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THE GUJARATI CONSONANTS

M. S. PATEL

and

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Y OF EDUCATION AND PSYCHOLOGY
Maharaja Sayajirao University of Baroda
BARODA, 1964

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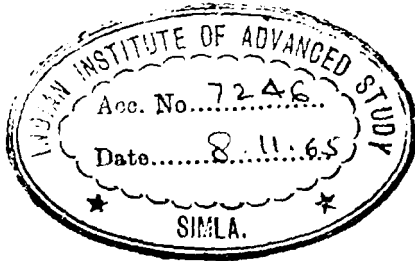
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FOREWORD

The Vowel System of Gujarati, which was published in 1961 has been well received in India and abroad as an attempt to describe the vowels and diphthongs of Gujarati in a systematic and scientific manner. The present monograph embodies the results of fundamental research in the same field of linguistics by Professor M. S. Patel and Shri J. J. Mody. They have carried their research step further and determined the consonant phonemes of Gujarati. The practical value of the present chain of research will be greatly enhanced by the fact that the approach of the researchers has been both *analytic* and *comparative*, which spotlights the distinctive features of Gujarati and English consonants. Such a comparison will be a great help to the teachers who teach English to Gujarati children. We shall look forward to the continuation of the same chain of research in the field of morphology, syntax and semantics.

Baroda,
September 1963.

S. N. MUKERJI
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1980年11月11日

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THE GUJARATI CONSONANTS

by

M. S. PATEL

J. J. MODY

I. Introductory

This is the second in the series of monographs embodying the results of investigation into the phonology of Gujarati in the light of the modern advances made in the field of linguistics. The first one was published in the form of a monograph "The vowel system of Gujarati" in 1961. This investigation carries our research a step further and describes the consonantal sounds of spoken Gujarati. Since this is expected to be read in continuation of the previous one, no attempt is made here to explain what a phoneme is or what its functions are. It will be sufficient to say that phonemes of a particular language are the meaningful speech sounds that are used by the speakers of that language. A phoneme by itself has no meaning, but the speakers of a particular language will understand one speech sound being different from another only in terms of the phonemes of that language, *e.g.*; *p b* are different sounds because *pin* and *bin* are different words. Similarly *k* and *g* are different sounds, *i.e.*, phonemes, because *cap* and *gap* are different words. Moreover, phonemes are speech sounds and not the letters used in writing. Letters are mere symbols to represent

the phonemes on paper. They are mere visible marks.

The alphabet of a language consists of all such meaningful sounds of that language. The script consists of the letters that represent those phonemes in writing. Though the symbol ક represents the sound ક + એ (k + ə), only ક is used here to indicate the sound of ક (k) simply for the sake of convenience. Similarly, ગમ, etc., will represent ગમ, (g, m), ect.

The sounds described here are those sounds employed by the ordinary speakers of Gujarati in their natural conversation. They are the sounds of the present-day spoken Gujarati, and not those described by our grammarians based on the patterns of Sanskrit or English, and not even those which the pedants would ask us to speak, but those that are actually spoken.

The symbols used in this monograph, are those of Gujarati script which is an off-shoot of the Devanagari script, alongwith the parallel symbols of the I.P.A., *i. e.*, International Phonetic Alphabet. † Gujarati script being largely a phonetic script, the sounds represented by the symbols are quite familiar and hence sounds are not illustrated by words unless it is otherwise necessary.

The harmony between the sound and the symbol is not complete in Gujarati as we usually believe. The trouble is not with individual letters. Each

† With some variations

letter represents one particular sound and only one. But when letters are joined into words, the words are many a time pronounced differently from what the letters mean; e. g., દાંત-વેદાંત (વેદાન્ત); અહાર (આ'ર)-આરી (આ'રી); ગોળ (ગે.ળ-ગોળ); etc. Of course such discrepancies do not come in the way of the natural pronunciation of the people. But that is because pronunciations are handed down from generation to generation only through the mouth, and not through the writings.

The roots of the Gujarati phonology are of course, in Sanskrit, but with the passage of two to three milleniums many sounds have changed their qualities since the times of Paṇini. An attempt is made here to account for all those changes and variations, and whenever doubt arises we must not look to the old patterns of traditional grammars for inspiration but observe the speech of today. The dictum—*The proof lies in speaking*—should be the principal guide. The subject of this study is the speech of the day and not what it was in the past.

II. Mechanism of sounds

Any description of speech sounds, especially the consonants, must necessarily refer to the *organs of speech* (વાગ્યવન), *manner of articulation* (પ્રયત્ન), and the *point of articulation* (સ્થાન). It must also refer to some basic features of speech like *voice* (ઘોષ), *aspiration* (પ્રાણુધ્વનિ) and *nasalization* (નાસિકધ્વનિ). Hence an elementary description of the mechanism of speech (વાગ્યવ્યાપાર) will not be out of place.

The *larynx* (५१६) is that part of the wind pipe in the throat which contains the *vocal cords* (२५२-१-२१०१). The space between the vocal cords is called the *glottis*. The motive power of speech, *i.e.*, the stream of air (५१५) is supplied by the lungs

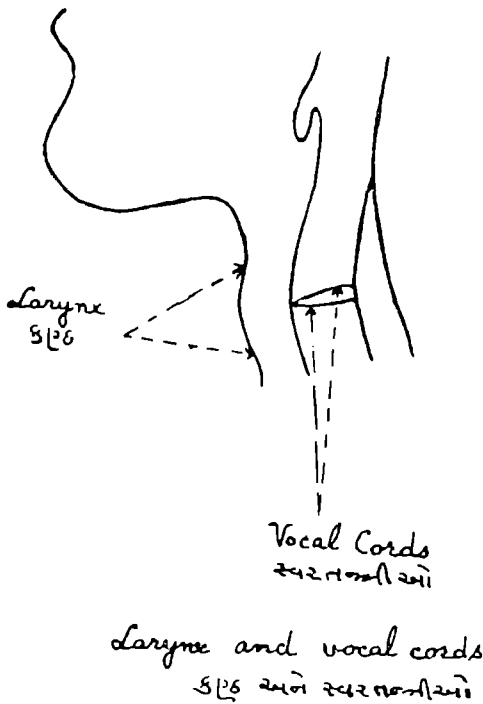


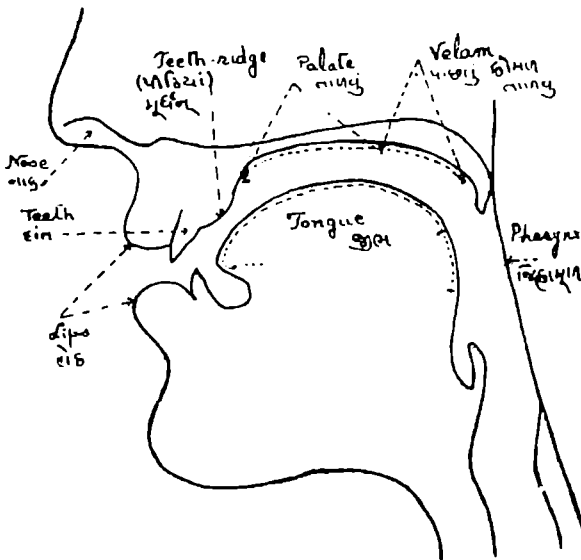
Figure 1

(३६५१). The stream of air may be made to cause the vocal cords to vibrate. The resulting sound is called the *voice* (३६५). Instead of that, the stream of air may be made to cause a friction sound by rubbing against the walls of the wind pipe in the larynx. The sound of that friction in the larynx is

called the *aspiration* (प्राण्यध्वनि). Voice and aspiration are the two most important *features* of speech sounds. The stream of air may also be made to produce both voice and aspiration simultaneously. The result will be the *aspirated voice* (प्राण्यध्वनियुक्त धोप); it may also be called the *voiced aspiration* (सधोप प्राण्यध्वनि).

If the stream of air carrying the voice is made to pass through the nose wholly or partly, the voiced sound is said to be nasalized. This is called *nasalization* (नासिक्यध्वनि). Only voiced sounds, whether aspirated or unaspirated, can be nasalized. According to the three features a sound can be described as (i) *voiced* (धोप) or *voiceless* (अधोप), (ii) *aspirated* (महाप्राण्य) or *unaspirated* (अल्पप्राण्य), (iii) *nasalized* (अनुनासिक) or *non-nasalized* (निरनुनासिक).

Thus we have seen that the lungs, the larynx, vocal cords and the nose are in a sense *organs of speech*. But the main organs of speech are in the mouth, the chief among them being the *tongue* (जिह्वा, उल). The tongue is the most important organ of speech which is rightly associated with the Goddess of Learning (सरस्वती). Other organs of speech are the two *lips*, (छेद) the *teeth* (दंत), the *teeth ridge* (पीठियां) and the *palate* (ताणत्रुं). Out of the two lips, the lower lip is called the *articulator* (करण्य) and the upper lip, the *point of articulation* (स्थान). The tongue is the other articulator. For the purpose of understanding phonetic descriptions of sounds, the tongue is divided into (i) *tip* (उरत्रुं), (ii) *front* (अग्र-



Organs of speech
वाक्प्रणाली के अंग

Figure 2

भाग), (iii) *middle* (मध्यभाग), (iv) *back* (पश्चिमोत्तम भाग), (v) *root* (मूल) and (vi) *blade* (द्विपार). These divisions are arbitrary and there are no sharp boundary lines between the tip, front, middle, back and root. The blade is the rim of the tongue and includes the tip also. The tip is not just a point but covers a small area around it. By *teeth* we mean only the front two upper teeth, and the *teeth ridge* is to mean only that bulging part of the gums above the two upper front teeth. That part of the gums is

called the *alveolae* (भूर्धन)* also. The palate is like a concave dome extending from the teeth ridge to the window of the nasal passage. It consists of two

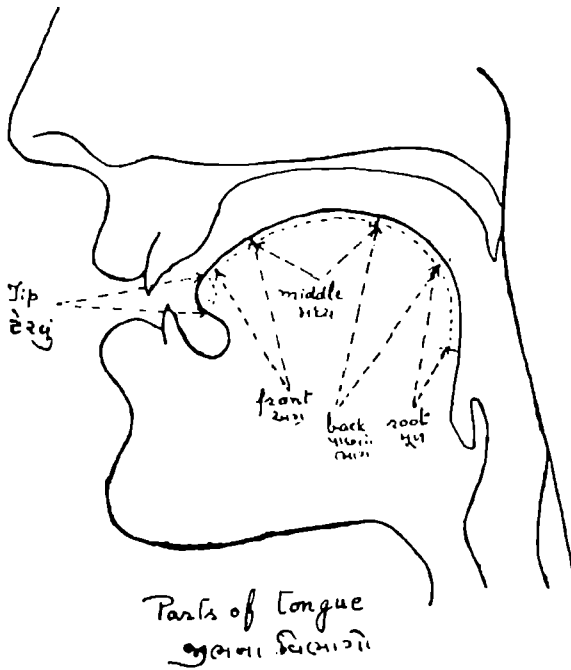


Figure 3

* Many think, of course erroneously, that भूर्धन्य sounds are to be pronounced by curling the tongue upwards and touching the zenith of the dome of the palate. But then the sound should be called palatal (तालन्य) and not भूर्धन्य. मूर्धन् (Sk.) means a summit—naturally the summit of the teeth ridge. Even Paṇini has placed भूर्धन between तालु (palate) and दन्त (teeth) and what else, except the teeth ridge, is there between the two?

parts (i) the harder front, and (ii) the softer back part. The hard palate is called the *palate* (ମାତ୍ର) in phonetics and the soft palate is called the *velum* (ପାତ୍ର ମାତ୍ର). The cavity of the throat is called the *pharynx* (ଗିରୀମୂଳ). At the far extremity of velum the *i.e.*, the soft palate, there is a small tongue-like appendage, dangling above the cavity of the throat. It is called *uvula* (ମାଳି ଭ୍ରମ).

The tongue is extremely mobile. It can close the oral passage at any point in the mouth to block the stream of air, or can determine the course and shape of the oral passage to produce various kinds of hissing or resonant sounds. It can take innumerable shapes to do this. The lips also can lie spread, or can be rounded, to modify the quality of sounds, and can be pursed to close the air passage. The velum, *i.e.*, the soft palate can be raised to close the nasal passage or lowered to open it for the air stream to pass through the nose.

III. Classification of sounds

Speech sounds can be classified according to (i) the manner of articulation (ଧାରଣ) and (ii) the point of articulation (ସ୍ଥାନ). The scheme of describing the sounds will be as follows. Mention will be made of the point and the manner of articulation, and that part of the tongue that is used as articulator. In the labial sounds no mention will be made of the tongue. The sound will be described as voiced or voiceless, but it must be taken to be unaspirated and non-nasalized unless it is stated otherwise.

A. Manner of articulation

According to the manner of articulation, a sound may be called either a stop (स्पर्श) or a plosive (स्फोट); a fricative (संघर्ष), an affricate (स्पर्श संघर्ष); or a resonant (धोषवत्).

Stops (स्पर्श व्यञ्जनैः): The tongue is made to block the passage of air momentarily in the mouth at some point, from the teeth to the pharynx. The two lips also can block the passage of air. The sounds for which the passage of air is thus stopped by the contact of any two organs of speech are called *stops*. They are called स्पर्शव्यञ्जनैः—really *contact* sounds, according to our traditional phonetics. In the Western scheme, it is not the stoppage of air that is so significant, as the sound of plosion or friction that follows the release of the stop is.

Fricatives: (संघर्ष व्यञ्जनैः) (ओष्माक्षरैः): The tongue (or the lips) instead of stopping the air stream, can make the oral passage very narrow at some point in the mouth so that the air under pressure rushes out with an audible friction, *i.e.*, a hissing sound. Such sounds are called *fricatives*.

Resonants: (धोषवत्): The oral passage is kept wide open enough for the production of *resonants*, so that no friction of air is caused, but the quality of the voice is modified by resonance in the oral passage whose shape and size can be determined by shape of the tongue. Voice is an essential feature of resonants.

Plosives : (स्फोट व्यञ्जनो) A plosive is a stop (स्पर्श). When the passage of air is blocked by the tongue or the lips, the air under pressure from the lungs, naturally tries to escape. So, when the stop is released, the air rushes out suddenly, thus making a sound like a plosion as in \underline{t} (ट). Such sounds are called *plosives*. It must be remembered that the stoppage and the release of air are but one instantaneous action. Usually the stop is released at some point in the mid-line of the mouth, but there are some stops that are released on one or both sides of the tongue, as in the case of \underline{t} (ल). Such stops are called *lateral stops* (भाषुना स्फोट).

Affricates : (स्पर्शसंघर्ष व्यञ्जनो) An affricate is also a stop. There are some sounds in which the release of the stop is slowed down and delayed. So the air does not escape suddenly, but rushes out through a small slit causing a friction sound of a short duration after the stop. Such sounds are called *affricates*.

The air is stopped at some point both in plosives and in affricates.

B. *Points of Articulation*

The range of points of articulation extends from the edge of the teeth to the back wall of the cavity of the throat. In fact the points of articulation are innumerable in that range. The upper lip is also considered to be one such point. But only a few of them are significant for the description of speech

sounds as can be seen from the following table. The sound is named after the point of articulation.

<i>Type of the sound</i>	<i>Point of Articulation</i>	<i>Articulator</i>	<i>Illustrations</i>
1 Bilabial (ओष्ठ्य)	Upper lip	Lower lip	p ५
2 Labio-dental (दन्तोष्ठ्य)	Edge of upper teeth	Lower lip	v ५
3 Dental (दन्त्य)	Back of upper teeth	Tip of tongue	t ८
4 Pre-alveolar (अग्रमूर्धन्य)	Lower slope of teeth ridge	Front of tongue	l ९
5 Alveolar (मूर्धन्य)	Summit of teeth ridge	Front of tongue	ç २
6 Pre-palatal (अग्रतालव्य)	Upper slope of teeth ridge	Underside of tip of tongue	ʈ ८
7 Palatal (तालव्य)	Hard Palate	do	ɲ ३
8 Velar (अनुतालव्य)	Velum or Soft palate	Back of tongue	k ३
9 Pharyngal (निक्षीमूलीय)	Back wall of the cavity of the throat	Root of tongue	q क्षरसी ३
10 Dental alveolar (दन्त्यमूर्धन्य)	Back of upper teeth and the lower slope of teeth ridge	Tip and front of tongue	ʈs प्राकृत ३
11 Glottal (कण्ठ्य)	Vocal cords	Vocal cords,	ə, ħ अ, उ

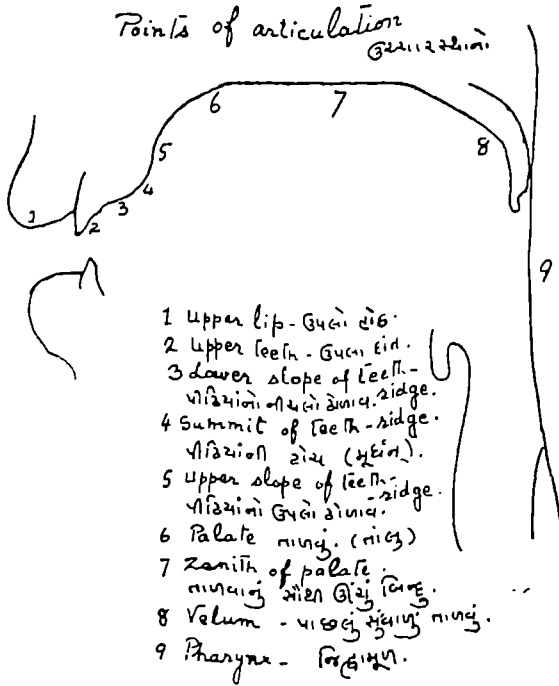


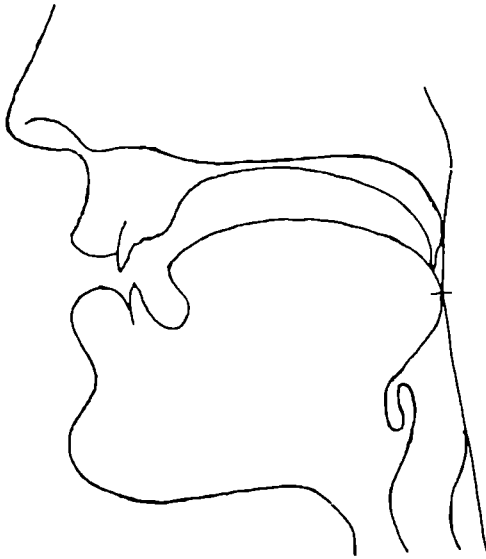
Figure 4

The above scheme of describing the speech sounds is worked out to describe the Gujarati sounds only. There are other types also, with different points and manners of articulation in other languages. They have not been described here for the simple reason that Gujarati has no use for them.

As we have seen, many sounds have changed since Paṇini. He fixed the points of articulation of consonants as he actually observed them in the speech of his own times. But during the 2500 years after him, the language of the people changed slowly

but steadily through stages viz. Sanskrit → Prakrit → Apabhramsh → Old Gujarati → Modern Gujarati; and along with that, have changed the points of articulation and manners of production of many sounds. One thing that has not changed is the script. We have adopted the Gujarati script of course, but the symbols remained the same, which follow the pattern of the traditional Devanagari script.

The following will account for all such changes.



Pharyngal k (q)
 सिंहाम्लीय क (सिंहान्त क वर्ण)
 अरली क्षरमी क

Figure 5

IV. Gujarati consonants

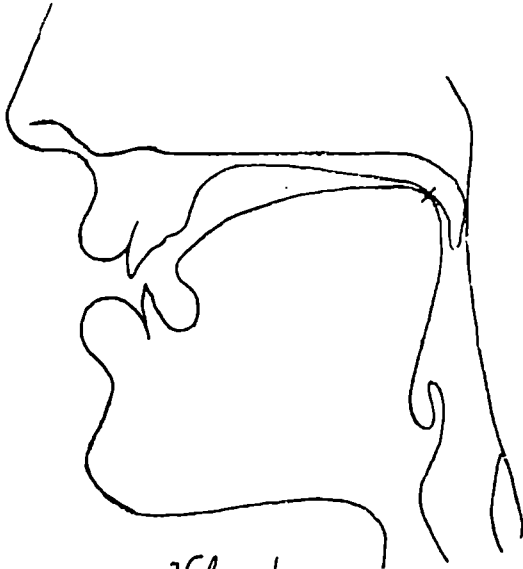
A. Stops : (स्पर्श व्यञ्जनो)

Plosives : (स्फोट व्यञ्जनो)

(a) Velars : (अनुतालव्य) .

I. ક (k) : *The voiceless velar plosive.*

According to the traditional grammars ક is કણ્ઠ્ય (laryngal). But even Paṇini has not described ક as કણ્ઠ્ય but as ગિર્ધામૂલીય (pharyngal)^x. According to him only અ હ (ə h) are laryngal.+ In the Gujarati speech today ક is not even pharyngal but velar. The back of the tongue touches the back part of the



Velar k

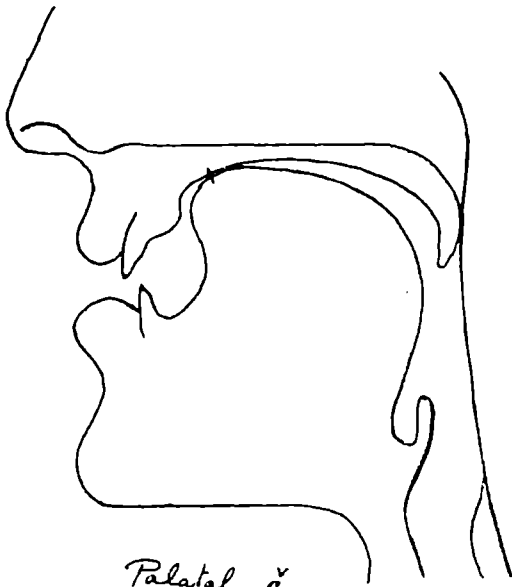
પાછલો તાલવ્ય ક - અનુતાલવ્ય ક
ગુજરાતી ક વર્ગ - અરબી ક્ષીરમી ک

Figure 6

soft palate. At the time of Paṇini ङ must have been produced by the contact of the root of the tongue with the back wall of the wind pipe as it is in Persian or the Arabic ڤ (q) today. But since then the point of articulation has moved upwards. What is true of ङ is true of ञ ण and ण also.

2. ञ (kh) : *The voiceless aspirated velar plosive.*

ञ is produced in the same manner as ङ. The diagraph kh is only a convenient symbol. It does not indicate that h (aspiration) is a separate sound coming after k. It is but one sound ञ. This



Palatal c̣

मिडल २ - सिद्ध २ ए

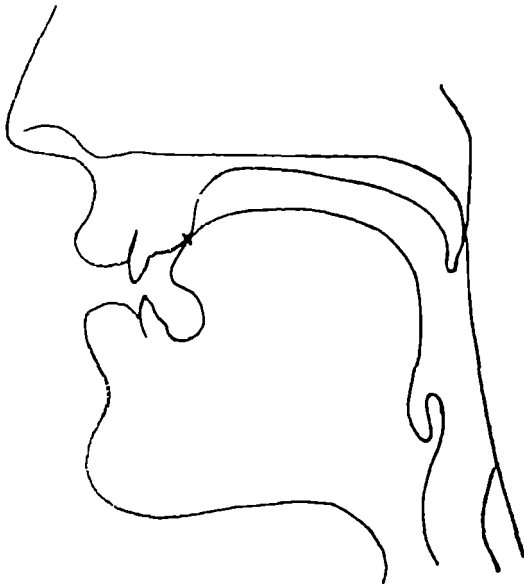
Figure 7

will also apply to other diagraphs which will be used henceforth, e. g., gh, bh, ṭh etc.

3. ग (ḡ): *The voiced velar plosive.*
 4. ग् (ḡh): *The voiced aspirated velar plosive.*
 5. ङ (ṅ): *The voiced nasalized velar plosive.*
- (b) Alveolars : (ऋक्षरय) :

6. च (č): *The voiceless alveolar plosive.*

According to the traditional phonology च is palatal (तालव्य). In the days of Paṇini च might have been palatal. Today no part of the tongue touches



Alveolar č
 ऋक्षरय च - ऋक्षराली च यो

any part of the palate in the production of ચ; but the front part of the tongue touches the summit of the teeth-ridge. What is true of ચ is also true of ષ જ ઝ and ઞ.

7. ષ (\check{c}^h): *The voiceless aspirated alveolar plosive.*

8. જ (\check{j}): *The voiced alveolar plosive.*

9. ઝ (\check{j}^h): *The voiced aspirated alveolar plosive.*

10. ઞ (\check{n}): *The voiced nasalized alveolar plosive.*

The sounds ઝ ઞ are controversial sounds in Gujarati phonology. Some consider them to be mere symbols in the script representing no sounds, and preserved simply for the sake of symmetry of having 5 sounds in each class *viz.*, ક વર્ગ; ચ વર્ગ etc.

But ઝ and ઞ are actual speech sounds in Gujarati speech. They occur as the first members in conjuncts in words like ગઙ્ગા, પઙ્ખો, કઙ્કાસ, કઙ્ચન, મઞ્જૂર, મઞ્છા, etc., which are usually written as ગંગા, પંખો, કંકાસ, કંચન, મંજૂર મંછા, and pass for the તીવ્ર અનુસ્વાર (strong nasality) under a mistaken identity.

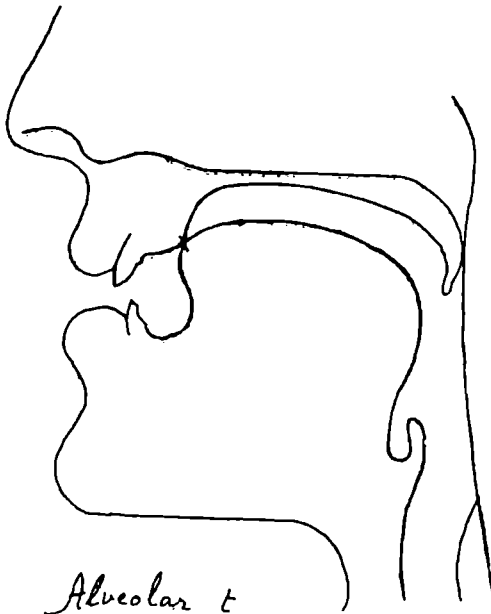
Again ઝ occurs in words like ભાઝ, ઢોઝ, સિઝ, ભાઝરો, etc. These words are written as ભાંગ, ઢોંગ, સિંગ, ભાંગરો etc., meaning thereby that they should be spoken as ભાઙ્ગ, ઢોઙ્ગ, સિઙ્ગ, ભાઙ્ગરો. But in actual speech the sound is ઙ્ + અ and not ઙ્ + ગ્ + અ. This difference in speech may be observed by comparing them with words like ગઙ્ગા, પઙ્ગત, etc.

Both ʃ and ʂ are difficult to pronounce in isolation. Their pronunciation can be made only when a vowel precedes them. Hence they never occur as first sounds in words. If, however, an attempt is made to speak them in isolation, something like अः॒ & इयः will be the result and that is ridiculous.

(c) *Pre-palatals* (अग्रतालव्य) *Retroflex* (परिवर्तित) :

11. ɽ (ṭ) : *The voiceless prepalatal plosive.*

The traditional phonology describes ɽ as मूर्धन्य (alveolar). Originally it must have been produced by tip of the tongue touching the summit of the teeth-

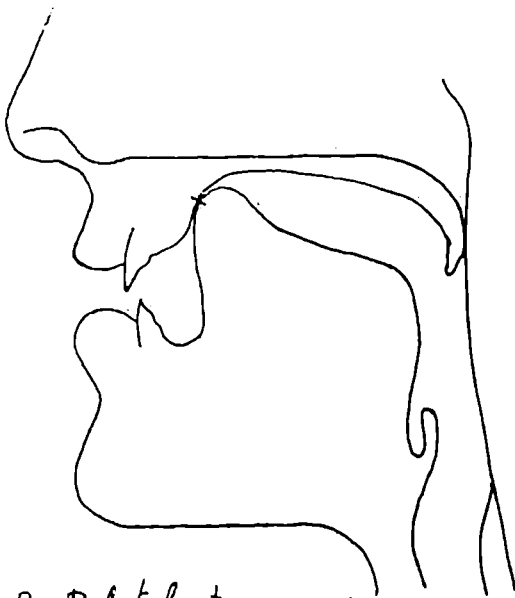


Alveolar t

मूर्धन्य ɽ - अग्रताल t - परिवर्तित ɽ

Figure 4

ridge. Today the underside of the tip of the tongue touches upper slope of the teeth ridge, that is, from where the palate begins. Hence the term *pre-palatal*.



Pre-Palatal † (retroflex)

અગ્રપાલટલ ઝ (વરિચ્છિત્ત) - ગુજરાતી ટ ૬૬૩

Figure 10

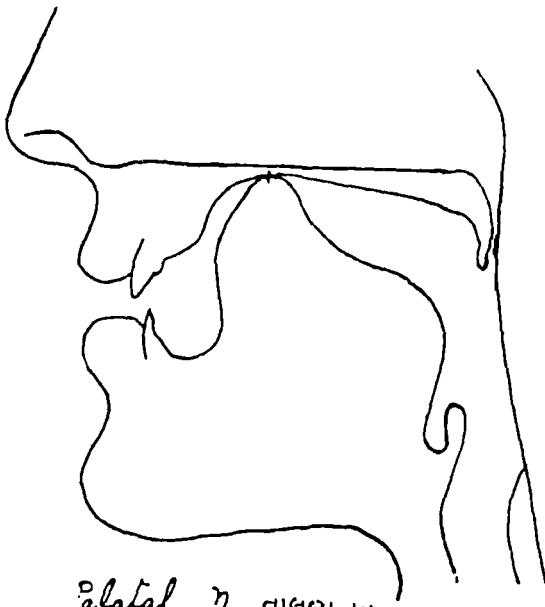
Mention must be made here of a new feature acquired by these Gujarati speech sounds, *i.e.*, ઝ and others, and that is *retroflexion* of the tongue. In the retroflex articulation the tip of the tongue is turned upwards, *i.e.*, curled back and the underside of the tongue touches either the upper slope of the teeth ridge or the zenith of the dome of the palate. Retroflex sounds are a speciality of the Dravidian

languages and it is said that Gujarati acquired it from them. But retroflexion in Gujarati is of a much smaller degree than that found in the southern languages. Hence Gujarati ડ ઢ ણ ળ are retroflex sounds.

What applies to ડ also applies to ઢ ણ and ળ and to ળ to a certain degree.

12. ઢ (\underline{t}^h): *The voiceless aspirated pre-palatal plosive.*

13. ણ (\underline{d}): *The voiced pre-palatal plosive.*



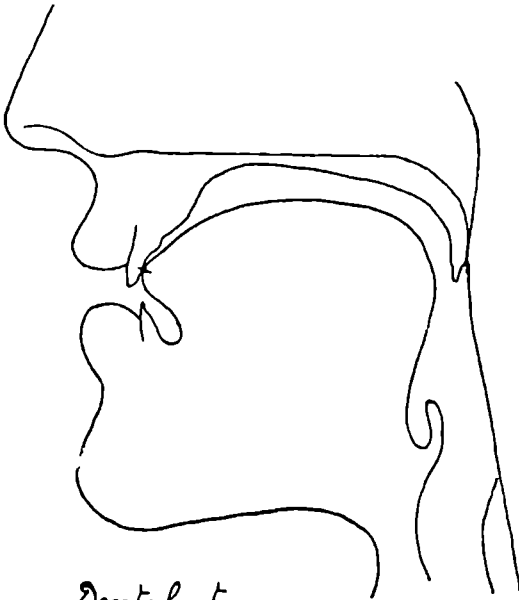
પ્રેપાલટલ નું નિહાળવા લેખી
ગુજરાતી લેખી ની અંગે કોઈપણ સૂચના

Figure 11

14. ढ (ḍ^h): *The voiced aspirated pre-palatal plosive.*

15. ञ (ṅ): *The voiced nasalized palatal plosive.*

Exception has to be made for ञ. It is articulated far above, actually near the zenith of the palatal dome with a higher degree of retroflexion. The plosion also is weaker and softer. Hence ञ is the real palatal sound.



Dental ḍ

ए०२५ न - सु०२१०१ न २ ६ ६

Figure 12

(d) *Dentals* (ຄ-ຮຸ່ຢ):

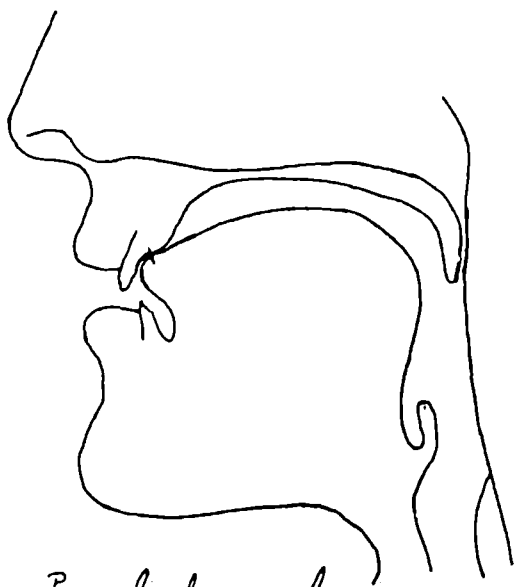
The dentals have preserved their original point of articulation. Hence, no comments.

16. າ (ັ): *The voiceless dental plosive.*

The tip of the tongue touches the back of the upper teeth. This applies to າ ຄ and າ. But າ has changed a little.

17. າ (ັ^h): *The voiceless aspirated dental plosive.*

18. ຄ (ັ): *The voiced dental plosive.*



Pre-alveolar າ ຄ
 າກຳພູຊ້ອນ າ ຄ - າກຳພູຊ້ອນ າ ຄ

Figure 13

19. ઢ (d^h): *The voiced aspirated dental plosive.*

20. ઢ (n): *The voiced nasalized pre-alveolar plosive.*

We will have to make an exception for ઢ here. The front of the tongue touches the lower slope of the teeth-ridge. Of course ઢ can be produced at the back of the teeth, and in certain phonetic context, *i. e.*, in the neighbourhood of other dental sounds it becomes dental also *e. g.*, in ઢઢઢઢ, ઢઢ, etc. But in the natural flow of the Gujarati speech ઢ is pre-alveolar as a rule.

(e) *Bilabials* (બિલાબીય):

Bilabials are produced by the two lips.

21. પ (p): *The voiceless bilabial plosive.*

22. પ (p^h): *The voiceless aspirated bilabial plosive.*

23. બ (b): *The voiced bilabial plosive.*

24. બ (b^h): *The voiced aspirated bilabial plosive.*

25. મ (m): *The voiced nasalized bilabial plosive.*

Before passing on to another group of consonants, it is worth-while to note here that only the five bilabials and four dentals have not shifted their points of articulation. Otherwise whole sets of consonants, *viz.*, ઢ group, ઢ group and ઢ group have

changed their points of articulation, १ parted company with other dentals and ७ went far ahead. Is it not surprising that the point of articulation for २ group moved up and that for ३ group moved down, crossed each other and interchanged the places? Was it done during the last 2500 years? Did it take 2500 years for the change? Who knows?

B. *Lateral* (५१७७७ २३३३३३३ ५५५५५) *Plosives*.

26. ७ (1): *The voiced pre-alveolar lateral plosive.*

Originally ७ was a dental sound. But today the front of the tongue touches the lower slope of the teeth-ridge. In some phonetic context, *i.e.*, in the neighbourhood of another dental sound ७ becomes dental *e.g.* ७७७७७, ७७७७७ etc. but the principal member is pre-alveolar.

27. ७ (७): *The voiced palatal lateral retroflex plosive.*

The tip of the tongue touches the dome of the palate, with retroflexion.

७ and ७ are taken here out of the traditional order, to complete the list of plosives.

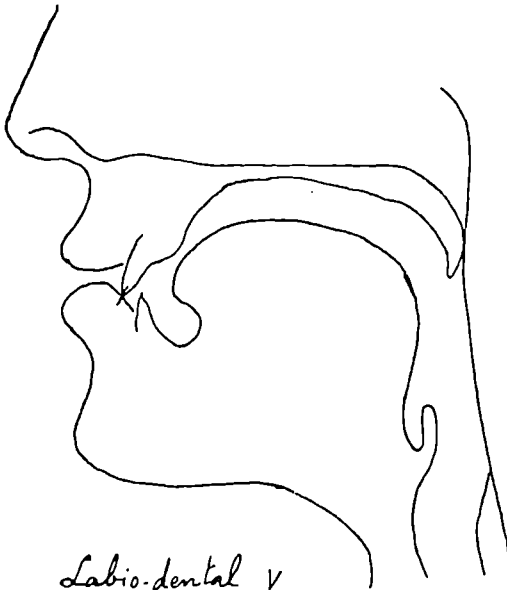
C. *Semi-vowels* (५५५५५ ५५५५५ ५५५५५)

The traditional phonology gave us four semi-vowels ५ २ ७ ५. But when Gujarati lost ५ and ७ two vowels from its sound system, २ and ७ lost their vocalic characteristics and became ordinary consonants. Out of the four, only ५ and ५ have remain-

ed semi-vowels (अन्तःस्थाः). अन्तःस्थ means standing on the border line of vowels and the consonants. With a slight change, the sound becomes a vowel. य and व have this quality and share in common some features of ष and फ़. Hence य and व are semi-vowels. र and ल have no vowels to fall back upon.

28. य (y): *Palatal semi-vowel* (तालव्य अन्तःस्थ)

In the production of य the tongue takes up the position for ष, but immediately gives up that position and rapidly glides down to the normal position.



Labio-dental V

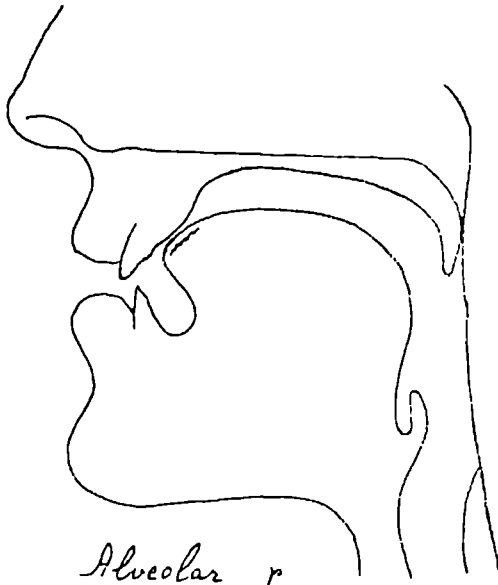
दन्तोच्छ्रय व - गुणवर्णनी व

Figure 14

This rapid gliding movement is essential to perfect the sound of w . If that gliding movement is absent the sound would remain u .

29. w (v): *Labiodental semi-vowel* (द-तोष्य अन्तःस्थ)

As a matter of fact w (v) is the real semi-vowel. In the production of w sound, the lips are rounded and take up the position for u (u). But they give up the rounding immediately, and rapidly spread out. This rapid movement is essential to perfect the w sound. In the absence of this movement the sound would remain u .



Alveolar r

दूधम र - चुचरानी र

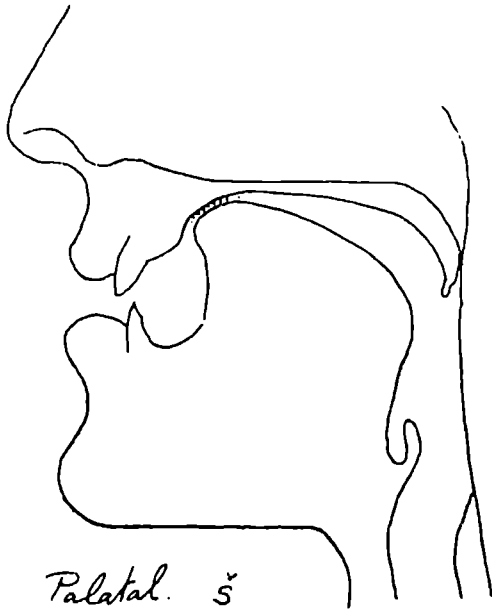
Figure 15

Gujarati વ (V) is *labio-dental*. The backwall of the lower lip touches the edge of the upper teeth. Both વ and વ̣ are voiced sounds as they are semi-vowels. They are called resonants also.

D. *Fricatives* (સંઘર્ષ વ્યંજનો)

30. ર (r) : *The voiced alveolar fricative.*

No longer now ર is a semi-vowel. It has become a fricative. The front of the tongue approaches the teeth ridge, leaving a small slit for the air to rush through. A throbbing sensation is felt on the front of the tongue.



Palatal. ૨

પાલટાલ ૨ - ગુજરાતી ૨

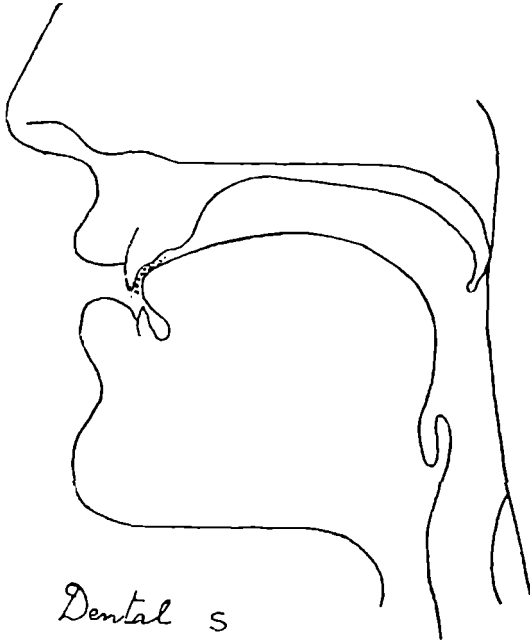
Figure 16

31. श (*ʃ*): *The voiceless palatal fricative :*

The front of the tongue approaches the palate leaving a small slit for the air to rush through, causing a hissing sound.

32. स (*s*): *The voiceless dental fricative :*

The front of the tongue approaches the back of the two upper teeth, leaving a small slit for the air to rush through, causing a hissing sound.



Dental s

दन्त्य स - गुजराती स

Figure 17

33. ह (*h̄*): *The voiced Glottal fricative :*

In fact, the sound of ह is pure *voiced aspiration*

(સથોપ પ્રાણુધ્વનિ). It is produced from the glottis (કણક) and the air causes friction there, hence it is a glottal fricative.

The fricative હ is called the મહાપ્રાણુ (the almighty breath), because as a feature of other sounds it can change their qualities, e.g., ક + aspiration = ખ, etc.

As voiced aspiration it functions as one of the consonants in speech. As pure aspiration હ has the capacity to make vowels aspirated, e.g., સ'વાર, બા'ર, etc., and so we may call હ as our third semi-vowel of Gujarati speech.

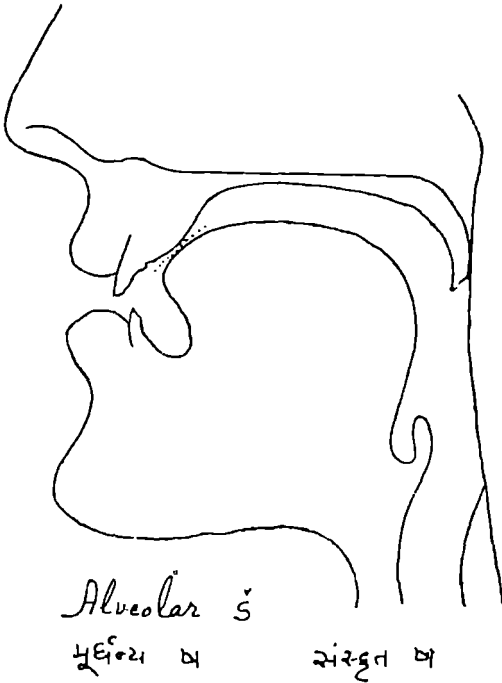


Figure 18

The traditional phonology had given us three fricatives (ઊષ્માક્ષરો meaning hot sounds)—શ પ સ. Their middle partner, the alveolar (મૂર્ધ્ન્ય) sound વ is lost to Gujarati speech. We may write લાવા and આશા, ઋપિ and ખુશી, but we always pronounce the palatal fricative. Simply because we write વ in some words for the sake of correct spelling, વ cannot be considered as one of the speech sounds of spoken Gujarati.

By ઊષ્માક્ષર is meant a hissing sound, the sound of hot steam escaping through a hole. In fact શ and સ only two are such ઊષ્માક્ષર, hot sounds; ર is a throbbing sound and હ is aspiration sound. ર શ સ હ all four are called fricatives because they have the element of friction in common.

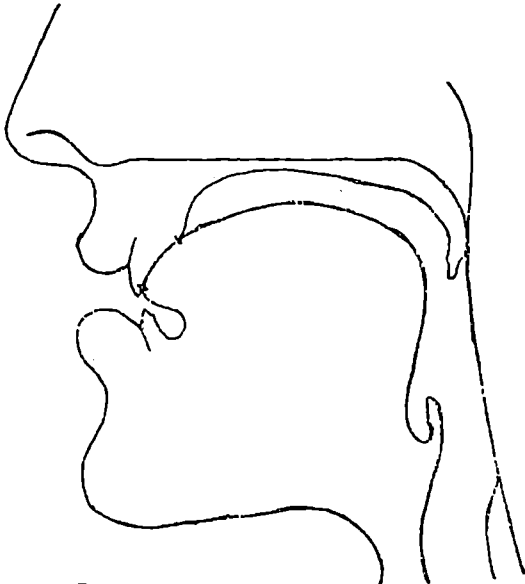
This completes the list of consonants of Gujarati speech of today. There are 27 plosives (2 of them are laterals); 2 semi-vowels (3 if we consider હ as one more semi-vowel) and 4 fricatives. They are given in a tabular form at the end.

V. Other sounds

The above are the 33 consonant phonemes of spoken Gujarati. They are the only significant or meaningful consonant sounds. But these are not the only sounds of the Gujarati speech. There are other sounds, though not significant, found in Gujarati speech, and well observed by linguists. Any description of Gujarati speech sounds will remain incomplete if no mention is made of them.

A. *The case of Prakrit* ચ હ જ ઝ

In some regions of Gujarat especially central* Gujarat and Saurashtra, ચ હ જ ઝ are pronounced in a different way. That pronunciation is called Prakrit as opposed to the Sanskrit pronunciation of ચ હ જ ઝ. Prakrit may mean corrupted or polluted; or it may mean natural. But every speech sound is natural and no sound can be said to be pure blue-blood and another impure or polluted. One sound



Dental - alveolar \check{c} (affricate)
 દન્તામૂર્દાચ ચ (અર્ધસંઘર્ષ) - પ્રાકૃત ચ હ જ ઝ

Figure 19

* Charotar and Kanam

is simply different from another. That is all. Hence the term Prakrit is a misnomer.

In the case of the so called Prakrit ચ્ ઙ્ ઞ્ ઝ્ there is friction after the release of the stop and hence they are affricates. In the production of these sounds the tip and the front of the tongue press hard against the back of the teeth as well as the teeth ridge. These Prakrit sounds may be called *dental-alveolar affricates* (દન્તમૂર્ધન્ય સ્પર્શસંઘર્ષ વ્યજ્જતો).

This type of pronunciation of ચ્ ઙ્ ઞ્ ઝ્ is not restricted to villagers only. Even the educated city dwellers use them. They are restricted to certain regions of Gujarat, and not to certain classes of people. The sounds of Prakrit ચ્ ઙ્ resemble that of ટ્સ (ts) and those of ઞ્ ઝ્ resemble that of ઢ્ઝ (dz) pronounced not as two sounds in a conjunct, but as one sound in one effort. Linguists of Gujarat call them અર્ધતાલવ્ય (half palatal) or દન્તતાલવ્ય (dental palatal). But they are not palatals at all. The palate never comes into the picture in the production of either the ordinary or the Prakrit ચ્ ઙ્ ઞ્ ઝ્. It seem we cannot get rid of the word તાલવ્ય (palatal) in reference to ચ્ group, simply because the traditional terminology is weighing heavily in our minds. The proper term for these sounds should be *dental alveolar affricates*.

Scholars of Gujarati have recommended to put a dot under the letters as ચ્ ઙ્ ઞ્ ઝ્ to distinguish them from the alveolar ચ્ ઙ્ ઞ્ ઝ્. But these sounds are not separate phonemes in Gujarati speech, they are

mere allophones of ચ્ ઙ્ જ્ ઙ્. Those who use the affricates use affricates in all cases, and those who use the plosives, use plosives. Hence, no separate symbol is necessary. At least, the distinction is not meaningful in Gujarati as it is in Marathi; e.g., જરા—old age : જરા—a little. Not so in Gujarati. A Gujarati person will speak જરા or જરા according to his habit, in both the cases. Whether જ્ and જ્ are different phonemes in Marathi or allophones of one phoneme should, however, be left for the linguists of that language to decide.

B. *The case of ડ્ ઢ્*

It has been found that the pre-palatal ડ્ ઢ્ are pronounced pure palatals in certain phonetic context, i.e. when they are not initial sounds in words, e.g. in લ'ડું, ઢડું ઘડિયાળ, ઉપાડ, etc. They are then articulated at the palatal dome, with a greater retroflexion of the tongue. In this feature, they are similar to ળ્ and ળ્. All the four sounds ડ્ ઢ્ ળ્ ળ્ are flapped sounds, i.e., the plosion is weak and the tongue departs from palate as if in a hurry.

It is a common experience that many people interchange ડ્ ળ્; e.g., ઘડિયાળ-ઘડિયાડ, કાગડો-કાગળો, વરાળ-વરાડ, etc. This is the case only when ડ્ is not initial. In initial places ડ્ never interchanges with ળ્. That shows ડ્ ઢ્ have two varieties of articulation. The scholars of Gujarati suggest putting a dot under the letters ડ્ ઢ્ to distinguish them from the main sounds. But as they are allophones, there is no need to do so. They will be pronounced according to the

phonetic context in words without any harm to the meaning. But the case of ऽ६ is on a different footing than that of ञ७ etc. The articulation of ऽ६ is determined by the phonetic context, without reference to the region or the class of people. The articulation of ञ७ etc. is determined by the individual habits of persons residing in some regions.

C. *The case of क्ष and ञ*

These two are not independent sounds but conjuncts. In actual speech they are क्ष (kṣ) and ग्न्य (gny) respectively. In Gujarati speech रक्षाय is रक्षाय and ज्ञान is ग्न्यान . Then why were they included in the Gujarati alphabet? And other conjuncts like क्ष७ ञ७ were left out? Perhaps, क्ष was not originally a conjunct but a fricative like x (x) as in the eastern European languages. The words रक्षा-राय ; क्षेत्र-पेत्र , क्षमा-यमा are indications that lead us to the above conclusion. And what about ञ ? It is still a mystery. But one thing is certain. It is not a conjunct of $\text{ञ} + \text{ञ}$ in Gujarati as it is supposed to be in Sanskrit. Today it is a conjunct ग्न्य in Gujarati, क्ष्य in Marathi, ञ्य in Hindi.

V. *Future of the language*

Language is a living phenomenon. Speech is always in the process of evolution. Writing is more or less steady. If a language is to be studied, only the spoken form should be studied, because it is the speech of the people that determines the written form.

A language should be studied in terms of its own structure and not on the basis of any other language, even if that language is the mother-language of the present one, *e. g.*, Sanskrit and Gujarati.

At no time the process of evolution of a language is halted. It is a continuous non-stop process. We cannot say that our own language has now reached a stage when the process of evolution has halted and a finality of form has been arrived at. Language has continually evolved as can be seen from the past records, and even today that process is continuing. The present tendencies of evolution can be observed with a proper insight. One such tendency may be cited here as an example. The word-ending nasalized vowels in શું, સારું, etc. are fast losing their nasal colour even in the speech of the educated elite. Narsinhrao, some sixty years back, called them ઢ્રમલતમ અનુસ્વાર (softest nasality). The words ઢ્રમલ, ઢ્રમલતર, ઢ્રમલતમ (soft, softer, softest) indicated that the process of speech variation had already started then. Now people speak શું સારું only, meaning thereby that the softest nasality has now vanished altogether.

An attempt is made here in this series of articles, to describe the spoken Gujarati of the day, *i. e.*, the speech sounds of Gujarati as they are produced today. The description of stress, intonation etc. is naturally the next step, but that requires further research.

Appendix I

Gujarati Consonants

(પરોક્ષ વર્ણો)

		Billabial	Labio-dental	Dental	Pre-alveolar	Alveolar	Pre-palatal	Palatal	Velar	Glottal
Stops-plosives	voiceless	p		t		ʈ	ʈ		k	
	voiced	ph		th		ɖ	ɖh		kh	
	voiceless	b		ɖ		ɟ	ɟ		g	
	voiced	bh		dh		ɟh	ɟh		gh	
Nasals		m				ɳ			ŋ	
Laterals										
Fricatives	Voiceless Unaspirated			s						
	voiced					ʂ				
	Aspirated					ʂʰ				
Semi-vowels		ɱ	v							ɦ

Appendix 2 : Figures

- Figure 1 : Larynx and vocal cords
- Figure 2 : Organs of speech
- Figure 3 : Parts of the tongue
- Figure 4 : Points of Articulation
- Figure 5 : Pharyngal K
- Figure 6 : Velar K
- Figure 7 : Palatal Č
- Figure 8 : Alveolar Č
- Figure 9 : Alveolar t
- Figure 10 : Pre-palatal t
- Figure 11 : Palatal n
- Figure 12 : Dental t
- Figure 13 : Pre-alveolar ñ
- Figure 14 : Labio-dental v
- Figure 15 : Alveolar r
- Figure 16 : Palatal Š
- Figure 17 : Dental S
- Figure 18 : Alveolar Š
- Figure 19 : Dental-Alveolar Č

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ERRATA

PAGE	LINE	INCORRECT	CORRECT
2	10	ect.	etc.
2	19	monograph. are	monograph are
8	6	the i. e.,	i. e., the
17	27	This	This

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