

THE PRONUNCIATION OF SANSKRIT -- BY PROF. SUNITI
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The following special letters in this article require a note : ɔ (an inverted e) stands for the sound of Southern English *aw, au*, as in *law, caught*; v (an inverted ʌ) indicates the Marathi value of अ — an *o* pronounced with open lips; ʌ (an inverted v) denotes the sound of *u* in English *but*; m (an inverted m) stands for an unrounded *u*, which is heard in Tamil; ə (= e inverted) indicates the 'neutral vowel' sound, like that of the English *u* in *China, ago*; ɨ (= y inverted) stands for the voiced *h* — the Sanskrit ह, which is to be distinguished from the usual English *h* (which is unvoiced, like the Sanskrit *visarga*); and ʌ stands for the sound of *a* in South English *man, cat* (= *man, khat*). The letters with the apostrophe following, *g', f', d', d', b'*, are implosives, which are stops with glottal stop accompaniment, and these sounds are regularly substituted for the aspirates *gh, fh, dh, db, bb*, in many modern Indo-Aryan languages.

The pronunciation of Sanskrit is a subject of considerable interest and importance not only for the study of the Sanskrit language itself but also for that of the history of Indo-Aryan; and the problems which it presents have a bearing on General Phonetics as well. At the present moment, the study of Sanskrit in India may be said to be following two lines--(1) the Traditional, and (2) what in comparison with the traditional method may be described as the Modern. The former is in vogue in the old style Sanskrit schools, in which *Pandits* and *Śāstrīs* of the old type, without any modern or English education, and with their old outlook upon life unaltered, teach boys and young men the Sanskrit language as a sacerdotal and theological discipline. Their method is intensive, and within its narrow limits, it is quite thorough; and where there has not been any modification, through the present-day standardising tendency, the traditional method can be relied upon as being the repository of the old system of training and culture in Sanskrit. The tradition, however, is not identical everywhere in India. In the various linguistic areas there have occurred divergences, which may be described as dialects or variations (under local conditions of environment and history) of a common arche-type. The traditional

method takes into note only the local line of development, without any reference to the tradition current elsewhere. And we have in the different provincial traditions (provincial in the sense of relating to the various linguistic areas) their own systems of pronunciation of Sanskrit, like their own proper alphabets which are all modifications of the old Brahmī arche-type. It must be said that on the whole there is not a very great difference among the provincial traditions in Sanskrit pronunciation throughout the greater part of India, except in matter of some special sounds or letters, and in some of the outlying tracts like Bengal and Assam. These provincial, traditional schools are continuing still to be in existence, but a standardizing movement is more or less in evidence nearly everywhere. This standardizing movement is coming through the 'modern' method of Sanskrit studies which is followed in the English schools. With the foundation of the Universities, Sanskrit was introduced into the curriculum as a classical language, in Calcutta, in Madras, in Bombay, and later on in Allahabad, in Lahore and elsewhere. Formerly Sanskrit would be seriously studied mainly by those Brahmans who wanted to make Sanskrit learning their profession, and Hindu theology and medicine and ritualism and priestcraft their vocation in life. With the foundation of the Universities, boys of the other castes could take up Sanskrit as one of their subjects. The traditional pronunciation and the local script were used as a matter of course, at least in the junior classes, but the Universities agreed in adopting Devanāgarī for Sanskrit to the exclusion of the local scripts, at least in printing their text-books and their question-papers. This was also done by the learned societies, both within India and outside India. The adoption of Devanagari as the All-India script for Sanskrit, as the script *par excellence*, or the script for the language, was gradually brought about during the last century ; and this is quite a noteworthy thing among present-day Indian intellectual movements, which is helping to remove the babel of alphabets in our country. A hundred or eighty years ago the provincial alphabets, Śāradā, Newārī, Maithilī, Bengali, Oṛiyā, Telugu-Kannaḍa, Grantha and Mālayālam had greater prestige in their native tracts than Devanāgarī ; and the most erudite *Paṇḍits* in Bengal and Mithilā, the Tamil country or Malabar might not feel at home in either reading or writing Devanagari.

As the script of Benares, Mathura and Poona, and of the great *blot* of Hindu states in Rajputana, Devanāgarī has always had a certain amount of importance, especially in Northern India, but not enough to relegate the local scripts to the background. The first Sanskrit book ever printed was in Bengali characters—the ‘*Ṛtu-saṁhāra*’ which appeared from Calcutta in the nineties of the 18th century. But it was the European Sanskritists of Calcutta who, with the support of their Bengali fellow-workers, quickly decided for the script of Benares in printing Sanskrit. The first grammars of Sanskrit by Forster and Colebrooke were in Devanāgarī characters (1800 and 1805). The Asiatic Society of Bengal brought out in Devanāgarī the *editio princeps* of the Mahābhārata in the thirties of the last century. The Brāhmo Samāj of Calcutta helped the movement in favour of Devanāgarī by printing one or two Upaniṣad texts in that character. Īśvaracandra Vidyāsāgara, Premacandra Tarkavāgīśa, Madanamohana Tarkālaṅkāra and other scholars in Calcutta similarly brought out their editions of Sanskrit texts in Devanāgarī. And a great impetus for the acceptance of Devanāgarī was given by F. Max Müller when he began to publish from England his Ṛgveda with Sāyaṇa’s commentary from the fifties of the last century, using that script. All these things have brought about the present position of Devanāgarī in India, so much so that Bengali, Tamil, Telugu and Mālayāli boys have to know Devanāgarī in addition to their own alphabets when they study Sanskrit. In Bengal the movement began over seventy years ago when Īśvaracandra Vidyāsāgara, himself a great educationist, brought out his primer of Sanskrit grammar in Bengali (*Upakramaṅikā*) in which he gave the Devanāgarī letters at the end ; and about this time he published his Sanskrit primers for Bengali boys (*Rju-pāṭha*) in the Devanāgarī character. Certain alphabets have died out or are dying out through the establishment of Devanāgarī for Sanskrit : viz. , Śāradā, Newārī, and Maithilī, and Grantha. Nowadays, orthodox scholarship, charmed by the occurrence of the word *deva* in the name (and following orthodox scholarship the bulk of educated and semi-educated opinion in the country) have tacitly accepted the theory that Devanāgarī is the original alphabet of Hindu India, and that the other Indian scripts are descended from it. The late Sir Gooroodass Bannerjee, a judge of the Calcutta High Court and a distinguished

alumnus of the University of Calcutta, wrote a book to show how the Bengali letters were derived out of Devanāgarī : a bit of curiously misapplied scholarship and ingenuity, considering the error in the initial premise. Now, the setting up of Devanāgarī has gone hand in hand with the gradual development of a pronunciation of Sanskrit which seeks to rise above the provincial traditions : in fact, of a *Modern Indian Standard for Sanskrit Pronunciation*, which is more or less sought to be followed everywhere in India. What the nature of this pronunciation is like will be indicated below.

We can thus say that two styles of Sanskrit pronunciation obtain in India now — the old-fashioned, local, dialectal or traditional, differing in the different language and dialect areas ; and the standardized new pronunciation. Of the former class, there are the various provincial types, extreme cases being presented by those of Bengal (West Bengal, and the various East Bengal types). The new standardized pronunciation may be described as being on the basis of that current in Northern India (Ganges Valley, excluding Bengal), with some Mahārāṣṭra and Āndhra-Karṇāṭaka modifications. It may be said to have originated in Benares during the last two centuries. Benares as the most important Hindu cultural centre in Northern India attracted scholars from all over India, including also Mahārāṣṭra and the South. The old local pronunciation of Sanskrit (the traditional North-Indian one) was modified by the Mahārāṣṭra and Āndhra-Karṇāṭaka traditions, since these latter were in many respects better and more scholarly than the former : and the pre-eminence in learning of the Mahārāṣṭra Brahmans settling or sojourning in Benares received an additional lustre from the prestige of the Mahrattas as the champions of Hindu religion and culture and as the most puissant political group in 18th century India.

Our first *datum* for the study of Sanskrit pronunciation therefore consists of these present-day pronunciations — the various traditional ones—and the standard one. Herein we have a mass of phonetic material which has not been properly investigated or put to use, and which, being the result of unsophisticated development, is fraught with immense suggestive and corroborative value. These traditional pronunciations cannot on the face of them be taken to represent the ancient pronunciation of Sanskrit, or, to be more accurate, of Old Indo-Aryan of the centuries immediately preceding

the Buddha, when the Middle Indo--Aryan or Prakrit stage had not as yet evolved (at least in North-Western India — the land of Pāṇini). There are certain traditional systems which are 'corrupt' from the Sanskrit point of view, e. g. the pronunciations now current in Bengal, which are nearly as bad as the traditional English pronunciation of Latin, now being discarded. When a West Bengal boy in Calcutta or in Nadiya reads the opening verses of the Gītā in the following way —

dhritvāśtrā ubāc :

*dharmākkhettre kurukhettre śambeta jujutsabhā ।
māmokāḥ pāṇḍubāścoibo kimokurbata śanjayo ॥*

śanjayo ubāc :

*driṣṭā tu pāṇḍubānikān bhūbhān durjodhānastada ।
acārjām upaśāngaimmo rāja bhāṅgān abhrobit ॥*

or when an East Bengal boy, say at Dacca or Sylhet reads them in the following way —

d'ritvāśtrā ubāc :

*d'armākkhettre kurukhettre śambeta d'ud'utśabhā ।
māmokāḥ pāṇḍubārcōibo kimokurbata śand'jayo ॥*

śand'jayo ubāc :

*driṣṭā tu pāṇḍubānikān b'arān duir'd'od'ānastada ।
ātsāir'd'jam upaśāngaimmo rad'ā bhāṅgān abhrobit ॥*

neither does he nor does his teacher trouble himself in the least that a sad havoc is being worked with the pronunciation of the speech of the Gods. The standard pronunciation has slowly been making its presence felt, however, and the old tradition is going to the wall : thus, old-fashioned pronunciations like *biṣṭū*, *kreṣṭy*, *jibbha*, *ghrātā*, *prithak* (which may pass unnoticed, or may even be the rule, in the Sanskrit *śāls* or *catuṣpāṭhīs*) would now be openly ridiculed in the English schools, where boys are taught to say *biṣnu*, *kriṣṇā*, *jiuhā*, *ghritā*, *prithak*. Yet the old-fashioned pronunciation represents a regular line of development, in which many a germ of the past may be detected on close observation. The other traditional schools are much better when compared with the above : nevertheless, they too

are far removed from the Sanskrit norm, or ideal, in this matter, being, equally like the Bengali pronunciations, intimately connected with the habits of articulation characteristic of the mother-tongue—Panjābī or Marāṭhī, Tamil or Mālayālam.

To note some points in the traditional pronunciations which deserve consideration. The Mahārāṣṭra style of pronunciation is reputed to be one of the best and most correct in India, and this style has largely influenced the rest of India either directly (as in the Tamil country) or indirectly (through the new standard pronunciation). In it, अ has a unique value unknown in other parts of India; in Mahārāṣṭra, अ becomes an unrounded ओ, i. e. an *o* sound produced with the lips spread out instead of being rounded as normally (Phonetic Symbol for this unrounded *o* = [v]). This was certainly not its value in ancient times, judging from the evidence of the *Pratīśākhya*s. We are on equally insecure ground for the ancient pronunciation of अ when we take into consideration the typical North Indian (which is almost the Pan-Indian, barring Bengal, Assam, Orissa and Mahārāṣṭra) value of the letter, as the sound of the *u* in Southern English *but, cut* (Phonetic Symbol [A]), which is a low back vowel, slightly raised towards the [ɔ], and at the same time considerably advanced towards the central position, to give a technical description. The Bengali-Oriyā [ɔ], like the sound heard in Southern English *law, caught*, is even more problematical for the ancient sound of this संस्कृत अ. What was the exact position of the tongue and of the lips in pronouncing the संस्कृत अ of Pāṇini? The modern pronunciations are conflicting, while the local traditions show unconscious development, and consequently these are to be checked and supplemented by other sources of information. A similar difficulty is with the ऋ vowel. In the modern traditions, it becomes, usually, *ri* in Northern India and *ru* in Southern India (Orissa and Mahārāṣṭra fall under this); and the pronunciations *ru* (*u* being an unrounded *u*, i. e. an *u* made with spread-out instead of rounded lips), as well as *re, er, ro, or, rɔ, ɹ, and ir*, are also heard; and it is said that even *rü* (with *ü* as in German) also occurs. According to some of the *Pratīśākhya*s, it was *ara*. The exact point of articulation and character of the vocalic *r* of Old Indo-Aryan is an important matter in explaining a

good many points of Sanskrit and later Indo-Aryan phonology. Other things which may be mentioned are the pronunciation of diphthongs (*sandhyakṣaras*) *e ai o ou*, of the palatals *c ch j jh*, of the dentals *t th d dh*, of the semi-vowel *v*, of the sibilants *ś ṣ*, and of the *anusvāra* and the *visarga*. The *anusvāra*, for instance, has at present the value of *n* (in Northern India), of *ṅ* (in Bengal) and of *m* (in South India) — हंस being pronounced in Hindustan as *ḥans*, in Bengal as *ḥṅṅṅ* and in the South as *ḥamsə*. The pronunciation *ṁ* — a nasalised *w* — is I believe found in Mahārāṣṭra : *ḥvṁṁṁ*: analogous to this must have been the old sound of the *anusvāra* in Eastern India, which gave the Oriya *ṁ* as in बाँझ *bāṅṁṁ* as the *tadbhava* or Prakritic development of वंझ *vaṁṁṁ*.

The present-day local pronunciations of Sanskrit have not been properly studied. A stray monograph, like the excellent and exhaustive study of the phonology of the *naturalised* Sanskrit loan-words in the Dravidian speeches, especially Tamil, by Anavaratavina-yakam Pillai (in the *Madras University Dravidian Studies*), gives a mass of material for the usage current in the Drāviḍa lands in early times. But the matter has not been taken up for its own sake. The study of the local pronunciations of Sanskrit of course will go hand in hand with a rigorous phonetic survey of the Modern Indian language and dialects, -Aryan, Dravidian, Austric, and Tibeto-Chinese. This is one of the fundamental things in Indian Linguistics, and it is this fundamental thing that is now lacking. Investigation into this fundamental aspect of speech must at once be taken in hand. So far, a small beginning has been made, — in Bengal, in the Panjab, and in South India. It would be quite an important side-line in our research work in vernacular phonetics — this enquiry into what may be called the connected dialectal pronunciation of the classical languages — Sanskrit, Persian, Arabic, Avestan and Pahlavi, and Hebrew and Syriac. The traditional Indian pronunciation of Persian, for instance, whether at Lahore or Delhi, at Haidarabad-Sindh or Haidarabad-Deccan, at Lucknow or Jaunpur, at Patna or Chittagong, has some valuable light to throw on the phonetics of Early Modern Persian of four or five hundred years ago.

And this brings up the analogous question of the bearing of the Greater Indian traditions of Sanskrit and Pali pronunciation (which

are still current, though in a fragmentary form, in Indo-China and Indonesia) on the mediaeval pronunciation of Sanskrit in India. Ceylon with its Dravidian Tamil and its Indo-Aryan Sinhalese is culturally a part of India, but the same cannot be said, at least with equal thoroughness, of Burma and Siam, Cambodia and the Malay-land, and Java and Bali. In these latter lands, the Mons, the Khmers and the Chams, the Burmese and the Siamese, the Malays, the Javanese and the Balinese received Sanskrit quite early, and later Pali also followed Sanskrit into Indo-China. The traditions of Indian pronunciation of Sanskrit from the early centuries of the Christian era have still continued, specially in Siam and Cambodia and in Java and Bali. This tradition has often suffered from violent changes through the imposition of the speech-habits of the original languages to which Sanskrit had to accommodate itself: e. g. the Siamese speech-habit, which turns *āditya* into *āthit'*, *nagara* to *nakhon*, *deśa* to *thet'*, and reduces words like *dara-sabda* and *ākāśa-yāna* (which are the modern Siamese words for the telephone and the aeroplane) into *thoro-sap'* and *āgāt-chān*; and so forth. In such a case as the above, the type of Sanskrit pronunciation introduced would be an interesting side-study. The traditions still current in Java, in pronouncing the innumerable Sanskrit words present in Old Javanese (Kawi) as well as in the modern forms of Javanese, and in Bali where the *pedandas* or Brahman priests still intone the ancient Sanskrit *mantras*, represent one type of ancient Sanskrit pronunciation, and are more valuable, notwithstanding the Indonesian speech-habits, which have imposed themselves as a matter of course. Thus, in these Indonesian tracts, it is interesting to note the pronunciation of the Sanskrit अ as both *a* (the short form of the vowel heard in South English *father*, *art*) and *ɔ*, and of आ as *ɔ*, with modification of final आ to *ō* in Bali (*mudrō*, *sabō*, *gadō*, = *mudrā*, *sabhā*, *gadā*,); ऋ is pronounced as *rě*, the *anusvāra* as *ñ* (ङ), व as both *b* and *w* (representing respectively the North-central and North-eastern, and the North-western, Western and Southern habits of pronunciation). The necessity of the study of these Greater Indian traditions side by side with those of the different language and dialect-areas within India will be easily conceded. This struck me forcibly when, as against the nearly pan-Indian pronunciation of Sanskrit ऋ *hm*; as in

brāhmaṇa, as *mb* (*brāmbhaṇa*, *brambhā* etc.), I heard Ceylonese Buddhist monks pronounce the word ब्राह्मण as written in Sanskrit — *brā-h-ma-ṇa* : which brought back to me the pronunciation which the Greeks heard in North-western India when Alexander the Great came in the 4th century B. C., — for the Greeks wrote down the word as *Brakhman-* ; and I think I heard in the island of Bali from the lips of the *pēdaṇḍas* the more learned form *brāhmaṇa* with *h+m*, beside the popular *brōmaṇa*.

A few remarks on the nature of the present-day standard pronunciation may be made before we can pass on to the other sources of information to be utilised in this connection. This Modern Indian standard, as has been said before, is based on the old Benares pronunciation : that is, on the mediaeval Āryāvarta pronunciation, with some Mahārāṣṭra and other extraneous influences. Its vowel system is based on that of the Eastern Hindī and Bihārī dialects, and this on the whole serves for the rest of India too. Thus, it gives the sounds of *ʌ* and *ɔ* (the latter in unaccented positions) to अ, rejecting the Mahārāṣṭra value of *v* and the Bengali-Oṛiyā value of *ɔ* ; ऋ is *ri*, and the other North-Indian variants and the South Indian *ru* are eschewed; ॠ according to the local Benares tradition is *lri*, but that is dropped in favour of *li*, which is current in Bengal ; the Southern *lu* is not permitted. The diphthongs ए ऐ ओ औ are *e ai o au* : the opener sounds as current in the Western Hindustan tracts have not been adopted (e. g. Western Hindi ऐ as *xe* or *xe*, and औ as *xo* or *ɔ*). As regards the consonants, the usual Bihārī and Hindī values of the letters are followed. च छ ज झ are palatal or palato-alveolar affricates, and the dental affricate values of *tʃ*, *tʃh* or *s*, *dʒ*, and *dʒh* or *z* found in a great many Indo-Aryan dialects, in the North, South, West and East but absent in 'Āryāvarta,' are not at all tolerated. So, too, the recursive or implosive pronunciation of the voiced aspirates घ झ ढ ष भ, i.e. *g' j' d' d' b'* instead of *gh jh dh bh bb*, found in many traditional or local pronunciations which keep close to the vernacular, is not all admitted. On the other hand, ण, which is absent in the vernacular dialects of the Gangetic plains, is sought to be given its proper cerebral pronunciation, *ɳ*, in the standard now set up — the traditional pronunciation invariably turning it to the dental *n*: the insistence on the proper value of ण being given to the letter, in the Standard Pronunciation, is due not only to Mahārāṣṭra influence, but also to that

of the Panjab and Rajputana, where *ʋ* is a living sound in the vernaculars. In the Gangetic plains, the proper *ʋ* sound is aimed, but it is usually a substitute that is arrived at — a nasalised cerebral *r̥* — \tilde{r} . One may say, however, that for \tilde{r} , *ʋ*, *ʋ* and \tilde{r} , these three are equally allowable in the Standard Pronunciation. The *j* and *b* pronunciation of initial \tilde{r} and \tilde{r} occurs in the North Indian tradition, following the vernacular habits, but the example of Mahārāṣṭra and South Indian as well as Kashmirī and Panjābī *Śāstrīs* is making the *j* and *b* pronunciation out of fashion, and *y* and *v* are recognised. The old North Indian tradition turned the palatal \tilde{r} *ś* to the dental *s*, and the cerebral \tilde{r} *ṣ* was altered in it to *hb* (\tilde{r}): विशेषः *viśeṣaḥ* was *bisekḥḥa*. Mahārāṣṭra and South Indian influence brought in some kind of *sb* sound for both *ś* and *ṣ*. The genuine folk-element in the North Indian dialects possesses only the dental *s*, and lacks not only the Sanskrit *ś* and *ṣ*, but any kind of *sb*-sound altogether: the only *sb*-sound heard and imitated was from Persian and English, and this foreign *sb* is quite different from both *ś* and *ṣ* of Sanskrit. In the Standard Pronunciation, it is this *sb* sound — an imitation of the one obtaining in Persian and English—that is employed for both *ś* and *ṣ* — the earlier *s* for *ś* may be tolerated, but *hb* for *ṣ* is no longer allowed. So that usually in this kind of pronunciation of Sanskrit, there is no discrimination between *ś* and *ṣ*, both being pronounced as *sb*: only a Mahārāṣṭra *Śāstrī* or a Vedic scholar from the South is expected to differentiate properly between *ś* and *ṣ*. For the *anusvāra*, the four variants *n*, *m*, \tilde{w} , and \tilde{n} are all allowed in the standard pronunciation; the last however is the least common, and the second and third are in a vague way regarded as the most correct. In the matter of *visarga*—interior *visarga* simply doubles the following consonant, but when final, it becomes a frank \tilde{h} — a voiced *h*, after which the preceding vowel is pronounced as a sort of prop: e. g. रामः हरिः मनुः प्रायज्ञः = *rāmaḥa*, *ḥarīḥi*, *manuḥu*, *prāyajñaha*. This sort of articulation is in accordance with both the local tradition and Mahārāṣṭra usage: and it is not the old sound of the *visarga*. For \tilde{v} , a kind of *v* (bi-labial or denti-labial) is heard: usually, it is the bilabial fricative sound, but a semi-vowel *w* is allowed before the back vowels *a ā*, and before the front vowel *e*, specially when the \tilde{v} is post-consonantal. About conjunct consonants, the two combinations \tilde{r} and \tilde{r} are to be noted. In the Ganges Valley, Old

Indo-Aryan *kṣ* became *kḥb* in Middle Indo-Aryan (Prakrit); but the mediaeval Sanskrit tradition in Northern India pronounced *kṣ* as *ccb* (*cb* initially, *ccb* internally), and this *ccb* tradition is still current in the local pronunciation of Sanskrit. Now the *ccb* is no longer tolerated in the Standard Pronunciation *k + sb* (of some kind) is only allowed. The North Indian tradition makes *gy* or *g̃y* out of *ज्ञ* — as if it was *gñ* instead of *jñ* : in the standard pronunciation, this tradition has been accepted, and the Mahārāṣṭra pronunciation *dñ* or *dny* and the correct Sanskrit *jñ* are neither of them allowed (*tat + jñānam* gives *taj jñānam* : by *saṁdhi* the standard pronunciation would pronounce it turn to *taj gyānam*). This *gñ* value of *ज्ञ* seems to have been an old one, and to have also affected the South : witness the Tamil form *kinānam*, often pronounced *gnānam*) beside another, older Tamil form *ñānam* (which may be from either the Sanskrit. or a Prakrit *ñānam*). The stress system followed in the Standard Pronunciation may be said to be the usual North Indian (‘ Hindi ’) one : and vowel-length is usually sought to be retained as in the orthography.

The current pronunciations can thus be questioned as to their faithfulness to the old ones. They are to be checked by other kinds of information. The information of paramount importance, outside of the present-day usages, which is available to us is that supplied by the Sanskrit treatises on pronunciation and phonetics, the *Śikṣās* and *Prātiśākhya*s, which embody both ancient theory and ancient practice. These works, with their commentaries, cover the entire range of Sanskrit phonetics and phonology from the period of the ‘Brāhmaṇas’ downwards. In the older texts, the actual observations of the Old Indo-Aryan speakers into the articulation and behaviour of the sounds of the spoken dialects—say of the period 1000-500 B. C.—may be said to be embodied ; while in the later works, and in the subsequent compilations and commentaries, later vernacular habits are noticed, and they are sometimes cautioned against and sometimes tolerated. A careful comparison of the present-day usage with the accounts given in the *Śikṣās* and the *Prātiśākhya*s is of vital importance for arriving at the old pronunciation of Sanskrit. I need not discuss this matter in detail here. It is enough to mention the very valuable work recently published by Dr. Siddheshwar Varma --

'Critical Studies in the Phonetic Observations of Indian Grammarians' (Royal Asiatic Society, London, 1929, James G. Foulong Fund, Vol. VII). The entire question of the *Śikṣā* and *Prātisākhya* evidence has been handled here with admirable clearness and philological acumen, and this makes the work indispensable for all students of the Sanskrit language and Sanskrit linguistics. A good idea of the nature of the ancient Indian phonetic theories and observations and some important points in phonetic discussion can be formed from Dr. Varma's book. Among the important points discussed are, apart from the contents and chronology of the extant works, the old Indian theory of the syllable, including syllabic division and syllabic quantity which are so intimately connected with the later development of the Aryan speech and with Sanskrit prosody; consonantal length (or 'doubling,' as it is usually called), is another item which engaged the attention of the ancient phoneticians; as also *abhinidhāna* or incomplete articulation. This habit of *abhinidhāna* undoubtedly made the old pronunciation of Sanskrit strikingly different from the modern ones. Thus, at the present-day in pronouncing words like शक्ति, अब्द, लिप्त we fully explode the first consonant in the group — *śak-ti*, *ab-da*, *lip-ta*; but in ancient i.e. pre-Prakrit times they did not fully pronounce or explode the *k*, *b* or *p*: this is what exactly is done in Modern English (*looked*, *begged*, *slipped* are pronounced in English, not like *luk-t*, *beg-d*, *slip-t*, but as *lukt*, *begd*, *slipt*, with the *k*, *g*, *p* not fully articulated). The nature of the old Sanskrit accent as described in the *Prātisākhya*s is another subject of utmost philological importance, from point of view also of the Modern Indo-Aryan (vernacular) phonology. In all these and other points it will be seen that modern pronunciations can largely be corrected by a study of the old pronunciations and theories as discussed in the *Prātisākhya*s and other works.

The remarks of the Prakrit grammarians on pronunciation and the phonology of Prakrit are also to be taken into account.

An important source of information regarding the ancient and mediaeval pronunciation is the actual spelling in extant epigraphical and other documents, in Sanskrit as well as the Prakrits. From the inscriptions of Aśoka downwards we find indications of vernacular habits of pronunciation from the actual spellings. Thus it is plain

that certain dialects of the 3rd century B. C. had a palatalised *k* sound; and intervocal *s*'s seem to have become voiced to *z*'z (the former denoted by *y*, the latter by an *s* with a bar below and by the ligature *ys*) in the North-Western frontier tract; and that *y* had become a strong fricative about two centuries before the Christian era. Mistakes in spelling in the inscriptions and in Mss., in using one letter for another, are valuable evidence for the pronunciation, and such mistakes are pretty frequent in these documents. A spelling like *likṣita* for *likhita* in an old Bengal inscription establishes the contemporary pronunciation of *kṣ* as *khy*, as now; and spellings like *tejāṁsi*, *vanṣe*, *hāṁsa*, *prāṁsuḥ*, with *ñ* or *n* for the *anusvāra* in Gupta inscriptions, would establish the fact that the old sound of *anusvāra* was lost by the first half of the 1st millennium after Christ. The optional doubling of consonants in connection with a nasal or liquid or semivowel is frequent in the inscriptions, and it is found partly in the traditional spellings current in some of the vernaculars (e. g. Bengali) at the present day. Thus आर्त्त, अर्थ, दीर्घ, सर्व, आर्य, beside आर्त्त, अर्थ, दीर्घ, सर्व, आर्य and पुत्र, पराक्रम, पथ्य beside पुत्र, पराक्रम, पथ्य. This is to be taken with great caution, as these doublings are sometimes only scholastic, without any reference to the pronunciation (e. g. in the spellings favoured by Bengali—वर्द्धमान, धर्म, सर्व, पर्याय — where the doubling is only the remnant of an orthographical tradition, not true to the pronunciation; whereas in spellings like बाक्क, सुक्क, तक्क, पक्क — although in Bengali there is no doubling, in the pronunciation it is actually heard—*bākk* or *bāikk*, *tākk*, *sūkk*, *pākk(w)*.) A survey of our epigraphical records from this point of view, properly arranged chronologically and regionally, will be invaluable for the study of the history of the Sanskrit orthoepical tradition, as well as for that of the phonology of Indo-Aryan.

The above are the internal evidences in this connection. We have in addition some good external evidence, too, to help us. This is obtained from extra-Indian languages, and is from both foreigners devoid of any theory regarding the pronunciation of Indo-Aryan who wrote down in their own scripts the Indian names and words they heard spoken, and from cultured Indians who had to adapt the Indian alphabet to foreign speeches which they reduced

to writing for the first time. All this refers to a period roughly embracing about a thousand years from the 4th cent. B. C. The Greek language and the Sanskrit and other Indian names and words it has recorded should first be considered in point of both time and importance. From the 4th century B. C. down to the first two centuries after Christ, there were important Greek and semi-Greek peoples acting as links between India and Western world. The Greek way of writing down Indian names gives us some indication as to the pronunciations heard by these foreigners during the period say 330 B. C. — 200 A. C. Sometimes complications are brought in by diversity of transcription, which would suggest diversity of pronunciation heard. Thus for अ we find both *s* and *ti* (= *ty*): *Sandraoptos* = *Candraguptah*, *Prasioi* = *Prācyāh*, besides *Tiastenes* = *Caṣṭēna*; and both *z* and *di* (= *dy*) for ञ: *Ozēnē* = *Ujjenī* = *Ujjayinī*, and *Diamouna* = *Jamunā* = *Yamunā*; and ञ is represented by *b* (which about 2000 years ago had not as yet altered to *v* as it did in later Greek), by *bu* = *bw* or *vb* (cf. the Marāṭhī transcription ञ for the English *v*), and by *ou* = *u* or *w*: thus *Bibasis* and *Hupbasis* = *Vipāsā*, *Sōastes* = *Suvāstu*, and *Owindion* = *Vindhya*. The intervocal ञ -*q*- seems to have received its present day pronunciation of ञ (‘cerebral *r*’) as early as the 1st cent. A. C.: witness Greek transcriptions like *Karuophullon* = Pkt. *Kaḍuaphalam* = Skt. *Kaṭukaphalam*, and *Saraganos* = Pkt. * *Saḍagaṇṇa* from earlier * *Sāṭakaṇṇa* = Skt. *Sātakarṇa*.

The Chinese transcriptions are to be considered next. We have a considerable mass of material for this. There are transliterations of names, personal and geographical; there are Buddhist terms and words in Sanskrit and Prakrit, and long Sanskrit *sūtras* and prayers transcribed in Chinese; besides Sanskrit-Chinese dictionaries with pronunciation in Chinese characters. The material is vast enough, but the ground is insecure. The Modern Chinese people have retained the ancient characters, but have altered the pronunciation beyond recognition, in all the different dialectal areas. Scholars at the present day are seeking, and with considerable success too, to rediscover the old pronunciation of Chinese of c. 500 A. C., and even earlier. Thus, the Chinese characters for *Buddha* and *Brahman* are pronounced in North China (Peking) as *Fu* and *Fan*, and in the

South China (Canton) as *Fat* and *Fam* : from the evidence of the Japanese pronunciation of the same characters, respectively as *Butsu Butsu* =, *Butu* earlier and *Bon* (= *Bon*), and from other reasons, it has been surmised that the 5th-6th century A. C. the pronunciation of these names in the Chinese of the North was **Bhywat* and **Bhywam* respectively. A few centuries earlier these undoubtedly approached more the Indian originals as *Buddh(a)* and *Bamh(a)*. The reconstructed Old Chinese **Bhywat* and **Bhywam* of course are too much altered to be of any help to us for the actual sounds of Indo-Aryan of the 1st half of the 1st millennium A. D. Similarly the two characters transcribing the name *Kāśyapa* are pronounced in Chinese as *Chia-yeh* in the North (Peking) and as *Ka-yep* in the South (Canton) and the Japanese pronounce them now as *Kashyō*, which in their phonetic writing they write as *Kā-si-a-pu*, which shows that *Ka-syapu* was the Old Japanese pronunciation. The Old Chinese equivalents in sound of these characters have been reconstructed as **Ka-χ'yap*. This again would not be of much help for our purposes; but it points to one thing, which is established by other means : viz. internal *ś* had been voiced to *χ'* in some of the North-Western dialects some two thousand years ago, the pronunciation of which the Chinese transcription sought to record. And similarly when we find that in Chinese they were careful to record the palatal *ś* and the cerebral *ṣ* by different characters consistently in the same text, we might presume that the pronunciation taught by the Indian translator and followed by his Chinese collaborator preserved the two sounds distinct. Similarly *b* and *v* are found to be kept distinct, and not confused as at present in Gangetic India. It is also noteworthy that sometimes wrong spellings in the Prakritic way, and even Prakrit words feature in two Sanskrit-Chinese dictionaries (the *Fan Yü Tsa Ming* and the *Fan Yü Ts'ien Tseu Wen*, both edited by Dr. Prabodh Chandra Bagchi) which date from the 8th century A. C. The material furnished by Buddhist Chinese sources is from many aspects well worth investigating.

Pahlavī or Middle Persian transcriptions present only a slight amount of material, as the bulk of Pahlavī literature is lost. Persian (or New Persian) and Arabic transcriptions of Indian names and words are later; and owing to the imperfections of the Perso-Arabic

script, especially in the early centuries of Islam when Arabic writing in the Kufic style was a very primitive and unsatisfactory system, these transcriptions are exceedingly puzzling and often valueless: e. g. in a work like Alḡarūnī's *Al-taḡqīq al-Hind*.

From the beginning of the Christian era onwards (it was perhaps earlier still) the enterprise of Buddhist missionaries, Brahman priests and ordinary Indian merchant-adventurers and settlers carried the Indian script beyond the frontiers of India, and reduced to writing for the first time a number of languages in Central Asia (Serindia), Indo-China and Indonesia (Insulinḡia). To mention these languages: there were Old Khotanese, Old Kuchean (' Tokharian '), and Tibetan in Central Asia ; Mon, Burmese, the lost Pyu language of Burma, Khmer, Cham and Siamese in Indo-China ; Old Malay of Sumatra (now no longer written in the Indian script), Sundanese, Madureses, Javanese and Balinese, besides a number of minor Malayan dialects in Indonesia including the Philippines. The Indian script was further transmitted from one non-Indian people to another, being sometimes itself modified in this transmission. The adaptation of the Indian script for these speeches was in some cases on the basis of Indian dialectal values of the letters ; and they are very valuable, especially the Central Asian alphabets of Indian provenance, for Indo-Aryan pronunciation of the early centuries after Christ. The spelling of Old Khotanese, for instance, as Leumann has shown, indicates the open or spirant pronunciation of the voiced stops *g d b* in the North-western tracts of India. This can be corroborated by other evidence,—and for a large tract of Aryan India too—in the early centuries of the Christian era. Intervocally, the sound of *g, d, b* were represented by the surds *k, t, p* ; and *kḡ, tt, pp* evidently were (at best in some cases) a graphic device for a single intervocal *k, t, p*. Moreover, *ś, s, s* intervocally were pronounced as *z', z, z*. The Kuchean system of writing, as also the Tibetan and the rest, are of very great interest, revealing the nature of the sounds of which the Sanskrit letters had become the symbols in the early Christian centuries, when these letters had also to be modified to represent foreign sounds. The treatment of Sanskrit loan-words in these speeches, which altered clipped and cut them according to their own phonetic habits, can equally be expected to throw helpful light on the matter. This of course is apart from

such meagre traditions of Sanskrit pronunciation as have survived in Indo-China and in Indonesia. Work in this line has been going on in Europe in some of these speeches, but the entire evidence is to be pooled for our purposes.

The materials obtained from the above internal and external sources are finally to be checked by the modern science of Linguistics in two of its branches—Phonetics, and Historical Phonology of Indo-Aryan and Indo-European. By applying the principles of General Phonetics to the information derived from the tradition and from old records and old evidence, certain definite conclusions can be arrived at; e. g. about the pronunciation of the sonant liquids (*r l*), about the aspirates (including *h* and *h̄*), about the dentals, palatals and cerebrals, about *abhinidhāna*, about pitch and stress accent and other things. Comparison of Old Indo-Aryan (Sanskrit) with the other Indo-European languages outside India—Avestic and Old Persian, 'Tokharian', Old Armenian, Greek, Latin, Gothic, Old Irish, Old Church Slavic, etc. and with its latest development in India through the Prakrits and the Apabhraṁśas and the modern vernaculars, also will be of a great suggestive value, as we can see at every step.

In the present paper only the problem and the nature of the materials for solving it have been discussed. The subject is capable of being taken up at greater length for a full investigation. It must however be admitted that as a problem the pronunciation of Sanskrit is not of much practical significance: any of the traditional styles, or the modern Indian standard that has now grown up, is quite sufficient for our daily requirements with Sanskrit whether as a cultural discipline or as a language of religious ritual. Yet the investigation will not be a futile one: for a great many interesting and important things in the history of a language are connected with its pronunciation; in fact, as Patañjali himself has said, 'the sound is the word' ((*dhvaniḥ śabdah̄*)): and a student of language can never minimise the value of the study of the sounds of the language, which, in themselves and in their attributes, in their mutual relationship in the sentence and in their relationship to grammar, form its very body, as it were, at a given epoch in its history.

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