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IRACH JEHANGIR SORABJI
TARAPOREWALA MEMORIAL VOLUME

Completed on the Occasion of the First Anniversary of his Death
(15th January, 1957)

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Deccan College, Poona
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IN MEMORIAM
IRACH J. S. TARAPOREWALA

Born 22nd July 1884] [Died 15th January, 1956
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Dr. I. J. S. TARAPOREWALA

Born: 22nd July, 1884  
[Died: 15th January, 1956]
IN MEMORIAM

IRACH JEHANGIR SORABJI TARAPOREWALA

Dr. I. J. S. TARAPOREWALA, the doyen of Linguists in India, passed away in Bombay on January 15, 1956. He was born on the 22nd July 1884, at Haiderabad (Deccan) where his father Jehangir Sorabji TARAPOREWALA was the Superintendent, Central Treasury of the Government of the Nizam of Haiderabad. Young TARAPOREWALA matriculated in 1898 from Bhadra New High School, Bombay, and graduated from Elphinstone College, Bombay, in 1903 with Honours in English and Sanskrit. He went to England and joined Grey’s Inn, London, in April 1904, and was called to the Bar in January 1909. He spent his vacations in France and Germany to study French and German. On his return to India he was appointed Professor of English at Central Hindu College, Banaras. In 1911 he was awarded a Government of India scholarship for scientific study of Sanskrit in Europe. He went to Cambridge and was admitted into Fitzwilliam Hall (October 1911). He took his B.A. degree there. Then he joined Wurzburg University and took the Ph.D. degree in July 1913. At Cambridge he read Sanskrit, Comparative Philology, Arabic and Persian under Professor E. RAPSON and Dr. P. GILES, Professor NICHOLSON and Professor E. G. BROWNE, respectively. At Wurzburg he studied Avesta (under Professor C. BARTHALOMAE), and Sanskrit under Professor Julius JOLLY, and Science of Education. He obtained the doctorate degree "summa cum Laude" on the thesis "Some Notes on the Adhyakṣapracāra (Book on Kautiya's Arthaśāstra)."

On his return from his second visit to Europe Dr. TARAPOREWALA was appointed Headmaster at Central Hindu Collegiate School, Banaras. In September 1917 he joined the University of Calcutta as University Professor of Comparative Philology. Beside his duties as Professor and Head of the Department of Comparative Philology he held classes also in Sanskrit, Persian, Gujarati and German. He introduced the study of Avestan at the University by revising the M.A. Course in Comparative Philology. For three years (1927-29) he delivered lectures as Visiting Professor of Iranian Studies at Visvabharati, Santiniketan. In January 1930 he joined as Principal, M. F. Cama Atharvan Institute, Andheri, (Bombay). After his retirement from this post in May 1940 he was appointed Director, Deccan College Postgraduate and Research Institute, Poona, and he held this post till 31st October 1942.

In October 1955, Dr. TARAPOREWALA went to Iran as Professor of Sanskrit and Indology at Tehran University. But he soon fell ill and had to be brought back to India (November 1955).
Dr. Taraporewala was a learned man but his learning sat very lightly on him. His amiable disposition blended with culture and learning made him dear to his pupils and friends. As a leading Linguistician in India he was connected with several Universities in this country as an examiner or as advisor. He knew several languages, Indian and European, modern and classical. He was a founder-member of Linguistic Society of India and was elected its President several times, first in 1929. He was also elected at various sessions of All-India Oriental Conference as a Sectional President.

Among his other academical activities the following may be mentioned.

1914: Lectures on Comparative Philology, Bombay University.
1928: Lectures on History of Zoroastrianism, Kama Oriental Institute, Bombay.
1937: Wilson Philological Lectures, Bombay University.
1955: Lectures on Avesta, Summer School of Linguistics, Poona.

The more important contributions by Dr. Taraporewala include the following:

2. Selections from Avesta and Old Persian, Part I, Calcutta University, 1922.
5. History of the Parsis in India (contributed to Cambridge History of India, Vol. II).
6. The Religion of Zarathushtra, Adyar, Madras, 1926.
9. Inaugural Address of the Linguistic Society of India (Lahore 1928).
10. The Indo-European Homeland (Presidential Address, Philological Section, Sixth Oriental Conference).
13. *The Gathas of Zarathushtra*, Bombay, 1

7th March, 1957

Sukumar Sen
RECIPROCAL INSTRUMENTAL IN BENGALI

By

SUKUMAR SEN, Calcutta

The idiom of the reciprocal instrumental is unknown in Old Indo-Aryan and not attested in Middle Indo-Aryan so far as I know. There is, however, sporadic occurrence of the idiom in late Sanskrit which may have come from the spoken language. For instance: adya yuddham tvayā mayā ‘today there will be a fight between you and me’.

Bengali, however, shows this idiom although no grammarian of the language has taken note of it. Professor S. K. CHATTERJII in his Bhāṣā-prakāś Bāṅgālā Vyākaraṇ, the most detailed grammar of the language, however, notices an idiom of the reciprocal agent case in modern Bengali; e.g. bāp-beṭāy jhagarā karche ‘the father and the son are quarreling’. But in the historical idiom of the language this sentence should better be bāpe beṭāy jhagarā hocche ‘a quarrel is going on between the father and the son’. In grammatical analysis of the first sentence the nominative of the verb karche is bāp-beṭāy which forms a dvandva compound as it were. In the second sentence the nominative is jhagarā and bāpe beṭāy are in the instrumental case implying reciprocity. To show that this idiom of the reciprocal instrumental is a regular and historical idiom in Bengali I quote some additional instances.

māye jhiye jhagarā ‘quarrel between a mother and her daughter’ (nursery rhyme).

core kāmāre dekhā nāī ‘there is no meeting between a burglar and the smith (that makes implements for him)’ (proverb).

tomāy āmāy dekhā holo ‘a meeting happened between you and me’ (TAGORE).

ebār vīnā tomāy āmāy āmarā ekā ‘now, my lute between you and me we are alone’ (TAGORE). This is a very interesting construction where the reciprocal instrumentals are in apposition to the nominative plural āmarā.

jale sthale kānākāni ‘there is a whispering talk between the waters and the land’ (TAGORE).

The last example leads to the iterative variety of the reciprocal instrumental. Thus: kāne kāne kathā ‘whispering talk’; literally, ‘a talk between
ear and ear'; galāy galāy bhāv 'very close friendship'; literally, a friendship where the persons hold one another's neck. This idiom is also connected with such reciprocal and iterative compounds in Bengali as galāgali 'close (friendship)', kānakāni 'whispering'; hātāhāti 'scuffle'; and Sanskrit (adverb) keśākesī, etc.

The first instrumental of the two reciprocal forms has lost the ending and therefore has appeared as the nominative and as a result we find the modern construction as noted by Professor Chatterji. The intermediate stage of this change is supplied by such instances as the following:

*gāi bāchure bhāv thākle bane giye dudh dey* 'if the cow and her calf have an understanding the milk is supplied (by the former to the latter) in the woods'.

*bhāi bone mukh dekhādekhi nāi* 'the brother and the sister do not meet each other'.

In these two instances the first instrumentals were originally *gāie* and *bhāie*. The normal phonological change is responsible for the apparent nominative forms.
NOTES ON THE PHONOLOGY OF MUNDARI

By

John J. Gumperz, Berkeley, California

In collaboration with H. S. Biligiri

0. Mundari, which is one of the Munda or Kolarian languages, is spoken by about half a million speakers over a large area in Southern Bihar and Northern Orissa. It is one of a large group of closely related Munda languages, including Santhali, Ho, and several others which are referred to by the name Kherwari by Grierson. The present analysis is based on the speech of one informant, a native of Mongolpur, P.O. Onorda, District Mayurbhanj, Orissa, a teacher with the Orissa Government Tribal Welfare Department, who is bilingual in Mundari and Oriya, and who also speaks Hindi and English. The dialect recorded here shows very close resemblance to the Bhumij described in the Linguistic Survey of India, which, as Grierson himself states, is almost identical with Mundari. The informant himself refers to his speech as Mundari.

1. Sir George A. Grierson, Linguistic Survey of India, Vol. IV, Calcutta, 1906. Other literature dealing with Mundari includes:
   J. Hoffmann, Mundari Grammar, Calcutta, 1903.
   P. O. Bodding, Materials for a Santali Grammar, Benagaria, 1929, deals with a closely related language.

2. The bulk of the material for the analysis was collected in the course of the seminars in Linguistic Field Methods at the second and third Schools of Linguistics, at Deccan College, Poona, in the summer and fall, 1956.

Thanks are due to Professor S. M. Katre, Director of Deccan College, for defraying the special costs of the seminar; to the Government of Orissa Tribal Welfare Department for lending the services of the informant; and to Mr. Phillip Barker for reading the manuscript and providing helpful comments based on his own fieldwork with Korwa, a related language.

The analysis is based on a text of about 1200 items. This is, of course, not enough for a complete description, and the conclusions presented here will have to be tested with a much larger body of data before they can be accepted as definite.
NOTES ON THE PHONOLOGY OF MUNDARI

1. The dialect has the following phonemes:

**Vowels**

\[ i, e, a, o, u. \]

**Consonants**

<table>
<thead>
<tr>
<th>Labial</th>
<th>Dental</th>
<th>Alveolar</th>
<th>Cacuminal</th>
<th>Palatal</th>
<th>Velar</th>
<th>Glottal</th>
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<tbody>
<tr>
<td>Stop</td>
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<td>t, d</td>
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Juncture, (represented by space).

1.1. Normal Vowel Values.\(^3\)  
/\(i\)/ indicates a lower high front vowel:  
\([i]\), e.g. /ipil/ ‘star’; /bir/ ‘jungle’.  
/\(e\)/ indicates a mean mid front vowel:  
\([E]\), e.g. /seta/ ‘dog’; /gel/ ‘ten’.  
/\(a\)/ represents a fronted low central vowel:  
\([a\langle]\), e.g. /da\(t\)a/ ‘tooth’; /san/ ‘firewood’.  
/\(o\)/ indicates a mean mid back vowel [\(\Omega\)]; e.g. /coke/ ‘frog’; /hon/ ‘child’.  
/\(u\)/ stands for a lower high back vowel:  
\([u]\), e.g. /kumbal/ ‘hut’; /kul/ ‘send’.\(^4\)  
Back vowels are rounded; all others are unrounded. The normal articulation of all vowels is fairly tense. The tongue position of /\(i\)/ and /\(u\)/ is slightly lower than that indicated by the corresponding short vowel phonemes in Standard Hindi.  
/\(e\), \(o\)/ are considerably lower than Hindi /\(e:/\) and /\(o:/\). The tongue position of /\(a\)/ is similar to that of Hindi /\(a:/\).

1.2. Positional Allophonic Variants. The following variations in vowel quality occur: Before retroflex consonants, front vowels and /\(a/\) are retracted and retroflex, back vowels are retroflex, e.g. /pe\(l\)a/ ‘friend’; /ga\(d\)a/ ‘river’; /go\(n\)a/ ‘cow shed’. Before final unaspirated stops (i.e. the phonetic glottal stop and phonetically glottalized stops), vowels are tenser than normal, /\(i/\) and /\(e/\) are retracted, /\(u/\) and /\(o/\) are fronted and less rounded than normal, e.g. /de\(k\)/ ‘climb’; /ku\(l\)it/ ‘kite (bird)’; /ut/ ‘mushroom’; /lo\(s\)ot/.

3. The terminology and phonetic symbols used are those given in Blom and Trager, Outline of Linguistic Analysis, Linguistic Society of America, Baltimore, 1942. The phonetic symbols are not intended to give accurate indications of the position of the respective vowels and consonants. They represent rather the center of a range of free variant allophones. The actual vowel values can be imagined to cluster around these centers in the way shots directed at a target cluster around the bulls-eye.

4. All forms with verbal glosses are quoted in the root form.
‘mud’. In initial position all vowels are preceded by a slight glottal constriction.

In addition /a/ has a number of other allophones. Before intervocalic (non-syllabic) /i/, after /h/ before /r/, and before /rh/, /a/ is raised and centralized: /taian/ ‘crocodile’; /jharka/ ‘window’; /barha/ ‘wild pig’. /a/ is fronted before and after /r/: /taran/ ‘shoulder’. /a/ is slightly higher and more retracted after the labialized allophone of /b/ or /p/ (see 2.2.): /duba/ ‘can’; /kuba/ ‘hunchback’.

In the diphthongs /ai/, /ui/, and /oi/ the final element appears as a palatal off glide before final /k/, e.g. /pampalaik/ ‘butterfly’; /muik/ ‘ant’; /horocoiq/ ‘lizard’. One other solution would be to assign the off glide to the glottal stop and set up the resulting segment as the final allophone of /c/. This would eliminate the contrast between the gap in distribution of final voiceless stops (see 2.).

1.3. Nasalization. Vowels are nasalized after all nasals. The nasalization is especially pronounced in final vowels, e.g. /gama/ ‘rain’; /mu/ ‘mouth’; /kapa/ ‘one-eyed’; /ina/ ‘that’. In the words of the type CVV’V(C), where V’ is a non-syllabic vowel, the nasalization extends over all vowels, e.g. /muiu/ ‘calf’; /nuau/ ‘new’. Vowels are further nasalized before /n/ or /n/ plus consonant, e.g. /kanth/ ‘wall’; /thonqa/ ‘beak’, and before /niV/, e.g. /inia/ ‘I’ (see 2.3.).

1.4. Vowel Length and Stress. In single word utterances length and stress are predictable and therefore not phonemic. There are several phonetic degrees of vowel length. Vowels are longest in words of the type CV, e.g. /ka/ ‘no’; /ti/ ‘hand’. They are slightly shorter in words of the type CVC or CVCC, and in the first syllable of words of the type CVC’V(C), where C’ may be /r/, /m/, /l/, /h/, /k/, or /s/, e.g. /dal/ ‘beat’; /bing/ ‘snake’; /macli/ ‘rice’; /buru/ ‘mountain’; /gama/ ‘rain’; /kula/ ‘chest’. Before other consonants and consonant clusters in disyllables of the above type, vowels are shorter yet, e.g. /seta/ ‘dog’; /ili/ ‘rice wine’; /sanga/ ‘potato’; /jharka/ ‘window’. Vowels are still shorter in non-final syllables of words of three or four syllables, e.g. /dakati/ ‘robbet’; /kokoetani/ ‘beggar’. Vowels are shortest before final stops; e.g. /urik/ ‘cattle’; /setak/ ‘morning’; /got/ ‘pick fruit’; /dup/ ‘sit’. Final vowels in polysyllabic words vary between length similar to that of CV and CVC. They tend to be longer than the vowel of the preceding syllable.

5. C indicates any consonant, V any vowel, unless otherwise indicated. The parenthesis indicates that the item may or may not be there.
In words of more than one syllable stress is fairly evenly distributed. The last syllable is slightly more stressed than the rest, although occasionally in the same word, stress may be on the first syllable in one occurrence and on the second in another. Syllables ending in a phonetic glottal stop or a glottalized allophone of a stop are considerably more stressed than others.

In utterances containing more than one word, it is necessary to distinguish two kinds of stress: utterance primary and secondary. The primary stress usually coincides with a rise in pitch. The available data is not sufficient to determine whether this stress is part of the intonation pattern or whether it should be treated as a phoneme apart from rise or fall in pitch.

1.5. Diphthongs. Clusters of two vowels are called diphthongs. In these clusters the first vowel carries the greatest amount of sonority, the second vowel carries only slightly less. The following diphthongs occur:

Last element /i/: /ai/, /oi/, /ui/, e.g. /hai/ 'fish'; /goi̯tha/ 'dried cow dung'; /kuila/ 'coal'; /muik/ 'ant'.

Last element /e/: /ae/, /oe/, e.g. /paera/ 'dove'; /baenga/ 'carrying pole'; /koe/ 'beggar'.

Last element /u/: /au/, /ou/; e.g. /hau/ 'red ant'; /ghau/ 'wound'.

Last element /a/: /oa/, /ua/, /ia/, /ea/, e.g. /joa/ 'jaw'; /sua/ 'parrot'; /real/ 'bed'; /dorea/ 'sea'; /kia/ 'needle tree'; /nuja/ 'coconut'.

Last element /o/: /eo/, e.g. /keonta/ 'fisherman'.

There are two instances, in the data, of long vowels in contrast with the vowels described in 1.2. Both of them are loan words from Oriya. In both cases the vowels in question are considerably longer than the phonetically long vowels discussed in 1.4. They will be written with double vowels in this analysis: e.g. /daali/ 'lentils'; /bua/ 'wife's elder sister'.

1.6. Non-syllabic Vowels. The allophones of /i/ and /u/ are non-syllabic medially between vowels, e.g. /tuiu/ 'jackal'; /moiat/ 'one'; /naua/ 'new'; /toua/ 'milk'. Phonetically, vowels in this position have less vowel color than the final elements of diphthongs; occasionally they are accompanied by a small amount of palatal or labial friction noise. Since these non-syllabic vowels show some similarity in pattern to consonants, they might have been analyzed as /y/ and /w/. The data shows, however, no initial non-syllabic vowels. One other argument for this analysis is the fact that

6. More information is needed to determine the exact phonemic status of these vowels.
allophonic nasalization in disyllabic words with medial non-syllabic vowel extends over the entire word (see 1.3.). This is not true in the case of medial consonants.

2. Consonants. Mundari has eighteen consonants, including ten stops, two spirants, three nasals, two laterals and one trill. All consonants may occur in word initial and medial position, with the exception of /ŋ/ and /l/. In word final position the data shows only voiceless stops /p/, /t/, /t/, and /k/, nasals, laterals, /r/ and /h/ after stop. /g/ appears finally as part of the cluster /ng/ (see 2.3.).

2.1. General Allophonic Features. The phonetic values of consonant allophones differ considerably according to the position of the allophone within the word. Initial non-aspirate consonant allophones are preceded by a slight glottal constriction. This is most pronounced with voiced consonants. Initial stops further show strong plosion, initial /l/, /s/ and nasals are sometimes preceded by a slight vocalic onset. In medial intervocalic position stops show less plosion and spirants less friction than initially. In words of the type CVCV all medial consonants except /ð/, /θ/, /ŋ/, /s/, /m/ are fairly long. In final position /p/, /t/, /t/ are strongly glottalized and unreleased; /k/ appears as a glottal stop (see 2.2.). Since there is no contrast between single voiced and voiceless final stops, it would be possible to assign the final allophones to the voiced stops, if it were not for the fact that this would make it difficult to handle the contrast between /taink/ ' (to) milk' and /jomeaing/ ' I eat', (see 2.3.). Final /l/, /m/ and /n/ are relatively long; /l/ and /n/ sometimes have a vocalic release. A similar release occurs also after stops and /l/ before other consonants in medial position (see 2.6.), e.g. /silnik/ [sil'nik] 'mosquito'; /kadla/ [kad'la] 'plantain'. If this release were treated as a full vowel, it would be necessary to set up either a phoneme of stress or another vowel phoneme to take care of the contrast between the above items and words like /dakati/ 'robber', where the medial /a/ has full stress.

2.2. Stops. /p/ and /b/ indicate voiceless and voiced bilabial stops respectively, e.g. /pej aş 'friend'; /ipil/ 'star'; /bing/ 'snake'; /rabang/ 'winter'. Initially before /o/ and medially after /u/ before /a/, /b/ has a slightly labialized release [b~w], e.g. /boda/ 'goat'; /nubak/ 'darkness'. The final allophone of /p/ is a glottalized unreleased stop [p'], e.g. /up/ 'see'.

/t/ and /d/ represent voiceless and voiced dental stops respectively, with tongue position similar to that of the equivalent Hindi sounds, e.g. /taian/ 'crocodile'; /hato/ 'village'; /dohe/ 'lake'; /sado/ 'horse'. The final allophone of /t/ is [t'], e.g. /ut/ ' (to) swallow'. In words of the structure /NVt/ or /NVV'Vt/, where N is any nasal and V' is non-syllabic /V/ or /u/,
the allophone of /t/ is [n'], a glottalized voiceless dental nasal, e.g. /met/ 'say'; /moiat/ 'one'.

/t/ and /d/ are voiceless and voiced retroflex stops, pronounced with the front of the tongue resting slightly behind the alveolar ridge and the tip curved towards the palate, e.g. /tanga/ 'peg'; /daṭa/ 'tooth'; /duba/ 'vessel'; /caṇḍuk/ 'moon'. In intervocalic position, before /h/ plus vowel after another vowel, and before /g/, /ḍ/ appears as a retroflex flap [tʃ], e.g. /gaḍa/ 'river', /kuḍhi/ 'lazy'; /beḍga/ 'dwarf'. The allophone of final /t/ is [tʃ] e.g. /jargi japaṭ/ 'rainy season'. There is one instance of [tʃ] medially before /k/, e.g. /tuṭka/ [tuṭ'ka] 'neck'.

/c/ and /j/ indicate voiceless and voiced palato-alveolar affricates, which pattern phonemically like stops. They are produced with the front of the tongue placed against the hard palate, slightly behind the alveolar ridge, e.g. /cilka/ 'how'; /muci/ 'cobbler'; /jojo/ 'tamerind'; /jiling/ 'tail'.

/k/ and /g/ represent fairly retracted voiceless and voiced velar stops, e.g. /kiring/ 'to buy'; /ṭaka/ 'money'; /gel/ 'ten'; /haga/ 'brother'; (for /g/ in the cluster /ng/, see 2.3.)

The glottal stop, which has been described as a characteristic feature of Munda languages, appears in three allophonic forms. In words of more than one syllable and in monosyllables before diphthongs, in utterance medial position (i.e. not before speech pause), the value is [ʔ] or [ʔb], e.g. [layʔ] 'stomach'; [kawʔ] 'crow'; [gitiʔ] 'sleep'; [pampalayʔ] 'butterfly'. Before pause in these same items the glottal stop is followed by a voiceless vocalic release plus aspiration. The nature of the release is determined by the preceding vowel, e.g. [layʔi]; [kawʔu]; [gtrʔi]; [pampalayʔi]. After voiced consonant plus simple vowel, or after a single vowel, the glottal stop is followed by a voiced vocalic release somewhat lower and more centralized than the preceding vowel. This release occurs both utterance medially and before pause, e.g. [dʔa<] 'water'; [dʔa<k0] 'water (plural)'; [ʔa<] 'arrow'; [niʔi>] 'wound'; [dʔe>] 'climb'. All the above allophones are in complementary distribution with /k/, which does not occur finally. Phonetically they share the feature of plosion and voicelessness, and they are also fairly close in point of articulation. They can therefore be considered as allophones of /k/. The items given in the above examples

7. It might be possible to write this word /tuṭ ka/ (see 3.), however more evidence on the occurrence of /t/ before /k/ is needed for a final solution.

8. Cf. Grierson, Hoffmann, and Bodding. The first two refer to it as 'checked consonants'; Hoffmann uses 'checked vowel'. All of them however agree in using one symbol for the three phonetically quite different allophones.
may therefore be written phonemically as follows: /laik/; /kauk/; /gitik/; /pampalaik/; /dak/; /dak ko/; /ak/; /nik/; /dek/.

2.3. Nasals. /m/ indicates a voiced bilabial nasal, e.g. /meram/ 'goat'; /gama/ 'rain'. /n/ represents a dental nasal with tongue position similar to that of /d/, e.g. /nida/ 'night'; /bana/ 'bear'; /taran/ 'shoulder'; /san/ 'wood'.

There are a number of other allophones of /n/. Before final /t/ and /th/ there is free variation between [−] and the nasal stop with nasalization of the preceding vowel, e.g. /unt/ 'camel'; /kanth/ 'wall'. (There are no examples for final /t/. Before medial /t/ and /l/ and final /k/, only nasalization is audible, e.g. /keonṭa/ 'fisherman'; /aunṭa/ 'a fruit'; /taink/ ' (to) milk'. Nasalization in these environments is more pronounced than after nasals, (see 1.3.).

/n/ has the allophone [ŋ] before /g/ and medial /k/. In final position the /g/ is not released, so that the cluster /ng/ appears as [ŋ]. Finally after /ai/ the allophone is considerably fronted ([ŋ < i]), and the preceding vowels are strongly nasalized, e.g. /ranga/ 'red'; /ṭunki/ 'basket' /jang/ 'seed'; /kaing/ 'not (infl.)'. Before and after /i/ plus vowel there is free variation between [ŋ] and the nasalized palatal spirant [y], e.g. /inia/ [Inia] or [Iyä] 'my'; /iniam/ [Iñam] or [Iyam] ' (to) cry'.

/n/ is a retroflex nasal with tongue position similar to /d/, e.g. /man/ 'a plant'; /menḍhi/ 'sheep'. In fast speech /n/ sometimes appears as a nasal flap, in medial intervocalic position, e.g. /kaña/ 'one-eyed man'; /cene/ 'bird'.

2.4. Spirants. /s/ indicates a voiceless alveolar spirant, produced with the front of the tongue placed against the alveolar ridge, e.g. /sanga/ 'potato'; /sasang/ 'turmeric'.

/h/ is a glottal spirant having two allophones, [h], a voiced glottal spirant pronounced with considerable friction in the glottis, occurring initially before vowels and also medially between vowels and after vowels before consonants, e.g. /hoṭok/ 'throat'; /mohu/ 'honey'. The allophone [ʔ] (aspiration) occurs initially, medially and finally after stops (for examples see 2.6).

2.5. Laterals and Trills. /l/ appears as a dental lateral with tongue position similar to that of /d/, e.g. /lutur/ 'ear'; /ruli/ 'wristband'; /maskal/ 'light'. /ɾ/ represents a retroflex lateral with tongue position similar to that

9. These are the only examples in the data.
of /q/. Finally before pause it appears with a central vocalic release [lʰ], e.g. /kuli/ 'wife'; /bengal/ 'brinjal'.

/r/ indicates an alveolar tongue tip trill accompanied by a fair amount of friction noise, e.g. /rembil/ 'cloud'; /sarsar/ 'finger nail'.

2.6. Consonant Clusters. Aside from aspirates, i.e. clusters of consonant plus /h/, most consonant clusters occur only medially. There are no initial clusters, and finally only /ng/ and sequences of nasal plus aspirates occur.

Medial two consonant clusters fall into the following groups:

(a) Nasal plus consonant: /mp/, /mb/, /mt/, /nd/, /nj/, /nc/, /nd/, /nt/, /nk/, /ng/, /nt/, /nl/. (Examples for the last four are given in 2.5.) e.g. /pampalaik/ 'butterfly'; /rembil/ 'cloud'; /cintung/ 'when'; /hende/ 'black'; /honjar/ 'wife'; /gulincu/ 'sling'; /phunçi/ 'white'; /thonça/ 'beak'.

(b) Lateral trill or spirant plus consonant: /lk/, /lp/, /lc/, /ls/, /rk/, /rg/, /rd/, /rn/, /rc/, /rs/, /sk/, /st/, e.g. /talka/ 'foot'; /silping/ 'door'; /kalkom/ 'crab'; /kalsa/ 'vessel'; /arki/ 'wine'; /jargi/ japot/ 'storm'; /bardulit/ 'bat'; /jhorna/ 'stream'; /murci/ 'vegetable'; /sirma/ 'year'; /sarsar/ 'finger nail'; /maskal/ 'light'; /mastur/ 'teacher'.

(c) Stop plus stop, stop plus nasal, nasal plus nasal: /pk/, /pt/, /pn/, /qg/, /cn/, /kn/, /mn/. (For ḍk in /tudka/ see 2.2.). In all these clusters the stop is followed by a central vowel release, the quality of which depends on the vowel of the preceding syllable, it is [I] after /i/, [ə] after /a/, etc., e.g. /capka/ 'disease of the tongue'; /cepta/ 'flat'; /pipni/ 'eyebrow'; /beḍga/ 'dwarf'; /siknik/ 'mosquito'; /qemna/ 'a type of snake'.

(d) Consonant plus lateral, trill, or /s/: /pl/, /dl/, /gl/, /kl/, /tr/, /tr/, /kr/, /hl/, /hn/. Stops are followed by a vocalic release before retroflex /l/. E.g. /diplang/ 'when'; /kadla/ 'plantain'; /phoglca/ 'toothless'; /mukli/ 'knee'; /putra/ 'elder brother's son'; /ceṭre/ 'miser'; /sukrí/ 'pig'; /dahlía/ 'turban'.

Three consonant clusters are few. All of them begin with a nasal plus homorganic stop. The medial stop is followed by a central vowel release: /mbl/, /ndr/, /ngn/, /ngt/, e.g. /rembla/ 'black gram'; /bindri/ 'spider'; /ṭangla/ 'peg'; /sungti/ 'friend'.

Aspirates show more similarity in pattern to single consonants than to clusters. They are analyzed as clusters here to avoid setting up a special phoneme of aspiration. Aspirates occur initially, medially and finally. They also enter into clusters with other consonants. All stops and medial /r/ and /l/ may be followed by /h/. Examples for final aspirates are some-
what rare in the data; only /ph/, /th/, /kh/, and one example of /gh/ occur.

(a) Initial aspirates, e.g. /bhagina/ ‘sister’s son’; /pharca/ ‘clean’;
/thega/ ‘(to) kick’; /dhali/ ‘strong’; /dhelka/ ‘clod’; /thote/ ‘a type of
arrow’; /choṭa/ ‘tame’; /jharka/ ‘window’; /khecot/ ‘jump’; /ghirni/
‘lizard’.

(b) Medial aspirates, e.g. /gadha/ ‘ass’; /aṭha/ ‘stick’; /kudhi/ ‘lazy’;
/ajhanar/ ‘wife’s elder brother’; /panicha/ ‘bow string’; /barha/ ‘wild pig’;
/dalhi/ ‘chin’.

(c) Final aspirates, e.g. /kaph/ ‘woman’s earring’; /joutuk/ ‘marriage present’;
/roth/ ‘chariot’; /maharagh/ ‘dear’.

(d) Clusters of consonant plus medial aspirates, e.g. /cortha/ ‘without
scruple’; /cuṇthi/ ‘miser’; /menḍhi/ ‘sheep’; /nampho/ ‘lamp’; /majhla/
‘second’.

(e) Clusters of nasal plus aspirate (final), e.g. /kanth/ ‘wall’; /benth/
‘cane’.

3. Word Juncture. Examination of utterances of one syllable shows
that certain phonemes have differing allophonic shapes depending on whether
they occur after pause, before pause, or between other segments. Thus,
voiced consonants and vowels have glottal constriction after pause and voice-
less consonants are relatively fortis; stops are glottalized before pause, /n/,
/r/, and /m/ are relatively long, etc. see 2.1.). The situation in words
of more than one syllable may be illustrated by means of the following
examples:
1. /ne bing/ ‘that snake’.
2. /rabang/ ‘winter’.
3. /khup ko/ ‘good (inflected)’.
4. /capka/ ‘disease of the tongue’.

In example one, the segment [ɛ] has vowel length similar to that of
final vowels in one word utterances of the type /CV/ (see 1.4.); the segment
[b] is preceded by glottal constriction and has strong plosion, as is
characteristic of initial consonants in utterances of one syllable. In example
two, the [o] of the first syllable is shorter; the [b] is relatively lenis and
has no glottal constriction. In example three, the [p’] is glottalized, and
the [k] is relatively fortis. In four, [p] is not glottalized, and both medial
stops are relatively lenis. This type of distribution may be analyzed in
two ways: It would be possible to set up separate phonemes for glottalized
[p’], non-glottalized [p], lenis [b], [b] preceded by glottal constriction and
for all other allophones mentioned above. It is also possible to set up a
phoneme of juncture. The latter solution is preferred here. Phonetically,
juncture is characterized by allophonic features of the segments that precede
and follow. In slow speech, juncture is sometimes accompanied by a slight
hesitation in speech, but this is not always so. In fast speech, on the other hand, juncture is often not heard in places where one would normally suspect it. Juncture is written as space.

The term word, as used in this paper, may be defined as a stretch of speech between two junctures. The phonemic word division arrived at by this definition does not always coincide with the traditional word divisions for Mundari, which are based on morphological rather than phonemic criteria.\(^\text{10}\) Thus, in /ti ko/ 'hands', the phonetic length of the [i] segment is longer than the [a] in /taka/ 'money', and the allophone of /k/ indicates the presence of word juncture. Similarly, verbal forms like /jom gia/ 'eat (future)'; /senok tana/ 'go (present)' are two words phonemically, since in the first example the [m] has length characteristic of word final position, the [g] is the initial allophone; in the second, the allophone of /k/ is [ʔ]. The above remarks should not be construed as a criticism of the traditional word divisions, since this paper does not deal with morphology. They simply serve to point out possible interesting differences between phonemic and morphological words in Mundari.

4. Syllable Structure. The following types of syllable structure occur. Words of one and two syllables are most frequent. Words of three and four syllables are rare.

(a) Monosyllables: VV, VC, VVC, VCC, CV, CVV, CVC, CVVC, CVCC,\(^\text{11}\) e.g. /ae/ 'seven'; /up/ 'hair'; /aek/ 'he'; /ing/ 'I'; /ka/ 'no'; /hai/ 'fish'; /bir/ 'forest'; /gaul/ 'milkman'; /bing/ 'snake'.

(b) Dysyllables: VCV, VCCV, VCCVV, VCVC, VVVC, CVVV, CVVVV, CVVCV, CVVCV, CVVCVV, CVVCVV, CVVCV, CVVCVV, e.g. /utu/ 'a vegetable'; /arki/ 'wine'; /upnia/ 'four'; /olak/ 'house'; /aiak/ 'his'; /naua/ 'new'; /taian/ 'crocodile'; /maiang/ 'bent back'; /guḍa/ 'mouse'; /kulla/ 'coal'; /peñai/ 'weaver'; /ranga/ 'red'; /bohnai/ 'elder sister's husband'; /tasat/ 'grass'; /bengal/ 'brinjal'; /rembla/ 'black gram'.

(c) Trisyllables: VCVCVC, CVCVVC, CVCCVCV, CVCCVCV, CVCCVCVC, e.g., /ajhanar/ 'wife's elder sister'; /dakati/ 'robber'; /bardulit/ 'bat'; /cikalka/ 'how'; /kaṭikat/ 'stick'; /kataiam/ 'deaf'; /jomeaing/ '(I) eat.'\(^\text{12}\)

(d) Four syllables: CVCCVCVCV, e.g., /kokoetani/ 'beggar'.

Words of three or more syllables are rare in the data.

\(^{10}\) Cf. GRIFFON and HOFFMANN.

\(^{11}\) In these examples “C” indicates any simple consonant or aspirate.

\(^{12}\) In vowel clusters of this type, the first vowel is part of the third syllable.
TRACE OF AN OLD PALATAL *zh > j IN SANSKRIT

By

M. A. MEHENDALE, Poona

It is well known to the students of the historical phonology of Sanskrit that IE palatal ĝh survives in Sanskrit as h (< ūh). It seems, however, probable to demonstrate its survival also as j (< ū with loss of aspiration) in an OIA form ujjāyati occurring in the Śatapatha Brāhmaṇa in the description of the Vāgapeya sacrifice.

One of the peculiarities of this sacrifice is the drawing of the seventeen Surāgrahas along with an equal number of the Somagrahas. About the symbolism of this act we read in the Brāhmaṇa (5.1.2.10-13): aha satptadaśa Somagrahāṇa ēṛṇāti/ satptadaśa Surāghrahāṇa Prajāpater vā ete andhāni yat Somaḥ ca Surā ca tataḥ satyaṁ śrīr jyotih Somo 'nṛtāṁ pāṃmā tamaḥ Suraite evaitad ubhe andhasi ujjāyati sarvāṁ vā eṣa idam ujjāyati yo Vāga- peyena yajate Prajāpatiḥ hy ujjāyati sarvam u hy evedāṁ Prajāpatiḥ (10). sa yat satpadaśa/ Somagrahāṇa ēṛṇāti satptadaśo vāi Prajāpatiḥ Prajāpatir yajñāḥ sa yāvān eva yajñō yāvantaḥ asya mātrā tāvataivāśyai tat satyaṁ śrīyam jyotir ujjāyati (11). aha yat satpadaśa/ Surāghrahāṇa ēṛṇāti satptadaśo vāi Prajāpatiḥ Prajāpatir yajñāḥ sa yāvān eva yajñō yāvataḥ asya mātrā tāvataivāśyai tad anṛtāṁ pāṃmānāṁ tama ujjāyati (12). ta ubhaye catustriṁśad grahāḥ sampadyante/ trayastriṁśad vai devāḥ Prajāpatiś catustriṁśas tat Prajāpatim ujjāyati (13). EGGELING translates (SBE 41.8-9) the above as follows: “He (the Adhvaryu) then draws seventeen (other) cups of Soma, and (the Neshtri) seventeen cups of Surā (spirituous liquor), for to Prāgāpati belong these two (saps of) plants, to wit the Soma and the Surā;—and of these two the Soma is truth, prosperity, light; and the Surā untruth, misery, darkness: both these (saps of) plants he thereby wins; for he who offers the Vāgapeya wins everything here, since he wins Prāgāpati, and Prāgāpati indeed is everything here (10). Now as to why he draws seventeen cups of Soma;—Prāgāpati is seventeenfold, Prāgāpati is the sacrifice: as great as the sacrifice is, as great as is its measure, with that much he thus wins its truth, its prosperity, its light (11). And why he draws seventeen cups of Surā;—Prāgāpati is seventeenfold, Prāgāpati is the sacrifice: as great as the sacrifice is, as great as is its measure, with that much he thus wins its untruth, its misery, its darkness (12). These two amount to thirty-four cups; for there are thirty-three gods, and Prāgāpati is the thirty-fourth: he thus wins Prāgāpati (13).”
Now in the above extract the use of \textit{vijayati} with Prajāpati and \textit{svam idam} is quite understandable since this identification is common in the Brāhmaṇa literature and according to the Āp. Ś. S. the very purpose of the Vājapeya sacrifice is the winning of Prajāpati (cf. \textit{Prajāpatim āpnotī} 18.1.3). What strikes us, however, is its use with both Soma and Surā (\textit{ubhe andhāsi}) without apparent distinction when the former has been identified with truth, prosperity, and light and the latter with untruth, misery, and darkness. Eggeling translates \textit{vijayati} in both contexts as ‘wins’. But it must be admitted that this reads rather awkward. It is reasonable for the Brāhmaṇa passage to tell us that the Adhvaryu seeks to \textit{win} for the sacrificer truth, prosperity, and light with the help of the Somagrabhas, but it is quite contrary to our expectation to hear the same text tell us that the other priest seeks to \textit{win} for the sacrificer also untruth, misery, and darkness by drawing the Surāgrahas.

In all our ancient literature, whether philosophical or otherwise, we often find passages to show that gods and men have aspired to gain truth, prosperity, and light and not their opposites. To give only a few instances we may cite the following about truth (\textit{satya}):

\textit{tasya vā etasyāgyānādheyasya/ satyam evopacāraḥ sa yāḥ satyāṁ vadati yatthānīṁ samiddhaṁ tam gheṭtenābhisiṁcend evaṁ hainam sa uddipa-yati tasya bhūyo-bhūya eva tejo bhavati śvāḥ-śvāḥ śreyāṁ bhavatya atha yo 'nrtam vadati yatthānīṁ samiddhaṁ tam udakenābhisiṁcend evaṁ hainam sa jāsaya tasya kanīyāṁ-kāniyā eva tejo bhavati śvāḥ-śvāḥ pāpīyāṁ bhavati tasmād u satyam eva vadet/ Śat. Br. 2.2.2.19. Eggeling translates (SBE 12. 312-313) — "Now, attendance on (or, the worship of) that consecrated fire (agnyādheya) means (speaking) the truth. Whosoever speaks the truth, acts as if he sprinkled that lighted fire with ghee; for even so does he enkindle it: and ever the more increases his own vital energy, and day by day does he become better. And whosoever speaks the untruth, acts as if he sprinkled that lighted fire with water; for even so does he enfeeble it: and ever the less becomes his own vital energy, and day by day does he become more wicked. Let him, therefore, speak nothing but the truth."}

Similarly we get passages to show that it was prosperity (śṛti), and not its opposite, that was considered desirable by gods and men. To quote again from the Śatapatha Brāhmaṇa 14.1.1.3: \textit{ta āsata/ śriyaṁ gacchena yaśaḥ syāmānndāh syāmeti tatho evame satram āsate ye satram āsate śriyaṁ gacchena yaśaḥ syāmānndāh syāmeti / Eggeling (SBE. 44.441) — "They²

1. For the desirability of truth as a protective power also cf. the famous instance given by Uddālaka Aruni to Śvetaketu in Ch. Up. 6.16. For the use of the verb \textit{vji} with \textit{satya} cf. \textit{satya jī} VS 17.83, AV 4.17.2, satyajīti Kāty. Ś.S. 19.5.4.
2. I.e., the gods.
entered upon the session thinking, 'May we attain excellence! may we become glorious! may we become eaters of food!' And in like manner do these (men) now enter upon the sacrificial session thinking, 'May we attain excellence! may we become glorious! may we become eaters of food!'"

It is hardly necessary to give again many instances to show that what applies to truth and prosperity, applies equally to light (jyotiṣ). To give a random instance from the Rgveda we may cite: jīvā jyōtir āśimahi (7.32.26) "living, may we obtain light!", and refer to the famous prayer from the Bṛhad. Up. tamaso mā jyotir gamaya (1.3.28) "Lead me from darkness to light."

As against the above passages showing that it were satya, śrī, and jyotiṣ which were considered as desirable possessions, we may cite a few others just to show that their opposites were never sought to be 'won', but were deemed as worth 'striking down or driven away' both by gods and men.

(1) anṛta: āvātiratam anṛtāni viśā ṛtēna Mitrāvaruṇā sacēte / RV. 1.152.1. "Alle Ungesetzlichkeiten unterdrücket ihr; ihr haltet es mit dem Gesetz, Mitra und Varuṇa!" (GELDNER)

(2) pāpman: yathā vai manusya evain devā āsan te kāmayantāvarttim pāpmanam mṛtyum apahatya daiśīṁ saṁsādam gacchāme ti ta etai Caturviṁśatārātram apāyayam tam āharan tenāyajanta tato vai te 'varttim pāpmanam mṛtyum apahatya daiśīṁ saṁsādam agacchan ya evaṁ vidvāṁsa Caturviṁśatārātram āsate 'varttim eva pāpmanam apahatya śriyam gacchānti śrī hi manusyaśya / daiśī saṁsaj.... (TS. 7.4.2.1-2). KEITH (HOS. 19.600):

"As are men, so were the gods in the beginning. They desired, 'Let us strike off the misfortune, the evil of death, and reach the conclave of the gods.' They saw this twenty-four night (rite); they grasped it, and sacrificed with it. Then they struck off the misfortune, the evil of death, and reached the conclave of the gods. Those who knowing thus perform the twenty-four night (rite) strike off the misfortune, the evil, and win prosperity, for the conclave of the gods is in the case of man prosperity...."

3. Also cf. RV 2.27.11; 3.34.4; 4.1.14 etc.; VS 8. 52,20.21; AV 8.1.21; 8.2.2; Śat. Br. 14.1.1.33.
4. Rather 'untruths' and 'truth'.
5. Also cf. RV 7.66.13; VS 6.17; etc.
6. Rather 'evil (and) death'.
7. It may also be noted that while taking fire from the Gāhapatya, one says: uddhriyamaṇa uddhara pāpmano mā yad avidvān pac ca vidvāṁsa cakāra/ (Śāṅkh. Ś.S. 2.6.6). Also cf. RV 1.24.9; 3.7.10; VS 3.45; AV 1.115.1-3; 10.1.10; 3.4; etc.
"he should offer to Sūrya (a beast) of many forms; verily he has resort to yonder sun with its own share; verily it drives away the darkness, the evil, from him, the dawn shines upon him, he strikes away the darkness, the evil."  

It will thus be seen that we often come across passages to show that anṛta, etc., were not considered fit to be ‘won’ in the same sense as satya, etc. It should not be argued against the objection raised here to the use of ujjayati with anṛta, etc., to say that it is used in the sense ‘to conquer, to bring under control’. For apart from the fact that uдж√j is not used in this sense elsewhere, it is worth noting that we do not come across statements to illustrate the use of √j with anṛta, pāpman, and tamas. What we get instead is their use with verbs to mean ‘to cross over, to go beyond’, ‘to strike or drive away’, ‘to burn’, or ‘to shake away, to abandon’. A few instances may be given here which are taken from the principal Upaniṣads.\textsuperscript{9} tarati śokaṁ tarati pāpmānāṁ Mundaka 3.2.9, naināṁ pāpma tarati sarvaṁ pāpmānāṁ tarati naināṁ pāpmā tapati sarvaṁ pāpmānāṁ tapati Brhad. 4.4.23, pāpmānām apahatya Ait. 3.8.4, Br. 1.3.10.11 (pāpmānāṁ mṛtyum apahatya athainā mṛtyum atyaṇah), hanti pāpmānāṁ jahāti ya evaṁ veda Br. 5.5.3.4; apahata-pāpma Ch. 8.7; sarīre pāpmano hitvā Taitt. 2.5; ya idam sarvaṁ pāpmano 'trāyata Ait. 2.1: aśva iva romaṇi vidhūya pāpma Ch. 8.13; sarvaṁ pāpmana auṣat Br. 1.4.1; yady api bahu iva pāpaṁ kurute sarvaṁ eva tāt savapya Br. 5.14.8; pāpanudāṁ Śve. 6.6; na sa pāpmano vyāvartate Br. 1.5.2; evaṁ hāsya sarve pāpmaṁ pradāyante Ch. 5.24; tasmā myditakasāyāya tamasam pāreṁ darśayati Ch. 7.26; tamanah pāreṁ gamiṣyāti Maitri 6.30; svasti vah pārśva tamanah parastāt Mundaka 2.2.6; tamanah praṇudati Maitri 2.2; bhitvā tamanḥ Maitri 6.24.

Starting then from the fact that anṛta, pāpman, and tamas were considered as something ‘to be driven away, to be given up’ it is possible to suggest a more satisfactory explanation of ujjayati when used with them. In all probability it seems to stand for an older form *ujjhayati (≋*uj-žhayati) meaning ‘abandons, gives up, etc.’ The loss of aspiration in this form seems to have occasioned its mingling with ujjayati ‘wins, etc.’ which occurs

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8. We may also cite: śaśvat putreṇa pitaro 'tyāyaṁ bahulauṁ tamah/ Ait.Br. 7.3. tāmas is called ājūṣta in RV 7.75.1.

9. For other literature one may do well to look up to the Pertiérsburg Woértorbucb under the respective words,
so often in this section of the Satapatha Brāhmaṇa. This (ud-) *jhayati can be derived from IE root *gheī ‘verlassen, fortgehn’ which is given by WALDE-POKORYN I 542-43 and POKORYN 5.418-19. *jhayati (1st conj. cf. Avestan participle uzayanto) is obviously akin to Sk. jahāti (3rd conj.) ‘abandon, etc.’ going back to IE *ghe, from which we have the past participle ujjhita (ud + *ghitá) with the same prefix as in *ujjhayati.10 With this explanation the text under consideration would mean that the drawing of the seventeen Surāgrahas was intended for symbolising the abandoning (and not winning) of anṛta, pārman, and tamas. When ujjayati occurs in the expression ubhe andhasi ujjayati we have naturally to suppose that here both ujjayati and *ujjhayati have fallen together so that once ujjayati means ‘wins’ when it refers to Soma, and once it means ‘abandons’ (as coming from *ujjhayati) when it refers to Surā.

The passage quoted at the commencement of this article can now be translated, with the necessary changes in EGGELING’s translation, as follows: “He (the Adhvaryu) then draws seventeen (other) cups of Soma, and (the Ngeṣṭŗ) seventeen cups of Surā. These two (saps of) plants, to wit the Soma and the Surā, belong to Prajāpati; of these two the Soma is truth, prosperity, light; and the Surā is untruth, misery, darkness. Both these very (saps of) plants he thereby (respectively) wins (ujjhayati) and abandons (ujjhayati < *ujjhayati); for he who offers the Vājapeya wins everything here, since he wins Prajāpati and Prajāpati is indeed everything here …… And why he draws seventeen cups of Surā; — Prajāpati is seventeen-fold, Prajāpati is the sacrifice: as great as the sacrifice is, as great as is its measure, with that much he thus abandons its untruth, its misery, its darkness. These two amount to thirty-four cups; for there are thirty-three gods, and Prajāpati is the thirty-fourth; he thus wins Prajāpati.”

It may now be shown that the above interpretation of the passage based on the two-fold derivation of ujjhayati is supported by the ritual practice of the Vājapaya and further by a literary usage in the Muṇḍaka Upaniṣad. First then to the ritual. The method of drawing and disposal of these two sets of cups, viz. those of Soma and of Surā, clearly show that it was intended from the beginning to keep a complete distinction between the two, and that the two were not allowed to co-mingle. The two were purchased separately, had a separate entrance, separate drawing, separate placing, and separate disposal. This procedure is a clear pointer to the fact that there was no question of ‘winning’ the Surāgrahas and what it stood for, not also

10. Sk. ujjhati ‘leaves, gives up, etc.’ occurring from the epics is clearly a new formation from ujjhita as already noted by UHLENBECK (KURZ. ET. W.). His other explanation based on WACKERNAGEL I, 164 is not probable. For the above explanation of ujjhita < ud-ḥā through ud-ḥitā see LEUMANN IF 58.20 ff. (1942).
of ‘conquering’ them, but undoubtedly abandoning them, giving them away.
To give some details about the procedure it may be mentioned that the seventeen Soma cups are drawn by the Adhvaryu seated in front of the axle of the Soma cart with his face westwards, while the Surā cups are drawn by the Neṣṭṛ (or Pratiprasthāṭr according to the Āp. Ś.S.) while sitting behind the axle with his face turned eastward (Sat. Br. 5.12.16). Then there are two separate earthen mounds (kharā) erected for depositing the cups, one in front of the axle for the Soma cups and one behind the axle for the Sūrā cups. The purpose of erecting two mounds is stated as net somagrahāṁś ca surāgrahāṁś ca saha sādayāma (5.1.2.15) “lest we should deposit together the cups of Soma, and the cups of Sūrā” (Eggeling). The Adhvaryu and the Neṣṭṛ do not hold the Soma and the Sūrā cups beyond the axle—nej jyotiś ca tamaś ca saṁśrīva (5.1.2.17) “lest we should confound light and darkness” (Eggeling). The Adhvaryu now says sāmpṛcāu sthaḥ sam mā bhadrēṇa pṛiktāṁ11 with reference to the Soma cups before placing them on the mound. The Neṣṭṛ, however, says, vi pṛcāu stho vi mā pāpmanā pṛiktāṁ11 with reference to the Sūrā cups. The significance of the latter mantra is explained in the Sat. Br. 5.1.2.18 as—“Even as one might tear a single reed from a clump of reed-grass, so do they thereby tear him out of all evil: there is not in him so much sin as the point of a grass-blade.”12 (Eggeling). This passage as well as the following given below should leave no doubt about the interpretation of ujjayati with the Sūrā cups as coming from ujjhayati. In the following section we are told that the Somagrahas are offered and drunk at the evening pressing (Ś. B. 5.1.2.19). But about the Sūrāgrahas we read—“And the Neshtri, taking the cups of Sūrā, steps out by the back door. He walks round by the back of the hall, and placing one (of the cups) in the Vaisya’s, or Rāganya’s, hand, he says, (ŚB. 5.1.5.28) ‘With this I buy him of thee!’13 For the Soma is truth, prosperity, light; and the Sūrā is untruth, misery, darkness: he thus impues the Sacrificer with truth, prosperity, and light; and smites the Vaisya with untruth, misery, and darkness.”14 (Eggeling).

11. VS. 9.4.
12. tad yathēśikāṁ muṇjād viśṛhād evam evam sarvasmāt pāpmanā viṣṛḥatas tasmin na tāvac canaino bhavati yāvat trēnasūryāgram/
13. This refers to the taking of the Madhugraha from a Vaisya or a Śūdra in exchange of the Sūrāgrahas. The Madhugraha is then given to the Brahman priest (cf. also Kāty. Ś.S. 14.4.15-17).
14. anena ta imaṁ niśkriṇamīti .... satyam evavac chriyam jyotiḥ yajamāne dādhāty anūtaṁ pāpmanā tamaṁ Vaisyaṁ vindhyati/.

It is worth noting that the Sūrā is not offered in the Ahavaniya. The Sūrā cups are taken to the Mārjālya, shaken, and drunk by those who participated in the race. Cf. Āp. Ś.S. 18.7.2, 4, 8.
Now about the Upaniṣadic passage in favour of the interpretation of ujjayati in the sense ‘to win’ only when going with satya and not its opposite anṛta. In the Muṇḍaka 3.1.6 we read the famous line—satyaṃ eva jayate nāṁtām. It has been usual to take satyaṃ here as the subject of jayate and accordingly translate the line as ‘truth alone conquers, (and) not falsehood.’ But there is some difficulty about this interpretation, because in the principal Upaniṣads satya appears only as something to be described, being often identified with Brahman, Ātman, Āditya or Dharma; or as an object of upāsanā or knowledge; or as a means to obtain the soul. About satya as something worth seeing at death we have the well known verse from the Īsopaniṣad 15 (also Br. 5.15.1): hiranyajyena pātreṇa satyaṣyāpiḥitaṁ mulham/ tat tvāṁ pūṣañ piṇapuṣaṁ satyadharmaṁ ċṛṣṭaye/ But nowhere does satya appear as a subject being associated with any activity as its agent. In the light of these observations it would not be possible to construe satyaṃ as the subject of jayate in the line referred to above. Also the context does not justify it. Just in the preceding verse we are told about truth (and knowledge etc.) being used as a means by an ascetic to obtain the soul (satyena labhyah . . . . . hyeṣa ātmā . . . . . yaṁ paśyanti yatayaḥ kṣinaṁdaśaḥ—Muṇḍaka 3.1.5). An ascetic (yati) is the subject there, satya the means. In our verse, in the second half, we are told that the sages go along the devayāna to reach the place which is the highest store of truth (yenaṁ kramanty ṛṣayaḥ hy āptakāṁ yatṛ tat satyasya paramāṁ nidhānaṁ). A sage (ṛṣi) is the subject here, satya apparently the object. In between these two statements, it is not correct to regard satyaṃ as the subject of

15. The controversy about the reading jayate or jayati may be left for the time being to a critical examination of the manuscript material.

16. tad etad akṣaraṁ brahma sa prāṇas tad u vāṁ manah/ tad etat satyaṁ tad amṛtāṁ tad veddhavyāṁ Somya vidhīḥ/ Muṇḍaka 2.2.2, tasya ha vā etasya brahmaṇo nāma satyaṁ iti/ Chāṇḍ. 8.3, satyaṁ hy eva brahma Br. 5.4; tat satyaṁ sa ātmā tat tvam asi Švetaketo/ Chāṇḍ. 8.3.16; tad yat tat satyaṁ asau so ādiryaḥ/ Br. 5.5.2; yo vai sa dharmaḥ satyaṁ vai tat/ Br. 1.4.14.

17. te devāḥ satyaṁ eva upāsanayā/ Br. 5.5.1, also 6.2.15, satyaṁ tv eva vijñāñāstvayā/ Chāṇḍ. 7.16.

18. satyena labhyas tapasaḥ hy eṣa ātmā samyajñaṇena brahmacaryena nityam/ Muṇḍaka 5.1.5; evam ātmani grhyate śau satyaṇeṇaṁ tapasaḥ yo ’nupasyati/ Śve. 1.15.


20. Perhaps the only exception could be in the cosmogonical account in the Br. Up. 5.5.1 where we read: āpaps evadāna agra āsuh/ tā āpah satyam asṛjanta satyaṁ brahma brahma praṇāpatiṁ .......But usually here satyaṁ and Brahman are considered identical. Hence HUMZ translates: “.....That water emitted the Real - Brahma (being) the Real—; Brahman Prajāpati.....”
jayate. Obviously a yati or a र्षि is intended as the subject and satya the object. The line therefore means—“(He) wins for himself (hence perhaps the use of Atmanepada) only truth and not untruth (as means and as an end).” It would be interesting to cite here Śaṅkara’s comments on this passage, though his ultimate interpretation differs from the one suggested here as he does not take satyam and anṛtam as objects of jayate. He says, “na hi satyānṛtayoḥ kevalayoḥ purusānāśritayor jayah parājayo vā sambhavati/ prasiddhāṁ loke satyavādinā ‘nṛtavādy abhibhūyate na viparyayo ‘tah siddhāṁ satyasya balavat sādhanatvam/”.

One cannot object to this interpretation on the ground that in the preceding verse (Mundaka 3.1.5.) and in the present one (3.1.6) yatayah and र्षayah are plural forms while in satyam eva jayate we have supposed yati or र्षि in the singular. For, in the present section of the Upaniṣad we find the use of singular in many other verses. But if the point is still stressed, it has to be pointed out that jayate lends itself being interpreted also as 3rd plural Ātm. व/जि in the 2nd conjugation attested in Vedic forms like जेषि.

It is thus clear that the Upaniṣadic line satyam eva jayate nānṛtam gives good evidence to show that in the ancient tradition it was truth alone which was regarded as fit to be won and not untruth and that the use of व/जि was suited for satya and not anṛta. It would, therefore, be correct to take ujjayati ‘wins’ only with the Soma cups, and not the Surā cups in the Brāhmaṇa passage; in the latter case ujjayati = *ujjhayati ‘abandons’.
SINGING IN LUSHAI

By
William BRIGHT, Poona

Students of linguistics, when first becoming acquainted with tone languages, sometimes wonder how such languages are sung: is there any agreement between the phonemic pitches of syllables and the pitches of the song melody; or is one pitch system sacrificed, as it were, to the other? Information on the question has been given by George Herzog for the Navaho language of the South-western United States, and by Y. R. Chao for Mandarin Chinese. The different answers given for these two cases point up the fact that no general answer can be given to the question, and that each tone language must be investigated separately.

In connection with the 1956 Summer School of Linguistics at Deccan College, Poona, the situation has been investigated in Lushai, a Tibeto-Burman language of Assam. The source of information was Mr. Lal Renga SAILO, whose home is the town of Hmawngkawn in the northern Lushai Hills. He proved to be both an excellent linguistic informant and an accomplished singer, and I wish to record my gratitude to him.

As a preliminary to the discussion of singing style in Lushai, a brief discussion of Lushai phonemes may be in order. Lushai phonology has been described by Eugénie J. A. HENDERSON, and her ‘systematic’ transcription is equivalent to a phonemic notation. The distributional statements given by her, however, are not completely adequate in terms of Mr. SAILO’s speech.

The syllable in Lushai may be defined as the sequence of consonants and vowels occurring with one of four contrasting tones. These tones may be written as follows: /\_/ high level; /\_/ high-to-low falling; /\_/ mid level in syllables ending with a short vowel, mid-to-low falling elsewhere; /\_/ low-to-high rising.

1. The term ‘tone language’ is here used as defined by K. L. PIKE, Tone Languages (University of Michigan Publications, Linguistics, vol. 4; Ann Arbor, 1948), p. 3.
SINGING IN LUSHAI

Lushai utterances begin with one of thirty-one contrasting consonantal sounds. Of these, seventeen are, relatively speaking, phonetically simple, and can be established without serious question as single phonemes: /b d g, p t k ?, v z, f s, l r, m n n/ . All the remaining initials, in spite of their greater phonetic complexity, may then be also interpreted as units, so that a syllable pattern with single initial consonant phoneme is recognised as prevailing throughout the language. We thus have aspirated stops /ph th kh/, sonorants with voiceless onset /hl hr hm hn hŋ/, plain affricates /tl tr c/, and aspirated affricates /thl thr ch/. It should be emphasised that digraphs and trigraphs such as /ph hl tl thl/ are used only for graphic convenience, and are intended to represent single phonemes in each case.

Of the contrasting syllabic elements which follow the initial, five are phonetically simple; these are the short vowel phonemes /i e a o u/. From this inventory, a pair of two-phoneme vowel clusters are formed: /ia ua/, pronounced as even-level diphthongs. Following this precedent, phonetically long vowels may be regarded as clusters of identical vowels: /ii ee aa oo uu/ .

Syllable-final elements include the single consonants /p t k ? l r m n n/ and the clusters /i? r?/. In addition, final semivowels occur, with or without following glottal stop: phonetically, [i u i ? u ?]. If these semivowels are considered allophones of /i u/, the phonemic inventory is kept at a minimum, but clusters of three phonemic vowels must then be recognised in sequences like [iai iau uai]. If, on the other hand, the semivowels are considered as occurrences of phonemes /y w/, the phonemic inventory is increased, but the sequences /iay iaw uay/ can be accommodated in the same VVC pattern as /iap iam uap/.

The latter analysis is supported by the fact that the proposed phonemes /y w/ also occur as syllable initials—not at the beginning of an utterance, but internally, as a result of sandhi change. Thus /hnãay / 'near' plus the question-marker /?em/ is pronounced in slow speech as /hnãay-?em/, but more normally as /hnãa-yem/ 'is it near?'; /záaw/ 'wide' in a similar situation produces slow /záaw-?em/ and normal /záa-wem/ , 'is it wide'? 15

The present data differs from HENDERSON'S in showing contrast between single (short) and double (long) vowels before syllable-final semi-

5. The proposed /yw/ remain in complementary distribution with /iu/ respectively. They are considered separate phonemes, however, following the principle given as follows by K. L. PRINZ, Phonemes (University of Michigan Publication, Linguistics, vol. 3; Ann Arbor, 1947), page 137: 'Two sounds are submembers of a single phoneme provided...that the total distribution of the submembers united into a single phoneme does not give a heavily nonsymmetrical result out of balance with the pressures of non-suspicious sequences in the language.'
vowels: thus /z̥a̞y/ 'to cut', /s̥a̞y/ 'elephant'; /n̥e̞y/ 'to have'; /n̥e̞ey/ 'certain'; /s̥o̞y/ 'to say', /s̥o̞oy/ 'to punish'; /hm̥u̞y/ 'spindle', /hm̥u̞uy/ 'lip'.

In terms of the above phonemes, the Lushai syllable can be said to consist of a tone plus one of the segmental patterns CV, CVV, CVC', CVVC', and CVC'''. In these formulae, C is any consonant; C' is one of the voiceless stops /p t k ?/ or one of the voiced sonorants /l r m n w y/; C'' is one of the non-nasal voiced sonorants /l r w y/. To this statement only one exception has been found: a word meaning 'steep' is pronounced either as /?d̥o̞y/, or as /?d̥o̞y?/, where the second alternant introduces a pattern CVVC''''.

The system of phonemic notation here proposed must be supplemented by one other symbol: the hyphen, indicating syllable division. This is not itself a phonemic feature, but simply a device for distinguishing medial consonant clusters from the medial single consonants which are written with digraphs; thus /tʰl̥a̞-tʰɔ̞r/ 'new moon' is distinguished from a hypothetical */thl̥a̞tʰ-ɔ̞r/.

It may be of value to compare this phonemic writing with the Roman orthography in use among the largely literate Lushai people. This practical spelling, invented by Christian missionaries, ignores tone completely. Its symbolisation of the consonants and vowels is, however, fairly accurate. Most of the phonemes are written in the same ways proposed in this paper; the exceptions are t for /tʰr/, th for /tʰr/, ch for /c/, chh for /ch/, ng for /n/, ngh for /hn/, no symbol for syllable-initial /?/, h for syllable-final /?/ (as well as for initial /h/), i for /y/, u for /w/, and aw for /o/. Phonemic double vowels are written with a circumflex accent, except when syllable-final and before semi-vowels, in which cases they are usually not distinguished. Syllable division is normally not indicated, so that a word like chakai /cʰa̞k-a̞-ʔa̞y/ 'crab' could be mistaken for a hypothetical */cʰa̞-kʰa̞y/ or the like.

Two samples of Lushai singing may now be considered. The first is one verse of a modern song entitled (in conventional spelling) 'Mizo kan nih kan lâwm e,' with words and music by a composer named Rokûnga. The informant sang it from a song book entitled Thalaite Hla Bu (Aijal, Welsh Mission Bookroom, 1952). The words are here recorded phonemically as


7. This is the orthography used in James Herbert Lorrain's Dictionary of the Lushai Language (Bibliotheca Indica, Work No. 261), Calcutta, Royal Asiatic Society of Bengal, 1940.
pronounced when spoken rather than sung. The melody has been transcribed, with the help of my colleague E. C. Dimock, in terms of notes of the treble staff. Notes of the lower octave are underlined. Sharps and flats are indicated by plus and minus signs respectively. The length of each note is indicated by a fraction following it; a raised dot after a fraction indicates an added half length. Diagonal lines indicate bar divisions.

\[
\begin{align*}
C_4^\# & F_4^\# \cdot F_4^\# \cdot -B_5^\# / C_4^\# \cdot A_4^\# F_4^\# \cdot -B_4^\# / A_4^\# \cdot A_4^\# -B_4^\# \cdot A_4^\# / G_4^\# \\
C_5^\# / F_5^\# \cdot F_5^\# \cdot -B_5^\# / C_5^\# \cdot A_5^\# F_5^\# \cdot -B_4^\# / A_4^\# \cdot F_4^\# G_4^\# \cdot G_3^\# / F_4^\# \\
E_3^\# / E_3^\# E_3^\# F_3^\# E_3^\# / E_3^\# E_3^\# D_3^\# F_3^\# / G_3^\# G_3^\# F_3^\# E_3^\# D_3^\# / C_3^\# \\
Kăn rếi rừu pô? ò saa nè kăn hmìó? ò thành bok sìi
\end{align*}
\]

A free translation runs as follows: 'We are glad that we are hill people. Our hills are pure, our minds are high, and our name is known. For the welfare of our country and community, purifying our hearts, let us use properly our bravery, our knowledge, and our wisdom.'

A comparison of lexical tones with song pitch in this material shows no particular agreement between them. Thus, in the first line, the rising-tone syllable kăn, lōo, and sìi are sung with level or falling pitches. The only falling-tone syllables of the song, rûu (line 2) and fn (line 4), are both sung with level pitches. The falling pitches which are sung in the first two lines replace lexical tones which are rising and high.

This lack of correspondence might, perhaps, be expected in modern Lushai songs, which, like this one, are strongly influenced by Occidental music. It is also possible, however, to examine a 'old song', one which presumably antedates contact with the West. Such a song is the following:

\[
\begin{align*}
D_4^\# & D_3^\# G_3^\# / B_4^\# -B_4^\# / B_3^\# B_4^\# A_4^\# G_4^\# \\
\text{hmìa nà? cuán khùa hmùn} & \text{ò léen kăn nìi} \\
/D_4^\# G_4^\# B_4^\# B_3^\# / A_4^\# G_4^\# \\
\text{ò là léen kăn nìi} \\
D_4^\# & D_3^\# G_3^\# / G_3^\# -B_3^\# B_3^\# -B_3^\# G_3^\# / B_3^\# B_3^\# B_3^\# \\
tùu nà? \text{ò rò? òan nèem thàn} & \text{hniàn kăn kàa rà?} \\
B_4^\# & D_4^\# B_4^\# -B_4^\# B_3^\# A_4^\#/ G_4^\# B_4^\# B_4^\# A_4^\#/ G_3^\# \\
mùal zà pùy ò in & \text{mìn lōo dàn tâa òè}
\end{align*}
\]
A free translation is: 'In the past we lived, we lived in the same village. But now between us faithful friends a great obstacle has come. Alas, alas, what longing, what longing!'

Comparison of the two systems here again shows a lack of correspondence. Of the eleven rising-tone syllables in the song, for example, ten are sung on even pitches and one on a falling pitch. The seven falling pitches of the melody replace three mid-to-low falling tones, two high-level tones, two rising tones, and one high-to-low falling tone.

It thus appears that the sacrifice of lexical tone to song pitch is not a new phenomenon in Lushai singing, but may well be aboriginal. Since differences of tone serve to distinguish meaning in Lushai, we may wonder whether the complete distortion of lexical tone in singing makes it difficult to understand the words of songs. The informant's answer is, 'It is not difficult for us.' That is, the tone contrasts of Lushai may be completely obliterated without seriously obscuring the meaning of sentences—a sign of the language's redundancy. To quote Hockett, 'This redundancy implies that, most of the time, a certain amount of distortion, added to the message at one point or another along the route it follows, leaves the message still intelligible.'

8. As in pûm 'whole', pûm 'to ripen', pûm 'belly,' and pûm 'splash'.
“SAMSKRT ‘KAVA’ AND RELATED WORDS”

By

Rev. A. Esteller, S.J., Bombay

Under the title “Sanskrit kava- and related words”* T. Burrow (the well-known author of the excellent book “The Sanskrit language”) has followed up a study made by H. W. Bailey in “Transactions of the Philological Society,” 1954, pp. 144ff.—where the latter draws attention to an Indo-Iranian base kav-: ku “to be small”.

1. Burrow’s Explanation.

The study of this base and its applications and derivatives in Sanskrit gives T. Burrow the opportunity of throwing abundant and new light on a host of Sanskrit words. I shall list here the chief ones so as to excite the reader’s curiosity towards his masterly treatment of this particular problem:

1. kurnāra, komala
2. kavapatha, kavagni, kavoṣṇa
3. kava-tīryaṇc-, kavāri, kavatnu-
4. akava-
5. ku- as first element in many compounds
6. kād-, kā-, kim, as first element of compounds
7. kubja- vs. urubja-
8. akūpāra- vs. pūrtam, pūrti-

Burrow’s brilliant analysis and his thorough and wide-ranging gathering of all relevant facts yields a fine harvest of new and illuminating results, as the interested reader will find for himself.

My purpose is to try and throw further light on one particular point: the use of kā- (kād., kim) vs. ku- as first element of compounds.

Burrow’s explanation, with which I, on the whole, fully agree, is:

(a) ku- has nothing to do with the interrogative pronoun; but belongs to this base and root: kū : kava.

(b) Its original meaning is "small", not "bad"—but the pejorative meaning is semantically derived secondarily over "too small, mean, inadequate, deficient", as testified by examples and their meaning.

(c) The use of interrogative pronoun forms as pejorative prefixes, similar to ku- is to be explained as a purely Indo-Āryan analogical development, due to "the homophony existing between ku- "little, poor" and the interrogative ku- (in kútra, kúha, etc.). Confusion between these two, and connecting them whether consciously or unconsciously, led to other forms of pronominal stem being used like the pejorative ku-. The commonest form so used is the neuter kad-, and in this case, there was obviously a striving to avoid using ku- before vowels, because in that case it would lose its syllabic quality. The feminine kā- is much less frequently used and tends to carry with it an additional idea of effeminacy, as in kāpuruṣa-. The neuter kīm is laid down in P. 2, 1, 64 to be so used in the sense of blame, but it is only very sparingly so used”.

2. A more complete solution.

It is the anomaly of the use of the feminine kā- that should arouse our suspicions and lead us on to find a more complete and satisfactory solution to this problem. Büttrow’s implied explanation (that its use was connected with the fact that it tended to carry an additional idea of effeminacy) is not satisfactory, since his very example ("kāpuruṣa") indicates that this idea comes from its being associated with "puruṣa". In a patriarchally-minded culture a deficient man is a womanish man almost necessarily.

I think we shall be on the right path if we take into account both the historical and the linguistic-phonetic aspects of the problem.

(a) kā- vs. kava-

The starting point is one word that is most likely to be the same—only represented in two different historical and linguistic phonetic stages: kavapatha: kāpatha.

Kavapatha is attested by Pāṇini as occurring in a (now extinct) vedic text, but kāpatha is evidently taken from the later śiṣṭa language which was already being penetrated by MIA (Pāli-prākritic) phonetic developments—one of the chief and earliest ones being the weakening of intervocalic -v-y- (as witness the ṛṣvedic intruder prauna!). This, in conjunction with the presence of the labial -p-, would naturally lead to an assimilating influence—giving a living word, as pronounced: kavapatha: kaa(v)pātha: kāpatha. And since the other chief word is kāpuruṣa and it offers the same phonetic conditions (reinforced by the presence of the u-vowel after the -p-), we can
all the more find satisfaction in the process: kava-puruṣa: kaa(v)puruṣa: kāpuruṣa. And this finds full confirmation in the next example: kavoṣṇa- (an old sūtra word) vs. koṣṇa; where the dissimilating influence of the u-tinged -auṣṇa: oṣṇa, on the one hand retained (in the literary language) for a time the syllable value of kava-uṣṇa while on the other, the popular trend went the whole hog towards pāli-prākritic koṣṇa (over kauṣṇa). That the last example of the series also confirms this explanation should not be difficult to see: ka(v)akṣa: kaṅkṣa: kāṅkṣa—where the following guttural was an extra help for the disappearance of the -v-.

(b) kad- vs. kava- and ku-

Since the above explanation is complete and satisfactory, we can take a step forward and examine the case of the compounds with kad. Leaving aside the formerly mis-interpreted kad-artha (of X, 22, 6), we have an old vedic kava + ari: kavāri and akavāri (together with akava) protecting the trisyllabic pronunciation of the similar *kavārya- which we can safely assume, since the very existence of kavāri and kavākṣa and kavoṣṇa shows the artificiality or lateness of Pāṇini’s rule about the substitution of kad for ku before vowels. The trend of the old language was rather to substitute kava for ku in such a case: that is shown both by the old examples studied above and by the natural striving for clearness to keep the two elements distinct—as against the trend towards a kṣaipra-fusion: hence kavāri, not kvāri, etc.

So, on the one hand, the similarity in sense and sounds with kavāri tended to keep ka(v)ārya vs. kārya (which would be the natural evolution of the word in the spoken language) trisyllabic, and on the other hand the presence of the homonymous “kārya” must have worked for a dissimilation of the two. Hence the hiatus-state ka(v)a: kaārya (which would naturally tend to equalise the two vowels) must have worked towards a hiatus-bridging ka(y)ārya, which was then resanskriticised as kadarya—since any reconstruction as kā(h)ārya—would have meant a kōrya (unexemplified elsewhere in the language), while a kim-arya would have meant a different word. On the other hand the very existence of the word kad-artha and kad-vat in ancient texts must have supplied the necessary support and analogy—together, above all, with the analogical formations already accepted in kāpatha kāpuruṣa, etc., which made an interrogative-like first element acceptable.

(c) kim- vs. ku-

This was reinforced by the case of kimpuruṣa. Here we have to start from a natural doublet of kava-puruṣa: ku-puruṣa. Such a word would, in the living later language, give a “ku(m)puṣra”—which is phonetically-linguisti-
cally, it seems to me, a "natural"; and then the -u- between a k and (m)pu-
would become indistinct enough to suffer the influence of the many words
of the language compounded with kim- (beginning with rgyvedic kimyu,
kimmaya, to say nothing of kincit with its trend to a deprecative meaning)
while there was nothing in the language to help an initial kum-. Add to
this the obvious likelihood that a living trend to dissimilation (of the three
consecutive -u-) would operate: whence kimpurusa for ku(m)purusa.

On the other hand, it is natural to expect that the spoken language
would have such doubles kavapuruṣa: kupuruṣa, since kava was dying out,
while ku- remained a living and lively factor in the further development of
the "śiṣṭa-bhāṣā". Hence the double occurrence of kāpuruṣa: ku(m)puruṣa-
kimpuruṣa and the others pointed out above. (Cf. also kāpatha: kavapatha
vs. kusṛti). Moreover, in the case of kimpuruṣa the tendency to assimilate
it to the interrogative pronoun must have been practically irresistible, owing
to the simultaneous existence of what looked like an obvious feminine parallel
in kā-puruṣa; so much so that even without any other linguistic-phonetic
trend at work this would be the likeliest explanation in this particular case.
But the palatal trend of samskṛt gutturals in general will also have partially
helped.

With all the above cases at work on the analogical feeling of the deve-
loping language, the only other case in older vedic texts is easier to explain:
kimśila- "having small gravel-stones". On the one hand, if the original was
kuśila- a pronunciation ku(m)śila- with an assimilatory trend to kimśila
would be quite on the cards. But two further factors would naturally ope-
rate towards the same change: first, the desire to differentiate it both from
kuśala and from kuśila; second, the fact that, as the language developed, the
meaning of ku- as "small" was disappearing and only the meaning "bad" was
alive. Now it was nonsense to call a field that had only "small" stones
(original meaning of the word) a "bad-stone-filled" one; for, having small
stones, it was rather praiseworthy than censurable; while the substitu-
tion of kim allowed the word to be classed among those that contained
the merely depreciating kim of the later kimpuruṣa sort, which meant "having
no stones worth considering". Hence this seems to be a wilful remodelling
of the word under the influence of the semantic evolution of ku-, besides
the analogical and other possible reasons indicated above. (And this applies
also to kimpuruṣa-).

3. A word on the right method

In the course of the above essay, I have tried to show in actual
practice the method of studying the phenomena of Samskṛt as living-
phonetic-linguistic facts. For it is my deep conviction that the study of
Sanskrit, not as a literature but as a language, has been too much under the spell of the mere written-printed word—forgetting often, to its own undoing—that Sanskrit is primordially an oral-aucular fact and that the MSS or books, especially in the oldest stages, are only representations of an oral-living reality. This in India and with regard to Sanskrit is, if anything, more true than in the case of practically any other language. We have always to break through the written letter to the living speech behind: through the dead lipi to the living śrutī. The unifying simplicity and thorough covering of all the recorded facts in a satisfactory manner should be a further recommendation for this explanation: ku-: kav- plus the living language explain everything.

4. A Confirmation in point.

In an article in INDICA (Silver Jubilee Volume of the Indian Historical Research Institute, Bombay, 1953) this writer gave the outline of the new approach to a text-critical reconstruction of the Rgveda Samhitā on which he is preparing a work for the near future. It is based on the fact indicated above that the ṛgvedic text must be viewed and weighed (as against the epic texts!) as an ancient living oral-rhythmic literary product re-edited by much later mere-grammarians, whose own living speech had evolved, towards Pāṇini and away from the rṣis, to a very large extent. The Samhitā is thus a palimpsest: This, in itself is no new discovery; but the ruthlessly logical application of its corollaries leads to astounding results. Let us give a sample.

(a) “kavā-sakhaḥ” (hap. leg.) and its lessons.

The ṛgvedic words around kava- (connected with the above problem) include, besides a-kava- (5 times), the forms kavā-sakhaḥ (once), kavāri- (once) and akavāri- (twice). What akavāri is should be clear from another precious (hap. leg.) relic: bṛhad-ṛi hence it is a + kava + ṛi. Therefore the original form is really “akavari” and the lengthening of the ā in -va- is a mere rhythmic one, subject (for the ṛṣi-kavis!) to the exigencies of rhythm and metre. In the case of kavā-sakhaḥ it is demanded by its metrical position (V, 34, 3) : (I transcribe the texts restoring diphthongs, visargas, kṣaipras and the yati-avasānas. + means samādhi):

(a) yā(ḥ) asmāi ghraṃsāi uta vā yā(ḥ) ūdhani
(b) sōmaṃ suṇoti bhāvati dyumāṃ āha
(c) āpāpa śakrā(ḥ) tatanūṣṭim ūhati
(d) tanāśubhram maghāvā yāḥ kavāsakhaḥ
But any novice in ṛgvedic metrical lore (as we indicated in our article referred to above) can detect the redactorial touches here, while the real expert will further see the principles that led the redactors to change the true ṛṣi original which must have been (as we shall more conclusively show in our coming work):

(a) ghraṃṣai ya(ḥ) asmāi uta vā ya(ḥ) ādhāni
(b) somaṃ sunoti, dyumaṃ bhavāti saḥ
(c) apa + aha śakraḥ tatanustim ūhati
(d) tanūsabhraṃ maghavā + i(m) yaḥ kavāsakhaḥ

That the redactor wanted his yaḥ in the regular-normal initial position in pāda-a (though it kills the initial rhythm, so beautifully exemplified in pāda-b)—is clear; and so is too that the yaḥ in a demands a saḥ in b; but the redactor has lost the living use of the vowel-resolution and the rhythmical lengthening in dyumān + bhavatī, and cannot make a decent jagati except with the “clever” changes he makes in words and their order. As for c, the same redactor, who has lost the freedom of rhythmical lengthening, would necessarily shun an initial apa + ha, and besides would want to avoid the possible misunderstanding (apāha)—hence the easy trick of repeating the preposition apa and avoiding the tabu-beginning of a pāda with 3-hrasvas! But it is also equally likely that the redactor had either misanalysed apa + ha as apa + aha, or (as we have assumed) still more likely that he actually had an original apa + aha, from which he borrowed his “aha” for the editing of the, for him faulty previous pāda b. This makes us rather prefer apa + aha, at least provisionally. Finally the deictic i(m) in pāda d gets lost in a reciter’s haplology with the adjoining yaḥ. But the meaning and the position of the words simply demand it unquestionably.

All this seems unnecessary—and it is so, as far as the mere pivot-word kavāsakhaḥ is concerned; but it paves the way for the next step. For it shows quite blatantly how the redactor is led by his grammatical preconceptions (born of a later linguistic stage) to edit the text—just as we all know incontrovertibly that he did systematically do in countless cases with the samādi conventions. And this logically makes him guilty (on principle!) of such-like tamperings, the moment he can be suspected of meddling with the rhythm-pattern or with archaic speech trends. The benefit of the doubt is for the archaic ṛṣi—against the redhanded later-day meddling that the sanāhītā-kāra is proven to be.

(b) The influence on the “(a)-kavāriḥ” group

Now, for the next step, the first thing to note is that the above kavāsakhaḥ is the one and only (hap. leg.) compound with kava- which occurs
in the family-books besides our akavāri (twice only), and that the only other compound with kava, kavāri, is an hap. leg. in X, 107, 3. The second thing to notice is that, wherever it occurs, akavāri or kavāri invariably breaks the rhythm-pattern, if taken as written in the samhitā—while if it were written in the etymological way, a-kavā-ri, it would be, on the one hand, unbearable to the samhitā-kāra (because it always would involve for him a taboo 3-hrasva beginning of pāda—which he will only accept à contrecoeur when all his tricks fail to produce something rhythmically better!) but perfectly viable to the ṛṣi-kavi, who would most naturally-normally make use of the ancient rhythmical lengthening and read a-kāva-riḥ, thus giving a perfect initial rhythm.

Therefore, it is absolutely certain (and we shall further confirm it in our coming work with innumerable cases scattered over the whole samhitā) in the light of what we have said above that the samhitā-kāra has followed that analogical trend so well exposed by Oldenberg (especially in its, so often and obviously, completely mistaken and even foolishly misguided applications): he has made of the correct kavā-sakhaḥ his model for a rhythmically impossible (in situ!) a-kavā-ri— in order to avoid, on the one hand, an archaic form (akāvari-) which was against his speech-habits, and, on the other, a “correct” form (akavāri) which would deform his (traditionally preserved!) rhythm-pattern in a major way. His “correction” leaves only a, for him, minor ārṣa blemish: a pāda beginning with two (only!) hrasva-syllables. The latter he has to grin and bear, because no amount of redactorial juggling with the actual archaic text can allow him to escape that (and even much worse things in extreme cases)—owing to his traditional materials and the partial conservatism of his milieu, and to his later-day, sacrosanct, grammatical preconceptions and conventions. There is one more force at work that helped the redactor: the levelling trend (also analogical!) in the living speech that tended to stabilise certain lengthenings in the daily language, as against the literary, more archaic one. For instance, kavā-sakhaḥ would tend to be stabilised as kavāsakhaḥ, because that rhythmical lengthening would fit always in whatever prose-position the word might happen to be, and, besides, it would be supported by the many other stereotyped lengthenings of the last syllable of a first member of a compound. But a kavi could say a-kavāsakhaḥ, ākavāsakhaḥ, a-kavāsakhaḥ by a free-archaic application of the “Dehnungsgesetz” (which needs a formulation very different from that of Wackernagel’s, as we hope convincingly to show in our work). Hence a-kavārī may have slowly become fixed-crystallised in the living prose-language of the samhitākāra, and, hence, facilitated his editing the ārṣa text with an easy conscience.
(c) The "(a)-kavāri" texts reconstructed

With this in mind, it will now be easy to see that the original text of the passages here concerned must have been:

III. 47, 5:

(a) marūtvantaṁ vṛṣabhāṁ vāyṛdhānāṁ
(b) ākāvarim ṭrivyāṁ śāsām īndrāṁ
(c) viśvāsāham āvasai nūtanāya
(d) ugrām sahodām ihá tāṁ huvaima

That the kavi who has wrought out such perfectly rhythmical pādas a+c+d, should, of a sudden, go in for an akavārim in b, is simply an insult to our ancient ṛṣis—and calling it "ārṣa" is just adding insult to injury, while, at the same time, committing text-critical (and rational) harakiri. No less! (There is one more fundamental reason why we feel certain of the above—but we shall come out with its full weight in our coming work. Yet it is stamped on the above text and on the whole saṃhitā so boldly that he who runs may read.) The word "viśvāsāham" is worthy of note, since it is one of those which (being originally an a-luk "viśvā(-ni) sāham" or its equivalent) gave rise to the kavis' freedom in lengthening the last syllable of the first member of a compound even beyond the limits of the normal 3-hrasva position.

X. 107, 3:

(a) dāvī pūrtiḥ dākṣinā daivayajyā
(b) nā kāvarībhyaḥ, na prṇānti tā hi
(c) āthā nāraḥ prā-yatadakṣināḥ
(d) avadyabhīṣṭā bahāvah prṇanti

Again, here: that the kavi who wrought out a+c (with such an obvious and perfect use of the rhythmical lengthening in c: athā naraḥ) should fail in the rhythm of b, is simply unthinkable; and so is that, in that same pāda, he should try to fill his metre with the double-termination -āsas (which we shall prove to be a slick redactional trick of the ṛgvedic saṃhitā-kāra’s—among many similar ones!) when he had at his disposal his normal vowel-resolution and rhythmical lengthening: dakṣināḥ. (How the ṛṣis must have turned in their graves at such bold tamperings!) Again, that a kavi should end two pādas in the same stanza with the same word in the same meaning, when the rhythm allows him a variation, as shown above in b—no, surely! But for the pedestrian grammarian of a saṃhitā-kāra, the "usual" prose order is more natural, and he prefers it, since he can manipulate the words so as to keep the rhythm-pattern—but
so can we, to avoid monotony, as we did above, and so (only more so!) could and would a self-respecting kavi! Finally the rhythm-murdering “avadyabhīṣā” is obviously a redactorial modernisation-analogy to avoid the obsolescent (3 times only!) bhīṣā (which later on is used as a nom. singular fem.) Or could we think of a “short” instrumental “abadya-bhī” with vowel-resolution and rhythmical lengthening, or, simply, of a bhvṛ. “avadya-bhīyāḥ” with an, in that case, also legitimate rhythmical lengthening?

The increasing weight of the accumulated redactorial indications above almost irresistibly points to the real kavi-original of the most important and final passage of this series:

VII. 96, 3:

(a) bhadrā (y)i bhadrāṁ kṛṇavat sārśvatī
drvāriḥ caitad i(η) vājīṁvatī
gṛṇānā jamadagnivat
(d) sūvānā+uta (?) vasiśṭhavat

That the real ancient word to be expected in b is, akavariṣ (with the double-purpose (masc. + fem.) -iḥ termination of the one-and-only word known in all the other occurrences of -riḥ !) should be evident, as also that the redactor would make it into an ī-terminating fem. To this he would be led by all his analogical trends: first, that in all the other cases -riḥ is actually used for masculines; second, that in this text it is surrounded by ī-ending feminines (besides the -ā ones, also exclusively feminine!); third, that the reciters before him had most likely already fallen into the same trap, both by analogy, propinquity (to the immediately preceding sarasvatī!) and by an almost natural assimilating haplography (iścai: -i(c)cai:- icai-). The latter would be made easier still by the fact that the yati in its most ancient form made a real avasāna with never a samdhī over it: hence akavariṣ cai- would still more irresistibly lead to -ri(h)ca:-ri ca-! On the other hand, that the deictic im in b (obsolescent as it is!) would be made into a single word with the injunctive “caitāt”, owing to its accentlessness, is but natural; as also is that the trend to samdhī (caitādim) should be reversed (by the reciters and redactor) owing to the presence of the adjacent -ta and the haplographic absorption of the anusvāra (in i-m) into the adjoining vā-. But the force of the parallel accompanying subjunctive-imperative kṛṇavat in a is an unmistakable pointer in that direction, (though, absolutely speaking, it could also be an augmentless imperfect). The reason why the redactor had to change the original bhadrā i bhadram into the rhythm-slaughtering bhadram id bhadrā is because for him the reciters’ bhadrāḥ: bhadre had normally to be considered as bhadrā + id + bhadram — and then to be shuffled, because else
he will have to make a sāṃdhi and lose one syllable! But the kavi could keep the two syllables even more easily-naturally than when freely using his well-known vowel-resolution in the gen. pl. -aam! And how obvious it is here that bhadrā (i) bhadrāṃ kṛṇavat sarasvatī is the natural and most appropriate order for the two bhadrā-forms! Finally the use of ca in d, though not impairing anything in sense or rhythm, is suspect of redactorial tidying up, (both for clearness and against possible misunderstandings) from an original:

“stuvānā + uta vasiṣṭhavat”

—which might easily sound like “stuvā nā + uta” or some such barbaric-nonsensical thing. Grammar and sense always take precedence over mere text details (especially if unimportant or only archaic) for the redactor!

5. Results for ṛgvedic text-criticism

The results of the above study involve an almost complete revolution in ṛgvedic text-criticism. We hope shortly further to prove every implication to the hilt—though the above samples should carry sufficient conviction to subject the method here employed to a full test as a working hypothesis of solid standing. That this will lead to a thorough and far-reaching reshaping of what even giants (like OLDENBERG, WACKERNAGEL and GELDNER) have had to say will appear to any thoughtful ṛgvedic scholar—but it will also lead to a very full restoration of our ancient glorious ṛṣis to the place of honour as kavis that has been systematically denied them from the days when the saṃhitā-kāra first threw upon their poetic creations the māyā-jāla of his semi-Pāṇinian grammatical-pedantic obsession.

As an earnest of those results we have here:

(i) the restoration of the real ṛṣi-kavis’ text in the several key-stanzas above;

(ii) the real meaning and form of kava-riḥ a-kava-riḥ (which should be thus entered in GRASSMANN);

(iii) the fact that the feminine a-kavari did not exist in the ṛṣis’ language;

(iv) the first foundation-stone of the proof that the ṛṣi-kavis are never at fault in rhythm and that all rhythmical faults are the work of a later redactorial hand—the saṃhitā-kāra’s!

N.B. (1) The correct rhythmical use “in situ” (by the Saṃhitā) of tauā-ṝḥ, turā-ṝḥ vs turṝyaḥ, turṝ-ṝtu confirms the above explanation tauā-ṝḥ. — (2) The possible origin (cfr. MAYRHOFER) of “kimnara” (as the basis of kimpurusa?) from an archaic semitic loan-word also confirms our main findings above. — (3) A haplology could also explain VII, 96, 3a; “bhadrā bhadrāṃ kṛṇavat+tat sarasvatī”.
THE LANGUAGES AND DIALECTS SPOKEN IN ORISSA

By

G. B. Dhall, Agra

Oriya, one of the major Indo-Aryan languages spoken in the state of Orissa, is one of the fourteen languages recognised by the constitution of India. Beyond the borders of Orissa, this language has many speakers distributed in the states of Behar, Bengal, Madhyapradesh and Andhra. Oriya is the anglicised form of the real name Odia [Oḍia] which is so called on account of its being the language of Odra which is an ancient name for the country known to the English as Orissa. Outside Orissa the name is mispronounced by many people as [uṭija].

Orissa fought long against the foreigners and came very late under British influence and later still under the British system of education. For many years the administrative machinery was manned by people from outside, who almost formed a part of the people of the State. The process of linguistic integration is going on even today although for very different reasons on a much larger scale than ever. Major projects like the Hirakud Dam project (one of the biggest in Asia) and the Raurkela steel plant project contribute very greatly towards linguistic inter-mixture. The refugee settlements have also created linguistic pockets in this State as elsewhere. For several of these reasons Orissa has been and is a home of many languages and dialects a short account of which is provided in these few pages. This little essay may interest people who deal with dialect standardisation.*

Besides Oriya, which is the recognised language of the State, a number of other languages of secondary importance are also spoken in different parts of the State. For reasons not connected with linguistics, Orissa has been a place of residence for many non-speakers of Oriya who speak some or other of the Indo-European or Dravidian languages. As will be clear from the last census one-fifth of the State’s entire population consists of tribesmen who speak a number of languages which possess no records. The languages spoken in Orissa may conveniently be classed under three well recognised language categories, viz. Indo-European, Dravidian and Austro.

*This was discussed in a seminar in the Poona School by an American linguist friend Uriel Weinreich interested in problems of dialects and standardisation.
Among the Indo-European languages we have Oriya, Bengali, Hindi, Gujarati, Marwari, Chattisgarhi and a foreign language English. Tamil and Telugu of the Dravidian group are spoken mostly on the southern border of the State. The Austric group consists of languages like Bhumij, Bhuyan, Gond, Gadba, Ho, Kondh, Kol, Kui, Kisan, Laria, Munda, Mundari, Orang; Patua, Saura and Santali.

As elsewhere in India, the educated people of Orissa speak English as their second language. Since the inclusion of Hindi in the school curriculum and introduction of Hindi films for entertainment many people get scope to learn and speak Hindi with ease. Even without training in Hindi and Bengali, the educated people can instinctively understand them and can speak both languages without strict observance of grammatical rules. In several parts of Orissa men with very little or no education can smatter a few words or phases in Hindi and Bengali. There is a common saying that an Oriya speaks Hindi when he gets angry. The Muslims though small in number speak Urdu in their homes and Oriya outside. It is interesting to note that the Pandas of Puri can speak any Indian language with ease because of their intercourse with visitors to Jagannath Puri from different corners of India.

The standard Oriya language, which is the language of books, of people at the University and in the office can be understood by Oriya people throughout the State inspite of the preponderating dialectic variations on the borderlands. Uptil now no survey of the dialects of Oriya has been undertaken nor is there any literature giving details in the matter. But then reference may profitably be made to some of the well-known dialectic variations of the standard language in the borderlands and in the heart of the underdeveloped Garjats which were until 1947 cut off from British Orissa as feudatory administrative units.

The people of the Garjats and those of the coastal districts of Orissa can be broadly divided linguistically into two major categories by reason of difference in intonation. The speech pattern of the people of the Garjats is still considered with some prejudice.

One of the very important dialects is Sambalpuri (the language of Sambalpur) spoken in the district of Sambalpur and in the neighbouring districts of Sundergarh, Kalahandi, Balangir and Bauda. It is a mixture of Sanskrit, Oriya, Hindi, Chattisgarhi and many other languages of the Austric group. This dialect is particularly interesting because of its vocabulary highly mixed up with the words of the tribal languages. It is interesting to note that though Sambalpur is far away from the Ganjam agency and the district of Koraput yet there is a high degree of similarity in the words
and their formation in the language of Sambalpur and in that of Ganjam and Koraput. This is because of the fact that Sambalpur in the West and Ganjam and Koraput in the South are chief centres of tribal culture. The languages of the coastal area are exposed to the influence of foreigners like the Muslims, Moguls and the Europeans particularly the English. The Sambalpur area being far away from the coastal districts was not so much exposed to foreign influence as is met within Balsore. But then for a long time included in Madhyapradesh, politically and socially cut off from the coastal Orissa, Sambalpur developed a language on very different lines. The characteristic difference of Sambalpur from that of the standard language lies in its very sweet musical intonation. The dialect is rich in folk songs and poetry but there is very scanty written literature. The people of Sambalpur are rightly proud of their linguistic heritage and an attempt however small is now being made to bring the language into print. Some scholars of Sambalpur refuse to accept Sambalpuri as a dialect but a separate language next to Oriya. They claim for Sambalpur dialect a position that Maithili possesses among the Behari group of languages.

The type of Oriya that is spoken in North Balsore, in some parts of Mayurbhanja and Midnapore can be treated as dialectal. It is greatly influenced by Bengali language. Illiterate people in those parts speak a language in which a sentence may begin in Oriya and end in Bengali or vice versa or a sentence may thoroughly be saturated with corrupt Bengali grammatical forms. The influence of Bengali is so predominant on the northern borders that small Oriya books popular among the common masses are written in Bengali characters though the language is Oriya. It may be remembered that for a long time Orissa formed a part of Bengal also.

A form of Oriya language spoken in South Orissa particularly in the districts of Ganjam and Koraput is a Telugu mixed version of Oriya, both the vocabulary and the intonation of which are very peculiar. The difference between standard Oriya, Sambalpuri and Dakshin (of the south) is so clear cut that they can be distinguished without effort. Many Oriya people in the border land speak Telugu as freely as they speak Oriya.

For a pretty long time the district of Ganjam formed a part of Madras where the Oriya speaking people were compelled to study Telugu along with Oriya. It is therefore no wonder that about fifty percent of the common Oriya words have Dravidian roots which is difficult to realise without proper linguistic outlook. But then the Dravidian languages are in essence so different from the Oriya language that even after hundreds of years of intercourse they have not influenced Oriya language in the way Bengali has influenced in the North and Hindi in the West of Orissa. It is rather interesting to notice that for about two hundred years Ganjam remained the centre of
Oriya literary culture and a number of outstanding figures like Gopal Krishna, Kavisurya and Gopinath Nanda had sprung from that dialectal area.

It is interesting to note that most of the tribesmen of Orissa inhabit the jungles of the Orissa Garjats and the districts of Ganjam, Koraput and Sambalpur. Among the Garjat areas (so called before the merging of the princely states in 1947) Mayurbhanja, Keunjhar, and Sundargarh are largely inhabited by the tribesmen. Alongside other important tribal languages, Mundari and Santali are spoken in Mayurbhanja and Saura, Kondha, Gadba and Paraja in Koraput. None of these languages possess any literature. Thanks are due to Christian missionaries who have worked on their languages however crude the method may be. It is for the first time in the linguistic school of Poona that some Indian Linguists including the writer with the help of Dr. John Gumperz, an American Linguist have just made a beginning in the scientific analysis of Mundari one of the important tribal languages. One outstanding Oriya novelist Sri Gopinath Mohanty has interested himself in the life and the language of the tribes people of Ganjam and Koraput. The Government of Orissa are making attempts at the anthropological study of the tribal people. The study of their languages is essentially necessary for the proper understanding of some aspects of Oriya language itself. Most of the tribesmen living on the borders of the Hindu villages understand and speak some sort of dialectal Oriya and influence it.

An account, however small, is given here of the chief tribal tongues distributed over the hills and dales of Orissa. Santali is one of the major tribal languages spoken by the largest number of tribal population of Orissa. They are concentrated in the district of Mayurbhanja and constitute twenty-three percent of the total population of that district. Arranged next in order of importance from the point of view of number come the speakers of Kondh, Kui, Saura and Ho.

The Kondhas inhabit mostly the districts of Ganjam, Koraput and Phulbani. A point of linguistic interest may be noted in the gradual dying out of the native language of the Kondhas in Phulbani due to regular intercourse between the Kondhas and the Oriyas. The Kondhas speak a sort of Oriya outside their homes; many families even speak Oriya inside their homes. It is interesting to know that much of the philological study of the Oriya vocabulary demands a knowledge of many of the tribal languages since the latter have greatly influenced the Oriya language. The speakers of Kui are sprinkled over the districts of Sundargarh, Kalahandi, Ganjam and Puri.

The Saoras of Ganjam and Koraput districts are known by various names. In Telugu they are known as Savara and in Oriya by Saura. They
speak a language belonging to the Munda family. Sir George Grierson thinks that their language is greatly influenced by Telugu and is closely related to Kharia and Juang. The speakers of Kui are distributed over the districts of Balsore, Mayurbhanja, Sundargarh and Kalahandi.

The Juangs and the Bhuyans inhabit the jungles of Keunjhar and Dhenkanal districts. The Juangs form the most important section of the tribal population of Keunjhar in the central belt of Orissa. They speak a language developed on the same lines as Mundari.

The Kisans of the Sundargarh district are one of the least known tribes of Orissa who live side by side with Orangs and their language shows traces of affinity with that of the Orangs. But much scientific study is necessary before anything can precisely be said about it.

To sum up the story of the tribal languages it may generally be said that though particular district regions are marked out for particular tribal people, there is a sprinkling of all types of tribesmen over the State of Orissa. These days education is being served to the tribal people in the medium of standard Oriya. To the extent it will succeed, Oriya language will be enriched and the tribal languages may ultimately be weakened into extinction, may be though in far distant future.

In the past, Oriya language has been mostly influenced by Sanskrit, Urdu, Arabic, Marathi and English so much so that the common man speaks a language unwittingly making use of a very mixed vocabulary. The future will provide ample interest to the linguists to come, when Hindi becomes the Lingua Franca of India and the tribal people are linguistically developed through a medium of standard Oriya.

Now the distribution of languages and dialects in Orissa stands as follows:

The standard Oriya language can be understood all over Orissa among the Oriya people, even in many cases partially understood by the tribal people. Major dialects of Oriya are spoken in Sambalpur in the West; Ganjam and Koraput in the South, Balsore in the North. Various unrecorded tribal languages are distributed all over Orissa particularly in the hills of the Garjats and the Agency areas of the districts.
CONTAMINATION IN PāLI

By

Madhusudhan Mallik, Santiniketan

An interesting feature in the development of the Pāli language from old Indo-Aryan in the formation of certain words is known as contamination. It is the fusion of two ideas or constructions when they rise up in the mind of the speaker simultaneously or follow so closely that the one gets mixed up with the other.

As an MIA idiom Pāli has followed the usual rules of phonetic changes and has turned and twisted words from OIA as it suited to its genius. In adapting it to its own, it has sometimes taken recourse to two or three sources for a single word and thus enabled us to discover contaminated words.

Contamination has spread in all branches (phonology, morphology and syntax) of the Pāli language. In morphology it is specially prominent. The Aorist, a distinct feature in the Vedas, has particularly provided a good ground for the formation of these sorts of words. Proper names are not immune from the sphere of its influence, cf. Aniruddha which is a contamination with the prefix '-anu'.

Thus ludda (ka), 'hunter' Mhvs. 28, from luddha (ka) is due perhaps to contamination with ludda—cruel, horrible, diabolical' Sn. 247 which is from OIA raudra; dovacassa—'unruliness, bad' M.I. 95—is a mixture of Skt. daurvacasya—'evil speech' and dauvratya—'disobedience', kaṭasi, J.I. 146, probably contamination of kaṭa + sīva (thikā), 'charnel-house', cf. kaṭa (?)—'a corpse', cemetery only in phrase kaṭasīn vaṭṭhethi; nīgantha, Vin. 1. 233, B. Sk. nirgrantha (Divy. 143) 'free from all ties', nir + gaṇthi, Pkt. nīgaṇṭha—'a member of the Jaina Order', a form confused between nir and ni; addasă, Vin. 11. 192, Skt. adṛkṣat, the doubling of the dental due to contamination with addakkhi (Skt. adṛkṣit); upakkiṭṭha—'defiled, soiled, impure', Vism. 13 and upakkiḷāsa—'anything that spoils, impurity, defilement' M. 1. 36, are, as Geiger says (vide Pāli Language and Literature — p. 79), perhaps contamination of upakkiṭṭha (upakkiṣṭa) and upakkesa (upakkeśa) with upakkiṭṭha and upakkiḷāsa (with svarabhakti vowel); ossajjati—'gives up, lets go' Sn. 270, a fusion of two roots √ sarj — 'gives up' and √ sarj — 'gives away'; vissajjati—'gives away' vi + sarj or sarj, the double ss after the analogy of nissajjati and ussajjati, cf. ossajjati for osajjati, the present vissajjati is not in use, the only forms of the simple verb system are the
following, ger. vissajja, usually written visajja in meanings 'setting free', grd. vissajjaniya, caus. vissajjeti; avassajati, J. IV. 425 'to let loose', ava + srj, perhaps ud + srj = Sk. utsrjati, although the usual Vedic form is avasrjati. The form ossajati puzzled the Buddhist Sanskrit writers in their Sanskritisation, apotsrjati = apa- + ut + srj (Divy. 203); oggata, 'gone down, sat', Vin. IV. 55, pp. of avagacchati, spelling gg on account of contrast with uggata, of avagamana, E. Muller (Pāli Grammar, p. 43) unwarrantedly puts oggata = apagata; okkasati — 'takes away' D. 11. 74, confusion of ut + √karṣ and ava + √karṣ; upapajjati 'to get to, to be reborn into' Sn. 584, may be upa + pad or a dialectic form of upajjati < ud — pad; upahacca — 'reducing, cutting short' J. V. 267, only in phrase upaparinibbānāya — 'coming to extinction after reducing the time of rebirths or after having almost reached the destruction of life', it may have a confusion with upahacca upajja uppajja as indicated by B. Sk. upapadāya — parinirvāyin; unnāda and unnāla — 'showing off, insolent', M.I. 32. Buddhaghosa has ud + nala but it is either a dissimilated form of ullala (n > l) ud — lal — 'to sport' meaning sporting, wild etc. or still more likely with a dialectal form of unnata, Pkt. unnata, although the Pāli commentator never thought of that, cf. with this the B.Sk. unnata in the same stock phrase uddhata unnata capala (M. Vastu 1. 305); ophuta — 'coveted' (D.I. 246) ava + unta (Sk. vrta vr, opp. apāvuta P. apāruta) and ava + phuṭa (phuṭa < phuṣ) always in combination avuta nivuta ophuta; tārayetum, Sn. 319 is a double construction, a contamination of tārayitum and tāretum.
THE UNPUBLISHED SONEPUR ORIYA INSCRIPTION OF THE TIME OF KING BHANUDEVA

By

K. B. TRIPATHI
R. College, Cuttack

The early Oriya inscriptions so far published from the western region of Orissa are very few in number. Apart from the Narsinghanath and Harishankar stone inscriptions\(^1\) in Sambalpur and Balangir districts which have been assigned to the 15th century, no early Oriya inscription appears to have been discovered in Western part of Orissa. A medieval Oriya inscription from Sonepur of the time of Virakishoredeva has been published in *BORS* 1920 Vol. VI. The history of the development of the Oriya language in this part of Orissa prior to the 15th century remains therefore obscure, as far as epigraphic evidence is concerned. In these circumstances, the discussion and publication of the text of an early Oriya inscription discovered in the town of Sonepur would be useful.

This early Oriya inscription is engraved on the upper part of black chlorite stone slab, the lower part of which is buried in the ground in front of the Khameshwari temple in the town of Sonepur, district—Bolangir, B.C. MAZUMDAR\(^2\) refers to the inscription and quotes a line from it as follows:—

\[ वे हरङ्ग ताप्यार मुण्डरे बज्जलाटं जद्दास्त्य पवेः \]

As we shall see MAZUMDAR's reading मुण्डरे (मुण्डरे) does not occur in the inscription. The word that occurs in its place is कपाले (कपाले), and again MAZUMDAR omits several expressions in the sentence as we shall see just now. According to him the inscription belongs to the 12th century but he does not give any reason for his view. Pandit Binayak MISHRA\(^3\) reproduces Mazumdar's reading mentioned above and likewise assigns the record to the 12th Century.

On 17-2-55 (when I and Sri B. Patt, M.A., B.L., B. Ed., as members of the Balangir Historical records survey committee visited Sonepur and examined the inscription) it was noticed that the stone slab containing the inscription was partly painted with vermilion. It was reported to us that it was an object of worship of the local people. We were further told by some local people that they had heard from old men that the inscription was discovered from a nearby field and was brought to the front of the

1. See *Indian Historical Quarterly*, 1936 September and Gopabandhu Anniversary Number, Samaj 1954, p. 55.
Khameswari temple. B. C. MAZUMDAR writing about Sonepur refers to one stone inscription of the Saka Year 1253 and he speaks of a slab of stone bearing an inscription as being unearthed from a heap of old ruins.

The stone slab containing the inscription stands about four feet from the ground and is about 2 feet from the ground. Though it stands completely exposed to sun's rays and rains, still it is remarkably well preserved. The inscription consists of 8 lines and the letters are deeply cut and distinct. The record is written in Proto-Oriya (or what BÜHLER calls Proto-Bengali) which is the ancestor of the modern Oriya script. Each letter of the inscription measures 1' × 4/5'. At the very outset the stone contains two figures which represent the top portion of Siva's trident.

Since the Narsinghnath and the Harisankar stone inscriptions are written in Oriya script (with top curves in place of the horizontal strokes of Proto-Oriya and since the Siddheswar temple Oriya inscription and the Poteswara temple Oriya inscription both written in Oriya script, are dated 1394 A.D. and 1376 A.D. respectively, the Sonepur inscription judging from the point of view of palaeography belongs to about the 13th century if not earlier, i.e. anterior to both of them.

The inscription belonging to the reign of a king called Vira Bhanudeva, registers the gift of several gold coins, [Fanam- Skt. Panam (to a temple)] for longevity of the same king. It is dated in the 16th year of Vira Bhanudeva, the weekday being a Saturday in the solar month Mina the tithi being the 2nd of the Dark fortnight. The details correspond to the 12th March of 1278 A.D. and the inscription belongs to the 16th year of the reign of the Bhanudeva I of the eastern Ganga dynasty. The year of the reigning king is however not absolutely free from doubt.

5. P. 117 ibid, in Appendix II, entitled The Stambheswari.
8. The first two letters of the 2nd line express the year of the king. The significance of the first letter which looks like ग्र is difficult to make out. The 2nd and the 3rd letters I read as '16'. If the 2nd letter would be a punctuation mark then the 3rd letter would read '6'. In this case the date would be March 31st 1288 A.D.

In fact such a letter does not appear to belong to the Proto-Oriya or Nagari alphabet. The letter may stand for a particular numeral. In BÜHLERS' Paleographical plates, Plate or Table No. IX, Column XV contains a symbol resembling the symbol under discussion. But BÜHLERS' symbol stands for the numeral figure 10. However as the symbol under discussion looks like Oriya 'a', I take it as 'a' the first letter of the Oriya alphabet. In the context it may be taken to stand for 'anka' which word sometimes occurs between the word Sambat or Samasta and the numeral indicating the Anka e.g. compare '.......... Kapileswara Deva Maharajarakara bijaya rajye samasta 4 Anikā Srātei Dhanu Amabai Sauribaze'. In the inscription under discussion the proto-Oriya 'a' also occurs—'a' in line 3.
This inscription closes with two circular marks which stand for the usual danda sign indicating Virāma. The word ‘ina’ occurring in line 5 and 8 is dialectical and means ‘here’. The basic term of the expression is ‘i’ (this) ‘na’ being the suffix. The word is still used in Balangir district. The word Padisa may be corrupted from Skt. parisad meaning a councillor and is still used as a surname or title in Sambalpur. The word ‘Padira’ standing for Padirāya appears to be a corruption of the Skt. term ‘Pratirāya’. The adjective ‘edaviya’ qualifying ‘Pana’ seems to refer to a particular type of ‘Pana’.

It may be noted that a number of Ganga Fanams were discovered in Sonepur and afterwards brought to the State Museum of Orissa. This is the only inscription of an Imperial Ganga king of Orissa which has appeared in Western Orissa and though it is one of the earliest of Oriya documents discovered so far, the language differs little from modern Oriya apart from the verb ‘haraui’ where the MIA. (Middle-Indo-Aryan) causative suffix ‘apa’ > āva is visible in the form of āu.

I am indebted to Sri B. Pati, M.A., B.L., for helping me to read the text on the spot and to Sri J. Mohapatra, the Head Clerk of Rajendra College, Balangir, for preparing the impressions.

Text of the Sonepur Oriya inscription of the time of king Bhanudeva.

1. Svasti Śri-Vīra Bhāṇudevasya pravadhyanāma-vijae-rāje samvata
2. 16 srāhi Mīna-krṣṇa 2 Saurivāre Sunapura-kaṭaka-
3. Pachimadesa-Adhikārī Sāmanta Paṭirāya = Isra-Paṭisaṅkara
4. adhikāre Śri-Virabhāṇudeva-rājāṅkara āi-
5. usva-kāmāthe Śri-Vaidyanāthadevaṅka ina Edavi-
6. ya9 -paṣamau vāra data 12 ehā je harai harāui
7. tāhāra kapāle Śiva-tāla Brahma-tāla Rudra-tāla ti-
8. ni tāla paḍai tāhāra kapāla ina ho vasa11 hoi12

1. From impressions as well as reading on the spot at Sonepur on the 17 February, 1955. 2. Text—Vira. 3. For pravardhamānāvijaya-rājye. 4. For Saurivāre (शूरिवारे) 5. For Pāchimadesa, 6. For Adhikārī. 7. For Pratirāja-Iśvara-Paṭisaṅkara. 8. āyuṣkāmārthe. 9. Reading doubtful. 10. Text—Vrahma-tāla; only the v-symbol is used in Oriya but it stands for the b-sound. 11. Text vasa may stand for vāsa. 12. The inscription closes with two circular signs one above the other indicating ‘virāma’.

9. S.I.I., V. No. 1152.
10. See Hobson Johnson, p. 265.
SONEPUR ORIYA INSCRIPTION OF BHANUDEVA

Translation

Hail! On Saturday, the 2nd of the Dark fortnight of the month of Mina in Samvat year 167 during the prosperous and victorious reign of Śrī Vīra Bhānuṭdeva, during the tenure of office of īśvara Paḍisa, the lord and Viceroy ruling in the Western territory with Sonpur as its capital, to Śrī Vajdyanāṭhadeva has been made here a gift of twelve Edavinya Fanams for the sake of the long life of king Vīra Bhānuṭdeva. He who takes these away or causes to take these away, on his forehead fall the three bolts namely Siva's bolt, Brahma's bolt and Rudra's bolt; his forehead becomes subdued (or ruined).

Vaidyanathadeva of line 5 of the document may be identified with the deity of the same name enshrined on the bank of the river Tel, about 5 miles distant from the town of Sonepur.
AN ETYMOLOGY OF TOYA

By

Nilmadhav Sen, Deccan College, Poona

The Sanskrit word toya, meaning 'water' is attested for the first time in the Nighaṇṭu (1.12) where it has been included in the list of udaka-nāmāni. It has never been used in the early Vedic literature, and its use is much restricted even in Classical Sanskrit literature. It has no cognate form in other I-E languages, it cannot be derived from any Indo-Aryan root and so in all probability it seems to be a loan-word in Sanskrit.

Now, we find that the word for 'water' in modern Boḍo language is dai and in the Tipā language (a sister language of Boḍo) it is tai or tui. These modern words are to be derived from a common proto-Boḍo word like *tay or *tuy which might have been borrowed into Sanskrit as toya. The words for 'river' in the Boḍo and Tipā languages are dai-mā and Tai-mā respectively, and it is significant that in the Viṣṇu-purāṇa (ii,4,28) Toya is the name of a river in Śālma-lavidpa. This also corroborates our contention that toya is a loan-word in Sanskrit from the Boḍo-Tipā branch of the Tibeto-Burman family of languages.
TAMIL LETTERS AND SOUNDS OF THE SEVENTEENTH CENTURY

By

T. P. MEENAKSHI SUNDARAN, Presidency College, Madras

In tracing the history of Tamil, the studies of the foreigners of this language form an important source. For one thing, the pronunciation of Tamil words as heard by them, naturally according to the phonemic peculiarities of their respective languages, is an important piece of information from which one can arrive at the phonetic value of the Tamil letters in their course of History. For another, the foreigners were familiar more with the colloquial language, for a study of which we have not many other sources of knowledge.

The Westerners brought with them the printing press to India and the first Tamil types were produced by Joanes Gonsalves in 1577. The first grammar of Tamil language by a foreigner, now available is that of Balde, a Dutch Missionary; but, he himself refers to previous studies on the subject, especially that of the Jesuit Father Caspard'Aquilar, which unfortunately are all lost to us. A translation of this seventeenth Century Dutch Grammar was given in the Bulletin of the Deccan College by Mr. J. A. B. Van Buitenen with a note on the phonetic and other peculiarities by Mr. P. C. Ganeshsundaram.

During my stay at Poona in connection with the Summer School of Linguistics, thanks to Mr. Ganeshsundaram and Mr. C. R. Sankaran, I had occasion to look at the original and get a photographic copy of this part of the bigger work by Balde through the courtesy of the Deccan College Historical Museum. Important as the above mentioned paper is, a more detailed study of this grammar is necessary for arriving at reasonable conclusions on the state of the Tamil language in the 17th century. Unfortunately, in the Bulletin, the original is not given, especially those portions where we have the Tamil transcriptions. These transcriptions are important from two points of view—first, from the point of view of Paleography and second, from the point of view of finding out the sound values of the Tamil letters as given by Balde. This will lead one to the study of grammar from the paleographic point of view, from the phonetic point of view and from the morphological point of view. In this essay the paleographic or orthographic point of view can only be studied with a necessary note on the sound value of the letters, reserving for a future occasion the other two studies.
The Tamil letter representing the sound, the short ‘a’, is not in Balde’s
times, having as in modern writing an elongated loop under, and in continu-
tion of, the curve at the top; the modern loop is represented there only as a
horizontal line. ‘i’ is represented like the English 3 with the lowest curve
rising up to the left and to the top. In the long ‘u’ the mark which dif-
ferentiates it from the short ‘u’ starts at the right hand end of the horizontal
line and is written as though by the side of the short ‘u’, whereas in modern
writing it is placed above and within the limits of the horizontal line. The
short ‘e’ and the long ‘e’; and similarly the long and the short ‘o’s are not
differentiated as in modern times or as in older times when a dot was to be
placed on the top of the shorter letter. Nor are there any dots on the pure
consonants to differentiate them from Syllabic consonants those occurring
as a syllable in combination with a following vowel. These dots seem to
have disappeared from the writing system soon after the 10th century A.D.,
to come back slowly in the 19th century. The ‘āyham’ represented now by
three dots arranged as it were in a triangle is found written in the 17th cen-
tury just like the longer Tamil syllabic letter ‘ku’.

Coming to the consonants, in ‘k’ the loop on the lower right hand side
is not found to join, as in modern writing, the vertical line coming from the
top from the middle of the horizontal line. The lower line in ‘n’ is not as
in modern writing produced straight to the left even beyond the vertical line;
it stops as a curve or as a semi circle, the bottom part of this curve going no
further to the left than the top part. In ‘r’ there is no line starting from the
right vertical line and going to the left making an obtuse angle, as in modern
print. In ‘t’ the starting loop of the left, seems to be, a little lower from the
other portions of the letter. ‘v’ is like the modern letter but the horizontal
line is produced to the left almost as in ‘a’, the only difference being the ver-
tical line here is not produced downwards as in ‘a’. It is difficult to distin-
guish the short ‘a’ and ‘vu’, the long ‘a’: and the long ‘vu’. In ‘z’ (as in azure or
‘r’ in farm) the lowest portion which is in the form of a horizontal line is
very much shorter than what it is today. The lowest portion seems to be
more like the lower line of Tamil dental ‘t’. The hard trilled letter ‘r’ is
written like the English 9 or inverted 6.

Coming to the syllabic letters, the marks of the short ‘i’ and long ‘i’
begin not from the right hand end of the topmost vertical line but from the
middle of it. The sign of the shorter ‘i’ goes up a little, then makes a little
curve, only to flatten up into a straight line to be parallel with the vertical
line but never going beyond the limits of the lower vertical line. The mark
of the longer ‘i’ is differentiated from this by its ending in a small loop at its
right, almost touching the vertical line. Here also the marks denoting the
short ‘e’ and the long ‘e:’ are not differentiated; nor are the marks for the
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</tbody>
</table>
short 'o' and the long 'o:'. The marks of short 'u' and the long 'u:' coming with the palatal nasal 'n', cerebral nasal 'n', dental plosive 't', dental nasal 'n', lateral 'l', alveolar nasal 'n' and trilled 'r' do not form an elongated loop, below the consonants as they do in modern writing. This seems to be on a part with the absence of the loop in 'a'. In all these cases, the mark for the longer sound is written separately on the right—a mark which is almost identical with the ordinary Tamil 'r'. This sign occurs also in the syllabic letters of consonants occurring with the longer 'e' and 'o'. The sign for the longer 'a' is also the same. In the trilled 'r' the sign of the longer 'a' is a kind of a comma, placed on the left hand top. If the sign for 'i' turns to the right, this turns to the left. This sign occurs in the trilled 'r' when also in combination with 'o'. In those letters whose right side ends in a vertical line going up, as in 'p', 'y', 'v' the curved sign representing the added 'i' starts straight from the top of the vertical line, but the vertical line ceases to be straight and is found slightly to be slanting to the left; the loop in the longer 'i:' comes very much near the middle of this slanting line. The sign for the longer 'u:' added to 'm' is very much like that which is added to 'z' (as in azure). The short 'u' and the long 'u:' added to 'z' is differentiated from this, by the curve underneath never reaching beyond the lower horizontal line and never going up to reach almost the top of the left vertical line. The short 'u' added on to 'z' has no loop at the end of its curve, whereas the longer 'u' has it. The same remarks may be made about the longer and shorter 'u' added to the cerebral 't'. When long 'a:' is added to the cerebral 'n' we usually write 't' today with a curve beginning at the end of the vertical line and turning to the left, instead of placing a mark like the ordinary 'r' on the right. The same thing occurs in the syllabic letter when this consonant makes a combination with 'o' following it. Today the longer 'a:' added on to the cerebral 'n', the alveolar 'n', and the trilled 'r', are all written this way. In the Tamil alphabet given by Balde the 'o' added on to the cerebral 'n' alone is not written this way but is followed by a sign like the ordinary 'r' as in the case of other letters. This may be a mistake; or it may be that both kinds of writing were in vogue in his time. It will be seen from the description given above that it is very difficult to distinguish velar nasal 'nu' 'vu' and trilled 'ru'. The 'rau' is also found wrongly written and is evidently a mistake.

On four pages as given in the photographic copies herewith attached, the vowels, the consonants and syllabic letters, (that is, consonants with vowels following them) are transcribed and described with their Dutch values. Mr. Buttenen calls this "a remarkable piece of calligraphy". This survey of the Tamil alphabet begins with this short note which runs in Mr. Buttenen's translation thus:—"The Malabars are accustomed to write on the leaves of the old palmyra with iron styles. They have had their charac-
ers from of old. Their letters are distinguished: 1. Some are called short or running (Loopende); 2. Others long; 3. Some vowels which they call letters of life because they give soul and life to the consonants; 4. Some consonants or letters of body, of which the vowels are the life; 5. Some they call mixed letters, which we call diphthongs, composed of two vowels; 6. Some are called letters used only at the beginning of a word; 7. Some in the middle; 8. Some at the end." The quantity is explained by Balde with the words short and long, and is also differentiated by the accent placed on the signs of long sounds. The short sound is known as 'Kuril' in Tamil, the long sound is 'nețil'. The vowels are called 'Uyir'—life or soul. The consonants are called 'Mey'—body. "Tamil grammarians designate vowels by a beautiful metaphor, as 'Uyir' or the life of a word; consonants as mey, or the body; and the junction of a vowel and consonant as 'uyir mey', or an animated body" (Caldwell, p. 132). The diphthongs are "Santhiakkaram", the Tamilised form of Sanskrit term 'Sandhyakshara'. The reference to letters occurring only at the beginning or at the middle or at the end of words describe as it were, the Tamil phonetic system.

Here we also get a clear idea about the method, these letters were pronounced, by the students of these days whilst naming the individual letters of the Tamil alphabet. The short vowels get 'na' added after their sounds; (i.e.) 'ana' in 'a', etc., long vowels and diphthongs get 'ana' coming after their sound for the purpose of enabling the students to recite (Ex. avana) these sounds in a sing song tone. In between the vowel sound and this enunciative increment, 'v' comes in to prevent hiatus after 'a: 'u:' 'o' and 'au'. It is curious that the long 'i:' is represented by 'y' with a long accent on 'y'. Probably the 'i' had been omitted by mistake and the accent transferred to 'y'. It may also be that the long 'i' was pronounced more like 'y' as is even now done in some cases in the colloquial speech. The true explanation may be that the Dutch 'y' approximates to this 'i' sound in Tamil.

In reciting or naming the consonants an 'i' is added as a prothetic vowel, except in the case of 'v' and 'm' where we find them written as 'uvana', and 'umana'—that is with a prothetic labial vowel 'u', probably because the consonants which they precede are bi-labial and labio-dental. When the consonants are followed by vowels, no such prothetic vowel is added; but the syllable is followed by the usual enunciative increment added as a rule to the respective vowels.

This gives us a picture of the way the young children were taught the alphabet in that age. Till very late in our Twentieth century, this method was continued in the old Pial Schools of Tamil land, till they are replaced by modern Elemematry schools. On page 193 of Balde's book there is a
picture of the children writing on the sand. We also see scrolls of palmyra leaves or Olai on which the letters were to be written as we now do on paper. 'a', 'i', 'u', 'e', 'o' are the vowels; each has two forms one short and the other long which are all clearly marked and distinguished. Every long vowel immediately follows its shorter counter-part. In between 'e' and 'o' occurs the diphthong 'ai' which is given the value 'ay' with an accent on the first sound. After 'o:' occurs the diphthong 'au'. The 'ai' when following the consonant is represented by 'oi' but its pronunciation is given as 'oei'. 'ei' is the pronunciation as given by Dr. Caldwell, who, however, does not mention the other pronunciation while Balde mentions both. Thus we get the Twelve Vowel sounds of Tamil.

The thirteenth letter in the Tamil alphabet goes by the name of 'aytam' whose pronunciation has been changing from time to time. The value is given by as 'aq' by Balde and in the alphabet it is named or recited separately as 'aquana'. This will be seen later on, to suggest a palatalised velar fricative sound.

The consonant 'k' is represented by a 'c'. When 'k', is followed by 'i' it is represented as 'qui'; when it is followed by 'e' it is represented as 'que'. 'q' thus represents the palatalisation of this consonant 'k'. When the consonant 'k' is named as 'iquana' we also find this palatalisation being due to the influence of prothetic vowel.

The palatal consonant like the one which occurs in 'church' is represented as 'ch'. The dental plosive is represented by 't', and the bi-labial plosive by 'p'. The cerebral plosive is represented with an 'r' with two dots on the top. This cerebral 't' is a letter which causes confusion to the students of Latin as pointed out by Beschi, since there is only a dental 't' in their language and since they do not have the alveolar 't' as found in English. Probably they heard this sound as a flap coming very much near the 'r'. It is this which is responsible for an 'r' coming in the place of cerebral 't' in the westernised names like Tuticurin and Tranquebar. The other plosive was originally an alveolar in Tamil. This has come to be pronounced as a trilled 'r' which can be represented by two 'r's; Balde gives its value exactly like this as 'rr'.

Coming to the nasals, the dental nasal is represented as 'n', the labial nasal as 'm'. Difficulty arises with reference to the velar, palatal, cerebral and alveolar nasals. The alveolar nasal is not differentiated from the dental; probably they were not then differentiated from each other even as they are not, in modern pronunciation. Both are now pronounced as alveolars except when the dental nasal is followed by the dental plosive, in which case it is pronounced as a dental. The velar nasal is given the value 'ngn'.
The final 'n' here is curious but probably is an attempt at representing unconscious nasalisation of the vowel following this velar nasal. The palatal nasal and the cerebral nasal are given the values respectively 'nh' and 'hn'; that is, the palatal, is represented by 'n' followed by an 'h' and the cerebral is represented by an 'n' preceded by an 'h'. If 'c' in BALDE's system represents 'k' the palatal plosive represented as 'ch' is then the velar as followed by an 'h'. The 'h' is probably the writers' method of representing the palatal sound found in 'ach'. It is curious to learn that the Tamilians of the age of Nannul pronounced their 'aytams' as a kind of an 'h' or breath or fricative in the cerebral region or more correctly in the palato-alveolar region. When the palatal nasal is represented as 'nh' it probably means that a nasal sound has to be produced in the palatal region. The cerebral nasal represented as 'hn' probably points out that the tongue was placed in the palatal alveolar region (which is near the cerebral region) and a nasal pronounced from the place.

Coming to the semi-vowels 'y' represents 'y', 'r' represents 'r', 'I' represents lateral dental 'I', 'v' represents 'v'. The cerebral 'I' is not differentiated from the dental 'I'. Nor is the 'z' (azure) differentiated from both. This letter is often confused with the cerebral 'I' in the South districts, a confusion which is found in BALDE's transcription as well. The order of the consonants in Tamil alphabet is as in the transcription by BALDE 'c', 'ngn', 'ch', 'nh', 'I', 'hn', 't', 'n', 'p', 'y', 'r', 'I', (dental) 'v' (cerebral), (z) as in (azure or like 'r' in farm); 'I' (cerebral), 'rr' (alveolar), 'n'.

When BALDE gives the pure consonants, he gives the trilled 'r' which he represents by 'rr' after 'y' instead of the ordinary 'r'. This mistake makes him mention the ordinary 'r' just before the final alveolar 'n' instead of the 'rr'. This is due to the confusion in the pronunciation of these two sounds which were not probably very much distinguished in hurried pronunciation. Here BALDE seems to distinguish the cerebral 'I' from the dental 'I' by placing a horizontal line across the 'I' in its middle portion. The Z which also he represents by 'I' is differentiated from his other 'I's by three dots placed parallel on the top of the slanting line. When he gives the syllabic letters (i.e.) each of the consonants occurring with the twelve vowels, he gives the order as found in Tamil alphabet without committing those mistakes which we find in his enumeration of the pure consonants. But here also there is one mistake that is the 'm' series instead of being given immediately after the 'p' series is given at the very end that is after the alveolar 'n' series.

In Modern Tamil Infant Readers, certain Sanskrit sounds are found represented by Grantha characters, and these are learnt by the children. These are absent in BALDE's book though in the transcription of Tamil passages there is room for suspecting the use of 'sh' and 'ksh' probably in the
words 'tosham' and 'moksham'. In any case this absence is significant as showing the rarity of these Sanskrit sounds occurring in the colloquial Tamil language of the Seventeenth Century.

These letters are the phonemes of the Tamil language and some of them change their phonetic value when coming in the middle of a word. Again some of these phonemes had probably a tendency to fall together. There are evidences in the transcription given by BALDE and they have to be reserved for a more detailed study.

BALDE's book was printed in 1672. He refers to one Francois whose mother tongue was Malabar and who was his interpreter. BALDE arrived in India in 1654 and stayed till 1664. The transcribed passages seem to follow the literary usage. Therefore, they may be taken to represent an earlier language. The transcriptions also show the influence of the Roman Catholic Portuguese whom BALDE did not want to offend. If so, these passages may be traced to a Tamil version used by the Portuguese long before BALDE. These considerations will induce one to conclude that the language we study in BALDE's writing is that of the closing years of 16th century.

The Malabaric is the general name of the Tamil language in the writings of the Portuguese and the Dutch of the 16th and 17 centuries. "In the first book ever printed in Tamil characters at Ambalakadu on the Malabar Coast in 1577 or 1579, the language of the book is styled Malavar or Tamil" — (Dr. Caldwell). This explains the use of the name Malabaric for the Tamil in BALDE.

The Tamil paleography has been studied only with the help of the inscriptions and copper plates. The cursory writing found in manuscripts will naturally differ from these; yet those have not been studied till now. No manuscript as old as that of BALDE's book has been known, though it is suspected that there are manuscripts of an earlier age in Tibet. In this study, therefore, BALDE's book which gives a manuscript transcription, is important.

The Tamil letters as found in the inscriptions of the 16th century are found listed on pages 56 and 57 in a book called Pandai-t-Tamil Ezuttukkal by my friend T. N. Subramaniyam in the row No. XVI (Based on 260 of 1930 Madras Epigraphic Report). The Srirangam Inscriptions of Acyutadevraya of the 1534 A.D. In this article the modern forms of Tamil letters have been often referred to. Any modern Tamil infant reader will give this information for comparison. This book also gives the forms on pages 54 and 55). The letters found there are very much similar to those given by BALDE. In 'i' the curve which goes to the left and to the top is found in the inscription to curve thereafter from the top to the right and then to turn downwards so as
to be parallel to the top portion of that letter. In the 3-like formation here in the centre on the right a kind of angle or dent is formed. In ‘nh’, the vertical line on the right, ends in a loop before curling up to the right a little and turning down to curl up to the left. In the dental ‘n’, the lower horizontal line goes beyond the centre, towards the left very much like the lower horizontal line as found in BALDE’s dental ‘t’. BALDE’s dental ‘n’ seems to be more like the 14th century letter. In ‘v’ the horizontal line starts like a curve from left to right. In ‘Z’ the lower horizontal line is not horizontal. It starts just at the centre of the upper horizontal line in continuation of the upper curve; it goes a little to the right and then turns making an angle, to the left. The trilled ‘r’ is more like a blurred modern letter for that sound rather than the inverted 6 form as found in BALDE. In the syllabic letter ‘ku’ the sign for ‘u’ starts at the right hand end of the letter ‘k’ as a curve going straight to the right a little and then curving down to the left, whereas in BALDE the end of the letter ‘k’ itself makes a continuous curve without first going to the right a little. The other letters are as found in BALDE.
PHYSICAL ANALOGIES OF LINGUISTIC STRUCTURE*

By

W. MEYER-EPPLE **, Bonn

[Translator's note: This paper is published here, firstly, to introduce Indian scholars to the recent mathematical trends in Linguistics; secondly, to introduce them to the fundamental idea that a large part of our knowledge, put in a mathematical form, is essentially similar in structure in the different fields of intellectual enquiry (physics and other natural sciences as well as linguistics); lastly, for the reason that, although several scientific papers on particular problems in linguistics using the methods of statistics and probability theory have appeared in English (many of which are cited in this article itself), the present author alone describes in a condensed and clear manner the different types of problems in linguistics for which mathematical techniques have been and can be applied; he points out the tool-value and limitations of these techniques and brings into relief the structural similarity of a large part of our knowledge, when put in a mathematical form.—Tr.**]

Structural Linguistics is making use, in increasing proportions, of mathematical ("distributional") ways of description. That it shows the tendency of becoming a mathematical science, does not appear to be surprising, when the inner ordering of all linguistic phenomena is taken into

[*This paper is an English translation (by P. C. GANESHSUNDARAM) of an article in German entitled "Physikalische Analogien Linguistischer Strukturen" which appeared in the Physikalische Blätter, 11 (1955), Heft 10, pp. 445-452, and is published here with the kind permission of the author and the publishers of the original German article.—Tr.]

[**Director of the Institut für Phonetik und Kommunikationsforschung der Universität Bonn and Co-Editor of the Nachrichtentechnische Zeitschrift.—Tr.]

[***In a letter to the present translator the author of this article says, "Selbstverständlich bin ich gerne damit einverstanden, dass Sie die englische Version meines Aufsatzes über 'Physikalische Analogien linguistischer Strukturen' im Dr. Taraporewalla Memorial Volume von Indian Linguistics veröffentlichen." ("Of course, I am quite in agreement that the English version of my article on 'Physikalische Analogien linguistischer Strukturen' be published in Dr. Taraporewalla Memorial Volume of Indian Linguistics").

As a humble homage to the memory of the late Dr. I. J. S. TARAPOREWALLA, one of the great pioneers in the field of Comparative philology of an early generation, this English translation of Dr. MEYER-EPPLE’s article in German is offered now, being representative of an interesting development in what may be called modern mathematical linguistics. It may be remembered that the paper points, through mathematical thinking, towards the unification of different levels of experience (vide Translator's note)—C. R. SANKARAN.]

account. Since the methods taken, by preference, from statistics and probability theory for the discovery of these relationships\(^3\) of order, in the case of almost all linguistic phenomena so far investigated, find a related mathematical formalism in the field of theoretical physics, it was natural to take over physical nomenclature to the characteristics of linguistic structure, without aiming at more than a purely heuristic analogy consideration. For the physicist it may not be without attraction to become acquainted with the taking over of concepts familiar to him to a field outside that of the natural sciences.\(^3\)

The knowledge that speech-phenomena allow themselves to be developed as a stochastic process, as a discontinuous manifold of sign-carrying elements ("constituents"), which can be isolated by linguistic analysis,\(^4\) forms the starting point of every mathematical-linguistic investigation. All continuous phenomena are left over to extra-linguistic disciplines.

Linguistic analysis utilizes a series of concepts belonging to the natural sciences. For example, in the IC-analysis ("Immediate Constituent Analysis") of R. S. Wells\(^5\) a given text, through "focal" dichotomy, is composed of dispensable and indispensable elements; the dispensable elements are called "satellites" and the indispensable elements "nuclei". In the choice of these concepts, the idea that there exists\(^6\) "a kind of gravitational pull" among the constituents of a text played its rôle throughout. One finds preferential "affinities", which determine for every element a concomitant partner.

The constituents functioning as nuclei or satellites can belong to several orders within the linguistic-semiotic hierarchy. J. Lotz distinguishes among the following stages:\(^7\) minimal sign, morpheme, word, phrase, clause and sentence. It is to be noted that neither the sound nor the syllable appears in this statement. Both of these are not linguistic elements in the real sense, although they can be profitably used in individual cases. Thus, for example, there is no great difficulty in giving the number of syllables

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3. L. Bloomfield, the inaugurator of a mechanistic 'anti-mentalistic' linguistics even asserted that every truly scientific development must make use of physical terminology (Language, 12 (1936) 92).

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5. R. S. Wells, Language, 23 (1947) 81; cf. also E. Haugen, Language, 27 (1951) 211.
corresponding to a morpheme or a word, while a mutual *demarcation* of
syllables, devoid of arbitrariness, can be impossible. Similar difficulties are
found in the case of sounds. In their place appears, as the smallest
demarcable and distinctive unit, the *phoneme* and the smallest meaningful
unit consisting of phonemes is precisely the *morpheme* (e.g., the word-stem,
a prefix or a suffix, etc.). M. Joos characterises the morpheme as “meaning-
ful molecules” which are built out of “invariant atoms”.

Counting out letters and groups of letters (digrams, trigrams, etc.) in
a text, is not, in general, the appropriate means towards the description of
linguistic phenomena. On the other hand, such a numerical estimation of
letters renders good service in the case of cryptographic problems (that is,
in the case of encoding and decoding of messages).

There are, however, a few cases, where the orthography of a language
comes so near a phonemic transcription that the counting of letters can be
of linguistic value; such languages are, for example, the Finnish, Czech and
Turkish, but not, however, German, English, French or modern Greek.

The molecular conception of Joos can be further refined by com-
paring the text-elements with gas, liquid or crystal molecules. In so doing
one can obtain a more fitting analogy with one of these aggregate conditions
than with another of them, in accordance with the properties in which
one is interested. For the description of a set of signs, interpreted in this
way, the methods of *statistical thermo-dynamics* can be adopted.

*The Entropy of Information*

Let the text consist of not too small a complexity of linguistic signs
which are taken from a finite set of elements (e.g., the phoneme inventory
of a national language). Let the number of distinct elements in this set
be $K$, and the probability of their occurrence in the text $p_1, p_2, \ldots, p_K$.
An important structural characteristic is arrived at, when the deviation of
the law of distribution of $p_i$ from the statistical normal distribution is
determined, by calculating the quantity

$$H_1 = - \sum_{i=1}^{K} p_i \log p_i. \quad (1)$$

8. See footnote 1.
10. “$\log$” stands for “logarithm to the base 2”.
H₁ is called the "first order entropy of information". Its fraction,
\[ h₁ = \sum_{i=1}^{K} p_i \text{ld} p_i \]
\[ \frac{1}{\text{ld} K} \]
the "relative entropy of information", obtained on dividing it by the highest value of \( \text{ld} K \), which appears in the statistical normal distribution, gives an indication as to how uniformly the set of signs is employed.

By means of equations (1) and (2) can be described not only texts by individual authors but even entire linguistic communities. An entropy of information, however, cannot be defined in simple terms either for a given text or for an idiolect¹¹ or a language. One has to ascertain first of all what types of signs (within the semiotic hierarchy) and what characteristics the investigation is to include.

**Historical Observations**

The idea of studying the higher states of linguistic organisation by means of statistical methods has its origin in the beginning of this century, particularly among the psychologists.¹²

Although these earlier investigations employed only modest mathematical techniques (essentially the calculation of the arithmetical mean and the deviations of the individual sign distributions, which were counted out, was employed), they were already showing quite interesting results,¹³ which, however, in the following years had almost gone into oblivion. Only about

¹¹. An idiolect according to B. Bloch (Language, 24 (1948) 7) is the "totality of the possible utterances of one speaker at one time in using a language to interact with one other speaker."


¹³. For example, in the works of Goethe and Schiller the mean number of syllables per word lies between 1.5 and 1.6 in the colloquial language (prose-drmas and letters) as against its value between 1.8 and 1.9 in the case of the literary language (letters of good style, narratives and scientific treatises). The reason for this is to be sought in the fact that in the colloquial language the monosyllables (that is, the monosyllabic words) are strongly favoured.
30 years later the study of linguistic-statistical questions was again begun afresh, now from the more competent statistical quarters.14

These investigations, however interesting they were individually, nevertheless remained very scanty from the linguistic point of view. In a moment, as it were, the situation changed when C. E. SHANNON put forward his mathematical theory of communication.15 Later he himself studied16 the problems relating to the information entropy of printed English texts, and information theory analysis was at once shown to be a workable tool for linguistic investigations.17

Also, the properties connected with the entropy of the letters of the alphabet and of groups of letters, which are so important in communications engineering and cryptanalysis, have been worked out and published in part.18

The earlier statistical investigations of G. K. ZIPF,19 carried out from very general view-points, could now be evaluated and brought in line with the higher mathematical stand-points.20

The Temperature of Information

B. MANDELBROT starts with the entropy of information. He considers it as a measure of value which he places higher, the greater the 'diversity' of the text. Thus, for example, a text consisting of 1009 elements (say, words), of which 9 occur with a relative probability of 0.1 and the remaining 1000 with a probability of 0.0001, is of less value than a text in which all the units are equally probable. If the elements of a text are ordered in accordance with the probability of their occurrence, that is, in accordance with their statistical rank, then, between the rank \( r \) and the corresponding

relative elemental probability $p_r$, a strikingly regular relationship is found, expressed in the form

$$p_r = P(r + q)^{-B}$$

(3)

where $P$, $q$ and $B$ are constants of the text. Mandelbrot denotes as "text parameters" the quantities $B$ and $q$ and the total number $R$ of the text-building elements. Equation (3) can be theoretically derived; it is called the "canonical law of the probability of rank" and is the consequence of a minimal principle of common behaviour, the principle of 'least effort'.

Fig. 1 shows the rank-probability of Norwegian word distributions, in the works of Undset, Aasen and Wergeland. Similar distributions are found in all the natural languages so far studied, but not, however, in the case of artificial constructions like Basic.

English and Esperanto. The tendencies for equilibrium, working within languages and linguistic development, were viewed by Zipf and Rogers from the point of view of a "dynamic philology".  

Independent of the language in which the text is composed, there results, in terms of the text parameters, a macroscopic description of the text, which stands in direct analogy with the macroscopic thermodynamical quantities of state. Mandelbrot calls the constant $1/B$ the "informational text-temperature". A higher temperature indicates that the available text elements are used well, the rarer ones among them being used in keeping with their probabilities, whereas in the case of a lower temperature the elements are badly used, the rarer elements being extremely rare.

In the majority of cases the text-temperature remains below 1; such texts, according to Zipf, are said to be "open". The total number of text-building elements, $R$, cannot, in such cases, be estimated merely by a sample study of the text. Text-temperatures above 1 ("closed" texts) are not quite common.

Rare elements, in the case of "closed" texts, are used proportionately with greater probability than in the case of the "open" text and the disposable vocabulary is not so extensive. Examples of the cases with text-temperature above 1 are modern Hebrew (wherein the vocabulary is restricted on historical grounds, although the desired variability is quite considerable), and also the works of puristic poets with deliberate limitation of vocabulary.

**First Order Characteristics**

It has already been said that even with the elementary statistical methods, valuable insight into the structure of linguistic complexities can be obtained. A comprehensive sketch concerning the linguistic characteristics resulting from the computation of elemental probabilities has been given by W. Fucks. He exemplifies his methods with individual texts, idiolects as well as natural and artificial languages. Therein he distinguishes between the *first order characteristics*, which are to be calculated from the statistical moments (mean value, slope, flatness, deviation, entropy) defined

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23. The justification for this nomenclature is derived from the fact that the language model considered here is analogous to the ideal gas of Thermodynamics and the quantity $B$ in the linguistic equation plays the same rôle as the reciprocal of the absolute temperature in the thermodynamic equation.

as the ensemble-mean of the probability distributions of isolated text-elements, and the second and higher order characteristics, in the case of which the relationships between the text-elements come into play.

Among the first order characteristics figures the probability distribution of syllables found by Fucks for words of special linguistic interest. The number of syllables $z$, the mean number of syllables $\bar{z}$ and the probability $p_z$ of $z$-syllabic words have among them the relationship

$$p_z = \frac{(z - 1)^{z - 1}}{(z - 1)! \exp (z - 1)}^{25} \quad (4)$$

It is presumed that this distribution gives rise to the universal law of word-building from syllables for all languages in which the concepts 'word' and 'syllable' are applicable. If from $p_z$, the entropy of information $H$ for the characteristic, number of syllables/word, is calculated by means of equation (1), the relationship between $H$ and $z$, shown in Fig. 2, is found.

![Graph showing relationship between entropy and mean number of syllables/word for different languages: Japanese, Russian, Greek, Latin, Turkish, Esperanto, German, Arabic, English.](image)

**Fig. 2:** Calculated and Observed values of Information-entropy as a function of the mean number of Syllables (after Fucks).

The values of entropy actually observed for nine different languages are shown by circles; (apart from Arabic, the result for which is probably vitiated by a too special choice of text), they are in striking conformity with the calculated values.

_Nahordnung and Fernordnung_ 25a

W. Fucks has more firmly established the comparison of linguistic structures with the arrangement of molecules in gases, liquids and solids, by the adoption of Bethe's concepts of "Nahordnung" and "Fernordnung." 26 Thus a transition from the consideration of individual, isolated text-elements into groups of elements can be effected. In the place of the individual probabilities, \( p_i \), will then appear the joint-probabilities, \( p_{ij} \), which deal with every two elements at the same time, or \( p_{ijk} \) for every three elements, and so on. At the level of the phoneme, a text in the first order of approximation can be conceived as a Markoff process, 27 that is, as a stochastic mechanism, in which there exist the strongest statistical connections between the elements immediately following one another. 28 The phonemic properties of the Nahordnung or proximate relations ("environment") of a text can, therefore, be approximately represented by a Markoff-chain.

Investigations with groups of more than two text-elements are indispensable for the clarification of phoneme distribution and syntactical relationships; they are not, however, immediately clear. Fucks has, therefore, made use of the concept of "free path" from atomic physics for the investigation of the properties of Fernordnung or distal relations. Instead of the text-elements themselves, in these cases, the distances between a text-element with the characteristic \( i \) (e.g., the disyllabic characteristic) and the next element (or next but one, and so on) with the characteristic \( j \) (e.g., trisyllabic characteristic), are studied.

_Disintegration of Morphemes_

The statistically derived characteristics can be made use of for the synchronic as well as diachronic (historical) investigations. The pursuit of

25a. The terms 'Nahordnung' and 'Fernordnung' respectively signify 'proximate relations' and 'remote or distal relations'. In other words 'Nahordnung' refers to such events whose probabilities depend upon the probability of an immediately preceding event. 'Fernordnung', on the other hand, refers to such events whose probabilities depend upon the probability of some event between which and the events in question there have been several other events.—Tr.

the characteristics over centuries back, however, meets with peculiar difficulties; it is indeed in no way certain that the elements whose characteristics are investigated, remain unchanged with the passage of time. R. B. Lees who examined this question in detail, could in the course of it show that there are certain morphemes (the "active colloquial root-morphemes") which can be looked upon as historical invariants and therefore are appropriate for diachronic descriptions.  

Lees, through his "glotto-chronological method", picks out from the morpheme inventory of a language belonging to a particular cross-section of time a partial collection, the elements of which can be identified as being in use at an earlier epoch of the language; thus a predominating vocabulary is arrived at, which is associated with the concepts recurring at all times ("cultural universals"), as for example, the names for the parts of the body, numerals, geographical states and simple actions. A given inventory \( N_0 \) of such root-morphemes assumes an exponential relationship with time, that is, after an epoch of time \( t \) is elapsed, this inventory is reduced by morpheme disintegration to

\[
N = N_0 \exp (-\lambda t)
\]

(5)

The parallel to the radio-active disintegration of substances is quite obvious; the analysis of the products of morpheme disintegration ought to lead thus to the explanation of the lexical history, just as the analysis of the mineral products of disintegration lead to the clarification on the age of the earth's crust.

Investigations by Lees on 13 languages, for which there was sufficient diachronic material at his disposal, showed that 81% of the root-morphemes considered had an existence over a period of 1000 years. The constants of disintegration \((-\lambda)\) lay between 0.760 for the transition from Egyptian to Coptic and 0.854 for the transition from Old High German to New High German or from Old Nordic to Swedish.

The glotto-chronological method was applied with success for the determination of the period of life ("time-depth") of such languages, which sprang up from a common original language; in good agreement with the historical facts, a time-depth of \(1.236 \pm 0.246\) millennia was shown for the pair of languages German-English, and of about 0.526 millennia for Osmanian-Azerbaijani.

Diachronic Variations

The parallel between the structures of linguistic relations and the physical characteristics of structure meets with its limitation, where the organic development of languages becomes noticeable. Empirical individual languages are not closed systems having their foundations in themselves, but are "dynamic media," layers of different co-existent systems intertwined into one another, which tend to have a mutual influence. It proves, therefore, to be impossible to comprehend fully such a system synchronically (that is, by observations at a single point in time). One has rather to bring in a finite time-interval of analysis ("time perspective", according to Fries and Pike), if the constituent factors are to be understood.

G. v. d. Gabelentz maintains that there are two antagonistic tendencies that come into play in linguistic reciprocal actions, namely, the motivation towards ease and the motivation towards clarity. If the desire for ease is identified with an increase and the striving towards clarity with a decrease of the (relative) information entropy, it can be understood that a diachronic investigation of linguistic structure cannot be realised as a monotonic development, but as an up and down progression corresponding to the blossoming and degenerate periods respectively of a language.

[I am much indebted to Dr. P. C. Ganeshsundaram for his excellent translation of my paper into English — W. Meyer-Eppler.]

33. W. Fucks (see footnote 24); P. Miron, Zur topologischen Struktur des Rumä" nischen; Diss., Bonn (1954).
A CRITIQUE OF EXPERIMENTAL METHODS IN PHONETICS *

By

C. R. Sankaran and P. C. Ganeshsundaram
Deccan College, Poona

It is generally understood that the science of Phonetics, like any other science, can be dealt with at different levels. At the highest level (that is, at the hypothetico-deductive level) it is a unified scientific discipline in itself; and at that level, Phonetics and Phonemics are not viewed in isolation. They together form a unified, inseparable, geometrical discipline, embraced by a single geometrical-physical theory, at the highest abstract level. Within the framework of such a theory, our usual classifications of speech-vibrations into the acoustical, neuro-physiological and psychological entities, and further into our familiar notions of consonants and vowels, break down.

We shall first of all, however, take up the more familiar field of phonetics here for our discussion, before we gradually go to the newer and—as it is often complained—unusual realms of phonetics.

Phonetics, as it is normally understood, is purely an empirical science without any unified theoretical background. At this empirical level, again, we can divide it into: (1) the so-called experimental phonetics and (2) the so-called “ear-phonetics” (in accordance with the usage of conventional linguists).

Or, it may be divided into: (1) acoustic phonetics and (2) articulatory phonetics, as is the modern tendency.

Usually the linguist is satisfied with a workable mixture of “ear-phonetics” and “articulatory phonetics”. For this reason we may call this workable mixture of the linguist as “linguistic phonetics”. However, he often requires the aid of acoustic measurements to test some of his ear-observations.

Both articulatory and acoustic phonetics have been known to the earliest grammarians like Pāṇini.1 But even to this day it is articulatory phonetics in combination with ear-phonetics which has been widely in vogue

* Based on the opening talk delivered by the senior author of the Paper on 18th October, 1955, at the Autumn School of Linguistics (October-November, 1955) to the students attending a course of Laboratory Practice in Phonetics.
for the qualitative description of speech-sounds, particularly among linguists.
ics. Even Information-theorists, in dealing with phonetic elements, follow
closely the linguists, so far as the descriptions of the speech-sounds go,
although they pay very great attention to the acoustic composition of the
sounds.

While studying the articulatory aspects of speech-sounds, we take into
account the lip and tongue positions, the state of the vocal cords, etc., to
enable us to give a fairly complete description of the mode and place of
production of any speech-sound.

It has been realised, however, that, even in practice, it is not possible
to give a purely articulatory description of speech-sounds without taking
recourse to the description of acoustical phenomena. For example, the fact
that the 'same' vowel may be produced by different articulatory positions is
sufficient indication that articulatory criteria, in the very nature of things,
cannot furnish any very precise description of speech-sounds, if precision is
attempted at all. Also, the question of the articulatory description of the
Tamil sound ķ appears to give rise to difficulties. Different scholars give
different descriptions.

Fig. 1. Showing non-retroflexed and retroflexed ķ.

2. How can we describe, for example, aspiration in purely articulatory terms?
(Cf. in this connection C. R. SANKARAN, P. C. GANESHSUNDARAM, B. Chaitanya DEVA
and A. D. TASKAR, A Study of Accent in relation to the Alpha-phonoid Theory, Dr. Suniti

3. Cf. Prof. G. Oscar RUSSELL, Synchronised X-ray, oscillograph, sound and movie
experiments, showing the fallacy of vowel triangle and open-closed theories, (Proc. II

4. Cf. for example, Kamil ZVELEBEL's review (Archiv Orientalni, vol. 23, 1955,
Fig. 2. Showing groove (especially in 2, 3, 4 and 7)

(Tracings reproduced from O. Svarny and Kamil Zvelebil, "Some Remarks on the Articulation of the 'Cerebral' Consonants in Indian Languages, Especially in Tamil, Archiv Orientalni, 23 (1955), Fos. 56-63, pp. 414-415, with the kind permission of the authors).
In fact, if an attempt is made to produce this sound, without being particular about the position of the tongue, we find that the sound can be produced within a whole range of tongue positions. Describing this speech-sound, therefore, in terms of articulatory positions and movements, we can say that the Tamil ळ is a post-alveolar or retroflexed (voiced or voiceless), strongly lateralised, weak groove-spirant. (What is it acoustically? Obviously, further precision investigations are necessary to discover its acoustic peculiarities). This indifferent voicing-non-voicing and retroflexion-non-retroflexion is very significant, since we often find in the vulgar dialects of Tamil and Malayalam a tendency either to pronounce ळ like the retroflex lateral ळ or like य. (� is very common in the Tamil areas and य is found among the Moplah speakers of Malayalam in Malabar). Often too, instead of the retroflex ळ we hear the retroflex spirant s, particularly among children. The indifference with which the single speech-sound ळ has either retroflexion or not, voicing or no voicing, is again another indication that descriptions based on articulatory criteria can at their best be inaccurate, if not totally false.

Further, during the process of hearing, it is more often the purely acoustical vibrations that give rise to the ‘picture’, so to say, of individual speech-sounds in the perceptual centre of our mind, irrespective of the articulatory finesses or otherwise.

Lest too much precision should be expected from acoustic criteria, as against the much grosser articulatory ones, it may here be pointed out that it has also been established by empirical observations in psycho-acoustic and communications laboratories that a sound, which is not identified by the hearer when it is heard in isolation without the hearer being face to face with the speaker, is often easily recognised at least either (1) when the lip-movements, etc., of the speaker are seen by the hearer, or (2) when the particular speech-sound is uttered in a meaningful chain with other sounds, or (3) both.

In the light of all this, we see that articulatory and acoustical criteria alone, at the empirical level, cannot furnish any precise description of speech-sounds. It is in fact the “phonetic context” characterised by the psychological and neuro-physiological background acquired during the process of speech-learning, that holds the key to our perception of speech-sounds. Anyone attempting to go into the ‘fundamentals’ cannot afford to overlook these questions.

5. See Fig. 1 and Fig. 2.
However, for a gross linguistic analysis at the ordinary empirical level, most of these 'fundamental' questions may be, and usually are, ignored.7

Let us now see what methods are employed in determining the articulatory criteria for the description of speech-sounds.

The articulatory movements or positions are studied in the following different ways. If no acoustic quantity is to intervene, the methods at our disposal for such studies are as follows:

(1) Cinematography — for studying the lip and tongue movements.8

(2) Palatography — for studying the tongue positions for various alveolo-palatal consonants. This provides a fairly good estimate of the spread of the tongue at the points of contact with the roof of the mouth. When photographed, it gives the projection of the area of contact in the horizontal plane.9

(3) X-ray photography — In the sagittal section, how the tongue carries itself, with respect to the other parts of the mouth and its cavity, can be seen in a vertical plane.10

(4) Laryngoscopy — to study the vibrations of the vocal cords, both visually as well as cinematographically.11

Certain other measurements take the acoustic factors into consideration. In order to estimate at what frequency the vocal cords are vibrating (instead of merely knowing whether the vocal cords are vibrating or not), for example, we have to turn to acoustic measurements. Acoustic measurements can be made with many different types of instruments, some of which are of the most recent development.

But, we confine our attention here to some of the classical methods in Laboratory Phonetics only, reserving the modern developments for a projected Monograph in the near future.

7. As, for example, in the methods of descriptive linguistics. As a brilliant work in this direction, we recommend the interested reader of this paper to H. A. Gleason, An Introduction to Descriptive Linguistics, Henry Holt & Co., New York (1955). Cf. also its able review by F. B. Aarseth and W. G. Moulton, in Language, 32 (1956) 469–477.
One of the most frequently used acoustic-phonetic instrument of the classical type is the kymograph:

It is used for studying:
(1) the vibrations of the mouth cavity.
(2) the vibrations of the nasal cavity.
(3) the vibrations of the larynx.
(4) the vibrations of the chest (breathing movements), etc.

Of all the different classical methods used in Laboratory Phonetics mentioned above, the linguistic phonetician most frequently utilizes: the kymograph and the artificial palate.

We shall first describe at some length these two means, before we take up other refined (acoustic phonetic) methods for our study.

What is that we can expect from these, what we have called, classical laboratory methods and techniques in phonetic research?

In Scripture’s words the kymograph responds through the membranes of the attached tambours only to the change in air pressure; it does not respond to the vibrations of microphonic speech. The whole apparatus thus registers only the mass movements of the air from the mouth, nose, etc., and nothing else.

In all kymographic work the maximum accuracy that can be normally obtained is only about 50%. For, many errors are introduced into the system by several factors, such as, for example, the yielding of the walls of the rubber tubing, the multiple reflections along the tube and at the two extremities, etc., further the inertia of the rubber or mica diaphragm and that of the stylus as well as the friction of the point of the stylus at the surface of contact on the drum are all contributory to the distortion of the original sound-waves. For any high precision recording, therefore, the kymograph is highly unsatisfactory. It is unsatisfactory also particularly because there are no known means (and it is difficult to find any new means) of estimating the error involved due to various factors, thereby leaving the door closed for any correction.


13. See in this connection, for a thorough treatment of the sources of error in different types of experimental phonetic investigation, Prof. Dr. Med. H. LOEBEL and F. WETHLO, Fehlerquellen bei experimentell-phonetischen Untersuchungen, Leipzig, 1931.

Also for a thorough treatment of the technical improvement of the kymographic method, see Vincenzo Cocchi, Sul comportamento delle membrane nella registrazione dei suoni della voce, Contributi del Laboratorio di Psicologia, Serie Ottava, Milano, 1940, pp. 511 ff.
The so-called quantitative measurements made on the kymograph, therefore, are at best qualitative indications showing in a rough way what apparently seems to take place in the mouth cavity, nasal cavity, larynx, lungs, etc.

Coming now to palatography, we find that there aren't any highly refined methods possible. The normal methods of preparing an artificial palate are, in a sense, clumsy. But a skilled hand can make almost perfect models by sheer manual dexterity.

Almost all the references we have at our disposal in this connection, suggest the use of either hard rubber or metal for the material used in preparing the artificial palate. Plastic palates can also be prepared.

The type of pigment to be used is given variously by different authors.

A detailed instruction for preparing an artificial palate is given by F. Wethlo. We are indebted to Dr. G. V. Desai and Dr. B. S. Shinde, Dental Surgeons, for having so kindly prepared artificial palates for a few of the Fellows at the Linguistic School, using a method similar to the one commonly practised in the preparation of dentures.

In conclusion, we wish to bring into relief our stand, which has been emphasised in all our work, that steady state articulatory and acoustical criteria alone, at the empirical level, cannot furnish any precise description of speech-sounds. Since, however, even different dynamic articulatory movements may yield the same acoustic resultants, we have to consider a description in terms of only dynamic acoustical quantities.


15. As for example, 'mit Brei aus Mehl und Gummi arabicum bestrich', 'Grutzner bestreicht die getrocknete Zunge mit einer Aquarellfarbe (carmin, chinesische Tusche, Ultramarinblau o. dgl.)', 'Gutzmann bestreicht umgekehrt die Gaumen mit farbe' (Poirier, op. cit., pp. 45-48), 'magnesia' (Poncettia-Calzia, op. cit., p. 69), white powder of 'Mehl, Magnesium, usw.' (E. Dieth, op. cit, p. 26).


vowel is considered as a vector\textsuperscript{18} the consonants will just be transitions of the vector from one value to another.\textsuperscript{18a}

It is also now clearly seen that the bedrock of our entire work,\textsuperscript{19} namely, the assumption that the Vowel and the Consonant are not mutually exclusive,\textsuperscript{20} is exemplified even by the latest experiments of André Malecot, F. S. Cooper, et al, within the empirical frame of reference,\textsuperscript{21} where the omission of formant transitions results in the loss of the consonant.

FURTHER REFERENCES

3. Fletcher, Speech and Hearing.
7. Univ.—Prof. Dr. Wilhelm Brandenstein, Einführung in die Phonetik and Phonologie, Vienna, 1950.

18a. Cf. also in this connection Prof. A. Gemelli's following interesting observation (referred to by C. R. Sankaran, in his Theory of the Alpha-Phonoid, BDCRI, 10 (1950) 62): "There are cases in which a vowel stops several times to originate various phases of a consonant."
AN EXPERIMENTAL STUDY OF THE NATURE OF ACCENT

By

A. D. Taskar, Coonoor

Introduction

The characteristics of vowel-sounds have been more extensively investigated than any other subject connected with speech in the field of linguistics. After a careful study of the literature on the structure of vowel-sounds it will be found that though at every stage of the investigations there has been a definite improvement in the understanding of vowel-sounds, still the definition of a vowel-sound is not perfect. A definition of a vowel-sound should be such as to be valid under all conditions of speech and at the same time it should be very easy to operate upon. In short it should be able to give an exact idea by easy manipulations about the changes in the structure of a vowel-sound if there is change in the initial conditions of speech. The harmonic theory of a vowel-sound, though, may serve as basis for distinguishing the various vowel-sounds under normal conditions of speech, still, it cannot help visualising the changes under modified conditions.

The inadequacy of the present definition of a vowel-sound was realised by Scripture and Gemelli, and they tried to give appropriate suggestions. But not much headway was made in the direction of understanding the speech phenomenon, for their work was still within the original framework of empiricism. At this stage Sankaran felt the inadequacy of the present theory of speech-sounds more strongly and formulated the Alpha-Phoneme theory.

According to a technical aspect of his theory a speech sound is considered to be a multi-dimensional entity, of which the three basic dimensions are pitch, duration and amplitude. It is possible to verify the assumptions contained in the two theories of speech-sounds by arranging an experi-

ment where the same speech-sound is uttered and recorded under both normal and modified conditions of speech. It would be of great interest if the changes in the structures of vowel-sounds are studied under conditions which are familiar to us. In everyday conversation we find speech-sounds being uttered under different conditions. This phenomenon we term as Intonation, where the basic pattern of the speech-sound remains the same but modifications are brought in due to accent, voice-quality, emotion, mental-attitude etc.

Accent has been described as the soul of speech. It produces unity of words and sentences in speech. The idea of bringing certain facts into prominence means special emphasis on the particular words. It acts as a living and life imparting soul within and with the word, exerting an influence of the whole language. Many important laws, VERNER's law for example, have been based upon the action of accent in modifying the structure of vowel-sounds.

In order to understand the physical basis of accent many investigations are carried out but still there is a difference of opinion as to what exactly constitutes accent. It would appear that the important role of accent in human speech was never properly understood because it was being viewed through a narrower angle. It was assumed that the changes due to accent occur in pitch and duration.

It is attempted in this investigation to present data on the changes in the structures of vowel-sounds by the consideration of both the theories and show that if a speech-sound is considered to be a three-dimensional entity it is possible to give an explicit explanation for the phenomenon of Accent whereas it is not so by assuming the theory of harmonic structure of speech-sound.

One language namely Telugu from the Dravidian group and one language namely Marathi from Indo-Aryan group of languages are taken as representative members for illustrating these relationships. There is a supreme advantage here, for in these Indian languages the original accent of any speech form can be significantly altered by either stressing the particular form or by the addition of a group of speech sounds.


7. Two independent theories for giving proper explanation of accent are being considered by phoneticians. The first propounded by ROUSSELOR lays that accent is due to greater pressure by the organs of breathing while the second one of FOSSCHAMMER brings about that the vocal-cords properly utilizes the breath resulting in a tone of higher strength. The first assigns the cause to the organs of breathing while the second to the organs of phonation.
To carry out the present investigation the following experiment was arranged.

The subject whose speech was to be recorded was seated in a room 20' × 10' × 18' which had been made partially sound-proof by arranging a canvas curtain about 3" from the wall and 1 ft. from the ceiling. The microphone, a Turner velocity-dynamic model, was placed at about 1 ft. from the subject. The output of the microphone was fed to an amplifier and hence to the Y beam of the Cathoderay Oscilloscope (CRO-Cossor 1049 double beam Industrial type). To the Y beam of the CRO was fed the output of a standard stabilised electrically maintained tuning fork oscillator at 1,000 c/s. The recording was done by means of an Avimo Camera 35/100/60, which was attached to the CRO with a light-tight hood, and the 35 mm. continuous recording film in the camera was electrically run at a speed of 20"/sec. The recording process was controlled through light signals sent to the subject by the person operating the camera. The subjects were requested to speak before the microphone sets of words in a normal way. The same sets were repeated by accenting the required sounds namely u, i, e, The subjects were requested to speak before the microphone several times before actually the records were taken, to eliminate as far as possible the inhibitions, if any, imposed by the apparatus. Similarly, remembering that a new language pattern superimposed upon the native-pattern is very often influenced by the latter, the subjects who obliged to give records of Telugu and Marathi speech-sounds had respectively Telugu and Marathi as their mother-tongues. One telling example from Marathi was recorded and studied for the purposes of indicating the changes produced in the original form by the addition of a group of speech sounds. The example in question is pūśkāl in which a cluster group occurs, and is compared with two 'non-sense forms' (which have no actual occurrence in the stream of speech), namely pūśal and pukāl in which either the one or the other individual member of the cluster in pūśkāl occurs separately.

The analysis of vowel-sounds was carried out by assuming that the Fourier Series properly describes a vowel profile. For the purposes of analysis of vowel-sounds 24 ordinates were taken. The scheme of finding out the amplitudes was followed up from Whittaker and Robinson.8

Measurements of ordinates of vowel-profiles for Fourier analysis were made by the Projection method. The film on which the sound-waves were recorded was projected on to a very fine graph sheet by a magnifying lense.

The ordinates of this magnified profile were measured at equal intervals. Three consecutive profiles which showed almost a constant form were selected for the purposes of analysis. The durations of vowel-sounds were measured under a Traversing Microscope.

RESULTS

The results of the analyses of vowel-sounds are presented as 1. Fourier analysis, 2. Measurements of pitch, duration and amplitude, and 3. Changes due to the addition of a group of sounds.

1. Fourier analysis

(i) Normal—The amplitudes of the various partials are given in Tables IV and V for Telugu and Marathi respectively. The important characteristics of the figures are that there are three prominent regions of resonance for both Telugu and Marathi. Sometimes regions of higher frequencies are also seen but their amplitudes are negligible. The amplitudes have got different values for different sounds, and sounds of the same class. With respect to the number of regions of resonance the results are in conformity with those obtained by Obata for Chinese, Mongolian and other languages spoken in different districts of Japan, and also more recent investigations of Steinberg on American-English.

From the values of average frequencies given in Table I of the various regions of resonance it will appear that for Telugu vowel-sounds there are very slight variations in the first regions of resonance. It seems that different Telugu vowel sounds are to be distinguished from one another only on the basis of the frequencies of the second region of resonance. May be on the third or the fourth in some cases too. The frequencies of the regions of resonance for the same sounds in Telugu and Marathi are not very much different from each other considering the variations in each category of sounds. The American vowel-sounds have frequencies for the second region which are to some extent equivalent to the third region of resonance of the two Indian languages. The first regions, however, compare very well.

10. Steinberg, J. C. Application of sound measuring instruments to the phonetic problems, JASA, (1934) vol. 6, p. 16.
### Table I

<table>
<thead>
<tr>
<th>Regions of Resonance</th>
<th>Telugu</th>
<th>Marathi</th>
<th>American English</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$F_1$</td>
<td>$F_2$</td>
<td>$F_1$</td>
</tr>
<tr>
<td>$u$ Normal</td>
<td>320</td>
<td>452</td>
<td>382</td>
</tr>
<tr>
<td>$u$ Accented</td>
<td>1194</td>
<td>1538</td>
<td>194</td>
</tr>
<tr>
<td>$i$ Normal</td>
<td>331</td>
<td>330</td>
<td>874</td>
</tr>
<tr>
<td>$i$ Accented</td>
<td>144</td>
<td>1060</td>
<td>944</td>
</tr>
<tr>
<td>$e$: Normal</td>
<td>126</td>
<td>130</td>
<td>34</td>
</tr>
<tr>
<td>$e$: Accented</td>
<td>204</td>
<td>204</td>
<td>31</td>
</tr>
</tbody>
</table>
(ii) *Accented*—The amplitudes of the various partials are given in Tables IV and V for Telugu and Marāṭhi respectively. It will be seen from the comparison of the values of stressed and unstressed vowel-sounds that, in general, there is a rearrangement of regions by shifting of the prominence of the partials; the amount of shifting depending upon the pitch of the fundamental. There is no uniformity in shifting of the regions of resonance, sometimes the regions are shifted to the lower side of the partial and, sometimes to the higher side. The amplitudes of the various partials have considerably changed, some are increased and some are decreased.

*Statistical analysis*—The complete data were subjected to statistical analysis to find out other finer points of interest and the results are given in Table II.

It will be seen from the table of analysis of variance that all the important terms of interactions between the main effects except A-K (Accent-Kind) for Marāṭhi are not significant. The analysis, therefore, does not suggest any simple explanation for the changes due to accent in the structures of the vowel-sounds. The experiment thus appears to be inconclusive with respect to the hypothesis under consideration, but it suggests designing either a larger experiment, or one in which the error variation was more carefully controlled by the use of proper consonantal surroundings.

2. *Measurement of Pitch, Duration and amplitude*—

The values of pitch, duration and amplitude\(^{11}\) of the stressed and unstressed vowel-sounds for both Telugu and Marāṭhi are given in Table III. It will be seen from the figures that the changes due to accent are found in all the three basic components. The pitch of the fundamental is invariably increased by accenting of the speech-sounds. But the behaviour with respect to duration and amplitude is not constant, some stressed sounds have decreased in amplitude and some in duration. The important fact that whenever there is a shortening of duration a lengthening of mean-square-root values of amplitudes follows, or vice versa, may be noted. The fact

\(^{11}\) When we come to the measurements of amplitudes, it is difficult to come to a conclusion as to the factor or factors that will clearly measure out changes in the amplitudes of frequency-component (or components). The commonest way of record has been of the pressure just outside the mouth, and this has been supplemented by occasional studies of the pressure changes in the chest during speech. The quantitative analysis by measuring the highest and the lowest points of a wave form from a base line, and taking half the length to mean amplitude of the wave. To maintain the 'specific-character' (according to A. Gemelli), the amplitudes of the various harmonic components of a wave-profile have been found out by Fourier analysis and mean-square-root has been taken to mean the amplitude,
### TABLE II

Analysis of Variance

<table>
<thead>
<tr>
<th>Source</th>
<th>TELUGU</th>
<th></th>
<th>MARATHI</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>D.F.</td>
<td>Sum of Sq.</td>
<td>Mean Sq.</td>
<td>D.F.</td>
</tr>
<tr>
<td>Accent</td>
<td></td>
<td>121035</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Regions</td>
<td>2</td>
<td>8914643</td>
<td>4457322</td>
<td>2</td>
</tr>
<tr>
<td>Kind</td>
<td>2</td>
<td>414483</td>
<td>207242</td>
<td>2</td>
</tr>
<tr>
<td>Accent-Regions</td>
<td>2</td>
<td>50581</td>
<td>25291</td>
<td>2</td>
</tr>
<tr>
<td>Accent-Kind</td>
<td>2</td>
<td>8048</td>
<td>4024</td>
<td></td>
</tr>
<tr>
<td>Regions-Kind</td>
<td>4</td>
<td>95366</td>
<td>23842</td>
<td>4</td>
</tr>
<tr>
<td>Error</td>
<td>22</td>
<td>929430</td>
<td>42247</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>16533586</td>
<td></td>
<td>32</td>
</tr>
</tbody>
</table>

Where Accent means effect produced by stressing the vowel-sounds.
Kind means differences in the three vowels.
Regions means differences in the frequencies of the three regions of resonance.
Interactions (Accent-Regions, etc.) means changes in one with respect to the changes in the other.

** Significant $P < 0.01$
* " $P < 0.05$
<table>
<thead>
<tr>
<th></th>
<th>TELUGU</th>
<th></th>
<th></th>
<th>MARATHI</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>a</td>
<td>b</td>
<td>c</td>
</tr>
<tr>
<td>Pitch (cycles/sec.)</td>
<td>Normal</td>
<td>Accented</td>
<td>Normal</td>
<td>Accented</td>
<td>Normal</td>
<td>Accented</td>
</tr>
<tr>
<td></td>
<td>u</td>
<td>100</td>
<td>0.125</td>
<td>0.150</td>
<td>0.133</td>
<td>0.131</td>
</tr>
<tr>
<td></td>
<td>e:</td>
<td>0.137</td>
<td>0.131</td>
<td>0.130</td>
<td>0.149</td>
<td>0.149</td>
</tr>
<tr>
<td>Duration (in seconds)</td>
<td>Normal</td>
<td>Accented</td>
<td>Normal</td>
<td>Accented</td>
<td>Normal</td>
<td>Accented</td>
</tr>
<tr>
<td></td>
<td>u</td>
<td>0.175</td>
<td>0.123</td>
<td>0.134</td>
<td>0.149</td>
<td>0.149</td>
</tr>
<tr>
<td></td>
<td>e:</td>
<td>0.137</td>
<td>0.130</td>
<td>0.149</td>
<td>0.149</td>
<td>0.149</td>
</tr>
<tr>
<td>Amplitude (in cm)</td>
<td>Normal</td>
<td>Accented</td>
<td>Normal</td>
<td>Accented</td>
<td>Normal</td>
<td>Accented</td>
</tr>
<tr>
<td></td>
<td>u</td>
<td>0.536</td>
<td>0.327</td>
<td>0.720</td>
<td>0.859</td>
<td>0.338</td>
</tr>
<tr>
<td></td>
<td>e:</td>
<td>0.536</td>
<td>0.327</td>
<td>0.720</td>
<td>0.859</td>
<td>0.338</td>
</tr>
<tr>
<td>(Note. The words used were puhal)</td>
<td>a</td>
<td>0.182</td>
<td>0.200</td>
<td>0.215</td>
<td>0.215</td>
<td>0.215</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>0.113</td>
<td>0.121</td>
<td>0.171</td>
<td>0.171</td>
<td>0.171</td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>0.109</td>
<td>0.119</td>
<td>0.215</td>
<td>0.215</td>
<td>0.215</td>
</tr>
<tr>
<td>Normal</td>
<td>Accented</td>
<td>Normal</td>
<td>Accented</td>
<td>Normal</td>
<td>Accented</td>
<td>Normal</td>
</tr>
<tr>
<td>--------</td>
<td>----------</td>
<td>--------</td>
<td>----------</td>
<td>--------</td>
<td>----------</td>
<td>--------</td>
</tr>
<tr>
<td>a</td>
<td>b</td>
<td>a</td>
<td>b</td>
<td>a</td>
<td>b</td>
<td>a</td>
</tr>
<tr>
<td>1</td>
<td>0.596</td>
<td>1.517</td>
<td>1.787</td>
<td>1.141</td>
<td>2.682</td>
<td>1.462</td>
</tr>
<tr>
<td>2</td>
<td>1.636</td>
<td>2.767</td>
<td>1.857</td>
<td>2.537</td>
<td>2.303</td>
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</tr>
<tr>
<td>3</td>
<td>0.736</td>
<td>0.635</td>
<td>0.596</td>
<td>0.735</td>
<td>0.397</td>
<td>0.429</td>
</tr>
<tr>
<td>4</td>
<td>0.577</td>
<td>0.710</td>
<td>0.385</td>
<td>0.607</td>
<td>0.293</td>
<td>0.294</td>
</tr>
<tr>
<td>5</td>
<td>0.462</td>
<td>0.332</td>
<td>0.289</td>
<td>0.392</td>
<td>0.582</td>
<td>0.422</td>
</tr>
<tr>
<td>6</td>
<td>0.415</td>
<td>0.175</td>
<td>0.338</td>
<td>0.221</td>
<td>0.334</td>
<td>0.414</td>
</tr>
<tr>
<td>7</td>
<td>0.179</td>
<td>0.242</td>
<td>0.247</td>
<td>0.284</td>
<td>0.191</td>
<td>0.273</td>
</tr>
<tr>
<td>8</td>
<td>0.138</td>
<td>0.138</td>
<td>0.138</td>
<td>0.138</td>
<td>0.138</td>
<td>0.138</td>
</tr>
<tr>
<td>9</td>
<td>0.135</td>
<td>0.135</td>
<td>0.135</td>
<td>0.135</td>
<td>0.135</td>
<td>0.135</td>
</tr>
<tr>
<td>10</td>
<td>0.016</td>
<td>0.241</td>
<td>0.241</td>
<td>0.241</td>
<td>0.241</td>
<td>0.241</td>
</tr>
<tr>
<td>11</td>
<td>0.023</td>
<td>0.023</td>
<td>0.023</td>
<td>0.023</td>
<td>0.023</td>
<td>0.023</td>
</tr>
<tr>
<td>12</td>
<td>0.017</td>
<td>0.130</td>
<td>0.130</td>
<td>0.130</td>
<td>0.130</td>
<td>0.130</td>
</tr>
</tbody>
</table>
### TABLE V
Amplitudes of Normal and Accented Marāṭhi Sounds

<table>
<thead>
<tr>
<th></th>
<th>[u]</th>
<th></th>
<th>[i]</th>
<th></th>
<th>[e:]</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Normal</td>
<td>Accented</td>
<td>Normal</td>
<td>Accented</td>
<td>Normal</td>
<td>Accented</td>
</tr>
<tr>
<td>1</td>
<td>0.278</td>
<td>0.306</td>
<td>0.534</td>
<td>0.228</td>
<td>1.139</td>
<td>0.794</td>
</tr>
<tr>
<td>2</td>
<td>1.263</td>
<td>1.693</td>
<td>1.022</td>
<td>1.167</td>
<td>0.477</td>
<td>2.308</td>
</tr>
<tr>
<td>3</td>
<td>0.372</td>
<td>0.157</td>
<td>0.280</td>
<td>0.744</td>
<td>0.280</td>
<td>0.056</td>
</tr>
<tr>
<td>4</td>
<td>0.114</td>
<td>0.250</td>
<td>0.075</td>
<td>0.143</td>
<td>0.008</td>
<td>0.654</td>
</tr>
<tr>
<td>5</td>
<td>0.231</td>
<td>0.041</td>
<td>0.161</td>
<td>0.282</td>
<td>0.075</td>
<td>0.113</td>
</tr>
<tr>
<td>6</td>
<td>0.084</td>
<td>0.221</td>
<td>0.406</td>
<td>0.198</td>
<td>0.095</td>
<td>0.327</td>
</tr>
<tr>
<td>7</td>
<td>0.326</td>
<td>0.030</td>
<td>0.268</td>
<td>0.389</td>
<td>0.300</td>
<td>0.261</td>
</tr>
<tr>
<td>8</td>
<td>0.084</td>
<td>0.176</td>
<td>0.131</td>
<td>0.091</td>
<td>0.093</td>
<td>0.298</td>
</tr>
<tr>
<td>9</td>
<td>0.046</td>
<td>0.156</td>
<td>0.088</td>
<td>0.263</td>
<td>0.186</td>
<td>0.010</td>
</tr>
<tr>
<td>10</td>
<td>0.438</td>
<td>0.141</td>
<td>0.100</td>
<td>0.300</td>
<td>0.107</td>
<td>0.149</td>
</tr>
<tr>
<td>11</td>
<td>0.078</td>
<td>0.161</td>
<td>0.097</td>
<td>0.060</td>
<td>0.257</td>
<td>0.195</td>
</tr>
<tr>
<td>12</td>
<td>0.041</td>
<td>0.010</td>
<td>0.037</td>
<td>0.035</td>
<td>0.167</td>
<td>0.020</td>
</tr>
</tbody>
</table>

*The words used were (pu̱kaḷ) (puʃaḷ) and (puʃkaḷ)*
that a shortening of duration is accompanied by a corresponding lengthening of amplitude clearly shows why J. Muyskens\textsuperscript{12} failed to understand the exact nature of accent.

3. The sound [u] in both the words pukaļ and pušaļ is compared with their correspondent [u] in puškaļ (cf. Tables III and IV). The pitch of the fundamental of the sound [u] in puškaļ is more than that of [u] in pušaļ, and less than that of [u] in pukaļ. The value of duration of [u] in puškaļ is not very much less than that of the same sound [u] in the other two forms but the mean-root-square value of the amplitudes is more than that for both the [u] sounds in pukaļ and pušaļ.

DISCUSSION

It will be seen from the results of the experiment that under modified conditions introduced by stressing of vowel-sounds because of irregular changes it is neither possible to predict nor possible to explain the nature of accent. It may appear that the objections raised by Scripture with respect to the number of ordinates to be used and the possibilities of committing errors in measurements even by using the trouble saving mechanical devices are quite genuine. On the other hand if it is considered that a speech sound is a three dimensional entity it leads to better understanding of the structures. Since the changes due to accent are found in all the three variables it is possible to give an easier explanation of some of the common speech phenomena. In the present case it can be pointed out that the two theories trying to give explanation of accent are correct only when both are together taken. There are no water-tight compartments in the matter of the changes so as to warrant the statement that changes due to accent are noticed only in the changes of pitch or in the changes of duration. The separate existence of the two theories to explain the nature of accent hitherto clearly indicates that it was never realised by earlier phoneticians that there can be also simultaneous amplitude variations. This has led to uncertainty in the field of physical phonetics as to the exact nature of accent. It will be seen that both the organs of breathing and phonation play equally an important part in producing the effect of accent. The organs of phonation cause a change in the tone of the sound. Similarly the organs of breathing cause a change in duration and amplitude. Thus the action of the two organs responsible for producing the change is simultaneous and is exhibited in the changes in all the three basic compo-

\textsuperscript{12} Muyskens, J. An Analysis of Accent in English from Kymograph records. VOX (1931), vol. 17, pp. 55-65.
nents. Since recognition of vowel-sounds in terms of regions of resonance with a limited number of ordinate measurements cannot be considered to be a sound criterion, it is intuitively suggested that as the three basic components can very well describe the changes in the structure of a vowel-sound and as it is possible to measure out the changes in these dimensions, the ‘motion’ of a vowel-point can be described as a composite function of these three variables. As the variables assume different values the function will describe a surface in three dimensions. The exact nature of this surface can be determined by measuring out the changes in the three components under all the possible modifications that may be imagined. It has already\(^\text{13}\) been pointed out that vowel sounds behave as a group, i.e., the changes with respect to any modification are similar for all the vowels. The problem is thus simplified because one need consider only one specific vowel for studying the changes. It is hoped that further work on the lines indicated above may bring out some interesting facts about the structure of vowel-sounds.*

\(^{13}\) Taskar, A. D. Vowel length. \textit{BDCRI}, (1952), vol. 12, pp. 252-256.

* The author has great pleasure in acknowledging his indebtedness to Professor C. R. Sankaran, Deccan College Post-Graduate and Research Institute, for his valuable help and advice in the preparation of this paper.
SOME NOTES ON THE HISTORY OF THE KITE
IN INDIA AND OUTSIDE

By

P. K. Gode, Bhandarkar Oriental Research Institute, Poona

In the article on "Kite-flying" in the Encyclopaedia Britannica Vol. 13 (1929), p. 421, we get the following remarks about Kites:—

"The tradition is that Kites were invented by Archytas of Tarentum four centuries before the Christian era, but they have been in use among Asiatic peoples and Savage tribes like the Maoris of New Zealand from time immemorial."

We are further informed in this article that "Kites' Day" is celebrated in China on the 9th day of the 9th month.

The above remarks do not give us any history of Kites in India or other Asiatic Countries. I record, therefore, some notes below which may clarify this history, especially with regard to India.

In 1952 I made inquiries with my friend Professor Dr. Vittore PISANI of the University of Milan (Italy) about the history of Kite-flying as recorded in European sources. Dr. PISANI was kind enough to reply to my inquiries in his letter of 23-6-1952 as follows:—

"As for Kite-flying I can give you only very scanty information. I don't know the works by J. LEGRÈNE, Les cerfs volants, Paris, 1910, and F. M. FELDHAUS, Die Technik der Vorzert, which possibly contain some hints to the history of Kite-flying and are quoted by Mario PASCAL at the end of his paper on Kite (Cervo volante) in the Encyclopaedia Italiana, Vol. IX, p. 862 ff; an article by C. F. MARWIN, The mecaniques and celebrities of Kites (Monthly Review, Washington, 1897) is quoted in the anonymous article on Kite (Drachen) in Der Grosse Brockhaus, 15 ed., Vol. 5, p. 66ff. From Broch-
hause, I learn that Kites are known since 1450 in North-Europe as child-
plays: this may hint to a MS of XV Cent. quoted by FELDHAUS (as I read in Encyclopaedia Italiana, p. 863), where it is taught "Wie du einen Drachen artificialiter machen und regieren sollt" (how you can do artificially and direct a kite).—As for the ancients, we can infer the acquaintance of the Greeks with kite from a picture on a Greek vase now in the National Museum at
ON THE HISTORY OF THE KITE IN INDIA AND OUTSIDE

Naples (No. 3151; S. Archaologische Zeitung, 1867, p. 125 it may be of V. or IV Cent. B.C.), where a maiden is shown playing with a triangular kite. — Moreover scholars are inclined to see a kite in the flying dove which Archytas of Tarent (430-348 B.C.) is said to have invented, in a rather confused passage of Aulus Gellius, Nocites Atticore X, 12: "Sed id quod archytam ... occulta concitum". Anyhow, if this was a kite it would mean that Gellius had no distinct idea of kites or did not well understand what the dove of Archytas really was.

According to Prof. L. Carrington Goodrich the kite originated in China in the 6th century A.D. (p. 114 of Short History of the Chinese People, New York, 1951). "The first verifiable reference is to its use at the siege of T'ai in 549, when the Liang emperor sent one aloft to inform his friends outside the city of his plight. The enemy noticing it, ordered their best archers to bring it down — according to Laufer, the first case of anti-aircraft warfare (pp. 34-37 of Prehistory of Aviation, by B. Laufer). The use of kites spread to Muslim lands in the seventh century, to Italy in 1589 and to England1 a few decades later."

If the use of kites spread to Muslim lands in the 7th century A.D., it is possible to suppose that the kites were introduced into India by the Muslims sometime after the 7th cent. A.D.

About the currency and history of kite-flying in Siam I gratefully record the following information kindly sent to me by my friend Prince Dhani Nivat, President of the Siam Society, Bangkok, in his letters dated 16-4-1952 and 7-5-1952: —

16-4-52—"Kite-flying has been recorded in the history of our race as having been indulged in by the national hero, Phra Ruang, who has been dated for the middle of the 13th century A.D. As with betel-chewing, it probably existed long before that, but we have no record of it. Of later years, although it has since been given up for several centuries past it formed part of the annual court ceremonies, which are still preserved in the present-day Cambodian Court."

7-5-52—"As for textual references concerning the indulgence in kite-flying on the part of our national hero, Phra Ruang, I should point out that the information is based upon oral tradition more than any authentic record. It is true that there is the History of the North, in Siamese,

1. In the Shorter Oxford English Dictionary, p. 1088 the word Kite in the sense of a toy is associated with the year 1664. The exact time of the introduction of the Kite into India is not known. The references to Kite in Marathi literature recorded in the present paper are later than A.D. 1560."
which is a collection of pseudo-historical traditions collected only as late as 1807 but it too was based upon oral traditions to a great extent.

Kiteflying in general, however, was recorded in the Palatine Law of Audhya promulgated in 1458 A.D., which unfortunately has not been translated into English except in parts."

It remains to be investigated whether kite-flying was introduced into Siam from China or originated in Siam itself. It is for students of Siamese history and culture to bring some evidence on this question. In the collection of Marathi manuscripts at Shri Samartha Vagdevatā Mandir at Dhulia (Khandesh) my friend Shri V. S. Bendre found a Ms (Bād No. 554) containing the following abhanga of Saint Ekanātha of Mahārāṣṭra (1533?—A.D. 1599):

Page 20—"Andre āteśa Re telle ḍhavūdi

Sādhusūlana Nīṇa dūm gōtra gō ḍhādi \( \| 1 \| \)

Ḍhavūdi ḍhagānte ḍhoṭi \( \| 2 \| \)

Paṇe paṇapūṇā pīrūkālā \( \| 3 \| \)

Vātāmātā jāoṭi ḍhāti \( \| 4 \| \)

Tē ḍhavūdi kāy koṭalā ḍhādi \( \| 5 \| \)

Ātmane jāmūṣu ḍhādi \( \| 6 \| \)

Tē Ṣīṁa ṣaṅḍeōni kann ḍhādi \( \| 7 \| \)

Ḍhavūdi ēṃg āairi \( \| 8 \| \)

Jē naṇē ṣhēre ṣambārī \( \| 9 \| \)

Vṛtānā ḍvāyu māhā ṣhēre \( \| 10 \| \)

Shāṇā ḍhbū ḍhogāṭe ṣhāre \( \| 11 \| \)

Yeke janaṇāṅṅi ḍ)NSString āṁī \( \| 12 \| \)

Ḍhavūdi sādhusūlā ṣaṅḍeōni \( \| 13 \| \)"

The simile of ḍhavūdi (vāvaḍē) or Kite employed in this song in a spiritual context describes in detail the size of the Kite, its string, its upward flight in the sky with the upward and downward movements and the noise produced by these movements. In fact it is a vivid description of Kite-flying. If the above song is a genuine production of Saint Ekanātha, who died in A.D. 1599, we shall have to regard its reference to Kite-flying as the earliest one in Marathi literature so far known to me. Since Shri Bendre reported this reference to me he was in search of some other reference to Kite-flying
in St. Ekanātha’s works. On 25-8-1956 he found the following very interesting reference to Kite-flying on p. 57 of Ekanātha Gāthā (edited by Outi):—

"२०६. अवश्य केली वाचवः।
कश्चा दोर परवः।
उडळती बारा चौदा गळ।
भरली ती गमनी उढः || १ ||
भजी चंग वाचवः।
दारांने भजी चंग वाचवः || दु ||
वौट हङ जोडोनी दोरा।
मध्ये क्रमागत लाखिल्या बारा।
अगमिनितीचा चंग उडः।
वाचवः उडळी अंधरी || २ ||
सहा चार मिळतोनी गळ।
अंतरजंघं सोडळती वाचवः।
एका जनाईंस वाची जोडी।
जनाईंसोंचे पायी गळे || ३ ||"

The metaphor of the वाचवः or Kite given to us by St. Ekanātha in the above extract gives us the following details about Kite-flying:

1. The Kite referred to was a very big one with a long rope.
2. It was flown in the sky with the help of more than a dozen persons.
3. Its frame was made of 12 bamboo strips.

It appears from these two references to Kite-flying by St. Ekanātha that this sport was current in the Deccan in the 16th century.

Corresponding to Saint Ekanātha’s references to वाचवः or Kite we find a reference to वाचवः in the Marathi work called the Grantharāja by Dāsopant (A.D. 1551-1615). This work has been edited by Shri S. S. Dso for B.I.S. Mandal, Poona, 1914. The pertinent extract referring to वाचवः reads as follows:—

Page 28— "वाचवः उड़े अंधरी।
सूर्य तें भारकाना करी।
तेसा वासना ठेऊली घरी।
लगातं निर्लत || ४ || (॥१०६॥)

(Prakaraṇa III, Ovi 108).
In these lines a Kite (बाघडी) is mentioned as flying in the sky, its string (सुन्द्र) being held by a person.

Saint Tukārāma of Mahārāṣṭra (A.D. 1608-1649) whose literary career is assigned to the period, A.D. 1632-1649, refers to Kite-flying in the following abhanga or song, to which my attention was kindly drawn by my friend Shri V. S. Bendre:

"छंटोनिया दौरी आविष्कारिती ।
बाघडी आकाषी नोकलिली ॥ १ ॥"

[See p. 164 of Tukārāma's Gāthā (S. P. Pandit's edition reprinted by Bombay Govt.)—Abhanga No. 2802, which is also found in other editions of Tukārāma's Gāthā].

In the above lines Tukārāma refers to बाघडी or Kite with दौरी or string, let off in the sky.

Kavīndrācarya Sarasvatī of Banaras, the celebrated protégé of Emperor Shah Jahan (A.D. 1628-1658), composed a Hindi work called "Kavīndrakalpalatē" in praise of Shah Jahan, Dara Shukoh etc. I procured a copy of the Ms of this work from Bikaner and deposited it at the B.O.R. Institute some years ago. Prof. Upadhyaya of Agra had an occasion to go through this copy in May 1956. I am thankful to Prof. Upadhyaya for drawing my

2. The word बाघडी meaning a Kite was current in the Marathi language in the 16th and 17th centuries and even later. It is also current today in some parts of Mahārāṣṭra. The modern Marathi word for Kite is पतंग. Whether this word in the sense of a Kite was current in the Marathi language in the 16th and 17th centuries remains to be investigated. In the following extract from a Marathi work called the Yogasāṅgrāma, composed by Shaikh Muhammad in A.D. 1645 the word पतंग is used as Shri Bendre points out but its exact meaning cannot be determined:

"अथ दिने पतंगचा रंग ।
छारू वृत्ती वाह गोरंग ।
तैसैं सुमान्द्राचं सोंग ।
जगी मिराबती ॥ १२५ ॥"

(Prasaṅga 16 of Yogasāṅgrāma)

The first two lines in the above extract refer to the colour of पतंग, which fades away when it is washed. Saint Tukārāma, however, definitely uses the word पतंग in the sense of ‘kite’ in the following lines:

"तेयं पुष्प याप नोकरने स्वह्न साहसी संकल्प पतंग ते ॥ ३ ॥"

(See Abhanga No. 197 of the Mantragītā of Tukārāma, edited by V. S. Bendre). According to Shri Bendre the Mantragītā was composed by Tukārāma sometime before A.D. 1643.
attention to the following reference to चंग i.e., Kite in this Hindi work of Kavīndrācārya:——

Folio 7 of B.O.R.I. Ms of Kavīndrakalpalatā —While describing the valour of Shah Jahan on the battle-field Kavīndrācārya gives the following simile:——

“उत्तमकस्तरापुरुष गठतसमन्चांगप्रतिवांच झटक अर्णग”

We are told in this simile that the severed heads of the enemy fly in the sky like the चंग or Kite.

Francis Buchanan in his Patna-Gaya Report (1811-1812A.D.) published by the Bihar and Orissa Research Society, Patna, Vol. II, page 625, refers to the use and manufacture of paper kites by Common artists as follows:——

“Although many great idle fellows amuse themselves with paper Kites, the makers cannot live the whole year by this profession as few amuse themselves with this sport except in the cool season. The makers, therefore, retail toys for children which are made by the potters and the apparatus used in smoking tobacco. Their Kites (telangi or guddi) are not superior to those of Puraniya.”

The above extract clearly shows that Kite-flying was current in Bihar in A.D. 1812 and possibly long before this year and that the manufacture of Kites had become a regular profession for the manufacturers of toys at Patna and Puraniya in Bihar.

About the currency of Kite-flying in Bengal my friend Prof Chintaran Chakravarti observes in his letter of 3-6-1952 as follows:——

“As regards Kite-flying in Bengal I may mention that the last day of the Solar month of Bhādra is observed as a special day for Kite-flying in Western Bengal, when Kites of many colours and sizes are found flying in the sky from noon to evening.” (Compare the celebration of the 9th day of the 9th month of a year as “Kite’s Day” in China).

About Kite-flying in Assam my friend Prof. Maheshwar Neog of the University of Gauhati has kindly informed me as follows:——

16-3-1952—“I am not familiar with any references to Kite-flying in Assamese or Sanskrit. There were many varieties of sports and pastimes patronised by the Ahom monarchs of Assam or otherwise prevalent in the country. Up till the time of loss of Ahom sovereignty in the beginning of the second quarter of the last century the Ahom kings used to seat them
with their nobility on the upper storey of the raing-ghar (house of sports or merriment) still standing on the site of their capital Rangpur (Sibsagar) on the occasion of the mahā-viṣuva-Saṅkrānti celebrated as Ca't (Caitra) or ba'hāg- (Vaśākha) bihu (visuvant), and witness various sports made by people traditionally assigned for them. One such fun, known as Šen-melā (releasing of Hawk) consisted of releasing of a kanuvā (crane) and after it a hawk (Šen, Sanskrit Šyena) and these two birds fighting in the air. Kite-flying seems to have been unknown to the Assamese till very recent times. The same word cilā is applied to the bird (masc.; fem.—cilani) as well as to paper-kite, which, I think, is an indication of that this game probably came with the English, who have got the same single word for both these things. In many of our small towns the people who sell Kites are often Bengali Muslims from Sylhet or Dacca. The Bengalis call the bird cil and the paper-kite ghuddi (घुड़ड़ी), which may have been derived from Hindi ghuddī (घुड़ड़ी) meaning a paper kite."

While thanking Prof. Neog for the remarks quoted above I may observe that there is every possibility of the Muslims introducing the Kites in Assam and other parts of India long before the English advent as we are told by Prof. Goodrich that the use of Kite, which originated in China, spread to Muslim lands in the 7th cent. A.D. We have already pointed out in this paper that Kites were known in the Deccan in the 16th cent., as they are mentioned by St. Ekanāthā (A.D. 1533?-1599) in his Marathi works.

In response to my inquiry about Kite-flying in South India my friend Prof. E. V. Viraraghavacharya of the P. R. College, Kakinada (Dt. E. Godavari) wrote to me as follows on 14-2-1952:—

"Kite-flying is a sport indulged in these parts by youngsters (below 20 or 50) in Vizagapatnam Dist. I observed young men (from castes other than the higher castes) participating in it. A friend tells me that this is the season when the Burmese people (young and old) spend much time and money (by way of betting) in this sport. They are said to tie a piece of sharp glass to the Kite and this piece of glass would be allowed to contact the rival Kite in competition, and cut the thread of the rival.

Kite—(Telugu) गाळि-पड़ा or गाळिपटमू. गाळि—wind and पटमू—a piece of cloth
(from Sanskrit पट).

पड़ा=Phana or a hood or something resembling it. Kites have long tails (pieces of cloth; the body proper being sometimes in the form of a serpent's hood, made up of thick and coloured papers attached to a square frame of thin bamboo pieces. Sometimes metal rings too are attached to kites to produce a hissing or a buzzing sound.)"
ON THE HISTORY OF THE KITE IN INDIA AND OUTSIDE

It is worth while collecting information about Kite-flying as current in the different regions of India and the countries of the world.

I believe that the notes about the history of Kite-flying recorded above, though scanty, prove the currency of Kite-flying in India from C. A.D. 1500 onwards. The history of Kite-flying outside India, especially in China and Europe is given by Berthold LAUFER in his book "The Prehistory of Aviation," Chicago, 1928, pp. 31-43 (Kites as precursors of aeroplanes). I shall record in a subsequent paper a complete chronology of Kite-flying as given by LAUFER as also that revealed in the notes recorded in the present paper. I hope scholars interested in this topic will report to me or record independently any references to Kite-flying in India especially prior to A.D. 1500.3

3. I record here most cordially my thanks to all friends who have helped me by supplying valuable information bearing on the present inquiry.
'IDLI' IN KANNADA LITERATURE

By

H. G. Narahari, Poona

Having read Dr. P. K. Goede's interesting paper on the popular dishes Idli and Dose in the Chatterji Jubilee Volume, I am tempted to record now, for the Taraporewala Memorial Volume, some references in Kannada Literature to the former of these dishes which would supplement the data available from Sanskrit and Prākṛt sources.

Idgalement or Iddalige appears to be the name by which the dish, now popular as Idli, was known to the Kannādgīs of old. A very early work on Cookery, the Sūpaśāstra of Jayabandhunandana (c. 800 A.D. according to R. Narasimhaçarya²) speaks of Iddarige of appetising flavour prepared from ground black gram (urdina bēle), mixed with curd and water and spiced with Asafoetida (īṅgu), Cumin seeds (jīrāge), Coriander leaves (kottumbbari) and black pepper (meṇasu):

Aredurdina bēleyamoṁ-
   dire mosaradi (?) nirolīṅgu jīrāge kottum-
bari meṇasallāṁ berasi-
   ḍdarigeyanaḍe kampanimpumāṁ taḷedirkum //.

The Pārśvanāthapurāṇa of Pārśvapāṇḍita (1205 A.D.) describes³ a rich dinner where, along with the many sweet dishes of the Kannada people like Maṇḍage, Hoḷīge, Hūrige and Laḍāuge, was served Iddalige, full of flavour and floating in melted butter:

...tuppaddali tēṅkuva kampu-
   ḍiddaligegalaṁ bēgaṁ
baḍdisidar jāṇaremboṁ bāṇasigare //.

2. R. Narasimhaçarya, Kannāṭaka Kaviçārite (Mysore, 1907), I. 16; I understand from Prof. T. N. Sreekantiah of Karnataka University, Dharwar that this work is now identified as part of the Lokopakāra of Cauṇḍarāya. If this Cauṇḍarāya is identical with the author of the Cauṇḍarāyapurāṇa composed in 973 A.D., the earliest reference to Idli now available in Kannada literature would go to the last quarter of the 10th century A.D.
3. cited in KK., I. 259.
More poetic is the Sāntīśvarapurāṇa of Kamalabhava (c. 1235 A.D.), which likens Id̂d̂aliges served in another splendid dinner to balls of the foam of the celestial river Gaṅgā:

\[\text{Surasindhuphenapiño-}\]
\[\text{tkaramivenal kāntivettu naganada teradim /}\]
\[\text{Piridum laghutvadim bi-}\]
\[\text{ttaripidiḍaligegalanantarvar baḍdisidar //}\]

**Id̂d̂alige** is again a prominent dish in an elaborate dinner described by the poet Maṅgarasa III (1508 A.D.) in his Saṁyaktvakaumūti: ⁵

\[\text{Begadindeḍemāḍidiḍaligedosegala.}\]
\[\text{........................\}}\]
\[\text{...āpoṭṭeyoṭeva maryādeyolagunḍu tegutirdaru //}\]

Anṇāji (c. 1600 A.D.) is another poet who grows poetic while speaking of Id̂d̂alige. The occasion is provided by his Saundaravilāsa ⁶ where, describing the dishes displayed in a restaurant (miṭhāyiyaṅgadi), the poet speaks of Id̂d̂aliges shining like the cool-rayed Moon (himakaranante rājisvva id̂d̂alige).

The Uḍḍina Kaḍābu mentioned in the royal dinner described by the Jain poet Terkanāmbi Bommarasa (c. 1485 A.D.) and likened, in poetic fancy, to frost settled down or to globular deposits of boiled nectar or to lunar rays solidified, appears to refer to Id̂li only:

\[\text{Baṭṭavereyo maṇjinobbuli}\]
\[\text{baṭṭitaḍudo amṛtarasavala /}\]
\[\text{Vaṭṭuvṛtttada pīṇḍavāḍudo candrikeyu bandu //}\]
\[\text{gaṭṭigōṅḍito enalu nolpara}\]
\[\text{diṭṭegolavanu manake haruṣava}\]
\[\text{puṭṭepuddina kaḍābu savideru nṛparu mananalāye //}\]

In Karnaṭak at least the modern Id̂li is nothing more than a diminutive form of the ancient giant dish Huygaḍābu. Large vessels specially designed for its preparation are to be found even now in all those Karnaṭaka homes which still keep the old tradition.

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4. cited Ibid., p. 294.
5. KK., II. 336.
6. Ibid., p. 130; this is cited by B. A. Salfore (Social and Political life in Vīja-
yanagara Empire, II. 313) also who lists passages in Kannada literature describing the
dishes current among the people,
HOW PĀÑINI HAS BEEN MISUNDERSTOOD

By

Kshitish Chandra CHATTERJI, Calcutta

Pāñini’s grammar has been studied in India for about 2,500 years, but still there are many rules about the exact meaning and implication of which we are completely in the dark. There are several cases where later grammarians and commentators have thoroughly misunderstood the rules of Pāñini and sanctioned forms which are manifestly ungrammatical. I shall mention a few such cases in this short paper.

In the Saṅkṣiptaśāra of Kramadīśvara there is a rule ‘nalopo nādhikaraṇaikatve’ ii.5.36. The Vṛtti supplies the example: rājanyati ṭhakkure. The commentary explains: adhikaraṇaikatva-vihita īyi pare nakāra-lopo na bhavati.

The plain meaning is that n-stems do not drop their n before the distinctive suffix -īya when it is added to a locative singular. Thus ṭhakkuraṁ rājānam ivācarati yields rājīyati ṭhakkuraṁ, but ṭhakkure rājanīvācarati will yield rājanyati ṭhakkure!

Similarly the Supadma of Padmanābhadatta has the rule nah kye’nau ii.3.2, which is explained thus in the Vṛtti: anī-visaye kya-pratyaye nānta eva padasamijñaḥ syāt rājīyati, rājāyate; padatvān nalopaḥ; añau iti kim? rāja-nyati gurau.

Supadma lays down that an n-stem is to be regarded as a pada before the distinctive suffixes -kyac, -kyaṅ and -kyaṣ except when it ends in the locative singular. Thus in the sense of gurun rājānam ivāc arati we shall have guraṁ rājīyati, but in the sense of gurau rājanīvāc arati we shall have gurau rājanyati.

All this is very strange, because in all other cases the distinctive from the karmopamāṇa and that from the adhikaraṇopamāṇa are absolutely identical and there is no reason why there should be a difference in the case of n-stems.

The fact is that Pāñini prescribes the suffix -kyac only after karmopamāṇa in his rule upamāṇād ācāre iii.1.10. Kātyāyana extends the suffix to adhikaraṇopamāṇa also by his Vṛttika adhikaranāc ca. Now Pāñini has a rule in his Aṣṭādhyāyī na nisambuddhyoḥ viii.2.8 acc. to which a pada
does not lose its final n before the locative singular and vocative singular endings. The learned grammarian has mentioned ni in this rule for locative singulars without ending like vyoman, carman etc., occurring in the Vedas. Katyayana and Patañjali also hold this view, for Katyayana has the Varttika: bhatvāt tu nam pratisedhānarthakhyam which is accepted by Patañjali, who explains it thus: 'nau pratisedho' narthakah'. kim karaṇam? 'bhatvāt' bhasamājñātra bhaviṣyatī. yadī tarhi bha-saṃjñātra bhavati 'rathantare sāman ityatra 'allopo 'nah' vi. 4.134 ity allopaḥ prāṇpoti naṅsa dosaḥ; uktam; ubhayasaṃjñānyapi cchandānīni dṛṣṭyante, tathā hi 'sa sūṣṭubhā sa ykvatā gaṇena' (RV. iv. 50.5); padatvāt kutvam, bhatvāj jaśtvam na bhavati; evam ihāpi adatvād allopo na bhatvān nalopā na bhaviṣyatī.

It is clear from this that according to Patañjali the highest authority on Sanskrit grammar ni in the rule is for Vedic forms only. He does not mention forms in the classical language in this connection. Thus acc. to Patañjali the rule does not apply to cases covered by the Varttika: adhikaranāc ca.

Nāgeśa noticed the point but the conclusion he drew from these premises is different. He says that by not referring to cases like rājanivācarati rājanyati bhikṣuke the Bhāsyakāra merely shows that denominative forms are not to be used in such cases. Thus Nāgeśa says in his Uddyota: na ca rājanivācarati rājanyati bhikṣuke ityātriḥdikaranāc ca (iii. 1.10.1) iti kyaci lokā udāharanasyābhavaḥ etad bhāsyaprāmāṇyād anabhidhānena tatvā kuṣaṇapapateḥ. He expresses the same view in his Laghusabdenduṣekhara also: 'rājanivācaratityarthe' dhikaranācetī kyac tu loka nāṣyeva anabhidhānavad, at eva parame vyoman (RV. x.129.7) ityādāv aṣāsmayādītvād bhāvyena sūtrasathāni-grahaṇa-pratyākhyanām bhāsyoktaṁ saṅgacchata iti bhāvah.

No doubt 'anabhidhāna' comes in very handy whenever a difficulty occurs, but there is no reason why there should be 'anabhidhānā' here.

Kramadīśvara, Padmanātha and others are right in not accepting the hypothesis of 'anabhidhāna', but wrong in the application of the rule.

Thus since Pāṇini’s rule ‘na nī-sambuddhyoh’ is meant for the justification of Vedic forms like vyoman, carman, etc., since Pāṇini had no idea that Katyayana would extend his suffix -kyac to adhikaranopamāṇa also and was thus not in a position to make provision for the non-application of the rule in the case of adhikaranopamāṇa ending in n, since Katyayana and Patañjali who accept -kyac in the case of adhikaranopamāṇa do not refer to the case of n-stems while considering 'na- nī-sambuddhyoh' but confine it to Vedic forms like vyoman. and since there is no reason why in the case of n-stems alone the adhikaranopamāṇa denominatives should differ from the
karmopamāṇa ones, it is perfectly clear that rājanivācarati will yield rājiyatī and not rājanayati and that the protagonists of rājanayati have misunderstood Pāṇini’s rule.

Pāṇini lays down that in the case of Bahuvrihis in which the first member is an adjective to the second, the former if ending in a feminine suffix generally drops it except when the last member happens to be priyā, etc. Now Pāṇini includes the word ‘bhakti’ in the priyādīgaṇa. But in literature in compounds with ‘bhakti’ (devotion) as the final member, the preceding member invariably shows the elision of the feminine suffix. So, many later grammarians and commentators were forced to make the absurd statement that dṛśhabhaktiḥ found in the Rāmāyana and Raghuvamśa is to be dissolved as dṛśham bhaktiḥ yasya saḥ and that dṛśhā bhaktir yasya saḥ should yield dṛśhābhaktiḥ. Bhobarāja laid down that there should be puṁvadbhāva when ‘bhakti’ means ‘an object of devotion’ but no puṁvadbhāva when it means ‘devotion’; but later grammarians did not see their way to accepting this view. They did not consider for a moment the sense in which Pāṇini uses the word ‘bhakti’ in his grammar; they did not take into account the instances occurring in the Mahābhāṣya, they did not think it their business to seek for the reason underlying the phenomenon of puṁvadbhāva, they took the word ‘bhakti’ in the sense prevalent in their times and asserted and maintained against the genius of the language that the grammatically correct form is dṛśhābhaktiḥ.

According to Pāṇini ii.3.40 both the genitive and the locative are used in ‘nirdhāraṇa’; but he bans compounds with the partitive genitive but not with the partitive locative in his rule ‘na nirdhāraṇe’ ii. 2.10. This has led later commentators to think that Pāṇini allows compounds with the partitive locative. They forget that Pāṇini does not sanction compounds with nirdhāraṇa spatamī and so it is not necessary for him to prohibit the formation of such compounds.

Instances could be multiplied to any extent but these three will suffice to show how Pāṇini’s rules have been misunderstood through the ages. Later commentators thought the ancient commentaries worthless because they could not bring themselves to accept their view and so these invaluable works perished. What would we not give to have a glimpse of the first commentary of the Aṣṭādhīyāī?
Sanskrit dhāruṇa- and Greek thelumna

By

Manfred Mayrhofer, Würzburg

Vedic dhārūṇa- “bearing, holding; (n.) basis, foundation, etc.” (RV, AV, VS) and Greek thēlumna n. plur. “foundations” (Empedocles), Homeric pro-thēlumnos “uprooted, whose roots, whose foundations are gone,”1 tetra-thēlumnos “of four layers” have been connected by some older etymologists,2 and in more recent times by Franz Specht, Der Ursprung der indogermanischen Deklination (1944) pg. 126, 275 n. 1. At first sight, however, this comparison seems to be impossible, since one cannot reasonably keep apart dhārūṇa- from dhar- “to hold”; Vedic dhārāṇa- “bearing, holding, supporting”, etc., going back to I.E. *dher- (Walde-Pokorny, I, 856sqq.); Greek *thēr-, not thēl- should therefore be expected. On the other hand, the combination of dhārūṇa- and thēlumna etc. is very tempting,3 not only because of the identical meanings (“foundation, firm ground”), but also from the point of view of word-formation: speaking in Sanskrit symbols, a *dhāruman- (: thēlumna, cf. Chantraine, La formation des noms en Grec ancien, 1933, pg. 215sq.), from the -u- base in dharuṇa- and plausibly in dhru-vā “firm, fixed”, would be quite conceivable besides Vedic dhār-man- “support, hold” (from the un-extended root) and dhārī-man- “custom, law, dharmah” (from the shva-base). And there is perhaps a way of connecting Greek thēlumna with Skr. dharuṇa- without having to separate dhārūṇa- from dhar-, or dhar- from its cognates pointing to I.E. *dher-.

Looking at the Greek word-family of thēlumna, we see that the oldest examples are the two Homeric compounds, pro- and tetra-thēlumnos. The simplex thēlumna is later; finally, there are some glosses in Hesych’s lexicon

1. See J. Wackernagel, Sprachliche Untersuchungen zu Homer (1916) pg. 240; also Diller, Philologus 97 (1948) pg. 361sq.
3. and would be preferable also to the explanations of thēlumna as “pre-greek”: cf., f.i., H. Günther, Labyrin (1932) pg. 30; A. J. Van Windekens, Le Pélasgique (1952) pg. 88 (with bibliogr.).
considered to be members of the thélumna-family, which are of no etymological value.⁴ That means, that in oldest Greek -thélumno- is recorded only with two prefixes containing -r-, pro- and tetra- : would it, therefore, be too bold to assume an older *therumno- (: dharúna-, I.E. *dher-u-mn-) changed by dissimilation in *pro-therumno-, *tetra-therumno- to -thélumno, a form later used also as a simplex (thélumna, Empedocles)? This supposition would enable us to include Greek thélumna in the family of Skt. dhar-—leaving undecided the old theory of Skt. dharúna- coming from *dharumna- and being thus still closer related to the Greek words examined in this little paper.

⁴. “athélimnon” is now read “athélémon ákousma: kakón” in LATTE’s new edition (1953) and does not belong to our words; “athélimnoi: kakoi” is a “spätbyzantinische Entstellung des Cyrillglossars” (Prof. LATTE, in a letter to the present writer) and a case of itacism; “theləmon: hólon ek rhizón” is plausibly a wrong derivation from Homeric prothélumno— and certainly no I.E. “thème en -e-” (VAN WINDEKENS, l.c.)!
FREQUENCY AND PHONEMICS

By

Gordon H. Fairbanks, Cornell University, U.S.A.

0.1. It is customary in morphological analysis to make use of the criteria of maximum differentiation and replaceability. Thus on the basis of maximum differentiation, since the verb sing and many others in English have a maximum of five forms, sing, sings, sang, sung, singing, the verb put is also analyzed as having the same five forms. The verb put has only three phonemically distinct forms, put, puts and putting, but these are equated with the five forms of sing on the basis of their mutual replaceability, such that put is a single morpheme form when it replaces sing, is composed of a base morpheme plus a past tense morpheme when it replaces sang and is composed of a base morpheme plus a past participle morpheme when it replaces sung. It is also customary to temper these criteria by the principle of frequency. If the criterion of replaceability is taken rigorously, then it would be necessary to analyze sang as two different forms depending upon whether it was replaceable by was or by were. If the analysis is tempered by the principle of frequency, then since there is in English only one verb that has more than five phonemically distinct forms, the verb to be (be, am, are, is, was, were, been and being), English can be analyzed as having verbs that show only five forms with the exception of the verb to be which has eight forms. To analyze all English verbs as having eight forms would be to follow the criteria of maximum differentiation and replaceability more rigorously, but would be less practical.

0.2. In Russian the noun /stól/ 'table' has five phonemically distinct forms, /stôl, stalá, stalú, stalé, stalóm/, in the singular as does also the noun /žiná/ 'woman', /žiná, žinú, žiní, žíné, žíný/. However, since both žiná/ and /žinú/ are replaceable by /stól/ and since both /stál/ and /stalé/ are replaceable by /žiné/, it is necessary to consider that /stól/ represents two forms and that /žiné/ represents two forms or that we have a total of six case forms. The form /stól/ is a nominative case form when it replaces /žiná/ and an accusative case form when it replaces /žinú/, the form /žiné/ is a dative case form when it replaces /stál/ and a locative case form when it replaces /stalé/, the mutually replaceable forms, /stál/ and /žíní/, are genitive case forms and the mutually replaceable forms, /stalóm/ and /žíný/, are instrumental case forms, a total of six case forms. Most of the nouns in the language can be described in terms of this six-case system, but not all nouns. The form /stalé/ is sometimes replaceable by the form
/uglú/, /f stal’é/ ‘in the table’ /v uglú/ ‘in the corner’, and sometimes replaceable by /ugl’é/, /a stal’é/ ‘about the table’ /ab uglé/ ‘about the corner’. Also the form /stalá/ is sometimes replaceable by /damú/, /is stalá/ ‘out of the table’ /iz damu/ ‘out of the house’, and sometimes replaceable by /dóma/, /at stalá da dv’éri/ ‘from the table to the door’ /ad dóma da vagzála/ ‘from the house to the station’. The criterion of replaceability, if taken rigorously, would require the addition of two more case forms to the system; /stal’é/ would be one case form when it replaces /uglú/ and a different case form when it replaces /ugl’é/ and /stalá/ would likewise represent two different case forms. There are only a small number of nouns in the language that have these extra case forms phonemically distinct from the six originally posited. If the criterion of frequency is introduced, the bulk of the language may be described in terms of six case forms and then a limited, but specifiable, number of nouns would be exceptional in having more than six forms.

0.3. When a linguist makes an analysis of this type, he is positing two levels of morphological patterning in the language. I would call one level the basic or high frequency paradigmatic patterning and the other the exceptional or low frequency paradigmatic patterning. Both are integral parts of the language and must be stated in the morphology. There is no sharp line of demarcation as to when the principle of frequency is to be employed in the analysis and when not. In the English example cited above, there is only one verb with eight forms and a fairly large number with no more than five. In the Russian example there are a number of nouns with the extra case forms, but the difference between the number of nouns with six forms and those with more than six is still very great. It is a matter of the discretion of the linguist how great a difference in frequency between two morphological patterns he will insist on before positing two levels of morphological patterning. If he is discreet, his analysis will be acceptable to other linguists. The application or non-application of the principle of frequency in a specific language may be conditioned also by the purpose of his analysis.

1.0. In phonological analysis this principle of frequency is not generally employed in assigning allophones to phonemes. In some languages where a particular phonemic contrast is one of very low frequency it is worth while considering some of the implications of adopting this principle. A phonemic contrast may be rare either because it occurs in only a few items, that is,

1. Rigorous application of the principle of replaceability would require positing more than eight case forms in Russian, but this example is meant to be illustrative, not exhaustive.
FREQUENCY AND PHONEMICS

has a low list frequency, or because it has a very limited distribution. It is worth considering both cases.

1.1. An extreme example of a phonemic contrast with a very low list frequency occurs in Mazateco, where [t] occurs in only a few words medially after nasals, but with high frequency in initial position and [d] occurs with high frequency medially after nasals and not at all initially. One analysis, giving precedence to the principle of phonetic similarity, would be to consider [t] either initial or after nasals as the phoneme /t/ and [d] as the phoneme /d/. This produces an analysis with a very peculiar distribution of the phonemes, /t/ occurring initially with high frequency but after nasals in only a few words and /d/ occurring with high frequency after nasals but not at all initially. Giving precedence to the principle of frequency, another analysis would be to consider [t] initial and [d] medial after nasals as allophones of the same phoneme /t/ and to consider [t] medial after nasals, as a different phoneme /t/. This analysis has various advantages. It considers [t] and [d] as allophones of the same phoneme which fits the fact that [t] and [d] are in non-contrastive distribution for the vast majority of the language. It considers medial [t] after nasals as a separate phoneme in that position in which it does contrast with [d] which depicts more clearly the fact that [t] and [d] contrast in only a few items. It gives the phoneme /t/ a wide distribution and one probably paralleled by other phonemes. It considers the consonant system of the language to be composed of the phoneme /t/ and /t/ among others, and further to be composed of two sub-systems. The first sub-system is of high frequency and includes the phoneme /t/, the second of low frequency and includes the phoneme /t/. This analysis does not eliminate the contrast between [t] and [d] from Mazateco, which seems to be the intent of Fries and Pike when they relegate the contrast to a 'conflicting coexistent system'. This analysis also avoids the necessity for introducing the native speaker's reaction to learning to write his own language or learning a different language. It admits overlapping of phonemes, a point discussed in section 2.


3. The sub-systems posited here on the basis of frequency are similar to sub-systems posited on the basis of distribution. Punjabi, according to the unpublished analysis of Sri K. C. Bahl when he was studying under my direction at the Deccan College, has a vowel system composed of ten phonemes, /i e e a > o u u/, which may be divided on the basis of distribution into one sub-system including /i e e a > o u u/ and a second including /i e e a > o u u/. Armenian, either the East or West variety, has a vowel system of six phonemes, /i e a o u u/, of which /i e a o u/ form one distributional sub-system and /u/ a second.


5. Fries and Pike, Lang. 25.30 (1949).
1.2. An example of a contrast in a limited position occurs in Pre-Slavic at a time not much earlier than Proto-Slavic. After the non-palatalized phonemes /p b m v t d s z l n r k g x/ and after the palatalized phonemes /c ʃ ʒ y/ the vowel [a], but not [æ], may occur, after the palatalized phonemes /p' b' m' v' t' d' s' ʃ' z' l' n' r'/ the vowel [æ], but not [a], may occur and after the phonemes /c ʒ ʃ/ both [a] and [æ] may occur. One analysis, giving precedence to phonetic similarity, would be to analyze [æ] wherever it occurs as the phoneme /æ/ and [a] wherever it occurs as the phoneme /a/. This would mean that the phoneme /æ/ could occur only after 14 of the 32 consonant phonemes and the phoneme /a/ could occur after only 21 of the 32 consonant phonemes and of these 21 only three are duplicated among the 14 after which /æ/ may occur. This is a distribution unlike that of the other vowel phonemes which may for the most part occur after any consonant. Considering the limited position of the contrast between [a] and [æ] and considering that [a] and [æ] are almost in complementary distribution in the same way that other front and back vowels are completely in complementary distribution, another analysis would be to consider [æ], where it contrasts with [a], a phoneme /æ/ and to consider [a] and [æ] in all other positions as allophones of the phoneme /a/. This analysis states the contrasts that occur in the language since it recognizes the two phonemes /a/ and /æ/ in the only position in which they contrast with each other. It also states the patterning of allophonic distribution in a consistent manner since it recognizes that the patterning of [a] and [æ] in all positions except after /c ʒ ʃ/ is parallel to the patterning of the other front and back vowels. The vowel system is composed of six phonemes /i u ə o a æ/, which in turn is composed of two sub-systems, one including the phonemes /i u ə o a/ each of which may occur after any consonant and the other including /æ/ which may occur only after /c ʒ ʃ/.

1.3. The situation where a contrast occurs with a very limited distribution can be considered the converse of the situation where a contrast is lacking in limited positions. In German the contrast between a voiced and a voiceless stop occurs in many positions, but is lacking in final position. The usual method of analyzing this situation among American linguists is to assign the phone in final position to one of the pair of voiced-voiceless stop phonemes. The lack of contrast is indicated by admitting only one type of phoneme in this position. This may be said to parallel the Pre-Slavic situation above where the contrast between [a] and [æ] in a limited position is recognized by admitting these as two phonemes in the only posi-

6. The vowel /u/ has a defective distribution, but the other vowels, /i ə o/, may occur after any consonant.
tion in which they do contrast. Some European linguists are likely to draw
attention to the lack of contrast in German by admitting an archiphoneme in
this position. This might be paralleled in the Pre-Slavic example by positing
an archiphoneme /A/ for both [a] and [æ] in positions in which they do
not contrast.

1.4. The stop-affricate system of Tamil presents a more complicated example
of phonemics contrasts with low list frequency. The phones pertinent to the
analysis may be illustrated by the following chart:

<table>
<thead>
<tr>
<th></th>
<th>Initial</th>
<th>Intervocalic</th>
<th>Medial after /r/ or /l/</th>
<th>Medial after nasal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labial</td>
<td>p</td>
<td>pp</td>
<td>p</td>
<td>b</td>
</tr>
<tr>
<td></td>
<td>(b)</td>
<td>β</td>
<td>(b)</td>
<td></td>
</tr>
<tr>
<td>Dental</td>
<td>t</td>
<td>tt</td>
<td>t</td>
<td>d</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø</td>
<td>Ø</td>
<td></td>
</tr>
</tbody>
</table>

7. The data discussed here are from the speech of Sri M. S. Shanmugam Pillai,
Lecturer in Tamil, Annamalai University, Annamalainagar, who has been working on
an analysis of his language with some assistance from me. The language is the variety
he would ordinarily use in conversation, but not the more formal classroom style. He
comes from Nagercoil in the extreme south, but has been living in Chidambaram for the
last twelve years. The data differ phonetically to some extent from that of Murray
Fowler in his article, The segmental phonemes of Sanskritized Tamil, Lang. 30:360-7
(1954). Differences occur in both the native vocabulary and in the loanwords. My data
include loans from Sanskrit, Portuguese and English, whereas Fowler's includes loans
only from Sanskrit and Portuguese. The differences are to be attributed partially to a
difference in dialect or idiolect and partially to a difference in style, the style that Fowler
is analyzing being somewhat more formal.

8. Although two varieties of [r], a dental slightly trilled [r] and an alveolar more
strongly trilled [r] are written in this position, there is no difference in the pronunciation.
Thus, what is written ti:rrpu is pronounced [ti:lyrrp:ɾ] and what is written karpu is
pronounced [k'ʌɾp:ɾ]. External evidence of this fact is that students sometimes mis-
spell the second of these forms in the manner of the first.

9. Clusters of retroflex /l/ plus stop or affricate also occur, but there are fewer
combinations and those that do occur neither contribute to, nor conflict with, the
analysis presented.

10. There are limitations as to which nasals may occur before a particular stop.
These limitations raise problems in the assignment of nasal phones to nasal phonemes,
but do not affect the analysis of stops and affricates.

11. Phones in parentheses are those with a very low frequency. Examples are:
pencil'; [ʃ]: [ʃʌmbʌ] 'jumper, blouse', [ʃʌnnʌ] 'window'; [g]: [ga:ndi] 'Gandhi',
<table>
<thead>
<tr>
<th></th>
<th>Initial</th>
<th>Intervocalic</th>
<th>Medial after /r/ or /l/</th>
<th>Medial after nasal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alveolar</td>
<td>(tʰ)</td>
<td>tʰ</td>
<td></td>
<td>ḍṛ₁²</td>
</tr>
<tr>
<td>Retroflex</td>
<td>(t̂)</td>
<td>t̂</td>
<td>ḍ</td>
<td>ḍ</td>
</tr>
<tr>
<td></td>
<td>(d̄)</td>
<td>ḍ</td>
<td></td>
<td>ḍ</td>
</tr>
<tr>
<td>Palatal</td>
<td>č</td>
<td>č</td>
<td>c</td>
<td>j</td>
</tr>
<tr>
<td></td>
<td>(s)</td>
<td>s</td>
<td>(s)</td>
<td>(s)</td>
</tr>
<tr>
<td>Velar</td>
<td>k̬</td>
<td>kk̬</td>
<td>k̬</td>
<td>g</td>
</tr>
<tr>
<td></td>
<td>(g)</td>
<td>γ</td>
<td>γ</td>
<td></td>
</tr>
</tbody>
</table>

It is clear that this represents a six-way contrast with respect to position of articulation as shown by the contrasts of geminates in intervocalic position: [kʰppʰm] 'tribute', [kʰʌtʰi] 'cry',¹⁶a [kʰʌtʰi] 'studying', [kʰʌtʰi] 'tie', [kʰʌčči] 'party, sect', [pʰʌtʰi] 'ten', [pʰʌtʰi] 'attach to'. [pʰʌtʰi] 'silk', [pʰʌkkʰm] 'side'. It is also clear that there is, at least for some phonemes, a contrast between a tense, voiceless aspirated phoneme and a lax, voiced phoneme: [pʰʌm] 'a measure of weight', [bʰʌm] 'strength'.

12. The phone [ḍṛ] represents an alveolar stop with a very short r-colored release. This could be analyzed as /ṛdr/ but may be analyzed as the variety of alveolar stop that occurs after a nasal. Fowler, Lang. 30-362 (1954) analyzes it as /ṛdr/, an analysis that is supported by the similar cluster he finds in [nej-tʃʰi] 'yesterday' /neːtru/. He thus finds no evidence of an alveolar contrasting with a dental or with a retroflex. In my data, where Fowler has the cluster [tʃʰ], I find [tʃʰ], which clearly contrasts with [tʃ] and with [ʃ]. I also have in my data an alveolar in initial position contrasting with a dental: [tʃiʃ] 'fire', [ʃiʃ] 'tea'. Since I find it necessary to posit an alveolar initially and intervocally, I would consider the cluster [ḍṛ] as the variety of alveolar that occurs after a nasal.

13. The symbol [ḍ] is used here to represent a voiced retroflex stop in initial position and medially after a nasal and a voiced flap intervocally and medially after /r/ and /l/. This distinction is not necessary for the analysis.

14. I have used the symbols [č] to represent [tʃd̄] and the symbol [čć] to represent [tʃʃ] mainly to show more clearly the parallelism between the palatal and the other series.

15. In some items initial [s] is in free variation with initial [č]: [sɪŋgyʌm] or [ɕŋgyʌm] 'lion', [s:astr] or [ɕa:stɾ] 'Castri', but in some it does not alternate: [sʌri] 'that's correct'. The phone [ʃ] in the items cited in footnote 11 do not show any alternation, although in Fowler's data, Lang. 30.365 (1954), [ʃʌnʌl] 'window' does show alternation.

16. The phone [γ] shows free variation in intervocalic position with a voiceless velar spirant [x]: [pːγʌm] or [pːxʌm] 'portion'.

16a. Small cap 't' has been substituted for author's crossed small cap l.
The problem is the assignment of allophones to phonemes. One analysis, giving precedence to phonetic similarity, would be to assign the tense, voiceless phones to the same phoneme and the lax voiced phones to the same phoneme. Thus [g] and [γ] would be allophones of the phoneme /g/ and [d] and [β] would be allophones of /d/. However, in the case of the labials, since there is a three-way contrast of [p], [β] and [b] in position after /r/ and /l/, [b] and [β] could not be allophones of the same phoneme and the distribution of allophones for the labials would not be similar to that for the velars and dentals. The phonemes /d/ and /g/ would have stop allophones in initial position and after a nasal, as would also the labial phoneme /b/. Intervocically and after /r/ and /l/ the phonemes /d/ and /g/ would have spirantial allophones, whereas the phoneme /b/ would not occur intervocally and would have a stop allophone after /r/ and /l/. The distribution of phonemes would be very irregular, thus /b/ would occur in three of the positions under discussion, /d/ in a different three positions, /d s g/ in all four positions, /p t c k/ all in the same three positions (but not the same three in which either /b/ or /d/ occur), /β/ in two positions and /j/ in the other two positions, neglecting the distribution of the alveolars which would be irregular by any type of analysis. Taking frequency into consideration I would first consider only those phones that occur with high frequency. Doing this I find no contrasts in initial position, a two-way contrast in intervocalic position that may clearly be analyzed as a single phoneme contrasting with the same phoneme geminated. After /r/ and /l/ there is also a two-way contrast that may be similarly analyzed even though the voiceless stop or affricate is not long. Thus initial [p' t' c k'] would be /p t c k/, intervocalic [pp' tt' tt' c ckk'] would be /pp tt tt c c kk/, intervocalic [β o d s γ] would be /p t c k/, the [p' t' c k'] after /r/ and /l/ would be /pp tt tt c c kk/, the [β o γ] after /r/ and /l/ would be /p t c k/ and the [b d dr d j g] after nasals would be /p t c k/. The phones that occur with low frequency and contrast with those already established as phonemes would be separate phonemes, thus [b] in initial position and after /r/ and /l/ would be the phoneme /b/, [s] in initial position and after nasal would be /s/ and [d j g] in initial position would be /d j g/. The [t'] and [t'] that occur initially fit the distribution pattern of the other voiceless phonemes and would be /t t/. The phones

17. This is the type of analysis employed by Fowler in Lang. 30.360-7 (1954). He does not present in his article the type of distributional data that I have used in my analysis, but as far as I can tell from the data he presents, if the analysis presented here were applied to his data, it would yield similar results. If this is true, then this type of analysis based on frequency would have the further advantage that it would more readily fit a variety of Tamil idiolects or dialects.
[d s] in medial position after /r/ and /l/ fit the distribution pattern for which single voiceless phonemes are posited and would be phonemically /t c/.

To judge this analysis it is necessary to consider how well it describes the language. It states all the contrasts that occur in the language, treating those of high frequency as belonging to a series of voiceless and tense phonemes /p t t c k/ and those phones of low frequency as belonging to a different series of phoneme /b d s j g/. The distribution of all the high frequency phonemes follows the same pattern with the exception of the alveolar phonemes which would be irregular by any analysis. With this exception they all occur initially, intervocally and medially after /r/, /l/ and nasals and they all occur geminated intervocally and after /r/ and /l/. They all parallel fairly closely the distribution of the nasals and liquids. There are three nasals /m n n/ and three liquids /r l j/ to be considered here. Each of these except the retroflex may occur initially paralleling the distribution of /p t t c k/, the non-occurrence of the retroflex /n l/ paralleling the rare occurrence of initial /t/. All the nasals and liquids may occur intervocally either singly or geminated, again parallel to the distribution of /p t t t c k/. Even the low frequency phonemes follow a pattern of distribution similar to each other since they all occur almost exclusively in initial position, the exceptions being that /b/ occurs medially after /r/ and /l/ and that /s/ occurs after nasals. The distribution of the allophones of the phonemes /p t t t c k/ also follows a consistent pattern: a voiceless, aspirated, tense stop initially and when geminated, a voiced, lax stop medially after a nasal and either a spirant or a flap medially after /r/ and /l/ and intervocally. This analysis describes the language as having a stop-affricate system composed of the phonemes /p t t t c k b d s j g/. This system may be split into two sub-systems, one consisting of the phonemes /p t t t c k/ each of which occurs with high frequency and has a distribution similar to that of the others and a second sub-system consisting of the phonemes /b d s j g/ each of which occurs with extremely low frequency, but nevertheless has a distribution pattern similar to that of the others.

Another advantage of this analysis is that it shows the past history of the language. The high frequency phonemes reflect the state of the language at an earlier period, that is, a language with a single stop-

18. There is in Tamil another retroflex continuant, usually symbolized as [l], showing in some positions r-coloring and in other positions l-coloring. Its distribution is quite different from that of /m n r l/ in that it does not occur initially and different from that of /m n n r l l/ in that it does not occur geminated intervocally.
affricate system. The low frequency phonemes show new contrasts that have been introduced into this single stop system by borrowing from Sanskrit, Portuguese and English. It seems reasonable to expect that in the future history of Tamil, one of two things is likely to happen. First, the low frequency items may be assimilated to the one-stop sub-system producing a one-stop system. Considering the extremely low frequency of these items, this may very well happen. Second, the low frequency phonemes may gain in frequency, either by further borrowings or by developments of the native vocabulary, to such an extent that it is no longer valid to set up a distinction between the different frequencies and the language would have to be analyzed as a two-stop system that is not split into sub-systems based on a difference in frequency. In summary, this analysis reflects the one-stop system of an earlier period of the language, describes the present-day language as having a two-stop system, but one that is barely phonemic, and leaves the question open as to whether the low frequency phonemes have introduced a phonemic split that will eventually produce a two-stop system with a regular distribution of the phonemes in it or whether the low frequency phonemes represent temporarily unassimilated forms that will eventually be assimilated and produce again a one-stop system.

2. The preceding analysis is based on the assumption that a phonemic analysis of a language is a statement of the phonetic contrasts that occur in that language in terms of discrete units, called phonemes. Phones that do not contrast with each other are assigned to allophones of the same phoneme. The phonemes are determined by the contrasts. The assignment of non-contrasting phones to phonemes is determined by supplementary criteria, such as phonetic similarity, pattern and distribution, and I would add to these, frequency. I would suggest that frequency may be given precedence over phonetic similarity in a language like Mazateco or Tamil, although which should be given precedence in a specific case will be dictated by the facts of the particular language being analyzed. Giving precedence to frequency allows overlapping of phonemes. This can be justified from a theoretical point of view since no phone in one position is ever identical with any phone in a different position and thus overlapping of phonemes is theoretically impossible. From a more practical point of view, even if a linguist considers two phones as identical, there is no reason why any one of the supplementary criteria should be given precedence a priori over any one of the others. The linguist is required to take care of all the contrasts that occur in a language, but as supplementary criteria he may give precedence to distribution rather than to phonetic similarity or, as I have suggested in the examples above, he may give precedence to frequency. The Tamil stop-affricate system is one case in particular where there are advantages in giving precedence to frequency.
LOAN WORDS IN PERSIAN

By

Chinmoy Dutt, Calcutta University.

Since the dawn of human civilisation the greatest treasure of mankind has been the power of expression in forms of words and languages which are even now advancing on the path of evolution to an unknown destination or fulfilment. No language is entirely free from borrowed words, because no nation has ever been completely isolated. Contacts with other nations inevitably lead to borrowings, though their number may vary considerably. Loan words always show a superiority of the nation from whose language they are borrowed, though this superiority may be of different kinds.

The Persian people had for their neighbours both in the east and the west some of the most highly civilised races of Asia. On the east were the Indians who were in the Aryan-speaking North India their linguistic kinsmen in the historical period and on the west were the Elamites, the Babylonians and the Assyrians foremost among the nations of antiquity. They came also in contact with a great many other nations both as neighbours and as conquerors; with the extension of the Achaemenian empire, the Persians could count among their subjects Arabs, Babylonians, Assyrians, Syrians, Egyptians and the civilised peoples of Asia Minor including the Greeks settled in Western Asia Minor and in the coast lands. Words from most of the languages could be expected to come to the Ancient Persian language in the course of the intercourse of the Persians with their speakers. Such words, of course, became naturalised in the language and were passed on to Pahlavi or Middle Persian and Modern Persian. One such typical word is the modern Persian word ‘muhar’ = seal. In ancient times the Persians knew only the cylinder seal as used by the Babylonians: a long round cylinder-shaped piece of stone was engraved on all sides with figures and words and this would be rolled on a piece of clay to give the impression. The flat seal such as we know was in use among the Egyptians, and the Persians learned to use it evidently from this people, so that the Egyptian seal came to be known as ‘mudra’, i.e., the Egyptian article; the Syrian name for Egypt Mizrāim or Mizrā was Persianised into ‘mudra’. This word ‘mudra’ was borrowed by the ancient Indians from the Persians and was adopted in Sanskrit as ‘mudra’ = seal, ring, etc. Old Persian mudrā > muōr and then
muḥar (Elamite mu-īš-ṣa-ri-ya, mu-ṣi-ṛ-ra-ya, Babylonian mi-ṣir, Hebrew miẓr). Muhar or muhr is thus an example of an old foreign word in modern Persian—a name of a people or country, adopted from the Syrians, and employed to mean an article. The word 'man'—a weight is in all likelihood an old Persian borrowing from the Babylonian 'mana' which also found its way to Greek, as mnā and to Sanskrit as 'mana' or 'manā'. The ancient Persians were profoundly influenced by the Babylonians in their culture and it is quite reasonable to expect that they had borrowed words from the Babylonian language which is Semitic in origin and a distant kin to Arabic.

The Persians during the period of Achaemenian empire were a ruling race and they did not have much need as a proud people to borrow words from their subjects unless absolutely indispensable, e.g., names of peoples like 'yaunā' and foreign proper names like 'dubāla', 'haldisa-', 'labnāna', etc. The cuneiform letters as used for their inscriptions are based on the characters used by the Assyrians and Babylonians in writing their language. They are written from left to the right and are believed by some to be used only for inscriptions. This alphabet fell into disuse after the end of the Achaemenian dynasty. It seems that some kind of modified Syrian alphabet based on the Phoenician script (which is the ultimate source equally of the Greek and Roman alphabets as well as the Arabic) was in common use throughout the Achaemenian empire in writing all sorts of languages, Aryan and non-Aryan; and the Avesta might have originally been written in it. Later on the Syrian alphabet as used in the Persian empire were evolved the elaborated Avestan alphabet and the rather crabbed Pahlavi script. These are still in use in writing Avesta and Pahlavi among Parsis of the Garbis, but in Persia itself, after the Arab conquest, when Pahlavi, a middle Persian was changing to modern Persian, the Pahlavi script was abandoned for the Arabic supplemented by the letters pē, chē, žhe, gāf to represent Persian sounds.

After Alexander's death (323 B.C.), the history of Persia was for a period linked with that of the west. The Greek rulers of Syria (descended from Antiochus, a general of Alexander), for a time ruled over Persia, and during this period there was an intensive Greek and Syrian influence on Persian culture and language. In 256 B.C., a national dynasty arose in Persia where a Parthian chief named Arsakes made himself independent in a part of Persia (Parthia in North-East Persia). The Parthians are a distinct branch of the Iranians—neither Median or Persian; at first they encouraged Greek culture, Greek being as their official language—so tremendous was the influence of Alexander and his Greek followers; but later, in the 2nd century B.C., they took up the language of the century. The Parthians fought and drove out the Greeks, and they had to fight with the Turanian hordes
from Central Asia. The Parthian dynasty, although Iranian, was finally overthrown by another native dynasty, the Sassanians in 226 A.D., when Artašēšir Pāpak who was said to be a scion of the Achaemenian house, became ruler of Persia, and with his accession a period of national glory was found in Persia, with important effects on the language which continued to the Arab conquest in 641 A.D.

The Persian language had during the Greek and Parthian periods undergone a great change. This change was a slow one, no doubt, but the character of Old and Ancient Persian altered and it became Middle Persian or Pahlavi. A large Semitic element came in the Huzvarish form.

The Syrian language in the centuries before and after Christ had immense vogue in the Near East and it had penetrated with the Syrian alphabet into distant Central Asia and China—the alphabet being adopted later on by Turks, Mongols and Manchus. Commercial enterprise of Syrian speaking peoples, coupled with their zeal for Christianity, the religion adopted in Syria in the early centuries of the Christian era was responsible for this. Persia also came under Syrian influence and a good number of Syrian words were adopted into Persian during the transition of Old Persian to Middle Persian and during the Modern Persian stage. The Arabs also had come under the influence of the Syrians and they too borrowed a great many Syrian or Aramaic words and later on when in Post Muslim times the Arabic language began to influence Persian—these Syrian words already existing in Persian received a sort of re-enforcement from their equivalents adopted by Arabic. Thus Syrian ‘sikka’ (sykt’) = die for coining etc. was adopted into Persian even before Muslim times and this word was passed on to India also as early as the beginning of the 7th century. Arabic borrowed the word from Syrian in the form ‘silkatun’ and the word came to Persian once again through the Arabic as ‘sikka’ and strengthened the existing form ‘sikka’ only the new meaning from Arabic persisted.

In addition to the Greek and Syrian, there were also words from Indian languages—the ancient Indian vernaculars, and in recent times, the modern vernaculars. Contact between the sister speeches of Indo-Aryan and Iranian was always a close one, from the separation of the two branches from each other in pre-vedic times onwards. Borrowing from Greek and Syrian took place before the development of Modern Persian in Old Persian and Middle Persian largely in Modern Persian. Greek lost its influence in the east during the Sassanian period, and Syrian was gradually absorbed by Arabic, and with the growth of Islamic culture in Iraq, Syria and Egypt western influences came into Persian only through Arabic. That is why in Modern Persian, there were hardly any borrowings direct from Greek and Syrian.
The Persians continued to be in direct touch with their eastern and north-eastern neighbours—the Indians and the Turks notably. Here there was no Arabic to act as an intermediary. Consequently as in ancient times, so in mediaeval and modern times Indian words have come to Persian, though in a very restricted number and the Turkish words also came to Persian, in the post Muhammedan days only, large bodies of Turkish speakers were always to be found in Persia and frequently they formed the ruling classes. A few Chinese words also came in the wake of the Turks and Indians.

After the Arab conquest of Persia (A.D. 641-51) Arabic influence manifested itself at once on Persian. Its Semitic element in Pahlavi had prepared the language for it. Arabic came to Persia with a double prestige, it was the language of the conquerors, and it was the language of a new faith which began to spread quickly among the people. Persian nevertheless had its own glorious past, and it did not yield without a struggle and in many departments of life Persian held its own. Especially when an absolute break with the past could be affected, the native Iranian traditions were too strong for that, and the memory of glorious of the pre-Islamic Persia on the past continued unabated in the national consciousness through the romantic legends of the Shahnameh. The machinery of the administration remained Persian and Arabic had to borrow Persian terms like ‘wazīr’ (Av. vīcira = discriminator), ‘dīwān’ etc. The national name for King (sāh); records (daftar), Secretary ‘dabīr’ etc. were never replaced by Arabic. In the matter of personal names, too, a great deal of the old Persian element persisted: ‘Darāb’, ‘Sikandar’, ‘Rustam’, ‘Sāpur’, ‘Fīrūz’, ‘Khusrau’ etc. and other names of old heroes and kings have continued in Islamic Persia, as also native words used as epithets (‘ṣer’, ‘āzād’, ‘dānišmand’, ‘āftāb’ etc.). But the force of Arabic was irresistible and Persian had to acknowledge the suzerainty of Arabic shortly after the conquest. The Persian converts to Islam took to the new language which was made an international language for the whole of the North Africa and the near east, including Spain on the west and the frontiers of India on the east and became the inheritor of the culture of the Greeks with the greatest enthusiasm; and a great deal of serious literature, literature of information—philosophical, scientific, historical, geographical, besides a considerable amount of poetry was produced in it by the Persians. The foundation of Arabic grammar and philology and Arabic humanism in general owe a great deal to the Persians. The position allowed to Arabic reacted on Persian: Arabic words began to be freely used in Persian without any hindrance, and Arabic constructions, Arabic terms of expressions, sometimes Arabic idioms and references to ideas and allusions specially Arab, besides Arabic metres all became acclimatised in Persia. This sort of thing went on till recent times and the result has
been for the Persian language something analogous to what we see in English. In the latter language, after the conquest of England by the French speaking Normans in A.D. 1066, the language abandoned itself to the influx of French and French words invaded English in all departments, frequently, making obsolete old English words and introducing new words with new ideas, things so much so that within few centuries the vocabulary of English became two thirds of French, and a great many French idioms and grammatical terminations were adopted. So too in Persian the vocabulary is now more than two thirds of Arabic, and one might say that any Arabic word in the dictionary is a prospective Persian word—it could be straight away used in Persian. Numerous vocables for which there had been no satisfactory Persian equivalents were freely borrowed. One part is to be noted. Arabic words came into Persian more through the influence of the school than through the influence of the Arabic speakers. In the first centuries of the Arab rule, of course, there were large bodies of Arabs in Persia, members of the ruling race, troops who garrisoned the strategic points and ‘mullas’ and ‘darvishes’ who preached the new faith: and their presence and influence was a factor in acquainting the Persians with Arabic. But when the Persian national movement set in from the 9th and 10th centuries, the Arabic speakers had gradually to give way: and besides in a few generations foreign settlers were bound to adopt the language of the land.

But Arabic became the cultural language of Islamic Persia; study of Pahlavi and Avestan ceased and with it their influence, and Arabic became the inspirer of Persian—through books, through the learned people. As a result of this, we find that Arabic could not keep its old pronunciation in Persia; words came as learned book words in their naked form—without the definite article ‘al’, for example, in the case of nouns and adjectives, which is so distinctive in Arabic. The contrast with Arabic words in Spanish, another Aryan language, which at one time came as much under the influence of Arabic as Persian and makes this clear. In Spain, there were large bodies of Arabic speaking people, Muslims and Jews, all through, before their final expulsion in 1492 A.D. and Spaniards got their Arabic words from them and thus Spanish forms preserve the ‘al’: thus ‘alhambra’, ‘alcoran’, ‘alborge’ etc. So too in the case of Arabic words adopted into other European languages, direct from Arabic speakers, the ‘-l’ of the ‘al’ is generally there, e.g. ‘algebra’, ‘alchemy’, ‘almanac’, ‘alcohol’, ‘elixir’; ‘alembic’ etc. Further, in Arabic phrases the ‘zamma’ or ‘pis’ is retained, the article ‘al’ not separated: ‘Abdullah’, ‘Daulatunnisa’, ‘Tahqiqül Hind’. It is impossible to give a list of Arabic words in Persian, it would mean quoting over two-thirds of the Arabic dictionary.
In recent years Persian has started to borrow words direct from the west and the European languages; that have perceptibly affected Persian are Russian, English and French. The influences of the first two is insignificant, but that of French extensive. These borrowed words are used not only in conversation, but also in the written language. This influx is not, however, due to the lack of resources of Persian vocabulary, which can still supply a sufficient fund of words to enable the Iranian poets and writers to express adequately their thoughts and ideas. Persian is, no doubt, lacking in new technical terms for the different branches of science, lacking as well in their expressions for abstract ideas which the needs and progress of time have called into being. The invention of new words and their affiliation are a slow and difficult process. The Persian writers avoided this course, as they found it easier to use European words when there was no Persian equivalent already in existence.

**Persian Vocabulary: Loan-Words**

**Greek**
- diram, dinār, pīyāla, pingān, kālbud, sandal/shandal, kamarā, nargis, pista, almās, sim, mord, etc.

**Aramaic**
- gazit/gazid, masiha, kashiš, caliba, kuništ; tabut, jhuhud, šanbad, kāsa, gunbaš, gör, etc.

**Babylonian**
- Pîl, (Assyr. Pîru), barid, abnus, manjanīq, qaisar, nūl, susan, kimiyā, qānūn, qasr, burj, iqlim, etc.

**Indian**
- kapi, šakkar, karkam, šagāl, saman, nargil, filfil, lak, čatrang, halila, vin, tambur, nāš, nilōpal, vašuk, etc.

**Turkish**
- alkhalla, urdu, qāši, qābu, qurma, khatun, khān, 'alivardi, khānum, ghaliča, čāqū, tabaq, turk, dāvogā, baši, baurći, bībi, begum, saughāt, etc.

**Chinese**
- čā, kāyaš, etc.

**Armenian**
- goz, žāj, žāč, buryanšān, etc.
Russian
iskinäs, varshaw, mushtuk, Imperätur, durushka, kāliskā, istizān, samāvar, etc.

English
ardali, vāgūn, buy-iskā'ūt, fūt-bāl, bā'ikūt, kūp, panchar, gilas, etc.

French
parlimā, cabina, dimukrat, diplomaci, ultimatum, buro, ajhā, bumb, jhanrāl, majhor, capitaine, fabric, telephone, zeplene, aviateur, faculta, conferance, akadami, capsul, clenik, ideal, picnic, jhorjhā, voile, tableau, mujhā, actor, etc.
UNPĀŅINIAN FORMS AND USAGES IN THE CRITICAL EDITION OF THE MAHĀBHĀRATA *

By

V. D. Gokhale, Poona

6. Compounds

The study of formation of compounds in the Critical Edition of the Mahābhārata is as interesting as other studies in the series. In it generally the rules of Pāṇini as laid down in his Āṣṭādhyāyī are followed in this connection. We, however, notice certain departures from them, e.g., the rule regarding rājan, ahan and sakhi at the end of a tatpuruṣa compound requires that the final -n should be dropped. But we have recorded below a number of instances where the final -n is not dropped. The variants recorded in the brackets with reference to Manuscripts always try to correct these archaic unpāṇinian forms.

Similarly Pāṇini lays down in another rule that the affix a is added to form the last member of a compound ending in ṛc, pur, ap, dhur and pathin. But we have noticed four compounds ending in pathin which are not formed in accordance with the above rule.

Sometimes suffixes denoting possessions especially suffix -in, are added even to bahuvihari compounds, even though they are in no way necessary for the understanding. Pāṇini teaches and practice confirms -in being readily added to compounds in śobhā, śālā, mālā, dharma, śilā and varṇa. In Mahābhārata, however, this pleonastic idiom is used in compounds ending in dhanus and gandha.

Adverbs like yathā, yāvat and tathā etc., are compounded with some nouns. They are either adverbs of the type yathākālam, yathāvayah or their

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1. For previous study of the series see E. D. Kulkarni, BORI XXIV pp. 83-97; BDCRI IV pp. 227-45; NIA VI pp. 130-39; BDCRI V.
2. rājāhāshakhibhyasat Pāṇini 5.4.91.
3. ṛkpūrabdhūhpathāmānākṣe Pāṇini 5.4.91.
second member is a participle ending in -ta. Moreover, we have noted such compounds used adjectively. The compounds of this type are not common in the old language, and such a compound is used adjectively once in Ṛgveda and once in Atharvaveda. WHITNEY in his Sanskrit Grammar records four such compounds from Śatapathabrahmana.  

Compounds with mā and na are not wanting. They are easily interchangeable without any change in meaning.

We have noted a few Dvandva compounds ending in singular, e.g., nābhāgekṣvākum 1.70.13.

We come across also irregular compounds ending in varcas (on the analogy of brahmavarcasam, hastivarcasam, etc.) 5.4.78.

Compounds like gataśrīh, 1.192.23 are worth noting in that Bhaṭṭabhāskara on TS 7.2.7.23 explains as gata prāptā śrīḥ yena saḥ, which is the meaning intended here.

We have observed compounds where the order of component members is changed. The compound mrgasvapnabhaya occurs for mrghabhayavapna in 1.2.46.

In a very few instances hiatus between two syllables in the body of the compound itself is observed. e.g., nārāyaṇaurogataḥ, and this clearly indicates an influence of the characteristic of Middle Indo-Aryan languages.

Anomalous compounds are also met with which exhibit combinations of elements not usually put together, e.g., yatrasāyamgrḥah (muniḥ) 1.41.1.

Loose constructions with compounds occur occasionally. e.g., niśādālayam uttamam, sahasrāṇām anēkānām, 1.24.2.

1. Compounds with ahan

ekāhnā 3.14.9 (K 2 B Dn 2.3 D4. 6 G1 ekāhāt); 38.28; 69.2 (K4 ekāhnē, D. 1.2 ekāhnāt); 69.9 (K 3.4 D 1.2 ekāhnāt, BD 4.6 ekāhāt); 75.13 (K4 B3 D 4.6 na ekāhnācchatam gantā, B 4 na. hyekahnāc ca tam gantā, T2 G2-4 naikāhnā dūrato gantā); 75.5 (Ś1 ekāha, K3 D 1.2 ekāhnāt, G 1 ekāhnau); 126.36 (B Dn D 4.6 ekāhāt, K3 D5 ekāhenā mahi tena);

6. Pāṇini does not mention the later type. Cf. also SPELTER, Sanskrit Syntax, 219.
7. WHITNEY, Sanskrit Grammar, p. 513 d.
9. Cf. E. D. KULKARNI, Sukthankar Memorial Volume, BDCRI V.
10. For other instances of WHITNEY, Sanskrit Grammar, 1314.
2. Compounds with rājān

sarvavānarājānau 3.147.25 [BD (except D1-3.5) T1 G1 sarve (for sarva-);
S K 2.3 -rājau tau, B Dc Dn D 4-6 T1 M rājānāḥ, T2 G 2.4 rājānam].
airāvatarājānāh 1.3.139 [K1 N1 yad airā, V1 yetraira, S (G1 missing)
yāvantō nāgara (T1 G 4.5 yady eva nāgāḥ sarpā vā)].
mlençcharājānāḥ 3.186.29.
sādhirājānāḥ 2.11.21 [K ādityāś cāpi rājāno, D4 ādityaṁ sāḍhi°, T 1 G 3-5
M2 °tyas cādri (T1 M2° dī) rā°, M1 (inf. lin. as in T1 M2) ātitāś
cādīrā°].
kūmrarājānam 1.16.10.
gandharvarājānam 4.44.8 [K °rājain tam: Cr °rājānam (as in text)].
devarājānam 1.217.15 (T1 śaraṇam devarājain te).
dharmarājānam 1.214.2, 214.17 [K2 N 2-3 V1 BD (except D1.2) T1, G1 M
āmantrya tam dharmarājām]; 3.128.12 (D1.2 S dharmarājām athā-
bhavit); 153.30 [S (except T1 G1) °rājain ca]; 154-2 (K 4 dharmar-
rājain ca, S dharmarājain vai).
nāgārājānām 3.75.17 (K1-3 Dn D 1-5 G1 M1 (nāgārājain tam, K4 Dc D2.3
T1 M2 °rājain tu).
parvatarājānam 3.135.4 (D5 parvataṁ āruhya, T1 G1.2 M parvatarājendra);
155.4; 160-10 and 11.
manḍūkarājānam 3.190.41 (K1.2 B2.4 Dn D 4.6 G1. 3 M1 manḍūkarājam,
Dc tam).
matsyarājānam 4.31.23 [D 6 G 1.3 M5 ma- (G1 mā-) tsyarājain ca, T1 G2
M1-3 °rājain tu, T2 mātsya°), 32.8].
madrārājānam 1.181.30 [K2 °rājain ca, N2. 3 V1 BD (except D2.5) madrā-
dhipatim].
rājarājānam, 3.265.23 (K1 rājarājate, K2.3 °rāja tvam, Dn yakṣarājain tam,
TG 1.2.4 rājarājain ca, M °rājain tvam).
dharmarājānā 3.48.38, 104.5 (TG 2.3 M dharmarājena).
matsyarājānā 1.1.115, 4.29.4 (Śl matsyarājṇas te, K °rājna te, B4 Dn2
D 6.11.12 °rājena).
virātārājānā 4.11.12.
dharmarājīne 3.37.35 (B3 D5 TG °rājam, Dc D4c °rāje, Śl K1.2 Dn D 1-3
dharmarājāya dhīmān sa).
manḍūkarājīne 3.190.31 (G1 M manḍūkarājāya).
nāgārājnānāḥ 1.16.13.
pitṛrājānāḥ 2.8.38 (G3 °rājasya dhīmataḥ)
kīrātarājānāḥ 3.174.11.
matsyarājñāh 4.17.5 (B1 D4 S matsyarājasamakṣam, D 10 "rājasamāpam").

virāṭarājñāh 4.7.11 (S virāṭarājasya babhūva vai priyāḥ); 11.1 Ś1 B 1.2

virāṭarāja, D2 "rājñā, S "rāje").

śālvarājñāh 1.96.38 (KOŃ 1.2 B Dn D 1.2.4 śālvarājasya, S bhīṣmas tasya

paravintapa).

pūrvarājñānāṁ 3.282.7 (G 2.4 pūrvarājakathāsryaiḥ).

3. Compounds with sakhin

pitṛsakhā 2.23.25 (B2 6 D12.6 pitṛsakha, D 3.5 G 3 priyasakhā).

bhāradvājasakhā 1.121.8.

priyasakhaśyau 1.210.5.

4. Compounds with pathin

saṁsiktaṁśṭapathāṇam 1.168.19 (Ś1 K1 "ktamśṭamārgaṁ ca, K4 "ṣṭa-

mārgaṁ ca, T1 G2.3 siktaṁśṭa)".

siktaṁśṭapathāṇam 1.213.32 (K3 saṁmṛṣṭasamsiktapatam).

rathapathāṇam 3.167.2.

satpathi 1.206.10 (Ś1 K1 Dn 3 G 3 satpatha-, Ṛ3 sadvarte, V1 sadvralaiḥ,

B 3.6 Da D 1.2.4.5 T3 G3.4 satpathe).

5. Compounds with dhanus

dṛḍhadhanvinam 3.40.11.

gāṇḍīvadhanvinam 4.48.3.

ugradhanvinām 3.175.4 (K1. 4 B 3.4 D 3.6 "dhanvanāṁ).

6. Compounds with gandha

uttamapunyagandhi 3.112.8 (K3 "gandhavantī).

punyagandhinā 3.44.2.

punyagandhinām 3.44.2.

7. Compounds with dharma

martyadharmiṇā 3.152.4 (Ś1 K1.2 B3 Dn D3.4.6 G4 martyadharmānā).

rājarṣidharmiṇi 3.275.29 (some Mss. rājarṣidharmaṇī, K1.2 sadvrāttadhar-

miṇī).

8. Compounds with adverb as the first member but used adjectively.

akutobhayāḥ 3.81.11, 136.18, 137.1, 266.14.

evanivrāyaḥ 3.126.23 (D1.2 ati, BDc Dn 4.6 īḍrasāṁ janayiṣyasi).

evanivrataḥ 3.112.13.
atathocitā 3.64.17 (B2.3 ayathocita, D1 eva śocate, G 1.2 mārgamāṇḍāṁ tathatocāt).
atathocitāṅgaḥ 3.225.11 [TG 1.4 M 'citaḥ sa (M1 san)].
kathanṛūpā 3.110.8 [Ś1 K1.2 kathāṁ ca rūpā (K1 'pa)].
kathanṛuktāḥ 3.135.10 [B1.2 (both margin). 3 mrto, G 4 vṛtto].
kinnimittam 3.147.2.
kimparāḥ 3.94.12 (K3 Kc pare, K4 parāḥ B2 M kalpitāḥ, Dn D 4 kampitāḥ,
D3 G4 kim purā, D5 ke cana, G1 kim varaḥ).
kimprabhāvaḥ 3.94.3.
kimcārāḥ 3.1.4.
kimāhārāḥ 3.1.4.
kimvīryaḥ 3.258.4.
kimvīryāḥ 3.188.6 (K3 kimkāryāḥ).
kimāhāravāhiṅaḥ 3.188.6 (M1 kimācāra°).
kimāyudhaḥ 3.188.6 (M1 kimāhārāḥ).
kimvasānāḥ 3.188.6.
kimparākramaḥ 3.258.4.
kvasthaḥ 3.181.22 (M kvatha).
kvasthāḥ 3.294.41.
tathāgraṭaḥ 1.33.5 (G3 śrutam).
tathādīnamānasam 3.162.11 (T1 G3.4 ṅdinavadanām).
tathāyuktam (nalam) 3.74.7.
tathāyuktām 3.94.27.
tathāyuṅktena 3.139.20.
tathārūpā 3.65.9; 4.23.4 (K Dn 1-3-4-8-12 yathārūpa).
tathāvidhau 3.136.15 (Ś1 K1.2 putrās cāsyā tathāvidhāḥ).
tathāvīryāḥ 4.47.10.
purākarma 3.198.22.
yathartukālāramyāḥ 3.248 (Ś1 athartu°, D5 sarvartu°).
yathartuvarṣī 3.186.44 (T1 akālavarsī).
yathākṛṣān 3.153.17.
yathāgatena 3.342.41, 275.58.
yathācīte 3.191.25.
yathācītāu 3.41.4.
yathāprakṛtiḥ 3.198.70.
yathāpratiijnābhiḥ 4.11.13.
yathāpramāṇataḥ 3.242.21.
yathābhāvasamāhitam 3.224.3 [Ś1 K1.3 B4 Dn D 1.2.5 M1 bhāvam (for bhāva-)
Ś1 K D1-3-5 -samāhitā, T1 G1. 2.4 samanvitam].
yathābhāhilasitam 3.281.28.
yathārūpāni 3.153.7 (T3 G2 rūpaṁ na, G4 rūpāṁ na).
yathāvidhaḥ 3.252.10.
yathāvṛttah 3.6.11.
yathāsrāntān 3.153.17.
yathoktāni 3.185.30.
yathocitān 3.90.21.
yathopadiṣṭāh 3.280.10.
yathāsvāni 4.30.15 (Dn 1 D10 yathāsvāni te; D6 yathārham te; D8 svāni svāni, Cā yathāsvāni; S svāni svāni atra kṣatriyāḥ, TG 2 svāni nara-
dhipāḥ, G1 svāni atra pārthivāḥ).
yathāsvān 4.50.1.
śvomaraṇam 3.81.126 (K2 Dn D5 naitasya maraṇam bhavet, D2 naivātma maraṇam vrajata).
śvabhūte 3.280.9; 299.28 (K1 śobhane).
sarvatoramyaś 3.146.3.
sadāuspaphaladrumaḥ 3.139.24 (T1 G1 sadāpahalayadrumaḥ).
sadāphalaḥ 3.297.54 and 55.
sadāphalaiḥ 3.132.1.
sadāsrotaiḥ 3.125.13.

9. Compounds with the order of component members changed.
samvatsaratvāḥ 1.21.6.
bāhulyabalaḍarpitaiḥ, 2.20.18.
vṛṣabhakāḍasaphalam 3.83.11.
puspavikacaiḥ 3.146.2 (K4 D1.2 vikacaiḥ puspapaiḥ).
yojanavimśānām 3.186.63 [K3 D 1-3 koṭinām, Ś1 K1-3 D5 yojanānām (K3 yena nāvām) samantāddhi].
vāraṇamattavikramaḥ 4.10.2 (Ś1 D8 vāraṇarājavikramaḥ; B5 Dn 1 D1.5 "tulya", D7.95 mattrajendra).
arvanantyaḥ 1.106.7.
dharmantyaḥ 1.103.20 (S nityo hi dharmasya).
śastrantyaḥ 1.94.62.
parvatavāsanityaḥ 3.249.7 (K2 vāsamukhyāḥ).
vanantyaḥ 3.126.7 (K1 T1 vane (for vana⁰).
taponityāḥ 3.228.8 (T1 nīti jñā caiva rādhaya; 3.110.16 [Ś1 K3 D3.5 iti khyāto, K1.2.4 D 1.2 T1 tato nityam (T1 "tyo)].
dharmantyaena 3.126.36 (D1.2 vīryenāmita buddhinā).
taponityasya 3.112.15, 11.6 (Ś1 K D3 G1 tapo- yuktasya).
vidyātpaponityāḥ 3.93.15 (K3.4 Dc D1-3.5 T1 "yuktaa.
dharmantyasya 3.24.10.

10. Compounds with hiatus -
narāyaṇaurogataḥ 1.16.35 (Ko 2.4 D 5 "vibhūṣanam; K1 "sirogataḥ, N3 G 2.5 M "siropagah B4 "managataḥ, D2 "siremaṇiḥ; TG 6 sa ca narāyaṇam gataḥ).
11. Anomalous compounds.

yatrasāyaṇaṃghraḥ 1.41.1, 3.13.10.
yatrasāyam pratiṣrayām 3.62.26 (S. pratiṣrayāt G1 tānāṣrayāṃ).
yatrecchakanivāsāḥ [K Dc D2-5 T1 M1 yathecchaka (for yatrecchaka), BDC D2. 6 G3 T1 M -nipātās ca. (for nivāsās ca).]

12. Compounds with loose construction.

putradāreṇa 1.45.25
svadāre 1.173.24 [D5 svapatnīyam; N2 V1 B (except B6) Da Dn D 1.2 svadāreṇu].
putradāram 3.131.9 (Da putradārādi naikṣati).
paradāra 4.13.14 [D1 bhartrārāṇa, D4 dāra sma, G2 M4-5 paradāro, Cap. dāraḥ smaḥ Crp. anyadārāḥ smaḥ Ca K as in text (Cr only dārāsmi)].
paradāre 4.13.15 (S D3. 8 paradāreṇu te, G3 ṛdārata).
ganḍagayamunasaṅgāme 3.83.80 (for metre!).
bhadramānā 1.60.81.
bhadramānām 1.60.58 [B (except B5) D (except D2) 迦manā TG 迦madām (G2 迦tam, G3 tā) (N 3 haribhadramānāgopi)].
mālyadāmaṁ 2.19.18.
savyasācau 3.89.29 (NG1 迦sācini).
prthiviṇīyajāyaḥ 4.36.1, 63.7.64 (D4 prthivipatiḥ).
sāgaraṅgamā 3.61.34 [T2 G (G1 missing) sāgaropamāṃ].
padmākṣajalasaprabhām 1.9.18 [K3 S (except G6 M1) 迦samibhām (M 3 as in text) N V1 D2 suprabhām; BDa D3. 4.6.7 ṛvarcasām].
matsyasagandhā 1.51.55 (Dn D1 G3 sa matsyagandhaiva, D3-5 迦sugandhaiva, G 4.5 迦sagandhaiva).
matsyasagandhini 1.57.53 [Da matsyagandhā varāṅganā; DS tasyā matsyasagandhini; TG1.2.4-6 M sa tasya (T1 ca syai, T2 kanyā G1.2.4-6 M caṣṭā, M3 tu syai; M5 to sā) matsyagandhini].
hamiṣadharmānaḥ 2.38.38.
mṛgapakṣīṣadhrmāṇaḥ 3.116.12.
saṇjalpanasahāsānaṅ 3.1.27 [K2 Bdc Dn D4. 6 saṇjalpāc ca; D5 saṇjalpen (G1 samsargaṇa, G2 sambhāṣana-)].
sarṣipurogamāḥ 3.80.47 (S1 K1 sarṣigānaś tatha; K2. 4 Dn D3-5 sarṣigaṇāḥ purā, D1-2 ṛṣipurogamāḥ).
sūryendusaprabhe 3.194.11 [B1-3 D (except D 1.3.5) G2 sūryasamaprabh].
savajrajyasagarbham 4.30.10 [Dn 2 Cnp sp sannāhāyasagarbham, S (M2 om) dr̥ḍhamāyasagarbham, Ca as in text, Ccs. cite vajrāyasamāhi].
kuruṇāṃṣabham 1.112.1; 3.156.5.
kurupāṃrṣabhaḥ 1.160.12, 163.6, 182.5; 3.3.15. 247 [D2 T3 G (except G1) M1 adhipo (for ṛṣabho), 26.2, 120.22 S1 K1. 2 De adhipaḥ (for ṛṣabhahaḥ), D10 esa vai dhararājas tu].
pitūḥ priyacikirsayā 1.94.85.
purorvaṁśavivardhanah 1.112.7.
bhāskarasyātmasambhavah 1.126.5 (K 2.4 ṛṣyaṅgasambhavah).
mamāgamanakāṅkṣijñaḥ 1.144.11.
rājñāḥ priyacikirsayā 1.155.48.
vāḍavāmukhādiptāgnes toyahavyapradam 1.19.16 (K1 ṛṣyāgni, K4 Ṛ 3 Da 1 ṛṣyāgni).
viśāṁ patiḥ 1.169.12, 188.4.
viśāṁ pate 1.176.33, 187.22 [Ṛ 3 B (except B 5) D2 mahīpate]; 192.17. T 3 G2-4 viṣāṁpatim); 192.25; 194.11, 18; 196.23, 197.25, 198.13, 205.18, 225.18.
astreṣu gatamānasah 3.163.46.
gavāṁ tīrthe 3.93.3 (D2 snātas tīrthe; D5 mahātīrthe).
vṛṣṇināṁ ṛṣabheṣa 3.35.85.
tava virya paritrātāḥ 3.91.7.
tasya darsanatṛṣṇām 3.142.4.
pituruḥdayatoṣayāḥ 3.261.6.
bhayasya ajñāiḥ 3.146.28 [Ś1 K1.2 bhayaprājñais ca, BDn D 4-6 T 2 (after corr.) G3 bhayānabhijñāiḥ].
vaves tamisrāgamānamāṁ 3.161.10.
rāmeṇa kṛtamanyavah 3.116.25.
PURĀTANA PRABANDHA SAMGRAHA AND
THE DATES OF CHANDA AND JALHA

By

Mata Prasad GUPTA, Allahabad University

Nearly twenty years ago, Muni Jina Vijaya compiled under the title ‘Purātana Prabandha Samgraha’ a number of prabandhas connected with the themes of the prabandhas of Mērutunga’s ‘Prabandha Chintāmani’. It was published in the wellknown Singhi Jaina Series. In this compilation he also included two prabandhas under the captions Prithvirāja Prabandha¹ and Jayachanda Prabandha.² In these prabandhas there appear four chhappayas, of which three are found in the Nāgari Prachārini Sabha, Kashi edition of Chanda’s ‘Prithvirāja Rāsaut’.³ Therefore a new light has been thrown on Chanda and his work ‘Prithvirāja Rāsaut’ by the publication of these two prabandhas, and this has been discussed by Muni Jina Vijaya in the Prāstāvika Vaktavya (preface) of the work.⁴ While discussing his views, I propose to put forward my own conclusions here, based on these new data, about the dates of Chanda and also of another poet, Jalha.

In the aforesaid Prāstāvika Vaktavya, under the sub-heading ‘Samgraha kē kuchha mahatva kē prabandha’ Muni Jina Vijaya writes: “Here I want to draw the attention of the scholars on one thing, that from the prabandhas dealing with Prithvirāja and Jayachanda, which have been included in this work, we find that the contention of certain scholars about the authorship and date of ‘Prithvirāja Rāsaut’, the wellknown Hindī epic, that the whole work is spurious and a creation of about the seventeenth century is not altogether correct. The three or four Prākrita verses, which are met with in the aforesaid two prabandhas (pp. 86, 88, 89 of Purātana Prabandha Samgraha), have been looked for in the ‘Rāsaut’, and out of these four verses three have, though in a deformed condition, yet verbatim been found out in the same. This proves that the poet, Chanda was decidedly a historical personage and a contemporary of Prithvirāja, the Hindu ruler of Delhi; that he was held in high regard by him and was his court-poet. It was he who, with a view to recite the glorious deeds of Prithvirāja, composed a poem in

1. Purātana Prabandha Samgraha, p. 86.
2. Ibid., p. 88.
the Deśya Prākrit language, which (poem) was known by the name of 'Prithvīrāja Rāsaū'. Hereafter he quotes the three verses from the prabandhas, and giving their parallel reading from the 'Prithvīrāja Rāsaū' published by Nāgarī Prachārīṇī Sabha, Kashi, he emphasises the need of an authentic edition of the work.

We are not concerned here with the necessity or otherwise of an authentic edition of 'Prithvīrāja Rāsaū', or even with the authenticity of the work. We are concerned here only with the able compiler's views regarding the date of 'Prithvīrāja Rāsaū' and its author Chanda.

Muni Jina Vijaya is perfectly justified in holding that the work 'Prithvīrāja Rāsaū' cannot be a fabrication of the seventeenth century, as the two prabandhas mentioned above contain verses composed by Chanda and one of the Mss. containing these two prabandhas is dated 1528 v.e. But is he justified to hold the above-quoted view about Chanda and his date only because certain verses appearing in the name of Chanda and composed in Deśya Prākrit are referred to in the prabandhas in which Chanda appears as a court-poet of Prithvīrāja and these prabandhas are found in Mss. belonging to the fifteenth century of the Christian Era?

So far as the language of these verses is concerned, it continued to be in use even upto the fourteenth century of the Christian Era, as is borne out by 'Prākrita Paingalam' and many other works. Hence the date of the Ms. viz. 1528 v.e., even combined with the form of the language used in the aforesaid verses, cannot be sufficient to establish that the author was a court-poet of Prithvīrāja, who lived in the twelfth century of the Christian Era.

As for the dependability of the account given by the writer or writers of these two prabandhas, in which Chanda appears as a court-poet of Prithvīrāja, the able compiler's view could have been justified only if a substantial portion of the work of Chanda had been referred to in these prabandhas and the facts stated therein could be corroborated with the facts known from history. But apart from that, I will draw the attention of the scholars to a very important fact about these verses which has somehow been overlooked by the learned compiler of 'Purātana Prabandha Samgraha'.

If we closely examine the two prabandhas, we find that out of the four verses regarded by the learned compiler of 'Purātana Prabandha Samgraha' as compositions of Chanda, two are really compositions of another poet,

5. Ibid., pp. 8-9.
6. Ibid., pp. 9-10.
7. Ibid., p. 3.
Jalha and not of Chanda. This is borne out by the name of the poet appearing in the last two feet of these two verses. These verses are reproduced below from the text of Jayachanda Prabandha as it appears in the ‘Purātana Prabandha Samgraha’: 9

(i) Trīṣṭhi lakṣha tukhār sabala pākhariain jasu haya,
Chaūḍasain mayamatta danti gajjanti mahāmaya.
Vīṣa lakṣha pāyakka saphar phārakka dhāṇuddhara,
Lhusaļu aru baluyāna sāṃkha ku jāṇau tāha para.
Chhattīsa lakṣha narāhivai vihi vinadiō hō kīma bhayau,
Jaichanda na jāṇau ‘Jalhu’ kai gayau ki mūu ki ghari gayau.

(ii) Jaītachandu chakkavai dēva tuha dusaha payānau,
Dharani dhasavi uddhasai pāḍai rāyah bhangānau.
Sēsu manīhin sāṃkhiyau mukku hayakkari siri khantio,
Tuṭṭāā so hara dhavalu dhūli jasu chiya tanī mandio.
Uchchhaliu rēnu jasaggi gaya sukavi ‘B(J) alhu’ sachchaū chavai,
Vagga indu bindu bhuyajuali sahasa nāyaṇa kina pari milai.

It may also be noted that only the first of the above two verses is found in the ‘Prithvirāja Rāsau’ published by the Nāgarī Prachārinī Sabhā of Kashi,10 and even this verse is not found in the Mss. of the work belonging to other lines of transmission of its text. At least so far during the last more than two years of my work on the text of the ‘Prithvirāja Rāsau’, I have not met with these two verses in any of the Mss. of the other lines of transmission of the text of this work.

How for the prabandha-writer may be relied upon for whatever he says, may further be gauged from the fact that he is not content with merely quoting these verses, but introduces both these verses with the following words:

(i) “tadanu Chanda Balidda Bhaṭṭēna śri Jaitra Chandra pratyuk-
tam”.11

(ii) “tēnaiva pūrvamuktam”.12

Therefore, it is obvious that the prabandha containing these references is nothing short of a fabrication done with the help of material supplied by a certain work of Jalha, and should in no case be treated with anything like historical seriousness. It may be that the other prabandha, viz. Prithvirāja

12. Ibid., p. 88.
Prabandha also was similarly written, with the only difference that the verses referred to in this case happened to be the compositions of Chanda.

Consequently the views of the learned compiler of the 'Purātana Prabandha Samgraha' about Chanda and his date seem to be hardly tenable.

Yet a peep into the textual history of these prabandhas does help us in arriving at some approximation about the dates of Chanda and Jalha and it will be useful to turn to it.

As has already been mentioned above, the two prabandhas in which the four verses occur are Prithvirāja Prabandha and Jayachanda Prabandha, of which the former is available in two prabandha-samgrahas which have been named 'P' and 'B' respectively, and the latter is presently available in 'P' only; the folios in which the latter might have occurred being missing from 'B', it cannot be said with certainly that it occurred in 'B' also

Further, 'P' collection contains 40 prabandhas while 'B' contains 71 prabandhas, though the Ms. of 'B' being incomplete, many of its folios missing from it, only 54 prabandhas are obtainable from it. And a number of prabandhas in the two samgrahas relate to common themes, though nothing can be said about their texts without seeing the Mss. of 'P' and 'B', except with regard to the following 8 prabandhas which have been compiled in the 'Purātana Prabandha Samgraha':

1. Vikrama sambandhe Rāma-rājya Kathā prabandha,
2. Vasāha Ābhada prabandha,
3. Kumārapala kāritamāri prabandha,
4. Vastupāla Tējaḥpāla prabandha,
5. Prithvirāja prabandha,
6. Lākhana Rāula prabandha,
7. Nyāyē Yaśōvarmaṇa nṛpa prabandha, and
8. Ambuchicha nṛpa prabandha.

Yet this number is sufficient for our present requirements.

On a comparison of the two collections 'P' and 'B', the following conclusions seem to be inevitable:

(i) The authorship of the above eight prabandhas compiled in the two collection is identical: this is borne out by the fact that the text of these prabandhas in both of them is almost the same.

(ii) The two collections must have belonged to two distinct lines of transmission for their common text: this is borne out by the fact that no such errors or lacunae are found in them as are common to the two collections.
(iii) In both the collections interpolations have been effected independently of each other: this is borne out by the fact that both the collections contain sentences, passages and verses not common to each other and of the nature of additional matter.

(iv) This additional matter should have been in the form of adscripts at some stage earlier than the present one, as the Mss. of 'P' and 'B' are not said to contain any such adscripts.

It is therefore evident that from the authorship of these eight prabandhas down to the Mss. of 'P' and 'B' referred to above, their texts should have passed through at least three stages of transmission in the following manner:

The authorship of the prabandhas common to 'P' and 'B'

<table>
<thead>
<tr>
<th>The authorship of 'P' collection</th>
<th>The authorship of 'B' collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>The authorship of interpolations in the form of adscripts in 'P' collection</td>
<td>The authorship of interpolations in the form of adscripts in 'B' collection</td>
</tr>
<tr>
<td>Present Ms. of 'P' (1528 v.e.)</td>
<td>Present Ms. of 'B' (the last folio being missing, the date of the Ms. is not known)</td>
</tr>
</tbody>
</table>

Now, if we make an allowance of 50 years an average for each of these three stages of transmission of the text, which I do not consider to be excessive in any case, it may be easily surmised that the authorship of the prabandhas common to the two collections may be placed at about 1378 v.e. And, if we place the date of composition of the verses incorporated in the two prabandhas even fifty years ahead of this, the date of their composition approximates to about 1328 v.e.

The date of Chanda, therefore, approximates to 1328 v.e. The date of Jalha however cannot be approximated in the above manner, as the Ms. of 'B' is mutilated at the place where the Jayachanda Prabandha, in which the above-quoted verses of Jalha occur, should or might have occurred. Yet the probability is clear that Jalha may be nearly as old a poet as Chanda, for it is quite likely that the author of Jayachanda Prabandha may be the same as that of Prithvirāja Prabandha.
A NOTE ON THE USE OF THE GENITIVE CASE IN EARLY HINDI PROSE*

By

Dayanand Srivastav, Calcutta University

In early Hindi prose the genitive case covers a very wide range of expression. Besides genitive of possession, as—māāi mathurā ki ayyī hui kāns ki dāśi hū (I am maid-servant of Kans and have come from Mathura—PS); rājā udayabhānu kā mandīr (the temple of king Udayabhanu—NKP); candravatī kī sakhiyā (playmates of Candravati.—RKK); and genitive of relationship, as—maāi rājā raghu kī beṣī hū (I am daughter of raja Raghu.—NKP); ye bhānje kāns kē dou (these two nephews of Kans.—PS), it has the following functions or expressions:

(a) The genitive acts as the subject of the action denoted by the word it qualifies—ekā ektī śī kṛṣṇa kā calanā sun (hearing suddenly the sudden departure of Krishna—PS); balramji kā ānā jān sab gwāl bāl dauḍe āye (hearing the arrival of Balramji all gwabal came running—PS); unkā gānā nācānā sun delhī baldevji bhi nācane gāne lage (having heard and seen them singing and dancing Balramji too began to sing and dance—PS); āp kā becan laōakī ke jilāne kā sādhan hai (your blessing is an instrument of bringing back this girl to life—NKP); jānā mahārāj mahārānī aur guśā mahendar giri kā rānī ketakī ke liye (going of the king, the queen and the saint Mahendragiri for the queen Ketaki—RKK).

(b) The objective genitive in all the three texts is a more frequent idiom than the subjective genitive and it functions as the object of the action to which it governs (direct or indirect), thus—kapaśī ke mārane kā kucha doṣā nahi (there is no harm in slaying a deceit—PS); itani bāt ke sunate hī usā citrarekha ke nikaṭ aya madhur bazar se bōlī (hearing this Usha came near Citrarekha and said sweetly—PS); sarāhanā jogi ji ke sthān kā (worshiping of the mendicant’s place—RKK); aur lānā usī bhabhūt kā jo gurūji de gaye the (and bringing of the ash bestowed by the saint—RKK). In Rānī Ketaki kī Kahānī, the noun of action takes its object in the genitive thus: is kahānī kā kahanewālā āp ko jatātā hai (the relater of this story relates it to you—RKK).

(c) In Nāsiketopākhyaṇ, Prem Sāgar and Rānī Ketaki kī Kahānī the subjective genitive has an alternative expression, that is, it is used as instrumental genitive (having the sense of by), thus—mahārāj aur mahārāni ne apane beṭe ke likkehuye par sone ke pāni se yō likhā (the king and the queen wrote with gold-water on the letter written by their son—RKK); talwār ke bal ham tumhari dūlhan milā dēge (we shall arrange for your meeting with your bride by the strength of sword—RKK); yah adharm ajāne merā huā (this unpious deed has been done unconsciously by me—PS).

(d) Reciprocal genitive:—Examples of reciprocal genitive are not available from Rānī Ketaki kī Kahānī and Nāsiketopākhyaṇ. But some astray examples are to be found in Prem Sagar; thus—paraspar apakah karne vāle jano ke gaṅakā ke jan (the members of the society of mutual assistance—PS). In fact this is the solitary instance of reciprocal genitive, which I could gather from Prem Sāgar. The special feature to be noted is that both the genitives are here as possessive genitive.

(e) Partitive genitive:—The occurrence of partitive genitive in all the three texts are very frequent. It expresses any thing as the part of a whole or group, thus—us jhunda kī yah gāy idhar calī aṣī (this cow belonging to that herd is led astray—PS); yah us sabhā kā sadasya hai (he is the member of that society—PS).

Examples of genitive governing a phrase or sentence is very common idiom in these texts, thus—un jhagaḍalī dētyō me kā mēṭ ek dētya hū (I am one of the members of the groups of those quarrelsome demons—PS); jāre un pandavo me kā ek le ā (you go, and bring one of the members of the Pandavas—PS). The reduplicated form of genitive in all the three texts is employed to express completeness, totality or intensity. The frequency of such examples is greater in Prem Sāgar* than the other two texts (that is, Nasiketopākhyaṇ and Rānī Ketaki kī Kahānī) thus unke pīche rathā ke tātō ke tāte drṣṭa āte the (after him chariots after chariots—group of chariots—were seen—PS); yah sun sab ke sab cakit rah gaye (hearing this all were wonderstruck—NKP); is par sabhā kī sabhā vidroh kar uṭhī (on this account the whole assembly rebelled—PS).

Reduplicated partitive is also used as adjective in the superlative degree; thus: miṭhē kā mithā (very sweet), ache kā acha (best) and sundar kā sundar (most beautiful).

(f) The appositional genitive or genitive of identity is a rare idiom in early Hindi prose. But the possibility of such occurrence is not completely
ruled out. In Prem Sagar the appositional genitive is much more frequent than Nāsiketopākhyaṇ and Rāṇī Ketakī ki Kahānī, thus—hamāre dono ke mārane ki icchā kē (he desired the killing of we two—PS); tumhāre dono ke liye akrūr mathurā se āye hāi (Akrūr has come from Mathura for you two—PS); merā-terā dono kē aśubh mānate hāi (he desires ill of we two, you and I).

Under this we can also treat examples like—aīśī jor kē ādhi aiyē kē din kē rāt hogaṅī (such a violent storm came that day turned into night—PS); usne aīśī māyā kē ki din kē mahā ādherī rāt hogaṅī (he spread his māyā and day turned into very dark night—PS).

(g) The genitive of race or family is a special idiom and is just reverse of the partitive genitive, thus—yadu kē baṅsa (family of Yadu—PS) and in, kahā sūrya kē baṅsa ki jiskī kūrti samast lok me prasiddh hai (my lord! I belong to the family of Surya whose superiority is acknowledged in the universe—NKP) where the whole is referred to the part.

(h) The genitive is also employed to express the temporal sense, thus, vaisampāyaṅ kahate hāi kē he rājā das din ke bitane par candravati aṅī (Vaishampayan says, 'O King! after ten days Chandravati appeared—NKP); yathā din kē bāt hai (this is the happening of ten days); ek rāt kē rāṇī banāyī (made her queen for one night—NKP); aṅī rāt ke samaya kṛṣṇa pahūce (Krishna arrived at mid of night—PS); ek din kē bāt hai kē māi ne ek gāya ek bhrahmana ko diyā (one day it so happened that I gave a cow to a brahmin—PS).

The temporal genitive in these texts is frequently employed to express the termination of a period, thus—rāṇī ketakī ne do mās kē tapasyā kē (rāṇī Ketaki did a worship of two months duration—RKK); jab dwāpar ke ant me śrī kṛṣṇa āvatār lēge (by the end—termination—of Dwāpar, when Krishna will take birth—PS); in, tīn din ke bitane par we jīvit laut āye (after the termination of three days he came back alive—NKP) the temporal terminational genitive is employed as temporal subjective genitive.

(i) The genitive in these texts is also employed to express some place, thus; parvat ke cōṭhīpar kē warf (the snow of the peak of a mountain); jamunā kē tīr parvat sam jā baithā (he fixed himself as a mountain on the bank of the river Jamuna—PS); mathurā kē nāriyā (women of Mathura).

(j) The genitive of age is a special idiom in these texts, thus—jab uṣā sāt varas kē huṅ (when Usha attained the age of seven years—PS); kāmārī buḍhāpe ki avasthā kē ek kes kālā bhi nahi (I am overpowered by my old age and not a single hair on my head has remained black—NKP).
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(k) Genitive in these texts sometimes appears where dative of direction was expected; thus: \textit{uttar ke gaye balarām abhī nahi laute} (gone for the north, Balram has not yet returned—PS).

(l) The frequent occurring of genitive for the dative of advantage is an essential feature of the early Hindi prose. Thus—\textit{ek-ek rānī ke das-das putra aur ek-ek kanyā thī} (ten sons and a daughter were to every queen—PS); \textit{aisī bāt na to dekhane me aɣī na to sunane me kī binā bhāryā kisi ke putra ho} (this is neither seen nor heard that a son is born to a person without a wife—NKP); \textit{is deś ke rājā ke ek putra na hūwā} (not a son was born to the king of this country—RKK).

(m) Instead of dative, genitive in \textit{Nasiketopākhyān}, is used as indirect object thus—\textit{apane pitā ke kaun mūha dikhāūgī} (what face would I show to my father).

(n) In the following examples, we have genitive of purpose—\textit{wah uske khāne ke kāṁ kā na thā} (this was no good for his food); \textit{yah wakat thaharane kā nahi hai} (this is no time for staying).

(o) Genitive in Prem Śāgar is employed to express ablative idioms, as, \textit{bṛndaban kā āyā huā} (arrived from Vrindaban); \textit{parvat kā girā wah} (he, fallen from the mountain—PS); the idioms—\textit{jaron kā bhikhārī} (beggar from childhood); \textit{man kā kapaṭī} (malicious from or of heart); occurring frequently in Prem Śāgar and Rānī Ketakī kī Kahani can also be treated under this head. Such idioms are regular in the texts taken for study and they have also been inherited by Modern Hindi Prose.

Besides these, the genitive is employed in all the three texts as genitive of material, as \textit{Kāṇcan ke mandir} (temples of gold), \textit{ek daul cāḍā kā} (a bucket of silver—RKK), \textit{us ne ghās kī daliyā me putra ko rakhā diyā} (she kept her son in the basket of grass—NKP); as genitive of price, e.g., \textit{yah kitane kā ghodā hai} (of what value this horse is); as genitive of quality—\textit{bhāṭī bhāṭī ke parvat} (varieties of mountain—PS), \textit{baḍe acambhe kī bāt} (an exciting happening—NKP); as genitive of cause, e.g., \textit{path kā hārā} (tired of way), \textit{virah kī pīr kise sunāū} (to whom should I relate the pang of separation—PS); as genitive of purpose, e.g., \textit{citra rekhā likhaneh kā sāmān magāya āsan par baṅdhī} (having asked for the writing instruments, Citra-rekhā took her seat—PS).

Examples of elliptical genitive is a special feature of all the three texts. In certain cases the genitive post-position is also omitted, e.g., \textit{jēṭh bāḍī teras ko} (on the 13th day of Jēṭha), the regular expression should be \textit{jēṭh kī bāḍī teras ko}; \textit{kṛṣṇa ko māṇerwāla mūh māgā dhan paugēga} (slayer of Krishna would get wealth according to his desire—PS.), the regular form
would be mūh kā māgā. In these examples the nouns appear as genitively dependent compound.

The genitive post-position is frequently added to a verb and it expresses a substantive unit, e.g., māro-māro kāto-kāto kā sabd phailgayā (noise of 'strike and slaughter'—spread all over the place—RKK).

The genitive post-position in Prem Sāgar and Nāsiketopākhyaṇ is often employed with the verbs gaye and soye to express adjectival sense, thus, yā caudah ratna ke gaye kā sok hai, us soye kā khāṭ uśhā kar yahā rakh (bring here the bed that sleeping man—RKK).

The compound genitive is a common idiom in all the three texts. The genitive is compounded generally with locative post-position par (on). Thus, parvat ke coṭi par ke barf (snow from the peak of mountain—), bhūkhi ākhē prthwī par ke dhan se nahē bharaṇī (hungry eyes are never satisfied by wealth of universe).
TONES IN PUNJABI

By

Kali Charan Bahl, Poona

0.0 This paper deals with the tone system of a variety of Punjabi spoken in the city of Amritsar, which is commonly designated as Majhi (referred to herein as Punjabi only). The name Majhi is applied to the dialect of Punjabi spoken in Majha (Midland) which lies between the rivers Ravi and Beas-cum-Satluj and includes the districts of Amritsar, Gurdaspur and Lahore.2

The citations herein as based on my own pronunciation and have been supplemented as a check in most of the cases with the pronunciation of the other speakers.3

0.1 The existence of tones in Punjabi "had long been a puzzle to the students and speakers of Punjabi till Dr. Grahame Bailey discovered their true nature viz., that they consisted in altering the pitch of the vowel, technically called tones".4 But still the only descriptive statements of the tone systems of the various varieties of Punjabi are those contained in the works of Dr. Grahame Bailey and Dr. Banarsi Das Jain.5 The present paper (apart from describing a different variety of Punjabi) differs from the earlier treatment of the subject in the application of the phonemic theory and the conclusions arrived at can be briefly stated as follows:

1. Punjabi has three distinctive tones.
2. The position of tone is significant in a word.

1. I am grateful to Dr. Gordon H. Fairbanks and Dr. H. A. Gleason for having gone through this paper and made many useful suggestions and also to Dr. William O. Bright and Mr. P. C. Ganesh Sundaram of the Deccan College, Poona, for the valuable help I have received from them.


3. The two informants with whom I have worked are Smti Bhagwati Devi (in January-February, 1956) and Shri Kanti Prakash Bahl (August-September, '56). No difference in the speech of these informants has been found pertinent to the tones.


6. For difference in conclusions ref. to works cit. ft. nt. 5. There is no fourth or combined tone in the variety described by me and this is in fact the tone with the superimposed intonation.
3. The feature of stress is not significant in the language and is an automatic predictable concommitant of tone.

0.2 The Phonemes of Punjabi are as under:

(a) Segmental.

<table>
<thead>
<tr>
<th>Consonants</th>
<th>Bilabial</th>
<th>Dental</th>
<th>Retroflex</th>
<th>Palatal</th>
<th>Velar</th>
<th>Glottal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STOPS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vcls.</td>
<td>p</td>
<td>t</td>
<td>ʈ</td>
<td>c</td>
<td>k</td>
<td></td>
</tr>
<tr>
<td>Vcd.</td>
<td>b</td>
<td>d</td>
<td>ɖ</td>
<td>j</td>
<td>g</td>
<td></td>
</tr>
<tr>
<td>Vcls.Aspr.</td>
<td>ph</td>
<td>th</td>
<td>ʈh</td>
<td>ch</td>
<td>kh</td>
<td></td>
</tr>
<tr>
<td><strong>CONTINUANTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spirants.</td>
<td>s</td>
<td>ʂ</td>
<td>h</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasals.</td>
<td>m</td>
<td>n</td>
<td>ɿ</td>
<td>v</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lateral.</td>
<td>l</td>
<td>ḷ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flaps.</td>
<td>r</td>
<td>ḳ</td>
<td>y</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semi-consonants.</td>
<td>w</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Vowels.

Class I /ɪ ə ʊ/  
Class II /i e æ a ə o u/

(Vowels of the Class I are phonetically short and those of Class II are phonetically long).

(b) Supra-segmental.

1. Nasalisation ~

2. Tones — Even Tone —  
   Falling Tone >  
   Rising Tone /


The following limitations on distribution are pertinent to a discussion of tones:

1. All consonants occur initially, medially and finally except; /ŋ/ does not occur initially, /h/ occurs only initially,

7. Transcription used in this paper is tentatively phonemic and the symbols (with certain modifications) have been used as suggested by B. Bloch and G. L. Trager: "Outline of Linguistic Analysis" (1942).
/w/ does not occur finally except in a few proper names and
/y/ does not occur finally.

2. Consonant clusters are of four kinds:
   (a) Any consonants followed by a semi-consonant (initially and medially only)
   (b) Any sequence of identical consonants except ηη, yy/ (medially and finally only). 8
   (c) Certain other sequences of continuants plus stop (medially and finally only).
   (d) Certain sequences of stop plus stop (medially only).

There is the further restriction that no mono-syllabic or disyllabic word can have more than one cluster of classes b, c and d.

3. All vowels contrast in accented syllables except before pause where vowels of the class I do not occur. Vowels of Class I occur as atonic vowels after pause and between consonants and of Class II as atonic vowels before pause.

0.4 The present description of tones is restricted to mono-syllabic and disyllabic words, the various types of which can be represented by the following formulas:

MONO-SYLLABIC  (C) (S) V (C) (C)

DI-SYLLABIC    (C) (S) V (C) (C,S) V (C) (C). 9

1.1 Punjabi has three distinctive tones 10 which can be called Even Tone, Falling Tone and Rising Tone respectively and the following are a few minimal triplets to show the phonemic contrasts:

/bārī/ “window”   /bārī/ “broom”   /bārī/ “outside”.
/pālla/ “cold”   /pālla/ “spear”   /pālla/ “proud”.
/ṭā ṭg/ “hang”   /ṭā ṭg/ “manner”   /ṭā ṭg/ “legg”.
/kəṛā/ “straighten”   /kəṛā/ “to get made”   /kəṛā/ “pudding”.
/cā/ “wish”   /cā/ “shyness”   /cā/ “tea”.
/kāi/ “a kind of reed”   /kāi/ “grass-seller”   /kāi/ “green matter” (moss).

8. The sequence of identical consonants occurs finally after vowels of the class I only.
9. C. S. and V mean any consonant, semi-consonant and Vowel respectively.
10. For a definition of a tone language see K. L. Pike, "Tone Languages" (1948).
2.1 Features of the Even Tone.

The contour of Even Tone starts at a mid level and ends abruptly with a slight rise. It occurs on all types of mono-syllabics and either on the first or on the second syllable of the di-syllabics.

2.2 Features in Mono-Syllabics.

The Even Tone occurs in all types of mono-syllabics with all possible initial and final consonants or clusters and all possible vowels viz., /ā/, “come”, /pā/ “drink”, /dāvā/ “medicine”, /chā/ “to season a vegetable”, /dīl/ “heart”, /dāb/ “pressure”, /ṭyūb/ “tube”, /wās/ “irony”, /swārg/ “heaven”, /kāl/ “to boil”, and /chīl/ “to peel off”, etc.

In the checked mono-syllabics the rise is more distinct than in the unchecked ones as in /pā/ “to put” and /pāp/ “sin”. Also different auditory effects in the starting point of the glide can be noted depending on which consonants occur at the beginning of the words. The starting point of the glide is lowest on the syllabics beginning with a voiceless aspirated stops, slightly higher on the syllabics beginning with a voiceless unaspirated stop and higher still on the syllabics beginning with a voiced consonant as in /khal/ “a game of cards”, /kāl/ “death” and /gāl/ “melt”.

The glide has the same qualities in mono-syllabics of the type VC having vowels of the Class II as in /āp/ “self” and /āb/ “lustre”.

In the types CVC and CVCC having vowels of the Class I only, the rise in the glide is more distinct on the latter as in /mān/ “mind”, /mānn/ “agree”, /kāl/ “machine” and /kāl/ “loneliness”, etc.

In the type VCC where only vowels of Class I occur the low-start and the rise of the glide is more distinctly heard on the syllabics checked by voiceless unaspirated stops than those checked by the voiced or voiceless aspirated consonants as in /ākk/ “a plant”, /āgg/ “fire” and /ākk/ “eye” etc.

In the mono-syllabics of the types CSVC and CSV phonetic realisation of the glide is similar to that of the type CVC (with the vowels of Class II) and CV and the preceding semi-consonant has no effect on the tone glide on the syllabic peak as in /pyās/ “thirst”, /pās/ “near” /wyās/ “a name” and /wās/ “abode”.
2.3 Features in Di-syllabics.\textsuperscript{11}

In the di-syllabics if the tone occurs on the first syllable, it has always a relatively lower pitch of the voice and rise of the glide is realised on the second atomic syllable. Also the first syllable has a slightly greater amount of stress than the second as in /pāna/ “to put”, /kālā/ “art”, /mūrt/ “picture” and /nwārni/ “newly married.”

In case the two syllables are separated by a consonant cluster the amount of breath force increases on the first syllable without having any significant effect on the relative pitches of both the syllables viz., /pānna/ “am putting”, /jīndā/ “living”, /chölle/ “gram”, /pyālla/ “cup” and /cḥārra/ “lead-shot”.

If the tone occurs on the second syllable, the pitch contour is realised on this syllable. The first atomic vowel has always a low pitch (which is similar to that when the tone occurs on this syllable), but the pitch contour starts at the same level as that of the first atomic vowel and ends abruptly with a slight rise. The vowel bearing the significant tone has always in this case a higher amount of stress than that of the first atomic vowel as in /tēlē/ “tank”, /dōryā/ “river”, /mēkān/ “house”, /səmyān/ “goods”, /khrūḍ/ “scratch” and /mUKhyār/ “attorney”.

3.1 Features of the Falling Tone.

Words may have a different tone which may be called Falling Tone (or Falling Rising Tone). The glide of this tone starts at a low level falls down and rises to the mid-level and the pronunciation of words having this tone is also accompanied by a considerable constraint in the larynx. The syllables having falling tone may be pronounced with a creaky voice, especially in a consciously slow pronunciation.

3.2 Features in Mono-Syllabics.

In mono-syllabics the fall and the rise of the glide occurs on the same syllable but the glide is more distinct on the syllables having vowels of Class II than those with the vowels of Class I as in /tīr/ “everyone”, /tīr/ “courageous”, /tār/ “to imagine”, /tār/ “to place”, /tūr/ “farthest” and /tūr/ “trick”. Moreover, the glide seems to start at a low level on the syllables preceded by a voiceless consonant. Instances of all consonants except the voiceless aspirated stops preceding the syllable having falling

\textsuperscript{11} Various phonetic features of the mono-syllabics after pause and before pause are also found in the di-syllabics in similar environment and have been omitted from description to avoid repetition.
tone are found (except in the one word /khèd/ "to play") as in /pæ/ "fear", /pùs/ "ugly", /dàr/ "to roar", /tûn/ "note of music", /càss/ "habit", /kārr/ "creaking sound", /lï̀n/ "bringing", /kùnd/ "veil over the face", /rât/ "night".

In the mono-syllabics of the types CSV, CSVC and CSVCC the glide is realised on the syllabic peak only and the semi-consonant has no effect on it viz., /tyà/ "to meditate", /lwàr/ "black-smith", /pyàs/ "byàs/ "practice", /pwà/ "turn round" and /nyàŋ/ "name of a religious sect".

In the mono-syllabics with the vowels of Class II the fall of the glide is more distinct than on the mono-syllabics with the vowels of Class I, similarly it is more distinct on the mono-syllabics of type CVCC than on the type CVC (both having vowels of Class I) viz., /pîr/ "to attack", /pìr/ "crowd", /pùr/ "drizzles", /pùr/ "to crumble" /tèl/ "to melt" and /tèll/ "ugly man".

3.3. Features in Di-syllabics.

When the tone occurs on the first syllable, the fall and the rise of the glide occurs on the same syllable (except when followed by a consonant cluster, a semi-consonant or on the first vowel of the sequence of two vowels) and the second syllable usually continues on the same level of pitch as the end point of the glide on the first. In this case the first syllable has always slightly higher amount of stress than the second atomic vowel viz., /nèra/ "dark", /kòrâ/ "horse", /tyàrâc/ "in the festivals" etc.

If the two syllables are separated by a consonant cluster or a semi-consonant, or they occur in a sequence of two vowels, the fall of the glide occurs on the first syllable but the rise in the pitch is not completely realised on this syllable, but is continued also to the second atomic vowel viz., /bànda/ "excuse", /tàwa/ "attach", /cùmî/ "eye-lash", /mïnna/ "month", /pùa/ "aunt", /pwâi/ "turned round", and /pàjjə/ "confusion" etc.

If the tone occurs on the second syllable, the first atomic vowel always has a low pitch but the fall and rise of the glide occurs on the second syllable only. In this case the syllable bearing tone has a higher amount of stress than the atomic vowel as in /bènâ/ "get packed", /kèbrà/ "to be perplexed", /cèrməm/ "burden", /wèglàt/ "countenance.

The first syllable of the di-syllabics beginning with the consonant /h/ and having tone on the second syllable, may be dropped out from the pronunciation and the words may thus become mono-syllabics viz., /hələ/ >
TONES IN PUNJABI

/la/ “sir”, /həwə/ > /wa/ “air”. Similarly the tri-syllabics may also become di-syllabics as /həlwəi/ > /lwai/ “sweats-seller”.

In all di-syllabics the semi-consonant preceding a syllabic bearing tone, does not effect the realisation of the tone glide.

4.1. Features of the Rising Tone.

Words may have a third kind of tone which starts at about mid-level, rises high and falls down on the same syllable on which it occurs. According to the characteristics of this glide it may be called rising-falling tone or simply rising tone. This tone may also occur either on the first or on the second syllable of the di-syllabics.

4.2. Features in Mono-syllabics.

The rising tone may occur on words beginning with any consonant. The rise on the syllables preceded by a voiceless consonant is not so sharp as on the one with a voiced consonant. It occurs on all the possible vowels, combinations of the consonants and semi-consonants etc. viz., /ə/ “this”, /o/ “that”, /ar/ “business”, /sir/ “head”, /se/ “undue encouragement”, /ru/ “essence”, /bud/ “enlightenment”, /swa/ “ash”, /jwar/ “jewel”, /khol/ “open”, /mael/ “palace”, and /bud/ “wisdom”, etc.

In checked mono-syllabics, slight variation in the end point of the glide is heard, depending on the occurrence of a voiceless or voiced consonant. The fall on syllable checked by voiceless consonant is more distinct than the syllables checked by voiced consonants as in /kəs/ “please say him”, /wyán/ “about to marry”.

The fall of the glide is always greater on the unchecked syllables than on the checked syllables viz., /ga/ “to roam about”, and /gak/ “customer”. The rise of the glide is more distinct on the mono-syllabics having vowels of the Class II than those of the Class I as in /car/ “to cook”, /cər/ “to climb”, /gur/ “difficult to understand”, /gur/ “to become able”, /dir/ “a kind of wood” and /dir/ “to be irritated”. It is also more distinct on the mono-syllabics of the type CVCC than on the type CVC (both having vowels of the Class I) as in /khfj/ “to be annoyed”, /mjaj/ “suppression”, /mg/ “a kind of herb” and /mg/ “sky-light”.

4.3. Features in Di-Syllabics.

In the di-syllabics the tone may either occur on the first syllable or on the second syllable and in each case stress is an automatic accompaniment of the tone. If the tone occurs on the first syllable, the rise and the fall
of the glide occurs on that syllable, but the pitch of the following syllable is in level with the end point of the glide on the first as in /kála/ “hasty”, /mála/ “garland”, /dyóri/ “entrance to the house”, /jáemét/ “trouble”, /sfra/ “end-point” etc.

If the tone occurs on the second syllable the rise and the fall of the glide occurs on that very syllable, but the pitch of the atonic vowel is in level with the starting point of the glide. Also the fall on the unchecked syllable is more distinct than on the checked ones as in /mélā/ “sailor”, /mélès/ “a kinship term”, /tenkhá/ “salary” and /kUr lát/ “grumbles”.

In case the tone occurs on the first syllable and there is a consonant cluster or semi-consonant between the syllables, or there is a sequence of two vowels, the fall of the pitch starts on the first syllable and is completely realised on the second atomic syllable viz., /békkr dr/ “broom”, /jd̯dder/ “any where”, /dawa/ “law-suit”, /dáya/ “a unit of ten”, /réa/ “lived”, /rús/ “from the mind”.

In the di-syllables beginning with consonant /h/ but having tone on the second syllable, the first syllable is dropped out of the pronunciation or may sometimes be completely inaudible as in /hówár/ > [hwár] /hówár/ ~ /wár/ “smell”, /hólán/ > /lwán/ “red dye”. Similarly the tri-syllables may become di-syllables with the drop of the first atomic syllable as in /hólánñi/ > /lwánñi/ “of the red colour”.

The semi-consonant preceding a syllabic bearing rising tone, does not effect the phonetic nature of the pitch glide either in the mono-syllabics or in the di-syllabics.

5.1. The Position of Tone is Significant in a Word.

From the above discussion it is evident that there is a three way tone contrast on the mono-syllabics and on the di-syllabics, there is a three way contrast either on the first or on the second syllables of the words. Phonetically the contour on CVC is equivalent to the contour on both the syllables of the type CVCV as in /kál/ “death”, /kála/ “black”, /kál/ “to struggle”, /kála/ “confusion”, /kál/ “haste” and /kála/ “hasty”.

In the case of the three way contrast on the first syllable, the second syllable of the di-syllabics is atomic. Similarly the first syllable of the di-syllabics which have significant contrast on the second syllable, is atomic.

On the basis of this three way contrast on the mono-syllabics which is phonemically equivalent to the three way contrasts either on the first or on the second syllable of the di-syllabics, we can say that the position of the
tone is significant in the language and that each phonological word has only one lexically significant and contrastive tone which can occur on any one of the syllables and the position of the tonemically significant syllable in the word is distinct from the atonic syllable (in the di-syllables).  


In the di-syllables there is phonetic evidence for the occurrence of stress along with the tones which can be shown as under =

\[ \begin{align*}
C \, \check{\nu} \, C \, \check{\nu} & \quad C \, \check{\nu} \, C \, \check{\nu} \\
C \, \check{\nu} \, C \, \check{\nu} & \quad C \, \check{\nu} \, C \, \check{\nu} \\
C \, \check{\nu} \, C \, \check{\nu} & \quad C \, \check{\nu} \, C \, \check{\nu}
\end{align*} \]

There is no evidence in the language to show (a) that stress has any phonemic significance distinct from the tones and (b) it alone is significant in the language because:

(a) in the mono-syllables there is a regular three way contrast in tones and the stress cannot even be phonetically split apart from the tones,

(b) in di-syllables no contrasts of the types \( C \, \check{\nu} \, C \, \check{\nu} \) \( - \) \( C \, \check{\nu} \, C \, \check{\nu} \) or \( C \, \check{\nu} \, C \, \check{\nu} \) \( - \) \( \check{\nu} \, C \, \check{\nu} \) exist in the language, and

(c) there is either a three way contrast on the first syllable or on the second syllable only.

Stress, therefore, is an automatic predictable concomitant of tone and hence of no phonemic significance. Previous statements that stress distinguishes pairs of otherwise identical words are the result of inadequate analysis of tone and the phonemic interpretation of the atonic vowels.

12. For differences refer Bailey: Punjabi Phonetic Reader, Page, XV. His statement "When several syllables normally having the same kind of tone come together, it is customary in rapid conversation to pronounce the tone only in the most strongly stressed syllables", is suggestive but quite ambiguous.

13. The mark \( \check{\nu} \) before \( \check{\nu} \) means the phonetic stress.

14. All pairs as listed by Jain (Page 166) except \( \ddot{s}U\ddot{t}a \) "attention" and \( sU\ddot{t}a \) 'cause to be drawn out' are found in the variety of Punjabi described in this paper.

15. Refer Jain c.f. 14 above.
LUSHAI PHONEMICS

By
Robbins Burling,
Tura, Garo Hills, Assam

0. Introduction
1. Consonants
2. Vowels
3. Tones
4. Syllable Structure
5. Orthography

0. In the course of collecting a short vocabulary list of Lushai, a Tibeto-Burman language of Assam, I made a preliminary phonemic analysis. Though this is surely not the final word on Lushai, it does include an analysis of certain features that have been completely neglected in earlier discussions of the language. I present my analysis here then, as a contribution toward the fuller understanding of the Lushai phonemic system, not as a definitive discussion. Further work may very well modify some of the results reported here.

According to my analysis Lushai can be described as having 23 consonantal phonemes and 5 basic vowels. Each vowel may occur either long or short and there are a large number of diphthongs. There are also 4 tones, each syllable carrying one or another of the four.

1. Consonants:

The consonants may be diagrammed as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>labial</th>
<th>dental</th>
<th>cacuminal</th>
<th>velar</th>
<th>glottal</th>
</tr>
</thead>
<tbody>
<tr>
<td>stops</td>
<td>p, p', b</td>
<td>t, t', d</td>
<td>t, t'</td>
<td>k, k'</td>
<td>?</td>
</tr>
<tr>
<td>fricatives-</td>
<td>f, v</td>
<td>s, z</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&amp; spirants</td>
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<td></td>
</tr>
<tr>
<td>nasals</td>
<td>m</td>
<td>n</td>
<td></td>
<td></td>
<td>n</td>
</tr>
<tr>
<td>affricates</td>
<td>č, č'</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>flap</td>
<td>r</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lateral</td>
<td>l</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

1. My trip to Assam was made possible by a Research Fellowship from the Ford Foundation of New York. All the information reported here was obtained from a single informant, Shri Lal Thanhawla Sano, of Aijal, Mizo Hills, but a temporary resident at that time in Tura, Garo Hills.
/p/ A bilabial stop, voiceless but unaspirated, approximately like the “p” in “spit”. /pʰ/ “give”; /pən-pəɾ/ “flower”; /mēiː vəː p/ “ashes”.

/p'/ A stop made in the same position as /p/ and like it unvoiced, but with an aspirate, like the “p” in “pit”. It contrasts with /p/.

/b/ A voiced bilabial stop, contrasting with both /p/ and /p'/ but made with the same lip position. /bəː l/ “dirty”; /bên/ “ear”.

/t/ A dental stop, unaspirated and unvoiced. Like the “t” of “stop” it has no aspiration, but it is pronounced well forward of the English “t” position, more like the French “t”. /pɔt/ “pull; /tɔːl/ “water”; /təː/ “small”.

/t'/ An aspirated voiceless stop in the same tongue position as /t/.
/tәiŋ/ “tree”; /tәu/ “grease”.

/d/ A voiced dental stop, in the same position as /t/. /dәiŋ/ “stand”; /dә l/ “lake”; /dәm/ “black”.

/t/ An unvoiced unaspirated cacuminal stop. To an English speaking person this sounds very much like /t/, but it is made with the tongue rolled well back and articulating against the hard palate.

/tɔʔ/ “rotten”; /tɔː n/ “tie”.

/t'/ An aspirated unvoiced, cacuminal stop, made in the same articulatory position as /t/.
/tuː/ “sew”; /tә/ “good”.

Comparison with the bilabial and dental position would lead one to expect a voiced cacuminal stop as well, but such does not seem to exist in Lushai.

/k/ A voiceless non-aspirated velar stop, much like the English “k” in “sky”. /tloː k/ “fly”; /kәn/ “we”.

/k'/ A voiceless aspirated velar stop, much like the English “k” in “key”, but contrasting with /k/. /kә/ “that”; /kәl/ “congeal”.

Like the cacuminal series, the velar series does not include a voiced member.

/ʔ/ The glottal stop. This occurs only as syllable or word final, and follows only short vowels. /sɛʔ/ “bite”; /hүʔ/ “wet”; /ɛʔʔ/ “thick”.

/f/ A labio-dental unvoiced fricative, very much like English “f”.
/v/ A labio-dental voiced fricative, very much like English “v”. /vәm/ “throw”; /vә r/ “white”.
Comparison with the stop series would lead one to expect that a distinction might be made between aspirated and unaspirated voiceless fricatives, but such does not seem to be the case.

/s/ A voiceless groove spirant, intermediate in position between the "s" in "sh" of English. /səm/ "hair"; /sə/ "meat".

/z/ A voiced groove spirant, in the same position as /s/, and thus intermediate between English "z" and "zh" of "zoo" and "measure".

/z/ m/ "narrow"; /zəŋ-əŋ/ "all".

/m/ A bilabial nasal, like the "m" in English "man".

/puːm/ "belly"; /muş/ "tail"; /məːm/ "smooth".

/n/ A dental nasal, made with the same position as /t/, which is to say with the tongue slightly forward of the usual English "n" position.

/pəŋ/ "thin"; /tʰəŋ/ "liver"; /neŋ/ "along with"; /nəm/ "push".

I was unable to find instances of a nasal cacuminal, to correspond with the cacuminal stop series.

/ŋ/ A velar nasal like the "ng" in English "sing". Unlike the English "ng", however, this phoneme may occur initially as well as finally.

/tłəːŋ/ "mountain"; /ŋiːl/ "straight"; /ŋaɪʔ-tuʔʔ/ "think".

/c/ An alveolar unaspirated affricate, a little forward of the position of the "ch" in English "chair", but not so far forward as "ts" of "hats". It is in the same position as /s/. /čuːl/ "rub by hand"; /čiː/ "salt".

/c/ An aspirated alveolar affricate, made in the same position as /č/, but with aspiration. /čuːm/ "cloud"; /čɛːm/ "below". Again there seems to be no voiced affricate in Lushai.

/r/ An alveolar flap, or very brief roll made with the tip of the tongue. A good deal of breathy friction made by air passing the tongue tip accompanies this sound. /tʰəɾ/ "new"; /rɨːl/ "intestines"; /rʊːl/ "snake".

/l/ A voiced lateral, made with the tongue well forward against the teeth, as in French. /lai/ "dig"; /luː/ "head".

/h/ This phoneme occurs only as syllable initial, and it assumes in every case the phonetic shape of the following phoneme, except that it is unvoiced. When it precedes a vowel, it is much like the English "h", an unvoiced precursor of the later voiced vowel. It may also occur before /m/, /n/ /ŋ/, in each case being an unvoiced nasal of the type which follows it. Similarly
it may precede /l/ and /r/ as unvoiced versions of these two phonemes. (See below under clusters).

/ħer/ “turn”; /hiat/ “scratch”.

2. Vowels:

There are five primary vowel positions in Lushai, which are themselves quite simple, but each of them may be either long or short (and there is some slight accompanying change of position) and a number of diphthongal and triphthongal combinations are possible. I found the distinction between long and short vowels to be one of the most difficult aspects of the language, and I feel that my findings are most questionable at this point. I will discuss each of the Lushai vowels and explain so far as possible the difference between the long and short versions. After that, I will discuss diphthongs and triphthongs.

/a/ The long vowel /a:/ is pronounced in the low central position at about the location of the “a” in English “father”. The short vowel /a/ besides being shorter in time, is pronounced higher, almost though not quite as high as the neutral [ə] in English, or the short “a” of Hindi. The difference between these two is the greatest of any of the long-short pairs. Before /ʔ/, /a/ is always short (as are all other vowels before /ʔ/), but the /a/ is also pronounced low, in the usual position of /a:/ rather than higher in the usual position of short /a/. It is perhaps arbitrary whether these vowels before /ʔ/ should be assigned to the long or to the short phoneme, but if temporal length is taken as the most important criterion, then they are surely to be considered short.

/ɕaʔ/ “thick”; /tɕaʔ/ “good”; /kà/ “T”; /kɑ:/ “mouth”; /är-si/ “star”; /zə:n/ “night”.

/e/ Both long and short varieties of this vowel are pronounced very slightly lower than the “e” of English “bet”, a little bit in the direction of the vowel in “hand”. If anything, the long version is pronounced slightly lower than the short one, but the difference is not great. They are front unrounded vowels.

/ɕeʔ/ “you” (objective case); /ɕe:m/ “blow”; /tʃ-sen/ “blood” /peʔ/ “give”; /tɛʔ/ “small”; /leʔ/ “and”.

/i/ A high front unrounded vowel, higher than English “i” in “bit”, but not diphthongized like the vowel in “beat”. When long /i:/, this tends to be pronounced slightly higher than when short /i/.
/hnɛːm/ “smell”; /hnɛm/ grass”; /tɬiː/ “die”; /čiː/ “saliva” /čiː/ “salt”; /ɬiː/ “thou”.

/o/ A back mid, or low mid vowel slightly above the position of the first vowel in English “ought”, but closer to that vowel than to the vowel in French “beau”. It is barely rounded. Whether long or short, it is made in much the same positions, but the length difference is quite distinct.

/hɔːn/ “bark of tree”; /tɬoː/ “breathe”; /vɔt/ “cold”;
/sɔːː-taʔ/ “there—’far’”; /sɔː-taʔ/ “there—’not so far’”.

/u/ A high back vowel, which gives an acoustic impression of a sound intermediate between English “foot” and “boot”, but is almost completely unrounded. Long and short versions are pronounced in the same position.

/ɬʰun/ “stab”; /ɬʰuːn/ “day”; /ɕuː/ “is”; /nʊː/ “mother”; /ruʔ/ “bone.”

The distinction between short and long vowels tends to be fairly clear and unambiguous when they are followed by a consonant. However, when they occur in open syllables, the difficulty is considerably greater.

J. Herbert Lorrain, in his discussion of Lushai orthography in the preface to his “Dictionary of the Lushai Language” said that the circumflex (the conventional indication of vowel length) is often omitted from the a, i, and u, when these occur at the end of a syllable. This could mean that only one variety occurs at the end of a syllable, or it could mean that the orthography is imperfect. I felt, however, that in each case there were variations among the final vowels, which would have to be called differences in length, though in some cases the great preponderance of words had one length, while I could only discover a very few of a different length to contrast with the others. For instance, the word for “I” /kʰa/ ends in a shorter and higher vowel than other words ending in /a/, such as /kʰaː/ “mouth”. For this reason I analysed most final a’s as long, though in the conventional orthography no distinction is made. The whole question of length is a vexing one, and its final analysis will require considerably more work.

Diphthongs: A number of combinations of vowels occur, which are diphthongs in being monosyllabic, and in taking only one tone as a cluster. The diphthongs I have encountered, and there may very well be others are: aːu, aːu, aːi, ai, eu, eiː; ei, iaː, ia; oː; oːi; ou; uː; ua; ui; and the triphthongs iau, and uai. The vowel sequences here are quite simple, but the strict

determination of which of them are long and which are short would have required a good deal more investigation than I had time for. I am certain, however, that some variations of length can cause phonemic contrasts. For instance, /zā:i/ "sing" contrasts with /zāi/ "to cut". However, whether either or both members of the diphthong may be long, or whether the whole diphthong as a unit is to be considered long, I do not know. Because of this, I have simply not indicated length when I do not know it, and only those vowels marked with the subscribed dot are at all reliably short. Where I discovered some sort of contrast between words, or where a vowel sounds particularly long or short, I have so indicated them, but not all are reliable. I feel most confident of those involving long and short a's, and most of these are marked.

3. Tones:

Surely the most interesting thing about the phonetics of the Lushai language is the tonal system. Unfortunately earlier studies of Lushai seem to ignore the tones completely, even though the simple fact of their presence at least is quite obvious, and a great many words are distinguished from each other only by differences in tone. Even Lorrain, in his dictionary, which on the whole is a very impressive piece of work, makes no mention whatsoever of the existence of tones, and the orthography conventionally used does not indicate them. I have been told that foreigners seldom use the tones correctly, but are still understood, and apparently their absence in the writing does not lead to confusion. Still they are a very fundamental part of the spoken language.

According to my analysis, there are four tones in Lushai, each vowel or vowel cluster (or alternatively each syllable) carrying by necessity one or the other of these four tones. They can be conveniently and accurately labeled as 1) high level (marked as /ā/); 2) high falling (marked as /ā/); 3) low level (marked as /ə/); and 4) low falling (marked /ə/). The level tones are considerably more resonant than the falling tones, and have a mildly sung quality, while the falling tones approximate more closely the quality of ordinary speech in English, without much resonance. The low falling tone sounds about like the "yes" of finality as "yes, I will do that." The high falling tone is more like a "yes" which expects more to be said, as a person may say repeatedly "yes" when listening to the telephone, but it is not at all "questioning." That is, it is definitely a falling tone, though it starts and ends higher than the low falling tone. The falling tones start at about the same level as is held constant in the level tones, but go lower in each case. This gives the low falling tone the quality of being the lowest of them all. The level tones maintain a very even pitch. There is never any rising quality to any of them. There are numerous
examples of minimal pairs, where the only difference is pronunciation is that of tone:

/ɪn/ “drink” vs. /ɪn/ “house”; /c̥ːn/ “to watch for” vs. /c̥ːn/ “joint”; /c̥ːŋ/ “to share with” vs. /c̥ːŋ/ “tail feather”; /c̥ːŋ/ “bread”; /c̥ːŋ/ “younger sibling”; /k̥al/ “walk” vs. /k̥al/ “congeal, stiffen”.

The complication of the tones is considerably augmented by several factors. For one thing, a beginner may confuse differences in tone from differences in length. In a few cases the pitch varies slightly depending upon the following consonant. For instance, and this is the most notable case, the low falling tone, particularly when it accompanies a short vowel, is pronounced slightly lower when it precedes n, l, m, or is final in the syllable, than when it precedes t, or ?. Another factor which can cause confusion is that the tone differences are entirely relative, and in asking an informant a list of words, one must make sure that he continues the same point of reference. After a slight pause my informant sometimes shifted considerably, every bit as much as the difference between tones, and I had to reorient myself each time to follow him. Furthermore, emphasis may raise the tone a bit, so that a low tone can get confused with a high one, if the informant tries to emphasise to make the pronunciation clearer. I tried for a bit to check the tones in sentences, but this did not prove very successful, and the same words seemed to shift tone considerably according to context. For instance, the final syllable in a sentence or utterance seems to have the tone dropped a bit, and I felt that the first one was likely to have the tone slightly raised. However, these are problems which I did not pursue very far, and the tone values which I have given in this paper are those found in isolated syllables. The shift in tone according to context means that the problem of analysing multisyllable words is considerably greater than that of single syllable words. I feel quite confident of having adequately analysed the single syllable words, but I have unanswered questions about longer ones.

4. Syllable Structure:

Although Lushai has polysyllabic words, phonetically the syllable is very fundamental. Not only does each syllable carry a tone, but certain consonants and consonant clusters have limited distribution, some occurring only as syllable initial and others only as syllable final. All single consonants may occur as syllable initial except for the glottal stop. Finally, however, only /r/, /l/, /ʔ/, the nasals /m/, /n/, and /ŋ/ and one set of stops occur. The final stops, being unaspirated and unvoiced, are most reasonably grouped as members of the phonemes which initially are written /p/, /t/, /t/, and /k/, though in the final position these do not contrast with
the aspirated or with voiced stops. The following initial clusters are the most important: hm, hn, hŋ, hl, hr, and tl, and tl. In the latter two cases the /l/ is only vaguely voiced. Finally /ʔ/ occurs. There may be a few other clusters, though they do not form a very important feature of the language.

/tʃə/ "wing"; /tɬiː/ "wind"; /tɬeːm/ "few"; /tlaː/ "fall"; /hmɛi-ʔia/ "woman"; /hmɛt/ "squeeze"; /hne/ "suck"; /hnʔ/ "leaf"; /hnʔoːn/ "neck"; /hruː/ "wipe"; /hriŋ/ "green"; /hləʔuʔ/ "swim"; /hlɛː/ "far"; /ʔalʔ/ "burn".

5. Orthography:

So far I have only incidentally mentioned the traditional orthography of Lushai, confining myself to the symbols which I have applied to the phonemes as I have analysed them. For the sake of those who may be doing further work on Lushai, it may be useful to relate my symbols to those used more conventionally, however. The conventional orthography of the consonants is very adequate. Where my symbols differ, it is only to conform to more usual linguistic work. I have used ‘ to refer to aspiration, while conventional Lushai uses “h”. The subscribed period is used to show cacuminal t, as in the common transliteration of the Indic languages, and I have followed that. Where I have used “t” and “n”, conventional spelling uses the digraphs “ch” and “ng”. One apparent error in the usual orthography is the use of “ngh”, as a cluster instead of “hng” (which I have written “hn”). This cluster is clearly of the same nature as the “hm”, and “hn” clusters, and though these latter are conventionally written with the “h” first, just as I have transcribed them, the “h” is written following “ng”. Ordinary writing also uses “h” for the glottal stop, which causes very little confusion since the glottal stop occurs only as syllable final, and the “h” only initially. However, the two are phonetically quite distinct.

Long vowels are indicated by the superscribed circumflex, the short vowels remaining unmarked. Vowels not followed by consonants are, however, frequently left unmarked, but there is very serious doubt whether the length of vowels in this position has been adequately analysed. The vowel which I have written /o/ is conventionally written as “aw”. This is, however, a simple vowel, and not a diphthong, and it seems phonetically more accurate to use a single symbol, though the “aw” is at least unambiguous. The symbol “o”, on the other hand, is conventionally used for the diphthong that I have marked as /ou/, and is much like the vowel in English “boat.” As I have pointed out, tone is completely unmarked in conventional Lushai writing.
VERBAL PREFIXES IN BANGRU

By

Jag Deva SINGH, Government College, Chandigarh

A perusal of the verbal forms of Bangru reveals that it makes use of certain prefixes to elaborate or modify the meanings of a root. We have such pairs as

sərahna 'to praise'
bysrahna 'to deprecate'
bhalna 'to examine, see'
səbhalna 'to take charge of'

Still longer series is also available. We have

gəlna 'to putrify'
nvəlna 'to swallow'
pvghəlna 'to melt'
ugəlna 'to vomit out'
gvəlna '(of crops) not to bear fruit because of too much water'

and also

tyrna 'to go across, swim'
nytyrña 'of liquids to settle down'
uittərña 'to get down'
nystrña 'to behave in an unbecoming manner'

Obviously in the above instances by, sə, ny, pv, gv, etc., are prefixes that are added to the root and these bring about a change in its meanings. Bangru makes use of the following prefixes. These are given below with their allomorphs. These do not have any fixed meaning. The force and centre of meaning varies as if with different verbal roots. However some sort of general meanings can be ascribed to them.

1. a ~ e 'all round'
2. u ~ u 'out, intensity'
3. o ~ o 'completely, down'
4. ny ~ ni 'much, well'
5. nys 'beneath, improper'
VERBAL PREFIXES IN BANGRU

6. p ~ ph 'out, thoroughly'
7. pɔr 'away'
8. py 'intensity'
9. by ~ bi 'reverseto, apart, intensity'
10. bhi 'against'
11. sə 'fully'

A few examples of the use of each of these prefixes may be cited below.

1. a-
   apphrna 'to become flatulent'
biphrna 'to take airs'

2. u—u
   bəlna 'to burn'
   ləlna 'to do one’s utmost'
   jəlna 'to burn'
   pərna 'to fall'
   dhunna 'to card'
   kəna 'to tighten'
   'to boil'
   'to tilt over'
   'to become bright or distinct'
   'to scald'
   'to annoy, bother'
   'to raise one’s self a little'

3. ɔ ~ o
   sərna 'to trickle'
   sərna 'to be smeared'
   gəlna 'to putrify'
   ossrə 'to spread all round'
   ossə 'to knead'
   ɔgəlna 'to bear fruits because too much water'

4. ny ~ ni
   bahna 'to conduct'
   tyrna 'to go across'
   upørna 'to grow'
   pəkharə 'to wash'
   'to pull on'
   nyybahna
   nytørna
   nypørna
   nykharə
   'to grow'
   'to wash clean'
   'to trickle'
5. nys
  tṝṇa  'to go across'  nystṝṇa  'to behave in an un-
  'to behave in an un-
becoming manner'

6. pṛ ∼ ph
  sarṇa  'to suffice'  pṛṣarṇa  'to stretch out'
  'to stretch out'
  lāghṇa  'to cross'  phṛḷagṇa  'to wash clean'
  'to wash clean'
  'to jump across'

7. pṛ ∼ ph
  bahṇa  'to conduct'  pṛrbahṇa  'to throw the bones
  and ashes of the
dead in the Ganges or in any other
sacred stream or pond'

8. py-
  gṛṇa  'to putrify'  pyṛγṛṇa  'to melt'
  chṛṇa  'to tread over'  pyṛchṛṇa  'to be left behind'
  'to be left behind'
  choḍṇa  'to forsake'  pyṛchoḍṇa  'to winnow'
  'to winnow'

9. by-
  kṛṇa  'to drop down of
  its own accord'  byṛkṛṇa  'to be scattered'
  chaṇa  'to pervade'  byṛchaṇa  'to spread all round'
  'to spread all round'
  ryṛṇa  'to lament'  byṛryṛṇa  'to lament piteously'
  'to lament piteously'
  ṣṛḷaṇa  'to move'  byṛṛlaṇa  'to confound'
  'to confound'
  ṣṛṇa  'to graze'  byṛṣṛṇa  'to move about'
  'to move about'
  ṛṇa  'to prepare'  byṛṛṇa  'to think over'
  'to think over'
  'to be obstinate'

10. bhi-
  ṭṛṇa  'to take a stand'  bhṛṛṇa  'to take a stand
  against someone'
  'to take a stand
against someone'

11. sṛ ∼ sṛ
  ṣṛvṛṇa  'to lose, waste'  sṛṣṛvṛṇa  'to collect together'
  'to collect together'
  taṇa  'to heat'  sṛṣṭaṇa  'to torment'
  'to torment'
  'to contain'
VERBAL PREFIXES IN BANGRU

We have also the prefixes s∅t-, pu, phu, dut, puc in the following verbal forms:

- s∅tkarna 'to show respect'
- pukarna 'to call'
- phukarna
- phukarna 'to produce a hissing sound'
- dutkarna 'to spurn away'
- puckarna 'to cajole, pacify a weeping child'

From the above examples it is clear that these prefixes are closely knit with the root. Nothing can be interposed between the prefix and the root. A root may be a free morpheme as in s∅-bhāṅga or a bound one as in ap-ph∅rṇa.

As Bangru is a descendant of 1A family these prefixes are the historically developed forms of the upasargas very much in use in the older speech. However, here these have become an integral and inseparable part of the root. We can set up the following correspondence between the Bangru and the Sanskrit prefixes.

<table>
<thead>
<tr>
<th>Bangru</th>
<th>Sanskrit</th>
</tr>
</thead>
<tbody>
<tr>
<td>a ~ ∅</td>
<td>a</td>
</tr>
<tr>
<td>u ~ u</td>
<td>ud-, ut-</td>
</tr>
<tr>
<td>o ~ o</td>
<td>o∅r∅-</td>
</tr>
<tr>
<td>ny ~ ni</td>
<td>nr-, nir-</td>
</tr>
<tr>
<td>nys</td>
<td>nis-</td>
</tr>
</tbody>
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</tr>
<tr>
<td>py</td>
<td>∅pr∅-</td>
</tr>
<tr>
<td>by ~ bi</td>
<td>∅bh∅-</td>
</tr>
<tr>
<td>bhi</td>
<td>s∅m-</td>
</tr>
</tbody>
</table>

It is evident from the above table that Bangru does not have a prefix that is not there in the older speech. Similarly most of the verbal roots that admit these prefixes can be traced back to their historical origin. e.g. g∅l∅na, J∅l∅na, dhumpa are derived from the Sanskrit roots g∅l-, Jv∅l- and dhū.

Next we have a class of verbal forms such as byāṇa 'to give birth to'; by∅r∅na 'to forget'; byāṅha : to marry'; anā 'to come' which cannot be split into two or more elements on the evidence from synchronic data. Are these, then, constituted of single morphemes unanalysable any further? But a student of the dialect will be tempted to interpret the first segment, namely by-, a- etc. as a prefix, simply because it is so elsewhere. But how to treat the second element? It is not found anywhere else in the dialect. Obviously we have no grounds to break the form into two elements. However if we choose to go into the history of the words we find that Jāṇa 'to give birth to' and byāṇa 'to give birth to' are evolved from the same Sanskrit root J∅n-
‘to be born’. In the course of historical development the two words have come to assume phonetically dissimilar forms. Thus by—in byaṇa historically is the same element as it is in many other forms i.e. a prefix. But now it has become as an integral part of the root. aṇa ‘to come’ Jaṇa ‘to go’ (both from ya—to go) sumaṇa ‘to remember’; bṣaṇa ‘to forget’ (from sṛ ‘to remember’) bahna ‘to conduct’, byahna ‘to marry’ (from vṛh- ‘to carry’) have the same story to unfold. nycoṇa ‘to rinse’ from ni-ścut-; byrajna from vṛ-raj; bydhoka ‘to shy’ from vṛ-dhḵ ‘to go’ have a more transparent history.

And yet there is another class of verbs such as ukna ‘to miss’ (from ut-krṃ) sohrna ‘to gather together’ (from sem-a-hṛ) pṣna ‘(of milk) to ooze from udders’ (from prṣ-rṣu) nyṛhna ‘to stoop’ (from ni-əvə-dhr) where the two elements, the prefix and the root, are so fused together that we can only make a guess.

It may be observed in the end that these prefixes do not have the productive force of a living affix as they once had in the older speech. Their use is restricted to the forms that have come down historically and is not extended to new roots. In other words these verbal forms are historical survivals and the prefixes used therein are no longer living ones.
ONOMATOPOETIC AND ECHO-WORDS IN KAMRUPI

By

Upendra Goswami

Deccan College, Poona.

§ 1. In the development of languages linguists have put forward many theories. Amongst them the Bow-wow or onomatopoetic theory supposes that objects are named after the sounds they produce. Thus “cuckoo” in English, or *miaou* in Chinese, are clearly the sounds produced by the animals.71 In Hindi *cat* is called *myāu* as it makes sounds like *myāu-myāu*. Similarly the horn of a motor car is called *bhōpū* as it produces a sound pō-pō.2 In Kamrupi the cat is called *mu*, *meukri* or *maekri*. The Kamrupi word for a musk rat is *sikā*, which seems to come from its sound sik-sik. Similarly the words *suk-seikā*, a kind of bird, or *hudu*, a kind of bird, seem to be onomatopoetic in origin. It is also to be noted that in calling or driving away different animals some onomatopoetic words are used differently. For example *kur-kur* is used for calling the puppies. The word for dog is *kukur*. Oh-oh is used for calling the dogs. In this way *hor-hor* and *suh-suh* are used to drive away cows and goats respectively.

Apart from these there are a large number of expressions used in day-to-day speech in which sound and sense are united ‘in a marriage-union’. These words present before us such a picture which no equivalent word can do. They may be used as a verb, adverb, noun or as an adjective. With the addition of the suffixes-ā, -nā or-iā, the adjectival sense is indicated. With -i and -eni the sense of a noun is implied. With -e adverbial sense is indicated. With the verbal affixes the expressions may be used as verbs. For example:

kin-kin-ā boihrān ‘a mild shower’.
khēn-kheñ-iā > khēn-kheñā ‘peevious’.
sāp-sip-nā pāni ‘very shallow level of water’.
dhar-phar-i > dhar-phori ‘struggling in agony of mind or body’.
pir-pir-ēni > pir-pirēni ‘a slight tickling sensation’.
ken-kēn-ē nāthkibī ‘do not be annoying like barking of a dog’.

1. *Elements of the Science of Language*—by Dr. Taraporewala.
2. *Sāmānya Bhāṣā Viṣāṇ*—by Dr. B. R. Sarasena.
Xi mok khes-khes-ābā dhoissi 'he has begun to annoy me' (by repeatedly asking something).

biz-bizoi 'gives itching sensation'.

§ 2. These onomatopoetic words also carry different sets of meaning:

(i) the nature of an object, e.g.
    phir-phirā kāpur 'thin cloth'.
    met-mētā bhār 'a heavy load'.

(ii) the nature of a colour, e.g.
    tik-tikā rānā 'very red'.
    kis-kisā kalā 'very black'.

(iii) the different kinds of physical indisposition, e.g.
    tin-tin-i 'feeling of headache'
    sek-seki 'the burning sensation of a wound'.
    xur-xuri 'the itching sensation of the nose'.

(iv) lonliness, thickness etc., e.g.
    xen-xśnā 'lonely'
    ghit-mītā āndhār 'thick darkness'.

§ 3. The onomatopoetic words are formed in two ways. In one (A) the first element is repeated and in the second (B) in the second part the first consonant is changed. But the change of the consonant is not predictable as in the case of the echo-words (cf. § 4). Again unlike the echo-words none of the elements or parts constituting the words carry any meaning independently. Below a list of such formations is given.

(A)

-ī:

kēn-kēnī 'cry of a dog when beaten or cry of a child'.
kāl-koli 'sound of a current or of the belly'.
khas-khosī 'hastiness'.
khes-khesī 'annoyance'.
gir-girī 'sound of indigestion of the stomach'.
ghar-ghorī 'sound of a wheel or of throat'.
ghur-ghuri 'conspiration'.
ghen-gheni 'teasing of a child for something'.
tah-tohi 'bursting pain of a boil'.
dap-dopi 'blustering'.
ONOMATOPOETIC AND ECHO-WORDS IN KAMRUP

dham-dhom 'blustering'.
phar-phori 'burning sensation as from friction'.
biz-bizi 'itching sensation'.
bhât-bhutî 'sound of the stomach due to indigestion'.
rap-ropi 'keen feeling of hunger'.
hir-hiri 'the roaring sound of clouds'.

gal-goilâ 'loud as of voice'.
kou-kouîâ 'very hot as of water'.
ghên-ghêinâ 'very small as of fish'.
señ-seînâ 'very hot, burning'.
sou-souîâ 'liquid, watery'.
zar-zoirâ > zazoirâ'dry'.
thên-thêinâ 'tall as a tree with a few branches'.
tâl-tuilâ 'ripen'.
dhak-dhoikâ 'very white'.
pen-pêinâ 'paste-like'.
phur-phuirâ 'light'.
bhak-bhoikâ 'a man who speaks loudly'.
mâu-muiâ 'polite'.
lên-leînâ 'tall and thin'.
xut-xuitâ 'restless'.
hal-hoîlâ 'frank, out-spoken'.

sir-sirî>sissirî pâni 'shallow' water'.
sil-silâ 'cleansed'.

pit-piteîi 'jealousy'.
(B)

kal-moli 'feeling of hunger'.
dag-mogi 'a sense of uneasiness due to extreme heat'.

ghut-muitâ 'dwarfish'.
sat-boîtâ 'restless, smart'.
sat-phoiîtâ 'restless, smart'.
lar-phoirî 'unsteady, slack'.

§ 4. The echo-words are those in which a word is 'repeated partially and the idea of et cetera and things similar to or assimilated with that, is expressed.' The first part of these words carries meaning and is used separately; while the second part has no meaning independently. Like the standard Assamese Kamrupi also substitutes the first consonant by s—in the second part in the formation of these echo-words. For example:

<table>
<thead>
<tr>
<th>Assamese</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ghar-sar</td>
<td>'house and similar things'.</td>
</tr>
<tr>
<td>gharā-sarā</td>
<td>'horse and the like'.</td>
</tr>
<tr>
<td>mās-sās</td>
<td>'fish and the like'.</td>
</tr>
<tr>
<td>mad-sad</td>
<td>'wine and the like'.</td>
</tr>
<tr>
<td>miths-siths</td>
<td>'sweetmeat and the like'.</td>
</tr>
<tr>
<td>kāpur-sāpur</td>
<td>'cloth and the like'.</td>
</tr>
<tr>
<td>khori-sori</td>
<td>'fuel and the like'.</td>
</tr>
<tr>
<td>gākhir-sākhir</td>
<td>'milk and similar things'.</td>
</tr>
<tr>
<td>dāt-sāt</td>
<td>'teeth and the like'.</td>
</tr>
<tr>
<td>zui-sui</td>
<td>'fire and the like'.</td>
</tr>
<tr>
<td>lem-sem</td>
<td>'lamp and the like'.</td>
</tr>
<tr>
<td>rod-sod</td>
<td>'sunshine and the like'.</td>
</tr>
</tbody>
</table>

If the original word begins with s-, the echo-word takes on t-. For example:

<table>
<thead>
<tr>
<th>Assamese</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>sāti-tāti</td>
<td>'lamp and the like'.</td>
</tr>
<tr>
<td>sāh-tāh</td>
<td>'tea and the like'.</td>
</tr>
<tr>
<td>sāni-teni</td>
<td>'sugar and the like'.</td>
</tr>
</tbody>
</table>

In this connection the following Kannādā formations also may be seen:

- hanṣu-hampalu 'fruits and other things'.
- ānku-đonku 'zig-zag'.
- nela-gila 'floor and the like'.
- tuppa-gippa 'ghee and the like'.
NASALISATION, ASPIRATION AND MURMUR IN GUJARATI

By

P. B. PANDIT

Gujarat University and Deccan College, Poona.

0.0. Gujarati has the following vowel and consonant phonemes:

\[i e s u o c a \theta, v s \tilde{s} y x h, r, r l, m n n N, pb td t\tilde{d} cj kg.\]

An attempt is made here to discuss the distribution of the nasals and aitch.¹

1.0. The class of nasal phonemes in Gujarati has the following distinctive features:—Position of articulation i.e., labial, dental and retroflex (alveolar), and nasal resonance. Beyond the alveolar region, the position of articulation ceases to be a distinctive feature, and is conditioned by the following phone. Oral closure, therefore, is a determined quality in the previous group /m/, /n/ and /n/, while conditioned in the latter /N/.

/n/ is a retroflex flap, and the flap is very quick in intervocalic positions. The underside of the tongue flaps quickly over the insides of alveolar arch; sometimes the ‘wipe’ is considerable, going somewhat above the alveolar arch.

There are, thus, four nasal phonemes:

/\textipa{m}/ bilabial, nasal
/\textipa{n}/ dental, nasal
/\textipa{n}/ retroflex, nasal
/\textipa{N}/ nasal.

1.1. Of the first three, /\textipa{m}/ and /\textipa{n}/ have greater freedom of occurrence since they occur after pause, while /\textipa{n}/ does not; there is also a restriction on /\textipa{n}/, since /\textipa{n}/ does not occur before retroflex stops.

Save for one loan-word from Marathi, /\textipa{\v{e}n\v{n}\v{a}}/ ‘elder brother’, current mainly among the Gujarati speaking Marathis, /\textipa{n}/ does not occur as a long—geminated—consonant, while /\textipa{m}/ and /\textipa{n}/ do: /\textipa{kh\v{e}m\v{m}a}/ ‘pardon’, /\textipa{k\v{n}\v{n}a}/ ‘string tied to the kite’.

¹ A note about the transcription: [‘] indicates aspiration (voiced if the preceding consonant is voiced, voiceless if the preceding consonant is voiceless, [--] below a vowel indicates a murmured vowel, # stands for pause, [ ] for phonetic transcription and / / for phonemic.)
For other positions, their occurrence is fairly congruent:

\[ \#mV, \#nV; Vm \#, Vn \#. \]

\[ VmV, VnV, VnV; VmC, VnC, VnC; (V = \text{any vowel}, C = \text{any consonant}). \]

1.2. Examples: /m/, /n/, /\eta/.

| [man] | 'honour' | [k\^nik] | 'husk-rice' |
| [nam] | 'name' | [t\^anki] | 'piece of bread' |
| [am] | 'thus' | [t\^imki] | 'pinch' |
| [an] | 'command' | [k\^nbi] | 'peasant' |
| [van] | 'complexion' | [\^n\^ysi] | 'it (f.) was destroyed' |
| [\^ndit] | 'learned person' | [t\^n\^t\^o] | 'building' (participle) |
| [\^\^m\^n\^o] | 'right (hand)' | [r\^m\^t\^o] | 'playing' |
| [b\^m\^t\^o] | 'brahmin' | [m\^t\^o] | 'believing' |

(derrisive expression)

1.3. The distinctive feature of /\eta/ is nasality — nasal resonance — only; it has four allophones in complementation.

In the first three allophones, the contrast is localised in the following contexts:

1. [\eta]: /\varepsilon/, /\varepsilonh/  
   [n] /k, g/

2. [\eta]: /\varepsilon/, /\varepsilonh/  
   [n] /c, i/

3. [\v^\nu] /\varepsilon/, /\varepsilonh/  
   [\v^\nu] /s, s, r, l, y, v/ and any murmured vowel.²

If the preceding vowel is other than /\varepsilon/, /\varepsilonh/, then the first two allophones vary freely with the fourth allophone [~].

4. [~]: occurs as the nasalisation of the preceding vowels /i, u, e, œ, a/. If /\varepsilon/ or /\varepsilonh/ are followed by another vowel phoneme (the following vowel should not be a murmured vowel — see allophone 3), then it occurs as the nasalisation of the vowel /\varepsilon/ or /\varepsilonh/.

2. Phonetically this statement could be further refined, thus distinguishing the nasals before /s, s, y, v, r, l/ according to the difference in the articulatory character of /s, s, y, v, r, l/ and thus setting up a few more allophones: one before /s/, another before /\varepsilon/', another before /\varepsilon/ and so on. But this is not relevant, since they all share a common feature in having a nasal increment of the preceding vowel /\varepsilon/, which distinguishes them from other allophones.

It may be noticed that the occurrence of the allophone [\v^\nu] is mainly limited to the learned loanwords from Sanskrit.
/N/:—
[b‘ag]  ≈ [b‘ang] ‘tobacco’
[iŋ]  ≈ [iŋ] ‘asafoetida’
[vādžni]  ≈ [va,ndžni] ‘barren women’
[vidžno]  ≈ [vi,ndžno] ‘fan’
[циальн] ‘gong’
[b‘nko] ‘brave’
[r‘ng] ‘colour’
[s‘ntso] ‘machine’
[k‘š] ‘proper noun of a demon’
[v‘š] ‘lineage’
[dāt] ‘teeth’
[kā] ‘why’
[v‘t] ‘ring’
[p‘to] ‘turban’
[1‘u] ‘I may take’ [1‘u is a dialectical variation]
[k ś] ‘some’
[dā] ‘curds’

1.4. The homorganic nasals (allophones 1 and 2), the ‘nasal increment’ of the preceding vowel, (as Grammont puts it ‘prolongement nasal de la voyelle précédente’ Traité de Phonétique p. 365), and the nasalisation (allophone 4) are metrically equipollent (i.e. syllables of the type vowel +N are considered long). This may lend further support to the bundling of these allophones in one phoneme.

This patterning also points towards a relevant phonological feature that in Gujarati nasalisation, the point of articulation is distinctive from bilabial to alveolar (retroflex) region, and thereafter indifferent, depending only on environment.

2.0. It would, thus be clear that in Gujarati there is a two-way /m/, /n/ contrast initially, and a four way contrast /m/ /n/ /ŋ/ /N/ elsewhere: finally — before pause —, and after vowel and before consonants. Thus, initially:

/mat/  ‘mother’
/nat/  ‘caste’

finally:
/kan/  ‘ear’
/kam/  ‘work’
/kan/  ‘funeral procession’
/KN/  ‘why?’
medially, after vowels and before consonants:

\(/\text{cimki/}\)  'pinch'
\(/\text{mankan}/\)  'swift (mare)'
\(/\text{janka/}\)  'Sita's name'
\(/\text{vaNki/}\)  'crooked'.

We cannot say, therefore, that before stops there is only one 'homorganic nasal', or contrastive nasals are neutralised before stops, leaving one 'archiphoneme' /N/. A more or less similar situation prevails in Marathi, where all the contrastive nasals are localised between vowels and consonants, and finally — before pause — with /m/ and /n/ contrast in initial position. With these facts before us, the following remarks by Firth could hardly be acceptable:

"Nasals and nasalisation in the Sanskritic languages raise fundamental questions of phonetic and phonological theory, and also problems for Roman transcription. Let us take Marathi for instance. In initial position only two nasal consonants can be used, n and m. In final position, there is a three-term nasal alteration, but immediately preceding another consonant, especially only one is possible, the nasal homorganic with the following consonant" (J. R. Firth, *Proceedings of the Second International Congress of Phonetic Sciences*, Cambridge, 1936, pp. 180-81.)

Examples from Marathi, a few out of many available, are given below, which amply show that all the contrastive nasals — homorganic and heterorganic — occur before consonants:

\([\text{t\text{\v{e}mki/}}]\)  'nose ring'
\([\text{d\text{\v{e}nka/}}]\)  'stroke'
\([\text{d\text{\v{e}nka/}}]\)  'bell'
\([\text{t\text{\v{e}nka/}}]\)  'salary'

2.1. Allen refers to Firth's remarks cited above and perpetuates the same error, going a step ahead by 'enunciating' an important phonological principle, which is: "n or m in a sequence Vnt or Vmp is a very different functional unit from that in VnV or VmV; for whereas in the latter case n and m are mutually contrastive, this is not so in the former case. The homorganic nasals form a single phonological unit and a phonological transcription will recognise the fact". (W. S. Allen, *Phonetics in Ancient India*, London 1953, p. 45).

In any phonological transcription of Gujarati or Marathi, distinction between contrastive nasal phones will have to be mentioned in V-C context, and this would apply to many other New Indo-Aryan languages.
2.2. The two facts that (i) the homorganic nasal is localised in a very limited set of environments (e.g. see the distribution of [ŋ], [n] above, and (ii) the contrast between different types of nasal phonemes is not neutralised before consonants, would prevent us from supporting the statements made by Firth and Allen.

3.0. Gujarati, like many other Indo-Aryan languages has a set of aspirated stops in contrast with unaspirated stops, and it has a set of murmured vowels in contrast with simple vowels, the murmur being usually referred to as voiced aitch. It is proposed here to interpret murmur and aspiration phonemically.

3.1. Aspiration in Gujarati is the breathy release which immediately follows the stop consonants, and which is voiced when the preceding consonant is voiced, unvoiced when the preceding consonant is unvoiced. Murmur is voiced breath, low pitched and simultaneous with the vowel.

3.2. The following three sets of words will describe the situation:

1. [bær], [b'ær], [bær].
2. [pər], [p'ər], [pər], ([p'ər], is a nonsense word).
3. [ər], [ər].

In [bær], the vowel is clear, there is no aspirated release of the preceding stop either. In [b'ær], the vowel is clear, but it is preceded by aspirated release, which is voiced when the preceding consonant is voiced. In [bær] the underlined vowel is murmured, and there is no aspirated release of the preceding [b].

Similarly in [pər], the vowel is clear, not preceded by aspirated release; in [p'ər], the vowel is clear but preceded by aspirated release which is voiceless when the preceding consonant is voiceless: and in [pər], there is no aspirated release of the [p], but the vowel is murmured.

In [ər], the vowel is clear, in [ər] the vowel is murmured.

3.3 We can consider the element of murmur [−] and the element of aspiration ['] in complementation: aspiration (i.e. aspirated release of a preceding stop) leaving the vowel clear, while murmur being simultaneous with the vowel.

3.4. Murmured vowels do not occur after aspirated release of stops. Vowels after aspirated stops—voiced or voiceless—are always clear. Murmured vowel does not occur before pause.

3.5. One phoneme /h/ whose distinctive feature is some sort of extra breath will have two allophones: ['] and [−]. When it is simultaneous
with the vowel it is murmur, (murmur being described as *sotto voce*, with voicing and slight lowering of pitch), when not simultaneous with the vowel it is the aspiration of the previous consonant. Murmur is transcribed after the vowel, aspiration is transcribed after the consonant.

Thus, we can rewrite the above sets of words, phonemically:

1. /bar/,  /bhar/,  /bahr/.
2. /pʰr/,  /phər/,  /pʰhr/.
3. /aʁ/,  /ahr/.

Thus a nasalised murmur vowel, e.g. [ũ] shall be represented in the linear phonemic transcription as /uhN/.

3.6. [pʰat] 'crack'  [bar] 'twelve'
[bʰat] 'cooked rice'  [bʰar] 'burden'
[at] 'hand'  [bar] 'outside'
[ɔɾi] 'boat'  [pʰr] 'last year'
[məd'i] 'small cottage'  [pʰdʲ] 'army'
for a wandering  [aɾ] 'obstruction'
sanyasi'  [ɾ] 'bones'
[kəd'i] 'spiced and  [ʔ] 'myself'
cooked butter-
milk'
[daɾi] 'beard'  [aɾ] 'obstruction'
[dʰar] 'robbery'  [ʔ] 'myself'
[lak] 'hundred thousand'

3.7. In my dialect, and in the speech of many educated Gujarati speakers murmur alternates with its absence:

Thus the following doublets are variations in speaking style:

/bahr/ ~ /bar/  'outside'
/pʰhr/ ~ /pʰr/  'last year'
/mahruN/ ~ /maruN/  'my'
/vahr/ ~ /var/  'aid'
/vahlο/ ~ /valο/  'dear'
/daɾho/ ~ /daro/  'day'
/kahno/ ~ /kano/  'Lord Krishna'
/pʰluN/ ~ /pluN/  'bread'

The reverse does not happen, i.e. the clear vowels do not alternate with murmured vowels,
NASALISATION, ASPIRATION AND MURMUR

3.8. One more important alteration may be mentioned here. A syllable-final voiced aspirate release alternates with the murmur of the preceding vowel:

\[
/\text{labh}/ \sim /\text{lahb}/ \quad \text{'advantage'} \\
/\text{vagh}/ \sim /\text{vahg}/ \quad \text{'tiger'} \\
/\text{jaNg}/ \sim /\text{jahNg}/ \quad \text{'thigh'} \\
/\text{s\og\iuN}/ \sim /\text{s\oh\iuN}/ \quad \text{'all'}
\]

This may be explained as progressive assimilation. This alteration may be considered as an additional argument for not considering the aspirated stops /kh/, /gh/, /th/ etc. as unit phonemes.

4.0. There have been some doubts about the phonetic character of the murmured vowels in Gujarati.

4.1. In the Linguistic Survey of India (Vol. IX, Part II, pp. 347-352), Grierson has given a list of words in which 'a slight h is heard, although the latter is not represented in writing'. CHATTERJI (S. K. CHATTERJI, 'Recurrives in New Indo Aryan', Indian Linguistics, Vol. I, No. 1, 1931) describes the murmured vowels following the consonants as stops accompanied by glottal closure, and compares them to 'similar' sounds in Sindhi. Commenting on the above observation of GRIERSON, CHATTERJI further remarks, 'now, this 'slight' h sound, which has been noted, is nothing but the glottal stop, or accompanying glottal closure .......... Gujarati has thus consonants with glottal closure as specific phonemes". (Ibid, p. 31).

No glottal closure is noticed in [p\og\ar] or [b\og\ar] or in any other example of murmured vowels. What is noticed is that the murmur is simultaneous with the vowel, and there is some lowering of pitch which we regard here as the function of murmur.

4.2. Suction stops or 'implosives' as they are more commonly known, are distinctive in Sindhi. Suction stops in Sindhi were described by Turner (R. L. TURNER, 'Sindhi Recurrives or Voiced Stops preceded by Glottal Closure', Bulletin of the School of Oriental Studies, London, Vol. III, pp. 301-315), and he named them as 'recurrives': "Prince Troubetzkoy refers to consonants in the Caucasian languages accompanied by complete closure of the glottis (Bulletin de la Societe de Linguistique de Paris, No. 72, p. 204). There he calls them 'recurrives', a convenient term, I have anglicized as 'recurrives'" (TURNER, Ibid., p. 304). He further records GRAHAME BAILEY's observation (in a note published in the Bulletin of the School of Oriental Studies, Vol. II, Part IV, p. 837), "Finally Dr. Grahame Bailey in a note speaks of them as 'implosives' in which the breath is drawn in
instead of being expelled. According to him, the larynx is lowered and
glottis closed. This action sucks the air back, but no appreciable amount
enters the lungs. This description agrees generally with my own observa-
tion*. (Turner, Ibid).

4.3. Phonetically, nothing comparable happens in the case of murmured
vowels following stops. Chatterji's observation, therefore, cannot be
sustained. A few spectrograms and kymograms are reproduced here to show
that no glottal closure is involved here.

We can notice in the spectrogram that while the onset of voicing is
immediate after the release of p in [pɔr] and [pɔr], it is delayed—being
intervened by a period of voicelessness—in the case of [p'ɔr]. [ - ] in
[pɔr] could be distinguished by the presence of random distribution of
energy, more noticeable at higher frequencies, while [ɔ] in [pɔr] is free
from this.

It is difficult to notice the difference in the onset of voicing when the
initial stop is voiced, but that there is no glottal stop—closure—intervening,
is clear on account of continuous vowel harmonics.

In the kymograms for [p'ap], [pap] and [pap], we also notice the same
difference (p'ap and pap are nonsense words). In the case of [p'ap], the
vowel starts late, at the end of aspiration, while in the case of [pap] and
[pap] the onset of voicing is immediate. That the initial in [pap] is not a
stop with glottal closure is visible by continuous vowel vibrations after the
release of p.

4.4. This much aid from instruments is taken only to show that [pə] is not
a 'recursive' or 'implosive' as described by Chatterji in the paper cited
above, and also in his various books (Indo-Aryan and Hindi, Ahmedabad,
1942, Rajasthan Bhasha, Udaipur 1947). A more elaborate study of murmured
vowels from the point of view of acoustic phonetics may throw some
light on the relation of murmured vowels with pitch in the languages like
Gujarati, dialects of Rajasthan, Lahanda, Sindhi and Panjabi.

4.5. It should be noted, however, that this difference of interpretation at
the phonetic level does not affect Chatterji's hypothesis regarding the
differential treatment of -h- between the Indo-Aryan languages outside the
Gangetic Doab and the dialects spoken in the Doab region. "How far is the
recursive treatment of aspirates connected with tone?" (Chatterji, Ibid)
suggests a further line of inquiry into the phonology of the languages outside
the Doab, where languages like Panjabi and some dialects of Rajasthani have
phonemic tone, Sindhi has phonemic suction stops and Gujarati has
murmured vowels.
NOTES ON STEM-VOWEL ALTERNATION IN THE BENGALI VERB

By

Edward C. Dimock, Calcutta

0.0. The following data is based on the ideolect of Mr. Bhabataran Datta of Calcutta, with whom the writer worked, in Calcutta, and at the Deccan College Summer School of Linguistics, between December, 1955, and May, 1956.

1.0. Bengali verb stems may be divided into two broad classes:
A. Stems of form 1.a. CV- or 1.b. CVi-
   2. (C)V(C)(C)-
B. Stems of form (C)V(V)C(C)a-

1.1. These stems may be described in terms of the vowel alternations which take place in them under certain conditions.

1.2. Vowel phonemes\(^2\) occur in the basic stems of these classes according to the following distribution:

A. 1.a. /e, a, ɔ/  
   1.b. /a, ɔ/
   2. /e, æ, a, ɔ, o/
B. /i, æ, a, ɔ, o, u/

1.3. Vowel alternations, when they take place, are of the following type:

<table>
<thead>
<tr>
<th>Basic Stem vowel</th>
<th>Alternate Stem vowel</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. e</td>
<td>i</td>
</tr>
<tr>
<td>2. æ</td>
<td>e</td>
</tr>
<tr>
<td>3. a</td>
<td>e</td>
</tr>
<tr>
<td>4. ɔ</td>
<td>o</td>
</tr>
<tr>
<td>5. o</td>
<td>u</td>
</tr>
</tbody>
</table>

Thus, the two stems might be, and hereafter are, referred to as low and high stems, respectively.

1. My thanks are due to Professor Gordon Fairbanks, of Cornell University, and to Dr. William Battrie, of the University of California, both of whom saw the greater part of the paper at the Summer School of Linguistics at the Deccan College, Poona, in 1956, and whose comments and suggestions are incorporated herein. I am especially grateful to Professor Charles Ferguson, of Harvard University, parts of whose unpublished description of Bengali I was allowed to see, and upon whose knowledge of the language I was permitted to draw.

2. The phonemes of the language are: /p, b, t, d, ŋ, k, g, ph, bh, th, dh, ṭh, dh, kh, gh, č, j, čh, jh, š, h m, n, ŋ, l, r, ř, rh, i, e, æ, a, ɔ, o, u, length, ~ (nasalisation)/. Length of both vowels and consonants, is written as double vowel or consonant, Juncture and intonation have not as yet been analysed by the present writer.
1.4. It may be stated, as far as the present data shows, for the whole language, that, in words of CV₁CV₂ pattern, where V₂ is /i/ or /u/, and V₁ is not /a/, V₁ is the higher of two possible vowels; or, in other words, that the stem is the high stem. This is true not only for verbs:

/ken-/ “buy”, /kini/ “I buy”

but for other structural classes as well:

/nɔ̃t/ “actor”, /nɔ̀ti/ “actress”

where V₁ is /a/, there is no change:

/jan-/ “know”
/jani/ “I know”

2.0. Stems of class A:

2.1. The statement of 1.4. can be enlarged, in terms of class A stems, except where the vowel of the basic stem is /a/, to include not only words of CVCV pattern, but words of CVV(C) and CVCVC patterns, as well.

Examples:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. e/i de- “give”</td>
<td>—</td>
<td>—</td>
<td>ken- “buy”</td>
</tr>
<tr>
<td>dii “I give”</td>
<td>—</td>
<td>—</td>
<td>kini “I buy”</td>
</tr>
<tr>
<td>diiš “you (despective) give”</td>
<td>—</td>
<td>—</td>
<td>kiniš “you (desp.) buy”</td>
</tr>
<tr>
<td>but de “give!” (desp.)</td>
<td>—</td>
<td>—</td>
<td>ken “buy!” (desp.)</td>
</tr>
<tr>
<td>2. æ/e —</td>
<td>—</td>
<td>—</td>
<td>phael- “throw”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>pheli</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>pheliš</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>phael- “throw!” (desp.)</td>
</tr>
<tr>
<td>3. o/o hɔ- “be”</td>
<td>ʃi- “bear”</td>
<td>ʃi- “bear”</td>
<td></td>
</tr>
<tr>
<td>hoi</td>
<td>—</td>
<td>—</td>
<td>pɔri</td>
</tr>
<tr>
<td>hoš (see section 2.3.4.)</td>
<td>ʃoš</td>
<td>ʃoš</td>
<td>ʃoš</td>
</tr>
<tr>
<td>—</td>
<td>ʃi</td>
<td>ʃi</td>
<td></td>
</tr>
</tbody>
</table>

3. A possible exception is the emphatic -i suffix, the addition of which does not change the vowel of the stem:

ʃi- “all”, ʃi- “all (emphatic)”.

However, because this suffix can be attached to any part of speech, and because of various other indications of the relative freedom of the form, there is the possibility of establishing juncture, and continuing to state the rule as without exception.
4. o/u — — oṭh- “rise up”
        uthī
        uthiṣ
        oṭh

5. — kha- “eat”
    ācai- “want”
    ājani- “know”
    khai, etc.
    ācai, etc.
    ājani, etc.

2.2. Vowel alternation in other situations is morphologically determined:

2.3. The following statements may be made for all verbs of the class in question.

2.3.1. High stem occurs:

1. Before the -b- morpheme of the simple future, except in class A.1.a., and in class A.1.b. when the vowel of the basic stem is /a/.

2. Before the -c- morpheme of the continuative, throughout, except where the vowel of the basic stem is /a/.

3. Before the -l- morpheme of the simple past or conditional conjunctive, except in class A.1.b., when the vowel of the basic stem is /a/.

4. Before the -t- morpheme of the past conditional (or habitual), or the infinitive, except in classes A.1.b. and A.2., where the vowel of the basic stem is /a/.

2.3.2. Examples: (all given in 1st person of their respective tenses).

<table>
<thead>
<tr>
<th>Class</th>
<th>Stem</th>
<th>-b</th>
<th>-c</th>
<th>-l</th>
<th>-t</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.1.a</td>
<td>de-</td>
<td>debo</td>
<td>dičći</td>
<td>dilam</td>
<td>ditam</td>
</tr>
<tr>
<td>A.2.</td>
<td>kent-</td>
<td>kinbo</td>
<td>kinći</td>
<td>kinlam</td>
<td>kintam</td>
</tr>
<tr>
<td>A.2.</td>
<td>phaet-</td>
<td>phelbo</td>
<td>phelći</td>
<td>phellam</td>
<td>pheltam</td>
</tr>
<tr>
<td>A.1.a</td>
<td>hō-</td>
<td>hōbo</td>
<td>hočći</td>
<td>holam</td>
<td>hotam</td>
</tr>
<tr>
<td>A.1.b</td>
<td>ōi-</td>
<td>šoibo</td>
<td>šoićći</td>
<td>šoilm</td>
<td>soitm</td>
</tr>
<tr>
<td>A.2.</td>
<td>ōt-</td>
<td>bośbo</td>
<td>bośći</td>
<td>boślam</td>
<td>bosṭam</td>
</tr>
<tr>
<td>A.2.</td>
<td>oṭh-</td>
<td>ut(h)bo</td>
<td>ut(h)ći</td>
<td>ut(h)lam</td>
<td>ut(h)tam</td>
</tr>
<tr>
<td>A.1.a</td>
<td>kha-</td>
<td>khabo</td>
<td>khačći</td>
<td>khelam</td>
<td>khetam</td>
</tr>
<tr>
<td>A.1.b</td>
<td>ācai-</td>
<td>ācibo</td>
<td>ācici</td>
<td>ācilm</td>
<td>ācaitam</td>
</tr>
<tr>
<td>A.2.</td>
<td>ājani-</td>
<td>ājanbo</td>
<td>ājanći</td>
<td>ājanlam</td>
<td>ājantam</td>
</tr>
</tbody>
</table>

2.3.3. The geminate -čći- in certain of the forms above is the allomorph of the continuative morpheme which occurs with class A.1.a. stems.
2.3.4. In class A.1.a. stems, except where the vowel of the basic stem is /a/, vowel alternation also takes place before the -š personal ending morpheme of the 2nd person despective indicative.

boš- "carry" boš "you (despective) carry"

diš- "give" diš "you (despective) give"

khaš- "eat" khaš "you (despective) eat"

2.3.5. In class A.1.a. stems, where the vowel of the basic stem is /e/ (two stems only), the unexpected alternates /a/ and /æ/ occur: /a/ before the -o personal ending morpheme of the 2nd person familiar present, and /æ/ before the -e personal ending morpheme of the 3rd person familiar present.

dao- "give" dao "you (familiar) give" dæe "he (fam.) gives"

nae- "take" nae "you (familiar) take" nae "he (fam.) takes"

2.4. The following statements may be made for all verbs of the class in question, without exception.

2.4.1. High stem occurs:

1. Before the -(i)o morpheme of the future imperative.

2. Before the -(i)e morpheme of completive and conjunctive forms.

The morphemes are so written in order to distinguish them from the 2nd and 3rd present personal ending morphemes, with which they are homophonous, to indicate that high stem occurs before them, and to indicate the allomorph -io, which occurs after /o/ as in forms of h3-, below.

2.4.2. Examples:

<table>
<thead>
<tr>
<th>Class</th>
<th>Stem</th>
<th>-(i)o</th>
<th>-(i)e</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.1.a</td>
<td>de-</td>
<td>dio</td>
<td>die</td>
</tr>
<tr>
<td>A.2.</td>
<td>ken-</td>
<td>kino</td>
<td>kine</td>
</tr>
<tr>
<td>A.2.</td>
<td>phæl-</td>
<td>phelo</td>
<td>phele</td>
</tr>
<tr>
<td>A.1.a</td>
<td>hɔ-</td>
<td>hio</td>
<td>hoie</td>
</tr>
<tr>
<td>A.1.b</td>
<td>ŋi-</td>
<td>šiio</td>
<td>šoie</td>
</tr>
<tr>
<td>A.2.</td>
<td>bɔš-</td>
<td>bošo</td>
<td>boše</td>
</tr>
<tr>
<td>A.2.</td>
<td>oth-</td>
<td>utho</td>
<td>uthèque</td>
</tr>
<tr>
<td>A.1.a</td>
<td>kha-</td>
<td>kheo</td>
<td>khee</td>
</tr>
<tr>
<td>A.1.b</td>
<td>câi-</td>
<td>čeo</td>
<td>čee</td>
</tr>
<tr>
<td>A.2.</td>
<td>jан-</td>
<td>jeno</td>
<td>jene</td>
</tr>
</tbody>
</table>
3.0. Stems of class B:

3.1. In verbs of this class, high stem occurs before the -(i)o and -(i)e morphemes, in stems of pattern CVCa-, except where the stem vowel is /a/.

There are no occurrences of verbs in stem-vowel /e/ of this class, in the present data.

Verbs occur in this class which have /i/ or /u/ stem-vowels, throughout; in these cases, the final -a of the stem becomes -i before -(i)o and -(i)e, and -o, elsewhere.

3.2. Examples: (in the column under a/o, examples are in 1st person present).

<table>
<thead>
<tr>
<th>Stem</th>
<th>-(i)o</th>
<th>-(i)e</th>
<th>a/o</th>
</tr>
</thead>
<tbody>
<tr>
<td>jira-</td>
<td>jirio</td>
<td>jirie</td>
<td>jiroi</td>
</tr>
<tr>
<td>ghuma-</td>
<td>ghumio</td>
<td>ghumie</td>
<td>ghumoi</td>
</tr>
<tr>
<td>bėka-</td>
<td>bėkio</td>
<td>bėkie</td>
<td>bėkai</td>
</tr>
<tr>
<td>nɔra-</td>
<td>norio</td>
<td>norie</td>
<td>nɔrai</td>
</tr>
<tr>
<td>oṭha-</td>
<td>uṭhio</td>
<td>uṭhie</td>
<td>oṭhai</td>
</tr>
<tr>
<td>kamra-</td>
<td>kamri</td>
<td>kamrie</td>
<td>kamrai</td>
</tr>
<tr>
<td>lāpha-</td>
<td>lāphio</td>
<td>lāphie</td>
<td>lāphaei</td>
</tr>
<tr>
<td>pǒuča-</td>
<td>pǒučio</td>
<td>pǒučie</td>
<td>pǒučai</td>
</tr>
</tbody>
</table>

4.0. Description of tense and personal ending morphemes, together with the allomorphic and morpho-phonemic statements which would complete the above picture, cannot be given here because of space considerations. They are, however, able to be stated in a very simple manner, and present few difficulties, of either method or presentation.
SANDHI IN MODERN COLLOQUIAL TELUGU

By

BH. KRISHNAMURTI
Andhra University

0.0. One of the major difficulties that a non-Telugu speaker experiences in learning the present day spoken Telugu is its sandhi system. Sandhi may be defined as a class of alternations which occur among the phonemes of two or more morphs in close juncture or sanñhitā.\(^1\) If the alternation is determined by a given sequence of phonemes rather than their status as constituents of certain morphemes, we call it automatic alternation. Most of the cases of sandhi in spoken Telugu are automatic.

1.00. The phonemes of colloquial Telugu, fairly representative of the educated middle class language of the Coastal Districts,\(^2\) are as follows:—

1.1. Consonants:—

<table>
<thead>
<tr>
<th>Labial</th>
<th>Dental</th>
<th>Alveolar</th>
<th>Palatal</th>
<th>Retroflex</th>
<th>Velar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stops</td>
<td>(p)</td>
<td>(ph)</td>
<td>(t)</td>
<td>(th)</td>
<td>(k)</td>
</tr>
<tr>
<td></td>
<td>(b)</td>
<td>(bh)</td>
<td>(d)</td>
<td>(dh)</td>
<td>(g)</td>
</tr>
<tr>
<td>Affricate</td>
<td>(ch)</td>
<td>(j)</td>
<td>(j)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spirants</td>
<td>(f)</td>
<td>(s)</td>
<td>(ś)</td>
<td>(ṣ)</td>
<td>(b)</td>
</tr>
<tr>
<td>Nasals</td>
<td>(m)</td>
<td>(n)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laterals</td>
<td>(l)</td>
<td>(l)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trill</td>
<td>(r)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semi-</td>
<td>(w)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vowels</td>
<td>(y)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) In this definition, the scope of sandhi has been extended to include the alternations that occur not only among the phonemes in immediate contact but also among those that are spaced by other phonemes. The explanation is that the phonemic alternations are simultaneous with the occurrence of two or more morphs in close juncture (for examples, see §§ 4.2 ff).

The traditional meaning in which the word Sanñhitā is used by the Sanskrit grammarians as "varpānām atiśayitaḥ sannidhiḥ sanñhitā-samjñah syāt" (i.e., the closest possible proximity between phonemes is sanñhitā) suits well as a synonym for what is known as close juncture in Modern Linguistics (also see for definitions of close and open junctures, B. Bloch and G. L. Trager, "The Syllabic Phonemes of English", Language 24, p. 225).

\(^2\) The coastal districts: Nellore, Guntur, Krishna, East Godavari, West Godavari, Visakhapatnam and Sreekakulam.
If we are analyzing the speech of the uneducated classes, we have to eliminate all the aspirate stop phonemes from the list, since they are all replaced by the corresponding unaspirated ones, voiced or voiceless, e.g. educated dialect: /dharmam/ charity, justice; uneducated dialect: /darmam/. Even among the educated classes, aspirated and unaspirated stops freely alternate with differences in style, emphasis, tempo, etc., e.g. /pedda/ big: /pēddha/ extremely big (emphatic); /inkā/ still, /inkhā/ id. (emphatic).

1.11. Vowels: /i e a o u, ē ēē ō ū/. On account of the absence of /æ/ corresponding to /ā/, long vowels are classified as separate phonemes. An alternative way is to set up /i e æ a o u/ and a phoneme of length /-/ in which case, /æ/ occurs only before the phoneme of length /-/.

1.2. Allophones: — Only a brief account of the allophones of the above phonemes is given in the following:

After an open juncture, all voiceless stops are tenser than in close juncture. All voiceless stops have spirantized allophones in the intervocalic position. /c/ and /j/ have two allophones each; [ts dz] (blade-alveolar affricates) respectively, before back vowels, and [č j] (prepalatal affricates) respectively before front vowels, e.g. /cūci/ = [tšūci]. /m/ has a bilabial spirant type of allophone [w] in the intervocalic and utterance-final position, e.g. /māma/ = [māw] Maternal uncle or father-in-law, /waccām/ = [wāc̬w] we came. /n/ has the following allophones: [ŋ] before velar stops, [n] before the palatal allophones of /c j/, [n] (dental nasal) before dental stops and [ŋ] (alveolar nasal) elsewhere, i.e. initially, intervocally, in gemination and before the blade-alveolar allophones of /c j/; e.g., /nannu/ = [n^na] me (accusative), /mana/ = [m^na] our (inclusive), /ancu/ = [^nts] border.

Some of the distinguishable allophones of the vowel phonemes are as follows: /e/ has an opener allophone [ɛ] before an open juncture; in close juncture it is always [ɛ] e.g. /ginne/ = [ginne] a cup; /ginnelu/ = [ginnelu] cups (pl. -lu). /a/ is always [a]. /i e a u/ have zero alternants in the environment (V)C¹C²(V). What C¹ and C² stand for will be specified in the following sections. All vowels have slightly lowered and retracted allophones when /a/ occurs in the following syllable, and when a geminate does not intervene between the two, /kūra/ = [kUr] vegetable, curry, etc., /gōḍa/ = [gōḍ] wall.

1.3. For the purpose of this paper at least, we have to set up two phonemic junctures, close and open. Close juncture is the feature of transition from one segmental phoneme to the immediately following one
without any distinctive pause. This has no relation to the fact that the phonemes in question are parts of the same morpheme or different morphemes, e.g. /wāḍu/ he, /wāḍiki/ to him [(dative; morpheme division: wāḍ-i-ki)].

An open juncture is the feature of transition from one segmental phoneme to the next with definite pause in between; sometimes, this pause is bridged by an intonational pattern, generally, of the type (rising-falling). Examples of the foregoing:

1. wāḍu telisītelēnaṭṭugā māṭāḍāṭu He spoke with half-knowledge (i.e. in a knowing-not-knowing manner).

2. wāḍu telisi, telēnaṭṭugā māṭāḍāṭu He, even after knowing, spoke as if he hasn’t.

Many more features of juncture can be distinguished in Modern Telugu speech but their phonemic analysis in the present state of our knowledge is not entirely clear. We need only to state here that the sandhi alternations to be discussed in this paper occur only in close juncture.

Consonantal Sandhi:

2.00. In sequences of \((V)C^1 \overset{\vee}{C}^2(V), \vee\) stands for any of the short vowels i, a and u (rarely e) alternating with zero. This \(\overset{\vee}{V} (\sim \emptyset)\) marks the morpheme boundary, i.e. either \(\overset{\vee}{V}\) goes with the proceeding morpheme or the following one, or constitutes a morpheme by itself. A result of \(V \sim \emptyset\) (or in terms of process, the loss of the vowel between \(C^1\) and \(C^2\)) is sandhi between \(C^1\) and \(C^2\) which together alternate with a variety of sequences. Comparing the sequences of \(C^1 \overset{\vee}{C}^2\) with their corresponding sandhi alternants, we can analyze the data into four sets as follows:

2.1. \(C^1 \overset{\vee}{C}^2 \sim C^1C^2\)

a. tVr \(\sim\) tr E.g. māṭāḍu A word doesn’t come out (māṭa word, rāḍu does not come).

dVr \(\sim\) dr tōḍrāgam a rāga called tōḍi.

3. Hyphen (-) used here and elsewhere in the examples is only intended to indicate the morpheme boundary but not as a mark of any distinctive feature.

4. The whole question of the place of juncture in linguistic analyses needs further working and systematization. For the different views expressed about this, see W. E. WELMERS “A Descriptive Grammar of Fanti”, Language 22, Dissertation Series 39, p. 20; Rulon S. WELLS, Language 23, p. 108; he says “Juncture wherever it occurs is a morpheme though often with no detectable meaning”; also cf. B. BLOCH and G. L. TRAGEN, op. cit.
b. pVm ~ pm  kaḍupmaṇṭa burning of stomach (kaḍupu
  womb or stomach, maṇṭa burning; also
  jealousy).

bVm ~ bm  gulābmoγγa a rose-bud (gulābi rose, mogga
  bud).

c. nVt ~ nt  dānto ēmpani? What is the business with
  that? (dān-i-tō with that, ēm what, pani
  business).

nVd ~ nd  ieccindāntō..., with what has been given
  (icc-ina that given, dāntō with the thing).

nVj ~ nj  winjarugu Hear and then move (win-i having
  heard, jarugu to move, stir; imper. sg.).

nVr ~ nr  manrāmuḍu..., our Rama... (mana our,
  rāmuḍu proper noun).

nVl ~ nl  winlēdu That is not heard (win-a to listen,
  lēdu no, not).

d. rVn ~ rn  wārńe cūsāṇu I saw him (honorific)
  (wār-ın-ē him-only).

rvl ~ rl  mārlēdu It hasn't changed (mār-a changing
  lēdu none).

e. IVt ~ lt  kāltō tannāḍu He kicked with the leg (kāl-i-
  tō with the leg).

IVd ~ ld  kāluḍu It won't burn (kāl- to burn, -a- neg.,
  -du it).

IVc ~ lc  pālcembu a milk container (pāl- milk, -a- of,
  cembu container).

IVj ~ lj  gājuljata a pair of bangles (gājul-a- of
  bangles, jata a pair).

IVn ~ ln  ī māṭalāṅkenduku? Why these words for
  me? (ī these; māṭa-lu words, etc. nāku to
  me, enduku? why).

IVr ~ lr  pālāryi A marble stone (pāl-a- milk-of, rāyi
  stone).

2.2. C¹ ∨ C² ~ C¹C³ or C³C²

Here, C³ results from partial assimilation to C¹ or C² as the case may be. We can call this componential assimilation, i.e. some phonetic component
of one phoneme is assimilated to some component of the adjacent one in close juncture.

a. \( \hat{t}Vn \sim \hat{t}n \) E.g. \( \hat{p}a\hat{t}\hat{a}k\hat{u} \) r\( \hat{a}\)du I don’t know the song (\( \hat{p}a\hat{t} \) song, n\( \hat{a}k \)u to me, etc.).

\( \hat{t}Vl \sim \hat{t}l \) m\( \hat{a}\hat{\hat{l}} \)lu words (m\( \hat{a} \)t\( \hat{a} \) word, -lu pl. suffix).

b. \( nV\hat{t} \sim \hat{n}\hat{t} \) win\( \hat{\hat{a}}t \)am hearing (win- to hear; -\( \hat{\hat{a}}t \)am noun-

forming suffix).

\( nV\hat{d} \sim \hat{n}\hat{d} \) n\( \hat{\hat{u}} \)\( \hat{\hat{\hat{\hat{d}}}b} \)b\( \hat{\hat{\hat{a}}} \) oil tin (n\( \hat{u} \)n\( \hat{e} \) oil, \( \hat{\hat{\hat{d}}}b\)b\( \hat{\hat{a}} \) tin).

c. \( \hat{I}V\hat{t} \sim \hat{I}t \) c\( \hat{\hat{\hat{a}}}l \)\( \hat{\hat{\hat{\hat{a}}}t} \)am being sufficient (c\( \hat{\hat{a}}l- \) to be sufficient;

-\( \hat{\hat{a}}t \)am, vide supra).

\( \hat{I}V\hat{d} \sim \hat{I}\hat{d} \) c\( \hat{\hat{\hat{d}}}l\)\( \hat{\hat{\hat{\hat{d}}}a} \)m being sufficient (same as above,

-\( \hat{\hat{d}}a \)m dialectal variant of -\( \hat{\hat{a}}t \)am).

2.21. In these cases, it is clear that the alternation of \( n, l \) with \( \hat{n}, \hat{l} \) is
through their assimilation to the retroflex phonemes in contact. There are also several cases of assimilation on allophonic level, e.g. \( /\hat{r}\hat{\hat{a}}j\hat{d}u/ = [\hat{r}\hat{\hat{a}}\hat{d}ju] \)
It won’t take fire (from \( \hat{r}\hat{\hat{a}}j-\) to take fire, -\( \hat{\hat{a}}- \) neg., -\( \hat{\hat{d}}u \) neut. sg.). In this case, since \( [z] \) nowhere contrasts with \( [j] \), it will be taken as only an
allophone of \( /j/ \) before a dental stop in close juncture. Then, naturally,
we have to include this in phonemics but not in morphophonemics. This
raises a descriptive problem in Modern Linguistics, at least from a pedagogic
point of view; namely, sandhi alternations which belong together as part
of morphophonemics have to be split between phonemics and morpho-
phonemics, simply because, in some cases, the assimilated phoneme turns up
as a different phoneme but in others only as a non-contrastive componental
transformation of the assimilated phone. Since the alternations \( \hat{t}Vn \sim \hat{t}n, \)
and \( nV\hat{t} \sim \hat{n}\hat{t} \) are automatic, there can be no contrast between \( /n/ \) and \( /\hat{n}/ \)
in this particular environment, i.e., before or after a retroflex stop. However,
as \( /n/ \) elsewhere contrasts with \( /\hat{n}/ \), we have to set up this alternation under
morphophonemics.

2.3. \( C^1 \hat{\vee} C^2 \sim C^2 C^2 \)

2.31. Stops:

a. Velar series

\( kV\hat{k} \sim \hat{k}k \) E.g. peruk\( \hat{k}k\)\( \hat{\hat{o}} \) Pull it out for yourself (peruku to

pull out; -k\( \hat{o} \) reflexive imper.).

\( gV\hat{k} \sim \hat{k}k \) a\( \hat{\hat{u}}k\)\( \hat{\hat{\hat{\hat{u}}}k}k\) Go begging! (adugu to ask, beg.)
gVg ~ gg  taruggāwundi  It is deficient (tarugu deficiency; -gā in that manner; wundi it is).

kVg ~ gg  ceruggaḍa sugar-cane (ceruku sugar-cane, gaḍa stick).

b. Palatal series

cVc ~ cc  cūcceppu Look in and tell (cūc-i- having seen ceppu tell!).
jVc ~ cc  jācettu jasmine tree (jāji jasmine, ceṭṭu tree).
jVj ~ jj  gājjāḍi glass jar (gāju glass, jāḍi jar).
cVj ~ jj  cūjjaḍisī poyināḍu Seeing it, he got scared (cūc-i- having seen; jaḍis-i- having feared; poyināḍu he is gone, intensifier).

c. Dental series

tVt ~ tt  pāttalupu old door (pāta old, talupu door).
dVt ~ tt  gēttannindi Buffalo kicked (while milking) (gēde she-buffalo; tann- to kick).
tVd ~ dd  pāddāram old thread (pāta old, dāram thread).

Dental + Palatal

tVc ~ cc  pācceppu old sandal (pāta old, ceppu sandal).
dVc ~ cc  gēccārmam buffalo-skin (gēde buffalo, cārmam skin).
tVj ~ jj  rājjāḍi stone jar (rāt-i of stone).
dVj ~ jj  lējjalubu No cold (lēdu No, jalubu cold, i.e. disease; this particular combination is infrequent in spoken Telugu).

D. Retroflex series.

ṭVṭ ~ ṭṭ  nāṭṭam planting (nāṭ- to plant, -ṭṭam noun-forming morpheme).
ḍVṭ ~ ṭṭ  pāṭṭam singing (pāḍ- to sing).
pāḍḍam singing (-aḍam a dialectal variant of -aṭam vide supra).

nāḍḍam planting (nāt- to plant + -aḍam).

e. Labial series

kōppaḍḍāḍu He fretted in anger (kōpa- n. anger, paḍu to feel).

jaluppaṭṭindi (One) caught cold (jalubu cold, paṭṭi- to catch).

jēbaruwayndi The pocket became heavy (jēbu pocket; baruwu heavy).

nābbanda a slab-stone (nāpa slab, baṇḍa stone, rock).

2.32. The occurrence of sequences where both C¹ and C² are aspirated stops is usually rare; but where one of them is an aspirated stop and the other unaspirated, the principle of their sandhi alternation is as follows: When C² is an aspirated stop, C¹ is assimilated to C² in the matter of voicing, devoicing, and palatalization similar to the alternations described under 2.31.

kVgh ~ ggh ogghanṭayndi One hour has passed (oka one, ghaṇṭa hour).

dVch ~ cch ēcchārjiḍabbu? Where is the money for fare? (ēdi? where; chārji fare).

On the contrary, where C¹ is an aspirated voiced stop and C² an unaspirated one, C¹ alternates with the corresponding unaspirated voiced stop:

E.g. dhVt ~ dt kāḍtelisindi The story is known to me (kadhā story, telus- to be known).

bāḍcālā taggindi The pain has subsided a good deal (bāḍha pain, cālā much).

2.4. In cases where both C¹ and C² are identical phonemes of the sonorant group (i.e. nasal, lateral, trill, semi-vowel and sibilant), the alter-

5. Some of my informants with whom I experimented with these utterances could not distinguish acoustically between dt and tt; so also between dc and cc.
nation may be shown as \( C^1C^2 \) or \( C^3C^3 \) since the question of assimilation does not arise, e.g.:

a. Nasals
   \( nVn \sim nn \)  
   \( mVm \sim mm \)  
   \( \text{winnu I won't hear (\( \text{win-} \) to hear; -\( a- \) neg.; -\( nu \) 1st pers. sg.).} \)  
   \( \text{pāmmāda \ldots on the serpent (pāmu serpent, māda on).} \)

b. Lateral
   \( (\checkmark)IVI \sim ll \)  
   \( \text{nēllu months (nēla month, -\( lu \) pl.).} \)

c. Trill
   \( rVr \sim rr \)  
   \( \text{vārēlēdu He (honoric) hasn't come (vāru he; rā- to come).} \)

d. Semi-vowel
   \( wVw \sim ww \)  
   \( \text{bāwelāēdu The brother-in-law has left (bāwa brother-in-law; welē- to go).} \)

e. Sibilant
   \( sVs \sim ss \)  
   \( \text{cūsargā ceppu Look in and say clearly (cūs-i having seen; sari-gā- well).} \)

2.5. A different type of sandhi alternation involving mutual componental assimilation among the phonemes involved may be formulated as follows:

\[ C^1\checkmark C^2 \sim C^3C^3 \]

Here, both \( C^1 \) and \( C^2 \) are simultaneously assimilated to each other, with the result, that they alternate with a doubled phoneme which contains the phonetic components of both \( C^1 \) and \( C^2 \), e.g.:

a. \( dVn \sim nn \)  
   \( \text{pānū I won't sing (pāḍ- to sing; -\( a- \) neg.; -\( nu \) 1st pers. sg.).} \)  
   \( \text{mūnēllu three months (mūḍu three, nēllu months).} \)

b. \( dVI \sim ll \)  
   \( \text{cūlēdu (One) hasn't seen (cūḍ-\( a- \) seeing, lēdu not or no).} \)  
   \( \text{wālēdu He is not (in or there) (wāḍu he, lēdu no).} \)
3.00. The sandhi alternations among consonants so far described may be represented clearly in a chart as follows:

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<thead>
<tr>
<th>C²</th>
<th>k</th>
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<td>Cl</td>
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**Vocalic Sandhi**

4.00. There is only one type of vowel-sandhi which can be called automatic. Since two vowels cannot occur in succession within the same morpheme, there ought to be a morpheme boundary between any sequence of two vowels. If they occur in open juncture, sandhi does not take place. As in the case of consonants, vocalic sandhi occurs in close juncture.
4.1 \( \sqrt[1]{\sqrt[2]{x}} \sim \sqrt[2]{x} \) (i.e. in this environment \( V^1 \) has always a zero alternant).

e \sim e E.g. adekkāda? Where is that? (adi that, ekkaḍa? where).

ia \sim a panayindi The work is finished (pani work; ay- to be over).

ei \sim i ginnikkallēdu The cup is not here (ginne cup; ikkaḍa here).

ai \sim i āyanikkallēḍu He is not here (āyana he).

ue \sim e illekkaḍa? Where is the house? (illu house)

uo \sim o atanuokkaḍe .... he alone .... (atanu he, okkaḍ-e one only).

Only a few examples are given above, but the rule operates without exception as far as my knowledge goes. Sequences where \( V^1 \) is /o/ are rare.

4.2. Two more types of alternation which are non-automatic but which cover a wide area of vowel-sandhi in Modern Spoken Telugu are as follows:

4.21. In a sequence of more than two syllables in close juncture, the vowel of the second syllable is assimilated in quality to that of the following syllable. The alternations may be set forth as follows:

\( uCl/e \sim .. iCi \) E.g. kalis-i having met (kalus- to meet, -i past morpheme) kalisē adj. meeting—(-ē non-tense adj. suffix).

\( uCa \sim .. aCa \) kalaw-a in order to meet (kaluw- to meet, allomorph of kalus-, vide supra).

This alternation operates without exception among the verb class. Exceptions occur among the noun class, e.g., moguḍu husband, moguḍimīḍa.. on the husband (-i- oblique morpheme, mīḍa on), not mogiḍi....

4.22 Final /i/ of a member of the N (noun) class alternates with /u/ before the plural morpheme -lu:

E.g. gadulu rooms (gadi room, -lu pl.)
kattulu knives (katti knife)

5.00 So far, we have concerned ourselves mainly with the automatic alternations in spoken Telugu since it is easy for a non-Telugu speaker to master this particular area without having to wait till the morphological analysis of the language is worked out. The non-automatic alternations or the morphologically conditioned alternations among the phonemes may well be
treated under the respective morphological classes rather than under morphophonemics.

5.1 Sandhi alternations when phonemically represented introduce problems of morphemic identification; for instance, the phonemic sequence /pāṭiyyi/ may represent morphophonemically either [pāḍitiyyyi] make a basin (for plants) or [pāṭiyyyi] plant it and (then) pull. In cases of this type, where a given morphophonemic sequence automatically alternates with a single phonemic sequence, it is better to represent them in morphophonemic transcription than in the phonemic. This has the advantage of showing a morpheme in a single phonemic shape every time it occurs; in other words, the phonemic alternations among its allomorphs are automatically determined by the environment of the other phonemes. A statement about these alternations will however be made under morphophonemics. In the above example from Telugu, since the phonemic sequences V/dit/V and V/tit/V do not occur anywhere, they are always phonemically /tt/. Hockett suggests this procedure as a preliminary to morphemic analysis, which he calls “Preliminary Normalization.”

5.11 However, it should be noted that this procedure cannot be applied to cases where non-automatic sandhi is involved. A good example from Modern Telugu is the following: /pannu/\(^1\) tooth, plural /paṇḍu/ teeth; /pannu/\(^2\) tax, plural /pannulu/ taxes. Here, it is only the identification of the particular morpheme, i.e. pannu\(^1\) or pannu\(^2\), that determines the sandhi alternation of /nnul/ to /nul/ or /nnul/ (zero alternation) respectively. Therefore, it becomes necessary here to represent the sequence only in transcription.

THE POSITION OF THE NASALS IN THE BHOJPURĪ
PHONOLOGICAL SYSTEM

By

Bishwa Nath PRASAD, Patna

In Bhojpūrī, there are only two unaspirated nasals m and n, differentiated before vowels, but before plosives and fricatives these oppositions do not occur, as the nasal always goes by the quality of the occlusive or the constrictive that follows. Each of the plosives and the fricatives has thus its corresponding homorganic nasal consonant which precedes the occlusion or the constriction. In their articulation, the soft palate is lowered and there is homorganic oral closure. These nasal alternances forming groups with their correlates are tabulated below:—

Plosives.

<table>
<thead>
<tr>
<th>Velar</th>
<th>nk</th>
<th>nkf</th>
<th>ng</th>
<th>ngh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palatal</td>
<td>νc</td>
<td>νch</td>
<td>νj</td>
<td>νjh</td>
</tr>
<tr>
<td>Retroflex</td>
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<td>n, t, h</td>
<td>n, d</td>
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<tr>
<td>Dental</td>
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<tr>
<td>Bilabial</td>
<td>mp</td>
<td>mph</td>
<td>mb</td>
<td>mbh</td>
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Fricative.

Alveolar ns or ñs̃.

It may be noted that before h the nasal component has velar articulation so that n + h is pronounced as ngh in Bhoj., e.g., singh 'lion'.

1. n may maintain its alveolar articulation when it is followed by s, or it may have alternatively a slightly open articulation in such contexts, because of the tongue taking the position for the fricative s without forming complete closure for n. This may be phonetically transcribed as ñs̃, e.g., bʌñsi: or bʌñsi:.
Examples:

\[ \begin{align*}
\text{n} & \quad - s\text{n}\text{k}\text{a}: & \text{"doubt"} & \quad b\text{n}\text{k} & \text{"bank"} \\
\text{p}\text{n}\text{k}\text{h}\text{a}: & \quad \text{"fan"} & \quad p\text{n}\text{k}\text{h} & \text{"wing"} \\
\text{d}\text{n}\text{g}\text{a}: & \quad \text{"riot"} & \quad r\text{n}\text{g} & \text{"colour"} \\
\text{k}\text{n}\text{g}\text{hi}: & \quad \text{"comb"} & \quad s\text{n}\text{gh} & \text{"association"} \\
\text{n} & \quad - c\text{n}\text{c}\text{h}\text{l}: & \quad \text{"unsteady"} & \quad p\text{n}\text{c} & \text{"arbitrators"} \\
\text{p}\text{n}\text{c}\text{h}\text{a}: & \quad \text{"watery discharge"} & \text{x} \\
\text{p}\text{n}\text{j}\text{a}: & \quad \text{"claw"} & \quad r\text{n}\text{j} & \text{"anger"} \\
\text{j}\text{h}\text{n}\text{j}\text{h}\text{t}: & \quad \text{"botheration"} & \text{x} \\
\text{n}: & \quad - g\text{n}\text{t}\text{h}\text{a}: & \quad \text{"bell"} & \quad c\text{n}\text{t}\text{h} & \text{"miser"} \\
\text{k}\text{n}\text{t}\text{h}: & \quad \text{"a neck ornament"} & \quad k\text{n}\text{t}\text{h} & \text{"throat"} \\
\text{t},\text{n}\text{t},\text{t}, & \quad \text{"egg"} & \quad j\text{h}\text{n}\text{d}, & \text{"crowd"} \\
\text{t},\text{n}\text{t},\text{d}, & \quad \text{"cold"} & \quad t\text{h}\text{n}\text{d}, & \text{"cold"} \\
\text{n}: & \quad - m\text{t}\text{h}\text{r}: & \quad \text{"incantation"} & \quad ^{\text{n}}\text{t} & \text{"end"} \\
\text{r}\text{t}\text{h}\text{i}: & \quad \text{"bier"} & \quad p\text{t}\text{h} & \text{"diet"} \\
\text{g}\text{t}\text{d}: & \quad \text{"dirty"} & \quad b\text{d} & \text{"closed"} \\
\text{d}\text{h}\text{n}\text{d}\text{h}: & \quad \text{"work"} & \quad g\text{t}\text{d} & \text{"smell"} \\
\text{m}: & \quad - c\text{m}\text{p}\text{a}: & \quad \text{"a kind of flower"} & \quad h\text{c}\text{k}\text{m}\text{p} & \text{"hubbub"} \\
\text{t},\text{c}\text{h}: & \quad \text{x} & \quad l\text{m}\text{ph} & \text{"lamp"} \\
\text{m}\text{b}: & \quad \text{"long"} & \quad o\text{w}\text{l}\text{m}\text{b} & \text{"support"} \\
\text{k}\text{h}\text{m}\text{b}: & \quad \text{"pillar"} & \quad t\text{h}\text{m}\text{b} & \text{"post"} \\
\text{n}: & \quad - b\text{h}\text{n}\text{s}: & \quad \text{"flute"} & \quad h\text{h}\text{n}\text{s} & \text{"goose"} \\
\text{h}\text{n}\text{s}: & \quad \text{(or b\text{h}\text{n}\text{si}:)} & \text{(h\text{n}\text{s})} \\
\end{align*} \]

It may be noted that there are limited number of words in Bhoj having the homorganic class-nasals as the first element of such groups in the final position. The instances of the use of such groups are mostly intervocalic. mph represents a gap, the only word with mph being l\text{m}\text{ph}, from the English 'lamp'. The cross-marks indicate the gaps in the examples compiled above.
NASALS IN THE BHOJPURI PHONOLOGICAL SYSTEM

On the basis of these perceived phonetic sequences the following nasal alternances classed into six series of localization may be noted:

- Velar  —  \( \tilde{\eta} \)
- Palatal  —  \( \tilde{\eta}_p \)
- Retroflex  —  \( \tilde{\eta}_r \)
- Dental  —  \( \tilde{\eta} \)
- Bi-labial  —  \( \tilde{m} \)
- Alveolar  —  \( \tilde{n} \) (fricative)

Moreover, there are occurrences of simultaneous nasal components with the following alternances (sānunāśika forms) under the progressive or regressive effect of a nasal consonant, or in contiguity with a nasalized vowel preceding or following them:

1. (i) flapped retroflex \( \tilde{\eta} \) and \( \tilde{\eta}_h \).  
   (ii) semi-vowels \( \tilde{y} \) and \( \tilde{w} \).

2. (iii) liquids \( \tilde{r} \) and \( \tilde{l} \).
3. (iv) aspirate \( \tilde{n} \).

The anunāśika in the case of the vowels has been represented as their nasalization and has been represented by the symbol ~ placed over them.

2. Our approach here in the treatment of the nasals may be compared with that of M. B. EMENEAU in his article The Nasal Phonemes of Sanskrit (Lang. XXII, 1946, pp. 86-93), in which he has made some good suggestions regarding the 'phonemic' organization of the Sanskrit nasals. His whole treatment is based on the assumption that the Sanskrit alphabet was phonemic in character. It is, however, not clear what meaning he attaches to the use of the term phonemic in this connection. The Sanskrit alphabet system, for all we know, was essentially syllabic and the modern Indian languages which use the Nagarī syllabary or other cognate forms still preserve that character (op.cit. Firth, Sounds and Prosodies, TPS, 1948, pp. 132-33). According to his phonemic conception, EMENEAU treats the anusvāra (\( \tilde{\eta}_1 \)) as a separate phoneme in Sanskrit, while in our treatment of the Bhoj nasals, the anusvāra has been regarded as a bearer of prosodic features which serves as a compendium scripturae for \( \tilde{\eta}, \tilde{\eta}_n, \tilde{\eta}_n, \eta, n, m, n \) or \( \tilde{n} \) before another consonant of the same class. Even in Sanskrit the anusvāra had a limited scope. 'Its proper place in the interior of a word is only before fricatives' (Siddheshwar VARMA, Critical Studies in the Phonetic Observations of Indian Grammarians, p. 154).

In Bhoj, we have shown by palatography that even before the fricatives the anusvāra takes the prosodic colouring according to its context by assuming an alveolar articulation with proper oral closure or with slightly open aperture (Iṣadvivṛta). This characteristic articulation of the nasal without full oral closure is important from our point of view as it suggests the possibility of a similar feature in the utterance of the anusvāra before the Sanskrit fricatives, and y, r, l, v and h which were the only definite succeeding sounds to which an anusvāra could be appended. Before the Iṣatsṛpta semi-vowels, the laterals and the tapped sounds the anusvāra took the Iṣatsṛpta or partial contact articulation, and before the Iṣadvivṛta (slightly open aperture) fricatives it took Iṣadvivṛta articulation. Thus even in these contexts the anusvāra was obviously not immutable, but took prosodic colourings according to its contexts as it did in the case of the plosives.

So far as Bhoj is concerned the anusvāra before h as already noted above takes the velar articulation as \( n + h = \tilde{\eta}gh \), and before y, r, l, v, the anusvāra does not occur in Bhoj.
It has been differentiated in our treatment from the anusvāra (nasal after-
sound) which has been interpreted as equivalent to a vowel followed by the
corresponding savarṇa or class-nasal of the following sound.\textsuperscript{3}

There are only two nasal consonants $n$ and $m$ used in contradistinction
from each other in initial, intervocalic and final positions in Bhoj. $n$, with
flap articulation is found in intervocalic and final positions only in a few
tatsama loan-words from Sanskrit used by the educated speakers in
Sanskritic style and thus belongs to a different system, the common Bhoj,
speaker using $n$ in its place. There is thus no contrast between $n$ and $n_\phi$.
Examination of the sequences in which the nasals occur shows at once that
it is only medially before the stops of its own series, before $h$ and the
alveolar fricative $s$ that each of the nasals occurs, taking upon itself the
prosodic colouring according to its contexts. In the case of $s$ following
the nasal sound, alveolar closure is formed immediately before the articulation
of the fricative, or the nasal may be pronounced with incomplete closure
before $s$. This prepares us for evaluating $\vartheta$, $n$, $n_\phi$, $\eta$, and $n$ or $\eta$ as consisting
of a basic nasal articulation $n$ with environmental modifications depending
upon the articulatory movement which it precedes. Thus it is the one unit
$n$ which is realized at the junctions with a consonant immediately following
in the same word as $\vartheta$, $n$, $n_\phi$, $\eta$ and $n$ or $\eta$. In the phonological transcription
the analysis may be indicated by the employment of the basic symbol $n$
which is to be interpreted as the immediate nasal in prosodic junction, with
the junction prosodies as shown below:

$$
n + [k, kh, g, gh] = \eta [k, kh, g, gh] \\
n + [c, ch, j, jh] = \chi [c, ch, j, jh] \\
n + [t, th, d, dh] = \eta [t, th, d, dh] \\
n + s = ns \text{ or } ns \\
n + h = \eta h
$$

As already noted above, the nasal component before $h$ has velar arti-
culation and $n + h$ is realised with an anaptyctic or prosodic $g$ before $h$. The
obstruant is physiologically a ‘denasalizer’ as it stops the nasalization process.
$n + h$ is thus equivalent to $\eta h$ at the phonetic level of abstraction. Note
in this connection that the sequence $n + h$ is quite different from $nh$ which
symbolizes the aspirated form of $n$ and has been treated as a unit conso-
nant in the same way as $dh$, etc. In $nh$, the nasalization is a simultaneous
component of aspiration ($= n h$), while in $n + h$ $h$ is not nasalized, owing
to the appearance of the prosodic $g$ between $n$ and $h$ as a ‘denasalizer’.

\textsuperscript{3} For a similar equation in the case of the anusvāra before plosives, see Pāṇini,
Aṣṭādhyāyī 8.4.58.
$n + h$ may, therefore, be phonologically represented by writing $g$ above the line as $n^g h$ to avoid confusion with $n + gh$ ($= n g h$), which is phonologically different from $n + h$, though the two sequences sound alike phonetically. $n h$ is different altogether.

As regards the medial\(^5\) bilabial nasal $m$, it has to be noted that it is not the same $m$ which is differential before vowels. The latter has oral closure followed by oral release while the former has no oral release after the closure. As a medial, $m$ carries the same prosodic mark of junction having the same prosodic quality of co-localization with the plosives of the bilabial series that follow it as $n$ has with the series of the obstruants following it. Thus medial $m$-like $n$ has also to be interpreted as in prosodic junction, with the junction prosodies.

$$m + (p, ph, b, bh) = m (p, ph, b, bh).$$

We are thus left with two nasals, $m$ and $n$ in parallel distribution with each other before vowels and in final position, and two medial nasals $m$ and $n$, between which oppositions do not occur. There is still scope for analysis and further abstraction which may lead to the unification of these two medial nasals. Medial $m$ and $n$ have one common prosodic factor of going by the quality of localization of the obstruant that follows. This common factor of the prosodic mark of junction may be abstracted and symbolized by $\theta$ to cover all the cases of the medial nasals. This one symbol will be adequate enough to serve as carrier of seven (including $n$) junction prosodies of the medial nasal in junction with a following obstruant. Thus

$$\begin{align*}
\text{o } [k, kh, g, gh] &= \eta [k, kh, g, gh] \\
\text{o } [c, ch, j, jh] &= n [c, ch, j, jh] \\
\text{o } [\ , h, \ , h] &= n [t, t_h, d, d_h] \\
\text{o } [t, th, d, dh] &= \eta [t, th, d, dh] \\
\text{o } [p, ph, b, bh] &= m [p, ph, b, bh] \\
\text{o } s &= \text{ns or ns} \\
\text{o } h &= \eta gh
\end{align*}$$

With this prosodic symbol we can unambiguously represent in phonological transcription

$$\begin{align*}
g^\text{\textasciitilde nga}: & \quad \text{‘the Ganges’} \quad \text{as} \quad ga^\text{\textasciitilde ga}: \\
p^\text{\textasciitilde nc}: & \quad \text{‘arbitrators’} \quad \text{as} \quad pa^\text{\textasciitilde ce}: 
\end{align*}$$

4. The other possible devices of notation might be to use a different $h$ symbol or hyphen for $n + h$ ($n - h$) or a ligature for $n_h$ (aspirated $n$) and no ligature for $n + h$ or to represent the aspirated $n$ as $\eta_h$ or $n_h$ and $n + h$ as $n h$.

5. The medial nasal is here used in the sense of the nasals in junction before the immediately following consonants within the same word.
\( p^n d.i t \) 'learned' as \( p\text{a}d.i t \)
\( s^n t \) 'saint' as \( s\text{a}t \)
\( c^m p.a: \) 'a particular kind of flower tree'

\( b^n s.i: \)
\( \text{or} \)
\( b^n s.i: \) 'flute' as \( b\text{a}s.i: \)
\( s.i\text{h} \) 'lion' as \( s.i\text{h} \)

This will also enable us to dispense with the two double consonants \( n n \) and \( m m \), which can be conveniently represented as \( o n \) and \( o m \) respectively, e.g.,

\( p^n n.a: \) 'page' as \( p\text{a}n.a: \)
\( c.u.m.m.a: \) 'kiss' as \( c.u.m.a: \)

The prosodic symbol \( o \) can thus play the same part as the anusvāra could play in the Devanāgari orthographic system.

This discussion, however, is not meant to force a final decision as to whether the medial nasal should be handled by the use of the symbol \( o \) in the Roman orthography for Bhoj., but it does show the way to a higher level of abstraction yielding a result of wider range and more comprehensive value.\(^6\)

Since we have already got \( m \) as a basic nasal symbol by virtue of its parallel distribution with \( n \) in other contexts, it may be conveniently used for the \( m \)-like \( n \), before the bi-labial plosives on the ground of articulatory similarity, for it does not mean the employment of any consonants as shown above.

**But it must be clearly understood that the similarity of articulation and the use of the same letters do not imply any phonological or so-called “phonemic identity”.\(^7\)**

\(^6\) The present Hindi spelling in the Nāgarī script is very capricious in the use of the medial nasals. Kaithi being free from the literary conventions has proved more successful in adjusting itself to the phonological demands by using the anusvāra only in all cases of medial nasals. In Nāgarī, however, some write \( r\text{a}g \) (\( r\text{a}ng \)) 'colour', while others write \( r\text{a}g \) (\( r\text{a}og \)), some write \( l\text{a}m\text{a} \) (\( l\text{a}mba: \)) 'long' while others write \( l\text{a}m\text{a} \) (\( l\text{a}amba: \)). The use of the anusvāra in such contexts is resented by the Sanskritists, who following Pāṇini, "Anusvārasya yayi parasavarnah", 8.4.58, prefer to write invariably the phonetic savarna (homorganic) class-nasals before the following plosives and use the anusvāra only before the non-plosives. This discussion might serve as a basis for the reformation and simplification of the Hindi spelling by the use of the anusvāra only in all cases of medial nasals, both in interest of systematic writing and that of convenient printing.

\(^7\) See Führ, on hypostatization of letters and the cramping effect of “one symbol per phoneme” (I.P.A.), 'Sounds and Prosodies' TPS, 1948, pp. 129-136.
NASALS IN THE BHOJPURI PHONOLOGICAL SYSTEM

As all the vowels in Bhoj. can be nasalized, it will be noticed that generally it is with the vowels of long duration that the nasalization or the 'anunāsika' occurs and the 'anusvāra' or the nasal after-sound of the class to which the following sound belongs, occurs with the vowels of relatively short duration. But at the same time there are several instances of 'tadbhawa' words in which the 'anunāsika' is used with a 'short' vowel also, e.g., hā:s 'laughing', rē:ga:l 'colouring', sīgo:r 'decoration', ūku:r 'light', ūkuri: 'small sprout'. Such is specially the case where an original 'long' vowel is shortened on account of its antepenultimate position, as is done in the case of the strong and the long forms of nouns and of the causal verbs, e.g.,

ā:gan 'courtyard' āgona:
bā:s 'bamboo' bāswa:
bhī:jal 'wetting' bhīja:wal 'causing to wet'
phē:kal 'throwing' phēkwa:wal 'causing to throw'.

Similarly the 'anusvāra' or the class-nasal after-sound is also found after a vowel with relatively long duration in a number of 'tatsama' and 'semitatsama' words from Sanskrit, e.g.,

ka:nd, (ka:n,d,) 'canto',
sa:nt (sa:nt) 'quiet',
pa:nd,e: (pa:n,d,e:) 'a title'.

Besides, Bhoj. has instances of syllables ending with the nasal n, e.g.,

bahi:n 'sister'
hi:n 'short'
lī:n 'being absorbed'

and also of syllables with nasalized vowels, e.g.,

hī: 'even'
lī: 'take'.

In order, therefore, to avoid ambiguity, and also in consideration of the vocalic character of the 'anunāsika' and its distinct prosodic implications as syllabic nasal, it seems desirable to represent it phonologically by the special symbol ~ placed over the nasalized vowel.

As regards the nasalized consonants in Bhoj., viz., the nasalized forms of y, w, r, l and h, (y, ŭ, r, l and ḫ), no separate symbol is necessary for
them as the ‘anunāsika’ in their case is dependent upon or associated in
every case with the nasalization of the preceding or the following vowel.
In other words, they are parts of the nasalization process. They therefore
do not need any special diacritical mark over them. The nasalization mark \~
placed over the adjoining vowel will be sufficient to indicate the nasal com-
ponent in their case without ambiguity.

It may be pointed here that since the nasalization process affects \( y, \ w, \)
\( r, \ l \) and \( h \), and the vowels preceding and following them simultaneously, it
may not be necessary, when this feature of the effect of nasalization in such
cases has been stated, to mark the nasalization more than once, and that
can be done in the syllable which may hold \( y, \ w, \ r, \ l \) and \( h \) themselves, e.g.,

\[ \begin{align*}
\text{bāːyāː:} & \quad \text{‘left’} \quad \text{may be written as } baːyəː; \\
kūːwāː: & \quad \text{‘well’} \quad \text{may be written as } kuːwəː; \\
dīːhiː: & \quad \text{‘give’} \quad \text{may be written as } diːhiː. \\
\end{align*} \]

It is thus clear that from the total phonetic data of two phonematic
nasals \( m \) and \( n \) six (or seven including \( n \)) medial nasal alternants, five types
of nasalized consonants, besides the nasalized vowels, we have abstracted
only three units for phonological purposes which may be placed under
three main types of articulation:—

(i) The bilabial nasal symbolized by \( m \)
(ii) The lingual nasal symbolized by \( n \)
(iii) The vocalic syllabic nasal symbolized by \~

Or in terms of phonological categories, we may place them under the
following three heads:—

(i) The phonematic nasals in parallel distribution .. \( m \) and \( n \)
(ii) The prosodic nasals .. \( \mathbf{\tilde{o}} \)
(iii) The nasal prosody (nasalization) bound up with
the vowel system .. \( \mathbf{\tilde{\ell}} \)

This simple treatment, which does not involve any complicated
prosodic statement\(^8\) so far as Bhoj. is concerned, and this minimum number
of units is capable of taking account of all the phonetic and distributional
data with nasal modulation in Bhoj.\(^9\)

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8. Which Emeneau seems to be afraid of in the case of possible prosodic treatment
of the Sanskrit nasals (op. cit.—Emeneau, The Nasal Phonemes of Sanskrit, Lang., XXII,
1946, p. 92).

9. It may be of interest to note that the observations made here about Bhojpuri
will be found broadly applicable to the other eastern speech-forms like Magahi, Maithili
and also to several of the Hindi dialects like Brajbhāṣā and others.
THE LANGUAGE PROJECT AT THE DECCAN COLLEGE*

By

S. M. KATRE, Poona

1. The Deccan College, originally established in 1821 and closed in 1934 as an undergraduate college in arts, was revived by the Government of Bombay in 1939 as a foundation for research and postgraduate studies, principally in Linguistics and History, providing opportunities for sustained and planned research in the field generally comprised by the terms 'humanities' and 'social sciences.' The department of Linguistics provided for research and postgraduate instruction in Indo-European, Dravidian, Semitic and Sanskrit (especially Vedic) studies with four chairs. Similarly the department for Social Sciences included chairs in Proto- and Ancient Indian History, Medieval Indian History, Maratha History and, in particular, in Sociology-Anthropology. The objective of the Linguistics Department was not only the conduct of planned research in the field of Indian Linguistics by members of the faculty, but imparting training to postgraduate students in the field of historical and descriptive linguistics.

2. At the time of establishing these two departments at the Deccan College only one University in India was imparting postgraduate instruction in linguistics. There was a full course in linguistics consisting of eight papers at the M.A. level at Calcutta, thanks chiefly to the early presence of two eminent Indian linguists there, Dr. I. J. S. TARAPOREWALA and Dr. S. K. CHATTERJII. It was the intention of the Reorganisation Committee appointed by the Government of Bombay that an active centre for training and research should be established in Western India at the Deccan College, although linguistics was still not a major subject of study in the University of Bombay, though Bombay was the first to recognize the value of such studies by accepting the Wilson Philological Lectureship in the latter half of the nineteenth century. However, the intrusion of the second global war within a month of the revival of the Deccan College in its new shape hindered the

*This paper should more appropriately be entitled “Project for Linguistic Development and Research at Deccan College with special reference to studies in the principal Indian languages.” It gives the history and progress of the project from 1953-1956.
planned development of all its departments. Most of the field work could not be carried out, and in linguistics a large part of the research undertaken departmentally centred round the study of texts rather than living speech.

Nevertheless, the work planned out and executed by the departments of the Deccan College indicated the need for undertaking two fundamental but long-term projects: a Dictionary of Sanskrit on historical principles and an Ethno-Linguistic Survey of India, by both the linguistics and social sciences departments. Accordingly these projects were submitted to the Government of India for financial assistance during 1946. During 1948 two important steps were taken towards the realisation of these objectives. The first step was the establishment in Poona of a regional university, the first of such to be founded in the Bombay State. In the draft statutes a special Board of Studies in Linguistics was established although linguistics was not yet a major subject of study at any stage of university education. The second step was the acceptance by the Indian and Bombay Governments of a certain financial liability for establishing a small nuclear department at the Deccan College for extracting material for the Dictionary of Sanskrit on historical principles, from an approved Minimum Programme consisting of over 2000 separate texts from the earliest Vedic to about the end of the 18th century, covering every aspect of Sanskrit learning.

3. The second project submitted by the Deccan College for an Ethno-Linguistic Survey of India could not find a ready response either at Governmental level or among scholars interested in such studies. The main reason why scholars could not undertake this stupendous but urgent research was that their number was small and those competent to undertake sustained research were already committed to other studies. There was no training centre, other than at Calcutta and Poona, where the necessary tools of research could be acquired. Even these centres lacked the equipment necessary for carrying on such work, apart from personnel to undertake the necessary training project.

The interest shown by the Rockefeller Foundation of New York in the problems of communication in India and the application of linguistics to the solution of such problems assisted the Deccan College during 1953 to organise a conference of linguists and educationists. This conference was called at the Deccan College in May 1953, following a conference called by the University of Poona on the problems of a medium of instruction at the university level, consequent upon English ceasing to be such a medium. This conference, presided over by Sir Ralph Turner, Director of the School of Oriental and African Studies, University of London, deliberated for three
days and unanimously recommended that steps be taken to initiate three important projects by the Deccan College.  

4. The Governing Body of the Deccan College resolved that the Director should submit, on the basis of the recommendations made by the Conference and the special reports submitted by the Standing Committee, a phased programme of study and research and indicate the steps necessary for undertaking them with full details of financial outlay and personnel required. Following a short visit to the United States and to Europe under the Rockefeller Foundation, the Director submitted a short-term project for linguistic development and research at the Deccan College with the primary object of organising three schools of linguistics during 1954 and 1955, associating both senior and junior linguists from the United States and the United Kingdom with their counterparts in India, for intensive training in descriptive and historical linguistics and use of modern techniques of descriptive linguistics and their applications to problems of communication.

1. The following is the text of the Resolutions:

I. Fundamental Needs of Indian Linguistics:

1. It is the considered opinion of this Conference that it is necessary that a knowledge of the history of a language should form an integral part of the study pertaining to that language. This Conference therefore recommends that all Universities should include the scientific study of languages in their curricula for the B.A. and M.A. degrees and provide for this teaching by the creation of Departments of Linguistics.

2. As a fundamental Human Science, Linguistics, in the opinion of this Conference, should form part of the equipment of workers in Anthropology and in the practical domain of some aspects of Social Services. The Conference consequently draws the attention of the Anthropological Survey of India and of other relevant organisations, Governmental or otherwise, to the necessity of providing for some special training in Linguistics among their workers.

3. The Conference also recommends that for the proper teaching of languages and linguistics, laboratories for Experimental Phonetics be provided at the Universities.

4. The Conference further recommends that the following fundamental tasks in connection with the immediate needs of Indian Linguistics be undertaken:

(a) Historical Grammars of the principal Indian Languages in a uniform series.
(b) Translation into principal Indian Languages of the most important standard books on General and Indian Linguistics written in foreign languages.
(c) Dialect Studies and Dialect Geography be given a top priority since the material forming the basis of these studies is fast disappearing.
(d) Critical editions of important texts in the principal Indian languages.
(e) A new Linguistic Survey of India on comprehensive and modern lines to be undertaken on an all-India level.
(f) Establishment of a Bibliographical Service for Linguistics (specially Indian).
This preliminary project of 18 months commencing from 1st July 1954 had the following three distinct aims:

(a) Training of between 60 to 75 Indian scholars in essential field techniques for linguistic research in modern Indian languages for supplying the personnel for long-term projects like the new Linguistic Survey of India.

(b) Associating younger American scholars with the training of selected Indian scholars and giving the essential elements for pursuing their own field of research and acquisition of knowledge in the particular language selected by each.

(c) Bringing together senior linguists from India, United States and the United Kingdom not only for joint participation in the instruction of the training programme but also for clarification of dif-

II. The Project for Common Vocabularies of the Principal Indian Languages:

1. In the opinion of this Conference the Project submitted by the Deccan College is one of great significance to the scientific study of Indian Linguistics as well as to its application to practical problems. The Conference, therefore, recommends that it should be undertaken as soon as possible with the co-operation of scholars from all parts of the country.

2. This Conference further recommends that:
   (a) The organisation and direction should come from the Deccan College who are the sponsors of the Project under the general supervision of its Director.

   (b) A Standing Committee consisting of:

   1. Sir Ralph Turner, (Chairman)
   2. Sr. S. K. Chatterji
   3. Dr. Baburam Saksena
   4. Professor T. N. Sreekantaiya
   5. Dr. S. M. Katre (Convener)

   should be constituted to advise the Director on matters of organisation and direction of work on the Project. Members of the Standing Committee should be ex-officio members of the Consultative Body of Experts envisaged in the Project, etc.

III. Training Facilities for Specialisation in Indian Linguistics for Indian and Foreign Scholars:

1. The Conference recommends that a Summer and or Winter School be inaugurated at the Deccan College in which Indian and Foreign Experts can give intensive training in principles and methodology of modern Linguistics as applied to Indian Languages.

2. The Conference requests the authorities of the Deccan College to extend the training facilities designed for the special staff to be recruited for the Project to other scholars interested in Indian Linguistics.

3. The Conference further recommends that Universities, Governments and Foundations be approached to award scholarships for suitably qualified students for specialising in Indian Linguistics at this School and to give facilities for their staff to participate in the activities of the School.
different techniques and methodologies for evolving a suitable approach to Indian Linguistics.

The preliminary project of training was supported by a generous grant from the Rockefeller Foundation, apart from the nominal fees charged for registrants and the scholarships awarded by the Government of India.

5. The first School of Linguistics under the preliminary project opened on 15th November 1954. In his inaugural address Dr. Suniti Kumar Chatterji, the doyen of Indian Linguists, reviewed the sustained progress of Linguistics in India right from the days of Pañini, and invited the attention of linguistic scholars to the rapid strides made by descriptive linguistics in recent years, particularly in the United States. It was a happy augury, he said, that a linguistic school of the type usually known as a Linguistic Institute in the United States was being organised for the first time in India, and the Deccan College which had done pioneering work in linguistics was, in his opinion, the most appropriate venue, for the holding of such schools. The school would present the latest development of research in various fields of linguistic science and offer opportunities for discussion of current problems, demonstration of techniques and stimulation of research in each aspect of the linguistic field.

Advantage was taken of the holding of the Winter School of Linguistics to organise the first annual meeting of the Linguistic Society of India in continuation of the School. A majority of the registrants of the School enrolled themselves as members of the Society and participated in its two-day programme, the first day of which was highlighted by the distribution of certificates to successful registrants completing their courses, at the hands of the President of the Society, the late Dr. I. J. S. Taraporewala, in whose memory the present volume of Indian Linguistics is being published. Dr. Taraporewala also happened to be the first Director of the Deccan College. By inviting the first annual session of the Linguistic Society in Poona the Deccan College established an inseparable link between the Society and the language project sponsored by it. As a result of this the Society was registered in Calcutta and was augmented by the incorporation of the Indian Philological Association. The Linguistic Society of India also sponsored, jointly with the members of the faculty, the special jubilee volume of Indian Linguistics offered to Dr. Chatterji, and inaugurated the new series in a revised format as the joint publication of the Linguistic Society.

2. Originally the Deccan College had extended an invitation to the Linguistic Society to hold such annual meetings as far back as in 1941.
of India, incorporating the Indian Philological Association. The Linguistic Society thus became co-sponsor of the language project at the Deccan College.

6. The second School of Linguistics was organised during the summer of 1955 from May 9 to June 18. Compared to the total number of registrants which was 75 for the first Winter School (of whom 60 actually attended the courses), the actual number of those who registered for the second school was more than double this number. While the sign of increasing numbers was encouraging as interest in linguistic studies spread and opportunities were offered, the organisers were caught unprepared to cope up with the large number of practicals in phonetics and phonemics in view of the limited number of members of the faculty.

This school was inaugurated by a general lecture on linguistics by Professor Henry M. Hoenigswald, the Senior Visiting Linguist from the United States. At the concluding function of the school, presided over by the Head of the Bombay State, Dr. Hare Krishna Mahab, certificates were distributed to successful candidates.

7. During 1955-56 Dr. Gordon H. Fairbanks, Associate Professor of Linguistics at Cornell University, was invited to the post of Senior Visiting Linguist at the Deccan College, to participate in the training programme. Dr. Biswanath Prasad of Patna University was appointed Indian Visiting Professor to be in charge of the training programme and to assist Professor Fairbanks in directing and coordinating the work of junior Indian and U.S. scholars. Two junior research associates from the United States arrived during August-September 1955 for specialising in Bengali and Kannada respectively.3

On the basis of the results of the first two Schools twelve fellowships were recommended and seven accepted for one year's intensive training in descriptive linguistics at the Deccan College.4

8. In view of the strictly limited number of senior faculty members available in India who5 could participate in the training programme at the Deccan College, the Rockefeller Foundation had agreed to offer a certain number of fellowships in the United States for such scholars as were sponsored jointly by the Deccan College and the institutes employing them. Among the first batch of scholars so deputed were Professor T. N. Sreekantatya of Karnataka University, Dr. P. B. Pandit of Gujarat University and Mr. V. I. Subramoniam of Travancore University. They attended the differ-

3. Viz., Mr. E. C. Drmack and Dr. W. O. Bright respectively.
4. See Table No. 1 below.
5. See Table No. 2 below.
ent Summer Institutes of Linguistics in the United States before joining the Universities to which they were assigned.

9. The third and last school of linguistics under the preliminary project was held in the autumn of 1955, from October 17 to November 26. 81 scholars registered for this school. The school was appropriately inaugurated by Mr. B. G. Kher, Chairman of the Official Language Commission which was then in session in Poona. With the experience of the past two schools the third one was much better organised, in phonetic and phonemic practicals as well as in the distribution of courses. A continuing programme of studies for those who had attended the previous session was made possible. Another feature of significance in the two schools held during 1955 was the bringing of informants for some of the primitive languages of India with which the majority of registrants had no direct acquaintance. These courses in field methods proved both attractive and instructive.

10. The close association between the organisation of the three schools of linguistics and the Linguistic Society of India resulted in the accession of strength to the Society in its life- and annual membership. Most of the members of the faculty were either original life members or newly recruited life members, while all registrants became ordinary or life members at the time of enrolling themselves for the schools. This new accession to the strength as well as stimulation of contacts between members of the faculty and registrants at the schools brought on new life to the Society. The sixteenth volume of Indian Linguistics was presented to Dr. Suniti Kumar Chatterji on the occasion of his sixty-fifth birthday during the All-India Oriental Conference at Annamalainagar (in December 1955) at the hands of Dr. S. Radhakrishnan, Vice-President of India and General President of the Conference. Broad-based on membership drawn from every nook and corner of India the Linguistic Society has become the mouthpiece of this new activity in linguistics sponsored by the language project at the Deccan College.

11. With the end of the preliminary project the Deccan College reviewed the position and came to the conclusion that there was still need for a continuing programme for linguistic development and research in order to supply the personnel requirements of long term projects like the Linguistic Survey of India or for applications of linguistics to problems of communication, etc. In particular it was felt that the personnel requirements for continuing the summer and winter schools of linguistics were much below the minimum, necessitating the drawing upon the same group of senior linguists.

6. See Table No. 3 below.
7. See Table No. 4 below.
from different parts of India for each school so organised. No University was offering a comparable course for descriptive techniques; the demand for such courses more than justified a continuing of the summer schools. In the meantime the University of Poona provided for the introduction of a full course of general and special linguistics (each comprising four papers at the postgraduate level for the M.A. degree, effective from June 1958). Similarly the Government of Bombay approved the introduction of postgraduate first and second year diploma courses in Linguistics at the Deccan College with effect from June 1956. The Regulations for these latter provide for due credit to be given to those who attend the Summer and Winter Schools of Linguistics jointly sponsored by the Deccan College.

The language project at the Deccan College was chiefly responsible for the widening interest in linguistic studies all over the country. The organisers felt that the time had come to hold such schools outside Poona in order to carry the advantage to different parts of the country. The problem of finding an adequate number of faculty members to impart instruction during such schools from within the country necessitated the pooling of resources on a global basis, the chief source still being the United States and the United Kingdom. The Standing Committee felt that until the end of 1959 the personnel requirements for conducting summer schools of linguistics could not be met entirely from the country. Moreover it was also felt that while linguistics should find an honoured place in university curricula the time had not yet arrived for universities to institute a major postgraduate course in linguistics primarily for lack of competent personnel. Consequently it was felt that the Deccan College and the Poona University must supply the impulse and direction for some time to come; it was only when the linguistics department in Poona was thoroughly organised and adequately manned to supply a continuous stream of competent linguists for filling in the requirements of other universities interested in instituting departments of linguistics that such departments could actually be started without starving any of those previously set up. The Committee felt that such development should be envisaged on a phased basis; till that time the Deccan College should continue to take the lead in conducting the training and research programme and build up a strong postgraduate department of linguistics in all its branches (general, descriptive, historical and comparative) for supplying the needs of other universities. The first phase for such a development was envisaged as the moving out of the Summer School from Poona to different parts of India on a co-sponsorship basis. Since the members of the faculty were primarily to be drawn from India and all the available members were intimately connected with the Linguistic Society of India as original or newly recruited life members, the Linguistic Society offered to be one of the co-sponsors of the continuing programme for linguistic development and research with the Deccan
College. The third partner in this growth would naturally be a University situated outside the region of Poona. Invitations had already been received from the Universities of Annamalai and Agra for holding future summer schools in their campuses. Taking all these things into consideration the Deccan College approved a continuing programme of linguistic development and research at the end of the preliminary project. As before, the funds for this development were principally received from the Rockefeller Foundation. This second programme was divided into two phases of 15 and 27 months respectively. The first of these phases is coming to an end on 31st July 1957.

12. Under the first phase of the continuing programme it was decided to hold two summer schools of linguistics which would provide graded continuing courses to registrants from previous schools in addition to basic tool courses for new registrants. The Advisory Committee also replaced the autumn or winter school of linguistics by organising a linguistic seminar confined to a few selected senior scholars, including the fellows and fellows-designate, with the object of carrying on directed research and offering opportunities for advanced students for consultations with members of the faculty without formal teaching in joint projects of research.

The first summer school under the continuing programme of linguistic development and research at the Deccan College attracted 142 registrants. The school was inaugurated by the Rt. Hon’ble Dr. M. R. Jayakar, for eight years Vice Chancellor of the University of Poona and Chairman of the Governing Body of the Deccan College, and was concluded by the distribution of certificates to successful candidates at a joint function of the school and the local members of the Linguistic Society of India by Dr. Sukumar Sen, President of the Society and a Member of the faculty for three of the four schools of linguistics so far organised.

13. As a part of the policy of giving further training abroad to both younger and senior scholars the Rockefeller Foundation again awarded research fellowships. With the return of some of these scholars from abroad after a year’s further study and training, the membership of the faculties required to handle the different courses during the summer schools will be greatly strengthened, though the number will not be adequate until 1960.

Similarly two additional junior linguists from the United States were enabled to come to India for study of Hindi (Braj) and Kannada (Northern Standard) under the Language Project at the Deccan College.  

8. Viz., Mr. Lewis Levine and Dr. William C. McCormack respectively.
On the return to the States of Dr. Fairbanks as Senior Visiting Linguist in 1956, his place was offered to Dr. H. A. Gleason, Jr. of Hartford Seminary. Likewise on his return from U.S.A. Dr. P. B. Pandit of Gujarat University was invited to join the Deccan College as Visiting Professor of Linguistics in the place of Dr. B. N. Prasad.

14. The three years during which the Deccan College has been active in organising the development of linguistic studies in India have led to fruitful results. Among the Universities which have newly entered the field of linguistics since 1953 may be mentioned the following:

1. Agra (with its Institute of Hindi Studies).
2. Ahmedabad (Gujarat University: Department for Gujarati Literature and Linguistics).
3. Aligarh (with a special project for the linguistic survey of the surrounding region).
4. Annamalai (with a Silver Jubilee Department for Dravidian, specially Tamil, Linguistics).
5. Baroda (with two special papers in Linguistics at the M.A.).
6. Dharwar (Karnatak University, with two chairs for Kannada and Dravidian Linguistics).
7. Travancore.
8. Waltair (with a special department for an etymological dictionary of Telugu).

These are in addition to the Universities of Calcutta and Poona which had already established departments of linguistics.

The Union Government have had under active consideration the setting up of a new Linguistic Survey of India. Though presumably no steps may be taken during the Second Five Year Plan period the consequent delay may well turn out to be a period of preparation if the response to the schools organised by the Deccan College is a safe indication.

15. Significant developments have taken place within the Deccan College itself. The most important project on which the College started its work since 1948 on the Dictionary of Sanskrit on historical principles is now constituted into an autonomous department with a full-time Director and Editor in charge and an enlarged staff, working under the supervision and control of a Board of Editors appointed jointly by the Union Government and the Governing Body of the Deccan College.

The Government of Bombay approved the first and Second Year postgraduate diploma courses to be started at the Deccan College with effect from June 1956, and it is expected that the first examination will be held
in July 1957. As part of the second five-year plan of development for the College, Government have also sanctioned the creation of two Readerships in Indo-Aryan and Austro-Asiatic Linguistics. The first stage in self-sufficiency regarding faculty needs has thus been definitely achieved, and regular training can be imparted with the minimum assistance of the staff now available through the current development project.

16. A special committee of the Linguistic Society of India met on June 16, 1956, and recommended to the Society the sponsorship of organizing the preparation and publication, in a uniform series, of historical grammars of 18 principal Indian languages and comparative grammars of Indo-Aryan, Middle Indo-Aryan and Dravidian languages. While accepting this recommendation the Society also resolved to bring together, through the members of the faculties of the schools of linguistics, all such universities which have facilities for undertaking field work in descriptive linguistics directed towards working out in detail sections of the proposed Linguistic Survey of India, and get the individual plans fitted into an over-all coordinated project and have them submitted to the University Grants Commission for support. Similarly a special conference of Vice-Chancellors and Educationists was proposed to be called for discussing the organisation of linguistic studies in different Universities and finding ways and means of holding periodic Schools of Linguistics in different parts of the country.

9. Assamese: Upendra Goswami,
   Bengali: Suniti Kumar Chatterji,
   Gujarati: Prabodh B. Pandit,
   Hindi (Khadi Boli): Baburam Sakseha,
   Braj Bhasa: Dhirendra Varma,
   Eastern Hindi: Baburam Sakseha,
   Bhojpuri: Uday Narain Tripathi,
   Maithili: Subhadra Jha,
   Kannada: T. N. Sheekhantaiya,
   Malayalam: K. V. Nambudiripad,
   Marathi: N. G. Kalekara,
   Oriya: K. B. Tripathi,
   Western Panjabi: Harved Bahl,
   Eastern Panjabi: K. C. Bahl,
   Sanskrit: S. M. Katre,
   Tamil: T. P. Meenakshisundaran,
   Telugu: G. J. Somayaj,
   Sinhalese: D. E. Hettiaratchi,

   Comparative Grammar of Indo-Aryan: Sir Ralph Turner,
   Comparative Grammar of Middle Indo-Aryan: Sukumar Sen,

The Linguistic Society of India hopes to be able to publish between two and three volumes each year, beginning with 1958.
17. The first of the autumn linguistic seminars sponsored under the continuing project of research and development in linguistics was organised between the 18th of October and 17th of November 1956. In all 36 scholars (out of 48 enrolled) were selected to attend the seminar, including past and present fellows and the fellows-designate. The emphasis was more on perspectives rather than formal basic teaching in linguistics; consequently the seminar concentrated mainly on discussions on specific problems of research and training in field methods. Six field methods courses were organised as under:

1. Sindhi : Indo-Aryan
2. Korku : Munda
3. Lushai : Tibeto-Burman
4. Bodo : Tibeto-Burman
5. Nkonde : Bantu
6. Iraqui-Arabic : Semitic

Each group consisted of 5 to 10 registrants and they were directed to work out phonemic analyses of the particular languages while working with native informants.

The object of these seminars was the completion of directed research in the field of descriptive linguistics by which means each individual scholar trainee would receive intensive guidance for working out set problems and making a contribution to linguistic studies in general. The training spread over two or three previous summer schools would be exemplified in a piece of completed research under supervision of the faculty of the seminar and thus enable each individual scholar thereafter to continue research on his own.

Students who had problems of their own individual research were enabled to consult various members of the faculty taking part in the Seminar. This ensured their getting guidance not only from teachers of their own universities but also of other universities, thus widening their scope and bringing them into stimulating contact with active research scholars from different parts of the world.

18. By providing fellowship grants to selected junior Indian linguists, tenable at the Deccan College for one year ordinarily, the project has enabled them not only to receive intensive training in descriptive and comparative linguistics but also to achieve an adequate scientific description

10. See Table No. 1 below.
of their own idiolects. At the end of the project will accumulate, ready for
publication, accurate descriptions of some of the more important languages
of India. Along with these, the fruit of the field-methods courses in the
autumn Seminars will yield similarly descriptions of some of the less known
dialects and primitive languages. Towards much of these studies the junior
linguists coming from the United States and the United Kingdom will have
opportunities of contributing significantly.

19. It is as yet too early to estimate the contribution that the project
for linguistic development and research sponsored by the Deccan College
will make towards establishing linguistics in India. There has been con-
siderable awakening among the scholars regarding the real scope of linguis-
tics as a science. The demand for further instruction, even during the hot
summer months when these schools are organised, is an indication that there
is real need for continuing to give such assistance to those requiring and
demanding it. It may be that at the end of the current project at the Deccan
College in 1959 Indian Universities will be sufficiently organised to sponsor
these summer schools under their own financial arrangements and with the
aid of Indian staff drawn from different parts of the country. The present
organisation hopes that even when that stage is achieved the country will
not be denied the aid of foreign experts who may cooperate with their Indian
colleagues on the present basis.

The Deccan College project has not yet touched on the question of
the application of linguistics to the problems of communication. A begin-
ning has been made in analysing the phonemic and syllabic frequencies of
some selected modern Indian languages with a view to design scientifically
the basis for a system of speed-writing. The Government of India have
considered the possibility of commissioning the Deccan College and similar
institutes with research into other Indian languages for devising the scientific
basis for a system of speed-writing.

As yet there are no scientific methods evolved for teaching a second
or third Indian language to adult literates; similarly the development of a
scientific system of teaching English as a foreign language to speakers of
various Indian languages has not yet received adequate attention. In the
courses offered for the Summer Schools of Linguistics greater attention will
be directed towards language teaching methods. Part of the work of the
junior American linguists will be not only a description of the languages
selected by them for study, but also the compilation of teaching materials
for use in the United States. Dictionaries of some of the principal Indian
languages, particularly of the sub-standard or local standard speeches appear
to be necessary as aids to teaching materials.
The contribution that linguistic studies can make to the problem of intercommunication with the development of regional languages as media of instruction and vehicles for the expression of thought at all levels has yet to receive proper consideration. It was partly as a result of the synonymic dictionaries of Indo-Aryan and Dravidian languages projected by the department of linguistics at the Deccan College which led to the College ultimately to sponsor this development and research project. However, it now appears certain that the Deccan College will concentrate on fundamental issues and together with the University of Poona, develop a strong department to supply the needs of other Universities. The field of applied linguistics, therefore, is open for other universities and institutes as soon as they are ready with the requirements of staff and finances.

The Linguistic Society of India, at its last annual meeting in Poona in 1956, resolved to sponsor, jointly with the Anthropological Society and the Anthropological Survey, researches regarding the tribal languages. Part of such work has been included in the field methods courses of autumn seminars; but an integrated project requires to be worked out in detail. Doubtless the leadership shown by the Linguistic Society of India will to a large extent determine the success of this project.

20. This fruitful cooperative project sponsored by the Deccan College has brought together Indian, American and British linguists for training and research; perhaps by the time the present project comes to an end other countries in Europe and Asia may also contribute their quota of senior and junior scholars. With the attainment of independence the study and development of Indian languages has acquired importance, necessitating scientific description and recording of unrecorded material, particularly from the spoken standard dialects. Linguistic conflicts arising from lack of scientific knowledge can only be solved by continuous application of scientific techniques. Herein lies the utility of linguistic: both for science and knowledge as well as for application of such knowledge for the resolution of misunderstandings and conflicts.

India was among the first of the countries where scientific linguistics was born and practised. Even after the lapse of more than twenty-five centuries when descriptive linguistics established itself in the West, Panini still continues to be the model. It is therefore significant that the West and India have once more come together to reestablish linguistics here. Let us prove ourselves worthy heirs to both and build up a new tradition and a new approach to Indian Linguistics.

21. A few Tables are reproduced below to illustrate the arguments and statements contained in this paper.
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### TABLE No. 2.

Alphabetical List of the Faculty Members of the four schools giving place of deputing authority.

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<td>S. K. CHATTERJI</td>
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* Could not participate owing to previous commitments.

**TABLE No. 3**

List of participants who have received Overseas Fellowships from the Rockefeller Foundation:

1. Professor V. I. Subramoniam.
2. Dr. P. B. Pandit.
3. Prof. T. N. Sreekantaiya.
4. Dr. N. G. Kalelkar.
5. Dr. A. M. Ghatage.
6. Dr. G. S. Gal.
7. Sri A. R. Kelkar.
8. Sri H. S. Biligiri.
10. Shr M. S. Pillai.

**TABLE No. 4**

**LIST OF INFORMANTS**

**Summer School 1955:**

Shri Ramchandra Singh ... Mundari.

Bhabendra Narzi ... Bodo.

**Autumn School 1955:**

Shri Atram Gangu ... Gondi.

Atram Lacchu ... Gondi.

Tekam Khatti ... Kolami.

Ramachandra Singh ... Mundari.

**Summer School 1956:**

Shri A. R. Sailo ... Lushai.

J. T. Khot ... Kolli.

S. G. Shingde ... Warli.
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Total: 75 162 81 142 460
Table showing students of the first four Linguistic Schools distributed according to the States of India and the neighbouring countries.

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Total .. 75       162  81  142       460
**TABLE No. 7.**

List of Institutions, etc., deputing their staff for study in schools

1. Annamalai University, Annamalainagar.

2. Bombay University, Bombay.

3. Baroda University (= M. S. University) Baroda.

4. Director, Social Service Department, Government of Hyderabad, Hyderabad.

5. Director of Public Instruction, Chandigarh, Punjab.

6. Director, Department of Anthropology, Government of India, Calcutta.


9. Gauhati University, Gauhati, (Assam).

10. Karnatak University, Dharwar.


12. Lucknow University, Lucknow.

13. Mysore University, Mysore.

14. Poona University, Poona.

15. Sir Parashurambhau College, Poona.

16. Utkal University, Cuttack, (Orissa).
TABLE No. 8

Alphabetical List of Registrants for the Four Schools of Linguistics in 1954-56

(P = Present)

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THE SHIÛŢI DIALECT OF NORTH-WEST PAHÂRI

By

Siddheshwar VARMA, New Delhi

During the present writer’s second linguistic expedition to the Kashmir Himalayas, conducted in 1930, it was communicated to him by some of the coolies engaged by him, that the language of a village, officially called Siûţ (but by the inhabitants themselves Shiûţ) was quite unintelligible to them, though it was situated only about 10 miles from their habitats. The access to this village was extremely difficult, so that in some places, on the way, even cows could hardly pass. Nevertheless the writer, with the party, managed to reach the village, though, in one spot, they had to walk on all fours!

The village consisted only of 11 houses, the total number of speakers being estimated between 40 and 50. This hamlet belonged to the estates of a petty Raja, called the Raja of Chineni, who explained subsequently to the present writer that the linguistic isolation of this village had been due to nine months’ continues snowing there, so that for most of the year this locality used to be entirely cut off from the adjoining territories. The following sketch will show the geographical situation of this village.

From the above sketch it will appear that the village Shiûţ is about 125 miles to the North-east of Jammu.
A communication of this dialect was already made by the present writer in his article in J.R.A.S. Bengal, Letters, Vol. IV, 1938, Article No. 1, p. 3.

The striking feature of the dialect lay, not in its vocabulary, which hardly differed from that of the adjoining areas, but in pronunciation. The syncopations and mutations of individual words were so amazing that in connected speech they assumed even still more baffling forms. The greatest havoc on these phonetic changes was caused by gender, particularly by feminine plural, which presented curious deviations from the norms in the neighbouring dialects.

The following phonetic data will illustrate the notable trends of this dialect—:

I. Mutation due to final vowel [i]—:

Like most of the languages of New Indo-Aryan, this dialect has only two cases, viz. direct and oblique. Now if the direct case ends in [i], the stem-vowel of the oblique case shows a transformation. Thus, for “elephant”, the direct case has [hāṭi], but the oblique case has [heit]. The neighbouring dialect Khashālī fortunately presents to us the preceding stage of this oblique form, for in that dialect the oblique is [heit]. This [i] in [ei] of the Khashālī form is evidently an epenthesis, influenced by the final [i], as is paralleled in many Indo-Aryan languages like Bengali, and in Iranian. The [e] of [heit] in Shiũti is much closer than [e] of [heit] in Khashālī, and thus is a mutation or “Umlaut” of [ei]. Compare similar examples in Śuũti—:

“fish” direct case machḷī, oblique michḷī
“beard” direct dāṛī oblique dīṛī
“water” direct pāṇī oblique pīṇī

II. Mutation due to gender, as illustrated by the following words in fem. plural—:

<table>
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<tr>
<th>Fem. sg.</th>
<th>Fem. pl.</th>
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<tbody>
<tr>
<td>“all” sāṛī</td>
<td>sīṛī</td>
</tr>
<tr>
<td>“queen” rāṇī</td>
<td>rīṇī</td>
</tr>
<tr>
<td>“mare” kṛṣṇī</td>
<td>kṛṣṇī</td>
</tr>
<tr>
<td>“clever” siāṇī</td>
<td>sīṇī</td>
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<tr>
<td>“married” biāḷī</td>
<td>bēḷī</td>
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<tr>
<td>“broad” ċeṛī</td>
<td>cīṛī</td>
</tr>
<tr>
<td>“mother” māḷī</td>
<td>mīḷī</td>
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<tr>
<td>“went” gāḍī</td>
<td>gīḍī</td>
</tr>
</tbody>
</table>
"eats" khādi
"does" getti
"comes" ēdi
"shall be" bhōli
"will go" gāsli
"will die" mārli
"ate" khāi
"came" āi
"made to drink" plīāi pī
gīdī
gītī
īdī
bhūli
ghīli
mīrī
khī
ī

That such mutations become all the more baffling to the hearer when used in connected speech, will be appreciated if some of the above words are put in connected speech. Thus —:

"his mother struck me" [tīria mīlia āūmārā]
"may all be queens" [sīrī rīnī pō]

Conclusion

The above study, it may be presumed, has given us the following points —:

(1) The Shiūṭ dialect is a remarkable example for the scientific study of language "in air-pump", that is to say, if a linguistic region is left entirely to itself, it is likely to evolve phonetic rather than lexicographical variations.

(2) Evidently a single example is far from being adequate for driving us to a definite conclusion. It is therefore necessary that a copious number of such isolated areas be investigated, in order to enable us to arrive at safe results.
PHONETIC TRANSCRIPTIONS IN THE HISTORICAL AND COMPARATIVE STUDY OF INDIAN LANGUAGES

By

Suniti Kumar Chatterji, Calcutta

The basis of language is the spoken word. The written form of it of course has its value from various aspects, particularly from the historical context, but in the last resort it is based on the spoken word (except where the written form seeks to picture or symbolise the idea behind the word and not its phonetic representation as it affects the ear). It was this phonetic aspect, this auricular basis of the word as the component of language, which was insisted upon by Patañjali in his Mahābhāṣya (2nd cent. B.C.) when he declared that pratiṣṭa-padr̥thakocāh dhanuṣ śabdaḥ "the sound by which an object is made out is the word," and further, more pithily, taṣmād dhanuṣ śabdaḥ śabdaḥ "therefore, the sound is the word."

In learning a language, where we are more interested in reading and understanding and writing it than in speaking it, we are accustomed to pay greater attention to the written word than to the spoken one. The acquirement of classical languages which dominated the last so many centuries in the educational systems of different countries was generally tolerant of bad pronunciation, as diversity of pronunciation was universally recognised, but would not condone wrong spelling. "Orthography" was the first step of grammar, consequently, and attention to orthoëpy or right pronunciation was haphazard and secondary, the student being left to his own devices, by imitating good pronunciation as best as he could. When the teaching of modern languages which were to be acquired for both speaking and writing gradually came to take an importance which was increasing with the years, attention to the spoken word had to be paid, and the Science of Phonetics, to which students of language felt drawn inevitably from the fourth quarter of the last century, came to the assistance of language teaching as soon as it became established in its own right. The tentative experiments and advances made by investigators and scholars like Bell and Sweet and Jespersen during the last century placed the Modern Science of Phonetics on a sane objective basis, and the contribution made by the ancient Indian phoneticians (indirectly through Sanskrit studies) came also to give it the value of a tradition.

Phonetics has now largely come to its own, not only as an independent subject but also as ancillary to linguistic study and investigation. Different
groups of scholars in the various advanced countries have taken up the task of devising a suitable all-inclusive set of symbols—a comprehensive phonetic script—for all the various sounds occurring in human speech. Some of these phonetic scripts, like Sweet’s, for example, are absolutely new creations, without any reference to any of the existing alphabets. Others have sought to build up phonetic scripts on the basis of the Roman alphabet. Experience has shown that a totally new system of writing, however reasonably conceived and artistically executed, generally fails in its purpose—the total newness of the symbols becomes the inherent and insuperable disqualification for the acceptance of such a newly conceived phonetic alphabet. The scripts on a Roman basis are more easily acceptable, and some of them have become quite popular too.

Phonetic research and study have now advanced far enough towards standardisation and universalisation, and it is now time that a single standardised system in the representation of the sounds of language, a sort of Universal Phonetic Script, be adopted by all workers in phonetics and linguistics all over the world. The importance of an internationally accepted set of symbols for any science will be admitted by all, and this point need not be stressed. Without this, science suffers from a severe handicap in its progress through individual as well as international co-operation. The same symbols and figures in Mathematics, in Chemistry, in Physics and other physical sciences have made international advance a matter of course. In certain other sciences, the adoption of a common set of symbols is also becoming an acknowledged necessity, e.g. in Biology. Certain symbols, borrowed in some cases from Mathematics, for example, are being employed internationally in Linguistics: e.g. =, √, >, <, and + meaning respectively a cognate or a semantic equation, a verbal root, progress in sound or sense towards, descent from, and a hypothetical form, and a moribund or dialectal word as an alternative or allowable sound or form, etc.

Speech sounds form the basis of language. It is strange that with nearly a century and a half of history behind it, the linguistic science has not as yet adopted a universally accepted set of symbols to indicate the sounds of speech. In Chemistry, the elements which go to make up this physical world have got their symbols, Au, Na, O, H, K, Fe, Cl, etc., which for scientists all over the world stand respectively for Gold, Sodium, Oxygen, Hydrogen, Potassium, Iron, Chlorine, etc. We are speaking here of International Symbols, not of International Technical Terms, which with the languages of the world grouping themselves as those of Greco-Latin, or Germanic, or Slav, or Indo-Aryan (Sanskrit), or Semitic (Arabic), or Sinio inspiration, will be impossible of achievement,— the imposition of a few words of Greco-Latin or Pure English origin through the predominance of English
(or Anglo-American) can hardly be called an international employ of a particular set of technical terms.

The Roman alphabet as used for the languages of Western Europe, through which the greatest advance in Science has been made in the present age, has been a very great blessing. In instituting linguistic research through the comparative method, its utility and convenience was not understood at once. Franz Bopp brought out his *Comparative Grammar of the Indo-European Languages* over a century ago, and he used over half-a-dozen different scripts—Devanāgarī (for Sanskrit), Persian, Avestan, Greek, Armenian, Cyrillic, Irish and Gothic, in addition to Latin. At the present day, transcriptions into Roman have made for students of linguistics the learning of so many scripts unnecessary, and Roman and Greek (for Greek words) are the only scripts which feature in works on Linguistics; and there is a tendency, a very sane one which is noticeable, to transcribe Greek words also in the Roman script. Accepting the Latin and Italian values of the Roman letters, and extending the Roman alphabet by means of a few dotted and capped and otherwise modified letters, satisfactory systems of Romanisation have been gradually evolved for most languages—including not only those of the Indo-European family but also languages of other speech families like the Semitic, the Sino-Tibetan, the Ural-Altaic, the Bantu and the rest.

This was mostly the work of professed students of Linguistics who occupied themselves with the languages of one or more particular families. In their hands, quite a number of extended types came into being to meet the requirements of individual languages and scripts. As it was mostly a case of each worker tilling his solitary furrow, there was not much co-operation, consultation or co-ordination: there was either a wide or general acceptance of new symbols suggested by one investigator (in the shape of modified Roman letters), or there were alternative letters proposed, adding to the number in this way. But there was a tacit understanding among serious workers in Linguistics to base their new letters on those of the Roman alphabet as far as practicable, and not to go in for totally new and fancy characters.

Thus a varied and a copious extension of the Roman alphabet came into being in the wake of the progress of the linguistic science; and individual workers who were not satisfied with the wide choice offered by the ever-increasing progression of dotted and capped letters could go in for a few more. With money for new types forthcoming, the type cutters were ready to serve the demands of scholarship. But the number became unmanageable for all but only highly specialised presses. These extended or modified letters were at the outset for indicating various letters of alphabets like the Arabic,
Armenian, Devanāgarī, Cyrillic and the rest; then they were taken recourse
to denote differences in sound also within the same language, and even at
times were made to suggest some phonological history behind a letter or
the sound it represented at a given stage in the history of the language.

Typographical difficulties prevent us from giving specimens of the
various modified (dotted and capped) letters that are in use among students
of linguistics. Lack of co-ordination through General Phonetics, and also of
a single Phonetic Script accepted by all (certain difficulties in the matter of
having a single script for all languages, although the script is based on the
Roman, have to be admitted, particularly when there is to be considered the
need to transliterate the original alphabet), has resulted in the multiplicity
of symbols. Thus a nasalised vowel (ë) or (ø) for instance, is indicated
in the following ways

\[\text{en, em, ẽ, e, o} \] or \[\text{on, om, ő, o} \]

and the symbols \[\text{a, o} \], again, indicate not a nasalised vowel at all in an
old fashioned transcription of Old English or Anglo-Saxon, but they just
indicate respectively an [e] sound which has been derived from an earlier
[a] through Umlaut (hær > hær, *manniz, *manni > meñnn) and an
[o] sound which is from an earlier [a] occurring before a nasal (lænd > lแพทย
mann > moñnn, lɔmb > lɔmb). The Palatal stop sounds are represented in
various ways — [k, g; ky, gy; kj, gj; ty, dy; tj, dj; k̚, g̚; ŋ, ŋ̚; č, č̚] besides
the different ways of representing these sounds in various European languages
employing the Roman script, like (ch, j) as in English, (tch, dj) in French,
(tsch, dsch) in German, (cs, ds) in Magyar, (ç, c) in Turkish, (cz, dź) in
Polish, etc.

It would not be easy now entirely to do away with the current 'scientific'
Roman transcriptions which have been in use for Indo-Aryan (Sanskrit,
Pāli, Hindi, etc.) as well as the Dravidian languages, for Iranian (Avestan,
Old Persian, Pahlavi or Middle Persian, New Persian), for Armenian, for
Church Slav and other forms of the Slav speech, for Arabic and the rest.
For Romanised Chinese we would do better in abandoning the Wade system
and adopting the Gwo-yoe, which has the great advantage of including the
representation of the tones along with the vowel and consonant sounds; and
the Japanese National Romazi should similarly replace the practical if
inconsistent (from the point of view of Japanese kana writing) Hepburn
system. For Vietnamese, the current Romanisation should be retained.
For Indonesian (Malay), a system steering clear of the inconsistencies
of both the English and Dutch orthographies, and agreeing more with
the Indo-Aryan (though matters of detail are not necessary) should be adopted: a language which is going to serve some 75 millions of humanity as its national language deserves a consistent system, when it has voluntarily adopted the Roman script. The Romanisation adopted in the Tamil Lexicon of the University of Madras for Tamil is about the best, although I would suggest substituting [l] by [z]. For Mon (Talaing) and Burmese, the strict Romanisation proposed by BLAGDEN and DUMOY & STEENHOUT should be adhered to—the modern pronunciation being indicated by means of the ordinary Roman transcription which we find in Modern Burmese personal names, place names and words (the transliteration or the transcription within brackets, according to the context), or better by means of proper phonetic transcription (with the International Phonetic Association Script). An analogous system for Siamese should be adopted. Ordinary Tibetan Romanisation seeks to combine both the historical spelling and modern pronunciation, and we should always have the two together for linguistic work—the transliteration, followed by modern pronunciation (in the standard speech or in the dialects).

The transcription of the written word, however, does not solve the problem, but it is a great help in historical linguistics, presenting an ideal or static aspect of the language at a particular epoch. But a much needed reform is in the matter of indicating the sounds of Primitive Indo-European, and the still more ancient “Indo-Hittite.” Here the absence of a consistent system which is universally accepted becomes a source of much confusion, particularly to novices and to those who have no grip over phonetics and phonetic scripts. Some of the accepted technical terms also require revision. Thus, the sounds which are described as “Palatals” by most authorities on Indo-European are not really “Palatals” as we understand for modern speeches, and even for Sanskrit: they are just Velar sounds which are slightly advanced when they occur before the front vowels—they are “hard” sounds like the English c in cot or k in kid and g in got and in give. They are not the pure palatal stops which we hear. Burmese (ky, gy in ordinary Roman transcription) or in dialectal English (as in kid, gaiety), and which were the old values of the Sanskrit. Similarly the “Velar” sounds of Indo-European should be described as Uvulars: [q qh g ch]. Scholars engaged in Indo-European researches should come to an agreement about the symbols to be employed for these so-called “Palatals” which are really Velars: (k, kw, k₁, g, ã, g₁) are used for these, and [q, k, c, g] are used for the so-called “Velars” (really Uvulars), and the “labialised Uvulars” are denoted by [kʷ, q, qʷ; gʷ, c, cʷ]. Then, again, vocalised r, l, m, n etc. are denoted by [ɾ l ɾ̄ m n̄], which are apt to get confused with the retroflex [ɾ l n̄] and the anusvāra of Sanskrit [m]: [ɾ l ɾ̄ m n̄] stand for the unvoiced [ɾ l m n] in the alphabet of the International Phonetic Association, in which a small circle
below stands for devoicing. I make a suggestion that for representing the sounds of Primitive Indo-European, Primitive Semitic, Primitive Sino-Tibetan and other reconstructed speeches, we adopt in general the alphabet of the International Phonetic Association. The employment of the letters of this alphabet is precise and clear: the alphabet is all-inclusive: and the phonetic analysis on which it stands is the most scientific and up-to-date.

At the present day, the position which the International Phonetic Association has attained in the Science makes its alphabet the most suitable means for indicating the sounds of language at any given period in its history and among any particular community or section of the people. It is not, of course, a perfect system, as no human device can be perfect: but it is the best of all the systems that are current now, generally speaking. A greater use of it is to be made of phonetic transcriptions in this system for linguistic work. Thus Vedic Sanskrit as it was spoken at the time of the redaction of the Vedic hymns into the four Veda books (c. 950 B.C., according to the date proposed by Pargiter and by H. C. Ray Chaudhuri separately, and supported by L. D. Barnett) certainly differed in pronunciation from Vedic of some centuries earlier, and from Classical Sanskrit as it was taking shape as a literary language when Pāṇini wrote its grammar some five centuries later (c. 450 B.C.); and the Prakrit dialects of c. 200 A.D. were similarly very different in their articulation from Prakrit dialects of say 600 A.D. All these could not be properly understood from simple transliterations of passages from the Veda, from the Mahābhārata, from a 3rd century B.C. inscription of Aśoka, from the Prakrit portions of the Mrccchakatika. Similarly for all the periods of Indo-Aryan and in different parts of the country. Mere transliteration from the Tamil script in the same manner will not give us any idea of the unfolding of the phonetic history of Tamil from a sequence of texts from Old Tamil of the Sangam age, from Middle Tamil of the time of Meykanda Devar and Tayumanavar, and from Modern Tamil, down to the extremely colloquial speech of the present day where a large scale elision of interior consonants is leading the language to a newer stage of development. Phonetic transcriptions, and that, too, in an alphabet which does not permit any confusion, thus become a sine qua non for any investigation which can have an objective value.

To give one or two striking examples. An Old Indo-Aryan word like kathayati (कथयति) has become in Modern Bengali kay (কয়) or one like yoga (योग) has become Bengali jo (জো). The full history of the development cannot be had from the successive forms as they are given by Prakrit and Early Bengali, which can be denoted by the Devanāgarī script as कथयति, कथति, कथि, कहूँ, कहूँ, कहूँ and कय, and as योग, योग, योग, योग. But a series of phonetic transcriptions of the successive stages, preferably
in a finished phonetic alphabet like that of the IPA, makes the line of change exceedingly easy to follow:

\[
\begin{align*}
\text{[kathajati]} & > \text{katha\text{-}e}tji > \text{k\text{-}the}ti > \text{k\text{-}dhe} : \text{di} > \text{k\text{-}dhe} : \text{SI} > \text{k\text{-}dh\text{-}i} > \\
\text{k\text{-}h\text{-}ae} > \text{k\text{-}he} > \text{k\text{-}he} > \text{k\text{-}e} > \text{k\text{-}e} / \\
\text{[jauga]} & > \text{jauga} > \text{jo} : \text{g} > \text{jo} : \text{g} > \text{jo} : \text{\gamma} > \text{jo} : \text{\gamma} > \text{jo} : \text{\gamma} > \text{jo} : \text{\gamma}.
\end{align*}
\]

To arrive at each of the above stages in the line of development, a thorough appreciation of the phonetics of the language from period to period becomes imperatively necessary; and a full alphabet (with symbols for all characteristic sounds) such as is presented by the one adopted by the IPA, becomes a natural help in work of this kind. We all know that the first letter of the Sanskrit alphabet the short vowel \( a \) had two pronunciations in ancient time, one the older, more open [a] as the proper short of the long vowel [ā], the vie\( \text{v} \)ta or open pronunciation, and the other was a close pronunciation, a sam\( \text{v} \)ra one, which was like that obtaining in Northern India in accented syllables at the present day, the sound as in English cut, hut, son. The last sūtra of Pāṇini is not capable of being understood unless the commentary came to our rescue, and told us that what is in practice, i.e. in actual pronunciation in the laukika bhāṣā of Pāṇini’s time but a close (sam\( \text{v} \)ra ā, [\( ^{\wedge} \) a] in the IPA. script), is to be considered for grammatical purposes as an open, vie\( \text{v} \)ta [a] ([a] in the IPA. script). In other words, the old value of \( \text{\wedge} \) ā as a wide or open vowel (a) in Vedic had changed to a close vowel (\( ^{\wedge} \) a) in Pāṇini’s time, and this was an important fact of historical Phonology to which Pāṇini was fully alive, but which was obscured by the alphabet of Pāṇini not having two symbols for it.

The Aryan speech was first written down probably in the 10th century B.C., when a modified form of the later, linear and alphabetical development of the pre-Aryan Harappa and Mohen-jo-Daro script was adopted for it. The employment of an alphabet to write the language alone could make the compilation of the mass of hymns and ritual formulae current among the priests of the Aryan speakers into the four Veda books possible through the labours of a great literary conserver like Kṛṣṇa Dvaipāyana Veda-vyāsa; and it was equally the adoption of writing that made it possible for Veda-vyāsa and his disciples to start the collection of mythical and historical traditions current among the Aryan-speaking or Aryan-using Hindu people, of mixed Aryan-non-Aryan origin, of c. 10th century B.C. into the primitive Purāṇas and in the ballads of the Ur-Mahābhārata. At first, the writing of the Vedic hymns and other literature in an Aryan language was only a tentative thing. The orthography of Sanskrit could not have come into being as a perfect thing at one bound, and it was the result of centuries of close study and observation and grammatical analysis that the perfect system of spelling of Sanskrit came gradually to be fixed. We can see from the Asoka inscriptions
that the orthography was not yet a perfect one—it was in many matters a very hesitating, make-shift system. Thus in Aśokan Brāhmī, and later too, the double consonants were not indicated properly—a word like vassa being written either as vāsa or as vāsa, and certain conjuncts could not be tackled properly by the scribes, -vy- being written yv, for instance.

This makes it all the more necessary to give phonetic transcriptions of our early inscriptions, with their faulty orthography, for linguistic work. This was attempted quite regularly by Dr. F. W. Thomas who took care to give, beside a rigorous Roman transliteration, a tentative phonetic transcription indicating the double consonants and other points in pronunciation some Early Indian inscriptions. With an imperfect system of writing like the Kharoshthi which not only did not indicate the double consonants but also ignored the long vowels, a phonetic transcription becomes doubly necessary. The fragments of the Dharmapada and other MSS. giving in Kharoshthi specimens of the North-Western Prakrit as it was in vogue as a literary language in the 4th century A.D. also require to be phonetically elucidated, and this cannot be done from a mere transliteration but only through careful transcription by means of a script like the IPA., a transcription which in itself would be a phonetic reconstruction of the highest importance.

An attempt to represent the pronunciation of an Indo-Aryan dialect or speech at a given place and within a given period would be a great corrective to loose thinking in the matter of historic development of the language, and supply us with the true perspective. The vexed question of the evolution of New Indo-Aryan from late Middle Indo-Aryan (Apabhraṃśa), when we have before us a mass of literature of a rather artificial type produced by persons speaking early forms of New Indo-Aryan but sticking to a more archaic orthography which belonged to the earlier MIA literary tradition of the Apabhraṃśa, can be very largely made simpler by insisting upon the purely phonetic and phonological aspects of the question.

The above method has yielded very substantial results in the study of the Western European languages like English, German and French. In my own work I attempted to establish the pronunciation of Old Bengali in its formative period (c. 1100 A.D.), and of Early Middle Bengali (of c. 1400 A.D.), much as they have established the pronunciation of Old English and of Chaucer, and Shakespeare, in English, and of the language of the Chanson de Roland, of the works of Villon and of Montaigne in French. We should at the same time, as phonetic exercises primarily, cultivate the habit of reading specimens of a particular language at a given epoch, in the pronunciation which obtained at the time. This of course is not for every day work, or for appreciating the matter or content of a great work of literature, but is in connection with a thorough study of the language. Scientific exactitude
should be our aim, and phonetic transcriptions (through an alphabet like that of the IPA) of say Vedic in the pronunciation of 1000 B.C. (which can be arrived at only after a very painstaking phonetic study and analysis and historical and comparative enquiry), of an Āsokan edict of c. 250 B.C. in the something near enough to the actual pronunciation of an official of Pātaliputra, of Sauraseni Prakrit of c. 400 A.D., of Sauraseni Abhapramśa of c. 900 A.D. of a poem by Kabir of c. 1450 A.D. will then take its legitimate place in the historical study of a certain type of Indo-Aryan. So too in the case of the Dravidian languages. We read a Tamil poem of c. 500 A.D. in a modern Tamil pronunciation, just as a Persian scholar of the present day finds nothing wrong in reading Firdausi of c. 1000 A.D. in the pronunciation in vogue in Modern Persian of the year of grace 1957. And yet how much of the history of the language becomes clear before our eyes if we try to follow the historic method underlying an attempt to read the work as the original author himself read it! The value of this method for establishing or demolishing the alleged antiquity of a particular text or MS. can be easily appreciated. We have followed this method in establishing the antiquity of certain Early Bengali texts with considerable success. Like grammar, vocabulary or thought-content, or literary and other atmosphere, or matters of reference, nuances in pronunciation which can be detected by a rigorous phonetic analysis of a particular text specially when we try to render it in its restored pronunciation, and that too with a rigorously phonetic transcription at once give out the secret behind the language, and enable us to conjecture or ascertain the date or age.

Apart from the historical study of a particular language, a careful phonetic analysis, properly indicated by means of an all-inclusive phonetic transcription, of facts in a modern dialect or spoken form of a language is sure to place before us new facts and along with them new problems which must be solved if we are to unravel the past history of our languages. A case in point is the modification of the aspirate [h] and the voice aspirated stops [gh, jh, dh, dh, bh] in a large number of New Indian speeches which form a ring round the Central or Midland group of New Indo-Aryan (e.g. Hindki, Eastern Panjabi, Sindhi, Rajasthan and Gujarati, as well as East Bengali, as opposed to Western Hindi, Kosal, Nepali and other Pahari speeches, the Bihari dialects, and Western Bengali). The written form of the word in Hindki or Eastern Panjabi, in Marwari or East Bengali reveals nothing: a word like ghorā is spelt in the same way everywhere, but in the actual pronunciation of the word in these different speeches is a revelation (Hindki g'orā, East Panjab k'orā, Marwari g'oro, East Bengali g'urā—tone or pitch modulation being substituted for the original aspiration, along with other changes). This is an aspect of the question which we must place in the forefront, whenever detailed study of an Indian language or dialect is taken
in hand, whether by an individual scholar or organisationally in the form of a much necessary new Linguistic Survey of India—viz. the thorough study of the phonetics of the language as one of its basic elements.

Below a few tentative phonetic transcriptions of Indian languages at different periods as illustrations of a historical phonology of Indo-Aryan in its earlier periods (Old Indo-Aryan—Vedic; Middle Indo-Aryan—Early or Aśokan, and Second or Sauraseni Prakrit). Similar phonetic transcriptions can be made for Indo-Aryan at subsequent periods in the various parts of the country: and of the cultivated Dravidian languages like Tamil—Malayalam, Kannada and Telugu, following the various stages of their development.

Illustrations

I. Rig Veda, I, 1.  \( t, d = t, \text{ḍ}, \) alveolar.

1. agnīm i:ḷai purāñitaā (-tam)
   iaḷnāśia dāiwaćm (daiūām) ṛtuīJam
   āūta: raā ratnā dhiā: tamam.

2. agnī(ṛ) pū: rṣaiṁhīr rṣibhir
   Ṣiḷaiu nū: tana: ir utā
   sā daiūā: āīliā ūakṣati.

3. agnīna: raīm āuṇaṭat
   pāus,sam aitā diūāi-diūāi—
   iaçasāā ʔii: ráūattamam.

4. ágnai, īám iaḷṇam adhūuarāā
   ūiçūṭtaq(ṛ) paribhū:r asi,
   sā id daiūāiṣu gacchati.

5. agnīr (ṛ)hāuta: kaūīkratus
   satiag citizen gRaṇastamaq,
   daiūāu daiūāibhir ā: gamaṭ.

6. īād angā da:çuṣai tuām
   ágna, bhadrāv karisiṇāsi
   tāuāt tāt satiām angiraq.

7. úpa tuā:gnai diūāi-diūāi
   dāuṣa: uṣtar, dhīā: āailām
   nāму bhāranta śimasi.


II. Asoka Inscriptions: Rock Edict I:

(a) MANSEHRA: \(^{\text{aj}}^{\text{\sim}}\) dh\(^{\text{\sim}}\)m\(^{\text{\sim}}\)dipi de: va: n\(^{\text{\sim}}\)(m) prije: n\(^{\text{\sim}}\) prij\(^{\text{\sim}}\)dārcina: r\(^{\text{\sim}}\)a: likha: pita: hid\(^{\text{\sim}}\) no: kicci Ji: ve (for Ji: vo:) a: r\(^{\text{\sim}}\)bhittu (=a: r\(^{\text{\sim}}\)bhiti\(\text{\sim}\)a:) pr\(^{\text{\sim}}\)juhot\(^{\text{\sim}}\)vije (for pr\(^{\text{\sim}}\)juhot\(^{\text{\sim}}\)vvo:) no: pi e\(^{\text{\sim}}\) s\(^{\text{\sim}}\)(m) a: J\(^{\text{\sim}}\) k\(^{\text{\sim}}\)t\(^{\text{\sim}}\)vij\(^{\text{\sim}}\) (for ?k\(^{\text{\sim}}\)rt \(^{\text{\sim}}\)v\(^{\text{\sim}}\)v\(^{\text{\sim}}\)). b\(^{\text{\sim}}\)huk\(^{\text{\sim}}\)(m) hi do: s\(^{\text{\sim}}\)(m) s\(^{\text{\sim}}\)ma: J\(^{\text{\sim}}\)ss\(\text{\sim}\) de: va: n\(^{\text{\sim}}\)(m) priye: (for priye:) prij\(^{\text{\sim}}\) d\(^{\text{\sim}}\)rci: ra: Ja: (?) drikhhati. asti pi cu (for \(c\)) e: k\(^{\text{\sim}}\)tij\(\text{\sim}\) (for ek\(^{\text{\sim}}\)tij\(\text{\sim}\)) s\(^{\text{\sim}}\)ma: J\(^{\text{\sim}}\) sa: dhum\(^{\text{\sim}}\) (Shbz. sre: st\(^{\text{\sim}}\)m\(^{\text{\sim}}\)s\(\text{\sim}\)). de: va: n\(^{\text{\sim}}\) prij\(^{\text{\sim}}\)ss\(\text{\sim}\) prij\(^{\text{\sim}}\)dārcino ra: Jine: (for r\(^{\text{\sim}}\)a: o:) pura: m\(^{\text{\sim}}\)ha: n\(^{\text{\sim}}\)ss\(\text{\sim}\)i (for m\(^{\text{\sim}}\)ha: n\(^{\text{\sim}}\)s\(\text{\sim}\)swi, -spi).. de: va: n\(^{\text{\sim}}\) prij\(^{\text{\sim}}\)ss\(\text{\sim}\) prij\(^{\text{\sim}}\)dārcissa ra: Jine (for r\(^{\text{\sim}}\)a: o:) \(^{\text{\sim}}\)nudiv\(^{\text{\sim}}\)(so:) b\(^{\text{\sim}}\)hu: ni pra: n\(^{\text{\sim}}\) e\(^{\text{\sim}}\) s\(\text{\sim}\)Ha s\(^{\text{\sim}}\)sra: ni a: r\(^{\text{\sim}}\)bhij\(\text{\sim}\)isu (isū) — su: pa: rtha: je: (for \(\text{\sim}\)) se: (so:) ida: ni y\(^{\text{\sim}}\)da: \(^{\text{\sim}}\)j\(\text{\sim}\) (=\(\text{\sim}\)J\(\text{\sim}\)) d\(\text{\sim}\)harm\(\text{\sim}\)dipi likhita: t\(\text{\sim}\)da: tinni (for tr\(\text{\sim}\)jo:, Shbz.) je (\(v\)) pra: n\(^{\text{\sim}}\)a: ni (for pra: n\(^{\text{\sim}}\); Shbz). a: r\(^{\text{\sim}}\)bhij\(^{\text{\sim}}\)nti due (= dwo:) m\(\text{\sim}\)Jura: eke: (for e: ko:) mrige (for m\(^{\text{\sim}}\)g\(\text{\sim}\)) se: pi (for so: pi) cu mrige (for m\(^{\text{\sim}}\)g\(\text{\sim}\)) no: dhruv\(\text{\sim}\)k. e: ta: ni (for e: ta:) pi cu tinni (for tr\(\text{\sim}\)jo:) pra: n\(^{\text{\sim}}\)a: ni (for Shbz pra: n\(^{\text{\sim}}\);) p\(^{\text{\sim}}\)cchha: no: a: r\(^{\text{\sim}}\)bhig\(\text{\sim}\)nti.

(b) JAUGADA: i\(\text{\sim}\)m dh\(\text{\sim}\)mm\(\text{\sim}\)lipi kh\(\text{\sim}\)ping\(\text{\sim}\)ss\(\text{\sim}\) p\(^{\text{\sim}}\)v\(^{\text{\sim}}\)ss\(\text{\sim}\)ss de: va: n\(^{\text{\sim}}\)m pije: n\(^{\text{\sim}}\) pije\(\text{\sim}\)ssina: la: Jina: likha: pita: — hid\(\text{\sim}\) no kicchi Ji: v\(\text{\sim}\)m a: l\(\text{\sim}\)bhittu pr\(\text{\sim}\)johit\(\text{\sim}\)vije no: pi e\(\text{\sim}\) s\(\text{\sim}\)ma: Je: k\(\text{\sim}\)t\(\text{\sim}\)vij: b\(\text{\sim}\)hukam \(\text{\sim}\)hi do: s\(\text{\sim}\)m \(\text{\sim}\)s\(\text{\sim}\)ma: J\(\text{\sim}\)ss\(\text{\sim}\) dekhhati de: va: n\(^{\text{\sim}}\)m pije pije\(\text{\sim}\)ss: la: Ja: atti pi cu e: k\(^{\text{\sim}}\)tija: s\(\text{\sim}\)ma: Je: sa: dhum\(\text{\sim}\)ta: de: va: n\(^{\text{\sim}}\)m pije\(\text{\sim}\)ss pije\(\text{\sim}\)ssina la: Jine: puluv\(\text{\sim}\)m\(\text{\sim}\)ha: n\(\text{\sim}\)ss\(\text{\sim}\)i de: va: n\(^{\text{\sim}}\)m pije\(\text{\sim}\)ss pije\(\text{\sim}\)ssine: la: Jine: \(^{\text{\sim}}\)nudiv\(\text{\sim}\)s\(\text{\sim}\)m b\(\text{\sim}\)Hu: ni pa: n\(\text{\sim}\)s\(\text{\sim}\)s\(\text{\sim}\)s\(\text{\sim}\)s\(\text{\sim}\)sa: ni a: l\(^{\text{\sim}}\)bhij\(\text{\sim}\)isu su: p\(\text{\sim}\)t\(\text{\sim}\)ha: je: se: \(^{\text{\sim}}\)J\(\text{\sim}\) (i)\(\text{\sim}\)da: i\(\text{\sim}\)m dh\(\text{\sim}\)mm\(\text{\sim}\)lipi likhita: linni je: v\(\text{\sim}\) pa: na: ni a: l\(^{\text{\sim}}\)bhij\(\text{\sim}\)nti — dueve: m\(\text{\sim}\)Ju: la: e: ke: mige: se: pi cu mige: no: dhuv\(\text{\sim}\)m. e: ta: ni pi cu tinni pa: na: ni p\(\text{\sim}\)cchha: no: a: l\(^{\text{\sim}}\)bhij\(\text{\sim}\)iss\(\text{\sim}\)nti.

III. From the Mrčchakaṭikā, Act VI: Specimen of Sauraseni Prakrit.


r̥ṇṇa (γ) e:, ka: e: sa: ?
r̥ṇṇa (γ) e:, āli (γ) mā bhānā: si tumām. Jā (δ) i vāha: nām ājā (γ) a: jāni, ta: kisā ṣāmākiśa: ?
GLIMPSES FROM BORO FOLK SONGS

By

Pramod Chandra BHATTACHARYA*
B. Barooah College, Gauhati

1. In the course of my studies in Boro language of Assam, I have had opportunities to listen to many a folksong presented in accompaniment with typical Boro instruments. I like to present below three Boro folksongs on love and romance not from the musical point of view, but from a minor linguistic approach. Boro is an important Sino-Tibetan speech spoken in the districts of Assam valley, and northern districts of West Bengal. This language is usually known as Bodo or Plains Kachari. But the people call themselves Boro and their speech is nationally known as Boro [/bʊː/ː/ːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːèleCARDe
suprasegmental phonemes. A syllable has been described as the minimum unit of a Boro utterance. A syllable possesses one of the six vowel phonemes as its nucleus with or without single or cluster consonantal phonemes associated with one of the three suprasegmental phonemes. The glottalization is a phonetic feature associated with tones.

The tones are termed as high, mid and low. The tonemarks in case of high and low tones are shown before the relevant syllable. The mid tone has not been marked in this transcription.

For high tone // we have usually clear voice with short syllable nucleus with final glottalization, rarely we have clearer musical voice with overlong syllable duration; there is association with high level of pitch, pitch may rise from mid to high, sometimes from low level to high:—

//bi/ ['br?], he; //za/ ['dza?], eat. //ha/ ['ha:], what is it?
(emotional context).

For mid tone we have normal clear voice, associated with medium pitch with variable quality of syllable nucleus (usually short or half long) and there is absence of glottalization in the syllable final position. The pitch is either mid-rise or mid-level. The tone is left unmarked in phonemic transcription.

/hor/ [hɔ'r], night; /côr/ [cô'r], iron; /ce/ [ce:], one.

For low tone /\ we have usually less clear or breathy voice associated with low pitch and longer syllable duration without the feature final glottalization. The pitch falls from mid to low or high-mid to low.

/\bi/ [\bi:], to beg; /\za/ [\dza:], to be; /\hor/ [\hɔ'r], to hang down.

These three level of tones contrast each other, and inspite of a considerable range of phonetic feature, the Boro utterances are syllabically brought under a tonemic analysis. Tone is inherent to each syllable of the Boro words of main system; loan words and usually unknown foreign words at the first stage remain tonally neutral. But the process of naturalization slowly goes on work and in a later stage, the loan words and uncommon foreign words are garbed in Boro phonology and they acquire the usual features of tones postulated above. These are observations from our study of Boro mono-syllabic and disyllabic words in isolation. The modification of tones at syllable and word boundaries has often been noticed. The writer is grateful to Dr. Suniti Kumar CHATTERJI for bringing first these ideas in 1953 and to Prof. John BURTON-PAGE for favour of offering a methodology to work out tones in 1955.
As for the segmental phonemes, /p, t, k/ are initially strongly aspirated, less aspirated as a member of the consonant cluster and never aspirated in syllable final position occurring as unreleased stops. /c, z/ are alveolo-palatal spirants with affricated allophones with ranges from dentio-alveolar position to alveolo-palatal position. /Ø/ is an unrounded mid-vowel with a considerable range, typically Boro in production. /u/ has also allophones uttered with unrounded lips. This short analysis of Boro phonemes is expected to do something in correct reading of the following texts. The proper names are tonally not marked in our transcription. These are shown in italics.

4. The text of each song is followed by a translation-meaning with an eye to the context of situation. The social and philological aspects of Boro Folksongs are not discussed in this elementary paper.

(1)

ci/kla: 'dõi/lai /nõ /taŋ/lai gõn
ai/a /rai lai gõn,
lor /lai/nõ /taŋ/lai gõn
apa /ia /bн /laigõn.
'bi /'bi /ada larubandaru.
'ada larubandaru.

\cen/ra: zïnga /da/ci zïnga /da/ci
\aŋbadi /hоu/a /ta na i\ao,
zïnga /da/ci a/gõi zïnga /da/ci
zïnga /da/ci a/gõi rõndacimõndaci.

Maiden: "If I go to fetch water (and thereby to meet you alone in secrecy), mother would reproach me; if I go to bring fire (from a neighbouring house and thereby to meet you secretly), father would beat me.
O my elder one (lover) Larubandaru,
O my elder one Larubandaru!"
(In a tone of helplessness).

Youth: "Don't be sorry, be not sorry,
(do not meditate these things)
O my younger one (beloved) Rõndacimõndaci,
when there is a youth like me;
(who is in your love)
O my sweet one!"
GLIMPSES FROM BORO FOLK SONGS

(2)

ci'kla: ha/zö́ /ko ro'ao ha/zö́ /koro'ao,
      /boŋ/pan, /dan/nö́ /taŋ/böla /taŋ/böla,
      /na gö́/ran be /dor gö́/ran
      /la/bö́ /la/bö́ /ada porbacu /zöhlao.
      /la/bö́ /la/bö́ /ada porbacu /zöhlao.

cen'ra: /de /de /la/bö́ gö́n a/gö́i gangri-cona
      /zōú /coon na'nö́ /dön /de
      /hi ba /konaiao.
      /voca mai/'ron /dön /ka/de
      /nö́y /coon na /nö́i,
      /de /de /la/bö́ gö́n a/gö́i gangri-cona.

Maiden: “When you go to cut the fuel
at the foot of the hills,
bring me dry fish and meat,
O my hero Porbacu, my elder one!”

Youth: “Certainly, certainly, O my sweet Gangcri
Will I bring you these things.
Prepare for me more liquor (’zōú),
and conceal in the midst of cloth-heap,
and keep ready the boiled rice
of sweet scented paddy (after you husk it).
O my precious Gangcri, my sweet one,
these will I bring for you.”

cen'ra: ha/zö́ /koroni ho/lo lo/ka,
       an/zö́y /rai/zö́ za/gö́n/a /nö́nlo/ka.

ci'kla: /ada ha/tai /cali/ni
       /tao din gri/lo /nö́n/bai/ka.
       a/can mu/ta gö́/zö́y
       /lö́ lo /nö́y /dön/ka.

Youth: “The hololokha vegetable
grows on the hill,
so you grow in my heart.
You are the only maiden
who happens to be the mate of my life.”
Maiden: "O my elder one!
don't be sorry,
be not melancholy;
you shall purchase
a bottle of perfumed oil,
a pair of bracelets
and a dazzling garlands;
so that I can have these
just after my arrival at your house!"

5. These songs present a few Boro words of diverse interests. The word, \(ada\), literally means my elder brother, here it denotes the lover; so also the word for younger sister (\(a/g\ddot{o}\)) has its special meaning here as the lady love. The philological interpretations of a few Boro words like \(d\ddot{o}i\), \(h\ddot{a}/z\ddot{o}\), etc., and their probable influences on the formation of Indo-Aryan river-names and toponomy are reserved for future discussion.
FIELD-NOTES ON NAHĀLI

By

Sudhibhushan BHATTACHARYA, Calcutta

1. In the Linguistic Survey of India, Vol. IV, Nahāli has been described as a mixed language having a Munda speech allied to Korku as its base, with borrowed elements from Dravidian and Indo-Aryan. The Munda, Dravidian and Indo-Aryan traits are unmistakable in Nahāli. But if we analyse the inadequate material published in the Linguistic Survey of India on this speech, a good number of forms will be found in it which cannot be called Kolarian, Dravidian or Indo-Aryan. Some scholars are therefore not prepared to accept the theory of a Kolarian base for Nahāli and are very much inclined to trace in those unidentified traits the remnants of a lost family of speeches which was spoken in India in pre-historic times. Unfortunately, the nature and extent of this unidentified element in Nahāli could not be ascertained from the insufficient data available on this speech. It was therefore felt that fresh material should be collected on Nahāli to aid a solution to this problem (Robert SHAFER, Ethnography in Ancient India, 1954, p. 13; T. BURROW, The Sanskrit Language, p. 376).

In 1954-55 I undertook a survey of the Kolarian languages under the auspices of the Department of Anthropology, Government of India, which is at present the only Institution in India to offer facilities for the study of obscure tribal tongues. In course of my field-work in the Burhanpur tahsil, Nimar, I luckily came across a few Nahāli-speaking Nahāls through the kind help of Shri Dasarath PATEL of Kanapur village. I studied the speech from those informants for a short time. The main object of this paper is to make available this new material on Nahāli to those scholars who are interested in this problem.

2. According to the Census of 1951, only 1196 persons speak 'Nihali' in the 3 districts of Nimar, Amraoti and Buldana. The Nahāls have been 'mentioned in old documents as hill robbers', and appear to be an ancient ethnic group of Western India, now concentrated in Khandesh. They may be tentatively identified with the ancient tribe called Nāhalka, mentioned in Padma Purāṇa (II. 27, 42-3) as an off-shoot of the Niṣādas, who were 'settled in the hills and forests', and were 'addicted to vices'. It is interesting to note that the Korku and others call these people by the name of Nahāl, but the people themselves use a different nomenclature, viz. Kālto, to designate their group.
3. I have seen that the Korku consider the Nahāl to be an inferior section of their tribe. In a Korku folk-tale recorded by us the Nahāl have been characterised as an inferior type of people addicted to vices and cow-killing. The Nahāl clan-names, collected by us, are: Kākri (cucumber), Jambu (blackberry), Bōy or Jhara (grass), Cokob' (leaf of tree), Joppo (water), Cicca (tamarind), Tōta (maize), Dhapri (bank of river), Kōlya (fuel), and Chocho (kind of fruit). Most of these clan-names have also been found among the Korku. The Nahāl now-a-days live mostly in a region that lies contiguous to the West and South-west of the Korku tract. Apart from their connection with the Korku, they also appear to have some relation with the Bhil, for the reason that they are also counted as an inferior section of the Bhil of Khandesh (R. E. ENTHOVEN, The Tribes and Castes of Bombay, Vol. I, 1920, p. 174). The Nahāl tract lies in-between those of the Bhil and the Korku. It will be an interesting study to find out the exact relationship of the Nahāl with their two great neighbours. From a study of the Nahāli speech we can only find out the Korku and Kolarian traits in it. But in the absence of any precise knowledge about the original language of the Bhil, it will not be possible at the present stage to ascertain the Bhil element in Nahāli. We are giving below a short account of this speech in the hope that competent persons will analyse the material to find out the different elements contained in it.

4. Nahāli sound-system essentially agrees with that of Korku. The vowel length is of lesser importance in this speech which is a characteristic feature of many Kolarian tongues in contradistinction to Dravidian and old Indo-Aryan. A tendency to diphthongise or split up a long vowel can be noticed in Nahāli. Examples are kō- (kūō-) 'to bring', kör- (kūōr-) 'to take away', jō (jūō) 'T, īēpta 'honey', īēnken 'will go', kānti (kīāntī) 'for', 'for the sake of', etc. The a is a low, fronted sharp vowel which occurs as equivalent to Sk. a in most of the non-Aryan speeches of central and southern India. Nasalization of vowels occurs mostly in respect of ā, ē and ī, but is not very frequent. The Linguistic Survey of India has given the Nahāli word for 'head' as peṅg, but the form collected by us is pēi.

5. The varition in the pronunciation of a dental and retroflex t and d is noticeable in Korku and Nahāli which perhaps indicates the existence of alveolars in those speeches, now disintegrating due to the influence of modern Indo-Aryan; cf. Nahāli dud, ād 'milh', Korku khiti, khiṭi 'field', etc. Checked consonants are less frequent in this speech than in Korku: Nahāli jilguįį 'earthworm'. The glottal stops, heard in many Kolarian speeches, are not found in Nahāli and Korku. The aspirate stops and voiced h are pronounced with greater ease in Nahāli, which perhaps indicates that the Dravidian traits to be found in this speech are less fundamental. The only sibilant is dental
in Nahäli. But a sibilant is often changed to palatal affricates 信貸, 信贷, two frequent sounds of this speech. Thus, Nahäli chocho 'a clan-name': Korku soso "id."; Nahäli manco, mancho 'man': Sk. manusya; Nahäli vorcho 'year': Sk. varṣa; etc.

6. Consonantal sandhi plays an important part in Nahäli. Thus ardo, aḍḍo 'tree', jilvūgiļ 'earthworm' + pl. ṭa = jilvūgiṭṭa. This change is more evident in Nahäli conjugation; for example: ḍelēm-be 'drink (Imperative)', biji ḍelēn 'do not drink', ḍelēn-i 'did not drink', ḍelēvka (or ḍelēnka) 'is drinking', etc. But Korku is very liberal in permitting clusters made of different types of consonants. Vocalic variations also occur in Nahäli. But there is still much confusion in this matter.

7. The unidentified elements in Nahäli are more visible in the structure and lexical material of this speech. It has 3 numbers, singular, dual and plural, but exclusive and inclusive forms are not distinguished in it. The dual and plural suffixes are added only to animate objects as in Korku, but the suffixes for dual and plural in this speech are ḫṭel (or ḫṭel, ṭel) and ṭa, respectively, which come no where near the Kolarian, Dravidian or Indo-Aryan suffixes denoting number. Examples of dual and plural forms from Nahäli:

köl 'woman', dl. kōlḥṭel; mancho 'man', dl. manchihṭel; māv 'horse', dl māvihṭel; kalṭo 'a Nahäli', dl. kalṭihṭel, etc. The corresponding pl. forms will be köl-ṭa, man-ṭa, māv-ṭa and kalṭṭa.

An -l suffix has, however, been recorded forming the pl. of the 3rd person pronoun. Thus, etey 'he', īṭṭel 'they two', ēṭla 'they'. There is an -l pl. suffix found in many Drav. languages.

The first and 2nd person plural (and also dual) forms are tyēko and nēko; cf. tyēko giṭa bommoki 'we two are brothers', nēko giṭa bommoki 'you two are brothers'. This ko is obviously the Korku pl. suffix -ku found in many other Kolarian speeches. The word bommoki is difficult to explain. It may be derived from a Nahäli word whose cognates are found in Korku as bokeya, in Juang as bōk, in Mundari as boko, meaning 'younger brother', with an infixed -mo- denoting dual number; cf. Gadha būya 'brother', būmiya 'two brothers'; būlōn 'sister', būmulōn 'two sisters'.

8. There are some peculiarities in the declension of Nahäli nouns and pronouns. Many nouns are found to end in ēo. Thus, mancho 'man', palco 'son', boloīgō 'bear', ḏavgo 'branch of tree', pāco 'five', kāmo 'work', etc. A similar -o is found in Korku; e.g. koro 'man', but the pl. is kor-ku; rojo 'daily', meghnātho or meivnaṭṭo 'a Korku god identified by some Korku with Meghanath, son of Rāvana'.

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9. The same suffixes are found to be used for the accusative and genitive, and instrumental and locative in the declension of nouns and pronouns in Naháli. The cases will therefore fall under the following four heads:

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<th>Cases</th>
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<td>Instr. and Loc.</td>
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<td>Dat.</td>
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10. The Naháli word for 1st person sing. is jō 'I' which form is found to be used only in the nominative. In other cases ev is used is perhaps related to iñ, iñ 'I', used in many Kolarian languages including Korku. This ev and 2nd person sing. nē and pl. là- are found to take oblique increments -g, -n and -l, respectively, before taking the case–formatives. Thus, ev-g-e-n arabe 'see me', eťey nē-n-en araka 'he sees you (sing.)' jūō là-l-a-n araken 'I will see you (pl.)', etc.

11. The different cases in Naháli are illustrated below:

(i) **Accusative and Genitive**: -n: ètām pëtëki 'make them sit' (for the change of -n to -m in ètām see § 6), heren cāvgoki 'frighten this person', backaren bīji āpaen-kama 'do not make the child weep', cōrtan cekibe 'catch hold of the thieves', įti manchon mantibe 'tell this man', etc.

   iŋi-n avar 'our house', an manṭa-n avar 'other mens' house', eťe-n ayrere 'his mother', bai-n kokhor 'sister's fowl', etc.

   -na: eťey ivi mōth jen-na araken 'he will see us three persons', ètla iŋi-na cāvgo-kamai 'they frightened us', heren kaṭṭoka pādabe 'beat this person to death', nē eťe-na arṭhiki 'you make him weep', jūō eťe-n avar-kon bi-kamai 'I turned him out of the house', etc.

   kōl-na kupra 'wife's cloth', eťey-na kōllere 'his wife', ẏēko-na aba 'father of us two', han nāni-na avar 'whose house is this?' ho mancho-na abare 'that man's father', evge dāi-na palcure 'my elder brother's son', etc.

The genitive -a found in Korku and many other Kolarian languages can also be traced in Naháli. But it appears that -e is used in the sing. and -a in the pl. in this speech. Thus, ev-g-e āṭho 'my husband', ev-g-a avar 'our house', nē-n-e palco 'your (sing.) son', là-l-a kokhor 'your (pl.) fowl', etc.

A possessive case can also be formed in Naháli without using a suffix. Thus, addo kajar 'top of the tree', nē rupya 'your rupee', etc.
(ii) Dative: In Korku -ke and -ken are used both in acc. and dat. But in Nahāli -ki (-ki) is found only to form the dative case. Thus, ev-g-ke ma ‘give me’, etey-ke bebe ‘give him’, ev-g-ke nam kojyi ‘what have you brought for me?’, nani-ki beken ‘whom shall I give?’, ev-g-ke cafo pati ‘I felt hungry, lit. hunger came for me’, neni-ke bi cafo pati ‘you were also hungry, lit. hunger came for you too’, etc.

A stray form has been recorded in our material in which kianyi has been used as a postposition to denote a dative idea; e.g. hin mancho-kiyanyi nan kojyi ‘what have you brought for this man?’. Kianyi or kanyi is also used to form infinitives of purpose; e.g. ara-kan yi ‘to see’, tyekanyi ‘to eat’, etc.


i biya-ki kalfo be te ‘there is no Nahāl in this village’, hin-ki nan jere ‘what has happened at this place?’, agetto-kajar-ki ‘on the top of the tree’, gham-ki kupra jeldi patarka ‘cloth will be dried up soon in sunshine’, etc.

In dorgor-ke erka ‘going to the hills (for wood)’ the implied dative idea (‘for wood’) is more prominent than the locative sense expressed in ‘to the hills’.

(iv) Ablative: -kon: agetto-kajar-kon ‘from the top of the tree’, hin-kon eger ‘remove from here’, etc.

In Hindi -se is used both in instr. and abl., which has perhaps influenced the following formation in Nahāli:

evge-kon i kamo bekkamay jere ‘this work will not be done by me’, i mancho-kon jereka ‘it will be done by this man’.

12. In many languages in India kinship terms are inflected to show the person of the possessor. This trait has a very wide distribution in India and is found in the Kolarian, Dravidian and Tibeto-Burman languages, and also in Burushaski (see M. B. Emeneau, “Dravidian Kinship Terms”, Language, Vol. 29, No. 3, 1953). In some Kolarian languages terms denoting limbs of the body and those denoting articles of material culture are also inflected to show inalienable possession. In Nahāli and also in Korku the kinship terms are inflected, but these terms take the suffix only when they stand in relation to a 3rd person. Thus Nahāli evga abpa ‘my father’, but eteyna aba-re ‘his father’. The inalienably possessed kinship morpheme for the 3rd person is -re in Nahāli and Korku, -ro in Juang, -le in Gadba and Djey, -doi in Parengi and -te in Santali and Mundari. The Nahāli kinship
terms are of a highly classificatory type. Even opposite sexes are sometimes expressed by the same word in this speech.

13. The most important feature of Nahāli conjugation is its simplicity. Verbal ideas are expressed mostly with the help of separate words. Nouns, adjectives and adverbs are not often used as verbs in it as is done in Korku and other Kolarian languages. The number and person of the object and subject are not shown in the verbs in this speech. In this matter Nahāli differs particularly from the Kolarian tongues most of which are noted for their complicated verbal system. A Nahāli verbal form consists only of the base and the tense particle, at times glides or union vowels intervening between them.

14. The following tense particles are used in this speech:

(i) -ka — to form Habitual Present and Present Imperfect tenses. Examples are: ḍhōr bōy ūye-ka, jō chokra ūye-ka ‘cow eats grass, I eat bread’, eṭey dinaka ara-ka ‘he sees every day’, etc.

corto dokco-ka ‘blood is coming out’, jō ḍovgorke er-ka ‘I am going to the jungle’, maṇṭa aḍḍo beri-ka ‘men are cutting wood’, backar apa-ka ‘the child is weeping’, nē cāvgo-ka ‘you are being frightened’, etc.

(ii) -ken — to form future tense. Examples are: ara-ken ‘will see’, pāḍa-ken ‘will kill’, cakhav-ken ‘will sweep’, ūla-ken ‘will be wet’, cakhā-ken ‘will ascend’, etc.

The Present and Future tenses are usually distinguished in this speech, although the Present tense particle -ka is sometimes used also to form the Future tense. Thus, jālū-ka ‘will descend’, peṣe-wa ‘will sit’, kama-ka ‘will do work’, ūye-ka ‘will eat’, etc.

(iii) -(y), -(y)i — to form Past tense. Examples: bēṭṭ-i ‘died’, pāḍa-i ‘killed’, cakhav-i ‘did sweep’, cakhā-i ‘did ascend’, ūla-i ‘became wet’, cāvg-i ‘were (was) afraid’, kama-i ‘worked’, cuṭṭi-yi ‘pounded’, aḍîk-i ‘was burnt’, etc.


The Linguistic Survey of India has suggested that kadine or kedine is a suffix to form Present Definite, which is perhaps wrong. The word ḍan is used in this speech, as in Korku, as an auxiliary verb in Past Progressive and Past Perfect: cf. Hindi thā. Thus, ara-ka ḍan ‘was seeing’ and ara-ka-ḍani ‘had seen’.
15. The Korku method of pronominalising the verb to form transitives and causatives are not found in Naháli. The method of using special affixes to form transitives and causatives which is followed in many Kolarian speeches and also in most of the Dravidian languages, is also not adopted in it. The usual practice to form transitive and causative verbs in Naháli is to add the root kama- ‘to do’ with the base of the principal verb. The two verbs form one unit which follows the conjugation of the latter. Thus, colob pata-r-i ‘leaf dried’, but jô ege kólha kupra pátharkama-y ‘I dried my wife’s cloth’; joppo raban-ken ‘water will become cool’, etey joppo rabankama-ken ‘he will cool water’; poyye aphir-ke ‘bird is flying’, nê aphirkama-ke (ka) ‘you are making it fly’; jalâ-ya ‘descended’, jô eflan jalâkama-y ‘I made them descend’; similarly, kherikama- ‘to pull’, golakama- ‘to heap’, etc.

Sometimes a different word is used to denote a transitive or causative idea. Examples are: bî- ‘to rise’, ocol- ‘to lift’; adik- ‘to burn (intr.)’, ofti- ‘to burn (tr.)’; apa- ‘to weep’, arthikama- or apaevamama- ‘to make to weep’; betto- ‘to die’, pada- ‘to kill’, etc.

16. Second person Imperative singular and plural verbs are mostly formed by adding -be. Thus, uri-be ‘kindle (fire)’, ghata-be ‘search’, bi-be ‘rise’, be-be, ‘give’, mer-be ‘play’, cana-be ‘dance’, etc. The transitive and causative verbs which are compounded with kama- ‘to do’, are exceptions, for they use -ki to the base to form the 2nd person Imperative. Examples are: ketto-ki ‘put out fire’ (fut. tense, kettokamaken), eger-ki ‘remove’ (fut. tense, egerkamaken), delev-ki ‘make to drink’ (fut. tense, delevikamaken), peke-ki ‘make to sit’ (fut. tense, petekamaken), etc.

The suffixes -ye and -ke have also been used in a few verbs to form the Imperative. Thus, uta-ye ‘fall’, ola-ke ‘be wet’. The 2nd pers. Imperative of iyêr- ‘to go’ is ede, and that of pâto ‘to come’ is piya. It is found that in most cases the 2nd pers. Imperative ends in an -e which may be related to the Korku Imperative suffix -e.

17. The formation of negative verbs has the same variety in Naháli as is found in many Kolarian speeches, particularly Korku. The negative word in Naháli is bête ‘there is not’ ‘it is not’, which is sometimes changed to betel, betela, hey betela, etc. Thus, etey hitiki hey betela ‘he is not here’, hoši paraynki joppo betela ‘there is no water in the river’, hi avarki mancho hey betel ‘there is no man in the house’. The negative of Imperative verbs is formed by using biji, bij bic, etc., before the base of the verb. Examples: bic cāvgo ‘do not be afraid’, biji kõ ‘do not bring’, biji pâto ‘do not come’, biji iyêr ‘do not go’; biji anci ‘do not select’, biji jalâ ‘do not descend’, biji udi ‘do not rub’, etc. The negative word usually precedes the verbal form: but in one instance it has been found following the verb: katam biji ‘do not be silent’. Transitive and causative verbs which usually form the affirmative
Imperatives by suffixing -ko (see §16) adds an extra element -ka to the root in the negative forms. Thus, biji peṭe-ka ‘do not make to sit’, biji gol-a-ka ‘do not heap’, biji jala-ka ‘do not make to descend’, etc. In the remaining verbs the real base of the verb is found to be used.

In forming the negative of past tense hot, hoc, hop, hok, etc. are used before the verb. Examples are: hot pada ‘did not kill’, hoc cāvgo ‘was (were) not afraid’, hoc kōr ‘did not take’, hop puri ‘did not send’, hoc cakha ‘did not climb up’, hot jala ‘did not descend’, hoc jalāka ‘did not make to descend’, evke cāto hop pāto ‘I did not feel hungry’ etc. It appears that consonantal sandhi does not always take place in Nahāli.

In the formation of the negative of rest of the simple tenses bikil, bek, bac, etc. are found to precede the verbal base. Thus, bikil beṭto ‘will not die’ ‘is not dying’, bikil pada ‘will not kill, etc.’, bikil cakha ‘will not sweep’, cāto bep pāto ‘hunger will not be felt’, bibil koto ‘will not beat’, bac cāvgo ‘will not be afraid’, bek kōr ‘will not take’, bikil jalāka ‘will not make to descend’, etc.

18. The use of inflected conjunctives is a peculiar feature of many Indian languages. All the Kolarian languages, as far as I have seen, can now form conjunctive participles. But while working on many of them I noticed that the informants sometimes prefer to split up the sentence with a conjunction to avoid a participial formation. It may be a native element of this speech-family which is borne out by the fact that in Korku and Nahāli the conjunctives are formed by adding -do which means ‘and’; cf. Nahāli jō tyē-do pāti ‘having eaten I have come’.

19. The search for native elements in Nahāli is generally confined to its lexical material. But the fundamental points of the structure of a speech may also be of some help to us in this matter. I have therefore given above a short summary of Nahāli grammar which, I hope, will be taken into account in determining the real affiliation of this speech. A short vocabulary of Nahāli, collected by us, will now follow.

FIELD-NOTES ON NAHĀLĪ

22. āpa- ‘to weep’ ‘to cry’, 23. āpavekama- ‘to make to cry’, 24. āpo ‘fire’, 25. ārthi- ‘to make to weep’, 26. avar ‘house’ (Sa. orāk’, Mu. orā, Korku ura ‘id.’, etc.), 27 ātho ‘husband’ (Korku dhōtha ‘id.’), 28. iyēr-, egl- ‘to come’, 29. inga ‘here’ (Korku), 30. icha- ‘to pinch’ (Mundari ica- ‘id.’, etc.; cf. Go. kicca, Oll. kisk-, Kui kisa ‘id.’, etc.), 31. itili ‘here’, 32. īṭṭel ‘they two’, 33. immi- ‘to be’, 34. ira- ‘to cut with sickle’ (Korku, Sa, Mu., etc., ir- ‘id.’), 35. ir ‘two (fem. neut.)’, irar ‘two (masc.)’ (Dravidian—see EMENEAU, Kolami, p. 198, vocable No. 302), ir-jen ‘two persons’ (Sk. jana ‘person’), 36. ilur ‘husband’s younger brother’ (Korku ilur, Mu. iril ‘id.’), 37. ugaen- ‘to remain’ ‘live’, 38. ugar- ‘to open’ (cf. Sk. udghātana ‘id.’), 39. uḍi- ‘to rub’ (Korku uṛed- ‘id.’), 40. uman ‘to measure’ (Korku), 41. urī- ‘to kindle’, 42. ura- ‘to rise’ (cf. Hi. ṛē- ‘id.’), 43. uḷa- ‘to fall’, 44. eger- ‘to remove’, 45. ēger ‘burning charcoal’, ‘fire’ (Sk. aṅgāra ‘id.’), 46. ēte, ētey ‘he’, ‘that person’, 47. eḍugō ‘fly’ (Korku rukū, Par. arū, Gad. uro, Mu. roko, Semang roai), 48. er- (iyr- ‘to go’ (Par. iai-), So. iy, yir ‘id.’), 49. ocol- ‘to lift’, 50. oti ‘that’, 51. oṭti- ‘to pull out’ (cf. Ta. ọti ‘break off’, etc.; see EMENEAU, ibid., p. 227, No. 619), 52. odo or ‘buffalo’, 53. oyja- (oyjakama-) ‘to carry on head’ (Korku), 54. oro millet’ (Korku), 55. orṭa- ‘to return’, 56. orṭak- ‘to be lost’, 57. ovāri ‘son’s wife’, ‘younger brother’s wife’ (cf. Hi. bouhāri ‘id.’), 58. ǫṭha ‘chin’ (Sk. oṣṭha ‘id.’), 59. ˈōra ‘air’, 60. ˈọla- ‘to be wet’, 61. ˈōlakama- ‘to make wet’, 62. ˈōhan ‘mortar’, 63. kakhey- ‘to comb hair’, 64. kaka ‘mother’s younger sister’s husband’, ‘father’s sister’s husband’ ‘father’s younger brother’, 65. kaki ‘father’s younger brother’s wife’, 66. kakri ‘cucumber’, ‘name of a Nahāl clan’, 67. kaggo ‘mouth’, 68. kajar ‘top of something’, 69. ˈkāṭan- ‘to be silent’ (Korku), 70. kaṭṭo- (koṭṭo-) ‘to beat’ (cf. Mu. kuṭao ‘id.’); may be a Drav. word: Ta. Ma. Ka. koṭṭu ‘id.’, 71. ˈkāṭham ‘tortoise (Korku.; East Beng. kāṭha ‘id.’), 72. ˈkāṭhla ‘armpit’ (Korku), 73. kaṇḍe ‘tuber’ (Korku; Hi. kāndā ‘id.’), 74. kapati- ‘to tremble’ (Hi. kānapā ‘id.’; the particle -ṭin-, -ṭiṇ is also used in Korku and some other Kolarian speeches to verbalise loan-words), 75. kapor ‘winnowing basket’, 76. kapli ‘butterfly’ (Korku), 77. kama- ‘to do’ (Korku; Hi. kām ‘work’), 78. karchi ‘pitcher’ (cf. Sk. kalasi ‘id.’), 79. karyom ‘elder brother’s wife’, 80. kalo ‘a Nahāl person’ (there was a tribe in ancient India called Karkaṭaka), 81. kalaṭṭel ‘wife’s elder brother’, ‘his wife’, 82. kanti ‘for the purpose of’, 83. kamo ‘work’ (Hi. kām ‘id.’), 84. kāv ‘flesh’, 85. kāvra ‘crow’ (Korku), 86. källen ‘egg’, 87. kiṭa- ‘to winnow’ (may be Dravidian), 88. kiyam ‘tomorrow’ (cf. Mu. miya ‘day after tomorrow’), 89. kuguso, kuguchyo ‘hair’, 90. kupra ‘cloth’ (Hi. kɔpra ‘id.’), 91. kuba- ‘to be intoxicated’ 92. kura ‘unripe’, 93. kui ‘water well’ (Korku; Sk. kuṇa ‘id.’), 94. küdu ‘bamboo door’, 95. keṭto-kama- ‘to extinguish fire’, 96. keḍa- ‘to be felt’ (?), 97. kepa ‘louse’, 98. kerchik- ‘to itch’ ‘scratch’ (cf. Hi. khəjulāṇā ‘to itch’), 99. kelli ‘cow calf’ (Korku),
larial fever'), 183. jaran 'crab', 184. jari 'root' (Korku; Hi. jër, 'id.'), 185. jalū- 'to descend', 186. jalu kama- 'to make to descend', 187. jaldi 'quickly' (Hi.), 188. jiki 'eye', 189. jiki kapri 'eye-brow', 190. jiki yāto 'tears', 191. jilgūjī 'earthworm' (Korku jilgōd 'id.'), 192. junu 'broom' (Korku; Mu. jono, Sa. jənən, Par. junu 'id.'), 193. jūd 'bamboo' (cf. Korku, etc. mād 'id.'), 194. jere- 'to remain', 195. jō 'I' (cf. Burushaski je, ja, Pasto zə, Newari ji 'id.'), 196. joppo, jappo 'water', 'a Nahāl clan', 197. jhuri 'swing' (Hi. etc. jhula 'id.'), 198. ṭarsya 'kind of animal called in Ma. etc. tāyas, 199. ār- 'to throw' (cf. Hi. ḍālnā), 200. āṭuṭi 'ripe' (past participle), 201. ṭevrē 'lip', 202. ṭēko (tēku) 'we two', 203. ṭiyē- (tē-) 'to eat' 'to chew' (may be Drav.; Ta. tīg 'id.'); for other etymas see EMENEAU ibid., p. 247, vocable 921), 204. ṭēya 'wife's brother or sister', 205. ṭembriya 'tiger', 206. ṭōta 'maize' 'a Nahāl clan' (cf. Hi. bhūṭa), 207. ṭhagatiōkama- 'to deceive' (Korku; Hi. ṭhōgānā 'id.'), 208. ṭhuk- 'to spit' (Hi. thūknā 'id.'), 209. ṭekri 'forehead', 210. thendey 'moon', 211. ḍaḍi 'beard' (Korku; Hi. dāṛhi 'id.'), 212. āvogō 'branch of tree' (Korku; cf. Hi. dāv 'big stick'), 213. ḍaṇḍo 'upper arm' (Korku), 214. ḍaṅ 'elder brother' (any senior man not much older than the speaker'), 215. ḍia, dia, 'day' (Korku; Sk. dīvā 'id.'), 216. ḍin, din 'day' (Hi. etc.), 217. ḍinoka 'daily', 218. ḍukri may 'father's sister', 219. ḍugi 'red-faced monkey', 220. ḍuṭ, duṭ 'milk' (Beng. etc.), 221. ḍeḍḍa 'frog' (Korku), 222. ḍelen- 'to drink', 223. ḍeleōkama- 'to make to drink', 224. ḍevta 'Sun' (Sk. devatā 'god'), 225. ḍo 'and' (Korku; Kha. Mu. orio 'id.'), 226. ḍoṛgor 'forest' (Korku, Ma. etc.), 227. ḍoṛa 'bull' (Korku), 228. ḍoṛga 'a variety of ant of sig size', 229. ḍhāpri 'bank of river', 'a Nahāl clan' (Korku), 230. ḍhulla 'dust' (Sk. dhūlī 'id.'), 231. ḍhor 'cow', 232. tāṇḍur 'rice' 'paddy' (Sk. tāṇḍula 'rice'), 233. dhava 'distant', 234. nakko 'nail of finger' (Sk. nakha 'id.'), 235. nāvāgar 'plough' (occurs in most Indian speeches), 236. nāpyom 'mother-in-law' 'husband's, elder sister' 'wife's elder brother's wife', 237. nāko 'you two' (see nē), 238. nā, nān 'what' (may be Drav.; cf. Pj. nāv 'why', nāto 'what'), 239. nānī 'who', 240. nāra 'adam's apple' (Korku nāra, 'id.'), 241. nāy 'dog' (Drav. word; Ta. nāy; for other etymas see The Parji Language by T. BURROW and S. BHATTACHARYA, p. 178. netta), 242. nālku, nālo 'four' (Drav. word; see EMENEAU ibid., p. 222, vocable 566), 243. nāvay 'why', 244. nitto- 'to enter', 245. nīḍēr 'white ant' (Korku nīdir 'id.'), 246. nīḍērtav koṭra 'inside of anthill', 247. nē 'thou' (Drav. word, see EMENEAU ibid., p. 225, vocable 601), 248. pakin 'peacock' (cf. Beng. pech jōm 'peacock's tail'), 249. pakōto 'bone', 250. paga 'tail', 251. pāṭār- 'to dry (intr.)'; pāṭarkama- 'to dry something', 252. pāḍa- 'to kill', 253. parayn 'river', 254. parka 'all', 255. palco 'son', 256. pāṭ-, pīy- 'to come', 257. paron 'bank of river' (cf. Sk. pāram 'id.'), 258. pala 'leaf' (Korku), 259. pāsi-ki 'near' (Hi. pās), 260. pāco 'five' (Hi. etc. pāć 'id.'), 261. pī- (pa-) 'to come', 262. pīrh 'daughter' (see palco), 263. puri- 'to send', 264. puch- 'to wipe away' (Hi.
etc. pōch- 'id.'), 265. pejikoe mka- 'to drive away', 266. pēte- 'to sit', 267. peṭekama- 'to make to sit', 268. petek- 'to tear' (intr.), 269. pete kama- 'to tear something', 270. penḍrē 'shin of leg', 271. pēy 'head', 272. poyye 'bird', 273. pōpo 'belly', 274. phuphu 'father's younger sister' (Hi. etc.), 275. phejer 'morning' (Hi. etc.), 276. phor 'fruit' 'mango' (Sk. phala 'id.'), 277. bakān- 'to leave' 'release', 278. backari 'child' (Hi. etc. bācca 'id.'), 279. baṭam- (see jappo baṭam-), 280. baṭuko 'mango', 281. baḍhā 'sky' (Hi. etc. bāḍēl 'id.'), 282. bāba 'father's elder brother' 'father's sister's husband' (Beng. bāba 'father'), 283. bāi 'elder sister', 284. bāchye 'younger', 285. bāy 'today', 286. bā, eba 'father', 287. baṭe, baṭe 'now', 288. baḍo 'sickle', 289. bāro- 'to sing' (Drav. word; Ta. pāṭu 'id.'; see EMENEAU ibid., p. 230, vocable 652), 290. bi 'also' (Korku; Hi. bhi 'id.'), 291. biṭil 'sand' (Korku; Mu. gitil 'id.'), 292. biḍi 'one (f.n.)' (Mu. midā, Par. boi, Sa. mid., San. mit, Korku mia 'one'), 293. biḍum 'one (m.)', 294. biya 'village', 295. birtom 'husband's elder brother' 'wife's elder sister' 'father-in-law', 296. bī- 'to rise' 'sun to rise' 'to come out', 297. bīkama- 'to turn out', 298. būḍu- 'sun, moon to set' (cf. Hi. būrṇa 'id.'), 299. buml 'navel' (Korku; Mu. buti. San. buka 'id.'), 300. bekkī- 'to reap', 301. bēṭe 'not', 302. bēṭo- 'to die', 303. beri- 'to cut wood', 304. bērko 'cat', 305. boko, bokko 'arm', 306. bokki- 'to tie something', 307. bokko minjar 'palm of hand', 308. bōtoṭ 'hare', 309. bōmākki 'brother' (dl.), 310. bōy 'grass', 'a Nahāl clan', 'fodder', 311. bologo 'bear' (Sk. bhalluka 'id.'), 312. bhaga 'big' 'older', 313. bhaga- 'to grow', 314. bhaga day 'elder brother', 315. bhaga may 'father's elder brother's wife' 'mother's elder sister', 316. bhavri 'back of the body', 317. bhānja 'sister's son' (Hi.), 318. bhilla 'kite' (Korku), 319. bheriya- 'to fill' (intr.) (Hi. etc. bhar- 'id.'), 320. bheriyākama- 'to fill (tr.)', 321. ma 'to give', 322. makan 'but' 'even then' (Korku; San. mankhan 'id.'), 323. māvgar 'crocodile' (Korku; Hi. māgār 'id.'), 324. maikko 'bee', 325. mancho 'man' pl. manṭa (cf. Sk. manṣya, etc. 'id.'), 326. mandi- 'to speak' (Korku), 327. mavsi 'mother's younger sister' (Hi.), 328. māto 'thigh', 329. māndu, māndo 'rain', 330. māney 'we (pl.)', 331. māma 'mother's brother' 'father's younger sister's husband', 332. māmi 'mother's brother's wife', 333. māy 'mother' (Hi. māyi 'id.'), 334. māv 'horse', 335. māvgy 'where', 336. mījar inside' (see kajār), 337. mīndi 'evening' 'night', 338. mīyan 'how much', 339. murkijī 'mosquito', 340. meur 'anthill', 341. menge 'tooth' 'jaw', 342. mer- 'to play', 343. mera 'near' (Korku), 344. merokama- 'to make to play', 345. mokhne 'elbow' (knee?), 346. mochor 'pestle' (Sk. muśala 'id.'), 347. monḍa 'heel', 348. mōṭh, mōṭho 'three' (Drav. word; see EMENEAU ibid., p. 219, vocable 551), 349. yeṭa 'honey', 350. rabanka 'cold' (Korku), 351. rabankama- 'to cool something' 352. rupya 'rupee' (Hi. etc.), 353. laśka 'a god worshipped by the Nāhāl in the month of Phāṭguna (Feb.-March). The Korku worship Rāvana who, according Hindu mythology, is the King of Laśka. In Korku speech laśka means 'distant place'; e.g. khaḍ laśka 'very
20. We have made an attempt to show the Kolarian, Indo-Aryan and Dravidian elements in Nahali vocabulary. Most of the Kolarian words found in this speech agree closely with Korku which unmistakably points out to the intimate connection between these two tongues. The next Kolarian language with which Nahali has closer lexical parallels is Mundari, and not Santali. It is also interesting to note that the Kolarian words in Nahali, on the whole, agree more with the western and northern Kolarian speeches, i.e. Korku and the speeches of the Kherwari group. The Nahali words identified by us as Dravidian are not many. Most of them in phonetic details agree more with their cognates in the central Indian Drav. speeches. For example, Nahali copo 'salt' agrees more with Pj. cup, Oll. Kol. Naik. Poya sup, Go. sovar 'id.', but in the south Ta. Ma. Ka. Tu. Te. Sav. have uppu, Ko. To. up, Koq. uppi 'id.'. The Indo-Aryan words found in Nahali have greater agreements with their cognates in Hindi, Hindusthani and Marathi.

21. Our comparative study of Nahali words is far from complete. But the main issue, I hope, has been made sufficiently clear that a large number of words of this speech cannot be called Kolarian, Indo-Aryan or Dravidian. The number of such words as shown in our list may be reduced as a result of further deliberations. But the present problem is that a large number of basic words in Nahali denoting limbs of the body, important animals and articles of material culture, etc. are significantly aloof. Some scholars are therefore inclined to believe that Nahali originally belonged to a different speech-family which is now extinct, and that these words are remnants of that ancient tongue. It has been posited further that the native elements in Nahali represent the lost speech of the Bhil 'race'.

22. The problem of race and language in India has not yet been solved. The number of speech-families found in the mainland of this country is four. But the speakers of these languages are classified into different races the number of which is likely to exceed the above number. It is therefore quite plausible that a few more speech-families existed in Indian main-
land in the past. The high percentage of the unidentified elements in Nahāli leaves little doubt that the base of this speech belonged to a family which is now lost.

Abbreviations of names of Languages

Kolarian: KK. (Korku), San. (Santali), Mu. (Mundari), Jua. (Juang), Khar. (Kharia), Sa. (Savara, Saora), Gad. (Gadba), Par. (Parengi), Ḍiḍ. (Ḍiḍey), Bon. (Bonḍa), Nah. (Nahāli), etc. Items from Semang, Sakai, Orang, etc. of Malaya Peninsula have also been quoted.

Dravidian: Ta. (Tamil), Te. (Telugu), Ma. (Malayalam), Ka. (Kannada), Tu. (Tulu), To. (Toda), Ko. (Kota), Bad. (Badaga), Koḍ. (Koḍagū), Go. (Gondi), Kol. (Kolami), Naik. (Naiki), Pj. (Parji), Oll. (Ollari), Kon. (Konḍa), Kui (Kui), Kur. (Kuṟukh), Brah. (Brahui), Drav. (Dravidian), etc.

Indo-Aryan: Sk. (Sanskrit), Pkt. (Prakrit), Hi (Hindi, Hindusthani, Urdu), Ma. (Marathi), Beng. (Bengali), etc.
A WÄRLI TALE

By

Gajanan M. Patil, Visnagar.

The following is the text of a native folk-story recorded from the Wärli informant, Shri Sonyaji Gopal Shingde, a trained primary Headmaster from Chinchani (Dist. Thana), on 10th June, 1956, when he attended the Summer School of Linguistics at Poona as an informant.

The Wärlis belong to the tribal races of Thana District. They live mostly in the interior places away from the cities and towns, and carry on their simple life by agriculture, forest cutting and manual labour in towns. Even in towns they keep themselves aloof from other people and carefully protect their customs and culture.

The story exemplifies the native colloquialisms, and wonderful similarity in linguistic characteristics with standard Marathi of which their speech is a dialect. The dialect has the usual grammatical forms viz., Noun, Pronoun, Adjective, Adverb and Verb. The Nouns have inflections for cases and number and the verbs have inflections for tenses, moods, genders and number. The following morphemes of the case inflections should be noted:

[A] (i) Nom. Sing bhakər (f.)
    wagh (m.)
    *kombə (n.)
    *jambhəy (f.)

(ii) Obl. Sing. — ek > ek ~ eke; *dusra > dusre; *tōplā > tōplya-
    *mən > məna-; */ghər/ > /ghəra-/; /pən/ > /pənya/-
    /to/ (pronoun) > /tya/- ~ /te/-; /m/ (pronoun) > /mā/
    */mən/ > /mən/-; */khin/ > /khindəi/-; /dis/ > /disa/-
    /wət/ > /wəte/-;

(iii) √ Nom. pl. = /̩-ə. ~ /̩-i ~ /̩-a ~ /̩ #
    cf. /dələ/; /kombəi/; /bhakri/; /jambhəya/; /wagh/.

(iv) √ Oblique pl. = √-an- cf. */d,hor/ > /d,horan/-

(v) √ Instrumental = /̩-na ~ /̩-n
    /̩-n after -o and -a endings.
    cf. /wad,hghon/; /tyan/
\( \sqrt{-} \)-na after \(-i\) and consonantal endings.

\( \sqrt{-} \) ablative = \( \sqrt{-} f i \)

\( \sqrt{-} \) locative = \( \sqrt{-} t \sim \sqrt{-} i \sim \sqrt{-} \sim \sqrt{-} \#.

\( \sqrt{-} \) (prep.)\( -c \) = \( \sqrt{-} -uc \)

vowel endings take \( \sqrt{-} -c \) = cf. /S\( \exists \)kalic/, /b\( \exists \)rec/,

consonantal endings take \( \sqrt{-} -uc \) = cf. /ekuc/, /pharuc/

/ye...enuc/.

[B] The conjugational tenses, etc.:—We come across the usual three tenses, the present, the past and the future. The plu-perfect and the potential forms of \( \sqrt{-} \)hona, “to be” are noteworthy.

The present tense:—1st person:—/ah\( \exists \)/, /j\( \acute{\text{a}} \)y/.

2nd per.:—/jat\( \acute{\text{a}} \)y/

3rd per.:—/ahe/, /k\( \exists \)r\( \exists \)/, /sang\( \exists \)/.

The past tense:—3rd per.:—/ala/, /ali/, /bandhli/, /b\( \exists \)sla/, /dil\( \exists \)/,

/dil\( \exists \)/, /gela/, /geli/, /sod\( \exists \)l\( \exists \)/, /wis\( \exists \)rli/, /pil\( \exists \)/, /bhuj\( \exists \)ya/, etc., etc.

The verb has the gender and the number of the subject.

The future tense:—/gh\( \exists \)n\( \exists \)/, /yen/, /k\( \text{ha} \)n/, /ho\( \text{y} \)l/, /p\( \text{ed} \)\( \text{a} \)/.

The 1st per. sing. forms in st. Mar. would be /ghe\( \exists \)n\( \exists \)/, /ye\( \text{n} \)/, /khain/ instead the forms given here. These forms are homophonemic with the gerunds of the same roots. Cf. /por ali pani ghe\( \exists \)n/.

The pluperfect:—These forms are found in /didh\( \exists \)/, /nidh\( \exists \)/, /an\( \text{el} \)/,

/\( \text{th} \)\( \text{e} \)\( \text{w} \)\( \text{el} \)/, /nang\( \text{el} \)/, etc. Wonderful similarity of these forms is noticed with the similar Gujarati forms. Cf. /apel/ “given”, /didhel/ “given”, etc. These forms may be used as participles in the sentence.

The potential forms are noticed in the auxiliary roots of the composite verbs. The auxiliary root \( \sqrt{-} \)hona, “to be” has an allomorphic base \( \sqrt{-} \)s\( \exists \)na in St. Mar. The \( \text{W} \)\( \text{a} \)\( \text{r} \)\( \text{l} \)\( \text{i} \) dialect does not use the latter one and instead of the St. Marathi forms */wis\( \exists \)rli \( \text{\&} \)\( \text{aw} \)/, */zala \( \text{\&} \)\( \text{aw} \)/, */kapla \( \text{\&} \)\( \text{aw} \)/ and */zali \( \text{\&} \)\( \text{aw} \)/, it uses /wis\( \exists \)rli howi/, /zala howi/, /kapla howa/ and /zali howi/.
The imperative forms, apart from the St. Mar. type, are formulated by an additional bound morpheme /-jos/ after the usual imp. forms of 2nd person. Cf. /sanga/; /raha/; /jayjos/; /sanjos/.

The Gerunds are usually formed by addition of bound inflexional morpheme /-un to the bases of all roots excepting those monosyllabic roots with vowel endings. Cf. /sangana > /sangun/; /rəhna > /rəhun/; /watna > /watun/; /bəsna > /bəsun/; /dəhərun/, /dəhəkun/, etc., and /ghen > /ghen/; /yena > /yen/ [(yenuc)]; /jana > /jan/ where the /n only to the oblique base.

The infinitive of purpose are formed by addition of /ya > /aya to the bases either ending in vowels or consonants. The meaning is similar to the dative case of the nouns. Cf. /sangaya lagla/ and */kamala lagla/ or /panyala geli/ and */sangaya gela/. The bound morpheme /sat hi is sometimes added. Cf. /khayasat hi/; /jayasat hi/.

The peculiar causal formation is found in the sentence (15). /porina bes basla jəwəwlə/.

The indeclinables including prepositions are found as /na/; /hů/; /wər/; /c/; /kva/; /ata/; /mənga/; /ikə/; /əth/; /əgdi/; /əsə/; /od hyat/; /sət hi/, etc.

The adjectives /mət ha/ ~ /mət e/, /bes/; the numerals /e k/, /dən/ are available in the story as also the pronouns /mi/; /tumhi/; /to/ [obl. sing. /te/; /tya/]; /ti/; /eyo/ are found.

[C] THE TEXT

(1) Ek wad,hgho hota. (2) tya-ci eku-c pori. (3) ti-ho phar dur
One old Wärli was. His one-only daughter. She also very far
pərnun didhel. (4) tya-ce ghera-pəf i ek disa-ci bhůi od,he dur
having married given. he-of house-near-from one day- land so much far
didhel. (5) ek dis wad,hghoce mən-at alə jəwə pori-ce gherə
given. One day old Wärli-of mind-in came let me go daughter-‘s house
pahna. (6) kəbər hů ghen na don dis pahna hů rəhun
guest. News also I will take and two days guest also having stayed
yen. (7) dusre dis wad,hgho mot e pəhət-ratiwər ut hələ. (8) don
I will come. Second day old Wärli very dawn-night-at got up. Two
naglyə bhakri bhujlya. (9) pora-la kha-ya-sət hi na ma-la-w nahari
Ragi-of bread baked. Child-to eating-for and me-to-also breakfast
hoyl. (10) bajar-cə də,alə anel te ghetlə. (11) be's gatjə will be. market-of grams were brought they were taken. fine knot bandh-li na pori-kəd,ə jaya-sat,hı nighala. (12) jatə-jatə dupar zali, was-tied and daughter-to going-for started. Going-going mid-day happened, nimber phar zala. (13) təy to nəi-ce kat,hı wiswaya bəsla. heat of the sun very happened. There he river-of on the banks for rest sat. (14) caukhənə, khan bhakər khali, pani pilə; na məngə quarter (about morsel) bread (was) eaten, water (was) drunk, and then səla zala təsə watə-la lagla. (15) San-ce də,horan-ce məgarə sic cool was then way-on started. evening-at cattle-of behind-only pori-kəd,ə jan pohəcla. (16) pori-na bes bas-la jəwəwla, daughter-to having gone reached. Daughter-by fine father to was fed. (17) tyanhə bhakər anel ti pori-ce porə-la
By him also bread was brought that daughter-of children-to watən dili. (18) də,alə watən diliə; having distributed (was) given. Grams having distributed (were) given.
(19) Səkəlic nihari keli. (20) Jə, wəy wad,hghola sangaya Morning-in breakfast (was) made. Son-in-law old-Wərli-to telling lagla. (21) Karə- mama, aj tumhi jatəy; jat howə te jayjos started. What-oh mama, today you are going (if) going are then; go.
(22) mi tə kam ahe tıkə,ə jaycə ahə. (23) əsə sangun to te gərərat fi I (for one) work is there going am. Thus having told he (really) house-in-from gela. (24) pori ut,hli ti panyala geli. (25) Wad,hgho mənət kərə,went. Daughter got up she water-for went. Old-Wərli mind-in does.
(26) porina biji kombd,i sod,hı na yə təplya-khel,cə kyə sod,lə nahi. daughter-by other fowls (were) left and this basket-beneath-of why left not.
(27) Wisərli howi. (28) Wad,hgho təplə ukawun nangə: təy (She) forgotten might have. Old Wərli basket having lifted sees (and what) təkhəl bəla mot,hə mor dərun anel. (29) Wad,hgho that-beneath very big peacock having caught was brought. Old Wərli cərəkəla. (30) təy əc Jə, wəy mala jaya sangə ho. (31) mor (was) surprised. (This is why) son-in-law me-to for-going tells. peacock khaya watə, pəd,əl to. (32) bə,rə. (33) Od,hyat pori ali pani for eating share will fall. Alright. Just then daughter came water ghen. (34) Wad,hgho porila sangə. (35) Bay, mi tə ata having taken. Old Wərli daughter-to tells. Daughter I (really) now
ghərə jāy. (36) Jəwāyala sanjos gelə əsə. (37) Wad, hghon home-to am going. Son-in-law-to tell I went thus (that (ind.)). Old Wərli-by həluhəlu jaya cal man̲li. (38) pori-ce ghərə-pai-si bəre-c slowly for going walk placed. Daughter-of house-near-from much-too dur gelə na mani-t-le eke zad, a-khəl be's sahi nəng-un bəsla. far went and pasture-land-in-of one tree-beneath fine shade having seen sat. (39) pəkki ni-j kad, hli. (40) nəngər sut, nəca wəkhət zala Too-much sleep (was) taken. Plough unyoking-of time been howa na ut, hla'. (41) Wicər kərə. (42) ata jəwəyə na might have and got up. (He) thought does. Now son-in-law-by mor kapla howa, bhəjīv zali howi. (43) Moraci bhəjī peacock cut might have, curry-to been might have. Peacock-of curry khan əyəc jāy. (44) ikd,ə jəwəsna moraci bhəjī kərayci I shall eat then only I go. Here son-in-law-by peacock-of curry making-of əyəri keli. (45) Od, hyat Wad, hgho pərət yenuc rəhəla. (46) pori preparation made. Just then old Wərli again having come remained. Daughter sangaya lagli, "ba kya alas." (47) əgə kay telling-for started, "father why have (you) come. Oh (daughter) what sangū. (48) aj malə khajət hota. (49) te khind, it bhəle motə ha shall I tell. Today to-me about to eat was. (In) that pass very big wagh mohorə alə. (50) to jat nay, kay nay. (51) jambbəya det tiger in front came. He going not, (anything) not. Yawnings giving bəsun rəhəla. (52) manzəwər pel kəraya lagla. (53) ərə jəwəy, having sat remained Me-on mark doing started. Oh son-in-law, pharəc motə ha na to. (54) na əgdi rəngə. (55) eyo əumhi mor much-too big (really) he. And (very) near. This (by) you peacock d, hakun t, thewel od, he wag, na mi ət, hə. (56) məngə sanga himmət hol having covered kept thus far, and I here. Then tell courage will kay pud, hə jaya. (57) na himmət cale'. (58) əsə tə mi (what) ahead to-go. Not courage (walks). (As a matter of fact) I pha' r nəngel wagh, pən əsa nahi nangla. (59) təy mi pərət alə na". many have seen tigers but such one not seen. Thus I back came (really)". (60) "Alas tə athə rəhə." "You have come then now stay".
Lexical notes:


2. ti-ho — she (really). Words like /ho/ (30), /tə/ (22), /to/ (31), /na/ (53), (59), /əsə tə/ (58), are the colloquialisms of the dialect.

3. pərnum dena = to give in marriage.

4. ek disaci bhūi od,h[he] dur — at a distance which would require one day’s journey.


od,h[he] — so much (cf. mar. evd[h]ē).

5. mənat yena — “to come in mind”, “to strike”, “to think”.

6. khəbər — “news”;

hū — “also”, “too”.

7. mote pəhət ratiər — “too early in the morning”.

8. nagli — the grain called as “Ragi”.


10. jatəjatə — “as he was going” (repetitive form to show continuity).

dupar zali — “it was midday” (noon).

11. nimər phar zala — “it was too hot”.

12. təy — “there” cf. təy = “therefore, thus”. (59)


14. caukən, khan — “about a quarter” (just to make the morse).

This is purely colloquialism.

jila zala təsə — “then (when) it was cool” (in the evening).

Watələ lagna — “to start on the journey” (path).

15. Sance dəhorance məgχar jic = “in the evening just behind the cattle only”.

16. Watələn dena — “to distribute”.

17. Jaycə ahe — “I am going”. Jacə is a peculiar form of the present participle. Cf. *Jayci ahe — “she is going”.

18. mənat kərna — “to think”. Cf. (5) above. The constructions differ though the meaning conveyed is the same.

19. təplə (n.) — “basket”;

nangna — “to see”.

əv — “then”. Cf. [mar.] tə in the phrase jə...tə.

20. təy səc — “This is why”. “It is for this reason.” Cf. [mar.] təric.

21. Watə pədəl to — there will be an additional share. I know.

22. The nasality and the vowel length have phonemic value in the dialect. Cf. /əsa/ “like this”. /əsə/ “thus”. */bərə/ (n.) “good”; /bərə/ “alright”!
(37) Cal man, na = "to start, to be on foot".
(38) man (f.) — "pastureland outside the village."
(39) pəikki ni'j kad, hli — "(he) had a good sleep".
(40) naŋger sut, ni, ica wəkhət—"the time of the unyoking the plough", (in the evening).
(45) pərət yenuc rəhla — "did come back".
(50) to jat nay kay nay — "nor was he going nor doing anything."
(51) "He sat yawning".
(52) pel kərna—"to keep watch on", "to mark on", "to concentrate upon".
(56) himmət hona — "to have courage".
(57) na—"not" (negative particle). √ na has three different meanings in this tale. (1) na = "and"; (2) na = assertive particle without any special meaning cf. (53); and (3) na = "not" negative as in present case.

himmət calna — "to take up courage".

(9) & (19) /nahari/ & /nihari/ = "breakfast"
(60) /ata/ (35) & /athā/ = The distinction is due to male & female speech.

[E] Phonological notes:

/o/- < /ev/- (mar.) cf. od, hyat < evd, hyat; od, he < evd, he.
/n/ is partially substituted in place of /n/ in St. Marathi, apart from its origin from other sources. Cf. */pan,i/ (St. mar.) > /pani/;
/*pərnun/ (st. mar.) > /pərnun/;
/c/, /j/ & /z/ are mostly dental affricates except where they are followed by front vowels or /y/ or when they occur in Tatsama words from Skt. where they are palatals. Cf. /ekuc/; /aj/;
/caukhən/; /jat/; /jaco/; /sanjos/; /tyaci/; /naglicya/;
sance/ but /wicər/ (Sk.) = thought.

The active and passive voices are generally followed according to St. Marathi grammar; the construction in (16) is peculiar.
D.G.A. 80.
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Fig. 39
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Fig. 40
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