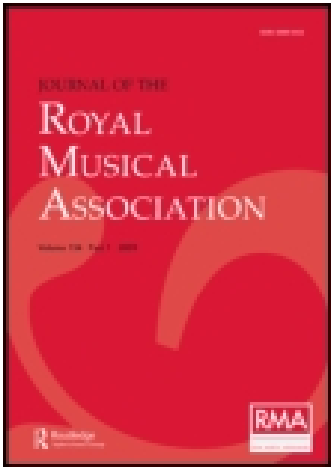

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Notes on Indian Music

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In the Chair.

NOTES ON INDIAN MUSIC.

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Of all the Indian arts one of the most popular is that of music, and perhaps of them all the least known to Europeans. Almost every one who has been in India knows that native music exists, but there are comparatively few who recognise the deep hold that it possesses over Indian minds. Europeans, as a rule, leave India with the idea that the national music of the country consists only of noise and incessant drumming, varied, perhaps, by nasal drawling—equally repulsive as unmusical. That there is a real musical art—with an employment of various scales, abounding in rhythmical beauty and full of passionate expression, seems to many almost incredible. And yet this is so.

Sanskrit scholars and Orientalists are aware of the existence of many Indian musical works; indeed, the Bhârata Shâstra, a work written by the seer Bhârata, before the Christian era, is one of the most valuable works upon ancient music that we possess, and it is worthy of note that an interesting translation of it is being prepared by M. Grosset of Lyons.* Of a date rather later than Bhârata's work, we have the Sangíta Ratnâkera, a lengthy treatise which may be said to be the oftenest quoted authority upon the ancient music of India. Time does not permit an examination of the contents of these or other of the many Sanskrit musical works; it must suffice to say that they contain very full descriptions of the ancient melody types, technically known as Râgas; and of the Tâlas or rhythmic forms; there are also lists of the various musical instruments, details of their construction, and of the methods of playing upon them. As regards other Sanskrit musical works, careful enquiry shows that there are about 100,

* Pending the publication of the complete work, M. Grosset has published, under the title of "Contribution à l'Etude de la Musique Hindoue" (Paris: Leroux, 1888), a translation, commentary, and Sanskrit text of the 28th adhyaya of this work: most valuable to the student.

mostly in MSS., of later date than the two previously mentioned, still in existence.

Natives of India say that music is of divine origin, and they attach a great importance to the art in their religious observances—indeed, it was generally held that sacrificial rites (*yagams*) lost their efficacy unless three Brahmins were present, two playing upon the Vina and the third chanting Shâstras. Hindu mythology abounds with references to music; and indeed the very notes of the scale and the melody types are considered as but representative of the celestial beings from whom they take their names. Music is known as the fifth Veda; the ancient musical writings are generally spoken of as Ghandârva Shâstra or Ghandârva Veda; the name, Ghandârva, being given the celestial musicians.

The object of this paper is, however, to give a sketch of modern Indian music, rather than to treat of the history, antiquity, and traditions of the art.

Sangîta, as music is called, comprehends vocal music, instrumental music, and dancing; we shall confine ourselves to the first two.

The Hindus divide their octave into twenty-two intervals called s'rutis. The temperament of the Indian scale would therefore at first sight appear to differ widely from any temperament recognised in Europe. Recent enquiry, however, shows that there has existed a considerable difference of opinion as to whether the twenty-two s'rutis were equal divisions of the octave or not, and even in the Sanskrit works this is not clearly explained; one of them, indeed (the "Sangîta Ratnâvali"), goes so far as to say: "Every distinct audible sound is a s'ruti; it is a s'ruti because it is to be heard by the ear." Hence it appears that the existence of these s'rutis, or intervals less than semitones, is purely theoretical, and when employed is *practically* limited to purposes of grace and embellishment. And as Indian music abounds in grace of all sorts, the use of the s'rutis is general and the ear is sometimes led to believe that the division of the scale is different from what it really is. The system of the division of the scale is fixed, and yet it allows of a great deal of expressive grace at the player's fancy. And so, possibly from a natural transformation tending to simplicity, or, perhaps, from an adaptation more suitable for practical use than a fine-spun theory, the Hindu scale has become practically a half-tone one, allowing of the performance of expressive melodic music which is capable of the greatest refinement of treatment, while altogether outside the experience of the Western musician.

The temperament of the Indian scale has from time to time attracted considerable attention amongst acousticians

and musicologists, and as early as 1807 formed the subject of a paper by Mr. Paterson, to be found in Asiatic researches. In 1877, however, before the Royal Society, Mr. Bosanquet proved that the fifths and thirds produced by an *equal* division of the octave into twenty-two parts do not differ very widely from the exact intervals which are the foundation of the diatonic scale, the fifth being ·07 of a comma sharp, and the third being ·045 of a comma flat. The late Dr. A. J. Ellis, F.R.S., however, went far more deeply into the subject, and his researches contain the most valuable information of the kind we possess.

Dr. A. J. Ellis endeavoured to solve definitely this vexed question of temperament by securing a set of tuning forks, accurately adjusted to the twenty-two s'rutis by native musicians in India. With this view he entered into correspondence with the Rajah Sir S. M. Tagore, who agreed to provide the forks so adjusted. However, the forks were tuned by means of sliding weights, and on their arrival in England they were found to be practically useless; being compared with Dr. Ellis's tonometer they gave no results of value. Dr. Ellis then sent the Rajah a set of twenty-two forks, tuned on the assumption that the octave was *equally* so divided, requesting that the forks should be re-tuned where wrong. This the Rajah made no attempt to do. The Rajah apparently trusts to the ear alone, and the ear is not to be relied upon for minute intervals, and Dr. Ellis could get no satisfactory information from this gentleman. However, in a work entitled "The Musical Scales of the Hindus," Sir S. M. Tagore gave other details for the division of the Indian scale from which Dr. Ellis was enabled, in conjunction with Mr. Hipkins, to work out the data given below; the figures are in cents—*i.e.*, $\frac{1}{100}$ parts of an equal semitone. The calculation of the values has been worked out according to (according to Tagore) both the present usage and the ancient custom :—

Degrees:	1	2	3	4	5	6	7	8
Notes:	C	D♯♭	D♭	—	D	E♯♭	E♭	E
Old:	0	51	102	153	204	264$\frac{2}{3}$	325$\frac{1}{3}$	386
New:	0	49	99	151	204	259	316	374

Degrees:	9	10	11	12	13	14	15
Notes:	E♯♯	F	—	F♯♯	F×	G	A♯♭
Old:	442	498	549	600	651	702	753
New:	435	498	543	589	637	685	736

Degrees:	16	17	18	19	20	21	22
Notes:	A♭	—	A	B♯♭	B♭	B	B♯♯
Old:	804	855	906	966$\frac{2}{3}$	1027$\frac{1}{3}$	1088	1144
New:	787	841	896	952	1011	1070	1135

Remarking upon these experiments, it must be noted that although our equally-tempered scale is represented pretty well, still that the D♭♭, E♭♭, E♯♯, Fx, A♭♭, B♭♭, B♯♯ have no equivalents in any European system.

The national instrument (the Vina), however, is fretted semitonically, and Dr. Ellis kindly examined several specimens for me, arriving at the conclusion that the intervals were very close to those of our equally tempered scale. I give below the result of one such examination in "cents" or hundredth parts of an equal semitone:—

Cents:	0	97	195	312	397	515	596	692
Notes:	G	A♭	A	B♭	B	c	d♭	d

Cents:	782	883	997	1092	1207
Notes:	e♭♭	e	f	f♯♯	g

Dr. Ellis and Mr. Hipkins further examined critically and in the most patient and searching manner, the Rajah Sir S. M. Tagore's s'ruti Vina, now in the South Kensington Museum, and also an old Vina now in my possession; the result of these experiments have been published in detail in my work upon Indian Music,* and time does not allow of my more than mentioning the matter here.

As regards the apparent similarity of the Indian and European scales, we must remember that the latter were evolved, in process of time, from those of ancient Greece. Whether there can have been any direct connection between Indian music and that of ancient Greece must be a matter of pure conjecture. It is, however, tolerably certain that the music of the whole ancient world consisted entirely of melody, and that harmony or counterpoint, in the modern acceptation of the words, were altogether unknown. The historian Strabo shows us that Greek influence extended to India, and also that Greek musicians of a certain school attributed the greater part of the science of music to India, a statement which is deserving of attention. And even now most of the old Greek modes are represented in the Indian system. And in the absence of evidence conclusary of direct musical communication between ancient India and Greece, all this tends to point to a musical system of some old-world civilization, unknown to us, from which both the Indian and Greek scales (and consequently the European) have independently been developed. Whether this common origin may be looked for in Egypt or Assyria, or, more probably, in the music of nations of an age still more remote, must remain uncertain. Suffice it to say that, although no connection can be established between the Indian and modern European scales, yet they would thus appear to

* "The Music and Musical Instruments of Southern India and the Deccan." (London: Novello, Ewer & Co., 1892.)

point to a common origin. It seems that the Indian scale intervals should rather be understood as they are explained by the native writers—viz., as a tone, $\frac{3}{4}$-tone, and semitone, composed of 4, 3, and 2 s'rutis respectively. And with this conception of intervals, for the $\frac{3}{4}$-tone is still undoubtedly approved of in the East, a division of the octave into 24 *equal* parts becomes impossible. For as it was essential to secure an approximately perfect fourth with 9 s'rutis, and a fifth with 13, the division of the octave by 22 was the only one available. The error in the fourth of 9 equal s'rutis of a 22 division is only $\frac{1}{8}$ a comma, in melody hardly noticeable; but the error in a 21 or 23 division could hardly be tolerated. The s'rutis thus being a little wider than exactly equal quarter tones ($54\frac{6}{11}$ cents instead of 50), the Indian series in most respects come near the intervals of our *just intonation* scales. Still the resemblance is accidental, since the foundation is different.

Again it must be remembered that the strings of all Indian instruments are very thin in proportion to their length; the slightest pressure upon the fret causing a variation in the pitch. Consequently Indian fretted stringed instruments, as compared with those of Europe, are less confined in their intonation, and are capable of producing an infinity of delicate grace by modification of pitch, that cannot adequately be expressed in any notation. The nearest approach to these Indian graces is found in the Bebung or Vibrato, which in the clavichord alone of *keyed* instruments is capable of being produced. In stringed instruments it is of course produced by a rocking motion of the finger without raising it from the strings.

The Hindu scale, then, having become in practice one of half-tones, the octave is divided into twelve semitones; the seven notes of the scale are known as Shadja, Rishaba, Ghandhâra, Madhyama, Panchama, Dhaivata, Nishâda. Shortened for purposes of solmization into Sa, Ri, Ga, Ma, Pa, Dha, Ni.

By the following diagram the scales may be more readily understood. From the twelve semitones are formed seventy-two different modes or scales. The tonic and fifth are common to all. Thirty-six have the perfect fourth and thirty-six the augmented fourth.

As may be seen by the diagram, although every scale or mode is sung to the syllables Sa, Ri, Ga, &c., the intervals implied by the syllables vary in the different scales.

The dots placed in the columns should be read from left to right and signify the syllables Sa, Ri, Ga, Ma, Pa, Dha, Ni, already mentioned. It will be observed that the scales are formed in sets of six, the lower tetrachord being common to each set so constituted.

	C	C♯ D♭	D E♭	D♯ E♭	E	F	F♯	G	G♯ A♭	A B♭♭	A♯ B♭	B	c
Karnakangi	●	●	●	–	–	●	–	●	●	●	–	–	●
Rhâtnangi	●	●	●	–	–	●	–	●	●	–	●	–	●
Gânamurti	●	●	●	–	–	●	–	●	●	–	–	●	●
Vânaspati	●	●	●	–	–	●	–	●	–	●	●	–	●
Mânavati..	●	●	●	–	–	●	–	●	–	●	–	●	●
Tânarupi	●	●	●	–	–	●	–	●	–	–	●	●	●
Sânapati	●	●	–	●	–	●	–	●	●	●	–	–	●
Hanumatódi	●	●	–	●	–	●	–	●	●	–	●	–	●
Dânuka	●	●	–	●	–	●	–	●	●	–	–	●	●
Nâtakaprýa	●	●	–	●	–	●	–	●	–	●	●	–	●
Kókilaprýa	●	●	–	●	–	●	–	●	–	●	–	●	●
Rúpavati	●	●	–	●	–	●	–	●	–	–	●	●	●
Gáiakaprýa	●	●	–	–	●	●	–	●	●	●	–	–	●
Vakhulabhárna . ..	●	●	–	–	●	●	–	●	●	–	●	–	●
Máyamâlavagaula ..	●	●	–	–	●	●	–	●	●	–	–	●	●
Chákravaka	●	●	–	–	●	●	–	●	–	●	●	–	●
Suryakánta	●	●	–	–	●	●	–	●	–	●	–	●	●
Hatakambâri	●	●	–	–	●	●	–	●	–	–	●	●	●
S'ankâradvâni	●	–	●	●	–	●	–	●	●	●	–	–	●
Nâtabhairavi	●	–	●	●	–	●	–	●	●	–	●	–	●
Kyravâni	●	–	●	●	–	●	–	●	●	–	–	●	●
Kârahâraprýa	●	–	●	●	–	●	–	●	–	●	●	–	●
Gaurimanohâri	●	–	●	●	–	●	–	●	–	●	–	●	●
Vârunaprýa	●	–	●	●	–	●	–	●	–	–	●	●	●
Mârarángini	●	–	●	–	●	●	–	●	●	●	–	–	●
Chârukali	●	–	●	–	●	●	–	●	●	–	●	–	●
Sârasángi..	●	–	●	–	●	●	–	●	●	..	–	●	●
Hârikambógi	●	–	●	–	●	●	–	●	–	●	●	–	●
Déhra'sankârabhárna ..	●	–	●	–	●	●	–	●	–	●	–	●	●
Nâganándini	●	–	●	–	●	●	–	●	–	–	●	●	●
Yâgaprýa..	●	–	–	●	●	●	–	●	●	●	–	–	●
Râgavárdani	●	–	–	●	●	●	–	●	●	–	●	–	●
Gangáiabhusâni.. ..	●	–	–	●	●	●	–	●	●	–	–	●	●
Vâgadésvâri	●	–	–	●	●	●	–	●	–	●	●	–	●
Shulini	●	–	–	●	●	●	–	●	–	●	–	●	●
Chalanâta	●	–	–	●	●	●	–	●	–	–	●	●	●
Sâlanaga	●	●	●	–	–	–	●	●	●	●	–	–	●
Sâlanâva	●	●	●	–	–	–	●	●	●	–	●	–	●
Jâlavarâli	●	●	●	–	–	–	●	●	●	–	–	●	●
Nâvanita	●	●	●	–	–	–	●	●	–	●	●	–	●
Pavâni	●	●	●	–	–	–	●	●	–	●	–	●	●
Regonprýa	●	●	●	–	–	–	●	●	–	–	●	●	●
Gavambódi	●	●	–	●	–	–	●	●	●	●	–	–	●
Bhávaprýa	●	●	–	●	–	–	●	●	●	–	●	–	●
Sábhapántovarâli ..	●	●	–	●	–	–	●	●	●	–	–	●	●
S'adivedamángini ..	●	●	–	●	–	–	●	●	–	●	●	–	●
Súvaranángi	●	●	–	●	–	–	●	●	–	●	–	●	●
Dévyamani	●	●	–	●	–	–	●	●	–	–	●	●	●

	C	C♯ D♭	D E♭	D♯ E♭	E	F	F♯	G	G♯ A♭	A B♭	A♯ B♭	B	c
Duvalâmbheri	●	●	–	–	●	–	●	●	●	●	–	–	●
Nâmanâgini	●	●	–	–	●	–	●	●	●	–	●	–	●
Kâmavârdini	●	●	–	–	●	–	●	●	●	–	–	●	●
Râmaprýa	●	●	–	–	●	–	●	●	–	●	●	–	●
Gâmanas'rya	●	●	–	–	●	–	●	●	–	●	–	●	●
Visvambâri	●	●	–	–	●	–	●	●	–	–	●	●	●
Syamalangi	●	–	●	●	–	–	●	●	●	●	–	–	●
S'anmukaprýa	●	–	●	●	–	–	●	●	●	–	●	–	●
S'rimhandra	●	–	●	●	–	–	●	●	●	–	–	●	●
Hémo-vasántha	●	–	●	●	–	–	●	●	–	●	●	–	●
Dhârmovati	●	–	●	●	–	–	●	●	–	●	–	●	●
Néttimatti	●	–	●	●	–	–	●	●	–	–	●	●	●
Kantâmani	●	–	●	–	●	–	●	●	●	●	–	–	●
Rishavaprýa	●	–	●	–	●	–	●	●	●	–	●	–	●
Latângi	●	–	●	–	●	–	●	●	●	–	–	●	●
Vachaspáti	●	–	●	–	●	–	●	●	–	●	●	–	●
Mátsyakaliâni	●	–	●	–	●	–	●	●	–	●	–	●	●
Chintâmani	●	–	●	–	●	–	●	●	–	–	●	●	●
Suchâritra	●	–	–	●	●	–	●	●	●	●	–	–	●
Jotisvarúpeni	●	–	–	●	●	–	●	●	●	–	●	–	●
Dhartovardani	●	–	–	●	●	–	●	●	●	–	–	●	●
Nâsicabhárna	●	–	–	●	●	–	●	●	–	●	●	–	●
Kósala	●	–	–	●	●	–	●	●	–	●	–	●	●
Rásikaprýa	●	–	–	●	●	–	●	●	–	–	●	●	●

Although certain of their instruments possess a compass of nearly four octaves, yet practically three octaves, termed Sthayi, or Saptaka, *only* are taken into consideration.

The Hindus have a system of notation which, although sufficient for their requirements, is rather complicated. It consists of an employment of the seven letters of the alphabet denoting the musical notes, the time value of the note being expressed by a system of dots and signs placed above and below. The notation cannot be said to be in general use, and it varies slightly according to the requirements of individuals. As there are many different languages in India, many of which are written in different characters, to attempt anything like a detailed explanation of this notation to-night would be obviously impossible. However, some of the examples of Indian music that you will hear will be played from this notation, and you can then form an idea of its capabilities. It is, in fact, a sort of tablature, and we must bear in mind that most of the early European notation, before the introduction of pneums, was probably of a somewhat similar construction.

Time is considered under the name of Tâla. There are seven distinct varieties of Tâla, each of which is again sub-

divided into five. Hence there are thirty-five distinct measures. The table below will explain this; the figures singly denote the number of equal beats—the accents falling upon the first—in a bar. In Northern India the names of these Tâlas may vary slightly, but their construction is identical. The employment of mixed times and the consequent irregular rhythm is the most noticeable feature:—

Name of Tâla.	Name of Sub-division of Tâla.				
	Chaturushra.	Tishra.	Mishra.	Cundha.	Sankirna.
Dhruva ...	4244	3233	7277	5255	9299
Mátsya ..	424	323	727	525	929
Rúpaka ...	42	32	72	52	92
Jhampa ...	412	312	712	512	912
Triputa ...	422	322	722	522	922
Atatâla ...	4422	3322	7722	5522	9922
Ekatâla ...	4	3	7	5	9

[In regarding this table, I must again remind you that the numbers are time-beats and are not sums.]

There being practically no harmony in Hindu music, as considered from a Western point of view, clefs are not employed. The key-note is considered to be Sa, and is, in fact, the exact equivalent of the movable Do of the Tonic Sol-fa system, being taken of any pitch as the performer may require.

Here it may be permitted to introduce what constitutes the foundation of all Indian music—viz., the employment of a given number of melody types, which are known as Râgas. Now it has been urged that Indian music is unexpressive. That this is not so is shown by the meaning of the word râga. It is literally "that which creates passion," and each râga is allied to some special passion or emotion. A râga may be defined briefly as "a melody type founded upon certain intervals of a scale or mode," since it is a melodic extension of these said intervals according to certain well-defined rules. All the notes of this scale may or may not be employed, and differences of succession (often minute), peculiar graces, and varied expression serve to display the special characteristics of each râga. Hence, there may be many râgas in each scale, and, founded upon these râgas, there may be many different melodies; each melody, while being distinct, yet employs the same rules of succession, graces, and occasional emphasis upon or recurrence of certain notes, according to the rules of the râga in which it is composed. As these rules are exceedingly technical and complicated our time does not allow of further details. A knowledge of the application of these rules is known as the "Murchana," and is invariably taught orally. The murchana

then may be said to represent the style of the râga, and when a song or instrumental composition is said "to be in a certain râga," it means that it employs the same scale and melody type, and, in fact, in every way illustrates the character and style of that râga.

It is curious to note that the Indian musician is taught traditionally, that certain râgas are appropriate to certain hours of the day and night, and in educated Indian circles it is even now thought rather a display of ignorance to ask for any râga out of its proper hour. The custom is an ancient one and is mentioned in the Sanskrit authorities.

Out of the seventy-two different scales which have already been noticed, some are more popular than others. These, in Southern India, are the following:—

Máyamâlavagaula ...	c'	b	a♭	g	f	e	d♭	c
Nâta-Bhairavi ...	c'	b♭	a♭	g	f	e♭	d	c
Kârahâraprya... ...	c'	b♭	a	g	f	e♭	d	c
Hanumatódi	c'	b♭	a♭	g	f	e♭	d♭	c
Hârikambógi	c'	b♭	a	g	f	e	d	c
Déhra-S'ankârabhárna	c'	b	a	g	f	e	d	c
Chalanâta	c'	b	a♯	g	f	e	d♯	c
Kâmavârdani	c'	b	a♭	g	f♯	e	d♭	c
Mátsyakaliâni... ...	c'	b	a	g	f♯	e	d	c
Jâlavarâli	c'	b	a♭	g	f♯	e♭	d♭	c

and it may be interesting to note that the Greek chromatic genus is very similar to, although not exactly, the scale Máyamâlavagaula, *in which all elementary exercises are invariably taught.* This scale is universally popular throughout the East; and M. Bourgault-Ducoudray in his work upon Eastern music ("Trente mélodies populaires de Grèce et d'Orient," Paris, 1876) gives it the name of "Chromatique Oriental."

The Greek diatonic modes are also represented—viz.:

Dorian	mode	by	Hanumatódi.
Phrygian	,,	,,	Kârahâraprya.
Lydian	,,	,,	Déhra-S'ankârabhárna.
Hypo-Lydian	,,	,,	Mátsyakaliâni.
Ionian	,,	,,	Hârikambógi.
Æolian	,,	,,	Nâta-Bhairavi.

There are at present two distinct systems of music in use in India; they are known as the Hindustani and the Karnâtik. The latter, which is practised chiefly in Southern India, may be called the national system; the Hindustani shows traces of Arabian and Persian influence. The two systems differ, the Hindustani is perhaps the simpler, but there is yet a very intimate connection between the two. The nomenclature of the various râgas, tâlas, &c., is not the

same, and, as a rule, professors of the Hindustani system are men of poor education as compared with Karnâtik musicians. To the student, however, the most interesting differences are the facts that in the Karnâtik system melodies are composed in *one* râga; and in the Hindustani the employment of mixed râgas is universal; in the Karnâtik much attention is paid to the *form* of the melodies; in the Hindustani more attention is paid to minute differences between the various râgas. (I have throughout this paper quoted the Karnâtik system, unless otherwise specified.)

There are very many kinds of musical compositions; perhaps the easiest way in which I can present them to your notice to-night is by means of this tabular form. It is, however, necessary to state that as the various compositions consist purely of melody, to the casual observer the distinctions are often very subtle. In their composition these melodies are subjected to certain definite rules of form. Almost all consist of—(I.), a sort of burden or refrain called Pállevi; (II.), a short imitation of this burden called Anupállevi; (III.), a stanza or stanzas, usually an uneven number, called Charanâm. These follow each other usually in this order: No. I., No. II., No. I., No. III., No. I., &c. (with no pause between the parts).

In the Hindustani system No. I. is called Asthâyi; No. II., Antâra; No. III., Abhóg.

The rhythm of the Pállevi and Anu-pállevi is generally more marked and regular than that of the Charanâm, which abound in most ingenious imitation, and are interspersed with such a quantity of "graces" that to follow them intelligently requires a considerable theoretical knowledge of Indian music.

And in fact, in listening to Indian music, it is well to remember that—

(α) The melodies are short, lengthened by repetition and variations.

(β) They all resemble a rondo, the piece being concluded with the first strain (the pállevi already explained) or, at all events, with the first phrase (or even note) of the strain.

(γ) A phrase, or period (termed sángiti) is frequently repeated, with slight variations, almost *ad libitum*.

(δ) Much liberty is allowed with respect to pauses, which may be lengthened at will, provided the measure or *tâla* (already explained) be not disturbed.

KARNÂTIK SYSTEM.

Sâralas ...	...	Simple exercises.
Gentuversis	...	Simple exercises, but containing repeated notes.

Alankâras ...	Exercises upon the various tâlas, or times.
Gîtas	Simple melodies.
Prabhandas ...	Very similar to gîtas but divided into two parts and often elaborated in performance.
Thânas	Exercises for the Vina, the tempi being very rapid.
Svârajotas ...	Consisting of I. II. III., the rhythm fluent, decisive, and containing little superfluous grace. Tempo rapid.
Kruthis	Sacred hymns, consisting of I. II. III., usually composed in the more difficult râgas. Contain much grace. Tempo rather of an "Andante con moto."
Kîrthanas ...	Sacred hymns. Very similar to Kruthis, but simpler. Consisting of I. II. III., usually composed in the more popular râgas. Tempo Andante.
Vernams, or Thâna-vernams	Elaborate songs, somewhat like Svârajotas. Containing a good deal of grace, and consisting of I. II. III., but mixed with difficult passages for solmization, usually in the more difficult râgas, and the time purposely made as "catchy" as possible. Tempo very rapid.
S'ankha-Vernams	Similar to Vernams, but tempo less rapid. Sung chiefly at Nautches.
Javadis	Love songs. Sung much at Nautches, and, chiefly, "drawing-room" ballads.* Consisting of I. II. III. Tempo varying, but not too slow.
Pathams... ...	Very similar to javadis. Tempo rather slower; in performance cadences and graces frequently improvised, and melody rejoined at will of singer. Usually in mixed times.
Yella-pathams ... / Tathvams ...	Dirges and allegorical chants. Varying in form.
Lavanis	Folk-Songs. Varying in form.
Mangala... ...	Songs of "Salutation." Used universally at the conclusion of all musical performances. Consisting of I., and always in Râgas Surati or Saurashtra.

* Such *javadis* must not be confounded with songs of the same name sung during the dance *Karwar*.

Pállevi ...	...	A sort of fantasia (somewhat akin to the Welsh Penillion) upon a given subject; the subject being termed "avatar." Consists of three movements: the 1st usually slow, the 2nd rather quicker, and the 3rd very quick. Occasionally there are two subjects interwoven, but distinct.
Râga-Mâlika	...	or "Garland" of râgas. Consists of I. and III., each III. being composed in a different râga. The whole composition is very similar to the Pállevi above mentioned.

HINDUSTANI SYSTEM.

Sârigams	...	Simple exercises.
Tilanas ...	...	Exercises rather more elaborate.
Tappas ...	...	Consisting of I. II. III. Sometimes only of I. and III., and in some respects resembling the Karnâtik javadis. Contain elaborate cadences, are in various tâlas, but usually the most difficult, and the rhythm is purposely made as catchy as possible. Tappas are perhaps the most elegant of any Hindustani songs.
Thungris	...	Consist of I. II. and are in easy tâlas. Essentially love songs, and popular with all.
Dadras ...	...	Consist of I. II., usually in triple time; are simple and contain little grace; usually love songs.
Hori or Holi	...	Somewhat resemble Dhrupads; consist of I. II. III., a fourth strain being sometimes added; are sung at the time of the "Holi" festival.
Gurbahs ...	...	Consist of I. II.; are in easy tâlas (usually of 3, 4, or 7); are easy to sing; heard chiefly at the Dassera or Nauráthri festivals.
Khyals ...	...	Consist of I. II. III.; are always in even time (4), and are intended chiefly for professional musicians to show their proficiency in execution, by improvising embellishments and cadenzas, the tâla remaining regular throughout.
Lavanis ...	...	Folk-Songs.

Ghuzals ...	...	Songs of Persian origin; chiefly love songs; consist of I. III.
Pathams...	...	Songs consisting of I.; for the most part simple and easy to sing; hence very popular.
Dhrupads .	...	Consist of I. II. III. (III. usually subdivided into two parts). The tâla is usually very slow, the theme being varied and embellished according to the proficiency of the player. To understand or appreciate these songs requires a considerable knowledge of Indian music. They are usually of considerable length.

The highest form of instrumental music is without doubt the performance of râga as a solo; and this in both the Hindustani and Karnâtik system is the same.

Two movements are usually considered, called Alâpa and Madhyamakâla.

The Alâpa is a sort of rhapsody, abounding in expressive grace and embellishments of all kinds, constructed so as to display in a prominent manner the special characteristics of the râga in which it is composed. The music is not confined in its rhythm, indeed is often absolutely timeless, the style and pace being at the player's fancy. An alâpa is by far the most beautiful component of Indian music, but skilled performers are rare, and Europeans seldom hear music of this nature.

The Madhyamakâla, a second movement, is in construction symmetrical, and it is, in fact, a development of thânas mentioned previously. The rhythm is marked and regular throughout. A second movement is sometimes added to the madhyamakâla, identical as regards form, but the tempo is more rapid.

Having then thus sketched the secular music of India, there yet remains what is probably the most ancient of all: I refer to the sacred chants of the Sâma-Veda, which contain, in fact, the "incantamenta" of ancient India. The notation of these chants has been little studied, probably the only Europeans who have interested themselves in them are Dr. Haug* and Dr. A. C. Burnell,† both of whom are now dead.

* *Vide* "Ueber das Wesin und der Werth des Wedischen accentes," in Transactions (Abhandlungen) of the Bavarian Academy, xiii. Bd., 11 Abth., 1878; issued separately, and sold by G. Franz in Munich, also "über die altindische opfermusik" in "Vierteljahrsschrift für Musikwissenschaft," Leipzig, 1885.

† *Vide* "The Arsheyabrahmana" (Burnell), Mangalore, 1876; also "Catalogue of a Collection of Sanskrit MSS." (Burnell). Pt. 1, Vedic MSS. (London: Trübner, 1870.)

In all the copies of the Sâma-Veda there are certain signs, consisting for the most part of either letter or numbers, and written either above or below the text. These signs convey to the officiating Brahman the music of the passage he chants.

In the Sâma-vedic chant we find that there are seven notes employed, but that there is nothing similar to Râga, and that the rhythm or time is, like plain chant, entirely subordinate to and dependent upon the words. The notation varies exceedingly, and, indeed, it appears impossible to find any two MSS. which agree precisely upon this point; every copyist adding marks and signs of his own to assist him in his own chanting.

In the MS. copies of the Sâma-Veda two systems of notation are employed; the oldest contains several hundred various signs which not only represent the seven notes of the scale, but also all possible combinations of them, so that each division of a Sâma verse has, as a rule, only one musical note which is inserted after the first syllable of the division. Of this exceedingly complicated—and therefore almost useless for practical purposes—system, a work, entitled "Svârapari-bhasha"* gives a copious explanation.

As time passed doubtless the want of some notation equally expressive, but adapted to practical purposes, became more evident, and in Northern India the use of numerals instead of letters became customary. This practice appears to have been introduced into Tanjore from Gujerat as late as the commencement of the present century. Be this as it may, it is certain that the method of using numerals is now almost universal.

As in the ordinary Indian music, the Sâma-vedic notation makes use of seven notes; they are, however, differently named, and the scale is reckoned as descending instead of ascending; the first note being the fourth (or Madhyama) instead of the first (or Shadja) of the usual scale, resembling the Greek μέση—which was the keynote.

These seven notes are thus named:—

(1) Prâthama (or krushta), corresponding to Ma (=f) of the ordinary Indian scale.
(2) Dvitîya, corresponding to Ga (=e) of the ordinary Indian scale.
(3) Tritîya, corresponding to Ri (=d) of the ordinary Indian scale.
(4) Catûrtha, corresponding to Sa (=c) of the ordinary Indian scale.
(5) Mandra, corresponding to Ni (=b) of the ordinary Indian scale.

See Dr. Burnell's Catalogue referred to in note † previously.

(6) Atisvârya, corresponding to Dha (=a) of the ordinary Indian scale.
(7) Parisvârya, corresponding to Pa (=g) of the ordinary Indian scale.

In addition to these seven notes, known as *prakriti*, there are seven others, known as *vikriti** or compound notes, which express recurring groups or certain other modifications; these compound notes are:—

Prenkâ	which adds two matra to the preceding syllable and ends with the second svara: marked by the figure "2," or, sometimes, by the syllable "pre."
Námana	consisting of the first three notes.
Kárshana ..	a "portamento" either up, marked ∧, or down, marked ∨, including all notes between those marked.
Vinata	Consists of 1† and 2,† and marked "Vi" or "S."
Atyútkrâma ...	a melodic embellishment consisting of 4565.†
Samprasârana ...	a melodic embellishment consisting of 2345.†
Abhigâta ...	a repetition of the note with a short "a," and marked in the Bibliotheca Indica edition of the Sâma Veda by the figure 7.

Notes are also sometimes specially emphasised and styled *Vridda*, but these notes are not marked; prolonged notes, however, are styled *Dirgha*, and are marked by the letter "r," or, in Southern Indian MSS., by "o." When a group of notes occurs, and there is an additional number over each, these upper numbers give the length in "mâtra."‡ The bar or division (parvan) marks the notes to be sung with one breath: the last note of each "parvan" is always "vriddha." The chant is continuous, and the time value of the notes depends entirely upon the words.

This explanation, although far from complete, will in a great measure enable anyone to decipher the notation of these chants as written in the Bibliotheca Indica edition of

* The terms "prakriti" and "vikriti" are purely modern, and evidently are used in a different sense to their usual musical meaning; prakriti, in ordinary Indian music, meaning notes which contain their full complement of s'rutis, and vikriti those which have undergone change as regards this, and are consequently flattened or sharpened.

† These figures refer to the seven Sâma-vedic notes, *prâthama*, *dvitiya*, &c., just spoken of.

‡ A Mâtra in prosody means the time it takes to pronounce a short vowel.

the Sâma-Veda. But still there are various discrepancies which continually puzzle the enquirer. I therefore do not attempt to produce a specimen of this chant in notation; but should I ever return to India I hope to be able to throw more light upon the subject.

During the singing of these chants all these notes are made apparent by certain gestures, or distinct movements of the right hand. This hand is held horizontally, the fingers being close to each other, and the palm upwards. The first note is shown by waving the thumb; the second by striking the second joint of the fore-finger; the third and fourth by striking the second and third fingers in the same way; the fifth by striking the little finger once; the sixth and seventh by striking the little finger twice and thrice respectively; the thumb being employed in all cases to strike with. The seven compound notes are also shown by sweeping the tips of the fingers with the thumb and by bending certain fingers on to the thumb.

We now pass to the consideration of the musical instruments. The people of India have always been conservative in their tastes, and this is shown in a marked degree by the little change that their instruments have undergone during the last two thousand years. This length of time, I am aware, is great, but it appears to be fully warranted, both by the descriptions contained in the Sanskrit treatises, and even more by other references found in certain Pâli works, to which, being of Buddhist authorship, it is an easier matter to assign dates which are tolerably accurate. Again, old sculptures and paintings found in India go still farther to show the great antiquity of these instruments. I might mention especially the Buddhist sculptures of Amravati and of Sanchi; I mention these because certain of them have been brought to England and are now to be found on the staircase at the British Museum.

Musical instruments have in India from very early times been classed in almost the same manner that we have been accustomed to class them in Europe. The native classification is as follows:—

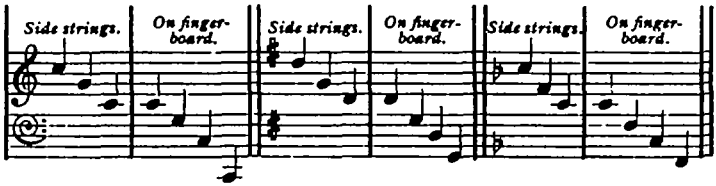
I. Tatra Yantra	Or stringed instruments.
II. Shushira Yantra	Instruments of percussion, *not* being covered with skin or parchment, such as cymbals or gongs, castanets, &c.
III. Ghana Yantra	Instruments of percussion, *being* covered with skin or leather, such as drums, tabors, &c.
IV. Anuddha Yantra	Wind instruments.

Of Indian stringed instruments, those played with a bow are considered as vulgar, and are not, therefore, in use among

musicians of repute. Pizzicato stringed instruments are, on the contrary, esteemed very highly, and have been brought, for purposes of melody, to a great degree of excellence. Their chief peculiarities are: 1. The use of wire strings; 2. The elasticity of, and thinness of these strings in proportion to their length, thus allowing for variation of pitch for purposes of grace or expression; 3. The use of sympathetic strings; 4. The great length of the finger-boards, and the absence of all shifts; 5. The use, in certain of them, of moveable frets; 6. Their tuning, which (except as regards the sympathetic strings) employs only the tonic, fourth, and fifth, or their respective octaves; 7. The absence of any fixed standard of pitch, which applies generally to all Indian music; 8. The employment, when necessary, of the Capo-tasto. Another peculiarity is the occasional use of a small bead, running upon the strings between the bridge and tail piece, and which is used to adjust small errors in tuning (by a pressure applied horizontally towards the tail-piece).

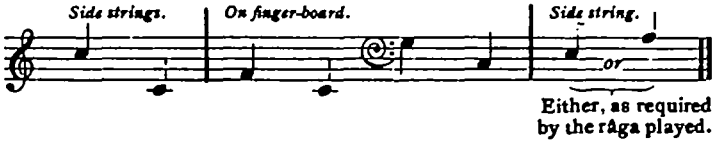
Of stringed instruments the most important is the Vina. It is strung with seven strings of wire, four of which pass over the frets, three are placed at the side. It is fretted semitonically, and is played either with plectra or the finger nails (which are purposely allowed to grow long); the side strings are struck by the little finger moved upwards, the other strings are struck by a downward motion of the first and second fingers. The tone of the Vina, although rather thin, is curiously soft and plaintive, and the peculiarity of the instrument renders it capable of the greatest expression.

It is tuned in one of the three following ways:—



There is another form of Vina, which is used chiefly in Northern India. It also is represented in the plates. It is called also the Bîn, and it differs slightly in its tuning, as well as in the tone, which is not usually so good as that of the Vina of the South, just described.

It is tuned thus:—



The most popular stringed instrument is, next to the Vina, the Sitâr or Súndari, the invention of which has been ascribed to the Persian musician, Amir Khusru, of Delhi, in the twelfth century of our era. The instrument, however, is of Sanskrit origin. The neck of this instrument is about three inches wide, and the frets (sixteen or eighteen in number) are moveable and can be adjusted to the intervals of the mode required. Common custom has five different methods of such adjustments (known as thâts). Sitârs have from three to seven strings, and are tuned to the tonic fifth (and their respective octaves), and the first string or *Chanterelle* invariably to the fourth.

Sitârs are constructed of various sizes and shapes. The bodies are formed usually of gourd, but the common teak wood of the country is also employed; large cocoanuts, and sometimes large conch shells, and even ostrich eggs, are used for the same purpose. Sitârs, in which sympathetic strings are found, are known as "Taruffe," and are common enough.

A beautiful variety of the sitâr, known as Mohur or Tâûs, the body of which is shaped to resemble a peacock, is not uncommon. An instrument, shaped somewhat like a sitâr, but having eight strings, called the Sur-S'ringâra, or love-viol, is occasionally met with.

The common accompaniment to vocal music is the Tamburi, in shape a kind of Vina or Sitâr, with four strings only, and without frets, and tuned to the tonic and dominant. Small pieces of silk placed under the strings at the bridge give a slightly buzzing tone to the instrument. The pitch of the Tamburi is altered as required by means of a species of Capotasto.

A species of Dulcimer, called Svâramándala, is also occasionally to be met with. It is played with plectra, and a sort of moveable nut, shaped like a quoit and held in the left hand, is applied to the strings whilst vibrating to produce varied expression or grace. This peculiarity is found also in the Egyptian Quanūn, and similar instruments.

Of stringed instruments played with a bow there are comparatively few varieties.

The Sârungi is most commonly met with, and is strung usually with three strings of thick gut. Occasionally a fourth string of wire is added, and there are from twelve to fifteen sympathetic strings of wire. In stopping the strings the fingers are usually pressed against the side, and the string is never held down upon the finger-board.

Other bowed instruments are the Sârinda, the Sarôde, and Chikâra. The Tâûs, already mentioned, is sometimes played with a bow.

Before quitting the subject of stringed instruments mention

should be made of the Rabôb, which is used principally in the Punjâb, and among Mussulman musicians. It is strung with three strings of gut and one of brass. The three gut strings are sometimes doubled (as in the Mandoline). Sympathetic strings of wire are usually found, and there are four or five frets of cat-gut. The rabôb, in some form or other, appears to be common in Mohammedan countries, and is probably of Arabian origin. In tone it somewhat resembles a banjo, the belly being of parchment. It is usually played with a wooden plectrum, but occasionally with a bow like a Sârungi.

Of percussion instruments the use of cymbals and castanets is universal. Cymbals are of various sizes, but those of from two to three inches in diameter, called Tâla or Jâlra, are the most popular; the first-named are hollow like cups, the latter are shaped like diminutive Turkish cymbals. These small cymbals are decidedly peculiar to Indian music, and are played to produce a faint clashing or even ringing sound, and with a dexterity that amazes one. They are made of bell-metal, and (as compared with Turkish cymbals) are of considerable thickness in proportion to their small diameter. Larger cymbals, in tone more like the ordinary Turkish instruments of the name, and called "Jhanj," are sometimes found. Castanets, called "Chacra," or "Chittika," are also used, and vary both in shape and size.

Of drums, the most common are the M'ridang and the Tabla. The M'ridang, considered to be the invention of the god S'iva, is a very favourite instrument. Its chief peculiarity consists in that it is made with two heads, of unequal size, and tuned to the tonic and dominant by means of small wedges placed between the shell and the braces. The centre of the smaller head is coated with a composition of resin and wax which gives the tone a sharp almost ringing *timbre*. The Tabla, the tone of which is very similar to the M'ridang, consists of two small kettle drums, of wood or copper (one of each is often used), tuned to the tonic and dominant; such drums are used in Deccan and farther North, in preference to the M'ridang.

Of other drums there are the Nâgara, or Bhéri, large kettle drums; the Naqqerah, somewhat smaller kettle drums; the Dhol, the Dholak, the Dholki, and Dâk, cylindrical drums used by street bands and country people. Also the Khanjeri or ordinary tambourine; the Duffe, Daera, and Thambathè, all varieties of the tambourine family, differing chiefly in size.

Wind instruments in India are looked upon as of secondary importance, probably from the fact that they are forbidden by the Shâstras to Brahmins. Consequently wind instrument players are Mahommedans or Hindus of low caste. The

antiquity of these instruments, however, is undisputed, and certain of them, notably the flute and the shell trumpet, are considered the especial attributes of the gods.

Of instruments of the flute species, the most important is the Pillagovi, or Murali, a transverse flute of simple construction traditionally ascribed to the invention of the god Krishna, who is usually represented as holding or playing upon it. The Nay, a flute of the same construction, *but having the embouchure at the end* (and consequently wanting the lateral mouth-hole of the Pillagovi), is also found. Both these flutes are soft and sweet, the latter especially so. The Algoa, a flûte-à-bec, sounded by means of a whistle, is also used; and in the Punjâb and Upper India such instruments are played in pairs like the ancient Tibiæ pares.

Of reed instruments the principal are the Nâgasâra (or Surnai) and the Muka-Vina. These have various names in different parts of the country, and their use is everywhere common. The Nâgasâra is a sort of oboe of rude construction, having a conical bore, and pierced with a certain number of finger-holes; these are roughly tuned by pieces of wax affixed. The Muka-Vina is similar to the Nâgasâra, but smaller. These pipes are usually provided with spare reeds and an ivory bodkin for their manipulation. A third pipe, known as S'ruti, tuned to the tonic or dominant, is the usual companion to these instruments, and acts as a drone-bass. These pipes, therefore, produce much the same effect as bagpipes, and are, in fact, the regular out-of-door instruments of Indian music. In tone, although harsh and shrill, they have a sort of wild beauty when heard at a distance that is curiously characteristic of the country.

There is also the Moshaq, a bagpipe with chanter, found in the Punjâb and Afghanistan, and in Southern India a bagpipe called S'ruti or Druthi, containing a single drone, is common enough. In general use, too, is the Púngi, or Jínagovi, a pipe used by snake charmers, and formed of a gourd in which two reed pipes are inserted, one being pierced with finger-holes, the other being a drone.

Of instruments of the trumpet kind there are the S'ankhu, a shell trumpet, found in every temple and sounded during religious rites and processions; the Kurna—otherwise called Búruga or Bankhu—a large hoarse-sounding instrument of rude construction, and the especial attribute of persons of high rank; the Tuturi, or Turi, a trumpet with one turn and of a higher pitch than the Kûrna; and the Nafarí, or Nefer, a small-bored straight trumpet.

There is also the S'ringa, or S'ing (called, in Southern India, Kahalay, or Kombu), a large curved metal horn, somewhat like the old Roman Buccina in shape, with a tapering bore. The use of the S'ringa is common both among

Hindus and Mahommedans, and from its peculiar construction its compass can be extended, by good players, upwards as far as the twelfth proper tone. This, of course, varies with the instrument used, and as they are invariably of the rudest workmanship, it is obviously impossible to speak with any certainty as to their compass. Indeed the most elementary principles of acoustics as regards *wind* instruments appears unknown in India. As wind instruments are despised by educated Indian musicians the reason is not far to seek. The most noticeable point appears to be that the use of the cup-shaped mouthpiece has existed in India from remote times.

Such, then, is a rapid sketch of Indian music. The reading of this paper has, I fear, occupied much valuable time, and I must not trespass longer upon your patience. If, however, I have been able, by this paper, to show that the much-despised Indian music is really an Art, and an intricate and difficult Art, worthy of serious study and research, I shall feel more than amply repaid.

NOTE.

During the reading of this paper, examples of the various Indian compositions were played in a masterly manner upon the Vina by Mr. Alaudin Maulabuksh Pathan, at present a student of the Royal Academy of Music, and a son of "Professor" Maulabuksh, chief musician to H.H. the Gaeckwar of Baroda; this gentleman is probably the only instance of an Indian musician studying music seriously at a European Institution.

In order to enable those present to follow more readily the examples played, the form and the rhythm were explained previous to the performance of each: the peculiarities of the râgas employed were pointed out, and the time was beaten previous to the commencement of each melody.

The various Indian instruments were explained by means of a series of plates, showing fifty-one different specimens, chiefly chromo-lithographic reproductions of water-colour drawings by Mr. William Gibb, and published in Captain Day's work referred to in footnote, page 48, of this paper.

DISCUSSION.

Mr. BANISTER.—There is one thing that we all claim for ourselves as musicians and that is thoroughness, and we can thank Captain Day very much indeed for the thoroughness with which he has treated the subject.

(The vote of thanks was passed unanimously.)

Mr. SOUTHGATE.—This has been one of the most interesting

papers we have heard delivered. Captain Day has clearly defined the Ragas. As regards the scales, I think it is entirely a matter of education. If we had been born to them we should have been perfectly satisfied with their modes. If we heard some of the music of, say, eight hundred or a thousand years ago, we should think it was very harsh; but if we had lived then we should not have thought so. I think that there is something in Indian music, and as musicians we should take more interest in it, even if at first our ears do not take to it.

Mr. Blaikley.—One or two points occurred to me whilst hearing Captain Day's interesting paper. It appears that these Indian scales are in their origin distinctly melodic. Notwithstanding this, it is a noticeable point, that whether we take the scale as one of twenty-two degrees to the octave in equal temperament, or the scale as used in actual practice, some of the chief intervals agree more closely with our diatonic scale in just intonation than the intervals obtained by means of our equal temperament of twelve semitones. The strangeness of the impression produced upon our ears would appear therefore to be due not altogether to the actual intervals used, but in great measure to their use in ways to which we are unaccustomed, and the question arises whether with custom we should not grow to forget that strangeness which is at first felt when listening to this music, and appreciate it at its true value. Another point suggested by the paper is the use of the eleventh note of the natural harmonic scale (the trumpet *f* or *f*♯); one of the Indian notes written down by Captain Day is exceedingly close to this, and is quite distinct from the note corresponding to our perfect fourth. The derivation of these two notes from a tube such as a trumpet and from the sub-divisions of a stretched string respectively, and their relationship to our diatonic scale has some interest.

Mr. Prout.—Mr. Pathan, who is studying at the Royal Academy of Music, has shown me several melodies and played them on the pianoforte. If we take melodies constructed on the scale of twenty-two notes and try to play them on our keyed instruments we cannot realise them. I found several of these scales exceedingly interesting, and I have tried whether the tunes were capable of being harmonized. One which contained two augmented seconds produced a very curious effect. The Oriental scales are so distinctly melodic rather than harmonic that I think it impossible to apply to them our Western system of harmony.