on top of the roof playing on various musical instruments. Streamers are fluttering from the top of the turrets, and faces are seen peeping through windows. On the right (not shown here), evening time is indicated by a descending sun and cow-herds are shown returning from the grazing ground. 'Below' the palace there is a number of female figures returning to the palace after filling their pitchers in a

stream shown along the lower end of the surface. On top of the tree there are two couplets sewn in black thread which read thus :

देखा देखी भई तैं सकुच सब छुटि गई मिरो कुल कानि कै सौं घूघर कौ करिबौ।
लगीरकरकी जब मिरो धकधकी गति थकी मति छकी ऐसौ नेहको उघरिबौ।
चित्त कैसे काढ़े दोउ ठाढ़े रहे कासीराम नेक न परवाह लाख लोगन कौ लखिबौं
बंसीकौ बाजैबो नरनागरको भुलिगयो नागरि कौ भुलिगया गगरि को भरिबौ॥

"The moment they (Rādhā and Kṛṣṇa) met (and were smitten with the arrow of love) they lost all sense of scrupulous shyness. Rādhā would no longer draw her veil over her face. Love-full eyes would continue to look at each other in constant gaze and the throbbings of the heart were almost stopped. Both remained standing like two pictures without having any care for the innumerable crowds standing nearby. Śrī Kṛṣṇa forgot to play on his flute and Rādhā to fill her pitcher[1]." The couplet evidently gives the identification of the scene.

The rumāl is about a hundred years old. The tradition of making such rumāls is still maintained in Chambā but the quality has deteriorated to a great extent. The subjects are still the same but the embroidery is careless. The front and back of it are no longer practically identical in the neatness of execution. Only the front is meant to be seen; the surfaces are covered with coarse stitches in aniline-dye coloured silk threads. The desire to suit the vulgar taste of the present day has resulted in an irrecoverable loss of beauty.

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1. Reading and translation by L. Sukul.

The rumāls, Pls. III and IV. are in the collection of Mr. Percy Brown ; the original of Pl. V. is in the Lahore Museum.

THE NATURE OF TIME

॥ काल तत्त्व ॥

From the teachings of
Śrī Bhārgava Śivarām Kinkar Yogatrayānand Jī*

The Nature of Time-Energy

Bhartṛhari—his feet be worshipped—once said that although all that is evolved eternally dwells, according to the hierarchy of potentialities, in the womb of its evolver, yet since it cannot remain constantly manifest, its manifestation ultimately depends upon Time (Kāla). All the energies which have a beginning and [an end] are dependent ; they have to operate within the limits of some independent energy and are ruled by it. This independent Energy is called Time-Energy (Kāla Śakti). Nāgeśa Bhaṭṭa explaining this in his book "The [jewel] casket" (मञ्जषा), wrote that Time (Kāla) is the principle (हेतु) of the rise, enduring and destruction of Existence itself. It is Time (Kāla) which, as winter, bars the power of bringing forth flowers and fruits in the mango tree, and again Time (Kāla) which, as spring, unlocks the power of procreation. The energies, ever present in a subtle shape in the causal-womb, are not free to manifest themselves in any order. They have to wait for the pleasure of some independent energy. And this energy in the control (वश) of which they exist is but Time-Energy, Kāla Śakti.

What is Time ?

In the hermetic parts of the Primordial Knowledge of subtle correspondences (Atharva-Veda-Saṃhitā) it is said :

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* Extracts from the Hindi version of शिव तथा शिवार्चन तत्त्व (the original being in Bengali).
Translation and notes by Śiva Śaraṇ.
Vedic words and mantras interpreted by Paṇḍit Vijayānand Tripāṭhī.

"कालोमूं दिवमजनयत् काल इमाः पृथिवीरुत। काले च भूतं भव्यं चेषितं ह वितिष्ठते"॥ "……काले ह विश्वा भूतानि काले चक्षुर्विपश्यति।" "काले मनः काले प्राणः काले नाम समाहितम्।…" "…कालोह सर्व्वस्येश्वरो यः पितासीत् प्रजापतेः।" "तेनेषितं तेन जातं तदु तस्मिन् प्रतिष्ठितम्।"

(Atharva Veda Saṃhitā, 19/6/53/5-9)

"From Time did heaven rise, Time engendered this earth, in Time dwell past and future and their oriented motion. In Time exist the elements of the spatial universe; in Time does sight see; in Time dwells mind, in Time life breathes. All is supported by Time. Time is the Divinity of all, the progenitor even of the Ruler of Creation. The universe is by it oriented, it is by it engendered, and stands within it." Time, thus pervades the dualism subject-object, enjoyer-enjoyed. Time is the nourisher, the support, the creator of all the spheres (भुवन) pervading them. Time is everywhere present; a father, a son are but forms of Time. Time is the cause of the universe, yet the resulting universe is nothing but time.

Thus, we can understand that in the Primordial-Knowledge the word Time (Kāla) is used to represent the union of the 'Auspicious unmanifest principle' (Śiva) and [his Power] Śivā, [the eternal auspicious night in the womb of which the universe dissolves into sleep,][1], that is the Illusionist (Māyī), the Principle of all, united to his Power of Illusion (Māyā).

The Two Forms of Time

The Primordial Knowledge, the Veda, and the other scriptures based upon it, speak of the dual shape of Time (Kāla). In the "[mystical] 'forest teachings' of the Primordial Revelation" (Āraṇyaka Śruti) called Taittirīya, it is said that[2] "springing out [from a never

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1. The word Śiva comes from the root शी to sleep.

That in which all goes to rest, which is the support of all is Śiva. His Energy, by which the universe is put to sleep, is Śivā, the Eternal night.

(२) सदीव प्रभवात् काचित्। अचक्यात् स्यन्दते यथा तां नद्योऽभि समायन्ति। सोदः सती न निवर्त्तते। एवं नानासत्त्वानाः। काला: संवत्सरं क्षिताः। अहमय महमय सर्व्वं समवयन्तितम्॥ स ते: सर्व्वैः समाविशः। उदः सन्न निवर्त्तते।

(Taittirīya Āraṇyaka 1/2/3-5)

drying source],[3] the river [of Time (kāla nadī)] flows ever evenly and, just as [by the reunion of many small rivers] this [great river] expands and never recedes (never dries), so also the small [divisions of] time, [the instants (kṣaṇa) and moments (muhūrta = 40 minutes),] and the greater [rivers of] Time, [the days and fortnights,] all contribute to the [flow of the] year. All [small or great parts of Time,] unite in a vast uninterrupted flow." When the small instants and moments, carried upon the greater divisions of Time (कालावयव) assemble to form the year, the shape of Time becomes perceptible and its reality can be understood.

The 'higher reality' (अधिसत्त्व) which gives rise to the tangible (मूर्त्त) Time, which can experienced (व्यवहारिकं) is, in many a sacred verse, spoken of as the Duration of Time (kālakāla)[4]. This inflexible unfragmentable Duration of Time, likened to an indivisible rod (अखण्ड दण्डायमान) cannot be perceived by any sight other than that of Primordial Knowledge —the Veda—and the correlated scriptures. Its one indivisible reality, circumscribed (परिच्छिन्न) by the Power of Illusion,—Māyā, appears to take multiple forms. The spatial Universe's sphere (विश्वभुवन) is but a particular state of indivisible Existence-Consciousness-Bliss [apparently] divided by the power of Illusion.

पूर्णः कुम्भोऽधिकाल आहितस्तं वै पश्यामो बहुधानुसन्तः। स इमा विश्वभुवनानि प्रत्यङ्कालं तमाहु परमे व्योमन्॥

(Atharva Veda Saṃhitā, 19/6/53/3)

"In the full chalice of [Eternal] Time, verily are kept the multiple shapes [of fragmentary time] which the sages can truly see. This inner Time pervades all the worlds [and] is said [to dwell] in the supreme firmament, [the Pure Principle, Brahman]."

The book of Astrology called "The Solar principle" (Sūryya Siddhānta) also explains that Time (Kāla) is of two kinds, the one 'like a rod indivisible and inflexible' (अखण्ड दण्डायमान) and the other 'the

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3. The passages within square brackets are found in the commentary of Sāyaṇācārya.

4. The term Kāla is used in the sense of both Duration (successive experience), and Time (the particular velocity of Duration generally experienced by humans). We are translating Kāla therefore either as Time or as Duration according to the general sense.

nature of which is to measure' (कलनात्मक). The Duration (Kāla, cause of the rise, enduring and destruction of the moving universe based upon the [dualism] inertia-motion, the Duration without an end (अक्षय्य) is "the partless rod-like Time" (अखण्ड दण्डायमान) while the Duration which can be experimented (निदृश्य), which is the object of perception, is Time, the measurable Duration (कलनात्मक काल).

लोकानामन्तकृत् कालः कालोऽन्यः कलनात्मकः। स द्विधा स्थूल सूक्ष्मत्वान्मूर्त्तश्चामूर्त्त उच्यते ॥

(Sūryya Siddhānta)

"Time by which the worlds come to an end is one time ; whose nature is to measure is the other. This one is also of two kinds, gross and subtle, hence called tangible (मूर्त्त) and intangible (अमूर्त्त).

In the part of the metaphysical "nearest approach" (upaniṣad) called the Śvetāśvatara, the Supreme Self (परमात्मा), the Duration of Time (काल काल) is spoken of :

स विश्वकृद्विश्वविदात्मयोनिर्ज्ञः कालकारो गुणी सर्व्वविद्यः। प्रधानक्षेत्रज्ञ पतिर्गुणेशः संसारमोक्षस्थितिबन्धहेतुः ॥

(Śvetāśvatara Upaniṣad)

"He is the builder of the spatial universe, the knower of the spatial universe, the Self, the knower of the womb, the maker of time, having [all] qualities [he is] the knower of all, the first evolver, the master who knows body and mind, the lord of [the three fundamental] qualities, the cause of the liberation, the enduring and the cohesion of the universe."

The hermetic 'Suśruta-saṃhitā' tells that Time is not produced through anyone's agency and is not a development (परिणाम) [from something else].

कालो हिनाम भगवान स्वयम्भूरनादिमध्यनिधनोऽत्र रस-व्यापत् सम्पत्ती जिवितमरणे च मनुष्याणामायाति।

(Suśruta Saṃhitā, Sūtrasthāna)

"Time, O Lord ! is self-born, beginningless, middle-less, endless ; in it dwell the scarcity and abundance of things and the life and death of men". The 'Kāla Mādhava'[1] makes a distinction between two sorts

1. A treatise on the Dharma Śāstras.

of Time on grounds of measurability (कलयितव्य) saying : That by which the physical existence of living beings can be measured (कलितव्य), counted (संख्येय), known (ज्ञेय), in terms of past-present-future, is called "mere Time" (केवल काल) and that by which this "mere time" can be measured (कलितव्य), known (ज्ञेय), in terms of rise-enduring-destruction, is the Duration of Time (काल-काल). From the "cosmological point of view (Sāṅkhya Darśana) also, Time (Kāla) is of two kinds, perpetual (नित्य) and fractional (खण्ड) ; fractional space-time (खण्ड दिक्-काल) is considered implied in the element Ether. The speculative philosophers (तार्किक गण) such as Raghunātha Śiromaṇi,[1] say that the essential-nature of Space-Time (दिक् काल) is Divinity and nothing distinct from Divinity (ईश्वर).

The Cause of the Different States of Existence according to the Vākyapadīya

Bhartṛhari—his feet be worshipped—said that : "the uncontrollable (अव्याहत) portions (कला) of Him [the all-powerful Supreme Principle, which is Existence-Consciousness Bliss,] when surrounded by uncircumscribable (अपरिच्छिन्ना) eternal energy (नित्यशक्ति) which is Time-energy (कालशक्ति), [and as a result of its action] shelter [i. e. are apparently] transformed (विकृत) into the six states of existence, (भाव विकार) [taking birth,] enduring (स्थिति), evolving (विपरिणाम), growing (वृद्धि), declining (अपक्षय) and being destroyed (विनाश)".

अव्याहताः कला यस्य कालशक्तिमुपाश्रिताः ।
जन्मादयो विकाशः षट् भावभेदस्य योनयः ॥

(Vākyapadīya)

The six forms of existence thus represent particularized states of the Energy, circumscribed by Time (कालावच्छिन्न), of Supreme Divinity, itself in no way limited (अपरिच्छिन्न).

Energies can abandon one form of existence to evolve other forms or states, but they neither increase nor decrease. There is no variation in the total energy which ever remains the same. All forces, the mechanical, chemical, electrical, vital, are interconnected. Each one

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1. A famous logician from Bengal.

can take the form of the others, each can exist of the existence of the others; this is why, in the universe, constant transformations take place, although it remains itself unchanged.

The Nature of Fractional Time

Before defining the words 'instant' and 'sequence' (क्रम) one should first understand the nature (स्वरूप) of fractional Time (खण्डकाल). As was said before there are two kinds of Time, the one fraction-less, rod-like and the other fractional. Instant, moment (muhūrta), day, fortnight, etc., are particular states of fractional time. To explain the intrinsic shape (स्वरूप) of fractional time (the time which we ordinarily understand as such) the Taitirīya Āraṇyaka tells :

सूर्य्यो मरीचिमादत्ते सर्व्वस्माद् भुवनादधि ।
तस्याः पाकविशेषेण स्मृतं कालविशेषणम् ॥

(Taittirīya Āraṇyaka, 1/2/2)

"The Sun [in the beginning] poured forth radiations (मरीचि) [cause of all activity], upon all the world. Revelation tells that to differences in the heating action of these [radiations] are due the differences of Time."

From the seed springs a germ, and from the germ grows a branch, the branch produces leaves and flowers, the flower evolves into a fruit, and the fruit again gives a seed. On whichever side he may look, man sees coming towards him, the endless flow of transformation (परिणाम प्रवाह).

Everything in the world is incessant transformation. It is to explain this that the mystical Taittirīya Āraṇyaka tells that the solar rays themselves—the heating power (संतापनी शक्ति) of the sun—are the cause of all transformation. The Sun-god, by his heating energy, incessantly burns the world. The world's transformation is the effect of this heat. Rice and other substances, when cooked, are transformed into food by the heat of fire. Water, when heated, becomes steam. All action or transformation in the world is similarly due to heat. Wheresoever transformation appears before us, we should understand that its cause is necessarily the heating Power of the Sun.

What is Heat ?

When any substance (द्रव्य) is heated, two kinds of actions take place in it proportionately to the quantity of heat. First, in the mass

of atoms, the expanding tendency (rajo guṇa), i.e. motion, increases ; secondly in the substance acted upon (विशिष्ट) by the heat there is atomal disaggregation (विश्लेषण) ; the atomal power of attraction of the atoms becomes weak and from this follows a transformation (परिणाम) in the properties, the characteristics and the state of that substance. This is what is called a cooking. In this connection the Revealed Word (श्रुति), in the [mystical] 'forest teachings' (Āraṇyaka) called Uddhṛt, explains that the cooking-action of the heat projected from the solar sphere (सूर्य्यं मण्डल), upon the mass of the elements (भूतजात) contained in the world's sphere (भुवन) according to its relative intensity, determines the particularized Duration, the length of the instants (क्षण), moments (मुहुर्त्त), etc. Through it the divisions of time from 'a wink of the eye' (निमेष) to the half-life-time of the Creator (पराद्धं) can be known. The author of the Mahābhāṣya, Patañjali, in his commentary of the Pāṇini Sūtra (कालाः परिमाणिना) "Durations are measurable limits", says that the power by which trees, grass, creepers and other formal (मूर्त्तिमत्) substances (द्रव्य) are seen sometimes to grow, sometimes to decline, is called Time (काल). If the increase or decrease of formal substances could be the result of non-particularized Duration (अविशेष काल) such divisions as day, night, fortnight, month, equinoxial half-year, year, ages (yugas), etc., would never have existed. We know them to be the different parts of Time ; but how partless Duration possibly came to be so divided, remains to be explained.

How can Partless Duration be Fractioned ?

Answering this question the divine Patañjali says that although Time (Kāla) is eternal (नित्य), although Time is without a second, is an indivisible (अखण्ड) ruling (विभु) principle (पदार्थं), although it knows no real differentiation, yet, through a difference of attributes, its differentiation is supposed (कल्पना) as is also the case with the all pervading Ether. Fraction-less, rod-like Time, when all the forms of action (क्रिया) are associated with it, seems to take different shapes. Associated to a particular form of action, Time becomes day ; associated to another form of action it becomes night, with another action it is month, with another year, with yet another an age (yuga). By association with what sort of action does Time take the form of day ? the answer of

Patañjali is that, associated to a particular motion of the Sun, Time takes the shape of day.

येन मूर्त्तीनामुपचयाश्चापचयाश्च लक्ष्यन्ते तं कालमित्याहुः। तस्यैव कयाचित् क्रियया युक्तस्या हरिति च भवति रात्रिरिति च। कया क्रियया? आदित्यगत्या। तयैवासकृदावृत्तया-मास इति भवति संवत्सर इति च भवति।

(Mahābhāṣya)

"That through which can be recognized the increase and decrease of all that has shape is called Time. In connection with a special action of this [Time] day exists and also night. This [special] action is the motion of the Sun. Through its periodic revolution the month comes to exist, and the year."

The hermetic (saṃhitā) Suśruta also says that

संवत्सरात्मकोभगवानादित्यो गीतविशेषेण निमेष काष्ठा कलामुहूर्त्ताहोरात्रपक्षमासर्त्वयन-सम्वत्सरयुगप्रविभागं करोति। ··· स एव निमेषादि युगपर्य्यन्त कालचक्रवत् परिवर्त्तमानः काल चक्रमुच्यत इति।

(Suśruta Saṃhitā, Sūtrasthāna)

"The special motion of the all powerful Sun, intrinsic shape (स्वरूप) of the year, creates the division of the 'wink of eye' ('nimeṣa' = $\frac{1}{10}$ of a second), the 'limit' ('kāṣṭhā' = 32 seconds), the 'portion' ('kalā' = 96 sec.), moment ('muhūrta' = 48 minutes), day and night (अहोरात्र), fortnight (पक्ष), months (मास), season (ऋतु), half-year (अयन), year, and age (yuga).

Since [measurable] Time from 'wink of eye' to 'age' revolves like a wheel, these are called the cycles of Time".

In the 'nearest approach' called "the Sun", Sūrya (Upaniṣad), it is said that all things are born from the Sun (Āditya).

कालचक्र प्रणेतारम् श्री सूर्य्यनारायणम् य एवं वेद स वै ब्राह्मणः

(Sūrya Upaniṣad)

"The Originator of the cycle of Time is Sire the Sun, abode of all creation ; whoever knows it knows the Principle of all ."

Definition of the Instant (kṣaṇa)

Just as one supposes the existence of an element of matter (द्रव्य) which can no more be divided, and which is called the atom (परमाणु)

similarly the 'smallest possible' (अपकर्ष काष्ठ प्राप्त) element of Time is called 'instant'. (क्षण).

The expression 'smallest possible element', is made from the word (अपकर्ष) "to divide, to make small, to decrease" and the word (काष्ठा) "extreme". It means that dividing Time into smaller and smaller fractions, a limit is reached when it can no more be divided. This indivisible fraction of Time, corresponding to the atom, is called 'smallest possible element'. It corresponds also to the time in which a moving atom moving by its own length occupies, in space, the place immediately adjacent to that it occupied previously.

Definition of Sequence (krama)

The uninterrupted (अविच्छेद) current, continuous like the flow of oil, of the instants, its never ceasing (अविराम) oriented motion (प्रवृत्ति), is called "sequence" (krama). The world cannot for one instant even remain without transforming itself ; without changing it cannot exist ; tranformation is the world's nature, transformation its intrinsic form (स्वरूप). After one instant comes another instant, after it another, then again another and, in this way, moves the endless current of time. Whatever we experience is transformation, is change or action. The passage or step from one state of existence into another is transformation (परिणाम) or change (परिवर्त्तन). From the root 'kram' (stride, step) the word 'krama' (sequence) is made. It has been said that the reality of sequence (क्रम) is only grasped at the end (अपरान्त) of the transformation (परिणाम).

यथापकर्षपर्यन्तं द्रव्यं परमाणुरेवम्परमापकर्षपर्य्यन्तः कालः क्षणः यावता वा समयेन चलितः परमाणुः पूर्व्वदेशं जह्यादुत्तर देशमुपसम्पद्येत स कालः क्षणः तत् प्रवाहाविच्छेदस्तु क्रमः ।

"Just as the limit of the division of matter is the atom so also the limit of the division of time is the instant. The time in which the moving atom leaving its previous place reaches the adjacent one is the instant. Its uninterrupted flow is sequence (krama).

क्षणनान्तर्य्यात्मा परिणामस्यापरान्तेन अवसानेन गृह्यते क्रमः

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1. Commentary of Vyāsadeva on Pātañjala darśana(वि० पा०) 52nd sūtra.
2. Commentary of Vyāsadeva on Pātañjala darśana (के० पा०) 33rd sūtra.

"Sequence, the nature of which is the uninterrupted [flow] of instants, is grasped at the end of the transformation."

All transformation (परिणाम) is the cumulative effect of the operation (व्यापार) of sequence (क्रम) ; only at the final limit (अपरान्त), the end (अवसान) of a transformation, can it be inferred (अनुमान) that a translation (पौर्व्वापर्य्य) which is sequence has taken place. The word 'sequence' thus, represents the transformation which will be experienced (अनुभूयमान) only at the final instant through the cumulative faculty (संकलन) of the Intellect (बुद्धि). Bhartṛhari explains that knowledge of action is but knowledge of instants, moments and other aspects of fractional time. He says :

गुणभूतैरवयवैः समूहः क्रमजन्मनाम्। बुद्धया प्रकल्पितामेदः क्रियेति व्यपदिश्यते

(Vākya padīya).

"The assemblage of that which exists within quality, has [distinct] parts, results from sequence and is conceived by the intellect as one thing, is commonly spoken of as 'action'." For a whole year I wore the same clothes, then, one day, some part of it tore away. Thus only did I know that my garment had worn. Yet it did not wear in a day. Its wearing began from the very instant when its shape was evolved. From that instant it began to burn (पाक क्रिया). When the wearing of this cloth, passing through extreme, relative and mere subtleness, reached the gross stage, then only did I know that wear had come. This transformation (परिणाम) experienced only at the last instant through the cumulative faculty of the intellect, is 'sequence'.

Nature, Person and Time

प्रत्यक्षेणानुमित्या वा यस्तूपायो न बध्यते एतं विदन्ति वेदेन तस्मात् वेदस्य वेदता।

"That which is not known through 'sensorial evidence' (प्रत्यक्ष), nor inference (अनुमान), nor any other means, that is known through Veda, this is why Veda is Veda'.

If we want to know the real essence of things, no one has the power to explain it except the Primordial Knowledge, the Veda and the other scriptures based upon it. The Primordial Knowledge tells that upon Time (kāla) depends the creation, standing, and destruction of the world. In the Viṣṇu Purāṇa also it is told that "The Principle, the Supreme Person, [the Pervader (Viṣṇu)] is the agitator (क्षोभक) and [is also under

another shape,] the thing agitated. Within the two states of Contraction (संकोच), i. e. the state of equality of the three qualities and expansion (विकास), the state of agitation (क्षोभ) of the three qualities), He ever remains present (विद्यमान) as the 'First evolver' (प्रधान) [or 'Basic nature' (प्रकृति)]".

स एव क्षोभको ब्रह्मन् क्षोभ्यश्च पुरुषोत्तमः ।
स सङ्कोचविकासाभ्यां प्रधानत्वेऽपि च स्थितः ॥

(Viṣṇu Purāṇa, 1/2/31)

Here the moving universe is shown as a development (परिणाम) from Nature, made of the three qualities—the ascending, expanding, and descending tendencies—resting upon the Conscious ; Nature is the Energy of the Supreme Self, of the Pervader (Viṣṇu), cause of all ; but Energy cannot be separated from him who possesses it (śaktimān) ; the Nature (प्रकृति) or Energy (śakti) of the Supreme Self is subject to contraction or development (संकोचविकासशील). In the 'Śrīmad Bhāgavata' also it is said that Nature (Prakṛti), Person (Puruṣa) and Duration (Kāla) constitute the shape of the Principle, the Brahman. They are not entities separate from the Brahman. Nature (Prakṛti) is the Energy inseparable and of one essence (अखण्डैकरस) of the Supreme Self ; and Person (Puruṣa) and Time (kāla) are its particular states (अवस्थाविशेष).

प्रकृतिर्ह्यस्योपादानमाधारः पुरुषः परः । सतोऽभिव्यञ्जकः कालो ब्रह्मतत् त्रितयंत्वहम् ॥

"Nature is the substance and Supreme Person the support of this [universe], Duration is its manifester, and I am this triple shape, the Principle". (Śrīmad Bhāgavata, 11/24/19)

Description of Time in the Viṣṇu Purāṇa and Atharva Veda

In the Viṣṇu Purāṇa it is said that Time has no beginning, no end ; when the three fundamental qualities—the ascending, expanding and descending tendencies (sattva, rajas, tamas) become equalized (साम्यावस्थापन्न) the universe is destroyed. Then Nature and Person stand apart. At that time, to support Nature and Person (Prakṛti and Puruṣa), now separate, the Supreme Principle, the Para Brahman, remains manifest under the shape which is called Time (Kāla). The shape of the Supreme Self which, at the time of creation, unites Nature to Person, Prakṛti to Puruṣa, and separates them at the time of destruction, the shape upon which flows the breakless current of creation-enduring-

dissolution of the space-motion universe, is the shape of the Supreme Self called Time. Nature (Prakṛti), Divinity (Īśvara), Time (Kāla), Law giver (नियति), nature (स्वभाव), etc., are one in their reality. Through Time all the visible moving universe is polarised (इषित), sexualized (कामित) ; therefore Time's will is the very will of the space-motion universe. Through Time is the space-motion universe procreated, in Time is the space-motion universe established ; Time is the 'Supreme Principle of existence' (परमार्थतत्व), Existence-Consciousness-Joy. Time supports and maintains the supremely august (परमेष्ठी) (he who stands in the highest place (परमस्थान), the sphere of truth, Satya Loka), the four-faced creator, Brahmā.

तेनेषितं तेनजातं तदु तस्मिन् प्रतिष्ठितम् ॥ कालो ह ब्रह्मा भूत्वा विभर्त्ति परमेष्ठिनम् ।

(Atharva Veda Saṃhitā 19/53/9)

"by it it is poralized, from it it is born, in it it stands. Time becoming the Creator, supports the Supremely August."

जन्यानां जनकः कालो जगतामाश्रयो मतः

"Time is the progenitor of all that is born, Time is considered the abode of the universe."

(Bhāṣā pariccheda)

Thus atom, electron, heat, electricity, earth, water, air, ether, planets, constellations, lunar fortnights, solstitial half years, year, life-breath, mind, intellect, 'I'-ness, living individuality, gods, heavenly beings, elements, all are but particular states (अवस्था) of Time, all are particular aspects of the reality of the Supreme Self, Time, circumscribed by Illusion (Māyā). This is explained in the Bṛhat Pārāśara-horā :

श्रीशक्त्या सहितो विष्णुः सदा पाति जगत्त्रयं । भूशक्त्या सृजते विष्णुर्नीलशक्त्या युतोऽत्तिहि ॥ सवषु चैव जीवेषु परमात्मा विराजते । सर्वं हि तदिदं ब्रह्मन् स्थितं हि परमात्मनि । सर्वेषु चैव जीवेषु स्थितं ह्यंशद्वयं क्वचित् । जीवांशमधिकं तद्वत् परमात्माधिकः किल ॥ रामः कृष्णश्च भो विप्र नृसिंहः सूकरस्तथा । एते पूर्णावताराश्च ह्यन्ये जीवांशकान्विताः ॥ अवताराण्यनेकानि ह्यजस्य परमात्मनः ।

"United to Fortune-Energy (Śrī Śakti) the Pervader, Viṣṇu, always protects the three worlds ; united to Earth-Energy (Bhū Śakti) the Pervader, Viṣṇu, creates ; united to the Dark-Energy (Nīla Śakti) he devours. In all living beings dwells the Supreme Self ; and all stand

in the Principle, the Supreme Self. In all living beings there are two parts. Those in whom the living part is predominant are such [i. e. living beings] ; those in whom the Supreme Self part is predominant are only 'apparitions' (किल). Rāma and Kṛṣṇa, O priest ! the man-lion and the boar, these are total incarnations. The others are in part living beings. There are many incarnations of the unborn, the Supreme Self."

Measurable Time and its Shape

Measurable time (कलनात्मक काल) is of two kinds, tangible (मूर्त्त) and intangible (अमूर्त्त). The Sūryya-Siddhānta takes the vital-breath as the unit of tangible time. The time necessary in a healthy body for inspiration and expiration is called vital-breath (prāṇa). One vital-breath takes about four seconds (of the Western division of time). The 'Time-atom', the 'truṭi', is the unit of intangible (अमूर्त्त) Time. It is the 33,750th part of a second.

प्राणादिः कथितो मूर्त्तस्त्रुट्याद्योऽमूर्त्तसंज्ञकः। षड़भिः प्राणैर्विनाड़ी स्यात्तत्षष्ठ्या नाड़िका स्मृताः॥ नाड़ीषष्ट्यातु नाक्षत्रमहोरात्रं प्रकीर्त्तितं। तत्त्रिंशता भवेन्मासः सावनोऽर्को दयैस्तथा॥ ऐन्दवस्तिथिभिस्तद्वत् संक्रान्त्या सौर उच्यते। मासैर्द्वादशभिर्वर्षं दिव्यं तदह उच्यते॥

Vital-breath (prāṇa) is said [to embody] tangible (मूर्त्त) [Time] ; time-atom (truṭi), etc., are called intangible [time] ;

6 vital-breaths (prāṇa) make one Vinādī or Pala) [24 seconds]
60 Pala make one Nāḍī (or daṇḍa, or ghaṭikā) [24 minutes].
60 Nāḍī make a sidereal day and night (नक्षत्र अहोरात्र)
30 [sidereal days and nights] make one [sidereal] month (नक्षत्र मास).

Similarly, [the time extending from one sunrise to the next is a terrestrial day (सावन अहोरात्र), and 30 terrestrial days make a] terrestrial month (सावन मास). [The time elapsed between the beginning and the end of one node of the moon is one] "tithi" or lunar day. [30 lunar days] make one lunar month (चान्द्र मास). The time which the Sun requires to move from one sign of the zodiac to the next is called solar month (सौर मास). Twelve solar months make one solar year. And one solar year is one day of the gods.

(Sūryya Siddhānta)

The Sūryya Siddhānta also explains that "कृतादीनां व्यवस्थेयं धर्म्मपाद

व्यवस्थया" "on the basis of the institution of the 'four feet of Eternal law' (धर्म्मपाद) is based the development of the four ages or Yugas". The Lord Manu tells that the natural opening or closing of the eyelid is called one 'wink' (nimeṣa) ;

18 Nimeṣa make one kāṣṭhā (limit)
30 Kāṣṭhā make one kalā (portion),
30 Kalā make one muhūrta (moment),
and 30 Muhūrta make one day and night (अहोरात्र)

One month of man is one day and night of the Ancestors (पितृ) and one year of man is one day and night of the Gods. The Northern course of the sun (Uttarāyana) is the day of the gods and the Southern course (Dakṣiṇāyana) is their night. All what I have told and shall further tell thee about the 'Scripture of the Luminaries' (astrology), which is the eye of Knowledge (Veda-nayana), is based upon the 'Primordial Knowledge', the Veda. Many hermetic-utterances (mantra) confirm the saying of the Sūryya Siddhānta that "the development of the four Yugas rests upon the institution of the four feet of Eternal Law (Dharma)", showing that it is based upon the Primordial Knowledge of subtle correspondences, the Atharva Veda.

शतं ते युक्तं हायनान्द्वे युगे त्रीणि चत्वारि कृष्मः

(Atharva Veda Saṃhitā, 8/2/21)

"I make thee [live] for one hundred years, for two Yugas, its triple, the quadruple."

This is the hermetic utterance used to bless the young man wishing him long life. From it is inferred that तद्द्वादश-सहस्राणि चतुर्युगमुदाहृतम्। सूर्य्याब्दसंख्यया द्विनिसागैरयुताहतैः॥ सन्ध्यासन्ध्यांशसहितं विद्धेयं तच्चतुर्युगम्

(Sūryya Siddhānta)

"[by dividing] the four ages (yuga) which comport 12,000 years of the gods (the number of solar years is obtained by multiplying by 10,000) [by 4+3+2+1, i. e. by 10 ; if the result of the division is then] multiplied [successively] by 4, 3, 2 and 1, one can know the [length of each one of the] four ages, Satya Yuga, etc. including their dawn and twilight." The commentary of Sāyaṇa adds :

हे बालक! ते शत हायनान् कृण्मः। तानेव अयुतं च हायनान् कृण्मः। तानेव द्वे युगे कृण्मः। त्रीणि युगानि कृण्मः। चत्वारि युगानि कृण्मः इति।

(Commentary of Sāyaṇa).

"O lad! I make thee live a hundred years; this I make into ten thousand years; this I make into two yugas; I make it three yugas; I make it four yugas. This is all." O lad! the special rites of this sacrament will make thee live one hundred years, which is the normal length of life for all men. Then shall I increase this number up to ten thousand. And thus, gradually, shall I extend the length of thy life till it fills up the four ages, the four yugas.

That one of our years is one day of the gods is told in the sacerdotal Taittiriya Brāhmaṇa (3/9/22)

एकं एतद् देवाना महः यत् सम्वत्सरः

"That which is a year that is a day for the gods".

The Cycle of Day and Night

Day and night are the two wheels of the year's cycle. The complete rotation of these two wheels closes the year's cycle.

एते सम्वत्सरस्य चक्रे यदहोरात्रे ताभ्यामेव तत् सम्वत्सरमेति।

(Aitareya Brāhmaṇa, 5/5/30)

"These two, night and day, are the cycles of the year, by these two the year exists."

In a clock, while the seconds' needle revolves sixty times, the needle of minutes revolves one time, so, also, when the cycle of day and night has completed its circle thirty times, the cycle of the month is formed. The month's cycle, like that of day and night has two parts, the clear and the dark fortnights. Just like the minutes' needle of a watch which, by revolving sixty times, causes the hours' needle to move round once, the month's cycle, by revolving twelve times, causes the year's cycle to move round. The year's cycle is not the largest cycle. In the Scripture are further described the four cycles of ages (yugas), Manus (manvantara), aeons (kalpa) and 'universal destructions' (mahā-pralaya) with their rhythms or revolutions.

Instants, moments, days, fortnights, seasons, equinoxial half years, years, ages, periods of one Manu (manvantara), aeons (kalpa), and universal destructions, in the view of the Primordial Knowledge, are but particular conditions, particular moments of divisible time.

True History

To understand the real history of the world it is necessary to know fully the beginning and the end of divisible time and the real nature not only of the earth but of the three worlds. The history in which are told the periods of all the cycles from that of instants to that of universal destructions and the natural results which necessarily follow the revolution of a particular cycle, is the real, complete and the only permanent history.

The Planets are the Shapes of Viṣṇu

जीवानां कर्मफलदो ग्रहरूपी जनार्दनः ॥ दैत्यानां बलनाशाय देवानां बलवृद्धये ।
कर्म संस्थापनार्थाय ग्रहा जावः शुभाः क्रमात् ॥ रामोऽवतारः सूर्यस्य चन्द्रस्य जगुनायकः ।
नृसिंहो भूमिपुत्रस्य बुधः सोमसुतस्य च ॥ परमात्मांशमधिकं येषु ते खेचराभिधाः ।
जीवांशमधिकं येषु जीवास्ते च प्रकीर्तिताः ॥

(Bṛhat Pārāśara Horā)

The 'giver of rewards', (Janārdana = Viṣṇu), taking the shape of the planets gives to living beings the fruits of their actions. So that ritual action, through which the strength of demons (daityas) is destroyed and the power of the gods increased, may be established the auspicious planets arise one after another. Rāma is the incarnation of the Sun, the Ruler of Jagu-land (Kṛṣṇa) is the incarnation of the Moon, the man-lion of the 'son of earth' (Mars), Budha of the 'son of the moon' (Venus). The beings in whom the Supreme-Self part is predominant are called planets (खचर) while those in whom the living part is predominant are known as living beings. Thus the planets possess Consciousness, have power to act (कारकता शक्ति), they have presiding deities and act in obedience to their presiding deities. They give to beings the fruits of their sins or good deeds.

कालात्मा च दिवा नाथो मनः कुमुद बान्धवः सत्त्वं कुजो विजानीयाद् बुधो वाणीप्रदायकः । देवेज्यो ज्ञान सुखदो भृगुर्वीर्य्य प्रदायकः

(Bṛhat Pārāśara Horā)

"And the Ruler of Day—the Sun—is the Self of Time ; the 'Kinsman of the Lotus'—the Moon—is Mind ; the son of earth (कुज) Mars—should be known as life-energy (सत्त्व), as force (बल) ; Mercury is [the power of speech (Vāk Śakti) or] the giver of Word ; Jupiter

(Bṛhaspati) gives knowledge (ज्ञान) and happiness ; and Venus (Bhṛgu) is the giver of sperm".

What are Presiding Deities ?

'That which does not possess the faculty of Consciousness' (अचेतन) cannot independently—at its own instigation—do any action. Action requires the support of consciousness. In the third chapter of the second part of the 'metaphysical point of view on the Doctrine' (Vedānta Darśana) is demonstrated, on the basis of Primordial Revelation as well as through argument, that the Unconscious, the inanimate, cannot, at its own instigation, without the support of a faculty of consciousness, do any work. With the help only of physical evidence and inference based upon it, there can be no certain solution of the question "can the unconscious, the inanimate, be independent or not ?" Simply looking at the outward aspects of Nature, many instances can be found from which it is evident that "the unconscious, without the guidance of a faculty of consciousness, cannot of itself begin any work, nor free itself from it. By comparison with works in which the action of a faculty of consciousness is evident, the necessity of a faculty of consciousness can be infered in works in which this action might otherwise be doubted. Works in which the action of a faculty of consciousness can be doubted are such as the growth of trees or creepers, the rising of mountains, the formation of vapour into clouds, and their descending upon the earth as rain, the multiple displays of chemical and physical energies, the strange dealings of vital energy, earthquakes, etc.. Whether such actions are due to the instigation of a faculty of consciousness or not cannot be determined through (physical evidence. And those who believe) only in physical evidence (स्थूल प्रत्यक्षवादिगण) usually deny the reality of all that cannot be demonstrated by such means. The 'believers in revelation' (आस्ति) however, tell that the facts that the existence of certain things cannot be demonstrated through physical evidence cannot be considered a proof that they do not exist. There is no doubt that things which are not subject to gross physical evidence also exist : The atom is not physically perceptible, yet its existence has to be admitted. That all work is due to the action of a faculty of consciousness has to be acknowledged from the 'metaphysical point of view' (Vedānta) and the 'point of view of logic (Nyāya darśana). Even among the

adepts of the modern particularized science some do recognize that, without the support of a faculty of consciousness, the unconscious cannot act by itself. Vācaspati Miśra in his "Bhāmati" raises the question "why should I accept that the senses have presiding consciousnesses" and, in a few sentences, gives its solution, saying : "the conscious instigation of the 'thing presided over' (अधिष्ठेय). to follow its own nature and the devising of the means to fulfil its aim constitutes the presiding (अधिष्ठातृत्व) over it." The driver is the presiding consciousness (अधिष्ठाता), the chariot the thing presided over (अधिष्ठेय). There is no doubt that before presiding over the chariot, the driver knew the nature (स्वरूप) of the chariot and the means to fulfil its aim. There is no doubt also, that, without the presiding (अधिष्ठान) of a faculty of consciousness, the inanimate cannot, of itself, do any intelligent action. If this is acknowledged one will be compelled to recognize that wherever intelligent and regulated action can be observed, a presiding consciousness must be present, otherwise one will be led to accept that in the inanimate there is power of doing intelligent or regulated work, that the inanimate has the capacity to discern what should not and what should be done, i. e. the inanimate has knowledge of space and time, i. e. the inanimate is conscious.

Presiding Deities and their Power

The Primordial Knowledge—the Veda—tells of presiding deities (अधिष्ठातृदेवता) of the planets and constellations and explains that under their influence men are inclined towards propitious or unpropitious (शुभाशुभ) actions. The Time principle is said by the Primordial Knowledge to be the cause of the rise, enduring and dissolution of the universe. Can anyone seriously believe that this Time principle can be a mere unconscious energy ? The Śvetāśvatara tells that Nature, (Prakṛti), i. e. Illusion (Māyā) which is made of the three fundamental qualities and is inherent (आत्मभूता) to the Supreme-Self—i. e. has no existence separate from that of the Supreme-Self—is the cause of the 'space-motion universe' (विश्व जगत्).[1] The Supreme-Self is the presiding [consciousness] of Time, nature (स्वभाव), Ether, and the other 'elemental principles' (भूत). He is

1. The two words Viśva and Jagat are used to mean the universe. But Viśva (that in which one enters) refers to the space-aspect and Jagat (that which moves) to the motion-aspect.

their ruler, he 'holds their command' (निदेशवर्ति) ; by his order they do their work, as was explained in the auspicious Bṛhat Pārāśara Horā. In the Bṛhad Āraṇyaka also, Supreme Divinity is said to be the inner ruler of all things.

From the study of the Knowledge of subtle correspondences, the Atharva Veda, it is clear that the zodiacal signs have presiding deities and that some of them have a favourable, sympathetic power and dispel pain, while others have an antipathetic power and destroy happiness.

Auspicious Times

The Primordial Knowledge and all the scriptures based upon it, acknowledge that in auspicious instants, auspicious moments, auspicious week days, auspicious zodiacal signs, auspicious lunar fortnights, auspicious months, auspicious seasons, auspicious equinoxial half years, auspicious years, lies a better opportunity for doing auspicious works. while in inauspicious instants, etc., lies the power of producing unfortunate results. Those who search for truth with adequacy can easily observe that in auspicious or inauspicious times lies the potentiality of fortunate or unfortunate results, that this is an absolute reality, and that although we are not always able to understand it, this belief is not mere uncivilized superstition.

Presiding Deities of the Planets

In the "Hermetic text of the Boar" (Varāha Saṃhitā) it is said that lunar days and zodiacal signs have presiding deities and that these presiding deities have the power of making [things] auspicious or inauspicious. If on the lunar days or under the zodiacal signs which have auspicious presiding deities actions are done which come within their sphere of influence fortunate results are sure to be obtained.

यत् काय्यं नक्षत्रे तद्दैवत्यासु तिथिषु तत् काय्यं म् ।।
करण मुहूर्तेष्वपि तत् सिद्धिकर देवतानाञ्च ॥

(Varāha Saṃhitā)

"Upon the power which is in a planet, depends the fortune of the actions done on corresponding days. The power of realization which is in 'moments' (muhūrta) and their divisions (करण) constitutes their deity".

The Arch-seer (Maharṣi) Nārada explained that

यद्दिनं यस्य देवस्य तद्दिने तस्य संस्थितिः ।

"A deity is truly nearer on the day dedicated to it."

Further, in the Agni Purāṇa it is said that by worshipping Fire (Agni) on the first lunar day, Brahmā on the second, Yama on the tenth, Gaṇeśa on the fourth, Śiva on the eighth, fourteenth and eleventh, and Viṣṇu on the thirteenth, special results are attained.

The Svarodaya

The Svarodaya is a part of the 'Scripture of Re-integration' (yoga śāstra). It explains many aspects of the astrological theory. It tells that certain works (कार्य्य) should not be done while the light of certain ethereal luminaries (स्वर) is flowing and certain works can only succeed if performed under the influence of certain ethereal luminaries especially the moon and the sun. If one follows carefully the instruction given by the 'Scripture of the Rising of Ethereal Light' many diseases, generally considered incurable, can be checked.

Re-integration and Astrology are but the Two Aspects of One Thing

Although Re-integration (yoga) and Astrology at first appear to be completely different things, yet, seen from a more subtle point of view, they are not intrinsically distinct. In the treatise upon Re-integration [called] 'the Rising Ethereal Light' (Svarodaya Yoga) has been shown the complete interdependence of both Re-integration (yoga) and Astrology. This treatise describes the six zodiacal signs, Taurus (वृष), Cancer (कर्कट), Virgo (कन्या), Scorpio (वृश्चिक), Capricornus (मकर) and Pisces (मीन), as the zodiacal signs of the Moon ; and Aries (मेष), Leo (सिंह), Aquarius (कुम्भ), Libra (तुला), Gemini (मिथुन) and Sagittarius (धनु), as the six zodiacal signs of the Sun. From their adequate knowledge the auspicious and the inauspicious can be determined. Particular lunar days or lunar mansions are the givers of fortunate or unfortunate results ; for that reason, when the two ethereal luminaries (स्वर), sun and moon, enter them, fortunate and unfortunate results are obtained. In the Sacerdotal part (Brāhmaṇa) of Knowledge called Taittirīya it is said that the deity of Kṛttikā (the Pleiades, the 3rd lunar mansion) is Fire (Agni) ; that of Rohiṇī (the fourth lunar mansion) is the Ruler of Creation (Prajāpati), that of Mṛgaśirṣa (the 5th lunar mansion) is Soma ; that of Ārdrā (the 6th), Rudra ; that of Punarvasu (the 7th), the Sun (Aditi) ; that of Puṣya (the 8th) ;

Bṛhaspati ; that of Aśleṣā (the 9th), the Serpents, that of Maghā (the 10th), the troup of the Ancestors (पितृगण) ; etc.

The Knowledge born of Discernment

The Divine Patañjali said that "by concentrating the mind upon the "instant" (क्षण) and its sequence (क्रम) arises the knowledge born of discernment (विवेक)".

क्षणतत् क्रमयोः संयमात् विवेकजं ज्ञानम् (पा० द० वि० पा० रुद्र सूत्र)

This knowledge through which the essence (तत्त्व) of all becoming (परिणाम) starting from the becoming of the "instant" (क्षण परिणाम) comes to be known, i. e. the knowledge through which can be discerned with absolute certainty what everything was, will be, and is, the knowledge from which, as soon as it rises, nothing remains unknown is the knowledge arising from discernment (विवेकजज्ञान). This knowledge has for its object all things (सर्व विषय) at all times (सर्वथा विषय) and is sequence-less (अक्रम). It arises from its own reflection (प्रतिभा) and is untaught (अनौपदेशिक). There is nothing which is not subject to this knowledge, nothing which cannot be known through it. Past and future are present before it. To say that it is sequence-less (अक्रम) means that, through the mystical experience (संयम) of the becoming (परिणाम) of a single "instant" (क्षण) of anything, knowledge of all its becoming is realized as one present. This is why the knowledge born of discernment is said to be 'the knowledge which leads to the other bank (तारकज्ञान) :

तारकं सर्व विषयं सर्वथा विषयं क्रमञ्चेति विवेकजं ज्ञानं

(Pa. Da. वि. पा० ५४ सूत्र)

"The knowledge which leads to the other bank, which has everything as its object and all times as its object, and which is without sequence is the knowledge born of discernment."

Śaṅkara himself told that the man whose mental inclinations have thus been turned inwards, attains through devotion, direct experience of the "transcendental principle of existence" (परतत्त्व) : O Brahmā, son of the lotus ! Only by [constantly] thinking of me, dissolving the self into me, in a [continuous] flow of love (भावना) [or contemplation (ध्यान)], can man achieve total-knowledge (सर्वज्ञत्त्व), supreme royalty (परेशत्व), capacity of doing

everything in every field (सर्व्वं सम्पूर्णशक्तिता) and unlimited power (अनन्त शक्तिमत्व).

भक्तिगम्यं परं तत्त्वमन्तर्लीनेन चेतसा । भावना मात्रमेवात्र कारणं पद्मसम्भव ॥
मामनुस्मरतश्चित्तं मय्येवान्ते विलीयते । सर्व्वज्ञत्वं परेशत्वं सर्व्वं सम्पूर्णं शक्तिता ॥
अनन्त शक्तिमत्वं च मदनुस्मरणाद् भवेत् । (Yogaśikha Upaniṣad)

The Astrologer can through Calculation tell The Past and The Future

The man who knows Astrology, that is who knows the Scripture of the determination of time (काल विधान शास्त्र) can tell by calculation events in the past, present and future : in which year, which month, which fortnight, which day, which moment, an event has taken place or shall take place, at what moment a certain planet shall meet with other planets in a certain constellation, and what, in Nature, will necessarily result from it ; what shall be the future life of a certain child ; which actions should be done at a certain time to achieve certain results. All this the man who knows Astrology can tell beforehand. If there is no mistake in the calculations, the prophecies of the future-teller can never be wrong.

Each transformation is dependent on the pre-ordained law all of transformation and takes place in pre-ordained sequence. The cause of all effects is fixed (स्थिर) ; the effects accumulated by the implications (समवाय) of the cause, will always develop from these implications. This is the only reason why scientists can foresee the future, or the mathematician, by calculation, can tell how far an object will fall in three seconds.

The Prophets also use Subtle Calculation

The knowledge of the events which the makers of the Scriptures had described long before their happening was also based on subtle calculations. It is through calculation that they knew the events of the future. Through the practice of the 'method of re-integration' (yoga), the re-integrated yogī, who can control his mind, can see, before his eyes, all things at all time. There are two sorts of yogīs, the re-integrated (yukta) and the one 'on the way to re-integration (yunjāna). The re-integrated yogī, without mental concentration, without any effort, just sees all things as if they were before his eyes, but the re-integrating yogī has to remove his mind from other things and firmly concentrate upon the thing he wants to know, before he can see, gross or subtle, past, future or far distant things.

युक्तस्य सर्व्वदा भानं चिन्ता सह कृतोऽपर :

(Bhāṣāpariccheda)

"The re-integrated knows at all times ; the other by mental effort [only]".

Bhartṛhari—his feet be worshipped—said that for the man in whom illumination has arisen (आविर्भूत प्रकाश), i. e. in whose Mental (चित्त [the faculty upon which the imprint of memory takes place]), ever free from impurities, full knowledge has arisen ; whose mental is undistracted (अनुपद्रुत चित्त), the knowledge of things past and future is in no way more remote than the things before his eyes. Past and future become as if they were present. The knowledge of the Seers, the Ṛṣis, who witness the universal law (dharma) and perceive the essence of all things, is thus without sequence (a-krama). This is not magic, it is not super-natural, it is but a purer knowledge, based upon subtle mathematical laws.

The Lunar Day (tithi)

तत्र तिथि शब्दस्तनोतेर्धातोर्निष्पन्नः। तनोति विस्तारयति वर्द्धमानाङ्क्षीयमानां वा चन्द्रकलामेकां यः कालविशेषः सा तिथिः। यद्वा यथोक्तकलया तन्येत इति तिथिः (काल माधव)

"The word "tithi" (lunar day) is obtained from the root "tana" which means "extension" (विस्तार). The particular extension of time in which the moon increases or decreases by one portion (kalā = 1/16th) is [called] lunar day".

Or, also, as was explained, that which expands by one portion is a lunar day". (Kālamādhava)

In the book of astrology called Siddhānta Śiromaṇi is also said that, "because their extension is determined by the "portions" (kalā = one sixteenth) [of the moon] the [days of the lunar month] are called 'lunar days' (तिथि).

तन्यन्ते कलया यस्मात् तस्मात्ताः तिथयः स्मृताः।

(Siddhānta Śiromaṇi)

The Skanda Purāṇa says :

"She, The Arch-power-of-Illusion (Mahā Māyā), [the Universal supporting Energy (आधार शक्ति)] is established in "the embodied" (देहिनाम्) as "She who upholds the body" (देहधारिणी), She, [who is recognisable (परिचिता) in] the sixteenth part [of the lunar sphere, is the upholder of the lunar body (चन्द्रदेहधारिणी). She is the New-moon

(Amā), the goddess spoken of as the Arch-portion (Mahā-kalā). [She knows of no rise nor decline. She is the eternal lunar day (**नित्या तिथि**)]. From the new-moon to the full-moon the [other fifteen] lunar portions (**कला**) [which have for their shape the first and other lunar days, subjected to decline or increase, and used to count the days] are known as lunar days (**तिथि**), and the sixteenth even. O lovely visage !"

अमा षोड़श भागेन देवि प्रोक्ता महा कला । संस्थिता परमा माया देहिनां देहिधारिणी । अमादि-पोर्णमास्यान्ता या एव शशिनः कला । तिथयस्ताः समाख्याताः षोड़शैव वरानने ॥

(Skanda Purāṇa)

In the sacerdotal (Brāhmaṇa) Aitareya and Taittirīya it is said that the name of Time...

यो पर्य्यस्तमियादभ्युदियादिति सा तिथिः ।

(Aitareya Brāhmaṇa)

चन्द्रमा वै पञ्चदशः । एषहि पञ्चदश्यामपक्षीयते । पञ्चदश्यामापूर्य्यते ।

(Taittirīya Brāhmaṇa 1/5/10).

"from one rising [of the moon] to the next rising is a 'lunar day", "The moon has fifteen, the fifteenth never declines, the fifteenth is never completed".

अत्र प्रथम कला क्रियारूपा प्रतिपत् एवं द्वितोयादि कला क्रियारूपा द्वितीयादि (Tithi tattva)

"The first portion (kalā) in its active form (**क्रियारूपा**) is [called) Pratipat (the first day) and the active form of the second and other portions is the second and the other lunar days.".

Action (**क्रिया**) is Time (**काल**). The knowledge action (**क्रियाज्ञान**) is the knowledge of Time (**कालज्ञान**).

"Made of [the months, the number of which is] twelve [or of] wheel's spokes (**अर**) [which are the zodiacal signs, Aries, etc.,] the cycle [of the sun (**आदित्य चक्र**), intrinsic form of] truth, (**सत्यस्वरूप**), [1][eternal and] immutable, constantly moves round ; in it, O Agni ! existing in a mutual copulation (**मिथुनीभूता**) [like that of a woman and a man], stand the [children-like] progeny [of the sun] which number seven hundred and twenty and are the days and the nights (360 days and 360 nights). Thus are divided the 'lunar days' (**तिथि**)]".

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1. Amṛta means here "the sun" that is truth (satya).

द्वादशारं नहि तज्जराय वर्वर्त्ति चक्रं परिद्यामृतस्य। अपुत्रा अग्ने मिथुनासो अत्र सप्तशतानि विंशतिश्च तस्थुः।

(Rg Veda Saṃhitā 1/164/11)

The word 'amā' (new moon) means "together" (सहित). The 'lunar day' in which moon and sun are together is called new moon (amāvasyā). In the Aitareya Brāhmaṇa it is said that

चन्द्रमा अमावास्यायामादित्यमनुप्रविशति। आदित्याद्वै चन्द्रमाऽजायत

"The moon, on new moon day, enters the Sun, and from the Sun the moon is born again." (Aitareya Brāhmaṇa)

Full Moon and New Moon

In the Gobhila Gṛhyasūtra is told that "when Sun Moon are nearest to one another, (परसन्निकर्षं) it is new moon (amāvasyā). When Sun and Moon are farthest from one another, [when the Moon stands in the seventh zodiacal sign counting from the Sun,] this [extreme far-ness] is [called] full moon (पौर्णमासी).

सूर्य्य चन्द्रमसोर्यः परः सन्निकर्षः साऽमावास्या, सूर्य्या चन्द्रमसोर्यः विप्रकर्षः सा पौर्णमासी।

(Gobhila Gṛhyasūtra)

Astrology

In the words of Lagadha, the aim of the Primordial Knowledge, the Veda, is the accomplishment of the ritual sacrifices. But, if the ritual sacrifices are not performed in the prescribed time, they cannot yield the result for which they are done. Thus the Science of the luminaries, Astrology, is the eye of Primordial Knowledge. It is this Science of Luminaries which rules the process of Time. It was created so that we might know which action shall, when performed at a certain time, necessarily produce a certain result. Those who fully know this Scripture know everything. This is explained in the book of astrology called the "Principles of the Arch-father" (Paitamaha siddhānta)

वेदास्तु यज्ञार्थं मभिप्रवृत्ताः कालानुपूर्व्या विहिताश्च यज्ञाः।
तस्मादिदं कालविधान शास्त्रं यो ज्योतिषं वेद स वेद सर्वम्॥

"The Primordial Knowledge has for its purpose the ritual sacrifices, and the ritual sacrifices are to be performed according to Time. He who knows Astrology, the Scripture of the process of Time, knows everything."

Astrology cannot be understood without the Science of Numbers

Praising astrology the "Principles of the Arch-father" explains:

सव्व जगत्पालन संहारकरं श्री ब्रह्माणं भृगुर्विज्ञापयामास।
भगवञ्ज्योतिषामयनं श्रोतुमिच्छामि तमुवाच भगवान् पितामहः।
यदा मे त्वं कल्पादौ हृदयाज्जातस्तदा मया ते श्लोकानां।
चतुर्विंशति लक्षं ज्योतिषमुक्तं तदेवास्मिन् वारुणे यज्ञे।
महादेव शापेन ज्वालां भित्वा विनिर्गतस्य जन्मान्तरोत्पन्नस्याभि संभिहित ज्योतिर्ज्ञान-माविर्भविष्यति।...

अथ भगवन्तं भुवनोत्पत्तिस्थितिसंहारकारकं चराचरगुरुमतियशसं समधिगम्य भृगुर्विज्ञापमामास भगवञ्ज्योतिः शास्त्रं पिता गणितेन दुःखगाहमतो गणितविधिमाचक्ष्व। तमुवाच श्रीभगवान्छृणु वत्स गणित ज्ञानं। अनादि निधन कालप्रजापतिर्विष्णुस्तस्य ग्रहगत्यानुसारेण ज्ञानं गणितम्।

(पैतामह सिद्धान्त—विष्णु धर्मोत्तर)।

"[The world teacher and world friend] Bhṛgu asked Sire Brahmā, the Protector and destroyer of the whole moving Universe : O Lord of the Powers ! I wish to be taught this Astrological science. The Lord of the Powers, the Arch-father, answered :

In the beginning of the first age thou wert born from my heart. At that time I taught thee the 'science of the luminaries' in twenty-four hundred thousand verses. Now that as a result of the curse of the Arch-god, Mahādeva, piercing the tongue of fire in the ritual sacrifice of the Waters (वारुण यज्ञ) thou hast come again—hast been born again—[I shall again instruct thee in the whole of the astrological scripture. (The story of the divine Bhṛgu being reborn after piercing through the tongue of fire is found in the Aitareya Brāhmaṇa and in Nirukta) ; By listening to this concise teaching] will arise in thee [the full memory of] the [complete] Astrological scripture which was told to thee [in thy previous life]. Then approaching the Lord, the celebrated teacher of the animate and the inanimate by whose power the spheres are born, last, and are destroyed, Bhṛgu asked : O Lord of the Powers ! without the science of numbers, the science of luminaries (i.e. the applied knowledge of the astrological scripture and the science of results) is not possible. Teach me the mathematical science. The Sire Lord of the Powers then told him : Listen, O kinsman, to the science of numbers.

The Pervader, Viṣṇu, lord of the creatures, without beginning or end is Time. Knowledge of Him, in accordance with the movements of the planets, is the science of numbers."

The Scripture and Knowledge of The Motion of Planets

This calculation of celestial bodies (ग्रह गणित) is the fulfiller of all desires and is all auspicious. By carefully studying the motion of one of the planets, a man obtains that planet's sphere as heaven ; there is no doubt about that. Those who will know the motion of all the planets shall gain the Creator's paradise (Brahma-loka). Those who possess the knowledge of the motion of the planets, if they wish for righteousness obtain righteousness, if they wish for wealth get wealth, if they wish for pleasure get [a life of] pleasures, if they wish for liberation will obtain that supreme stage. By a thorough knowledge of the motion of planets a twice-born becomes qualified (पात्रता). And if, instead of making his livelihood from it, he gives up this means of livelihood, he becomes most qualified among the qualified".

इदं ग्रहाणां गणितंसर्वकामप्रदं शिवम्। गणितमेकस्य विज्ञाय ग्रहस्य सुसमाहितः॥
तस्य लोकमवाप्नोति नात्र कार्य्या विचारणा। सर्व्वं ग्रहगतिं ज्ञात्वा ब्रह्मलोकः प्रपद्यते॥
धर्मार्थीं प्राप्नुयाद् धर्ममर्थीर्थीं चार्थं माप्नुयात्। कामानवाप्नुयात् कामी मोक्षार्थी परमं पदम्॥
सम्यग् ग्रहगतिं ज्ञात्वा पात्रतां याति वै द्विजः। न चेत् वृत्तिं तथा कुर्य्यात् तथावृत्तिं विवर्जयेत्॥
पात्राणामपि तत्पात्रं ग्रहाणां वेत्ति यो गतिं।

(Viṣṇudharmottara)

The Purpose of The Astrological Science

Once a complete knowledge of the motion of planets has been acquired, through the 'Scripture of the process of Time' (कालविधान शास्त्र) or 'Science of the Luminaries' (ज्योतिष), next to be known is which action done in which way and at which time will yield good results, which instants, moments, etc., are favourable, which lunar day, which week day, which conjunctions, which zodiacal sign, which month, which equinoxial half-year, which year, may be the cause of success or failure ; which constellations are generally unfavourable and which constellations are generally favourable ; the influence of which planet is good or bad for a certain country, and produces droughts, floods, volcanic eruptions, earth-quakes, forest fires, tempests, revolutions, wars, and other misfortunes. There are many conjuctions of the Earth and the planets the effect

of which may spread upon a large expanse of time—this has been experienced by many. When Mars or Saturn in their orbit come nearest to the Earth, revolutions, fearful wars, and all kinds of mishaps take place in countries and races upon which they happen to rule. Yet, when, in the terror of death, thousands are before their time devoured by Time, it is ever impossible that all planets having become unfavourable the whole human race should come to its end.

THREE NEWLY DISCOVERED DATED BENGAL SCULPTURES

by N. K. BHATTASALI

A comprehensive history of Bengal sculpture has yet to be written There are already some notable contributions on the subject, viz. (1) R. D. Banerjee's "Eastern School of Mediaeval sculpture"; (2) R. P. Chanda's "Mediaeval Indian sculptures in the British Museum". (3) Kramrisch's "Pala and Sena sculptures"—Rupam. 1929. (4) S. K. Sarasvati's "Early sculpture of Bengal" J. D. L. Calcutta University, Vol. XXX. (5) Also the present writer's "Buddhist and Brahmanical sculptures in the Dacca Museum.

Fortunately, during recent years, three dated sculptures have been discovered from different parts of Bengal. They carry the study of the subject a little farther, and as they are excellent and well preserved specimens and can be fairly accurately dated, they are likely to serve henceforth as so many sign-posts for the history of Bengal sculpture.

A. The Kulkuḍi Sun-God image of the 12th year of King Govinda Candra

The image,[1] in black chlorite, 3′ 3″ in height, is now in the Dacca Museum, having been presented to the institution by its owners, the Guha brothers, Durgāmohan, Harendra, Nibāraṇ and Nagendra of the village Kulkuḍi, P. S. Gossāinhāṭ, Dt. Faridpur. The mother of the donors, now about 90 years old, reported that her father-in-law had rescued the image from the deltaic island of either Hatiyā or Sondeip, at the mouth of the mighty Meghnā where he found it in danger of getting lost through erosion of the river bank on which its temple stood. He rescued the image in time and brought it to his village home at Kulkuḍi. The

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1. Annual Report of the Dacca Museum, 1941-42. Pl. I.

inscription on the pedestal caught the eyes of an agent of the Dacca University, in search of manuscripts, and the donors were persuaded, without much difficulty, to present the image to the Dacca Museum.

The image is an excellent specimen of the sculptor's art of Eastern Bengal of the period. The figure wears all the distinctive dress and ornaments of the Sun-god, including the breast-plate, the daggers and the top-boots. The figure of the god is flanked by twelve circles of foliage, six on each side, each circle containing an Āditya or Sun-god in miniature. The lowermost circle on the proper right is occupied by a bearded male figure, holding a lotus in the right hand and a 'kamaṇḍalu' in the left, probably Vidhātā, or Brahmā, who, according to some texts has a place on the Sun's chariot. Underneath the lowest circle on either side, two spirited female riders on horses,—a rare sight in images—are depicted shooting Sun-rays in the form of shafts. Two more standing female figures, underneath, are similarly engaged. A remarkable omission is the standing miniature figure of Uṣā, who is generally found on Sun-god images of this period, just before the figure of the god himself. The seven horses drawing the Sun's chariot as well as the single wheel on which it moves forward, are all there ; the bearded Piṅgala on the proper right has lost his 'pen' hand, but Daṇḍa on the proper right is intact with his staff and sword. The half-bodied charioteer Aruṇa with his 'nāga-rajju' and whip, is in his proper place, while the two wives of the Sun-god, Sureṇu and Chāyā stand on either side of the god as inconspicuous figurines. The conical top of the slab has a prominent Kṛttimukha on it.

The inscription on the pedestal says that the image was installed by the leper Dina in the 12th year of King Govinda Candra, presumably the very same king who fought the South Indian invader Rajendra Cola in about 1023 A.D.. Assuming that Govinda Candra had come to the throne of Vaṅga only a few years before this event (an assumption for which there are some grounds), say in 1015 A. D., the image can be definitely dated in circa 1027 A. D.

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2. Annual Report of the Dacca Museum, 1941-42. Pl. II.

Fortunately, the discovery of another inscribed image dated in the 23rd regnal year of King Govinda Candra became known almost simultaneously with that of the Kulkuḍi image. This image is described below.

B. The Betkā Vāsudeva image of the 23rd year of King Govinda Candra.[2]

Betkā is a village, now almost on the bank of the Dhaleśvarī river, on the northern boundary of the Pargana of Vikrampura, District Dacca, Sub-division Munsiganj, P. S. Taṅgivāḍī. Some families of betel-planters (bārai) reside in the village from time immemorial. On re-excavating an old tank in the locality, a fine image of Viṣṇu came up some years ago and was taken later on to the 'Pallī-kalyāṇa āśrama' in the village of Outṣāhī, three miles to the south. Here, the inscription on the pedestal began to attract attention, and Sj. Jogendra Nath Gupta, author of the 'Vikrampurera Itihāsa' (History of Vikrampura) obtained rubbings of the inscription and handed them over to Dr. D. C. Sarkār of the Calcutta University for publication. Dr. Sarkār has published two articles on the inscription, one in the Bengali Journal 'Bhāratvarṣa', Jaiṣṭha, 1348 B. S., pp. 769 ff.; and the second in 'Indian Culture', Vol. VII, 1940-41, pp. 405 ff. The inscription says that the god Vāsudeva was installed by Gaṅgadāsa, son of Pāradāsa, belonging to the 'Bālajika' = Bārajika, i. e. the Bārai (betel-planter) community in the 23rd year of King Govinda Candra. According to our previous calculation, the sculpture is, therefore, dated in circa 1038 A. D.

The image is in black chlorite, about 4′ 8″ in height. It is a very good specimen of the sculptor's art of Eastern Bengal. The slab is conical at the top and has a prominent Kṛttimukha at the top, showing that these features, generally considered rather late, are not later than about 1000 A. D. The face of the god, though rather soft and feminine for the August Ruler of the Universe, beams with an expression of purity, beauty, innate goodness and benevolence. The faces of the two goddesses on either side are equally expressive.

C. The Rājibpur Sadāśiva image of the 14th. year of Gopāla III.

For details regarding the image and the inscription on its pedestal,

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2. Annual Report of the Dacca Museum, 1941-42. Pl. II.

readers are referred to the late Mr. N. G. Majumdār's article in the 'Annual Report of the Archæological Survey of India', 1936-37, pp. 130-133, and the present writer's contribution published in the 'Indian Historical Quarterly', Vol. XVII, 1941, pp. 217 ff. As made out both by the late Mr. N. G. Majumdār and myself, the inscription is undoubtedly of the 14th. year, and it is difficult to understand Dr. R. C. Majumdār's hesitation in accepting the date (JRASB., 1941, p. 216 and 'History of Bengal', Vol. I. ed. Dr. R. C. Majumdār, pp. 167-68, f.n. 4). The 14th year of Gopāla III must be very near 1140 A. D.

This image, also, as is usual with the images of the period 1000 A. D. —1200 A.D., is in black chlorite. It is a fairly large image, 3' 2" in height with a prominent Kṛttimukha at the top. It was discovered at Rājibpur, P. S. Gaṅgārāmpur, Dt. Dinajpur, close to the ruins of the once famous city of Koṭivarṣa, now known as Bāṇgaḍ. The image is now exhibited in the image gallery of the Indian Museum, Calcutta.

The god Sadāśiva is here depicted as a ten-armed, four-faced deity (the fifth face is not depicted) with all the usual attributes. The heaviness of the composition and the over-ornamentation mark it as a late piece of sculpture, akin to those of the Sena period and the inscription also confirms this ascription. Dr. R. C. Majumdār's attempts to suggest that the inscription may be of Gopāla II (accession circa 940 A. D.), i. e. 200 years earlier, does not take note of the chronology of the evolution of sculptural types of Bengal.

Now that we have finished describing the three new finds, undoubtedly dating in the period between 1000 A. D. to 1200 A. D., the great change that came over Bengal sculpture can be very well understood from a comparison with the frequently illustrated Bāghāurā image of Viṣṇu dated in the 3rd year of Mahīpāla Deva. We need not enter here into the vexed question of who this Mahīpāla was—whether a Pratihāra or a Pāla. I myself have, in more places than one, maintained that he was Mahīpāla I of the Pāla dynasty, but I now consider the claims of the Pratihāra Mahīpāla superior. Mahīpāla I finished his reign about 1026 A. D., and judging from the style, it is impossible to date this sculpture about 1000 A. D. We have, therefore, to shift this Bāghāurā image backwards by about a century, to accommodate the Sun-god image from Kulkuḍi dated about 1027 A. D. The ascription of the inscription and

the image to Pratihāra Mahipāla who reigned in the beginning of the 10th century A. D. thus becomes incumbent, and this is the outstanding service done by the two dated images of the reign of Govinda Candra. We can now clearly see that the transition from the rounded top of the slab and the sober workmanship of the relief to the conical top and a tendency towards over-ornamentation was effected roughly during the period 900 A. D. to 1000 A. D.

ICONOGRAPHY OF VĀYU AND VĀYU-WORSHIP IN GUJARĀT

by M. R. MAJMUDĀR

The gods of the Ṛgveda, whose number is stated to be thirty-three, were worshipped not in temples but in the open air on a sacrificial ground.

When Agni, as Fire before the eye of the worshipper, was prayed to, any definite image was out of question ; Of Vāta (wind) poet of the Ṛgveda says : "One hears him, roaring, but his form one does not see". The Ṛgveda does not contain any evidence of iconographic representations of any of the gods.

In the Vedas, the principal places are assigned to Agni, Vāyu or Indra and Sūrya, who appear to have been regarded as the triad of deities in whom the Supreme Spirit was especially revealed—Agni, Vāyu and Sūrya being respectively the rulers of the earth, the air and the heaven.

Apart from the phenomena over which these gods rule, the gods were differentiated mainly by the weapons they wield or by the animals which draw their cars. Hence, Marut was shown by his banner which he waves in the air, and the deer, the swiftest of the animals is his 'vāhana'.

In the Vedas, the cars of gods, though generally drawn by horses are also described as yoked with various other animals[1] such as the antelopes

1. A list of ten such animals is given in Nighaṇṭu, and repeated in Bṛhad-devatā.

of the Maruts and the goats of Pūṣan. In the case of Marut, the post-Vedic 'vāhana' has not changed.

According to the Āgama texts : "The 'vāhana' or vehicle of the personified weaver of 'bāṇa' is the wind, Vāyu, and his banner is the feather".

In the Śaiva Āgamas the Mūrtiśvara Śiva of Vāyu-tattva is Kāla, and he is the husband of Kāli. Parā Śakti assumes the form of Kāli as Vāyu-ākāra.

The Vāhanas in Indian sculpture are marks of identification, laid down in the Ṛgveda. The second way of distinguishing a god was by his weapons. Originally a single weapon was sufficient for the identification of a god, a 'vajra' for Indra, a 'cakra' for Viṣṇu, a 'triśūla' for Śiva and a 'dhvaja' for Vāyu or Marut. The number of distinguishing symbols, however, gradually increased in the course of time ; this is evident from later sculptures. Vāyu is referred to as 'darśata' (of pleasing appearance) in hymns which could only mean that Vāyu-images were made to look beautiful.

Vāyu images are generally four-armed. Vāta and Vāyu both denote Vedic deities. But Vāyu is chiefly the 'god', and Vāta the 'element'. Vāyu is celebrated alone in one whole hymn, in parts of others, and in about half a dozen hymns conjointly with Indra (Indra-Vāyū).

Vāta is associated with Parjanya, whose connection with the thunderstorm is much more vivid than that of Indra. Different sets of epithets are applied to the two wind-gods, those belonging to Vāta being chiefly expressive of the physical attributes of swiftness and violence.

Vāyu is said to have given birth to the Maruts or winds by the rivers of Heaven. Few references are made to Vāyu's origin. The worlds are said to have generated him for wealth. In the Puruṣasūkta, he is said to have sprung from the breath of the Puruṣa.

The 'Aitareya Brāhmaṇa' tells a story of how in a race which the gods ran for the first draught of Soma, Vāyu reached the goal first and Indra second. Vāta, as the ordinary name of wind, is celebrated in a more concrete manner. Shattering everything and thundering his din, he passes on. He goes along whirling up the dust of the earth. He wanders in the air on his paths. He does not rest even a day. One hears him roaring, but one does not see him. The place of his birth is unknown. He is the breath of the gods and is worshipped with oblations.

In Adh. II of the 'Durgā Māhātmya' from the Mārkaṇḍeya Purāṇa it is mentioned that for the killing of Mahiśśāsura, the essence of energy or light that every Devatā has, emanated from his body, and led to the making of the perfect form of Goddess Mahādevī. Among the particular limbs of the goddess formed from the essence of energy contributed by the various gods, the ears are mentioned as having been formed from the quota of Anila, the wind ('śravaṇāvanilasya ca' II, 18).

And further, in the equipment of the Mahādevī with corresponding weapons (āyudha) by the devas, it has been mentioned that Marut gave a bow and a quiver, filled with arrows (maruto dattavāṅścāpam bāṇapūrṇe tatheṣudhi, II 22).

Hanumān, the son of Vāyu, is connected with the wind that yearly brings rain, or with the clouds that send down rain. He is worshipped as the universal tutelary god in all villages.

The Hanumān of the Rāmāyaṇa is the son of the wind-god; and hence his other name Marutātmaja or Mārutī; like all monkeys, he can assume any desired form; he is 'cāmarūpin' like the clouds. Like the clouds. he flies through the air, hundreds of miles beyond the sea, for finding out Sītā, and he finds her. From the distant south, from which the monsoon comes forward, Sītā is brought back; and indeed, Rāma succeeds in doing this, only with the help of the monkeys, the rain clouds.[1]

According to texts on Hindu iconography, Vāyu should be a youthful person of powerful constitution, of black colour and possessing two or more hands. His eyes must be red and his garments white. He should have a wavy, curved brow and be adorned with all ornaments. In his right hand, it is stated, there should be a 'dhvaja' (banner) and in the left a 'daṇḍa' (staff). It might also mean that the right hand should be held in the 'patākā-hasta' pose. Some authorities prescribe the 'aṇkuśa' in the right hand of this deity. His hair should be dishevelled, and he may be seated either on a 'siṃhāsana' or on a deer. The latter is more often met with in sculptures as vehicle of Vāyu. He should also appear to be in haste to move very quickly.

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1. My thanks are due to my colleague and friend Prof. Dr. S. S. Bhâve for translating for me from German the notes on Hanumân from 'Das Râmâyaṇa' by H. Jacobi (Bonn, 1893) partly incorporated in this paragraph.

Vāyu's attributes are indefinite. Vāyu has a shining car drawn by a team or a pair of red (rohita) or ruddy (aruṇa) steeds. This team consists of eleven, a hundred or even a thousand horses yoked at his will. The attribute 'niyutvat' (drawn by a team) often occurs with reference to Vāyu or his cars. Vāyu's car, wherein Indra is his companion, has a golden seat and touches the sky.

Like the other gods, Vāyu is fond of Soma to which he is often invited to come with his team and the first draught of which he obtains as his share : for he is the swiftest of the gods.

The 'Viṣṇudharmottara' states that the colour both of the body and the garment of Vāyu should be sky-blue and that he should carry in his hands the 'cakra' and a 'dhvaja'. Vāyu should have his mouth open. To his left should be seated his consort. In the 'Kavaca' text from the Vārāha Purāṇa, appended to the popular 'Durgā-māhātmya' (glories of the Goddess Durgā) in the Mārkaṇḍeya Purāṇa, the female energy of Vāyu-Vāyavī is described to have a deer as her conveyance (vāyavyām [rakṣatu] mṛgavāhanī).

According to the Mānasollāsa, Vāyu is described as with two hands, one being 'varada', the other holding the banner ; with a 'mukuṭa' and 'kuṇḍalas.'

According to the 'Rūpa-maṇḍana'[1] and the 'Devatāmūrti Prakaraṇa,'[2] both the texts having been compiled by Sūtradhāra Maṇḍana from western India, Vāyu is made a full-fledged god with four arms, one 'varada', the others holding respectively a 'dhvaja' or 'daṇḍa', a' patākā' and a 'kamaṇḍalu'.

According to all Jaina authorities on iconography, Vāyu rides a deer. Some Śvetāmbara texts give him the attribute of a 'vajra', others give him a banner.[3] The Digambara account of him differs from this only in

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१। "वरं ध्वजपताकाञ्च कमण्डलुं करैर्दधत्।
मृगारूढो हरिश्मश्रुः पवनो वायु दिक्पतिः॥"
—रूपमण्डने, अ, २, श्लो, २६।

२। "वरं ध्वजपताकाञ्च कमण्डलुं-तथा करैः।
मृगारूढं प्रकर्तव्यं वायुदेवं मरुद्दिशि॥"
—देवता मूर्ति प्रकरणे, अ, ४, श्लो, ६४।

३। cf. "ॐ नमः श्रीवायवे वायव्य दिगधीशाय धूमराजाय रक्ताम्बराय हरिणवाहनाय ध्वजप्रहरणाय···] आचारदिनकरे।'
also cf. "वायु सितवर्णं मृगवाहनं वज्रायुधं कृतपार्श्वं]" निर्वाणकलिकायां।

the substitute of a wooden weapon (a broken branch of a tree)[1]. Thus we see that the Jaina Vāyu differs not essentially from the Brahmanic Vāyu; only the assignment of the attribute of a 'vajra' seems to be new. Similarly, the symbol of a wooden weapon, attributed by the Digambaras is another feature unknown to Brahmanism. The Yakṣa of Padmaprabha who presents some affinity with Vāyu is Kusuma, who likewise rides a deer according to both the Jaina sects, and the Yakṣiṇī is called Manovegā from her antelope-conveyance.

In the Hindu cosmos, the eight quarters of the universe are governed by eight Guardian deities, beginning with Indra ; they are known by the name of Dikpālas. Vāyu is assigned the guardianship of the north-west region of the universe. These eight deities have prominent positions in the Vedas, long before Viṣṇu and Śiva became supreme in Hindu belief.

As the ocean was considered to form the western limits of India, Varuṇa, the lord of waters was put in charge of the western direction ; and Vāyu was made the guardian of the north-west corner, as the wind-currents from the western ocean passed towards the north.

The ten Dikpālas, are found to be sculptured on the ceilings of the 'maṇḍapa' of a temple, just as those on the cave-temples at Badāmi. But very rarely are independent temples dedicated to each of these guardians. These are assigned their respective subordinate positions as attendant-gods on the main temple, with a view to protect the temple itself.

Gujarāt is a land of sub-castes for various reasons ; the exclusiveness consequent on foreign invasions and the influx of foreign settlers in the land of Gujarāt has necessitated separate castes and sub-castes among Brāhmins, Vaiśyas and even some of the Śūdras.

The traditions of a particular section or sect, under such circumstances were formulated in a sort of Purāṇa works ; and it is not surprising that we have an 'Audicya Prakāśa' for the Brāhmin settlers from the north in Gujarāt, a 'Śrīmāl Purāṇa' for original inhabitants from

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१। "एकस्यापि पश्चिमोत्तरदिशि द्वारावती भूपतेः वायुं तुरङ्गकुरङ्गमपृष्ठगमनं दक्षस्रुवृक्षायुधम्।"—देवपूजायाम्।

cf. also "खुरकपितकुलं यावसारङ्गयुग्मम्।
न्यालीलद्वावयन्तं त्रिजगदसुधृति व्यक्षसूत्रं साक्षम्॥"
—प्रतिष्ठासारोद्धारे।

Śrīmāla or Bhinnamāla, a 'Moḍheraka Purāṇa' for the Moḍha Brāhmins, Vaiśyas, and even oilmen from their habitat at Moḍherā (North Gujarāt), and an 'Anāvila Purāṇa' for the Anāvila Brāhmins in the South of Gujarāt.

The 'Vāyu Purāṇa', not the one of the eighteen principal Purāṇas but a fragmentary medieval Sanskrit text in 14 'adhyāyas', comprising of 572 'ślokas' describes the original habitat of Brāhmins and Vaiśyas, which was a place named Vāyaḍa, a few miles north of Paṭṭan, in North Gujarāt. A notable sect of Jaina Sādhus is also known from this place as the 'Vāyaḍa gaccha' as early as the 12th century.

The particular section of Brāhmins and Vaiśyas which is known to have Vāyaḍa as its original place, has amongst its families the worship of Vāyu as the traditional family-god, at times with his consort, the Vāyavī devī. As members of this section of the population of Gujarāt gradually migrated towards the South, they carried their religious and social traditions with them ; and this explains the existence of several temples of Vāyu all over Gujarāt.

The original temple of Vāyu-devatā, it is believed, was situated at Vāyaḍa, with a beautiful step-well by its side, which when falling on bad times, had the images removed and established at Paṭṭan, the flourishing town in the neighbourhood. Vāyaḍa is now a deserted village.

These images located at Paṭṭan are not of stone but of metal. The Guardian of the north-west quarter is accompanied by his consort Vāyavī, the Añjanī of the Rāmāyaṇa, and the mother of Hanumān. Vāyu, as the father of Bhīma, in the Mahābhārata testifies to the post-Vedic importance of Vāyu. The face of Vāyavī-devī is monkey like and she is two-armed. The four arms of Vāyu hold 'akṣasūtra', a 'dhvaja', a 'varada mudrā' (pose) and a 'kamaṇḍalu' respectively, starting from the lower right hand. The antelope is shown at the feet, at the left hand corner.

An image of Vāyu in stone, placed in a niche at the north-west corner of a main temple at Vaḍanagar, 13th century, is shown to hold something resembling a lotus-stalk in the upper left hand, in place of a simple 'varada' pose. The 'vāhana' is shown to the right, in this case. An image of Vāyu from the temple at Broach (inscribed Saṃvat 1510) shows the lower right hand with 'varada', the upper one holding the 'akṣasūtra' ; the upper left hand holds the 'dhvaja', and the lower one the 'kamaṇḍalu'. The 'vāhana' is seen behind the image.

The Vāyu-temple at Barodā houses both Vāyu and Vāyavī. The Vāyu image in white marble, is identical to the one described as one from Broach, which is however of black granite. Vāyavī-devī, is in a sitting posture, as if she were riding a deer. With one of her four hands she holds a child, very probably Māruti.

The illustration on p. 108 is from a painting on cloth, of the ten Guardians of the universe, not later than the 17th century A.D. Its importance is iconographical rather than aesthetic. The figure of Vāyu holds banners in the two upper hands, the lower right holding an 'akṣasūtra' and the lower left a 'kamaṇḍalu'. The antelope in great speed, is shown running towards the right.

Temples of Vāyu are in actual worship at Bhuj in Cutch, Cambay Ahmedābād, Broach, Surat and Andheri. This fact suggests the idea, behind these temples all of which are situated in close proximity to the Western and the Arabian Sea. The devout and flourishing worship of Vāyu as a family-deity ('kula-devatā') in a particular section of the Vaiśyas in Gujarāt evokes many cultural associations. It is also noteworthy that invariably the image of Viṣṇu is also installed in a Vāyu-temple, who equally shares the devotion of these Vaiśyas.

The Nagara-śeṭhas of Broach who are worshippers of Vāyu have been known to carry on extensive trade by sea with Arabia, Iran and other parts situated in the north-west direction to the coast of Gujarāt and Kāṭhiāwār.

This ancient maritime trade of some of the merchants of Gujarāt with countries situated in the north-west corner of the Arabian Sea partly explains the existence in Gujarāt of the uncommon worship of Vāyu, who is the protector or 'dikpāla' of that quarter.

Vāyu is naturally propitiated in order that the winds may be congenial to their journey and trade and that the ships might have good speed; the conveyance of the antelope and the symbol of a banner are mentioned among the distinguishing features of the Protector of the North-west.

The co-existence of a Viṣṇu-image with Vāyu is explained by the fact that Lord Kṛṣṇa, who later in life settled in Saurāṣṭra, has his seat at Dwārkā in the farther west. He is also known as Jagannārāyaṇa, the Jagat Beṭ of Muslim times.

THE WORLD-CYCLE

by R. SHAMASASTRY

In the Purāṇas and other religious works the creator of the world is assigned a day of 1000 Yugas and a night of the same duration. At the end of his day-period the world is stated to disappear and at the close of his night to re-appear with the same diurnal and nocturnal phenomena like sun-rise and sun-set. This notion seems to have its origin in the Vedic eclipse-cycle of 1000 Yugas. We may go so far as to say that the recurrence of the same solar and lunar phenomena at each eclipse-cycle seems to have been taken for the re-appearance of the universe in its original form at the dawn of the creator's day-period of 1000 Yugas. The Bhagavadgītā says (VIII. 17-19): "Those who know the creator's day-period of 1000 Yugas and also his night-period of the same length understand what a day and night mean precisely. At the dawn of the creator's day the whole universe manifests itself from the unknown and lies merged within the same unknown at night. Thus the appearance and disappearance of the universe with the same life and matter recur cycle after cycle of 1000 Yugas."

The recurrence of phenomena of life and matter and light and darkness being assumed to be the same in both the eclipse-cycle and the world-cycle, the difference between them lies in the meaning assigned to the word "Yuga". In the eclipse-cycle it means a period of 1000 Parvas of $14\frac{3}{4}$ days each equal to 40 years nearly, while in the world-cycle it is interpreted to mean 1000 Yugas of 12000 divine years or 4,32,0000 human years each. If we take a Parva to be equal to 14 days, as the Vedic poets seem to have taken avoiding fraction, then 1000 Parvas or 14000 days comes to be nearly equal to 39 years and a few months. Splitting this period into two parts of 7000 days each,

the Vedic seers seem to have called each part a Sapta-puruṣa cycle of 7000 days, a Puruṣa cycle being taken to be a period of 1000 days, with at least three visible eclipses, solar or lunar, or both together on an average. 1098 days constitute three nodal or eclipse years of 346 days each. In each nodal year no more than 4 eclipses, two solar and two lunar, can possibly occur. Sometimes there may be in the same region one visible eclipse or none at all in a nodal year. In three nodal years there can possibly be no more than 12 eclipses and not less than three visible eclipses at least in the same locality. Eclipses are variously called in the Vedas: they were sometimes called three brothers, or three fathers,—father, grandfather, and great grandfather. The three descriptive designations given to the three eclipses of a cycle of 1000 days are Paṭara, or one of dusky appearance, Viklidha, or one of black colour, and Piṅga, or one of reddish-yellow colour, as I have pointed out both in the "Drapsa", and the 'Eclipse-cult". An eclipse is generally called a Putra, or Vatsa, or Prajā, all meaning a son. The seven eclipses of a cycle of 1000 days are called the seven Putras of Viśpati (RV. 1.164.1). In the same verse the three eclipses of the previous cycle are called the three brothers, Palita, grey, Aśna, black, and Ghṛtapṛṣṭha, yellow, the colour of a cow's butter or ghee. Seven cows, seven sisters, or seven horses are other names given to 7 eclipses. If there were 17 eclipses in the order 4, 4, 2, 5, and 2 in five successive years, this rare occurrence of seventeen seems to have received the name of Prajāpati or Viṣṇu. The mnemonic formula denoting this phenomenon is "āśrāvaya, astu śrauṣaṭ, yaja, ye yajāmahe, vauṣaṭ," where each of the seventeen syllables stands for an eclipse. In the "Drapsa" I took the formula to mean 17 years with six intercalary months. Now I find that it rather signifies the occurrence of 17 eclipses in the order noted above. The Āpri hymns make a special mention of this with a slight variation in the number constituting 17. The total number of eclipses forming the subject-matter of the Āpri hymns is 33 called thirty-three gods, eleven on earth, eleven in the air, and eleven in the sky. Tryavi, three lambs, and 'pañcāvi', five lambs, all meaning solar eclipses of one or two digits are among the 33 gods. The mnemonic formula denoting them is 8 Vasus, 11 Rudras, and 12 Ādityas, with Dyāvapṛthivī, earth and sky. In the "Drapsa" I took the Āpri hymns to be a description of a cycle of 33 years. But on reconsidera-

tion I now find it to be a cycle of 11 or 13 years with 33 eclipses called gods.

In the mantras of Prayāja and Anuyāja offerings connected with the Āpri hymns Indra's age is given in terms of eclipses called three lambs, three calves, five lambs, draught oxen, a cow with a calf, a barren cow, or a bull. Counting the number of all visible eclipses, both solar and lunar, given in the eclipse-table in Swamikannu Pillai's "Indian Ephemeris", M. Raja Rao found the average number of visible eclipses per 100 years to be about 252, of which 99 are solar and 153 are lunar. I have shown how Śambara means a demon causing a solar eclipse and how his three forts mean three solar eclipses called a grey lamb, a black lamb, and a red lamb, or a silver fort, an iron castle, and a golden castle. We are told that "searching for Śambara hidden in the mountains, Indra found him in the fortieth year", and destroyed his ninety-nine castles. The average number of visible eclipses, both solar and lunar, for forty years is about 99. The average number of eclipses for 13 years is, as pointed out above, about 33 and three-times thirteen is 39, which is nearly the same as the fortieth year of the Vedas. Since three-times thirty-three is ninety-nine, it follows that the Vedic poets regarded the fourteenth and the fortieth years as two eclipse-cycles. If then the Vedic gods counted in terms of thirty-three are, as shown above, eclipse-gods, it must necessarily follow that the number of gods counted as 3336 in the Vedas is the number of eclipses which they observed and counted. Dividing this number by 252, the average for 100 years, we arrive at 1324 as the number of years, in the course of which they observed so many eclipses. This I take to be from the beginning of the Kali Yuga in B.C. 3102.

The eclipse-gods called the sons of Viśpati, the lord of the celestials, should, however, be distinguished from Aditi's sons, known as Dhātā, Aryamā, Mitra, Varuṇa, Aṃśa, Bhaga, and Indra. Her eighth son called Martāṇḍa was still-born and rejected. As Indra's house is said to be the thirteenth month (trayodaśo māsó indrasya gṛhaḥ), the seven sons of Aditi seem to have been the lords of seven intercalary months in the course of 19 years, which is also a cycle of eclipses, when the sun and the moon would have the position which they had 19 or 38 years before. This idea is expressed in the Ṛgvedic verse, "Dhātar, the lord of the first of the seven intercalary months in a cycle of 19 years or of 14 intercalary

months in a cycle of 38 years set the sun and the moon in the same position as before." Taking the word "Kalpa" as understood from the use of the verb "akalpayat" in the Vedic verse and interpreting the word "Dhātar" simply as creator, the verse seems to have been taken to mean that the creator made the sun and the moon along with the world in every Kalpa as before.

On the basis of the definition of Yugas, Manvantaras, and Kalpas found in the Amarakoṣa, the original scheme of a Kalpa may be recast as follows :

(1) A day and night make two units of time called a day-kalpa and a night-kalpa to men.

(2) The two halves of 14 days each of a lunar month make a day-kalpa and a night-kalpa to the fathers in heaven.

(3) The two halves of a year make a day-kalpa and a night-kalpa to the gods.

(4) Seventy-one or seventy-two such Yugas or pairs of day-and-night-kalpas make a Manvantara.

(5) Twice fourteen Manvantaras or two thousand Yugas make a day-kalpa and a night-kalpa to Brahmā, the creator.

(6) In other words, 1000 days or $2\frac{3}{4}$ years with one intercalary month make a Yuga cycle to men.

(7) 14000 days or 1000 Parva-yugas with 14 intercalary months make a Yuga to the fathers in heaven.

(8) 2000 Ayana-yugas or 2000x6x2x14 days or 2x2x6x14000days with 24x14 or 336 intercalary months make a day-kalpa and a night-kalpa to Brahmā. Since 14000 days are equal to 38 years nearly, we may say that 24x38 years with 336 intercalary months or 940 years make a day-kalpa and a night-kalpa to the creator. If we take a Parva to be equal to $14\frac{3}{4}$ days or so then the duration of a Kalpa would come to 500 years nearly or to 1000 years taking day-kalpa and night-kalpa together. It should be particularly noticed how the number seven forms an important factor in the above Kalpa-scheme. It needs no saying that the above scheme of time is very simple and intelligible and that the same has been magnified and turned into a huge number of years, basing it on Kṛta, Tretā, Dvāpara, and Kali-Yuga, with which the eclipse-cycles are, as pointed out elsewhere, closely connected.

The return of the sun and the moon to the same point with the same eclipse-phenomena cycle after cycle or Kalpa after Kalpa is hinted in the Ṛgvedic Śunaśśepa-sūkta or hymn addressed by Śunaśśepa to King Varuṇa for release from the sacrificial post to which he was tied to be sacrificed. Before taking up the verses, it seems necessary to know the legend of Śunaśśepa, as given out in the Brāhmaṇas. It is as follows :

"King Hariścandra, son of Vedhas, of the Ikṣvāku-line, was childless, although he had one hundred wives. In his house lived Parvata and Nārada. The latter advised the king to go to Varuṇa and say to him : "May a son be born to me, and I shall sacrifice him to you". Varuṇa said "Yes". Accordingly a son named Rohita was born, but the king put off the sacrifice from time to time saying (1) let the victim pass ten days, (during which the child is impure in the Sūtikāgṛha) ; (2) let his teeth come ; (3) let his teeth fall out ; (4) let his teeth come again ; (5) and let him become a warrior (Kṣatriya) girt with his armour. Varuṇa granted all these requests successively. When he became a warrior the king asked him to consent to be sacrificed ; but he said "No" ; and taking his bow ran away to the forest and lived there for a year. Varuṇa seized Hariścandra whose belly thereupon swelled (by dropsy). Rohita heard of this and five times he set out successively in the second, third, fourth, fifth and sixth years to go back to his father ; but each time Indra came in the form of a Brāhmaṇ and induced him not to go. While he was travelling in the forest in the sixth year, he met a starving Ṛṣi named Ajīgarta, son of Suyavasa, a descendant of Aṅgiras. Ajīgarta had three sons, Śunaḥpukkha, Śunaśśepa, and Śunolāṅgūla. Purchasing the middle son Śunaśśepa for a hundred cows (for the father would not part with the first and the mother with the last son) Rohita came to his father, who then went to Varuṇa and said : "I shall sacrifice this man to you". Varuṇa said "All right. A Brāhmaṇ is better than a Kṣatriya". Then commenced the sacrifice called Rājasūya, in which Viśvāmitra officiated as the Hotṛ, Jamadagni as Adhvaryu, Vaśiṣṭha as Brahmā, Agastya as Udgātṛ. They found nobody to bind Śunaśśepa to the sacrificial post and kill him. His father Ajīgarta volunteered to do these acts for another two hundred cows. He bound him and came whetting his sword ; when

Śunaśśepa thought "they will really kill me as if I was not a man. I shall pray to the gods". He prayed to Varuṇa and other gods, and at last to Uṣas in three verses, of which the first, as soon as he repeated, loosened the cord, the second thinned Hariścandra's belly, and the last completely liberated Śunaśśepa and made Hariścandra well again."

In my article entitled "Test of the Eclipse-cycle in the Vedas" published in the 'Orientalist' of Poona for May 1941, I showed how Rohita meant a lunar eclipse of Pinga colour occurring in each cycle of 1000 days. I see no reason why Rohita of the above story cannot be taken to be a lunar eclipse of the same type. Hariścandra is, as the name itself implies, the moon and his reddish son can be no other than an eclipsed moon. I am inclined to take Śunaḥpukkha, Śunaśśepa, and Śunolāṅgūla to be the names of the same three lunar eclipses known as Paṭara, Viklidha, and Piṅga. M. Raja Rao thinks that these are some three stars in the region of Canis Major and Canis Minor, the seven Bears, and the Dog-star and that Ajīgarta, meaning a deep pit of a serpent, is Āśleṣā, the deity of which is Ahi, a serpent. As the lunar eclipse happened near those stars, they were also affected by the eclipse and made to pray to Varuṇa for release. It is of no consequence whether the eclipsed moon in the region of the signs, Cancer and Leo, is called by those names or some three stars near the Dog-star (Śunāsīra) in the same region. What is of great importance is the occurrence of a lunar eclipse in that region, the sun being in the constellation called Śatabhiṣaj from which Āśleṣā and Maghā are the thirteenth and fourteenth stars, or 180° from the sun. The verses in which identification of Śunaśśepa with one of three eclipses recurring cycle after cycle is hinted are the 9th, 10th, 11th, 12th, and 13th of RV. I. 24. and the 8th verse of the 25th hymn. They are :

"The Śatabhiṣajs are thine (Varuṇa's) ; a thousand (days' journey) is vast and grave ; drive out far and backwards Nirṛti (eclipse-demon), and remove my sinful bonds (enaḥ)."[1]

RV. 1/24/9

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1. Skandasvāmin interprets "enaḥ" as 'pāśa' = binding ropes.

Commenting upon the above verse Skandasvamin took Śata and Sahasra as adjectives to Bhiṣajaḥ and explained that Varuṇa's physicians are a hundred, nay, even a thousand. There is no reason why Śatabhiṣajaḥ should not be taken as the constellation with Varuṇa as its deity and why Sahasra should not be interpreted to mean a thousand days' journey as in the verse "sahasrāhnā vitatāvasya pakṣau".

From Śatabhiṣajaḥ the thirteenth and fourteenth constellations are Āśleṣā and Maghā, making the sun and the full moon 180° apart.

"These Bears that are set up high in the sky are seen at night and go out somewhere during the day. Unaltered and uncontradicted are these laws of thine, O Varuṇa; and at night the moon goes to the Nakṣatra with lustre." 10

The meaning is that though the seven Bears are visible as usual, the moon has no lustre. This is an apparent break in Varuṇa's eternal laws regulating the movements of planets and constellations.

"Therefore I approach thee bowing with prayers; the same thing [release from the bonds] the sacrificer hopes to attain to by his food-offerings; O praise-worthy Varuṇa, take this my prayer to heart without anger; do not rob me of my life." 11

"The same the night, the same the day,—so they say to me; the same thought rises in my breast; the same is King Varuṇa to whom Śunaśśepa once prayed for release when caught hold of before: I am the same Śunaśśepa that is now caught hold of and prays for release as before." 12

Believing that Śunaśśepa is a human substitute for human Rohita to be sacrificed, Skandasvamin, the commentator, says: "Atītakalpe yaśśunaśśepa āsit ahameva saḥ gṛhītaḥ, gṛhītaḥ". "The same Śunaśśepa who was once caught hold of in a former Kalpa of 1000 divine Yugas am I now in bonds on the same night of the same day of the same year in the present Kalpa of 1000 divine Yugas". For reasons set forth above I hold that this is a reference to the return of the same kind of Rohita eclipse in a second cycle of 1000 days in the sixth year.

"Śunaśśepohyavadgṛhītastrivādityaṃ drupadeṣu baddhaḥ.
Avainām rāja varuṇassajīvādvidvānadadho vimuktau pāśān."

"(I) Śunaśśepa called upon thee, O Varuṇa, when I was bound to three posts (foot-holds of the tree on three occasions before). May King

Varuṇa, omniscient and unassailed, release the same Śunaśśepa from the bonds." 13

Here the expression, "triṣu drupadeṣu" means on three foot-holds of a tree and not three ropes and one tree or post. Skandasvāmin says that though there is as a rule only one rope to bind the victim by its head to the post, the reference to three bindings, one round the neck, one round the loins, one round the two legs here, is an exception in the case of a human victim like Śunaśśepa with a view to make him firm and unshaken at the time of slaughter. There is, however, no room for the objection raised and the explanation offered by the commentator. The text clearly mentions three foot-holds of a tree implying three bindings on three different occasions. The acts performed in the sacrificial hall are, as I have pointed out in "Eclipse-cult" imitations of the eclipse-phenomena observed in the sky. Accordingly the heavenly victim corresponding to the human victim in the sacrificial hall is the eclipsed moon, as pointed out above. What then is the Drupada or foot-hold of the tree to which the eclipsed planet was believed to have been bound? It is the Aśvattha or Pippala tree which is described in RV. 1.164, 20 as the abode of the sun and the moon. Accordingly it may be inferred that the Pippala tree was one of the constellations through which the two planets make their early and monthly revolutions. While explaining Pāṇini, 4/3/48, Vāsudevadīkṣita, the author of 'Bālamanoramā,' says that Kalāpaka means a debt payable at the time when peacocks have their feathers fully grown, Aśvatthaka a debt payable at the time when the fruits of the Pippala trees ripen, and Yavabusaka a debt payable at the time when barley grain ripens. Again while explaining Pāṇini 4/2/5 (śanjāyāṃ śravaṇāśvatthabhyām), he says that Aśvattha means the constellation Aśvinī. Others take it to signify the constellation Śravaṇa on the authority of the Kāṭhaka Saṃhitā identifying Aśvattha with Śravaṇa. This interpretation seems to be justifiable inasmuch as the Aśvattha tree bears fruit at the summer season. At the time of Pāṇini the arrival of the sun at the constellation of Puṣya marked the time of the summer season and summer-solstice. The Aśvattha tree is described in the Bhagavadgītā as having its top on the earth and its root or foot-hold in the sky. Accordingly if the constellation of Puṣya marked the top of the Aśvattha tree, its root or foot must necessarily be in Śravaṇa

which is at the other end of the diameter. The 'Sūryaprajñapti' says that the new moon at Śravaṇa marked the arrival of the winter-solstice and that the new moon at Puṣya signified the arrival of the summer-solstice. Pāṇini flourished at about 500 to 400 B. C. when Mahavīra, the author of the 'Sūryaprajñapti', lived and preached Jainism. The 'Vedāṅgajyotiṣa' locates the summer-solstice at the former half of the constellation of Āśleṣā and the winter-solstice at Śraviṣṭhā. Making allowance for defective observations, Svamikannu Pillai, the author of 'Indian Ephemeris', fixed the date of the Jyotiṣa to lie somewhere about 800 to 900 B. C. Others put it at 1200 to 1400 B. C. From this it follows that the solstices were at the end of Āśleṣā and the beginning of Dhaniṣṭhā at about 1300 to 1400 B. C., and that the same must have been located at the end of Maghā and the beginning of Śatabhiṣaj 2300 B. C., and at the latter half of Pūrvaphalgunī and the former half of Pūrvabhādrapada at about B. C. 3100. This is in complete agreement with the conclusions arrived at by Bāla Gangādhara Tilak on consideration of the shifting of the vernal equinox from Ārdrā to Kṛttikā and by Jacobi on consideration of the shifting of the summer-solstice from the Phalgunīs to Āśleṣā. There is also an additional proof furnished by the nomenclature of the constellations. The constellation of Pūrvabhādrapada is called Ahirbudhnya, the tail of the serpent. The constellation of Āśleṣā is called Ahi, the serpent. The reason why this Nakṣatra is called Ahi seems to be the frequency of eclipses when the serpent Svarbhānu is believed to devour the sun at solar and the moon at lunar eclipses. If the serpent's mouth is in the Āśleṣā, then its tail, the other node, must necessarily be at the constellation of Dhaniṣṭhā. Similarly, if the constellation of Śatabhiṣaj is the tail, then the mouth of the serpent, or the ascending node, must be in the Maghās ; and if the tail or descendig node is in Pūrvabhādrapada, then Ahi's mouth must be in Pūrvaphalgunī. Similarly Uttarabhādrapada called Aja Ekapād and Uttaraphalgunī must have been the tail and the mouth of the serpent in an earlier epoch. The situation of the solstices in Uttarabhādrapada and Uttaraphalgunī is hinted by the statement made in the hymn on Rohita in the Atharvaveda that at one end of the thread held by Prajāpati rested Aja Ekapād.[1]

1. 'Test of the Eclipse-cult' in the "Orientalist".

What deserves special attention in this connection is the significance and purpose of the sacrificial victims such as man, horse, cow, goat, sheep and the like. Unless we understand the nature of the dice-play, we can not fully grasp the significance of the victims. In the dice-play there must be two players with specified wager or stake laid before the umpire. The stake is called Glaha in Pāṇini (1/3/7). In the Ṛgveda it is called Glabha, a word which is derived from the root 'gṛh', to take. The perfect participle "gṛhīta" used in the Śunaśśepa hymn (1/24/12) meaning "taken as a stake" is from the same root. In the dice-play in the sky the two players are the sun and the moon. The stake laid by them must necessarily be their own person or their horses. If the player's own person is laid as a stake, it seems to have been called 'nara', cow, goat, or sheep in the ratio of decreasing value corresponding to the varying digits of the eclipse. The winner not only took the defeated person as a stake, but also tied the victim to a post in his own house to be disposed of at his own pleasure. The house in the case of the sun and moon is either the foot-hold or the top of the Aśvattha tree. The forms of the play were Kṛta, Tretā, Dvāpara, or Kali. If the sun or the moon in the game of running made a Kṛta Yuga or a number of Parvas divisible by four with no remainder, then he is considered to be the winner, as agreed upon. In the solar eclipse the moon is the winner, and in the lunar eclipse the sun is evidently the winner. The defeated planet is tied to the foot-hold or top of the Vanaspati, Aśvattha, to be disposed of at the will of the winner. It is probable that if the eclipse was two Padas out of four Padas, that is, half, it is called 'nara', man standing on two legs. If it be of four Padas, it is a cow. If very small, it is an 'avi', sheep. The value of one kind of victim in terms of the other victims requires further investigation.

An eclipse is regarded not merely as a game of dice-play or race of running, but also as a battle between the gods led by the sun or the moon and the demons under the lead of Śambara, Vṛtra, Nirṛti, and others of various names, when the defeated planet is bound to the victory pillar or set at liberty on payment of an adequate ransome of the value of a horse, a cow, a goat, a sheep or a slave or a woman, or gold, or a valuable cloth-piece. Sometime it is also conceived as an act

of devouring one of the two planets by Svarbhānu and the release of the swallowed is considered to be effected by incantation and prayer or, power of speech or Vāk in the Vedic terminology.

The binding of Śunaśśepa thrice in his former births in one or three former Kalpas and the recurrence of the same binding in the present Kalpa referred to in verse 12 is no more than the recurrence of the Rohita-type of the three eclipses of the previous cycle of 1000 days. This is also implied in the 8th verse of the 25th hymn of the first Maṇḍala of the Ṛgveda. It is as follows :

"May King Varuṇa who is omniscient and who is unopposed release the same Śunaśśepa from the ropes. Varuṇa knows full well the twelve productive months and also that which comes into being along with them (the thirteenth month.)"

Are we justified in believing like the commentator that the Vedic Ṛṣis who talked of 12 months and an intercalary month dreamt of 1000 divine Yugas or periods of 4,32,0000 human years when men like Śunaśśepa had a series of births and deaths with pain and pleasure like a revolving wheel ?

ÂLPANÂ OF THE KUMÂRÎ-VRATAS OF BENGAL

by SUDHIR RANJAN DAS

Alpanā or the symbolical drawings or paintings by girls and women on the ground with a kind of liquid which is locally known as Piṭhali is one of the most characteristic aspects of the folk art of Bengal. Ālpanās are mainly drawn on the ground or on some other objects, on all festive occasions. They are mentioned in the folk songs of Bengal.[1] Ālpanā plays an important part in the performance of vowed observances, Vratas. In most of the Kumārī Vratas, where young unmarried girls are the performers, Ālpanā serves as the altar on or before which the prayer or the chanting of the verses (chaḍā) takes place.

The Vrata-painting is locally known as Ālpanā or Ālipanā or Chitir. The place where this painting is done is known as Kot. The Vrata-Ālpanā can be divided in two classes—in one kind of Ālpanā different kinds of colour are used not without magical significance and in the other kind Piṭhali is used. The former may be called "dry painting" and the latter a simple form of painting or drawing with a white liquid. The ingredients for drawing or painting thus consists of different colours and Piṭhali. Piṭhali is made by diluting rice paste with water. The colours used are generally white, red, (green) and black. White is made of rice powder, red of burnt brick and black of coal dust. The ingredients which are used for drawing and painting on the ground for the Vrata-observances are commonly used by 'primitive' people in India for painting or drawing on the ground for magical purposes. They generally use three colours, white, red and black made of rice

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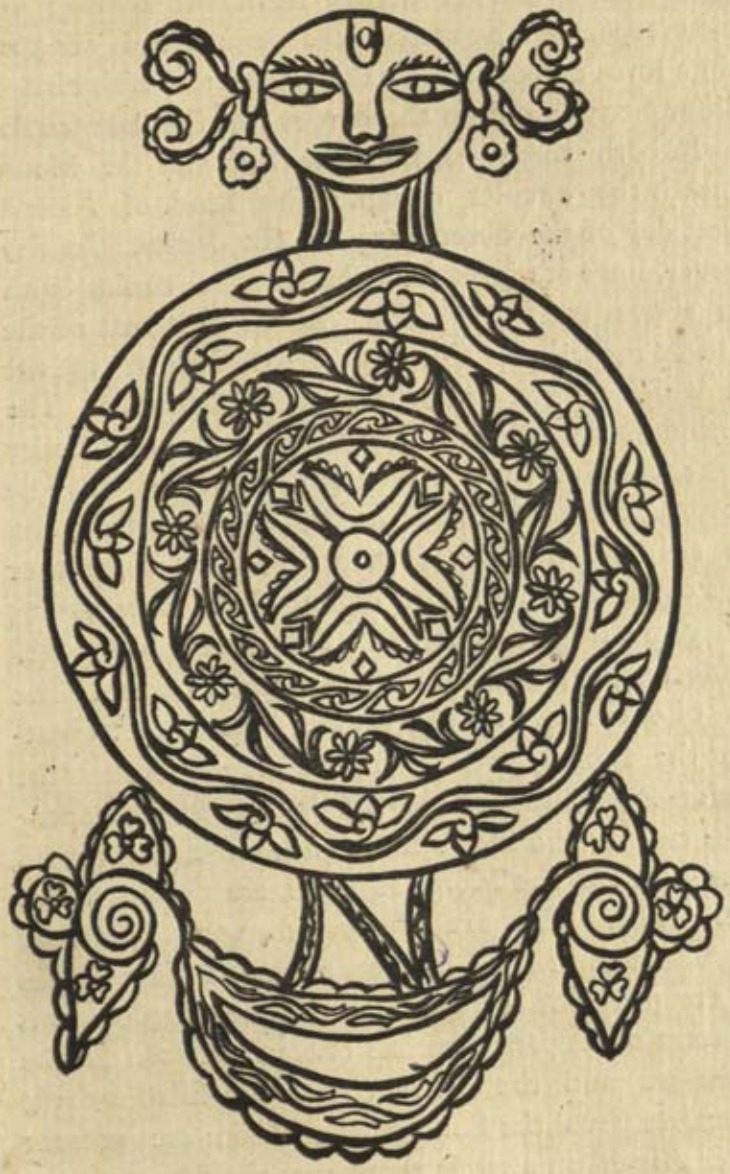
1. In the 'Mymensingh Ballads' the story of Kājalrekhā gives a vivid description of Ālpanā. It resembles the method of drawing Ālpanā as practised for the Vrata observances in different parts of Bengal. 'Mymensingh Ballads' by D. C. Sen, pp. 268-69.

powder, hearth earth and coal dust. To the primitives these colours mainly bear magical significance. Thus the Oraons of Chotanagpur believe that the three colours white, red and black represent the rainbow and are therefore most important factors in warding off the evils and evil attractions of the malignant spirits.[1] Among the Birhors it is believed that these colours stand for different Boṅgās. The black colour stands for the Baghout spirit, red for the Nāge-era-bundi and white for Burum-Boṅgā. Sacrifices are offered to the spirits represented.[2]



The use of different colours, or the dry painting, is particularly associated with the Māgh-maṇḍal-vrata; in all other Ālpanās Piṭhali is used.

Different Ālpanās are drawn, for example one which consists of five circles as the

1. 'Oraon Religion and Customs' by S. C. Ray, page 126-7.
2. 'The Birhors' by S. C. Ray, page 212.

Vrata is to be observed for five years. In the centre is a lotus (padma) and round it are plain circular lines and on the border of the last circle geometrical designs. Or, a creeper design is in the centre ; in the first circle is a lotus creeper, in the second are geometrical designs, in the third there is again a lotus creeper and in the fourth and fifth circles are lotus creepers of a different type and on the border of the last circle are geometrical designs. In both these Ālpanās the Sun and the Moon are drawn above and beneath the circular design. This kind of Ālpanā is mainly drawn on the last day of the observance of the Vrata. In day to day observances, however, lines are incised on the earth in circles with the Sun and the Moon above and below them. In the first year of the observance one circle is to be incised and this is to be added up to the 5th year of the Vrata which is the last year of its performance. The circular lines are filled with different colours. But there is no uniformity in the decoration of these circular lines. Generally however the first line is filled with green colour, the second and the third with black and white, the fourth with red and the fifth often with yellow or green or white. The Sun is always coloured red and the Moon white, thus giving an expression of their characteristic features. The sketch on p. 127 illustrates the Ālpanā connected with the Tārār-vrata which is more or less complicated. It consists of 4 circles. In the centre are four trident-like designs radiating in the four quarters. In the second circle is the design of a creeper locally known as Śaṅkha-latā or the conch-creeper ; in the third circle is a lotus creeper and in the fourth is a most complicated form of Śaṅkha-latā. The Sun and the Moon, as usual, are drawn above and below these circles. These also are decorated with numerous geometrical symbols, etc. Varieties of lotus creepers surround these circles and in the four corners creepers and geometrical designs complete this Ālpanā. Another simple form of Ālpanā consists of four circles. In the centre are geometrical designs and the other circles are filled by big dots indicating the Stars, and as usual the Sun and the Moon are present above and below. Another Ālpanā in a circle represents the Sun with its radiating rays and below it a lotus plant with branches and flowers. Yet another is a square (room) with the representation of two human figures inside it and with the Sun and the Moon above and below as usual.

These are the various forms of Ālpanās connected with the observances of the Vratas. The most characteristic features of these Ālpanās are the representations of the Sun, the Moon and the Stars. The Sun is given ears, nose, eyes, a throat, etc. The Moon on the other hand is always a crescent or half Moon, and never a full Moon, a circle. The circles of the Ālpanā represent the Universe with its luminaries, the Sun, the Stars, the Moon and their presiding deities, givers of light and life. Further elements in the Ālpanās are creepers of different varieties, Śaṅkha-latā and Padma-latā, lotus and other geometrical designs.

Almost all these features of the Ālpanā painting occur also in the drawings on the ground by the primitives, on festive occasions. The primitives usually employ different colours for the magical rites but the drawing with Piṭhali is also not absent. The drawing of diagrams with different colours is an essential feature of the Oraon religious rites. This is described by S. C. Ray: "Then he (the Oraon) draws a diagram on the ground with coal-dust, rice-flour and hearth-earth in the shape of three parallelograms with the eastern arm wiped off. The outermost lines are made of earth from the hearth and are thus red in colour, the intermediate lines with rice-flour and are thus white in colour and the innermost lines with coal dust and are thus black in colour. The figures represent three concentric compartments with openings on the east. On the inner side of the innermost lines similar lines are drawn with earth from the hearth".[1] This diagram is known as Pimri or the altar for the Kumārī-baithān rite. Such drawings with different colours are also required in the rite of the cutting of the "evil teeth". Thus we are told that with "a little rice-flour, a little coal dust and a little clay from the hearth placed before him, he draws a diagram representing magical symbols on the ground".[2] Among the Mundas as well this kind of diagram is drawn at the Lutur-tukui, or the ear boring rite. "A figure in the form of parallelogram with diagonals is drawn in the courtyard of the baby's father's house with rice-flour dough".[3] Among

1. 'Oraon Religion and Customs' by S. C. Ray, p. 285-286.
2. Ibid., p. 126-27.
3. Ibid., p. 46.

the Khāriās, a lotus-like diagram is very commonly drawn. "Some Dudh-khāriās draw a lotus-like diagram on the ground over which the tripod is set up. The lines forming the circumference of the inner circle of this diagram are drawn with coal-dust, rice-flour and burnt reddish earth from the hearth".[1] This kind of diagram is also required for the Hongoe Dibharna rite and during the Deothan rite geometrical figures are drawn, and also on the occasion of the Bandi festival in some Khāriā families. "The diagram represents the points of the compass and over the diagram a light is placed".[2] Among the Birhors, however, drawings with more or less ornamental designs are practised. During the Tākchānrhi rite two square rooms are drawn—the smaller one within the bigger one, and there is a small circle in the centre and the four corners are joined by lines crosswise. This is drawn on the ground by a woman with rice-flour.[3] At the time of the Bonā-Śānk "a mystic diagram is drawn on the ground in the 'aṅgam' which has been cleared with water and if available with cowdung diluted with water. Black coal-dust, red earth and white rice-flour are the materials used in drawing these lines".[4] Moreover at the time of the worship of the different Boṅgās such diagrams are drawn. During the worship of the Ora-Boṅgā, a mystic diagram with four compartments is drawn with rice-flour on a place cleared with cowdung.[5] Again during the Saso-Boṅgā festival "the courtyard of the house is cleared with water mixed with cowdung and the figure of a square is drawn with rice-flour in a part of the 'aṅgam.' Around the square on each side of it there are five figures of the shape of petals of flowers drawn with coal-dust and on each of the petals two similar petal-like figures are drawn one above another, the middle row with red earth and the uppermost one with coal-dust".[6] Besides these varieties of dry painting which are very common among the primitive tribes there is also the practice of drawing on the ground with Piṭhali.[7]

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1. 'The Khāriās' by S. C. Ray, p. 472.
2. Ibid., p. 474.
3. 'The Birhors' by S. C. Ray, p. 152.
4. 'The Birhors' by S. C. Ray, page 212.
5. Ibid., page 335.
6. Ibid., Page 335.
7. 'Oraon Religion and Customs' by S. C. Ray, page 40.

Among the Oraons of Chotanagpur the women paint with Piṭhali. Thus the Oraon woman paints ornamental figures on the Pulkhi (stone slab) with rice flour moistened with water.[1] The use of this form of liquid for drawing is also very common among the Gāros who at the great harvest festival mix flour with water and make hand-marks on the posts and walls of the house, etc.[2] Numerous examples of such drawings can be cited from primitive customs which are mainly magical in character.

The most characteristic feature of the Vrata-Ālpanā is the painting of the lotus and lotus creeper. The lotus is connected with the Goddess Lakṣmī and consequently also with wealth as Lakṣmī is the Goddess of wealth. In this particular application of its symbolic meaning the magical significance of the lotus lies in the supply of wealth and plenty.

All the features of the Vrata-Ālpanā are essentially of magical significance ; they are almost identical to the various kinds of magical drawings connected with the numerous festivals of the primitives. The drawing of a circle on the ground is full of magical significance. Even nowadays in Bengal a line representing a snake is drawn round a house for preventing the snake from entering the house. There are numerous references in the popular tales of drawing such lines for the performance of magical rites to keep off witches and evil spirits.[3] Here, as also in similar Abyssinian and other African magical drawings, we find the representation of the eyes, for averting the evil eye ; head and face for the protection against evils, etc.[4] In the Ālpanā is also expressed the magical belief that the fulfilment of desires requires the proper representation of the object of the desire. Thus by drawing Piṭhalir Chiruṇi the girls want to have a golden Chiruṇi (comb), etc. By drawing the Sun, the Moon and the Stars they want to influence the Luminaries to fulfil their desires. The 'decorative' elements such as the drawings of creepers, petals, geometrical figures, etc.,

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1. 'The Garos' by Playfair, page 45.
2. 'Vanglar Vrata' by A. N. Tagore, page 67.
3. 'Popular Religion and Folklore of Northern India' by Crooke, p. 30.
4. 'History of Ethiopia' by Budge, page 601.

are also not without magical significance but here the verbal tradition is totally lost. Thus the girls of Bengal are very practical in their Ālpanā painting. Their art means that something to their heart's desire must be achieved by the representation of the desired objects.

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A NEW VARIETY OF PAHĀRI PAINTINGS

by B. N. TREASURYVALA

Some paintings of the West Himalayan (Pahāri) schools it is difficult to assign to a particular centre. Starting from the extreme north, the main centres of this group are Kashmir where practically nothing of great merit was produced whereas southwards Jammu was an important centre of production. Basohli is further south of Jammu and Chamba lies on its eastern side. Very numerous examples of the Basohli school have come to light, and some from Chamba. A little further south between Basohli and Chamba is Kangra, the most outstanding centre of painting in the West Himalayan group. Little is known of Mandi and Suket. Tehri-Garhwal, the southernmost centre of this Himalayan group, has in its painting a family resemblance to Kangra. N. C. Mehta has discussed its character in his "Studies in Indian Painting" where he publishes an example in colour by Mānaku (plate No. 21) which bears the artist's signature ; he seems to have produced better work than Molarām, a second-rate artist whose importance has been exaggerated. The Sikh school is a decadent phase of the Kangra school.

Recently I acquired a group of coloured drawings of varying merit some of which have a rare charm and power. A number of these paintings while showing a recrudescence and absorption of 18th century devices, Mughal and Pahāri, are nevertheless related in the strength of line, bold spacing, range of colours and their application, to the examples illustrated here. They are probably works of a folk art practised until recently, and they might come from Jammu or from Kulu.

There are two types in this group (Pl. VI. 1, 2 ; and Pl. VI. 3, Pl. VII). The first type is represented by "A Lady smoking under a Willow

Tree" (Pl. VI. 1) with a girl attendant holding a fly-whisk and by "A Lady Dressing Her Hair" (Pl. VI. 2). This may be Vilawal Rāgiṇī with two girl attendants offering her a cup of wine ; one girl holds the cup and the other holds a flask. These two examples are by the same hand. The colours are subdued but the brush-strokes are powerful and precise. They are equal in strength and precision to strokes made by a quill. The painting is on the raw surface of an ivory-toned paper without any priming or wash of any kind. The colours are dull green for the willows ; a black stem of the willow in the first example and a vermilion stem and branches in the second example. Green, blue and red predominate in the costumes. The women wear dresses like Empire gowns usually found in Kangra paintings with very long sleeves and the pyjāmas of some are seen through the skirts. The textile designs and the outlines are all black.

This group one might assign to the Jammu school. But a closer examination shows that the figures with their short and rounded noses, high and straight foreheads and almond-shaped eyes are different from those found in Jammu and also in the Basohli school. In the painting "Girls Flying Kites" (Rāgiṇī ? ; Pl. VI. 3), the costume is similar to the two examples illustrated above but less elaborate. The textile designs are simplified, the colours limited. Indigo, black, brown, dull green, yellow and white body-colour are sparingly used and black for the kites, hair, eyes and outlines ; indigo is for the ground, the whole surface being washed with the colour unevenly. "Todī Rāgiṇī" (Pl. VII) shows the same type of costume and simple textile design as Pl. VI. 3, but the drawing is more accomplished and vivid. The colours here are limited like those of Pl. VI. 3, black for the willow foliage, brown for its stem and branches ; black patches decorate the deer, some parts are toned down with diluted colour. The Rāgiṇī wears a green Empire gown with long sleeves, yellow scarf, and her pyjāmas are visible through her green skirt (as also in Pl. VI. 3). The animals intently gaze at the face of the love-hungered heroine. She has pearl strings on her forehead, wears necklaces and flower-like earrings, and tassels on the arms. This group of painting has no elegance ; it is 'barbaric'. The paintings of the Jammu school are more refined than the paintings illustrated here. The Kangra school flowers into a melody of colours and a perfection of lines.

The paintings illustrated here are but remotely related to them ; they are closer to Basohli with its intensity of line and surface relations ; in colour they correspond more nearly to Kulu paintings but are free from their cumbrous crudities.

EARLY INDIAN TERRACOTTAS

by D. H. GORDON

THE PREHISTORIC TERRACOTTAS

An outstanding feature of the Harappa culture, as clearly shown by the vast numbers excavated both at Harappa itself and at Mohenjo-daro, is the profusion of terracotta figurines both of humans and of animals. These have been on the whole well described in the works of Sir John Marshall and Dr. E. J. H. Mackay. At the same time it is felt that good may be done in bringing forward certain points, which emerge as the result of a prolonged study of the material at museums both at Harappa and Mohenjo-daro.

As is the case at other sites and in other periods, there is a common type, forming by far the greater bulk of the figurines discovered, which should be distinguished from the occasional and sometimes mystifying variants found in their immediate stratigraphical vicinity. Before we proceed further it will be well to stress the fact, which will emerge again at all periods, of the excellence and sophistication of moulded specimens when compared with the crude primitiveness of modelled figurines.

ACKNOWLEDGEMENTS : The monograph on Early Indian Terracottas by Colonel D. H. Gordon was to be issued in 1942 as Memoir No. 61 of the Archaeological Survey of India. War economy made its publication in this series impossible. Dr. R. E. Mortimer Wheeler, Director General of Archaeology in India very kindly allowed the publication of this paper in JISOA. We express our gratitude to the Director General of Archaeology and to the Archaeological Survey of India for enabling us to publish the paper and to use the blocks prepared for them [Ed].

The author acknowledges the generous help of the Archaeological Survey of India, which gave him for the illustrations the following figures and permission to publish the same : Plate VIII. 1-7, Plate X. 3, 7, Plate XI. 1, 4, 6, Plate XII. 1. 6, 7, Plate XIII. 1, 3, 5, 7 and Plate XV. 9 ; Figures 8 of Plate VIII 6 of Plate IX ; and 5 of Plate XVI are from the author's own negatives taken and published by permission of the Department. Plate IX. 4 is reproduced from Dr. A. K. Coomaraswamy's figure in IPEK 1928, there being no other perfect figure of this type available. The remainder of the figures are from the author's own negatives.

The common type of Harappa period human figurine is the female figure shown in Pl. VIII. 2, having the fan-shaped headdress, which is common to by far the greater number of such figures ; round applied eyes ; the pinched out nose, which is to be found in modelled figures of all periods ; the wide characteristic mouth, sometimes applied, and incised, sometimes worked up in the modelling of the face ; the simple dog collar, occasionally as in this instance accompanied by a single necklace, a series of three or more necklaces being most uncommon, at Harappa for example there is only one figure with three necklaces and not one with more ; the narrow loin cloth, present in every female figurine, which precludes any connection with the nude goddess ; arms hanging at the sides, and fairly prominent applied breasts. The bulk of these figures have even less narrow waists and broad hips than that in the illustration, those with really narrow waists number less than a dozen and of these two figurines from Mohenjo-daro are of a totally different type to the normal. Both of these have their fore-arms brought in a curve across the waist, one has a series of what may be necklaces right down on to the shoulders, and the other a number of necklaces coiled tightly round an elongated neck ; from Harappa there are no figurines of this type. Narrow waists and broad hips are, therefore, by no means a characteristic of the female figurines of the Harappa period. Of the female figurines, roughly nine hundred, examined at the Harappa, Mohenjo-daro and Lahore museums, one had applied and incised eyes, two had applied and pierced eyes, the whole of the remainder had simple applied eyes ; this disposes quite finally of the statement that applied and incised eyes are characteristic of the prehistoric periods. Beside the fan-shaped, which is accompanied by a great variety of ornament and hair dressing, including at Harappa a series of rosettes, there are three other distinctive headdresses, one with a long narrow pointed peak which falls forward or backward, one a turban-like headdress with diagonal bands from top centre to low on each side, and one the curious voluted headdress found only at Harappa (Pl. VIII 3). This latter headdress is in form almost exactly like the voluted capital of a pillar, and it is plain from a close examination that all the figures with this headdress had their hands raised to meet it. Whether this was a headdress or some object of ritual significance carried on the head it is difficult to say.

The male figurines are fewer than the female and present fewer variations. Some have a horned headdress and necklaces, the majority are without ornament, the whole of them appear to be nude, some are bearded (Pl. VIII. 1). There is also a class of figurine which appears to be male, these are squatting figures of which there are a number both at Harappa and Mohenjo-daro. Some of these figures have a round cap with prickings all over, and a curious collar with a projection in front ; it is possible that they are slaves. These figures among others are those which are held by Dr. Mackay to be the product of children. It is very unlikely that anyone would have taken the trouble to fire the clay objects made by children during play, and crudeness is a most unreliable criterion by which to assign responsibility for manufacture. An ox figure has a similar collar to the squatting figures just mentioned, with curious funnel shaped wedges stuck in at each side. Did these funnels contain incense or some other offering ? If so it is very likely that this animal is sacrificial, and were these, animals and humans alike, token *ex votos* in lieu of actual sacrifices, either from humane considerations, which is doubtful, or from economic ones, which is more likely ?

These are purely speculations, but they lead to another consideration, what was the function of the other terracottas ? The male and female figures may be god and goddess, but it is felt to be very doubtful. Only the horned male figures have any very secure claim to divinity. The female figures with raised arms and the voluted objects on their heads are almost certainly votaries, and a good case for the ritual nakedness of male worshippers in ancient times can reasonably be put forward to explain the male figurines. If we concede that these are votaries, then may not the remainder of the female figurines be votaries too, especially when one considers the few interesting variants such as the lady wrapped in a long cloak, who is in no known religious tradition, and is a naturalistic figure of a human person pure and simple. The mass of oxen figurines are without doubt token offerings, they total nearly twice the number of all the other animals put together. What the function of the remainder might be, including elephants, boars, monkeys, hares, rhinoceros, goats, sheep, birds, turtles, and dogs, is difficult to say. Some of these are found on the seals and copper

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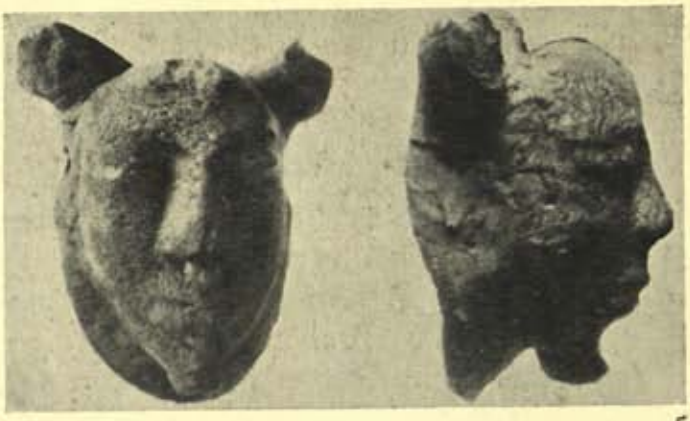

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tablets and may have been sacred animals. Perhaps, as in ancient Egypt, the majority of animals may have been held in reverence as a relic, or even an actual continuance of totemism. The man-headed animals have definite religious significance in common with other such objects throughout the ancient world.

In addition to the crudely modelled figurines there are a few moulded specimens. These are found in the lower levels of the D. K. area. They present a most sophisticated appearance when compared with the modelled figurines. The eye form is that commonly employed in the moulded terracottas of the early historic period, namely a sharp ended oval formed by two lines impressed in close proximity, so as to form a ridge surrounding the eye-ball. Of this moulded type there are four or five small masks, a double-faced figure and the upper portion of two normal figurines. All of these almost certainly represent a deity, usually horned and with a chin beard (Pl.VIII, 5), and though none of these is a fragment of such a figure, there is little doubt but that they are in some way connected with the horned and bearded men-animals. Dr. Mackay says of these moulded faces : "in a certain type of head, found only in the lower levels, which were made with the aid of a mould, merely the outline of the eyes were incised". This is inclined to be misleading ; in the masks the eyes are the direct product of the mould, in the double-faced image and one other, the definition of the enclosing lines appears to have improved by deepening. No moulded faces of the prehistoric period have been found at Harappa, but four hollow-backed female faces of the Buddhist period have been found at that site, the nearest parallel to them being the best style of hollow-backed face found at Sahri Bahlol.

In addition to the animal figurines there are two classes of bird terracottas which are extremely interesting, these are the birds on pedestals with spread wings and the bird whistles. Both of these are quite common at all Indus Valley sites, and have been shown to exist in the early historic period as bird rattle and pedestal birds with their form substantially unaltered.[1] The pottery bird whistle in a somewhat

1. This and other similar points were originally published in The Journal of The Royal Asiatic Society of Bengal, Vol. VI, 1941, No. 2 in an article "Survivals of The Indus Culture" by M. E. and D. H. Gordon.

modified form is made by wandering nomads at the present day. The vast majority of all these figurines are made of the normal pink pottery of the Harappa period ; most but not all of the male and female figurines at Mohenjo-daro were at one time coated with a red wash, this red wash is, however, completely absent from the figurines found at Harappa, and it is unlikely that it had any religious significance, but was adopted by the potters at Mohenjo-daro as a preservative. There are in all only seven figures in grey pottery out of the large numbers examined.

Though female figures have girdles and necklaces there is only one, which is in the Harappa museum, that has a cross girdled ornament resembling the *channavira*, which is so common in figurines of later date. In fact there are only two human figures which bear any resemblance to those of later date. One for that very compelling reason that it is of later date, this is a bearded head with a high pointed Iranian cap found in the D. K. area of Mohenjo-daro which cannot be anything but Indo-Scythian or Kushan (Pl.VIII. 7). The other is more puzzling, its context appears to preclude a late date, but its whole technique is quite foreign to anything else found at Mohenjo-daro ; this is a small female head with hair (?) in an applied roll at the back. The technique by which it is made is one commonly employed in the early historic period, but otherwise unknown at Mohenjo-daro, the face being made separately in a mould and then joined to the head. Neither of these heads appears to be of the antiquity with which they are associated. It is curious that at Harappa, Mohenjo-daro, Chanhudaro and Jhukar few if any terracotta figurines can be shown conclusively to belong to the succeeding Jhukar period, when the preceeding Harappa period produced them in such great abundance. If this is really the case it makes the linking up of terracottas from the Harappa period to the early historic period a matter of very considerable difficulty.

A number of female figures are stored in the archaeological godown in Peshawar, these so far as can be ascertained were found by Sir Aurel Stein at ancient sites in the Zhob. Nothing could be more dissimilar than these terracottas and those of the Harappa culture. These figures are made of that pale creamy grey fragile pottery which is so characteristic of the early figures in Sumer. They are aesthetically totally different to those found at the Indus sites and are the product of a different art

tradition and probably of a totally different people, and possibly of a totally different age. These female figures (Pl. VIII. 8) have an air of primitive decadence ; they are far less robust in every way than those made in the Indus cities. They are all broken off at the waist, so it is impossible to say definitely whether they were nude figures, or whether they had some form of skirt or loin cloth. The most common headdress appears to be formed by two narrow applied bands framing the face ; two other types exist, a semi-cylindrical hat wider at the top than at the bottom, and a star-shaped headdress with three points. The figures all have a number of necklaces close together down on to the shoulders. The outstanding peculiarity is the eye-form ; they are round hollowed out sockets with a surrounding ridge. It is possible that these had some paste or stone eye inserted in them, but it is considered most unlikely that this was the case. This eye form is reminiscent of that employed in the "dead men" figures on Chimu pottery from Peru.

In addition to these female figures there is a male figurine discovered by Sir Aurel Stein at Chhal Garhi in North Baluchistan,[1] which is also in the Peshawar store room. This is a most interesting figure, and is the only human figure in any material which has a definitely Sumerian air (Pl. IX. 6).[2] It is either a kneeling or seated figure probably the former, and the total height of the assembled fragments is about six inches. It has one surviving ear, not visible in the illustration, which is nearly circular and placed very high up in relation to the eye. It must be emphasized in order that it may not be necessary at some future date to contradict any strange speculations, that the dark mark visible at the inner corner of the left eye is shadow, and that the sockets are completely void of any indication of the eye-pupil. It will not be wholly out of place to mention here the fact that the lime-stone bearded head

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1. Investigation on my behalf by the Director General of Archæology has brought to light the following facts. This figure comes from Chhal Garhi in N. Baluchistan and is mentioned on p. 55 of Archæological Survey Work in the N.-W. F. P. and Baluchistan for 1904-5 by M. A. Stein (the late Sir Aurel Stein). A dating at this juncture would be very hazardous, but it is most probably of the prehistoric rather than the early historic period.

2. The terracotta figurines of Mohenjo-daro and the lack of any similarity between them and such figures in Babylonia has been fully discussed in "Mohenjo-daro ; some observations on Indian Prehistory" by D. H. and M. E. Gordon, Iraq, Vol. VII, pt. 1, 1940.

with a trefoil robe from Mohenjo-daro has a crack down the left hand side of the face, which produces a shadow in the eye socket. The originals of both these figures have been held up to the light and closely scrutinized and in neither is the eye-pupil indicated. This, combined with the fact that the eye-pupil is absent in all of the stone heads found at Indus sites, should set aside all the theories of Yoga as being based only on the uncertain, and in this instance completely inaccurate, method of examination of photographic reproductions.

Dating is as yet not the simple matter that it is believed to be by many, but laying aside the claims of extreme antiquity made by some and the excessive lowering of the lower margin of dating as advocated by others, there is hardly a single object found at any Indus Valley site which, not being demonstrably of the early historic period, is later in date than 1300 B.C., to put it at the very lowest estimate that can command serious attention. This still leaves a thousand years, which is an appreciable time for a country to be void of the remains of material culture. It has been shown that there is a persistence of terra-cotta types in some instances which cannot well be attributed to chance resemblance, but at the same time this is confined to bird and animal figures and the human figurines terminate apparently with the end of the Harappa period. The Jhukar period is, as far as one is aware, exemplified by only one head from Chanhu-daro, which is classified as such for the sole reason that it is not of Harappa type. The urn burial culture at Harappa does not appear to have produced any characteristic figurines, there being at this site also, only one modelled male head that might be representative of some culture postdating the Harappa period, but earlier than the early historic period.

The rosettes present in some of the figurines at Harappa are present also in those of archaic appearance found at Taxila and sites in the North-West Frontier Province. This does not, however, constitute anything more than a resemblance, and probably a coincidence, the examples on the one hand being quite securely dated prior to 1500 B.C. at the very latest, and on the other equally securely dated to not earlier than 200 B.C. at the very earliest. Let us however in any case keep an open mind to this extent that whereas the bulk of the "Harappa" figures are earlier in date than 2000 B.C. a few may be of a somewhat

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later date, and also that, whatever period they may belong to, there are figurines found at Indus sites, which on the uncertain, but not wholly to be ignored, evidence of stylistic grounds, appear to be of still later date than these.

THE FIGURINES OF ARCHAIC STYLE

With such quantities of terracotta figurines at Indus Valley sites it would be but natural to expect that such an outstanding cultural feature would have perpetuated itself, this does not however appear to have been the case. In dealing with this very difficult and controversial matter there are points which should be constantly borne in mind. Firstly, a large number of the terracotta producing sites have never been excavated, or if digging has been undertaken, it was not of sufficient extent or sufficiently well controlled as to produce unequivocal evidence of sequence, let alone date. Such sites are those in the vicinity of Muttra, which have never been excavated, but from which material has been derived mainly as the result of surface exploration after heavy rain, also Buxar, and Kadamkuan, Bakarganj and Bhiknapahari—all within the City of Patna.

Secondly, the presence of an object held to be of a definitely datable age does not prove that the objects in its stratigraphical vicinity are of the same age. It is this idea which has caused a great deal of confusion of thought. An object believed to be datable may be out of context for a number of reasons, retention for a number of years can place it among objects of a much later date. Objects whose retention in this manner is common are seals and coins, both of which being as a rule inscribed are favourite dating material, but also, for the reason just stated, eminently unreliable. Another method by which older objects, particularly pot-sherds and figurines, may come to be out of context along with later material is by being excavated and built in as part of more recent mud walling, which may raise them some eight or ten feet above their true archaeological horizon. Conversely intrusive digging such as burials, sump pits, and refuse pits may contain a jumble of material in their filling. All that we can say of a datable object is that in undisturbed ground the chances are that objects found at or above the same level are not older than that object, but, by reason of the possibility of its retention as an

object of sentimental or intrinsic value over a long period, they may be much more recent.

Thirdly, that style is a dangerous criterion of dating, especially when it is employed to assume that what is primitive or archaic is also ancient.[1] Where there is a degree of archaism, figurines have been readily presumed to be of "prehistoric" or of "Indus Valley" date, and a catalogue of technical points in construction drawn up to show the similarity of the group under discussion to another of proven early date. This unfortunately proves nothing. A study of the modelled terracotta figures goes to show that this technique was seldom if ever mastered by the producers of humble folk-art. Such attributes as pinched out noses, rudimentary or ill-formed limbs, crude eye forms are quite general whenever and wheresoever a mould has not been employed, these in short are attributes shared by the whole class of modelled figurines entirely irrespective of their date.

If one is not to date figurines by association or by style, then one may well ask how is it to be done at all. This is a question not lightly to be answered, style is of not much value until one has localised it and one can only localise by association. This is, however, the whole crux of the matter, what can we regard as typical style groups, and what can we regard as evidence of association indicating contemporary manufacture

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1. K. de B. Codrington published an article 'Some Indian Terracotta Figurines' in the 'Indian Antiquary' of August 1931, in which he challenged the opinions put forward by Dr. Coomaraswamy in the 'Boston Museum of Fine Arts, Bulletin', Dec. 1927, which was the prelude to his more comprehensive article on 'Archaic Indian Terracottas' in IPEK 1928.

C C. Das Gupta published an article "The Problem of Ancient Indian Terracottas" in 'The Indian Historical Quarterly', March 1936, in which he upheld the views of Dr. Coomaraswamy against the points which had been urged by Codrington, but failed to take into account the archaic type figures of Sar Dheri which are of the first importance. Das Gupta has also published in the Journal of the Royal Asiatic Society of Bengal, Vol. IV, No. 1, 1938, a "Bibliography of Ancient Indian Terracotta Figurines", which is practically complete up to 1936.

V. S Agrawala, wrote an article 'Mathura Terracottas', published in the 'Journal of the U. P. Historical Society', July 1936. This article was greatly influenced by Coomaraswamy's pronouncements in IPEK ; it does, however, present much material, clearly arranged, which cannot be found elsewhere.

Simone Corbiau has published an article dealing with her first visit to Sar Dheri in the 'Bulletin des Musées Royaux d' Art et d'Histoire' 1936, Brussels, entitled 'Collection de pieces provenant de l'Inde', also other articles 'New finds in the Indus Valley,' IRAQ Vol. IV, pt. I, 1937, and 'Prehistoric Remains on Historic Sites of India' 'Man', 1937, on the same subject.

as well as mere co-existence? It has been shown that there is a definite style of figurine that may be regarded as typical of the Harappa period, which is in definite contemporary association with a vast number of cultural objects, all of which can be attributed to that period, though the total length of its continuance may have been five hundred or more years. There are also a very few objects which, though in apparent contiguity, seem to be wholly foreign to that culture and that period, and which one's experience rejects as being contemporary. In the same way I propose to continue to produce typical style groups and indicate what is known of their true cultural associations, and by this method arrive at some tentative conclusions in the way of a rough chronology.

The first of these style groups is that which may be classed as the Archaic style of terracottas; as will presently be seen they cover a large range both of time and of locality. Superficially they appear to be similar to terracottas of considerable antiquity found in other quarters of the globe. When, however, closer examination as to style and technique is made, these similarities are found to have no very close correspondence beyond that which one crude figure in clay is bound to share with another depicting the same object. It is of course just these figurines of archaic style that have been seized upon by certain writers as bridging the gap which exists between the Jhukar Period of the Indus Valley, which is itself rather a local and unsubstantial manifestation, and the Mauryan Period, when we secure definitely datable material. No one is of the opinion that a complete cultural hiatus did exist over this period, nor does anyone wish to prevent association with this period of material that rightly belongs to it, but what is imperative in the interests of sound archæology is that material, that can be shown to be of early historic date, should not have a prehistoric dating wished upon it in order to provide the wherewithal to link up this annoying hiatus, which material should be sought elsewhere.

Certain recent excavations have proved the most promising class of archaic figurines to be not only of early historic date, but to have had popular continuance over a period of not less than two to three hundred years. It is also possible to show that other archaic figurines share certain technical features so closely with datable types as to prove

them contemporary, and it is almost a certainty that properly conducted excavation will bear out the conclusions thus formed. It has been suggested that these comparisons are prompted by subjective predilection, this is by no means the case. No one is, I am sure, prompted in this manner to deny the possibility of material cultural phenomena of any kind, within the period which has at present the appearance of an hiatus. Nor does anyone wish to resist, for some obscure reason, the locating of such material within this gap, if the facts indicate that it is this period to which it truly belongs. It is, however, when the objective facts point in a contrary direction that a stand must be made and these opinions challenged.

Terracottas of archaic appearance have been found at many sites in the North-West Frontier Province, and at Taxila, Muttra and Buxar, of these figures the commonest is that which may for convenience be called the Sar Dheri type.[1] This style of figure was first published by Dr. A. K. Coomaraswamy in his pioneer article on archaic Indian terracottas in IPEK 1928, and was assigned by him on stylistic grounds to "some part of the second millennium B.C." On the evidence then available such a dating was quite excusable. Eleven years of work by various persons have done much to modify this view.

The "Sar Dheri" type of archaic figurine is here illustrated by two examples on Pls. VIII and IX, which display the characteristics by which this type may be recognised. The outstanding feature is the applied and incised eye, which is formed by applying oval pellets of clay to the face and incising them from nose to ear by the stroke of some sharp edged instrument. Some of these figures are chinless, some have rudimentary chins, some have applied mouths, some have no mouths at all, but with the exception of one specific type, in which the eyes are worked up from the face material by modelling and then incised, the eyes of all are applied and incised. Though the legs of these figures are indicated by a peg shaped tapering off of the figure, this is often so deeply divided at the back, that the lower part of the figure splits apart

1. Sar Dheri was first brought to my notice by Major General H. L. Haughton, C B., C.I.E., C.B.E., in the winter of 1929. The site has been under investigation ever since, the first published account being in the Journal of the Royal Anthropological Institute 1932. "Some Terracottas from Sari Dheri" by Major D. H. Gordon. Also see Appendix A.

in the middle, and half figures can be found quite commonly. Half figures divided in this way have also been found at Harappa, and it is for consideration whether in both cases these figures were intentionally divided, and whether this has any ritual significance.

The "Sar Dheri" figures have rosetted headdresses of many types but they all preserve a family likeness and are quite unmistakeable. All these figures are apparently naked except for necklaces, sometimes the 'channavīra' or similar ornament, and a girdle. In one case, however, in the place of the normal small triangle indicating the pudenda there is a sprig of a plant. Two such examples were found at Sar Dheri, being flat moulded figures of archaic type.

When Sar Dheri was excavated in 1938, these archaic figures were found throughout the section from two to thirty-five feet below datum in the main mound, and at 40½ below datum and 9½ below surface at an adjacent point originally covered by the mound, this indicates that this was a popular long lived type, and that it is not possible to pin the type down to one definite limited period, nor is it possible from the sequence of the finds to say that a chinless or mouthless type is any older than the apparently more developed type which has these features indicated.

The area of this type, as indicated by our present knowledge, is that of Gandhāra, liberally interpreted, from Hadda, Lalpura, and the Kunar on the West to Taxila on the East, and from Bajaur on the North to the Main Road between Rawalpindi and Peshawar on the South.

It is fortunate that there should now be considerable evidence for the dating of the Sar Dheri type. The depth at which figures were found at Sar Dheri has been mentioned above, and as a Hellenistic moulded torso was found in the main mound at 37½ feet B.D.L.; a moulded head of somewhat deteriorated Hellenistic style at 29 feet B.D.L.; and a still more deteriorated Hellenistic head with rayed crown headdress in grey terracotta at 12 feet B.D.L. these, together with a Menander coin at 32 feet B.D.L., which is above its true context, Kushan coins down to about the same depth. and square Saka and Indo-Greek coins between 32 and 42 feet B.D.L., do not indicate a date prior to 200 B.C. at the earliest for any figurine of this type yet found at the same site.

Besides the numerous sites in the N. W. F. P. and Afghanistan from which this type has been recovered, specimens have also come to light at Taxila. Here they are the product of excavation at the Bhir Mound and at Sirkap, and ploughing on the unexcavated fields at the Bhir Mound, and also the fields West of Mohra Moradu. In the Bhir Mound they have been found from 3'-2" to 6'-8" below surface and at Sirkap at 19 feet below surface (Pls. IX. 2, and VIII. 6).

The bulk of the terracottas found at Bhir Mound are from surface to 5 feet below surface, only two human figures being found between five and eight feet and none below this depth. A dating of 150 to 80 B.C. is here proposed for the first five feet, and 180 to 150 B.C. for the preceeding three feet, below which no human figures have been found. More facts in support of this dating will be adduced when the moulded figures of Śuṅga date come to be examined.

The next most common type of terracotta from Gandhāra is the type named after Sahri Bahlol. This is a very primitive type and includes three related forms of terracotta figure. The first is a female figure with out-spread arms and legs, very crudely made having a high comb-like headdress, less fan-shaped as a rule than the normal Harappa period headdress. There is no nose, the face is slightly pinched forward having no eyes and an incised mouth, most of these figures have long lobed ears. The second is a cylindrical pedestal figure of indeterminate sex with the same style of head and with joined hands, the third has the same head and joined hands but balances on three legs. A related figure of a somewhat more sophisticated appearance was found at Bhita and dated as early Kushan, it is unlikely that any of the figures are earlier than the 1st century A.D. (Pls. X. 5 and XII. 7).

A third important archaic type is the spade shaped figure, these are found at Sar Dheri and Akhtar Dheri (Nisatta). Pl. X. 6, shows the transitional type between the naturalistic figure and the stylised one in which the legs have disappeared and only the pubic triangle is left to symbolise the female generative principle. Pl. IX. 5, shows a spade shaped figure with a four sided lower portion instead of the more usual triangle, this has the style of head covered with small indentations and pricking which is put forward as the "Akhtar Dheri" type, it being the style of figurine most commonly found at that site. From Sar Dheri

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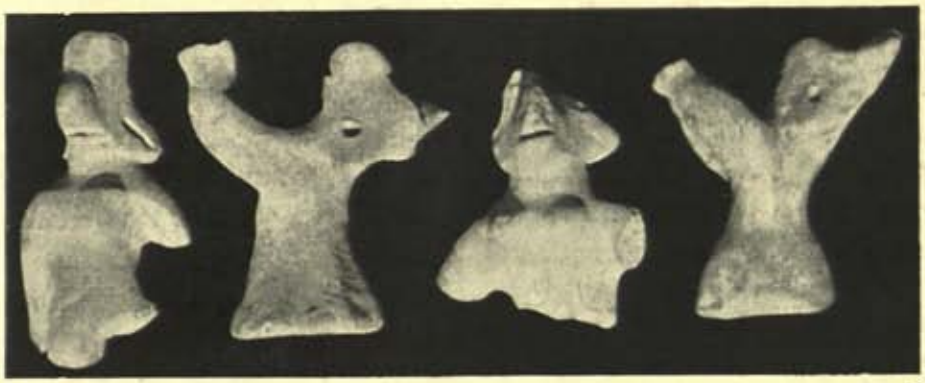

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comes a further spade shaped type, smaller and more fragile than is usually the case, exhibiting bisexual attributes combining both male and female principles, a protuberance in the centre of the female triangle must indicate the combined 'liṅgam' and 'yoni' so often seen in Hindu iconography.[1]

Wherever there is degeneration and deterioration one gets a type that is an approximation to the archaic, which point will again be brought out in connection with the moulded figurines. At Taxila, at Sirkap, only two feet below surface was found the torso shown in Pl. X. 3 which exhibits all the features of degeneration from good naturalistic moulding to primitive stylisation. The archaic form with the applied eye of Sar Dheri type must have attained to a certain iconographic significance, for we find that this style was faithfully copied in moulded figures where this eye form is unnecessary, besides being crude and unsightly. (Pl. X. 8).

At Muttra a primitive form of figurine has been found, without however any reliable archæological context of find-spot (Pl. X. 2). They are made in a grey terracotta and have crude animal like faces. A point, however, to be borne in mind is that all having the modelled faces are also of this crude type, and that the local modellers could not apparently turn out a good human naturalistic face without a mould, and this same peculiarity may be noted at all sites and at all periods.

These primitive figurines are of the same clay, have the same body forms, the same style of applied and incised ornament, and the same style of applied hair as the female figures with modelled faces, in fact it is only the application of the face mould that differentiates one from another. There is no doubt, from their numbers, that these figurines were a relatively mass production article, and that it is only the well produced face mould that prevents all the figures from sharing the same degree of primitiveness. When at a slightly later date the complete flat mould came into use the same difficulty prevailed, and we see the inept modeller making use of the head portion of such a mould, the body no doubt having been smashed, to give some degree of naturalism to his crude and primitive figure (Pl. X. 7). It is possible that some more humble potter

1. Plate I, fig a, 'Annual Rep. Curson Museum, Muttra' for the year ending 31st March, 1940 gives an example of this type.

"scrounged" this bit of a mould as a reject from a more up-to-date and prosperous business ; it does, however, prove beyond doubt that without the help of a mould the Mathurā potter could produce only the most crude semblance of the human face and figure. It cannot be allowed, therefore, that these figures, cruder in face but not in form, are anything but contemporary with the similar figures having a moulded face ; their dating, which can now be stated as early 2nd century B.C., will be dealt with in greater detail when the figures with moulded faces come to be examined.

From Buxar come a number of terracottas, but the description given by Dr. Banerji-Shastri[1] of his activities at this site does no more than indicate that very interesting objects may be found there. His most primitive type, with impressed diamond shaped eyes and small pursed-up lips, can be paralleled almost exactly by a head unearthed close to Mohra Moradu, Taxila. It is extremely unlikely that any of these figurines are even of Mauryan date.[2]

It may be asked for what reasons has such a remote date been assigned to these figurines of archaic appearance. The answer is not far to seek, what people wish to find they will find, and it is very desirable that something should be found to bridge the gap which exists between the low date of 1500 B.C., below which even the most unbelieving cannot go, for the latest finds on the admittedly pre-historic sites, and 250 B.C. beyond which date there is not the least evidence to place any objects coming from the early historic sites. The terracottas of archaic appearance just examined appeared to fill the role satisfactorily, merely because of the similarity that one crude figure in terracotta must inevitably share with any other crude figure in terracotta.

A prop and stay to the idea of an early date was the gold leaf figure of a nude woman from Lauriya Nandangarh. Dr. Bloch had announced the mounds at this site as Vedic burial grounds, largely because Vedic burial mounds were described as circular. In 'Man', 129, 1935 the present writer cast doubt on this theory and in 1936 the excavations of the late

1. Remains of a Pre-historic Civilisation in the Gangetic Valley ; K. B. Pathak Commemoration Volume, 1934.

2. St. Kramerisch in an article on 'Indian Terra-cottas' JISOA, 1939, pp. 89-112, has assigned correct dates to the terracottas from Buxar.

Mr. N. G. Majumdar at this site showed the mounds to be stūpas, which were unlikely to be earlier than of Aśokan date at the earliest, and as the gold leaf figure came from a trench relatively high up on one of the mounds it is unlikely to be earlier than late 3rd century B.C. at the earliest.[1]

As a matter of fact this gold leaf figure is in the same tradition as the nude female figures in bone at Sirkap, which are of Indo-Greek or Indo-Parthian date, and one of which is an exact counterpart of the Sar Dheri type even to copying the applied and incised eyes.[2] The nude goddess can be shown everywhere in the area under review to be of early historic date, and it may be well here to remark again that female figures found at the pre-historic sites are not nude, even if, and it is by no means certain, they do happen to be goddesses.

THE EARLY MOULDED FIGURES

Under the heading of early moulded figures are all those with a dating from c. 200 B.C. to the commencement of the Christian era. Again the matter of dating is highly controversial, but an attempt will be made to thread the maze of the complicated material presented by a number of Northern Indian sites. The great difficulty under which we labour is that the key types are those of Muttra, where, as yet, there has been no properly controlled or co-ordinated digging. The digging at Sar Dheri has removed from the archaic terracottas of that area the dating wished upon them on stylistic grounds ; but without similar proof positive, the dating of the terracottas of Muttra type is much more complex. This is more especially the case as these terracottas, like most others until one reaches the Gupta period, are most unaccommodating in the matter of parallels with datable sculpture.

The most revealing object is the figurine already mentioned, which has a crude modelled body and a face with an elaborate headdress produced from a broken portion of a flat mould. More significant still, the figure is provided with a collar, an applied band of clay with a stamp

1. The Annual Bibliography of Indian Archaeology, Vol. XI, 1936, p. 4 gives full details.

2. One of these bone figures was published by Coomaraswamy in his article in IPEK, buf its significance was at that time not apparent.

impression on it. It may be taken provisionally, that the figures with the applied ornaments, decorated with incised or stamped patterns, are in all probability the oldest. Examples come from Muttra, Taxila, Buxar, Bulandi Bagh and Pāṭaliputra ; the site of Sar Dheri, in its usual unfailing manner, produces one example of this applied and stamped decoration on a crude body, it is however unfortunately headless.

The figures found at the site of Pāṭaliputra fall into two classes. There are two somewhat large heads, one of a child-like appearance, which is of an unique character, and the other having a bicorne headdress, which incidentally bears not the very vaguest resemblance to the so-called "voluted" headdress of the figurines from Harappa ; and there are almost complete figures with applied clothing and decoration and poorly proportioned limbs. If one examines these figures closely it will be seen, that with the exception of the child face, these figurines have that round rather pug-nose style of face, which must be associated with terracottas of the period c. 150—50 B.C. The child-like face itself is only differentiated from this general type by the animated lip-form, which imparts to it more of character and personality than is found in the standard type. Whether this expression was obtained consciously or by chance is of no consequence, nor can we reach any certainty on such a point when dealing with an unique specimen. There is little doubt however that all are really in the same round-faced flat-nosed tradition. These figurines may be of Mauryan date, though stylistically they would appear to be Śuṅga ; as we have nothing by way of comparison of proven Mauryan date that in any way resembles them, a verdict is at the present best held in suspense.

As we have seen in the previous chapter, the crude figures with animal-like faces from Muttra are of the same date as the equally crude figures with good moulded features, sharing with them the same applied and stamped ornaments and the same style of hair-dressing in parallel applied plaits. In her book on the terracotta figurines from Seleucia on the Tigris, Miss Wilhelmina van Ingen brings out quite clearly the fact that terracottas of the period under discussion were as a rule an artisan mass-produced article, and one can readily perceive that, without the aid of a mould, the image-maker was unable to turn out anything but a form reduced to its most conventionalised elements.

With good moulded faces, from Muttra, there are two common forms of female terracottas in grey clay, one with a more simple rosetted headdress, large double earrings hung perpendicularly, and few ornaments (Pl. IX. 4), and the other with a more elaborate headdress and profuse ornaments (Pl. XI. 4). The feature, however, which links both these types and the one with crudely modelled faces is the identical form of hair-dressing, depicted by a series of roughly parallel applied strips of clay, sometimes ornamented by stamp impressions, representing either plaits or long locks of hair. The fact also that the same moulds, there appear on examination to have been surprisingly few of them, not more than three or four original moulds at the outside, have been used in the production of both these types, indicates that they could not have been greatly removed from one another, if at all, in time.

Have we any indications as to what this period was ? The figures with ornaments of simpler type can be paralleled at a number of sites, at Muttra itself definitely nude figures sculptured in stone with similar ornaments appear as late as the Kushan railing pillars from Bhuteśvara. The example given by Miss Kramrisch in Pl. VI, fig. 28 of her Indian Sculpture is proof of this. The mode of parallel plaits may be seen in a multitude of sculptures from the bracket figures at Sanchi to the late figures at Amarāvatī where this style of hair-dressing is particularly noticeable. Besides this Pl. XII. 5, shows a Muttra figurine of the more ornamented type having a style of ear-ornament, consisting of an object flat on one side and rounded on the other, which is a valuable clue. This style of ear-ornament is present in two figures, one of which is of similar applied decoration technique, found at Bhir Mound Taxila (Pls. XI, 1, and XII, 3).[1] Another more sophisticated moulded figure of a woman carrying a child, found in the fields near Mohra Moradu, Taxila, has the same ear-ornaments (Pl. XI, 2). It is unfortunate that there is no record of the depth at which the two Bhir Mound figures were found.

As has been mentioned already, one human figurine is recorded below eight feet at the Bhir Mound and only two below five feet, one of which

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1. Similar to Pls. XI. 1 and XII. 3, is JISOA vol. VII, Pl. IX. 2, from Pāṭaliputra, assigned to the late Śuṅga age on p. 107, in the article on 'Indian Terracottas' by St. Kramrisch.

is a male head of archaic type with a knotted headdress, commonly found at Sar Dheri, where it has approximately a 100—50 B.C. dating. It is, therefore, impossible to be convinced of a dating earlier than 160 B.C. for these two figurines, and it seems reasonable to suppose that the similar figures from Muttra are of similar date. The less ornamented figures with simpler headdress may then be regarded as possibly preceeding these by a few years and be dated at about 180 B. C. Pl. XI, 6, from Bulandi Bagh has similar technique and is in the same tradition, and so also is the bulk of the figurines found at Buxar, the circumstances of the finding of which are so inexact as to contribute nothing to the elucidation of our problems.

Following on these, presumably for there is no true scientific certainty of the fact, come the moulded figures from Muttra, for the most part in red terracotta, and in which the whole figure is the product of a rather flat mould. Very few are formed completely in the round by the joining of two separately moulded portions, back and front; they are nearly all in the form of plaques, with the figure impressed on the face and the back left plain. The female figures have without exception the round face with a somewhat pug-nose which is their chief characteristic. They also in many instances perpetuate the elaborate headdress of the more ornamental style of grey terracotta already mentioned (Pl. XII, 7), this is particularly noticeable in the bands ornamented with rosettes, which fall from the crown of the headdress to well below the shoulders. These bands, or something closely resembling them, are also found occasionally on archaic terracottas of Sar Dheri type from the same site (Pl. X, 4).

The subject of these bands will be reverted to later on, but before going any further it will be as well at this juncture to recall to mind the crudely modelled figure, with the face taken from a mould of the type usually employed for the red terracotta plaque figures that we are now discussing (Pl. X, 7). This figure is of the utmost importance, revealing as it does the incapacity of the normal Muttra image-maker to produce anything, either lifelike or artistic, without the assistance of a mould. The most important feature of this figure is the applied collar concealing the joining of the head. This collar shows conclusively that the idea of applied and stamped decoration was contemporary with the employment

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of the flat full length mould, from one of which this is quite definitely broken. This indicates that even if the grey figures with applied and stamped decoration and the red ones from the full length mould were not made at one and the same time, only the very shortest period can have separated them.

From the Bhir Mound, Taxila, at depths from two feet to four feet below surface, come figurines of a woman holding a child ; Pl. XI, 3, shows an identical one from close to the surface near Mohra Moradu ; these are all from the same mould ; they and also others now to be discussed are of Muttra type with the same round flat-nosed face. Of the same period are Pl. XI, 5 and XII, 4, the former from Mohra Moradu and the latter from 3'-4" B.S. at the Bhir Mound. The woman with the child is of a type that must be recognised as Śuṅga and rather late Śuṅga at that, as it has nothing in common with the art obtaining at Bharhut or exemplified by the early Yakṣa figures. The figure of the girl with her hands clasped above her head has been claimed as an outstanding example of Mauryan art. Its conscious sophistication, however, does not harmonize with any of the sculptures which may approach that period in date. This posture of raised arms and linked hands is not noticeable until one comes to the late period at Amarāvatī, where the attitude is quite common. From any other findspot this figure would call for a 1st century A.D. dating as harmonising with its artistic convention and development.

In Pl. XI, 5, one can see the headdress with rosetted bands, both this and that of Pl. XI, 3, are typical Muttra headdresses. It can now be seen that these rosetted bands link the grey Muttra terracottas quite securely with the red ones and also with the terracottas from Taxila which are of Muttra style, and with an easily dated Sar Dheri type. We have also seen that a peculiar form of earring affords a further link along the same lines. These common elements of dress indicate that these figures cannot be widely separated in time. There is one further point that is noteworthy, and that is that the closest approach to these headdresses in the sculptures in stone is from Muttra. The headdress of Pl. XI, 5, from Mohra Moradu may be compared with that of Pl. XII, 2, from Muttra, and that of Pl. XI, 3, also from Mohra Moradu with that of the woman shown by Coomaraswamy in Pl. XXI, fig. 81 of his History of Indian and Indonesian Art.

It is interesting to note also that this more genre type of sculpture, free from iconography, depicting human women carrying or playing with their children, does not appear until the Kushan period, this is emphasised by the Muttra terracottas themselves, of which figure 1 on Pl. XII, is an example. In this we see the mother and child, the former with the same style of flowing lower garment, divided in the centre and rolled back in folds at the sides, as can be seen in nearly all the Taxila specimens. No great period of time can have divided these figures. The Taxila figures and their Muttra counterparts represent a popular movement towards more secular subjects; this would not be immediately taken up by contemporary grand art, and some time elapsed before the same influence is noticeable in the sculptures, by this time as we see in fig. 1 the same motifs in terracotta were becoming exaggerated and debased.

Sar Dheri also does not fail to produce its figure of Muttra style and other relevant parallels. Pl. XIII, 2, produced from a double mould, of which the front is shown here, wears the unmistakeable Muttra skirt and girdle. From Sar Dheri comes also the female head shown in Pl. X, 8, this is interesting by reason of its distinctive headdress, or possibly hair-dressing, having a square cut aperture on the forehead. This style is common in the flat-moulded figures from Muttra and goes a long way to confirm their 1st century B.C. dating. Yet another parallel from the same site may be seen in Pl. XIV, 1, here a Muttra plaque is set along-side one from Sar Dheri. The Muttra figure has a style of headdress that appears in sculpture of the same locality. The collar and round ear ornaments in each are, allowing for the relative crudeness of the Sar Dheri specimen, identical. The latter has eyes worked up on the surface of the face and then incised, which allies it with the local archaic types : they both date from sometime in the 1st century B.C.

The only piece of sculpture that is almost identical with the terracottas of round-faced type is the one shown in fig. 37, Pl. 6 of Coomaraswamy's article in IPEK, it is itself from Muttra, and cannot be dated with any greater measure of certainty than we can date the terracottas. We can see from this that the whole of the female figures associated with the earlier Muttra types, either from the same locality or other sites, cannot be dated outside the period 180 to 50 B.C.

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The terracotta beads from Basarh conform closely to the above. The pre-Gupta types can for the most part be assigned to the period 120 B.C. to the close of the 1st century B.C. The winged figure and others on lotus bases being, as has been pointed out already by Codrington, related to the sculptures at Sanchi, and to those of the later Sanchi period at that. The heads of Hellenistic type from this site will be discussed in the next chapter.

The majority of the figures that I have seen from Kosambi, principally some twenty to thirty specimens in the India Museum, South Kensington, are so similar to those produced in the Muttra area, that, on more than a superficial examination, one might be excused for considering that they came from that area. The earliest are not earlier than late 2nd century B.C., the majority are of 1st century B. C. dating, while later types are of Kushan and Gupta date.

A very fine terracotta figurine of an unique style comes from Gorakhpur, again it has no certain archaeological context. Especially as it has no head or headdress to give us a clue, it is futile to try and date this figure from its clothing and ornaments, which would not necessarily show much difference between 200 B. C. and A.D. 300 ; its general style, however, inclines one to give it a dating of about A.D. 200. Its narrow waistedness has been compared to that of figures from Mohenjo-daro, with the inference that here we have a cultural survival. Comment on such speculation would be superfluous were it less common, narrow waistedness not being a feature of these figures, not more than ten being noticeably so out of more than five hundred figures examined (Pl. XIII. 7).

So far the figurines dealt with have been female, the male figures are by no means so numerous, nor do there appear to be any that correspond at all closely with the earliest female types. The majority of the male figures are represented by heads, complete figures being very scarce. These heads may for the most part be readily recognised by the turban having a high knotted protuberance on the left hand side. They come principally from Muttra, Taxila, and Sar Dheri. They are either moulded types or of the archaic style with applied and incised eyes. The latter come mostly from Sar Dheri, but one is from the horizon 5′ to 8′ B.S.

at the Bhir Mound.[1] This is the oldest specimen yet found, but it is unlikely that it can with reason be dated earlier than 200 B.C. at the very earliest ; the ones found at sites in Gandhāra being mostly 1st century B.C. A specimen exactly of this type was recently found at Arikamedu near Pondicherry. It is of true Sar Dheri male type, with applied and incised eyes and the headdress knotted on the left. The very primitive method of indicating the headdress by a simple protuberance on the left of the head can be paralleled again and again from sites in the Charsadda sub-division of the Peshawar District. Mr. Aiyappan in his article in "The Hindu" of 23rd March 1941 gives a photograph of this head, describing it as that of a woman ; this being quite excusable as only considerable familiarity with this type would enable one to classify it correctly. This point of sex was in fact in doubt until a complete figurine came to light having this left hand protuberance on its head, small conventionalised breasts which could have been argued as female, but the male organ of sex was so clearly displayed that all doubt was definitely at an end.

A series of male heads, nearly all in grey pottery, come from Muttra. The majority have the ordinary Indian headdress of the period with a large knot on the left.[2] One, however, pictured by Agrawala in his article on Mathurā terracottas (Pl. III, 3), is of Iranian, probably Parthian type as also may be the one shown here in Pl. XIII, 4. It is almost impossible under the circumstances to date these heads accurately, as this style of headdress was prevalent for many centuries ; however as Parthian types with conical headdress, both of good moulded Indo-Scythian style and of archaic style with applied and incised eyes, appear at Sar Dheri with a dating of late 1st century B.C. to early 1st century A.D., these Muttra figures can be dated with reasonable confidence to some part of the 1st century B.C. A similar date can also be assigned to heads unearthed by ploughing in the vicinity of Mohra Moradu and the Bhir Mound, Taxila (Pl. XIV, 2).

For the most part the more important of the male figures are of what may be called the Kuvera type. Here one is involved in a puzzle

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1. A series of these male heads is given on Pl. VI, fig. 2 of "The Age of Frontier Terracottas", by Lt.-Colonel D. H. Gordon, Iraq, Vol. V, pt. 2, 1938.

2. Shown on Pl. VI, fig. 3, 1.c.

of iconography which would require a whole chapter to itself, and then quite possibly not be satisfactorily solved. Suffice it to say here that there are youthful handsome graceful Kuvera types as well as bearded Zeus or Dyaus-pitar types, moustachioed Scythian types, and fat, large bellied types, and that the iconography of these types, linked with that of both the so-called and the genuine Hāritī, is incredibly complex. The youthful handsome type is itself linked with the figures of a youthful handsome Skanda holding a spear and a cock, which makes matters all the more difficult.[1]

The earliest Kuvera squatting figures are from the Bhir Mound found at 3'-5" B.S.; being of Hellenistic Parthian style it is impossible to date them earlier than early 1st century B.C. (Pl. XIII. 5). The Bhikna-pahari figure (Pl. XIII. 6) is stylistically later, the well shaped body, with exposed male parts, being paralleled by examples from Sar Dheri and Bhita ; in the sculptures, well modelled bodies of this style are mostly of Kushan date. The cap-headdress is common to all these figures, and in many instances, including that from Bhikna-pahari, is of the Phrygian or "Cap of Liberty" style, which is of Iranian origin and worn by Scythian and Parthian tribes. Seated Kuvera figures are found at Sar Dheri, three examples being shown in the first published account of this site.[2] During the recent excavations examples were found at 16' and 32' B.D.L.

The obvious stumbling block encountered in the above attempt at elucidation is the dating of the Bhir Mound finds as now generally accepted, with the exception of Mr. Codrington and myself. The more one sees of the terracottas of the Gandhāra region, the more one becomes convinced that the Bhir Mound dates are incorrect. Whatever the dating may be for the lower levels, it is difficult to believe that the top five feet can be dated earlier than 160 B.C., and the site may well have been occupied until much later, as the crude figures from Sahri Bahlol, shown in Pl. X, 5 alongside of similar ones from the Bhir Mound, date from the 1st century A.D.

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1. Shown on Pl. VII, fig. 1.

2. The question of this iconography and its bearing on the terracotta problem is set out in extenso in "The Mother Goddess of Gandhara." Gordon, Antiquity, 1937.

3. For examples see "Some Terracottas from Sar Dheri" J. R. A. I., Vol. LXII, fig. 1, Nos. 1, 2 and 4.

Throughout the whole of the Gandhāra area from Jalalabad to Taxila come figurines of excellent Hellenistic style. What their exact dating may be is still largely a matter of conjecture, though Taxila and Sar Dheri both provide clues, which will be of help to enable us to reach some tentative solution.

First of all, it will be as well to enumerate of just what this Hellenistic material consists. The principal objects are small nude figurines, shown in the complete round, the product of two moulds, back and front. They have a variety of headdress, the commonest being a wreath of the conventional laureate type (Pl. X IV. 3). Other headdresses are rosetted, either with small moulded or large applied rosettes ; or have a diadem with the hair in a slightly waved parting over the brow ; or again have the hair gathered up into two knobs on the top of the head. The rosetted types as a rule have the hair in a single thick braid falling down the centre of the back. On the back of the head directly above this braid there is, in most of the better specimens, an oval ornamented plate. Both this plate and the braid appear in an archaic type, indicating it to be a product of this primitive convention, contemporary with the period when this plate and braid were fashionable ; these features are either current feminine or art fashion, and are in no way iconographic. One head from the mound of Kashkar Dheri, Charsadda, has what might be claimed as a bi-cornate headdress. The horn-like ridges start from the same point over the centre of the forehead, and sweep back rising and diverging to each side as they go. There is no doubt that this headdress is allied to bi-cornate headdresses found elsewhere, and indicates a period at which this style of headdress continued to be worn. In addition to these nude figures which provide by far the greater bulk of the Hellenistic objects, there are semi-draped female figures, male figures of the Kuvera type, and bowl decorations which are of considerable dating value.

The nude female figures show a large range of what must be progressive deterioration. The best types are cast from excellently modelled originals, their technique being as follows : the bodies are hollow, and show a good naturalistic depth, being cast in two moulds and joined round the sides. The heads are solid, even in moderately large

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examples, and are produced by the back moulded portion being impressed on the clay core, and the moulded face-mask being fitted to the front of this core and the join worked over. The bodies of these figures are beautifully modelled, displaying a restraint and accuracy of anatomy which has nothing of the contemporary Indian exuberance.

Familiarity with a large range of types shows that this particular form of figure degenerated as time went by. The body moulds became progressively flatter, until the back and front moulded portions were just sandwiched together, the flat surfaces of each being in direct contact throughout. Faces and wreaths deteriorated in style, the features of the former becoming more blurred, until one finds a head, with the wreath headdress, which has no features at all. The braid behind first loses the lines indicating the hair, and finally disappears altogether. The plate ornament, which at its best shows a pattern on it, is first reduced to a small shapeless dab of clay, and then also disappears.

These figures are completely nude and devoid of ornament of any kind ; this and other types can best be paralleled from Seleucia on the Tigris, where similar figures were being made at exactly the same period. These figures appear in Miss van Ingen's book which has already been cited, and a study of which is indispensable for anyone who is investigating the terracottas of the period 1st century B.C.—2nd century A.D.[1] As I propose to put forward a number of examples from this site to help in the dating of this Hellenistic material, it will be as well to quote Miss van Ingen's dating for her Seleucia levels which reads as follows : "Of the four levels of occupation determined by the excavation of Trial Trench 4 and Block B at Seleucia the lowest, Level IV, is Seleucid, to be dated from about 290 to about 143 B.C. The three upper levels are Parthian : Level III was occupied from about 143 B.C. to about 69—70 A.D. ; Level II, from 69—70 to 115—20 A.D. ; and Level I, from 115—20 to approximately 200 A.D."

Before turning to Seleucia, what evidence have we to offer from Indian sites, and the answer to this is—very little. In previous publica-

1. "Figurines from Seleucia on the Tigris" by Wilhelmina van Ingen, University of Michigan Press, 1939. The book is a mine of well-reasoned information, lavishly illustrated.

tions on this subject I have recorded as my opinion that the best style of Hellenistic terracottas is of 2nd century B.C. date, and the only artistic survival that we have of the Indo-Greeks other than their coinage. In view of the evidence now available this dating cannot be maintained.

Unfortunately the excavated sites of Northern India, where this style of terracotta is found, have produced very few examples ; the site of Sirkap only producing some four or five specimens, and that of Sar Dheri three or four, as the result of regular excavation. The Sirkap terracottas, in common with the rest of the Hellenistic material of any artistic value, are found in the Parthian Levels. Three terracottas found at Sar Dheri were unfortunately not of the best type. A torso at 37½′, a somewhat deteriorated head at 29′, and a more deteriorated head at 12′ B.D.L. are what one might have expected to find. Tentatively one can date the torso as early Śaka period c. 50 B.C., the lower head as late Śaka period c. 30 A.D., and the higher up head as Kushan c. 130 A.D. corresponding roughly in time to Levels III, II and I respectively at Seleucia. The head at 29′ is an unfortunate find as it would appear that the nose has been added after the face was moulded, so that it seems much too large in proportion to the rest of the face, and so makes it almost impossible to place it stylistically. The headdress is of rudimentary character, consisting of two applied bands of clay, one fixed as a diadem, and the other brought from the nape of the neck over the crown of the head, increasing in thickness to a knob above the centre of the diadem. The Hellenistic examples at Sirkap are to be equated with those from Level III at Seleucia, these include the head with the unusual headdress, which combines a high comb with the normal wreath.

Now let us see what parallels can be produced between the whole of the existing examples of nude female types found in India and similar types found at Seleucia. Though the rosetted headdress is present in the European terracottas of this period it is confined to male figures, whereas in India it is confined to female ones. The thick single plait or braid is, however, present in nude female figures at Seleucia ; such figures, which closely resemble the Indian ones in every way, having their arms extended close to their sides, being Nos. 26—31, which are all of this type and, with a single exception from Level I, they are all from II or III. Of this type, but the modelling conforming even more closely

to the best Indian examples, are Nos. 94 a-h, which are standing nude women modelled without arms. Reference for these types should be made to Pls. II and VI of Seleucia. These figures have identically the same mould technique as those produced in India, and often suffer the same defect of having the front and back portions indifferently joined. Torsos of this style in alabaster and marble from Seleucia are exemplified by three specimens from Level II and one from Level I.

One of the nude figures of this type, the only nearly complete figure yet found, coming from Sar Dheri, has the two-knobbed headdress which is such an individual feature of the Seleucia female figures. These figures, of which there are a large number, are mostly from Levels II and III. It will be seen from the above that the bulk of this nude type comes from Level III, and that this well agrees with an Indian dating of c. 50 B. C. to c. 50 A.D. for this type of figure.

Of much the same period is another style of moulded figure. This is also a figure of a naked woman, but formed by the impression of a very flat shallow mould. It is of the plaque type and shows the woman with arms slightly raised from her sides, having rather a long neck and good Hellenistic features. The whole is so little raised that it is difficult to obtain an adequate photographic reproduction. Nothing quite of this style has been found at Seleucia. This form also undergoes the usual degeneration, and declines through types showing progressive deterioration of the proportions and the modelling of the limbs.

The heads with wreaths belong also to the nude figures, but those with plain diadems and hair parted and waved from the centre probably belonged to draped bodies. Even partially complete figures of these Hellenistic types are so uncommon however, that it is difficult to say just what kind of head went with any particular kind of body. This is particularly so with the draped bodies, two of which, the only two I have yet encountered, both from the site of Turlandi Swabi Tehsil, are headless. They wear the chiton and himation and are almost identical with two examples from Seleucia given in Pl. XI, figs. 80 and 81. This style of figure at Seleucia, whenever its exact level is noted, comes from Level II, and so the Turlandi figures are likely to be later than the nude figures and to date from very early Kushan times.

From Sar Dheri come a head and torso of an unfortunately smashed

unique specimen. It depicts a woman of the Aphrodite type so common in European Hellenistic art. This small figure, of blackish terracotta, has the bare torso, the lightly flexed leg and falling himation draped round the loins, all in the true Venus de Milo convention.

Though it is essentially Indian in form, Pl. XIII, 3, is introduced here, as I am convinced that the art convention followed is that of Aphrodite unveiling. The figure is in the collection of the Indian Museum, Calcutta, and comes from Muttra. It is claimed as Śuṅga, but the whole style of the figure with its attitude, in my opinion, proclaims it to be a product of the 1st or 2nd century A.D. There is nothing which is of this consciously provocative style, or having this degree of art sophistication, to be found among the objects of indisputably Śuṅga date.

The only site away from North Western India which, to my knowledge, has produced true Hellenistic terracottas, is Basarh. Here two heads, one wearing a radiate form of headdress, the other a high pointed Iranian cap, have been unearthed. The former is of the same style exactly, and doubtless of the same period, as the best Hellenistic types from Gandhāra, and can, therefore, be dated late 1st century B.C. (Pl. XIII. 1). The other is in line with the good Indo-Scythian or Indo-Parthian moulded heads from the same area, and is, therefore, of much the same date as the Hellenistic heads. These have been claimed as Mauryan but this would divorce them from the whole of the rest of the similar figurines found in India, which does not appear to be a very logical proceedure.

Besides these figurines there are other examples of Hellenistic art in the shape of what are termed Emblemata. These are figures, which may be groups or portraits, placed centrally on the inside of a bowl or saucer. Pl. XIV, 4, shows three of these figures, in addition to these a Cupid and Psyche has been recorded, also a pair with drinking cups of the type found on the partitioned schist bowls. These schist bowls are commonly decorated with amorous drinking scenes, examples are also found in terracotta which bring them within the scope of this memoir. Terracotta bowls of the partition type are rare, but pairs with drinking cups and also engaged in dalliance on a couch are known. The partitioned bowls probably enjoyed a fairly long popularity, and though the earliest may be late 1st century B.C., the greater part of them come from the 2nd

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century A.D. The emblemata had but a short continuance in Europe, where they had a vogue during the first half of the 1st century A.D.[1] It is likely that this fashion in pottery spread rapidly to the East, say in a matter of five or six years, as it is unlikely that any of the Indian specimens are much later in date.

Male figures of true Hellenistic type are extremely uncommon. Some of the Kuvera figures show Western influence, but it is only the bearded Zeus type that can be claimed as being Hellenistic both in execution as well as in spirit. Bearded Hercules or Atlas type heads occasionally appear, but they are indistinguishable from such types as are found in the normal Gandhāran sculpture of the period in which Western influence was strong. So far no athletes or epheboi have emerged of the style found at Seleucia. A figure, however, with a face like a comic mask, of the type shown in Seleucia Pl. XXVI, figs. 183-4, was found near Swabi.

Sar Dheri ; the Bala Hissar, Charsadda ; Akra,[2] Bannu District ; sites in the Kunar, Afghanistan ; all these have produced excellent specimens of this purely Western art, and though a firm date under the circumstances of insufficient excavation, is difficult : the assistance afforded by the material from Seleucia, together with what data we have, all go to indicate a date of c. 50 B.C. to c. 150 A.D. for the bulk of these Western art objects.

This also helps to fill in the period, glossed over by the majority of the Indian art pandits, from the end of the Śuṅga art period c. 70 B.C. to the commencement of the Kushan art period c. 70 A.D. There is no handy name for this art period, as Northern India was at that time split up into a number of small states. This did not, however, prevent a great deal of fine work, very largely of Western style, from being accomplished. By reason of its western connections, it has been omitted from the works of the Indian purists ; and a hundred years of art development is, thereby, neglected or its products relegated to another period. Other specimens of this period, though showing considerable Western influence, are in

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1. An example of a Roman emblemata bowl is given in "Art in Ancient Rome" by Eugenie Strong, also in "Monuments Piot", Vol. 5, Pl. 2.

2. Two heads from Akra are illustrated in Man, 70, 1934.

their spirit and often in their execution essentially Oriental : these will be dealt with separately in the next chapter, as they do not form part of this truly typical Hellenistic art.

THE LATER TERRACOTTAS OF VARIOUS TYPES

Under the heading given to this chapter come a variety of terracottas other than those dealt with in the last chapter, whose date is from c. 50 B.C. to c. 700 A.D. ; but before we examine this somewhat heterogeneous material, it will be as well to give some attention to the animal figurines found at the early historic sites.

Animal figurines are not so readily assignable to period or locality as are the human ones. By judicious selection one can produce oxen from pre-historic and early historic sites, which are almost indistinguishable. The applied eye, usually plain, but sometimes pierced and sometimes incised or indented, is practically universal. It may be as well to re-state the nomenclature of the typology of eye-forms which is here employed—applied eyes are eyes applied to the surface of the head after the clay has almost dried ; applied and incised eyes are eyes applied and then incised by a lateral cut ; applied and indented eyes are eyes applied and then indented by the pressure of a sharp or blunt instrument ; applied and pierced eyes are eyes applied and then pierced in the centre by a hole, which may extend into the head itself ; incised or impressed eyes are eyes incised or impressed directly into the clay of the head.

The applied eye so general in the pre-historic is very uncommon in the early historic period, when one finds them almost always incised or impressed directly into the head. The more normal eye-forms are a circle incised with a reed or some such instrument having a dot in the centre (Pl. XVI, 1), and a raised circle and dot produced by a stamp impression. I have a stamp of this kind, made of baked clay, having the negative impressions of an eye at one end and a hand at the other. It is arguable that this object is an amulet, and bears the amuletic hand and eye to avert the evil eye, but it certainly could have served the purpose of a stamp die. The majority of elephant figures, both from the Gandhāra region and from Muttra, do not have the eye shown in the example on Pl. XVI, but have a diamond-shaped incised eye with a dot in the centre.

The sites of Western Gandhāra, particularly Sar Dheri, Kula Dheri[1] and Sahri Bahlol, have produced a number of fine animal figurines, many of them in an excellent state of preservation. The types include oxen, horses, elephants, rams, antelope, camels, monkeys and lions. Beside the elephant on Pl. XVI we have an ox, a ram and a horse. The horse's head is of a very fine and unusual moulded type. Monkeys are very common and one gets some excellent moulded monkey faces. Some of these animals may have been toys, though it is possible that many were votive or, in the case of the monkeys, of apotropaic significance. The wheeled animals, one feels, were almost certainly toys, and can be grouped with such objects as whistles and rattles. Regarding the clay birds on wheels, though they were almost certainly toys, being found in relatively considerable numbers, one should not, however, neglect a possible association with the ritual bird chariot.

From Taxila especially, come a number of animals, oxen and elephant, which have fairly large hollow bodies. Such animals are also found at Sahri Bahlol, from which site come also very crude horses with long hollow cylindrical bodies. These horses and their riders are to be associated with similar horses and riders from Bedadi, Hazara District. The riders, from their quilted coats and other equipment, are obviously Kushan horsemen, and it is to the early Kushan period that these figures belong.

Whole or nearly whole figures of lions are by no means common, though they are found at various sites ; an interesting example with inlaid eyes of a yellow cement coming from Kula Dheri. Lion head decorations, used as pot knobs, are, however, quite common, and found at all the more important sites in the Gandhāra area. It must have been one of the commonest pot decorations and is found in bronze as well as in terracotta, with holes at each corner of the mouth for the insertion of a ring. Such holes are found in a few of the clay specimens, which could have taken a thin metal-ring or a cord.

The strangest animals are those found in the Nilgiri cairn burial

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1. Kula Dheri is a large mound some two and a half miles west of Sar Dheri towards Charsadda. It has produced possibly more small objects such as clay seals, lamps, potsherds, etc. with Kharoshthi inscriptions than any other site between Peshawar and the Indus.

sites of Southern India ; and though both sambar and tiger have been found on jar lids in these cairns, by far the majority appear to be figures of oxen, many dozens of which, from their broken fragments, were present in some of the cairns. These ox figures are square flat backed objects with legs at the corners, and a head with wide spreading horns fastened on to a tenon protruding at an angle upwards from the centre of one short side, while a tail hangs from the centre of the other short side ; the back, and often the horns and muzzle of the ox are covered with incised patterns. These cairn burials are as yet not very well dated, but out of the suggested datings, one of c. 300 B. C.—400 A. D. seems to be the most probable.

Pottery animals have been found at most sites throughout India, even including the Dorothy Deep Cave at Pachmarhi, where the head, saddle and tail of a horse, and the head of an ox have been found in present and possibly contemporary association with cave paintings of about 300–500 A.D., which would be a reasonable dating also for the animals concerned. These animal figurines generally as a class, though very interesting, do not afford any very sound dating criteria, and the foregoing remarks are all that are necessary to give a brief but fairly comprehensive description of them.

Having disposed of the animals we now come to the strange and varied material, which goes to make up the terracottas of the later period. Here we find but few of those straightforward types which have served to help us, so far, to arrive at some sort of chronological sequence and frame work. Our primitive Sar Dheri and Sahri Bahlol types persisted certainly up to Gupta times, in fact it is unlikely whether the Sahri Bahlol type can be dated earlier than the middle of the 1st Cent. B.C., and the bulk of the output of this type almost certainly appears during the course of the 1st Cent. A.D. If one turns to Pl. XVIII of Miss van Ingen's book on Seleucia, fig. 118 shows two extremely crude male figures, such figures are of all periods from I to IV, and thereby indicate that crudely modelled archaic figures had a prolonged vogue at this site also. Pl. XLII of the same work shows dancer figures, the outstanding features of which are their joined hands, and the fact that they are finished off at the hips. Comparison may be made with primitive figures from Sahri Bahlol shown on Plate X which have the same attributes. The Seleucia dancing figures

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all come from Levels II and III, the bulk being in Level II, indicating a dating of about 80 B.C. to 100 A.D. which well agrees with the proposed dating for the archaic figures of Sahri Bahlol type. These figures may have no connection, but the correspondence in form is very close. The Sahri Bahlol figures would have normally been classed as worshippers or votaries of some sort : the Seleucia figures have been classed as dancers on account of holes to which, it is thought, moveable legs were attached, they may, however, have been votaries.

An attempt will now be made to get such items of this later material into groups as is possible. First of all, there are certain figurines which can be classed almost certainly as Indo-Scythian, these are a limited number of male figures with pointed caps or large moustaches. This material has been used already in another work to indicate the co-existence of heads having applied and incised eyes, with heads of a recognisably late period with which they can be directly equated. Some of these heads show strong Hellenistic influence, and the equation of this type with the Hellenistic head, wearing a pointed cap, found at Basarh has already been recorded above.

There is a class of mask faces from Sahri Bahlol which is of great interest. Pl. XV. 5, shows a mask from Sahri Bahlol of the period when this type of terracotta was at its best ; it is a strange face, Hellenistic influence being strong, but the face itself is of an oriental though not necessarily Indian type. Fig. 11 on the same plate shows to what stage of archaism this style of mask can degenerate, the stages in this degeneration can best be followed by a series of these masks in the possession of the Peshawar Museum. The features get sharper, the eye-forms cruder and more exaggerated, the hair curls more clumsy, until at the lowest mark one reaches an example in which the mask has flattened, and the features are no longer moulded but crudely modelled with the usual incompetence of the image-maker deprived of his mould. When one has examined all the available specimens from this one site closely, there cannot be the slightest doubt of each degenerating type being linked to the one that preceeds it. Pl. XV. 4, shows a mask which is quite unique in style and which, though not to be grouped under the heading of Hellenistic figurines, shows considerable Hellenistic influence. This piece is from the Mardan District and, except that it partakes of the

mask technique, belongs in reality to that class of moulded head which will be discussed presently, in which each head is unique, and has little or no resemblance to any other head.

Terracottas which show much the same degeneration in type as these masks are those from Akra in the Bannu District. The ancient site of Akra, which is only a few miles from Bannu city and cantonment, has been sadly neglected, and is in danger of total disappearance by reason of its excavation for manure earth ; an agency of destruction which is gradually causing the disappearance of many of the most important sites in the Frontier Province. From Akra, as from all the better sites in the North West, come a number of kinds of terracotta figures, it has nevertheless a type peculiarly its own. These are oval flat-backed moulded figures with a hollow splayed out base, which enables this image to be stood upright. Examples of this type go to show that there are good featured figures of naturalistic style which, in due course, degenerate, the features becoming sharper and the eye-forms larger and cruder. Pl. XVI. 4, is an example showing marked degeneration ; all these figures have their hands clasped in the attitude shown here.

The only remaining style of terracotta, made during the period under discussion, which can be grouped as a class is that of zoomorphic and anthropomorphic pot spouts. Such spouts are quite common, especially those of grotesque animal style. The figures are formed generally by modelling aided by applied clay work, employed to produce certain features or for the decorations. The illustration, Pl. XVI. 3, shows an elaborate spout in the form of a woman clasping her breasts, an attitude otherwise unknown in Indian terracottas but quite common in Iraq. The liquid from the vessel to which it was attached poured through the holes in the centre of the breasts. Another pot spout of this type in the Peshawar Museum shows the draped figure of a woman ; her hands are clasped round an aperture in the genital region from which the liquid poured.

Figures of the type just described are without doubt to be associated with anthropomorphic pots also found in this region. Side by side with the spout just described, there is in the Peshawar Museum a small globular pot which is quite definitely an extremely crude counterpart of the pot spout which is its neighbour. It has a crude modelled face on the short

narrow neck of the vessel and no other human features except very conventionalised arms in curves converging at the neck above and at an aperture below, through which any liquid put into the jar must flow[1].

Such pots are known from the earliest times and are more commonly male, but there appears to be little doubt if any that the whole of the pots and spouts of this type found in Gandhāra are of the 1st Cent. B.C. or early 1st Cent. A.D. A pot of male type with a moustached face, showing the figure on it grasping the male organ, and a moustached face on a neck broken from a similar pot are given in "Iraq" in support of statements concerning the applied and incised eye technique. A pot with the same motif, though much cruder, is here shown on Pl. X. 1 it comes from Lalpura, Afghanistan, and was probably found at some site in the Kunar or in the Jalalabad region.

This disposes of most of the terracottas that one can segregate into classes, and one must now turn to the individual terracottas which are such a feature of this period. The first to be dealt with is I claim not only the finest terracotta piece of its immediate probable period, but one of the finest ever found in India. It is quite unique and therefore very difficult to date, there is strong Western influence and as we have seen it is not wise to presume such influence before c. 50 B.C. A date of late 1st Cent. A.D.—early 2nd Cent. A.D. is, therefore, proposed for this figure, mainly on stylistic grounds. The object under discussion is the one shown in Pl. XV, 9, which I have named the Angel of Khan Mahi, after the village where it was found and purchased by the Peshawar Museum, its exact find spot is unknown.

At first glance this figure has all the appearance of an angel produced somewhere in Europe during the early 15th Century. The fact, however, that it comes from Khan Mahi, only some two or three miles North East from Sar Dheri, and in the centre of the chief terracotta producing area of Western Gandhāra, and that its clothing and ornaments are essentially Indian, preclude its being an importation from Europe. The fact also that winged figures are not uncommon in Gandhāran art serves to place it in the period suggested.

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1. For an illustration of this pot see Pl. V, fig. 3 and 4 of "New Finds in the Indus Valley" Iraq. Vol. IV, pt. I. 1937, by S. Corbiau.

For the rest of these miscellaneous pieces, one can only put forward a few examples as indicating the diverse types which emerge. Pl. XV. 6, shows the head of a woman with thick braids of hair on each side of the face, with a crown-like headdress having a string of jewels hanging from it in shallow loops. This object is of very fine clay, with an iron wire as part of its internal construction, and is covered with a white size which is again covered with a gold paint. This figure comes from the Swabi-Mardan area. On the same Plate, fig. 7, shows the head of a very Semitic looking man, the hair of which behind is indicated by a series of dotted circles representing possibly a series of curls. This head comes from Sahri Bahlol and is quite dissimilar from anything else found in the neighbourhood.

Pl. XIV. 3, shows a very attractive figure of a young woman in a sari-like drapery, having a most challenging expression, and the head tilted at a clever and sophisticated angle. Its provenance is unknown except that it comes from the Peshawar or Mardan Districts. Figs. 2 and 3 on Plate XV show two heads from Sahri Bahlol ; the former is an orientalisation of the Hellenistic type and has a braid down the back ; the tenon which fixed it to the body can be clearly seen. The other is of a purely Indian style, and the cast of countenance could be most easily paralleled by sculptures of the Mediaeval Period. There are many other varied types from Gandhāra, but, as in the case of the ones noticed above, it is difficult to assign with any confidence a firm date to any one of them ; approximately they may be said to date from the 1st to the 3rd Cent. A.D. One does, however, occasionally find small heads of this period bearing a striking resemblance to the Gandhāran sculptures, such being male heads with moustaches, which are of true Gandhāran type and which we can date as being late 2nd or early 3rd Cent. A.D. quite confidently.

A great deal later in date than the terracottas we have yet been discussing are large heads which come almost entirely from Taxila. The artists who had been fashioning the stucco relievos handed down through the 5th and 6th centuries, sought a new medium early in the 7th Cent., and we then find terracotta heads of the same type as obtained in the stucco. Pl. XV. 1, shows a terracotta head of a simpleton from Taxila which was produced at this period. It is a very clever bit of portraiture, typical of this particular phase of Gandhāran art.

From most of the sites in Northern India which produce terracottas come plaques and figurines displaying definite Buddhist iconography. We have already dealt with the Kuvera figures, and in the same way as some of these copy the small Kuvera figures in black schist seated on thrones, we get the complimentary figures of Hāritī also enthroned. To these must be added definite figures, Buddha himself, which are as a rule moulded in low relief in the form of small plaques. Such figures are, however, by no means common, and this fact will be a matter for consideration when we come to examine the raison d'etre of the various forms of figurine.

I will close this chapter by examining two regional manifestations of terracottas. These are the ones coming from Bedadi, Hazara District, and those from Kashmir and Jammu. The village of Bedadi lies between Mansehra and Shinkiari. In this neighbourhood there are a number of Buddhist remains of the Kushan period. Terracotta figures were found at the foot of a wall of what was probably a small monastery, they include male and female figurines and heads of horses. Some of the male figures and the horses can be equated with those which come from Sahri Bahlol, and there appears to be but little doubt that though the former are crude, they have so much in common with the latter, which incidentally are themselves also crude and primitive, that together with their find spot, they can be definitely said to be of Kushan date. Any attempt to connect them with the Aśokan inscriptions at Mansehra, some miles away, is quite unwarrantable.

Pl. XV. 10, shows a head from Bedadi, this male head displays obvious traits of the Buddhist art canon. From this same site come female figures of a most curious style. They are dumpy and shapeless, almost square sided, and consist of what was to all intents and purposes a plaster envelope tinted red, upon which the very sketchy outlines of a garment had been moulded. The head, which is equally fragile, shows a face with quite well formed features and a squat cylindrical headdress. Within the envelope there was a brownish red powder, whether its condition was the result of internal disintegration which had reduced the core of the figure to powder, or whether the envelope was filled with a powdery substance after it was moulded is difficult to say, but I incline, having seen the fragments of this specimen, to the former solution.

The terracottas produced by Kashmir and Jammu are for the purpose of easy description divided into those of outstanding merit of late Buddhist date, and the rest. The marvellous heads in terracotta, which come from Ushkar near Baramulla in Kashmir, and from Pambarvan near Akhnur in Jammu, are of the seventh century A.D.

With the help of Kalhana's Rājataraṅgiṇī it has been possible to identify the monastery erected by King Lalitāditya-Muktāpīḍa, of whom Dr. Fabri, in an article in "Asia" says: "At Hushkapura this noble-minded king built the splendid shrine of Viṣṇu Muktasvāmin, and a large vihāra with a stūpa." The terracotta heads found at this site are most attractive, the outstanding examples being the lady with the ringlets and the bearded ascetic, both in the museum at Srinagar, and the woman's head 'with the middle parting' in the Lahore Museum, illustrated in the article in "Asia." The conclusion put forward by Dr. Fabri is that the seventh century artists in terracotta from Taxila, carrying with them the heritage of the fine achievements in stucco produced there during the preceding two centuries, migrated to Kashmir.

It may be as well to notice here a remark made by Mr. W. W. Tarn in a footnote on page 398 of his book "The Greeks in Bactria and India", he says of the stucco heads found at Hadda; "The stucco heads were cast in old Hellenistic moulds and then attached to 4th Cent. A.D. bodies"; Nothing in the archaeology of the Middle East goes to support this remarkable statement, and though Mr. Tarn deserves the greatest praise for the manner in which he has disentangled and arranged the sources available, to make a clear logical picture of this very difficult period, it cannot be said that any of his statements about the archaeology of the period are very happy ones.

The site at Pambarvan has produced over a period of years some forty or fifty terracotta heads mostly of extraordinary merit. Pl. XVI, 2, shows a typical example, many others will be found in the article in "Asia".

From the site at Ushkar come also certain large hollow moulded figures, which must be of the same period as the heads, though they betray a certain stiffness and crudeness of execution. When, however, one comes to examine the technical difficulties in casting and firing a large figure, about one half to two thirds life size, in terracotta, hollow and in the

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complete round, it can be appreciated that the body forms might well fall short of the heads ; though it may well be that, while approximately of the same date, these bodies do not actually belong to the heads we have been discussing, which were possibly part of relievos. The closest approach to this hollow style of figure found in Gandhāra is a fine torso (Pl. XVI, 5), which was found at Sahri Bahlol, and is now in the archaeological store room at Peshawar. It was reassembled from a number of scattered pieces by my wife and myself, and with some difficulty made to remain in equilibrium until photographed. It is hollow and roughly two thirds life size, and probably dates from the 4th-5th Cent. A.D., though, being quite unique, a firm dating is very difficult. Ornaments of the type found at Harwan and at Ushkar are found at Sahri Bahlol, though it is probable that the latter are a century or so earlier in date. They are associated in both places however with ornate Bodhisattvas and Buddhas with tight curls, all in stucco.

The rest of the terracottas from Kashmir come mainly from the fields that surround the site at Avantipur. Here small plaques showing the Buddha in meditation, surrounded with conical umbrellas, are common, also ordinary standing Buddha figures, and Hindu divinities all in plaque form of the type shown in Pl. XV, 8. Harwan produces a few similar plaques, and also the famous pavement of terracotta bricks, stamped with designs of horse-archers, deer, fighting cocks, crouching ascetics, and people in balconies of the same style as those in the sculpture of Kushan times at Muttra. The ancient megalithic site of Burj Hama produced no terracottas among the objects excavated there.

It will be seen from the above how varied is the style of the vast numbers of terracottas which were produced from the middle of the 1st Cent. B.C. until the disappearance of Buddhism from Northern India sometime in the 8th or 9th Cent. A.D., and how difficult it is to reduce this material to any sort of order.

CONCLUSION

In the preceeding chapters an attempt has been made to reduce to some sort of system and order the varied puzzling array of terracotta figures, from a number of ancient sites mostly in Northern India. It now only remains to sum up some tentative conclusions resulting from this survey.

First of all, a few words on what must now be recognised as the far from simple matter of chronology. It must be realised that it has been impossible to discover any continuity between the figurines of the pre-historic period and those of the early historic period. Would that it were otherwise—no one, least of all the author of this memoir, regards such continuity as an impossibility, and it is the wish of all who are students of this particular branch of archaeology, to be able to produce the links which show such continuity to be a fact. It is unfortunate that, on the one hand, there are possibly some who consider that evidence for continuity is being contradicted by those who, they think, are disgruntled because they have not made the discovery first, and on the other some who consider that evidence for continuity is being produced willy-nilly, regardless of the limitations of scientific proof, because of wishful thinking and a desire to prove that the Vedic period was not devoid of material art and culture. As matters stand at present, it does not appear that these attitudes are likely to be greatly modified.

It has, however, been shown quite plainly that the types which might be expected to link with the pre-historic have clear technical resemblances to datable early historic material. This quite precludes an early date being assigned to them, which would place them conveniently midway between the two periods. In this particular connection, one final word may be said on the subject of archaism. No progress in the study of Indian terracottas can be made until it is clearly realised that primitiveness and archaism are in themselves completely unrelated to chronology, which, as every effort has been made to indicate here, is fixed as a result of many converging elements of evidence. As I pointed out in "Man" 152, 1937, a modern vase from Tiflis with applied primitive figurines is a warning to all those who regard such crude figures as being inevitably ancient. At Seleucia there were unearthed a number of bone figurines of naked women. A certain number of these are moderately naturalistic, of which the best come from Level III, but 96 specimens are extremely crude and highly conventionalised and by far the majority of these come from Levels I and II. It would be better under these circumstances to allow archaism, as such, to make its complete and final disappearance as a criterion for chronological argument.

Unfortunately, with the present extent of our konwledge, it is still impossible to set in order the matter of the pottery of the early historic period, and be able to present, as a basis of comparison, well authenticated pottery types from regularly recorded stratigraphical levels, which could be cross checked with similar types coming from any level of any site in which terracottas are found. Until this is possible it is unlikely that the study of early Indian terracottas can be carried much farther.

As a word of warning to those who are interested in this particular line of study—all terracottas found on ancient sites are not ancient, and all terracottas purporting to come from ancient sites are not genuine. A most interesting terracotta figure was produced at Sar Dheri; quite superficial examination showed it to be of a soldier with buttoned tunic, belt, and haversack, a relic, I make no doubt, of the days when toys were scarce even in Europe, and which was turned out as a plaything for European children in India possibly some sixty to eighty years ago. The modern nomad whistle in terracotta found at Harappa has been mentioned. Mr. Waliullah Khan, who secured an identical specimen for me, has made a collection of modern nomad terracottas, including figures of oxen bearing small shallow bowls, probably for incense burning, between their horns. A terracotta figurine of a woman wearing a sari, dug up on the site of an old bungalow at Peshawar, was brought to the museum where I examined it, there is little doubt that it was made at the same time and for the same purpose as the Sar Dheri soldier. Muttra has acquired a bad name for fraudulent specimens. The only ones to my knowledge that appear to be faked are some which one might term "reprints", being modern casts taken from an original mould. They are of a very finely levigated bright pink pottery, and though possibly genuine are certainly suspect.

A point which, though of course largely speculative, can be discussed with greater profit, as our present lack of knowledge does not hamper us to the same degree, is the purpose of these images. The female figures may be goddesses, or they may be votaries, or in some cases they may be primarily decorative and ornamental. The earliest female figures, those of the Indus Valley sites, do not as a class exhibit those characteristics which proclaim a Mother Goddess. To begin with they are draped with a loin cloth, and for this reason they do not display those sex exaggerations

which are associated with such goddess figures; they are not shown moreover in those characteristic attitudes, which at that period would almost certainly have been present in some of the specimens, had they been directly associated with the Babylonian Mother Goddess; and finally, as has been mentioned there is a whole class of female figures from Harappa, with hands raised to an object on their heads, which is possibly a cult object and not a headdress at all, and even if it be a headdress is almost certainly an hieratic one, indicating in either case priestesses or votaries rather than a goddess. While it is possible that some of the more elaborate figures with wide hips, a wealth of necklaces, and headdresses flanked by cups for incense burning, are goddesses, these are very few in number, and the exact status of the bulk of the figures may be held to be doubtful.

The difficulty we encounter with nearly all these figures, is that their provenance does not help us much. Both in the pre-historic period, in which cemeteries have been discovered, and in the early historic period in which they have not, terracotta figurines cannot be associated with burial goods, the only exceptions being the images on the lids of jars found in the burial cairns of the Nilgiris; this being so an 'ushabti' function it almost definitely ruled out.

In the early historic period the female figurines are of many types. Some of them, especially those of primitive style, were certainly goddesses; though whether they were Mother goddesses, virgin goddesses, or just goddesses of love is a matter for speculation, or more probably a matter for the inclination of the owner, for goddesses as a rule were many sided in their activities, and by a suitable change of invocation could be approached from almost any angle. What might bring luck in marriage to one, might bring luck in less reputable love passages to another. Some might be deposited at temples as an "ex voto" either accompanied by a petition or else presented as a thank offering for favours received. Some, the very small ones, might be carried about as amuletic charms, either to promote fertility or insure a good outcome to one's amorous advances. Some might be household deities propitiated during the dangers of childbirth.

We may safely conclude that all the nude female figures of an iconographic rather than a secular style, can be classed as goddesses, for

the purpose of procuring divine assistance in one of the ways just mentioned. There are, however, certain figures which probably were ornaments, in the manner of the Tanagra figures, though they may, in most cases, have been associated with some luck-bearing properties.

Male figures are by no means as common at any period as female, and much the same remarks apply to them as well. In many instances they personify the male principle, in some they may be votaries, and in others votive. Horns in the prehistoric period, and definite well known iconographic attributes in the early historic period, help one to pick out with certainty those figures which can be classed as gods or demi-gods.

It is obvious that a great deal of work of all sorts remains to be done. During the course of this memoir, the importance of discoveries at Seleucia, and the value to be obtained from these discoveries by means of comparison with Hellenistic and Parthian material found in India, has been given the emphasis that it deserves; only works produced on the lavish scale of Miss van Ingen's book enable one to do this adequately. A linking of all the terracottas of the Hellenistic period from the Eastern Mediterranean to Bengal is necessary, but before this can be done it is imperative that the terracottas already found at sites such as Dura-Europos should be brought into greater prominence, and that this Hellenistic Parthian culture should be linked up through Bactria and Afghanistan into India and Chinese Turkestan, following the trade routes.

Certain terracottas from Chinese Turkestan are in the Srinagar museum, and though there are no definitely Hellenistic pieces among them, there are those displaying Scythic styles and motifs which indicate strong Hellenistic influence; monkey figures, are common, as they are in Northern India; two figures, however, with hollow cylindrical bodies and no legs show definite Syrian or Babylonian influence, which we have seen penetrated into Northern India at much the same time, probably the 2nd or 1st Cent. B.C. Important, too, are the terracottas found by Sir Flinders Petrie in the workmen's quarter at Memphis, now in the Museum of the Department of Egyptology at the University of London They have been published by the Egyptian Exploration Fund in the volumes Memphis I, palace of Apries (Memphis II) and Meydum and Memphis III. There are among them a certain number of Indian type terracottas of women and seated Kuvera figures. In an article

in "Iraq" I rejected Flinders Petrie's 6th-5th Cent. B. C. dating for much of the material, and adduced arguments for a 1st Cent. A.D. date for the Indian figures.[1] The whole of this material is almost certainly covered by a period not exceeding the limits 150 B.C. to 100 A.D.; but it requires more careful examination in the light of the discoveries at Dura and Seleucia. It is certain also that there must be much more Hellenistic material in the Near and Middle East which requires to be unearthed, either from tbe ground or from the obscurity of museums.

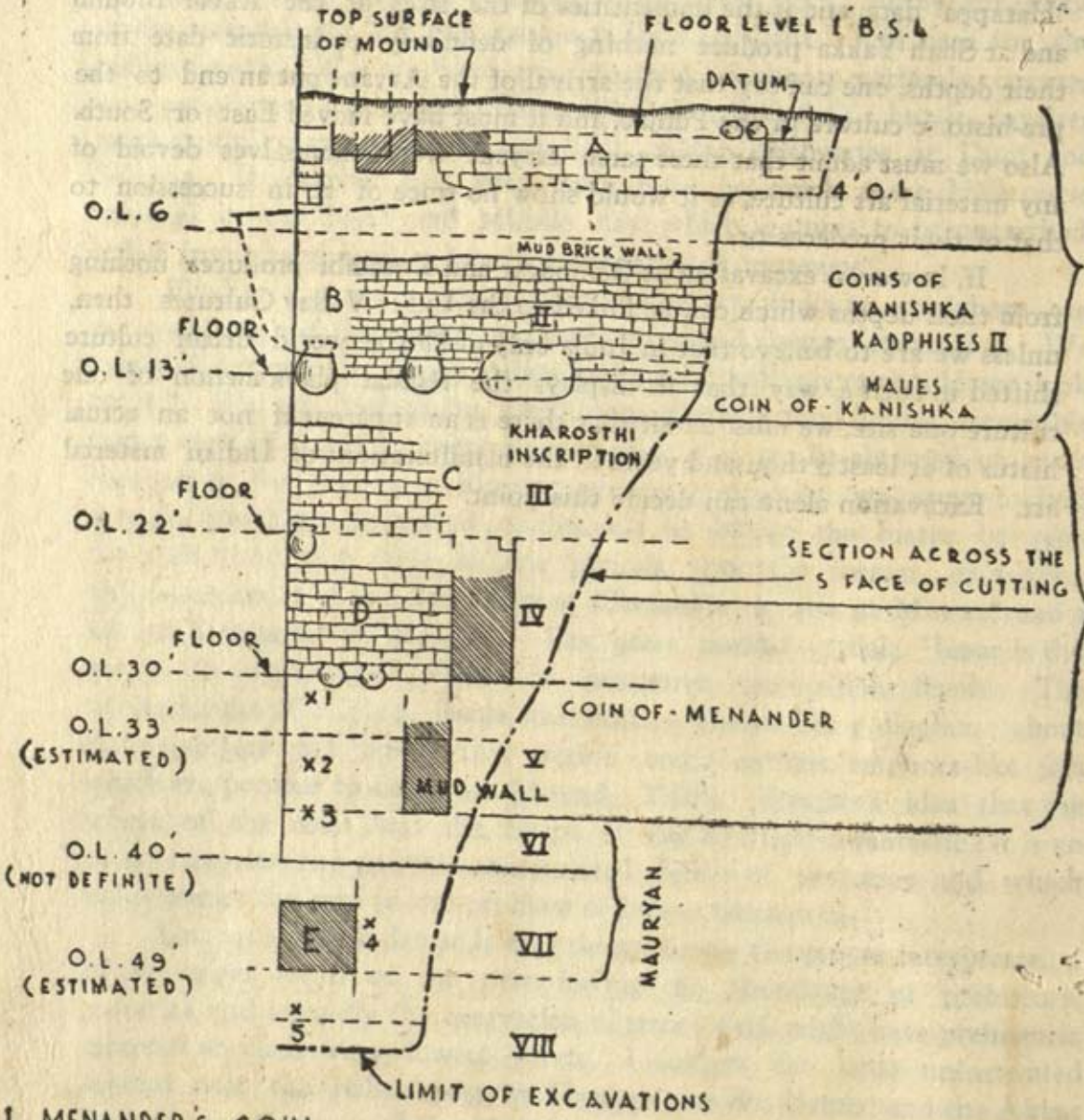
Finally, let us consider what can be done in India to straighten out our problems, and the answer to that is more and better excavation. We may well ask ourselves what are we looking for and where should we look for it? We are looking for two things, firstly, a good sound acceptable frame work, of sequence primarily, and then, if it can be obtained of exact chronology for the early historic periods: secondly, we want to find material which can be proved conclusively to bridge the hiatus between the prehistoric and early historic periods. For the former, excavation will be necessary of the Bala Hissars, Charsadda, a site at Muttra, and a site at Ramnagar or Kosambi. The great mound at Bala Hissar is the result of accumulated debris of successive occupation levels. The perpendicular North face shows stratification almost like a diagram; about three quarters way down this section come curious amphora-like jars which are peculiar to the Bhir Mound, Taxila. Foucher's idea that the whole of the mass was the Stūpa of the Eye Gift is fantastic; it is an occupation-site, one that has accumulated debris of centuries and which holds one of the keys to the problem of Indian terracottas.

Our second task demands two things, firstly the proper interpretation of the upper levels of the sites having an abundance of prehistoric material, and secondly the excavation of sites which might have prehistoric material at their very lowest levels. I suggest the large unexcavated mound near the police post at Harappa for the former, and the Akbar Mound near Gugera and the Shah Yakka Mound near Dipalpur for the latter, these being within a thirty mile radius of Harappa. If nothing can be found at Harappa which is not either of Buddhist date or of

1. The Buddhist origin of the "Sumerian" heads from Memphis; IRAQ, Vol. VI, Part I, 1939.

"Harappa" date, and if the immensities of the sites at the Akbar Mound and at Shah Yakka produce nothing of definitely prehistoric date from their depths, one can say that the arrival of the Aryans put an end to the pre-historic culture in the Punjab, and it must have moved East or South. Also we must admit that these same Aryans were themselves devoid of any material art culture, as it would show no trace of it in succession to that of their predecessors.

If, however, excavation at Ramnagar and Kosambi produces nothing from their depths which can be linked to the Indus Valley Cultures, then, unless we are to believe that in India only of all the world urban culture shifted in such a way that it displays the regular phenomenon of one culture one site, we must admit that there is an apparent if not an actual hiatus of at least a thousand years in the manifestations of Indian material art. Excavation alone can decide this point.



1. MENANDER'S COIN 32'.
2. COMPLETE MOTHER GODDESS 35'.
3. HELLENISTIC FIGURINE 37½'.
4. BLACK GLAZED SHERDS 43'.
5. CHALICE SHAPED VASE 49'.

A. BRICK WALL.
B. MUD BRICK WALL.
C. ,,
D. ,, (BLACK EARTH)
E. ,, (YELLOWISH EARTH)

Fig. 1

A BRIEF NOTE ON THE EXCAVATIONS AT SAR DHERI

The necessity of investigating sites in the Peshawar valley has been increasingly felt since the discovery of the Indus Valley Culture. Except for Sir John Marshall's work in certain mounds in the neighbourhood of Charsadda in 1902-03 all other excavations in the Peshawar valley were confined to Buddhist sites, such as Takhti-i Bahi, Sahri-Bahlol, Shahji-ki Dheri and Jamalgarhi. The numerous mounds in the Peshawar District are fast being levelled by the cultivators, who find in their earth a valuable supply of manure for their fields. The mound at Sar Dheri, nearly six miles from Charsadda, was particularly noteworthy for its considerable height and for the find of terracottas of different types, some of which were typically Hellenistic. The connection of the Sar Dheri figurines with the archaic type familiar from Harappa and Mohenjo-daro has recently been a matter of some controversy, and it was, therefore, decided to start preliminary investigations on the mound.

Fig. 2.
(Full Size)

In the peculiar conditions obtaining in the Frontier the Archaeo-

logical Camp, consisting of a party of three or four subordinates working in collaboration with Dr. Simone Corbiau of Brussels, who worked as an Honorary Attaché of the Department was accommodated in a 'sarai' of the local Pathan Chief. Colonel D. H. Gordon was a frequent visitor at the excavations and was immensely helpful to the excavating party.

The excavations were carried out to a depth of 49′ from the top, disclosing as many as 8 strata as indicated in the rough sketch on page 182.

The total range of occupation was not, however, more than 4 or 5 centuries, and the small size of the dig at the bottom of the shaft made it impossible either to reach definite conclusions about the age or to carry the work deeper. The local conditions prevented return to the site for extension of the work.

The definite data emerging from the excavation may be summarised as follows :

Fig. 3.
(Full Size)

The last two levels of occupation separated by a layer of open kilns comprising nearly 13′ from the top consisted of brick walls with stone foundations and mud brick walls respectively, dating from roughly 2nd—3rd Century A.D. The 3rd and 4th strata may be associated with the Śaka and late Greek periods, while the last four may belong to the Greek and Mauryan times. The find of a complete figurine of the mother goddess (Fig. 2, p. 183) type at 35′ and a Hellenistic figure (Fig. 3, p. 184) at 37′ 6″ suggests that the mother goddess figurine from Sar Dheri was more or less contemporary with the Greek period. It is, however, remarkable that the tree design[1] embossed in the lower

1. What appears to be a tree may be a pendant hanging down the ornament. It may also be pointed out that the drapery on the upper arms does not indicate it to be a nude figure which the mother goddesses usually are.

part of the mother goddess figurine is comparable with the well-known Harappa seal no. F. 649 (M. I. C., Pl. XII, fig. 12) in which a tree is seen issuing out of the womb of a female figure. The find of distinctive pottery including the chalice shaped vase (Fig. 4), bowls and goblets of rather thick texture with a polished red exterior surface and red and black interior indicates that the last two strata are dateable to the 3rd-4th century B.C. Another remarkable variety of pottery (Fig. 5) which was plentiful up to the 5th stratum is the shallow trough with carinated rim which must have been in vogue in the 1st-2nd century B.C. On the whole, the trial diggings, which owing to their limited scope and extent could not be said to be conclusive, have amply demonstrated the possibility of the mounds in the Peshawar Valley and the general lie of the strata in the great 'dheris' is now fairly clear.

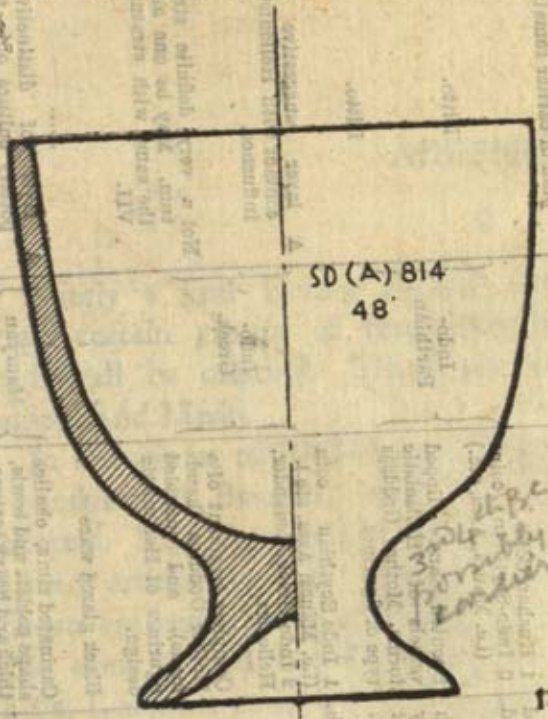


FIG. 4

FIG. 5

Abstract of observations at SAR DHERI (near Charsadda), District Peshawar, North-West Frontier Province

Stratum.	Relative depths Below datum.	Corresponding occupation levels (Below datum)	Architectural features and change of soil.	Characteristic Finds.	Tentative periods.	REMARKS.
	Surface to					
I	6′	1-*a* 0′ 1-*b* 2′ 1-*c* 4′—6′	Brick (Big size) wall over stone foundation, pottery kilns, storage jars 'in situ' half buried in ground	21 Kushan Coins. 1 Indo-Scythian Coin. Spouted and lipped vessels of Hellenistic forms. Mother Goddess type of pottery figurines. Kushan Soldier embossed on crystal bead.	Kushan (early and late).	A settlement of potters rather of well-to-do means. One of the houses had ¼″ thick plaster washed pale green.
II	6′—15′	13′	Mud brick wall. brick pavement, storage jars in situ.			Settlers conscious of the plan of earlier remains.
III	15′—25′	22′	Mud brick wall, Holed bottom jar in situ used as soak well.	1 Kushan Coin. 6 Indo-Scythian coins (i.e. Maues, Azes, etc.)		
IV	25′—30′	30′	'Black level'—Greyish mud brick wall, very brittle, grain pits of black earth, layer of ash.	Spouted and lipped vessels of Hellenistic forms, Mother Goddess type of figurines.	Indo-Parthian	Ditto.
V	30′—37′	33′	Mud wall, a layer of ash.	1 Indo Scythian coin (i.e. Maues, Azes, etc.). 2 Indo-Greek, Menander, Heliocles.		Ditto.
VI	37′—40′	40′	Yellowish clay deposit. Yellowish mud wall.	Complete fragment of a Mother Goddess (hand-made), and moulded figurines of Hellenistic design.	Indo-Greek.	A layer suggestive of contact with Hellenistic influence. Not a very definite stratum. May be one and the same with stratum VII.
VII	40′—46′	...	Mud brick wall, a layer of ash.	Black glazed ware . .		.....
VIII	46′—50′	49′	Decomposed soil, mud wall.	Carinated rims, chalice shape goblets and bowls, thick and heavy texture, husks used in the paste.	Mauryan	A layer of distinctive pottery culture only to be found at this level all over the site.

ADDENDA

I

Nearly a year having elapsed since the bulk of this memoir was written, certain groups of terracottas have come to my notice which cannot well be omitted. These are the figurines found at Rajghat, Kondapur and Maski.

In the winter of 1940-41 excavations were carried on at Rajghat on the outskirts of Benares, resulting in the discovery of some 2,000 terracottas. Mr. Agrawala, Curator of the Lucknow Museum has published articles on the Gupta material.[1] These Gupta female heads and busts are very closely of the same type as similar heads and busts of the same period found at Muttra. The head shown in JUPHS Pl. I, fig. 1, is most attractive ; it is agreeable to Western art ideas, but this is no reason why one should presume Western art influence. It is this confusion of thought that has caused many difficulties.

Plate II, fig. 8, shows the two-knobbed headdress, so common a feature of the terracottas from Seleucia, and which, as Mr. Agrawala justly remarks, seems to have had an international vogue in the ancient world. The girl swinging on Plate IV is delightful, and an outstanding example of the work in terracotta during the Gupta period. I would however like to point out, that both in the plaque on this plate, and in that on Plate XI of "Mathurā Terracottas" by the same author, there are not a pair of centaurs, but a female centaur with, in the first instance definitely, a man on her back. There should be some legend to support the comparative popularity of this design. I am told that earlier types of terracottas were found, but these have not yet been published.

Most interesting Andhra terracottas of the 1st and 2nd centuries A.D. have been found at Kondapur, forty one miles North West of

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1. Journ. U. P. Hist. Soc. Vol. XIV, Part I. p. 1 ; JISOA, vol. X. pp. 7-12.

Hyderabad City. They are in the Andhra Buddhist tradition of that period and conform fairly closely to the contemporary sculpture of the Andhra region.

At Maski in the Raichur district, a most complex and interesting series of cultures has been excavated ; so little evidence of stratigraphical sequence is available that it is a difficult matter to fix dates. We have visited the site, and also that of Madhavpur near Belgaum, and are now prepared to draw some conclusions which we hope to publish soon. These, which are based to a large extent on the dating which can be given to the brown and black pottery, found in the cairn burials of this locality and of Southern India, indicate the terracottas as definitely being made over a period from 200 B.C. to 100 A.D., overlapping on the one hand possibly into the 3rd cent. B.C. and on the other into the 2nd cent. A.D.

Some of these figures wear a high headdress which most closely resembles the Greek Kalathos, and has no counterpart in any of the sculptures. Comparison may be made between the figures in both upper corners of Plate IV. fig. b, of the 'Annual Report of the Archaeological Dept. of H. E. H. The Nizam's Dominions' and that shown by Plate V III, fig. 59, of Miss van Ingen's Seleucia.

II

NOTES ON A ŚUṄGA TYPE TERRACOTTA

The illustration of the very elaborate and well preserved terracotta figurine published in Vol. X, 1942 of the Journal of The Indian Society of Oriental Art, and the very interesting article by the late Prof. Johnston could not fail to arouse the curiosity of anyone who is interested in early Indian terracottas. The figure in its general form is not wholly unique, but there are individual features which so far do not appear to be present in any other similar figurine. In fact there is so much about this figure which is of importance, as touching the matter of the elucidation of the problem of Śuṅga terracottas in general, that I am putting forward these notes in the hope that they may clear up some points, and bring matters a stage nearer a true solution.*

The whole question of Śuṅga terracottas is a very vexed and difficult one. Much that has been published as being of a Mauryan or a pre-Mauryan date is really of early Śuṅga, and much that is called Śuṅga is of a later period, which, though it has remained neglected and anonymous, is in reality one of the greatest importance, contributing a large proportion of the known figurines.

There are few if any figurines of proven Mauryan date, those found at Pāṭaliputra being the only ones with a good claim. The main clues to the development of Śuṅga terracottas come from Taxila and Muttra.[1] It can be accepted without any fear of contradiction that the terracottas having applied, stamped or incised decoration and crudely modelled bodies come before those which are wholly moulded. At Muttra, figurines in grey terracotta are found with crude modelled faces and good moulded faces, both having the same style of crude body and

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* These notes give a resumé of Colonel Gordon's views and discuss the Oxford Figure in their light. They were to be published separately in Vol. XI, JISOA and are now embodied in the memoir on 'Early Indian Terracottas' [Ed].

applied ornamented decoration. It cannot be too clearly or strongly stressed that few figurines exist of any period which have good modelled faces, all the faces with good features, until well into Kushan times, are the product of a mould, This casts a definite doubt on the antiquity of the crude figures. It has become increasingly more obvious that they were crude because the image-maker could not produce a better figure without the aid of a mould. There is evidence to support this view ; Agrawala's Mathurā Terracottas, Pl. V. fig. 14, (see also Pl. X. 7 of this paper) shows how one of the image-makers affixed a typical Śuṅga head of the late flat mould technique to a crude body, and covered the join by an applied stamped collar of the same style as we find in the more primitive terracottas. The curious headdress in which long streamers covered with rosettes fall on both sides of the face almost to the ground, is present in the crude style terracottas and also in very many of those of acknowledged Śuṅga date. This elaborate piled-up headdress appears to be typically Śuṅga, whether accompanied by streamers or not ; and it is considered that the terracottas with applied decoration cannot precede the wholly moulded ones, with which they have so many features in common, by any great period of time. In confirmation of this two heads were found at the Bhir Mound, Taxila, unfortunately without properly recorded context, having a peculiar form of hemispherical ear-ornament and applied decoration, with a crude body and good moulded face. A figure from Muttra of the same type with good moulded face, applied ornaments and crude body has similar ear-ornaments, which appear also in another figure from Mohra Moradu, Taxila, of very late Śuṅga style (Pl. XI. 5). Though the matter has yet to be finally settled, the date of the upper five or six feet of the Bhir Mound, Taxila, in which deposit the bulk of the terracotta figurines have been found, is very suspect. It is unlikely that they can contain objects which date, unless preserved from an earlier period, and the terracottas do not support such an idea, earlier than 200 B.C. ; many in fact are much later, i.e. down to 80 B.C.

It can be said with some certainty that figures with applied decoration, good moulded faces and crude modelled bodies date from c. 200 B.C. to c. 120 B.C. and that those from flat moulds are from c. 120 B.C. to c. 40 B.C. at Taxila, where they were superseded by figures of ultra

Hellenistic style produced by those arch-copyists and philo-Hellenes, the Parthians. At Mathurā, Kosambi and other sites this style must have persisted longer, as only a few Hellenistic terracottas are found outside the Gandhāra area; we may be sure therefore that the Śuṅga technique endured in a modified way well into Kushan times.

All the foregoing tends to indicate that a style of terracottas which has been labelled Śuṅga flourished from 120 B.C. to at least 40 B.C. and in places probably as late as 80 A.D. Śuṅga is not a sufficiently comprehensive label to cover the whole period during which these terracottas were made. Agrawala in his article in the Journal of the U. P. Hist. Soc. July 1936 on "Mathurā Terracottas" tacitly disregards the period 70 B.C.—70 A.D. during which hundred years terracottas continued to be produced in normal quantities. The country down to Muttra was certainly in the hands of the Śakas and Parthians and so was all Western India including Gujerat. Of the Andhras, Prof. Rapson says: "The conquest of East Malwa marks the North Eastern limits to which the progress of the Andhra power can be traced by the evidence of inscriptions and coins." In the area Mathurā, Ahichhatra, Kosambi and Kāśī, Śuṅga power was replaced by other dynasties with more localised authority, such as the ten kings bearing the name of Mitra who minted their coins at Ahichhatra. Any mention of Andhra is wholly unjustified in this region, and it is certain that the style and technique associated with the Śuṅga period persisted in this area down to Kushan times.

To what period then does this figure belong and to what place should it be assigned? It is of Śuṅga style but shows a very considerable degree of sophistication. There is no figure quite like this either from Taxila or Muttra. The nearest approach is a Śuṅga head found at Rajghat, now in the museum of the Kalā Bhavan at Benares, which has much of the fineness of the Oxford example (inset on p. 195). In the place of the row of symbols on the headdress, there are only five stumps which migth be the handles of the axe, 'vajra, aṅkuśa', etc. A Taxila specimen in the author's collection has what are definite vestiges of the symbols on the headdress, but the impression from the mould is so poor that the outlines are all blurred. The best proof however of the late period of this figure is the type of the bangle and the starry background. These link up with an outstanding terracotta in the Muttra Museum, that of

Kāmadeva with his bow and arrows, at least that is how this figure has been interpreted by Mr. Agrawala and there is no reason why it should not stand. The bracelets of this Kāmadeva figure are identical with those of the Oxford Yakṣī or Goddess and, being of a very specialised ornamented type, this identity must be of definite significance ; the same style of star rosette being present all over the background. Agrawala dates the Kāmadeva as Kushan.

I shall now attempt a new approach, I do not propose dragging down the Oxford figure to a Kushan dating, but a date of 200 B.C. at the latest must definitely be abandoned. This style of flat moulded terracotta was not to be made for about another sixty to seventy years at the earliest, when we get types like the Basarh winged figure and the earlier moulded figures of Mathurā and Kosambi. The bulk of Śuṅga type figures must be late rather than early, as the headdress of some of the Mathurā types, with a square cut directly above the forehead links with moulded figures from Sar Dheri which are unlikely to be earlier than 1st Cent. A.D., and the large ornate headdress of turban style is found in Kushan sculpture, at which period also appear the mother and child sculptures which link with terracottas of Śuṅga type from Taxila. Let us say then that an approximate dating for this figure, and possibly for the Kāmadeva figure from Muttra as well, will be c. 40 B.C. and that in the tract between Muttra and Benares or perhaps as far East as Basarh, this type persisted in some measure until ousted by the crude heavy terracottas of Kushan date which may be found at most sites from Charsadda to Rajghat.[2]

The Kosambi terracottas in the India Museum, South Kensington show an extraordinarily close resemblance to the Muttra terracottas both in the Muttra museum and in my own collection. It is quite impossible to fix the Oxford figure down to one particular site, it might have come to light anywhere between Taxila and Benares.

Let us now look at the question of the clothing. Actually the Oxford figure is very differently clothed from what one usually finds in either the terracottas or the sculptures in stone during the period 120 B.C. —120 A.D., which is all one need consider, the bulk of these figures having the breasts bare. A few of the terracottas from Mathurā and Kosambi may possibly have some kind of tunic, though this is by no means certain

as the indications are very vague. My Taxila specimen has bare breasts and most of these figures appear to have a form of skirt-cloth which is divided and rolled back from the centre, in some cases this starts from the waist where there is a waistband to support it, and in others it is tucked into the girdle. I cannot agree, whatever the ancient literary sources may say, that the girdle is ever shown under the clothing either in the sculptures in stone or in the terracottas.

Female figures from Didarganj, Rajasan, Barhut, Sārnāth, Mathurā, Amarāvatī and Nagārjuṇakoṇḍa all show the girdle outside whatever rather exiguous clothing they may be wearing, and terracottas from Sar Dheri, Taxila, Mathurā and Kosambi show the same. There is one terracotta figure which quite definitely has one breast exposed and one covered and this is the Angel of Khan Mahi, a figure which, although published by me in 1934, is far from widely known (Pl. XV. 9). It comes from some site in the area between Charsadda and Mardan in the North-West Frontier Province, perhaps from Sar Dheri, and was bought by the Peshawar Museum from a goldsmith in Khan Mahi. This is one of the most outstanding of all early Indian terracottas and should have been recognised as such long ago. Its date is probably 1st Cent. A.D. but it is extremely difficult to place and may date from any time between A.D. 20 and A.D. 200; it is unlikely that it can be later than this.[3]

The squatting figures attached to the tassels hanging in front of the thighs of the Oxford Goddess are supposed to resemble certain figures said to come from Taxila, dated, according to Johnston, by Sir John Marshall to 3rd or 4th Cent. B.C. Now I hesitate considerably to challenge any statement from such an authority where Taxila is concerned, but having studied the terracottas of Gandhāra for fifteen years, and having combed over those in the Taxila Museum time and again, I feel that this is a statement that needs a great deal of qualification. It is only figures from the Bhir Mound which can claim such a date, and the only figure from this site which answers this description is a seated Kuvera (?) figure, Museum No. 115, found at 3 feet 5 inches below surface at the Bhir Mound, and therefore not in any case to be dated earlier than late 3rd Cent. B.C., but in my opinion to be dated to late 2nd. Cent. B.C. Actually I feel that this figure has little in common

with those under discussion and little or no bearing on the problem of the Oxford Goddess.

With regard to bandolier amulets, nearly all Bodhisattva figures from Gandhāra have a bandolier of amulets, and it is to these that Prof. Myres alludes when he mentions them as worn by Greco-Indian sculptured figures. But these are amulets of normal pouched or pendant style, and it is doubtful whether symbols were ever actually worn as depicted in the Oxford figure. In that instance they appear to be introduced rather clumsily as a collection of auspicious animals, which the designer wished to fit in to make up the complement, along with the signs on the headdress, of all the beneficent and potent attributes of the goddess.

The whole technique of the figure is different from any of the, literally, thousands of Indian terracottas I have seen and handled. The combination of moulding, carefully and separately stamped ornamentation and the lightly incised drawing in of the clothing is, so far as I am aware, unique ; and so is the mint condition of the figure, particularly as regards the detail on the ornaments which remains incredibly unabraided even in the most exposed portions. The extent to which this figure is fully fired with complete reduction throughout its section is no indication of date, as this degree of completeness wherever found appears to be purely fortuitous and void of significance.

The question of the identity of the Mother Goddess in Gandhāra was taken up by me in "Antiquity" and in "Iraq"[4] in which I made a prima facie case for Anaitis and Mithra as being the true Deities behind the very shadowy Hāritī and Kuvera, who otherwise could not have assumed the importance that they did in the Gandhāra area. India is full of Goddesses which can qualify as Mother Goddesses, and Johnston's plea for Māyā as the goddess depicted may be well founded, though one feels that Vāṣiṇī[5] and possibly others are good candidates. The two fishes worn as an amulet can be found among the auspicious symbols on the Jain Āyāgapaṭa from Muttra in the Lucknow Museum, and also by the side of a female figure in terracotta from the same place. The bird is probably Garuḍa, which with the Makara and the fishes would constitute the normal equipment of lucky animal charms of that day. The hind cannot readily be recognised as such even

with a magnifying glass, and is possibly a somewhat doubtful identification.

The fact remains that at present this figure has only a few superficial resemblances to any other now known, and until some figure is found in some more definite context with more exactly similar features of dress, facial expression, ornaments and technique, little can be determined more exactly about its date and provenance.

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1. (Page 189.) The evidence in connection with the dating of Śuṅga Terracottas has been given in detail on pp. 151 f. of this paper.

2. (Page 192.) The Śuṅga head from Rajghat, illustrated (p. 195) by the courtesy of the Bhārat Kalā Bhavan of Benares, was not found in any known archæological context. It has a headdress which is to all intents and purposes identical with that of the Oxford figure, but a face which conforms much more closely to the normal Śuṅga style. The alternating dot and circle pattern which frames the head may be compared with the dotted circle pattern surrounding the Kāmadeva figure from Muttra.

The crude figures with bulging eyes are dated later than Kushan times by Mr. Agrawala, and it is quite possible that he is right as regards those found outside the Gandhāra area.

3. (Page 193.) Originally published in Man 70, April, 1934.

4. (Page 194.) "The Mother Goddess of Gandhara", Antiquity, March, 1937, and "The Age of Frontier Terracottas". IRAQ, V, pt. 2, 1938.

5. (Page 194.) Mentioned as the possible favourite goddess of early times in Northern India on page 238 of Vol. I., Cambridge History of India.

THE WORLD TREE *

by SRĪ SWĀMĪ HARIHARĀNAND SARASVATĪ

The Root Principle

The first verse of the fifteenth chapter of the Gītā reads :

ऊर्ध्वमूलमधः शाखमश्वत्थं प्राहुरव्ययम्।
छन्दांसि यस्य पर्णानि यस्तं वेद स वेदवित्॥

"The Aśvattha (the tree of the World), root above and branches below, they say is everlasting. The Vedic rhythms are its leaves. He who knows it is a knower of Veda."

"Above" (ūrdhva, synonymous with upara) means higher (uñcha), superior (utkṛṣṭa). That which has nothing above itself to restrict its greatness knows no limit. This Supreme Principle (Para-Brahman) is the root of the World Tree.

Looking up towards this root, we see that higher than all composed of earth is the element Earth, higher than Earth is Water, higher than Water Fire, higher than Fire Air, higher than Air Ether, and beyond these the 'Principle of Individual existence' (ahamtattva), then the First Principle of existence (mahat-tattva, "the Great", i. e. Universal Intellect), then the Unmanifest Principle of existence (avyakta-tattva) and, at last, beyond even this, beyond all cause and effect, the Ground of all, the Self-illumined Brahman : It is in every way supreme—in subtlety and pervasiveness, and at the same time in aloofness and in purity. If water is more subtle, pervasive, pure, dissociate (asaṅga) than Earth, the next causal stage, then the supreme cause, as compared with the First Principle of existence and all other effects, has limitless subtlety, pervasiveness, detachment and purity.

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* Abridged translation with permission from 'Siddhānt' from the original Hindi, and notes, by Śiva Śaraṇ.

Whatever is unconscious, destructible, limited, and therefore by its nature sorrowful (duḥkhātmata) can never be superior to all. The self-illumined Principle, eternal and partless, transcends all because it is the very Self [1] of Joy (ānanda-svarūpa).

From the greatest joy possible to man[2], through the joy of the celestial singers (gandharvas) and of the gods among them (devagandharvas), through the joy of the self-made gods (karma-devas), the gods who were from the beginning (ājānaja devas), the king of Heaven (Indra), the teacher of the gods (Bṛhaspati) and the Lord of Creation (Prajāpati) to the Creator Himself (Brahmā), at every stage joy is enhanced a hundred fold. But the All-Powerful Divinity, the very essence of supreme joy (Paramānanda-rasātmaka), reigns gloriously above all these.

This Supreme Joy is the root of the World Tree. As the Eternal Word (śruti) says :

आनन्दाद्ध्येव खल्विमानि भूतानि जायन्ते, आनन्देन जातानि जीवन्ति, आनन्दं प्रयन्त्यभिसंविशन्ति।

"From Joy, most certainly, are all these beings born ; born of joy they live, they fare forward in joy and are resolved in it."

The Everlastingness of the Tree

The tree is called everlasting but as Bhagavān Śaṅkarācārya explains, "they say" (prāhuḥ) in Gītā XV, 1, points to the fact that this everlastingness is only apparent : it really stands for momentariness. Every day in deep sleep the Universe dissolves into its source, the causal Principle (Kāraṇa Brahman) : at the moment of waking a new world arises. The tree is called Aśvattha, that is a-śvastha, 'not remaining tomorrow'[3] "it is not worthy to remain even till tomorrow, therefore it is called

1. Literally : the proper form.

2. The greatest joy possible in the human state is considered that of an absolute ruler of the seven continents, powerful, wise, righteous, 'proficient in sacred knowledge' (śrotriya), and possessing every means of pleasure.

3. Aśvattha, the tree under which Fire, 'the Lord of the ritual-oblation-which-is-the-universe' (Agni = Yajña Prajāpati), takes his stand as a horse, is therefore also explained as Aśva-sthāna, the horse-stall (Mahābhārata, 85).

According to other exponents of symbolic etymology (Nirukta) it is the horses of the Sun who, during the long night of the journey upon the way of the Ancestors (pitṛyāṇa), rest, in the under world (yama-loka) beneath a Pippala tree, therefore called Aśvattha. But this explanation can evidently not be applied to the World Tree.

Aśvattha" न श्वोऽपि स्थातुमर्हः इत्यश्वत्थः । Though it survive for thousands of years, this world may not, of its own merit, endure another day : Like a bubble delicately perfect it has in itself no hope of lasting.

The snake imagined in a rope, however long the illusion may last, does not in itself deserve to remain an instant : it disappears as soon as light shows the real nature of the rope. So the World Tree disappears when ignorance is done away by perception of Reality (tattva jñāna). From this point of view, the world is described as everlasting so that every effort may be made to attain knowledge.

The Changeless Root

Though all agree this world is full of misery, some dispute that it is false. They argue that as a golden ring is nothing but gold, so a world born of Truth must be true ; but this is contradicted by experience and by Revelation. Though the ring be of gold, as ring it is illusory ; clay also is true, indestructible ; but the pitcher made from it is destructible, illusory.

वाचारम्भणं विकारो नामधेयं मृत्तिकेत्येव सत्यम् ।

"The object shaped exists only by speech, is but a name ; it is the clay that is real."

When, moreover, one sees greater and greater particularisation in the succession of effects and less and less in the hierarchy of causes, one is obliged to accept that qualified manifestation arose from the Unqualified. The whole universe came forth from the Brahman and is the Brahman ; but this does not mean it is the Brahman without restriction, only that it is nothing other than the Brahman.

Even so, the question may remain : when the untrue, unconscious Tree, the transient world of grief, arises in the self-illumined joy of Consciousness, does this not imply some kind of evolution, some transformation in that Absolute ; for, without some alteration in its root, how can the tree grow ? The answer is given in a beautiful verse of the Bhāgavata Purāṇa :

त्वत्तोऽस्य जन्मस्थिति संयमान्विभो वदन्त्यनीहादगुणादविक्रियात् । त्वयीश्वरे ब्रह्मणि नो विरुद्ध्यते त्वदाश्रयत्वादुपचर्य्यते तथा ॥

"Because it rests in Thee, the Ever-present, who art beyond wish or quality or change, the universe seems to have from Thee its birth,

existence, consummation. So it is that Thou art both the cause of manifestation and its causeless Principle."

This "Beyond" does not evolve (pariṇāma)[1] like a worldly cause, but, since it is the ground of that apparent transformation (vivartta)[2] which is the world, it is called the Root. Just as through ignorance, a rope is made the basis of an imagined snake, so through the beginningless ineffable Root-Ignorance which is Nature (Prakṛti) the Pure Self, the Supreme Principle (Śuddha Paramātma-tattva), is made the cause of the Universe.

Leaves, Buds and Branches

That the Vedic rhythms are the leaves means that the world bears flowers and fruit through the Revelation : without them it lacks true harmony and beauty. As a tree is protected by its leaves, so is the world by the original and the later Revelation (śruti-smṛti), through which eternal law is known. "The whole universe rests upon divine law" धर्मे विश्वस्य जगतः प्रतिष्ठा।

The fifteenth chapter of the Gītā continues its descriptions of the Tree :

अधश्चोर्ध्वं प्रसृतास्तस्य शाखा गुणप्रवृद्धा विषयप्रवालाः।
अधश्च मूलान्यनुसंततानि कर्मानुबन्धीनि मनुष्यलोके॥

"Above and below spread forth its branches, fostered by the [three] tendencies [of Nature], having for its buds the domains of sense. The roots, binding by deeds, extend below throughout the world of man."

The branches take their strength from the ascending, expanding and descending tendencies (sattva, rajas, tamas) through which all beings reach their full development. And just as buds put forth from the branches of a tree, so bodies, which are the result of deeds develop spheres of perception (tanmātras), sound, touch, sight, taste and smell. Although the ultimate root or immanent cause of this world is the Brahman, the Principle itself, the World Tree has secondary roots, the

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1. Like milk into curd ; the process of manifestation from the cosmological (Sāṅkhya) point of view.

2. Like rope into snake ; the process of manifestation from the metaphysical (Vedānta) point of view.

passions, which bind by the results of action. To obtain pleasure or the means to it, some perform rituals like Agnihotra, the oblation to the household fire, as ordained by scripture, while others steal wealth or wives against the ordinance. Or men act unlawfully to escape from pain. Pleasure and pain, moreover, themselves result from conformity with the law or divergence from it ; and from this again new passions arise. This endless cycle stabilises the world so that no tempest can shake it.

Although the passions exist even in the heaven of the gods, they are binding only in the world of man, for it is only there that deeds bear fruit.

Another description of the Tree

एकायनोऽसौ द्विफलस्त्रिमूलश्चतूरसः पञ्चविधः षडात्मा। सप्तत्वगष्टविटपो नवाक्षो दशच्छदी द्विखगोऽद्यादिवृक्षः॥ त्वमेक एवास्य सतः प्रसूतिस्त्वं संनिधानं त्वमनुग्रहश्च।

"This first of trees has one ground, two fruits, three roots, four saps, five kinds, six phases, seven barks, eight branches, nine hollows, ten domes of foliage, two birds. Thou art its very being, its progenitor ; thou art its tabernacle and its grace." (Bhāgavata Purāṇa)

The one Root Nature (Mūla Prakṛti), the original equilibrium of the ascending, expanding and descending tendencies, is the ground on which the tree grows.

Pleasure and pain are its two kinds of fruit, and the fruits themselves are numberless.

The three fundamental tendencies, [once unbalanced,] are its roots : the World Tree stands on the strength of Illumination (prakāśa, which is ascending, sāttvika), Agitation (halacala, expansive, rājasika) and obstruction (avaśthambha, descending, tāmasika). These three roots are sometimes called pleasure, pain, delusion (sukha, duḥkha, moha).

The four aims of human life (puruṣārtha), righteousness (dharma), riches (artha), pleasure (kāma) and liberation (mokṣa) are the saps of the Tree.

Its five varieties are the five kinds of perception (jñāna) for the world is experienced in the modes of speech, touch, shape, taste and smell : five worlds, in effect, are perceived through the five senses.

To arise, last, grow, mature, decay and be destroyed are the six phases of the tree.

Its barks are the seven constituents of the body (dhātu) : [lymph, blood, flesh, fat, bone, marrow, sperm].

The five elements (mahābhūta) with mind, intellect and the Ego (ahaṃkāra) are the eight branches of the tree.

The nine doors of the body are its hollows, the vital energies (prāṇa)[1] its domes of foliage.

The Two Birds

In the tree, whether considered as the world or as an individual, dwell two birds, the supreme and individual selves. Because he is to be sought through the manifestation, the Supreme Self is said to live in the World Tree.

द्वा सुपर्णा सयुजा सखाया समानं वृक्षं परिषस्वजाते। तयोरन्यः पिप्पलं स्वाद्वत्त्यनश्नन्न-न्योऽभिचाकशीति ॥

(RV. I. 164. 20 ; Muṇḍ. Up. 3. 1. 1.)

"Two beautiful birds mated good companions cherish the same tree. One enjoys the fig, the other merely looks without eating." The Bhāgavata Purāṇa (XI, 11, 6-7) tells us more about them :

सुपर्णावेतौ सदृशौ सखायौ यदृच्छयैतौ कृतनीड़ौ च वृक्षे। एकस्तयोः खादति पिप्पलान्न-मन्यो निरन्नोऽपि बलेन भूयान् ॥ आत्मानमन्यं च स वेद विद्वान् पिप्पलादो न तु पिप्पलादः। योऽविद्यया युक् स तु नित्यबद्धो विद्यामयो यः स तु नित्यमुक्तः ॥

"These two birds, alike, each others own, as they desire have made their nest in the tree. One eats the fig, the other waxes strong without food. The knower who does not eat knows Himself and all that is ; not so the eater of the fig. He who makes himself one with ignorance is ever bound, he who is one with knowledge ever free."

God and creature are alike, for both are of the self-same substance of Consciousness (cit-rūpa), and since they are always in agreement they are friends.

देहस्थोऽपि न देहस्थो विद्वान् स्वप्नाद्यथोत्थितः।
अदेहस्थोऽपि देहस्थः कुमतिः स्वप्नदृक् यथा ॥

XI. 11. 8.

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1. These energies govern breathing (Prāṇa), excretion (Apāna), diffusion (Vyāna), digestion (Samāna), coughing (Udāna), eructation (Nāga), blinking (Kṛkala), yawning (Devadatta), and assimilation (Dhananjaya).

"The sage, the knower, like a man awakened from dream, stands aloof from the body even while he dwells in it. But the wrong-headed (kumati), like a man dreaming, even though he also does not really live in the [unconscious] body, yet believes he does. There can be no qualities apart from the senses and their objects, therefore it is really only qualities in the shape of objects which are grasped by qualities in the shape of senses ; but the ignorant attributes them to himself while the sage is free of this conceit. The liberated man, though he stand in the midst of Nature, remains unsoiled (nirlepa) like light or space.

Other Descriptions

The Kaṭha Upaniṣad says :

ऊर्ध्वं मूलोऽवाक्शाख एषोऽश्वत्थः सनातनः ।
तदेव शुक्रं तद् ब्रह्म तदेवामृतमुच्यते ॥

"This fig tree roots above and branches below is from ever lasting to ever lasting. Pure light[1] verily it is called." (2.3.1)

The glorified Śaṅkarācārya, commenting on this 'hermetic formula' tells that it is from the knowledge of the cotton (the result, the particular तूल-व्यष्टि) that one may reach knowledge of the root (the cause, the general मूल-समष्टि) and so it is that the World Tree extending from the Unmanifest to the inanimate has roots above and branches growing down.

[In the Purāṇas we find :]

द्वे अस्य बीजे शतमूलस्त्रिनालः पञ्चस्कन्धः पञ्चरसप्रसूतिः ।
दशैक शाखो द्वि सुपर्ण नीड़स्त्रि वल्कलो द्विफलोऽर्कं प्रविष्टः ॥
अदन्ति चैकं फलमस्य गृध्रा ग्रामेचरा एकमरण्यवासाः ।
हंसा य एकं बहुरूपमिज्यैर्मायामयं वेद स वेद वेदम् ॥

"(The Tree) has two seeds, a hundred roots, a threefold trunk, five barks giving forth five saps, eleven branches, two nesting birds, three barks, two fruits that reach to the Sun. Vultures and villagers eat one of these fruits, the other is eaten by hermits and swans. He who knows from

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1. Semen (शुक्र) here means pure light. In his commentary Śaṅkarācārya tells :
The root of this world is semen (शुक्र), the White (शुभ), the pure (शुद्ध), the luminous (ज्योतिष्मत्), i. e. the self-brilliance of the Conscious (चैतन्य).

those worthy of reverence that One of many forms which is of the very stuff of Illusion,[1] he knows true knowledge."

Here, the two seeds are virtue and vice (pāpa-puṇya) and numberless desires are the roots. The fundamental tendencies of Nature are the threefold trunk, the five elements are the forks. The flowing saps are the five domains of the senses ; the five senses of perception and the five of action with the mind are the eleven branches. The two birds have made on this tree a nest which is the heart.

The coats of bark are [the three humours of the body], wind, bile and phlegm ; the two fruits, as before, are pleasure and pain.

The tree spreads upward to the sphere of the sun. Only these are freed who pass beyond it.

The vulture (the man of greed) and the villager (man of the world) eat the fruit grief ; the hermit (the man of renunciation) and the swan (the man of knoweldge) eat the fruit of joy.

In the Mahābhārata we find (Aśvamedha Parva 47) :

आजीव्य सर्वजीवानां ब्रह्मवृक्षः सनातनः । एतद् ब्रह्मवनं चैव ब्रह्मा चरति नित्यशः ॥

"This Original, everlasting Tree is the livelihood of all that live. In that Primordial forest the Creator ever wanders."

In other texts :

अव्यक्तमूलप्रभवस्तस्यैवानुग्रहोत्थितः । बुद्धिस्कन्धमयश्चैव

"The root from which it springs is the Unmanifest by whose grace it endures. Its trunk is Intellect."

इन्द्रियान्तरकोटरः ॥

"The senses are the hollows inside it."

महाभूतविशाखश्च विषयैः पत्रवांस्तथा । धर्माधर्म सुपुष्पश्च सुखदुःखफलोदयः ॥

"The primal elements are its branches, its wealth of leaves the pastures of the senses ; virtue and vice, fair flowers develop into fruits of pleasure and pain."

And Śrī Tulsī Dās has sung :

गूलर तरु कृपालु तव माया, लागे फल ब्रह्माण्ड निकाया ।
तेहि फल भक्षक काल कराला, तव डर डरत रहत सोउ काला ।

"O merciful, the fig tree is thy magic, the fruit of it is the whole

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1. Illusion (māyā) means either ignorance (avidyā) or knowledge (vidyā) ; it should here be understood as 'vidyā'.

universe. And he who devours this fruit is fearful Time. Yet Time himself lives in fearfulness of Thee".

The Limitlessness of the Tree

No one can find the beginning, end or middle of the Tree. For thousands of years the Creator Brahmā went searching for its root but had to come back unsuccessful. The four Vipaścits[1] spoken of in the 'Yoga Vaśiṣṭha' who were possessed of supernatural speed and power, tried for thousands of ages, even for aeons to find its limits, but in the end had also to give up hope. Vaśiṣṭha explains that one-fifth of every atom is the sense principle (tanmātra) of touch ; this is the support of air, in which the life-breath dwells. Within the life-breath is Mind and in Mind the universe. In the universe again, are numberless minds, in each mind a Universe. How can anyone find the beginning or end of a universe that is Mind ?

The five stages of earth, seed, sprout, tree and fruit correspond with the five phases of pure Principle (Śuddha Brahman), Causal Principle (Kāraṇa Brahman), the Embryo of Splendour (Hiraṇyagarbha, the aggregate of all supersensible states), the Glorious (Virāṭ, the aggregate of sensible forms, the Body of the Universe)[2], and the Dark Lord, Kṛṣṇa, the Fruit, [Divinity made manifest within the universe]. Just as the essential of earth, seed, sprout and tree is condensed in the fruit, so all is in Śrī Kṛṣṇa ; and just as a fruit potentially contains

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1. Vipaścit, a devotee of Fire, when his kingdom was in danger entered the flames, then reappeared with four independent bodies. Having recovered the kingdom, the four Vipaścits set out, North, South, East, and West, to find where the world ends.

2. The manifestation taken as a whole (samaṣṭi) is the Macrocosm or God (Iśvara).

His physical body (the universe) is called Virāṭ, the Glorious.

His supersensible body (the aggregate of all supersensible states) is Hiraṇyagarbha, the "Embryo of Splendour".

His Consciousness (universal consciousness) is Iśvara (the Ruler) or Vaiśvānara (pertaining to the Universal Man).

In the microcosm (vyaṣṭi), the individual being (jiva), these correspond, respectively, with :

Viśva (the dwelling), the physical vesture (annamaya-koṣa) ;

Taijasa (subtle, radiance), the supersensible body composed of the vital, mental and gnostic vestures (prāṇa-mano-vijñāna-maya koṣa) ;

and Prajñā (awareness), the individual consciousness, the vesture of pure joy (ānanda-maya koṣa).

In the individual being, the physical body corresponds with the waking state, the supersensible vesture with dream, unqualified awareness with sleep.

innumerable seeds, germs and trees, so in Śrī Kṛṣṇa there exists the potentiality of numberless causal Principles and so forth.

क्वाहं तमोमहदहंखचराग्नि वार्भू संवेष्टिताण्डघटसप्तवितस्तिकायः ।
क्वेदृग्विधाविगणिताण्डपराणुचर्य्या वाताध्वरोमविरस्य च ते महित्वम् ।

"What am I,—a body seven spans long[1], enveloped in the Macrocosmic Egg by abysmal Darkness[2], by Cosmic Intellect, by Individuality, by Ether and the moving spheres, by Fire, Water and Earth—before your greatness, in the pores of whose skin innumerable Universes whirl like atoms ?"

And like an old broken tree which, in the dark, gives rise to the doubt : Is it a tree or a man ? This world gives rise to false imaginations. Some see in it a conglomeration, others a becoming or an evolution, some a reality and others an illusion, till nothing is agreed upon except that somehow it exists. Its arising, continuance and disappearance cannot be explained in words.

The Gītā says (II, 45) :

त्रैगुण्य विषया वेदाः

"Veda has for its subject the three tendencies of Nature on which the world is based". This does not mean that by knowing the world one knows the Veda ; even if it were possible to know the world completely. But, even in a thousand lives, one could never attain complete particular knowledge of every plant in a single country, still less of every grain of sand or every snowflake, or of all the stars in the sky, to say nothing of the endless marvels of the supersensible universe.

वेदैश्च सर्वैरहमेव वेद्यः

Through all Knowledge (all Vedas) it is I who am to be known."

The Cosmic Being as Brahmā, pervades the physical universe, as Viṣṇu the supersensible world. When the Cosmic Being, as Śiva sleeps, the universe is re-absorbed into non-manifestation.

जागर्ति ब्रह्मा स्वप्ने विष्णुः सुषुप्तौ च महेश्वरः ।

"Awake it is Brahmā, dreaming Viṣṇu, in deep sleep the Arch-God (Śiva)."

1. The length of any human body is three and a half of its own cubits (the distance from the point of the elbow to the tip of the middle finger), or seven of its own spans (the maximum reach from the point of the thumb to the tip of the little finger).

2. "And darkness [was] upon the-face-of [the] abyss". (Genesis 1. 1. 2)

एकस्मिन्विज्ञाते सर्वमिदं विज्ञातं भवति

"By knowing the One, all is known".

To know Knowledge (Veda) is to become one with the Brahman, the Principle of all.

The Ground of the Tree

Just as a dream or a mirage, though clear and specific, does not resist deep scrutiny but, when its basis in reality is seen, in itself, disappears ; so when the Supreme Principle, the support of all, is understood, the World Tree vanishes.

जेहि जाने जग जाइ हेराई । जागे यथा स्वप्न भ्रम जाई ॥

(Tulsī Dās)

"By knowing whom the universe, vanishes, like the illusion of dream on waking."

For though the world, like dream or fancy, has in itself no real status (sthiti) and is nowhere truly established (pratiṣṭhā), yet it is wrong to say, [as demonic (āsura) natures do (Gītā XVI, 8)] असत्यमप्रतिष्ठतेः it is devoid of all real basis, for the Principle is the support (adhiṣṭhāna) of all.

Although knowledge of the world can never in itself be knowledge of the Absolute yet, as an effect is a means of knowing a cause, the World Tree can be the means of knowing its Root, the Supreme Self.

अनेन सौम्य शुङ्गेनापोमूलमन्विच्छ । अद्भिः सौम्य शुङ्गेन तेजोमूलमन्विच्छ । तेजसा सौम्य शुङ्गेन सन्मूलमन्विच्छ ।

"Through the burgeoning of Earth, trace out, O peaceful heart[1] its root the Water ; Through the burgeoning of Water its root the Fire ; through Fire its root Reality."

"He who knows the World Tree to its root, grasps the secret of all knowledge. He is freed [from bondage to manifestation]."

ततः पदं तत्परिमार्गितव्यं । यस्मिन्गता न निवर्तन्ति भूयः ॥

(Gītā XV, 4)

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1. Saumya means one whose mind is at peace, in whom the ascending (sāttvika) tendency is predominant. It is thus applied to a Brāhmaṇa.

"Then that resort must be diligently pursued whence those who have entered it return no more."

The Felling of the Tree

Then, the tree must be uprooted,

एतच्छित्वा च भित्वा च ज्ञानेन परमासिना ।
ततश्चात्मरतिं प्राप्य तस्मान्नावर्त्तते पुनः ॥

"Cutting and rending it with the sublime sword of Knowledge, then attaining delectation in the Self whence there is no return."

For the word Vṛkṣa, tree, is from the root व्रश्च to be cut. वृश्च्यते इति वृक्षः "It is cut, therefore it is [called] a tree". And again : वृक्ष 'छेदने "What is cut is a tree."

The World Tree is to be "hewn down with the trenchant weapon of non-attachment" असङ्ग शस्त्रेण दृढेन छित्वा

As was already explained the Pure Principle is not in Itself the root of this world : it is only through ignorance and illusion that It seems to be. In other words, the root of the world is the Principle qualified by Nature, so to uproot the World Tree, really means to root out ignorance.

एवं गुरूपासनयैव भक्त्या विद्याकुठारेण शितेन धीरः ।
विवृश्च्य जीवाशयमप्रमत्तः सम्पद्य चात्मानमथ त्यजास्त्रम् ॥

"He who thus with the cold steel of true knowledge sharpened by veneration for the teacher and by love of God, firmly and heedfully hews down the resort of life[1] having attained the Self casts away his weapon."

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1. The resort of life is the subtle body (liṅga śarīra) through which the individuality is sustained in its transmigration through many forms. It is composed of seventeen elements :

five vital energies (prāṇas)
(others say : five sense-principles, tanmātras),
five senses of perception (jñāna indriyas)
and five of action ((karma indriyas)
} forming the vital vesture (prāṇamaya koṣa)

mind (manas) forming the mental vesture (manomaya koṣa)
intellect (buddhi which includes Ahaṃkāra, I-ness) forming the gnostic vesture (vijñānamaya koṣa).

Of the other two vestures of the soul, one, the physical body (annamaya koṣa) sustained by food does not transmigrate ; and the other, the inmost vesture of pure joy (ānandamaya koṣa) is unchanging and indestructible, and remains when the subtle body, in its turn, is destroyed.

THE ORIENTATION OF INDIAN TEMPLES

by St. KRAMRISCH

Hamlets, villages, market towns, citadels, cities, capitals and suburbs, all these walled habitations,[1] as the Prāsāda itself, are laid out on the Vāstupuruṣamaṇḍala, and the temples of the village or city have their place assigned on it. In practise, equal in Śaiva and Vaiṣṇava texts, the main position of a Śiva temple is in the North-East, in Īśāna,[2] and that of a Viṣṇu temple in the West, in Varuṇa ; the Centre is the place for the temple of Brahmā, or of Viṣṇu or of any other form of God as the main divinity of the temple. Buddha and Jina temples, which belong to the heretics, are assigned generally to the South-West. On all other points there is as much agreement as diversity in the different Śāstras, so that the 'Kāmikāgama', ch. XXVI. 6 lays down that in this, the 'Kāmikāgama', the situation of a temple of Gaṇeśa is in the West, or South-West or between the North-West and the North or elsewhere.[3] In the chart on p. 209, several texts are put together which are more or less explicit on the positions of the temples. Where the temple of a divinity is set up depends upon the branch and phase of the tradition followed at the time and place of building. The worship of the Mothers, for example, whose temples and images the 'Kāmikāgama' gives as stationed in the North-East or the North

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1. The following are enumerated as walled habitations (prākārāntarasthāvāsa) in the 'Ī.P.' III. ch. XXV, 13-15 : Grāma, Kheṭaka, village, hamlet ; Kharvaṭa, market town ; Durga, citadel ; Nagara, town, city ; Rājadhānī, capital ; Pattana, town ; etc etc, and Śākhānagara, suburb. In most of the other texts, all these walled settlements are implied in the designation "village, etc." (grāmādī).

2. cf. the Vāstupuruṣamaṇḍala given in the 'Īśānaśivagurudevapaddhati' (III. ch. XXVI, and trans. in JISOA, vol. IX. p. 162 f.) and the positions of its divinities.

3. cf. ib. XXVI. 7, where the position of a temple of Durgā is given in the South or South-West or North-West or East or between the South and South-West.

THE POSITION OF THE TEMPLES IN VILLAGES, TOWNS, Etc.

Texts:	Īśānaśiva-Paddhati III. 25, 64—66[A][1] 67-72 [B]	Samarāṅgaṇa-Sūtradhāra X 107-32	Vaikhānasāgama II	Tantrasamuccaya II 1.8	109-13 : Daṇḍaka	Mānasāra IX 255-83 : Nandyāvarta	381-409 : Svastika
NE	Śiva [A, B](Īśāna)[2] Vāstu-camuṇḍī (Aditi) Gaṇeśa (Jayanta)	Maheśvara Śrī Vahni (Agni)	Śiva (Īśāna) facing E.	Śiva	Śiva (Parjanya, Udita)	Śiva Lakṣmī (Aditi)	Cāmuṇḍā (outside the settlement) Facing N.
E	Sūrya [A and B] (Sūrya) Gaurī, Śrī [B] Viṣṇu, Kṣetrapāla	Sūrya Viṣṇu Indra Dharma	Sūrya (Āditya) Facing W. Viṣṇu	Viṣṇu		Śiva	Sūrya (Āditya) Viṣṇu (Indra) Śiva (Īśa, Jayanta, Parjanya)
SE	Viṣṇu (Bhṛśa) Kālī (Agni) [A]	Sanatkumāra Savitrī Maruts, Māruta	Gaṇeśa (Bhṛśa) facing E.				
S	Guha [A] (Yaṃa) Mātṛs [B]	Gaṇeśa, Mātṛs Bhūtas Yama	Vindhyavāsinī (Yama)				Viṣṇu (Vivasvan)
SW	Gaṇeśa (Nirṛti) ; Buddha ; (Sugrīva); Jina (Bhṛṅga) [A]	Bhadrakālī Pitaraḥ Caitya	Ṣaṃmukha (Sugrīva)	Gaṇeśa (Nirṛti)		Subrahmaṇya (Dauvārika) Buddha Jina	Subrahmaṇya (Sugrīva); Jina(Nirṛti);Bhārga (Bhṛṅgarāja, Gandharva)
W	[A and B] Viṣṇu (Varuṇa) ; Kārttikeya [B]	Ocean, Rivers, Viśvakarman, Prajāpati Varuṇa	Viṣṇu (Varuṇa) (Āsana and sthānaka images) facing E.	Viṣṇu	Viṣṇu (Varuṇa or Mitra)	Śiva Durgā (Rākṣasa and Puṣpadanta)	Viṣṇu (Mitra, Varuṇa)
NW	[A and B] Jyeṣṭha (Vāyu) Caṇḍī [A] (Mukhya)	Serpents Saturn Kātyāyanī		Durgā (Vāyu)			Buddha (Vāyu)
N	Caṇḍī, Mahākālī (Niśākara) Mātṛs, Durgā Kṣetrapāla [B]	Viśākha,Skanda, Soma, Kuvera		Subrahmaṇya		Sarasvatī (Mukhya, Bhallāṭa)	Kālī (outside)
Centre	Brahmā [B]		Viṣṇu	All the gods			
Intermediate Directions						Śiva	Śiva (in inner rim)
8 Directions / Lokapālas		Mātṛs (all around) ; Viṣṇu				Viṣṇu Gaṇeśa	Gaṇeśa ; Durgā
Outside		Viṣṇu ; but not in the North ; Pañcavīras					Bhairava

1. A and B indicate different traditions recorded in the 'Īśānaśiva gurudevapaddhati'.
2. The words within brackets denote the plots of the divinities of the Vāstupuruṣamaṇḍala.
3. Guha, Skanda, Ṣaṃmukha and Subrahmaṇya are names of Kārttikeya.

The chart shows the positions of most, though not of all the temples given in the respective texts.

(XXVI. 8), and other texts in the South. is said in this text (ib. 18) to have been performed but recently by the Brāhmaṇas. Apart from the unalterable positions of the Śiva principle in the North-East, Sūrya in the East, the Viṣṇu principle in the West and the Brahmā principle in the Centre, the temples of the many forms of God are frequently assigned more than one place even in each single text.

The latitude in assigning positions to the temples contrasts with the definite rules for their orientation; the margin of their application however, is equally broad. Given any position it is of primary importance where the temple faces. In the orientation of the temples three principles combine (1) the orientation proper, for the temple should face the East, the rising sun; (2) the temples should face the Centre—of the settlement, the village or town, etc.; (3) God in his peaceful (śānta) image should be located in and turned towards, the habitations of men; God in his wrathful (ugra) image should be situated outside and face away from the habitations of men. The 'ugra' aspect of the image is linked up with the quality 'tamas', which implies destruction

The cosmic orientation, with reference to the Sun; the metaphysical orientation, with reference to the Centre of the Vāstupuruṣamaṇḍala and of every settlement of men; and the orientation with regard to man, the living being (jīva), his welfare and peace are the considerations which determine where a temple faces.

The first consideration is primeval and remains the basis of orientation. Most of the preserved temples face the East, others the West. It is therefore said that it is best if a temple has its door to the East and that it is good if its door is to the West. While however it is admissible that a temple faces South it is not desirable that it should face North.[1] This is observed also when the second consideration prevails, for it is said that the temples in the East, should face West, and those in the West should face East, and the others clockwise (pradakṣiṇa) so that those in the North face South but those in the South should not face

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1. 'Vaikhānasāgama' ch. II.—The cremation ground is to the north of the village, etc. and the Cāṇḍālas live there. The contagion of the dead body, its impurity, must not enter the temple.

North ('Samarāṅgaṇasūtradhāra', X. 112). Not only the temples in the town should face its centre but also those outside the town. If for some reason, such as the terrain, etc., the temple and with it the image in the Garbhagṛha have to face away from the town this is remedied by painting on the wall of the temple a likeness, identical in all iconographic matters to the image in the Garbhagṛha. The painted proxy on one of the walls of the temple then faces the town, for in paintings, the gods may face in any direction (ib., X. 125 ; 128).

The temples and images that are turned away from the village or town are those which are not auspicious, says the same text (ib. 124). The terrific forms of Viṣṇu, should be placed outside the village or in the forest ('Kāmikāgama', XXVI. 25) and temples of Narasiṃha should face away from the village ('Mānasāra', IX, 270) whereas all other images and temples of Viṣṇu should face the village or town (ib. 268). While images of Rudra are not to be placed within the settlements of men ('Kāmikāgama', l. c., 30), the image of Śiva in the North-East should also be outside and face away from the town ('Īśānaśivagurudevapaddhati', Pt. III. ch. XXV. 68). The latter applies also to temples of Śiva in the intermediate directions. Only those situated in the East or West should face the village, town, etc. ('Mānasāra', IX. 271-75). The latter two situations are not particularly those of Śiva temples ; should these be built there, they conform with the rule valid for the other temples ; like the gods of the Vāstupuruṣa-maṇḍala they all face the Brahmasthāna, the Centre. In its principle however, which is Tamas, destruction, the Śiva temple has its proper position in forests and on mountains ('Samarāṅgaṇasūtradhāra', X. 122). Even though a Śiva temple may be placed not only in the outer, but also in the inner border of the Vāstumaṇḍala, it should face away from the settlement of men.

The triple orientation, towards the Sun, towards the Centre and towards man, provides for diverse contingencies, so that in a late text, the 'Mānasāra' (l.c., 276), it is said that the main door of the temple of all images—except those of Viṣṇu, which always (but not in his terrible aspects) face the town, and those of Śiva which, as a rule, face away from it—may be in any direction. In truth, wherever the temple faces, to a Tāntrik the East lies between him and the image :

पूज्यपूजकयोर्मध्ये प्राचीं तु परिकल्पयेत् ।