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ART. I.—*On the Geographical Distribution of the principal Languages of India, and the feasibility of introducing English as a Lingua Franca.* By the Hon'ble Sir ERSKINE PERRY, President.

Presented July 1852.

INDIA, according to the most temperate authorities,* contains about one hundred and forty-one millions of inhabitants, who are distributed by Native geographers over fifty-seven, or, as some write, eighty-four provinces, all with peculiar languages.† Although this enumeration of different languages is, as we shall presently see, grossly exaggerated, there is no doubt that the diversity of tongues is very great; and the obstacle thereby interposed to free intercourse, and the diffusion of ideas from any central authority, is too obvious to be pointed out. My connection with the Board of Education at this Presidency having frequently led me to observe the complete isolation by which the intellectual movement of one province is separated from that of another, I have been induced to consider whether any means were at hand for encouraging the growth of a common medium of intercourse amongst

* Elphinstone's India, vol. i. p. 5.

† See Colebrooke, in As. Res. vol. xxiii. p. 220; but these are mythical numbers.

the educated minds of India. But the subject is too literary to allow of its being properly treated in a minute for a Government Board: it is, possibly, too political for discussion in a Society like this; yet, as the true object of the investigation of Oriental arts, sciences, and literature, for which this Society was established in 1804, is identical with that of politics, or πολιτεία, in its large sense, *i. e.* the art or science of increasing the happiness of man in civilized society; and as party feeling, fortunately, does not interpose in India, to cloud the judgment or awaken angry passions, I trust I may be allowed, without impropriety, to enter a field of inquiry, which, in some degree, touches upon the province of good government.

I.

I will first of all describe, as accurately as my means enable me, the limits of the principal languages of India; but, in our present state of knowledge, no such sketch can be anything more than an approximation to the truth, nor is it likely, for a long period to come, that an accurate language-map of India can be constructed. For, first of all, the limits of two neighbouring languages often occur in wild, unexplored, or unpeopled, tracts of country, so as to prevent the tracing of a precise boundary line; and, secondly, there have been such frequent vicissitudes among the governing Hindu races, each extending its language in turn over the territory of its neighbour, as to have created in many parts a complicated intermingling of languages, which would require for their unravelment a more minute inquiry, and closer study of the localities, than any European has yet been able to institute. Thus, in the country called, in Hindu nomenclature, *Karnátaka Désa*, or the high table-land above the Western and Eastern Ghâts of the peninsula, —which the English call, with no very precise definition, the Deccan,* the Southern Maratha Country, and Mysore,—Canarese and Marátha dynasties have alternately succeeded each other, and both have been broken in upon by invading powers from the Coromandel Coast in the south, so that the Canarese, Maráthi, and Tamil languages, have penetrated, each with a deep indent, into the language-region of its neighbours. Thus, on travelling through the Sátára districts last January, I found Canarese spoken in villages much to the north of the

* The ancient Hindu geographers gave the name of Dakshina, or the South, to the whole of India south of the Narbadda: the Mahomedans confined this name to the country south of the Krishna, while the English apply it in a different sense from either, and seem to confine it to the table-land between Kandésh and the Krishna.

limits assigned to it by the best authorities, reaching nearly up to Pandarpur; Maráthi, on the other hand, extends far to the south of Pandarpur, and Canarese and Marátha villages will be found to alternate throughout these districts,-just as *Johannes von Müller* describes villages in Switzerland, where French is spoken on one side of a crooked street, and German on the other.

Notwithstanding, however, the numerous languages which have been assigned by Bráhmans to India, it was perceived by them from a very early period that a simple classification might be made; and a two-fold division was determined on, depending, mainly, on geographical considerations, by which five northern languages were grouped in one class, and five southern languages in another, under the denominations, so familiar to us in India, of *Panch Gaur* and *Panch Dravid*.

According to the enumeration of the Bráhman pundits, whom Colebrooke cites,* the following is the distribution usually given; and I need scarcely mention, that whilst the name of *Gaur*, or Bengal, is extended to the whole of Northern India, or Hindustan, the name of that part of the Coromandel Coast between the twelfth and thirteenth parallels of north latitude, called *Dravida*, is applied to the whole peninsula:—

The five "Gaurs."	*The five "Dravids."*
1, Saraswati (extinct).	1, Tamil.
2, Kanoji.	2, Maráthi.
3, Gaur, or Bengáli.	3, Carnatic.
4, Maithila, or Tirhuti.	4, Telinga, or Telugu.
5, Orissa, or Urya.	5, Gujaráti.

Mr. Elphinstone† gives a somewhat different division, assigning Gujaráti to the northern, and Urya to the southern languages; and the *Haiga* Bráhmans, in Cánara, give a third list of the *Dravids*, excluding, strangely enough, the country on the Malabar Coast where they themselves are domiciled.‡

But it is unnecessary to examine these Bráhminical divisions further, as they are founded on no scientific principle, and convey little accurate information, although, by accident, the binary or mechanical division which geography, or, perhaps, a fanciful notion of symmetry, seems to have suggested, is the same which the increased knowledge of philology in the present day enables us to adopt. It would be unjust, however,

* See Colebrooke, As. Res. vol. xxiii. p. 219.

† India, vol. i. p. 278.

‡ F. Buchanan's Mysore, vol. iii. p. 90.

not to add that the largeness of views, and the great amount of observation which rendered a generalization so nearly approaching to the truth possible, does infinite credit to Bráhminical intellect at the early period when these conclusions were drawn.

When European scholars first began to study the languages of India with diligence, they were inclined to suppose that the southern languages, as well as the northern, were derived from the Sanskrit. Dr. Cary, Wilkins, and Colebrooke, were all of this opinion. Mr. Campbell, in his Grammar of the Telugu or Telinga language, was the first to dispute this affiliation, and he pointed out the mode in which the Bráhmans had made large importations from the sacred language of their religion into all the southern tongues, so as to give the latter the appearance of a derivation from the Sanskrit. Ellis, who is the great authority on the southern languages, carried the investigation further; and he showed that the chief languages of the peninsula,—viz. (1) Kárnátaca, (2) Telugu, (3) Malayálam, (4) Tulu, (5) Tamil,—all belong to one family,* of which the latter is the most cultivated; and now, Campbell, Ellis, Rask, and Lassen, all seem to agree with the Revd. Mr. Taylor, that the Tamil and Sanskrit languages belong to essentially distinct stocks.† Mr. Taylor further thinks that there was originally one simple, homogeneous dialect, spoken by rude aborigines, from the Himalayas to Cape Comorin, of which the Tamil is the cultivated representative.

It scarcely, however, accords with the philological experience of other parts of the world, that at a period when the Native of India was a rude savage, one homogeneous tongue should prevail over the vast limits comprehended between the Himalayas and the Equator—for Ceylon, the Laccadives, and the Maldives equally fall within the Tamiloid zone. It would rather seem, that, if such a wide extension of one language or of closely allied languages can be demonstrated, its diffusion must be owing to the operations of some race already arrived at a considerable degree of culture. Undoubtedly the evidence of this wide diffusion of what I term, (in order to avoid theorizing,) a Tamiloid language, is very strong, and it is accumulating every day. Thus Mr. Reeve points out, in the Preface to his Canarese Dictionary, that "the affinity between the Teloogoo and Karnátaca is so great, that frequently it is only necessary to change an initial or an inflection to make the correspondence complete." But Ellis, as we have seen, shows both of

* See note in Campbell's Telugu Grammar, p. 3.

† See Preface to Rottler's Tamil Dictionary.

these languages to be cognate with Tamil. Again: the Tamil-speaking inhabitants of the Coromandel Coast can make themselves intelligible when they get into the districts on the opposite side of the peninsula, where Malayálam is vernacular.* So "the language of Tulava, (on the Coast of Canara,) has a strong resemblance to that of Malayálá,"† though, as I gather from the Tulu-speaking Natives of the Malabar Coast whom I have met in Bombay,‡ they are unable to understand their Malayálam neighbours. But it is not only in the fertile lowlands near the sea on either side of the peninsula, and on the easily-traversed plains of the plateau, that the Tamil family of languages is to be found. The valuable collection of manuscripts accumulated by Colonel Mackenzie, and the inscriptions gathered at great expense and pains by Mr. Walter Elliot,‖ afford us evidence of those wide provinces having been reigned over by Tamil and Canarese dynasties within historical periods, and hence the diffusion of these languages is explained. It is only when we penetrate the more remote and wild localities of India,—that singular language-group, or isle of languages (as Ritter terms it), the Nil Giris, where, it is said, five distinct languages are vernacular, the wilds of Gondwana, the hill tops of Central India and of Sindh,—and listen to the evidence as to the traces there discoverable of a Tamiloid tongue, that we become convinced of its wide and early diffusion. Captain Harkness, who was the first scholar to examine closely the language spoken by that remarkable race the *Todas* on the Nil Giris, pronounces it to be closely allied to the Tamil,§ and the subsequent investigations of the German Missionaries confirm this conclusion.¶ The inhabitants of the mountains of Coorg, who in independent bearing, good looks, and all the outward signs of well being, are by far the finest race I have seen in India, speak a language called *Kodagu*, which Mr.

* F. Buchanan's Mysore, vol. ii. p. 346.

† Ibid, vol. iii. p. 90.

‡ Hundreds of these men (they call themselves two thousand) are to be found in Bombay as palanquin bearers, and hamalls; but the bearer caste generally in Bombay, called Camatties, and the *Bui* above the Ghâts in the Deccan, who carry palanquins, are from Telinghana. The Camatties in Bombay have been settled here for a long period, but retain their Telugu language, and by the last census it appears that the part of the native town where they are located contains above eleven thousand souls.

‖ See article on Hindu Inscriptions. Jl. Rl. As. Soc. vol. iv. p. 8.

§ Description of a singular aboriginal race, &c. by Captain Harkness. London: 1832.

¶ See paper by Dr. Stevenson in this Journal, vol. i. p. 155; and a note by Dr. Scmid, ibid, vol. iii. p. 84.

Ellis informs us is a dialect of Tulu.* On the crest of that high and romantic range, extending from Cochin to Cape Comorin, and reaching to eight or nine thousand feet above the sea, Francis Buchanan found that the rude tribes spoke "a dialect differing only in accent from Tamil."† Again: Mr. Ellis points out that the language of the mountaineers of Rajmahal, dividing Bengal from Bahar, abounds in terms common to the Tamil and Telinga; and Mr. Hodgson, who has paid particular attention to this subject, after comparing the vocabularies of seven languages now spoken by rude tribes in Central India, pronounces all of them to belong to the Tamil;‡ and the Brahui, on the mountains of Sindh, are said to have a language very like that of the Todas. Indeed, the interesting inquiries which our colleague Dr. Stevenson is now conducting in this Journal respecting the grammatical structure of Indian languages, render it not impossible that a Tamiloid tongue will be hereafter found to have constituted the original staple of all the languages of India, although it has become obscured, and in some instances, like Celtic by the Anglo-Saxon, completely effaced by the preponderance of the intruding Arian element from the north.

However this may be, in the state of knowledge which we now possess, we are able to determine that a closely allied family of languages extends over the whole of Southern India, cropping out on the hill tops in Central India, and on the mountains of the West, and, perhaps, also traceable on the southern slopes of the Himalayas. According to Rask, who, with great lingual qualifications, examined the language of Ceylon on the spot, Cinghalese also, contrary to the received opinion, belongs to this family;‖ and Lassen states that the languages of the Laccadives and Maldives come within the same category.§

Advancing towards the north, we are met by the intruding languages of a different family, of which Maráthi, or its dialect Konkani, is the southernmost representative; and, according to the evidence which Lassen with great industry has collected, it would appear that a race

* Campbell's Telugu Grammar; but I learn from the Rev. Mr. Mögling of Mangalore that it is more closely allied to Tamil and Malayálam than to Tulu.

† Mysore, vol. ii. p. 338.

‡ Paper read before the Calcutta Asiatic Society, December 1848.

‖ Preface to Singalesisk Skriftlaere. Colombo: 1821. Cited by Lassen, *Indische Alterthumskunde*, i. p. 199.

§ The Missionary Woigle attributes the language of these islands to the Malayan family, but apparently without reason.—*Zeitschrift der Deutschen Morgenlandischen Gesellschaft*, 1848, p. 258.

from Central Asia, entering India at the north-west,* had diffused themselves and their language, their religion and their Bráhminical distinctions, over the plains of India, at a period before true history begins. We may even see traces on record of the mode by which, within a comparatively recent period, the priestly race from the north insinuated themselves into Southern India. In a manuscript in the Malayálam language, written on palm leaves, and forming part of Colonel Mackenzie's collection, an account is given of the introduction of Bráhmans from the north, which seems to contain some glimpses of true history. After describing the elevation of the land on the Malabar Coast by the power of Parasu Rama,—a tradition which, from its recurrence in one shape or another along the whole coast, and from geological evidence, may possibly shadow forth a true physical fact, the gradual elevation of the sea-bord,—it is said "he made the ocean withdraw, and Kerála was created." Rama then "brought Bráhmans from many points, and placed them in Kerálam, but they would not stay there. Therefore, having considered, he brought the Arya Bráhmans from the *Utara Bhumi*, [Land of the North,] and settled them there. The Arya Bráhmans continued to reside with constancy in Malayálam. This being heard by those that went away at first, they returned again, and these are called the Pattan Tulawar; but having originally come from different quarters, and of different tribes, the Pattan Tulawar *still use different languages*. Afterwards numbers of Tamuler came thither, and between the Tamuler Bráhmans who came, and the Bráhmanar who were already residing, there arose disputes about the burning of a dead body, &c. &c. But how they became Tamuler, and what the truth was, and how the *Bráhma Uat'ya* which had been incurred was cleared from them, Iswar only knows."†

As a general conclusion, therefore, we may say that the whole of India may be divided between two classes of language—the language of the intruding Arians, or Sanskritoid, in the north, and the language of a civilized race in the south of India, represented by its most cultivated branch, the Tamil. Just as the greater and most civilized part of Europe may be divided between two distinct families of language, the Teutonic and the Romanesque. According to this division, the principal languages of India will be ranged as follows :—

* *Indische Alterthumskunde*, 1. p. 400, et seq. Dr. Weber, however, contends, that the Arians entered India from the north. See *Indische Studien*, p. 165. Leipsic : 1849.

† Mackenzie Collection, vol. ii. p. 83.

Arian, Sanskritoid, or Northern Family.

1, Hindi.
- *a* Hindustani, or Urdu.
- *b* Brij Básha.
- *c* Rangri Básha.*
- *d* Panjábi.
- *e* Multáni.
- *f* Játaki.
- *g* Sindhi.
- *h* Marwádi.

2, Kashmiri.†
3, Bengáli.
- *a* Tirhuti.

4, Gujaráti.
- *a* Kachi.‡

5, Maráthi.
6, Konkani.
7, Urya.

Turanian, Tamiloid, or Southern Family.

1, Telugu, or Telinga.
2, Karnátaka.
3, Tamil.
4, Malayálam.
5, Tulu.
6, Gondwani?

Limits of Hindi.

Speaking generally, the whole of Upper India, including the Panjáb, from the Himalayan to the Vindhyan range, but exclusive of Bengal, may be said to be possessed by one language, the Hindi. Nor is it only on the plains of Hindustan that it is to be found. On the southern slope of the Himalayas, in Kumaon and Gehrwal, Mr. Trail informs us the language is pure Hindi;‖ and generally along the sub-Himalayan range as far as the Gogra river, the impure Hindi dialect introduced by the Gorkhas from the plains appears to be extirpating the vernacular Thibetan tongues of the aboriginal mountaineers.§ Even beyond the limits I have mentioned, the genius of the language seems to prevail, as Mr. Masson found that with Hindi he could make himself intelligible throughout the whole of Kohistan.¶ It is not meant by the use of the word "Hindi" to denote a language of fixed characters, like French or Latin, or even like Bengáli and Maráthi: the term is only used to comprehend under a common designation the various dialects of a language essentially one, but which has received no great cultivation in any of its forms. According to the Bráhman pundits of Benares, "there are hundreds of dialects equally entitled to the name."** The Brij

* Malcolm's Central India, vol. ii.

† In the language-map accompanying this article, Kashmiri ought to have been denoted as a distinct language rather than as a branch of Hindi.

‡ Kachi, or the language of Cutch, might, probably, have been better classed under Hindi.

‖ Official Reports on Kumaon, published by the orders of the Lieutenant Governor. Agra: 1848.

§ Mr. Hodgson, As. Res. vol. xvi. p. 415.

¶ Masson's Journey, vol. i. p. 220; Ibid, vol. ii. p. 277.

** Report of Bombay Board of Education, 1848, p. 5.

Básha, (or Bhákha, as it is pronounced on the Ganges,) and the Panjábi, are the two most cultivated varieties of it,* but the Panjábi passes into Multáni, which a good philologist has shown in this journal to be a corrupted form of Panjábi; whilst Játaki, again, further to the south, is a corrupted form of Multáni,† and Sindhi and Hindi, in the opinion of an excellent Hindi scholar, are only provincial varieties.‡ But Sindhi, according to Lieut. Burton, who has studied it carefully on the spot, is "directly derived from Sanskrit, yet is a perfectly distinct dialect."‖ When the Maráthas extended their conquests into Hindustan, they found Hindi everywhere prevalent, from the limits of the desert to the frontiers of Bundelcund; and, finding it different from their own tongue, they called it, contemptuously, Rangri Básha, *quasi*, barbarous jargon.§ Sir John Malcolm extends the Rangri Bhákha as far west as the Indus, and east as far as the frontier of Bundelcund, where, according to Ritter,¶ the Bengáli tongue begins; but this is an error, for in Bundelcund, as in all the country to the Indus from the western frontier of Bengal, dialects of Hindi prevail.** The Marwádi and other dialects of Rájputána are said to be little connected with one another, but it is clear that they are varieties of Hindi, introduced by the intruding Rájput races; and, on travelling through Rájputána, it strikes the most cursory observer what a small element in the population the dominant Rájput constitutes.

Hindi, according to Mr. Colebrooke, and the Serampore translators of the Bible, owes nine-tenths of its vocables to Sanskrit roots: when it is spoken by Musalmans, and enriches itself from Persian or Arabic roots, it becomes Urdu or Hindustáni, in which form Garcin de Tassy observes it is employed by all Hindu reformers, or religious innovators; but this remark seems rather to apply to Hindi proper than to Hindustáni. When Hindi is spoken by Hindus, and draws on Sanskrit for enrichment or embellishment, it more appropriately deserves and bears the name Hindi; but the term is used so loosely all over India to denote the vernacular tongue of the district, that it is not easy to attribute to it a very precise signification.

Limits of Bengáli.

Bengáli, from its well-marked geographical limits towards the west, north, and east,

* Colebrooke, in As. Res. vol. vii. p. 230.

† Lieut. Burton. Bombay Journal, vol. iii. p. 84.

‡ James Prinsep. Beng. As. Jl. May 1837.

‖ Burton's Sindh, and the Races inhabiting it, p. 69. London: 1851.

§ Malcolm's Central India, vol. ii. p. 191.

¶ Asien, vol. vi. p. 768.

** See Hamilton's Hindostan, vol. i. p. 218.

according with the province of Bengal,—from its being the language of at least thirty million souls,—and from the cultivation which has been given to it, well deserves the name of a distinct language, though its relation to Sanskrit is, perhaps, not other than that of so-called Hindi. According to Colebrooke,* there are but few words in Bengáli not derived from Sanskrit; and the same writer observes of Tirhuti, on its north-eastern border, that it has great affinity with Bengáli. It may, perhaps, be observed at once, that, of all the languages belonging to the Arian class, our present state of knowledge does not enable us to determine whether they are developments of some tongue, of which Sanskrit is the cultivated representative, and of which *Magadhi* or *Pali*, at the æra of As'oka and the introduction of Buddhism to Ceylon, was a spoken form, or whether Sanskrit has been superinduced upon some aboriginal tongue, as it has been demonstrably, though in much smaller quantity, upon the Tamiloid languages of the south, and as French has been introduced into Anglo-Saxon. Certain it is, that in every Arian tongue, a considerable, and apparently primitive element is found, (in Gujaráti it is reckoned at one-third of the whole language,) which is not traceable to Sanskrit.

Gujaráti Limits.

On descending southwards, we find the Gujaráti in a sufficiently compact and characteristic form to constitute it a language, and owing its unity of character, no doubt, like the Bengáli, Urya, Maráthi, Canarese, and Tamil, to an early and powerful dynasty, extending over the country where it is spoken, and of which we have ample traces in history. The dialects of Kachi and Sindhi are quite intelligible to our Gujaráti interpreters in the Supreme Court, but Kachi seems to be a transition dialect between Sindhi and Gujaráti,† and the intelligibility of these languages is probably owing to the common relation of all of them to Hindi; though, occasionally, inhabitants of those countries use a *patois* that is quite incomprehensible to a Native of Gujarát. This, however, is no more than occurs amongst inhabitants of different provinces of Europe, such as Italy or France, where the language is but one. Gujaráti is bounded by the Marwádi a little to the north of Deesa, to the north and east by the Hindi or Rangri Básha of Malcolm‡ in Rájputána and Malwa respectively, and in the south it dove-tails with Maráthi in the valleys of the Narbadda and Tapti, ending at *Hámp*, on the former river, and running into *Nandobár* on the latter.

* As. Res. vol. xxiii. p. 224.

† See Lieut. Burton's Sindh, p. 60.

‡ Malcolm's Central India, vol. ii. p. 191.

Limits of Maráthí.

The Maráthi, as I have before observed, extends further to the south than any other member of the northern family of languages; and it has one remarkable peculiarity,—it is the only language on the west coast to which the natural barrier of the Western Ghâts has opposed no obstacle to its diffusion on both sides of the range, the cause of which I apprehend to be that the Maráthas were originally a race of mountaineers, situated on the crest of the Ghâts, it is said in *Baglán*, and cultivating the fertile valleys, or *Máwals*, running to the east, as well as the eligible depths in the Konkan on their western border. Being, moreover, a martial race, the favourable isolated hills which present themselves for defence in the latter rugged region would further tempt them to descend the precipitous sides of the *Saihádri* range, and to occupy the Konkan. The country called *Mahárâshtra*, which is first mentioned in Indian history in the *Mahâwánso*, probably obtained its name, and received a distinctive language from the existence of a Marátha dynasty, at some period not recorded in history. But at a comparatively recent date, I think, it clearly appears from the inscriptions translated by Walter Elliot, that the *Yádavas*, who held *Devagiri* or *Daulatabád* A. D. 1294, when the Mussalmans first turned their arms against the south, were Maráthas, and not Rájputs.*

The northern limits of Maráthi on the sea coast are to be found in the Kolwan Hills, or country of the Koles, near the Portuguese settlement of *Daman*, and it extends above the Ghâts in a north-easterly direction along the *Sátpura* range, parallel to the Narbadda.† About *Nandobár*, in the jungly valley of the Tapti, it intermingles with Gujaráti. To the eastward, its boundary has not been ascertained, but it is spoken throughout *Berár*, and in the open part of the territories of *Núgpur;* and on the whole of its eastern border it abuts on the country and language of the Gonds. From the *Núgpur* territories, Maráthi trends to the south-west, "touching in advance nearly on *Bijapur* and *Shankashwar*,"‡ and thence trends south-westerly to the coast at *Sidashaghur*, along the line marked out by Colonel Wilks and Mr. Walter Elliot as the western boundary of Canarese. From *Daman*, in the Northern Konkan, Maráthi runs down the coast both below and above the Ghâts to the neighbourhood of Goa, where it meets the language which Lassen,

* See W. Elliot, in Jl. Royal As. Soc. vol. iv. p. 28—30; and Briggs' Ferishta, vol. iii.

† Dr. Wilson, in *Oriental Christian Spectator*, 1848.

‡ Dr. Wilson, *ut sup.*

following his authorities Mackenzie and Ellis, calls Konkani,* and which language runs, according to Mr. Walter Elliot, nearly as far as Mangalore,† but the southern limits of this mixed dialect, however, I learn from Native travellers, and from the German Missionaries at Mangalore, is a village four miles north of *Upi*, or Oodapee, near Coondapore, where Tulu, or the language of Canara, begins.

Limits of Konkani.

This Konkani dialect, however, appears to be no other than Maráthi, with a large infusion of Tulu and Canarese words, the former derived from the indigenous inhabitants of Tulava, or Canara, the latter from the long subjection of this part of the Konkan to Canarese dynasties above the Ghâts. F. Buchanan found that at Carwar, fifty-five miles to the south of Goa, "the dialect of Konkan is used, but, from having been long subject to Beejapore, almost all the inhabitants can speak Maráthi."‡ The fact is undoubted; but the reason given is wrong, as the vernacular language of *Bijapur* is Canarese, and not Maráthi. Konkani being the mother tongue of many numerous classes in Bombay,—amongst others of the Shenvi Bráhmans,—I requested Mr. Murphy, Chief Interpreter of the Supreme Court, to examine the language for me, and I subjoin a very interesting note of his upon it.‖

The subject, however, requires a closer philological investigation than it has yet received, and I am informed by the Revd. H. Mögling, of Mangalore, that the Konkani-speaking Bráhmans of that part of the coast, where the language is vernacular, consider it quite distinct from, though cognate with, Maráthi, and that it has an equally elaborate grammar of its own. The limits extend from Goa below the Ghâts, to the village before mentioned, north of *Upi*.

* *Indische Alterthumskunde*, vol. i. p. 360.

† Jl. of As. Soc. of Bengal, Nov. 1847.

‡ Cited in Hamilton, vol. ii. p. 262.

‖ "An examination of the grammar of the Konkani proves it to be decidedly that of the Maráthi language. The nouns and verbs are inflected in the same manner, with some slight modifications in the details. A general characteristic which it shares with Gujaráti and Marwári, is the adoption of *o* as the masculine termination, instead of the *á*, used in Hindi and Maráthi.....The Konkani explains some of the difficulties of the Maráthi: what are anomalies or defective in the latter are sometimes found normal and complete in the former. It bears the stamp of a peculiar Bráhminical influence, many Sanskrit words being in common popular use for natural objects which are not so, as far as I know, in any other part of India. These are pronounced purely by the Shenvis, but by the common Christian population, (Natives of Goa,) are corrupted. Thus the common terms for *water*, *tree*, and *grass*, are Sanskrit: pronounced by the Shenvis *udak*, *vriksh*, *trin*; by Native Christians *udik*, *vukh*, *tan*.—*Note by Mr. Murphy.*

From this part of the coast in northern Canara, a diagonal line, running in a north-east direction towards Beder, marks the boundary between Maráthi and Canarese,*—of the latter, at least, above the Ghâts. In the neighbourhood of Beder the three languages of the Bala Ghát or plateau—Telinga, Maráthi, and Canarese—are said to meet.†

Limits of the Urya.

The language of Orissa is the last member of the Arian or Hindi family which requires to be mentioned. The original site of the Or, or Odra tribe appears to have had very narrow limits, viz. along the coast-line from the *Rasikulia* river, near *Gánjám*, northwards to the *Bans Kans* river, near *Soro*, in latitude 21° 10′; but in the process of migration and conquest under the *Kesári*, and more especially under the *Ganga Vansa* line, the limits of Orissa (*Or-dêsa*) were extended to Midnapore and Hooghly on the north, and to Rajahmundry on the Godavery to the south.

Orissa is backed to the westward by a range of granite hills, from 300 to 2000 feet high, but attaining higher elevations in the wild and little explored regions of Gondwana, further west. At the foot of these hills, the Konkan, or plain between them and the sea, is divided into two distinct portions. On the first, beds of laterite of considerable depth run out in easy undulations to the plains, on which not a stone of the size of a pebble is to be found between the termination of the laterite and the ocean. This district is, again, bounded by a marshy woodland tract along the sea shore, varying in breadth from five to twenty miles, and resembling the Sunderbuns of the Ganges in its innumerable winding streams, swamps, tigers, and alligators. It is on the other comparatively fertile lands of the central district called the *Mogalhandi* that the civilization and aggrandizement of the Urya race has developed itself.

The language, according to Mr. Stirling, "is a tolerably pure Básha (dialect) of Bengáli."‡ In the direction of Bengal it follows the coast-line as far as the Hijellee and Tumlook divisions on the Hooghly. On the western side of the Midnapore district it intermingles with Bengáli, near the river *Subanrekha*. To the westward, the Gond and Urya languages pass into each other; the Rajah of Sonnapur informing Mr. Stirling that half his people spoke the one language, half the other.‖

* Colonel Mackenzie, in As. Res. vol. vii.; W. Elliot, in Jl. of Royal As. Soc. vol. iv. p. 30.

† Colonel Wilks' Historical Researches in Mysore.

‡ Account of Orissa. As. Res. vol. xv.

‖ Ibid.

About *Gánjám*, on the coast, the first traces of Telinga occur. The Urya still prevails, however, forty-five miles south of *Gánjám* on the low lands of the sea shore, beyond which Telinga begins to predominate: at Cicacole the latter is the prevailing dialect, and in Vizagapatam Telinga only is spoken in the open country, though Urya on the mountains runs further down to the south.*

Limits of the Gond language.

Of the Gond language, Professor Lassen, writing in 1843, says that we know absolutely nothing.† Captain Blunt, whose interesting journey in 1795, from Benares to Rajahmundry, gives us almost all the information we possess of many parts of the interior, observes of the language that it differs wholly from all its neighbours, Telinga, Maráthi, Urya;‡ but as Ritter observes, this is the remark of a mere traveller, not a philologist. The *jet blackness* attributed to many of the tribes,‖ and pointed out both by Stirling and Blunt, is another example out of many to be found of the dark colour of the aborigines of India. Since Lassen wrote, however, the collation of the vocabulary of the Gonds with the languages of the south would seem to leave little doubt that we may safely classify Gondi as a member of the Tamiloid family.§

At present, however, the Gondwana highlands and jungles comprise such a large district of unexplored country, that they form quite an oasis in our maps; and as the Bengáli, Maráthi, Urya, and Telinga languages all abut upon them, it is impossible to trace their respective boundary lines with accuracy.

In dismissing the languages of the North, we may observe that their distribution and acquisition of distinctive characters appear to be owing to two causes—first, the geological features of the country over which they are spread; second, the accident of independent and powerful dynasties erecting themselves in certain localities. Thus, if the Arian race entered India at the north-west or north, and settled themselves, as all tradition indicates, in the Panjáb, and towards the valley of the Ganges, the wide plains of Hindustan, over which a buggy may be driven in the dry season for a thousand miles in every direction without a made road, would present no obstacle whatever to civilized races such

* Stirling. As. Res. vol. xv. p. 206.

† *Indische Alterthumskunde*, vol. i. p. 375.

‡ Narrative of a Tour from Chunarghur to Yertnagoodum, &c. As. Res. vol. vii. p. 57.

‖ Stirling, *ut sup.* p. 204. See as to Negroes of India, ante p. 246 (note).

§ See paper by Mr. Walter Elliot, in Jl. of As. Soc. of Bengal, Nov. 1847. Ditto by Mr. Hodgson, on Seven Languages of Tribes in Central India. Ibid, Dec. 1848.

as Alexander encountered, and Megasthenes describes, who were tending to diffuse their civilization and their language. The Arian conqueror or adventurer, whichever he might be, in descending to the south, would find physical peculiarities in the country pitched upon that would either wed him to the spot, or would offer obstacles to a speedy return. Thus, those who surmounted the barren heights separating Bahar from Bengal would feel too well pleased with the alluvial richness of the well watered plains below them to seek to retrace their steps, and a favourable combination of circumstances would soon raise *Gaur* into a kingdom, and Bengáli into a national tongue. The same train of circumstances operating on those who reached the fat lands of Gujarát, after quitting dreary Marwar, and shaking off the dust of its western desert, would soon induce them to convert their tents into houses; and the early existence of a Gujaráti kingdom fully accounts for the growth and distribution of its language. On the other hand, those who ascended the plateau of Bundelcund, or penetrated the fastnesses of Rájputána, might have been sufficiently pleased with the easy dominion they obtained over the wild indigenous *Bhils* and *Meinas*, to induce them to abandon the more fertile plains below; but as such localities gave no opportunity for extended empire, the Hindi they brought with them never grew up into a distinct language, and is only distinguishable as a *patois* from the Hindi of the plains. Whether the *Bhils* of *Rájputána* and of the *Satpura* range, the *Kolis** of the Western Ghâts, and other hill tribes in this Presidency, have retained any traces of an aboriginal language, I have never been able to ascertain; but the fact is stated broadly by Sir John Malcolm, and it is not unlikely to be correct.

The Maráthas, like the *Gujars*, were probably able, as I have suggested, to establish an extensive empire at an early period, although we have no such authentic accounts of it as we have of the dynasty established at *Anhalwára Patan*, in Gujarát; but it is not improbable that the city *Tágara*, mentioned in the Periplus, was a Marátha capital. Now, as these two dynasties came into contact in the Gulf of Cambay, it is instructive to observe the point at which the Gujaráti and Maráthi languages divide. On looking at the map, it is difficult to understand why Gujarát should turn the corner of the Gulf of Cambay, or, at all events, why it should descend the coast, and cross the rivers Narbadda

* The Ramusis of the Bombay Ghâts have immigrated from Telingana within a recent period, and though they have adopted Maráthi, they preserve a few terms of their original Telinga for purposes of crime, &c. See Captain Macintosh's Account of the Ramoosies. Bombay: 1833.

and Tapti. But, on visiting the country, the physical features of the land, and the characters of the two races, explain the phenomenon at once. The *Gujars* are excellent cultivators,* and the country they inhabit is a fine plain of alluvial loam, in many parts forty feet deep, and though composed of granites from the Aravalli range, quartz from the Méwar hills, and sandstone and trap from the Malwa plateau, so worn down is the whole alluvium by the gradual descent from the highlands, that, as in the Orissan *Mogalhandi*, not a pebble is left in the country to scare a crow withal. The Maráthas, on the other hand, are essentially mountaineers, herdsmen, and soldiers, but bad farmers. As, then, the black soil of Gujarát descends the coast as far as *Daman* to the foot of the *Kolwan* Hills, where Kole Rajahs still hold their rustic court, the *Gujars* naturally followed the course of the soil they knew so well how to till, whilst the Maráthas clung to their more congenial hills.

If we now approach the Tamiloid languages of the south, we shall find that similar geological causes and dynastic influences have governed their distribution.

Limits of the Telinga language.

On taking up the point at the east coast, where we left the Urya-speaking races extending themselves to the southwards, the Telinga language begins somewhere about *Gánjám*, though Urya seems extending itself southwards. At Vizagapatam, which is 120 miles further south, Mr. Stirling states that Telinga is exclusively spoken. Formerly, the limits of the language along the coast appear to have extended further to the north, and in the south they reach to the neighbourhood of the Pulicat lake, near Madras. On this coast, two Telinga monarchies formerly existed, the *Andhra* and the *Kalinga*,† both, apparently, enterprising races, and, as I pointed out in our last number, sea-faring people, although pious Hindus. The Hindu conqueror of Ceylon, (*Vijaya Wála*, the Conqueror,) who about 500 years B. C. invaded the island, probably proceeded from this part of the coast,‡ as the *Mahawanso* makes mention of an *Andhra* princess, who, after living in the jungles of Lada (?) intermarried with a lion, (Singh,) and was ultimately

* The race are no longer known by name in Gujarát, but they are well known as the best cultivators in the N. W. Provinces. See *ad vocem* that most instructive work for Indian customs—Sir Henry Elliot's *Glossary of Indian Terms*; and the field of Gujarát on which the last battle with the Seikhs was fought points out the wide diffusion of the race.

† Walter Elliot, in Jl. of Royal As. Soc. vol. iv.

‡ Lassen, however, thinks that *Vijaya* and his 700 followers proceeded from Gujarát. *Indische Alterthumskunde*, vol. i. p. 190.

the grandmother of *Vijaya*. The *Kalinga* dynasty appears subsequently to have gained great possessions on the plateau above the Ghâts, and, at the period of the Mahomedan conquest, Warangol, seventy miles NE. of Hydrabad, was considered the capital of what the Musalmans call Telingana. A great portion of the Nizam's Dominions, the districts of Cuddapah and Bellary, and the coast-line I have before described, are occupied by Telugu-speaking people.* Towards the lower part of the course of the Godavery, Capt. Blunt found that river to be the boundary-line between the Gond and Telinga languages.†

Limits of the Tamil language.

The Tamil language, according to Hamilton,‡ is "principally spoken in the tract from the south of Telingana to Cape Comorin, and from the Coast of Coromandel to the great range of hills, including great part of the Baramahal, Salem, and the country to Coimbatore." This, however, is a very indefinite description, as it does not appear whether he means the eastern or western hills; and from Colonel Mackenzie, and Mr. Elliot, who are the two best authorities on Canarese, the latter language appears to be well rooted in Coimbatore. Tamil was the language of three Hindu dynasties of whom we have records. The Cholas of Tanjore and Combuconam, who were settled on or near the Cáveri and Coleroon rivers, and who gave their name to the Coromandel, or Cholamandel Coast,‖ the Pandyans, whose capital is now occupied by the inhabitants of Madura, and the Cherans, who ruled at *Kerála* on the Malabar Coast. According to Mr. Taylor, Tamil was cultivated in its greatest purity in the ancient Pandyan kingdom, and, in the opinion of that very competent judge, "the result of a process, not very dissimilar to that which the early Saxon has undergone, [viz. copious infusions from a foreign tongue,] is to render the Tamil language, like our native English, one of the most copious, refined, and polished languages spoken by man."§ The examination of a good map will explain the easy diffusion of Tamil over the rich delta of the Cáveri, and over the low lands at the foot of the peninsula as far as the spring of the stupendous Western Ghâts that end at Cape Comorin, and even up to their very summit on the *Ani-Malaya* range, as we have seen ante p. 294; and the gradual ascent of the Eastern Ghâts from the

* Hamilton, vol. ii. p. 121.

† As. Res. vol. vii. p. 57.

‡ Hamilton's Hindustan, vol. ii. p. 248.

‖ Paolini the Carmelite explains Chola-mandala to mean the middle country, but most scholars interpret it the country of the Cholas.

§ Preface to Rottler's Tamil Dictionary.

Coromandel Coast explains readily how the Tamil-speaking *down-easters* and conquerors from that coast surmounted the plateau, where, like their northern neighbours of *Kalinga*, they have permanently implanted both their race and language. The Tamulians are a pushing, enterprizing race, and, as will be seen presently, the Tamil language appears to be extirpating Malayálam. The two languages dove-tail without coalescing in the low lands at the great gap of the Western Ghâts, and Tamil is also found to the westward of Cape Comorin on the coast, for example at Travancore, the ancient capital of the Rajahs.

Limits of Canarese.

The limits of the Canarese are the most distinct in geological relations of any we have yet spoken of. It is essentially a plateau language. The ancient Hindu term *Karnátaka* comprehended all the high table-land in the south of India above the Eastern and Western Ghâts, but, by a strange fatality, as Hamilton observes,* this country has not only lost its proper designation, but the latter has been transferred to the Carnatic, on one coast, and to Canara on the other, in neither of which is the Canarese language strictly vernacular. So, also, the Carnatic dynasties, so far as we know from history, or rather from inscriptions, never held sway below the Ghâts. Hamilton's general description of its limits seems correct enough:—"The common Canara Kúrnátaca character and language are used by the natives of those countries from Coimbatore, north to Balky, near Beeder, and within the parallels of the Eastern Ghâts to the Western."† Mr. W. Elliot, who was for some years stationed at Dharwar, draws its boundary-line W. and N. by a "line from Sádashagur on the Malabar Coast to the westward of Dharwar, Belgaum, and Hukairi, through Kagal and Kurandwar, passing between Kelingaon and Pandegaon, through Brahmapuri on the Bhima, and Sholapur, and thence east to the neighbourhood of Bider. From Sádashagur, following the southern boundary of *Sunda* to the top of the Western Ghâts, it comprehends the whole of Mysore as (far as) Coimbatúr, and the line of Eastern Ghâts—including much of the *Chola* and *Belála* kingdoms, and even *Dwara Samudra*, the capital of the latter, which was never captured by the *Chalukyas*" (*i. e.* the Carnatic dynasty of Kalyani).‡ I have before shown, however, that Canarese extends much further to the north than Mr. Elliot's boundary indicates: it was the language of business of the *Ádil-shahy*

* Hindustan, vol. ii. p. 247.

† Ibid.

‡ Journal Royal As. Soc. vol. iv. pp. 3, 4.

dynasty at Bijapur, who introduced it, to the exclusion of the court language, Persian ;* and throughout the whole of the Belgaum and Dharwar collectorates it is the vernacular language, although, strangely enough, on the establishment of schools by the Bombay Government in that district in 1840, the Canarese population stoutly resisted instruction being conveyed to their children in their mother tongue, and pleaded for Maráthi.† In the south, also, towards Coimbatore, I apprehend that Tamil dove-tails intricately with Canarese, as Maráthi does in the north, and Telinga in the north-east. I find in a report of the Collector of Coimbatore to the Madras Government, that there are 846 schools in that collectorate, "in which the children are taught Tamil, Teloogoo, Hindivee, (Canarese,) and other (?) native languages."‡

Limits of Malayálam.

Of the Malayálam and Tulu languages I have little to say, except that they each of them appear to be in a course of gradual extinction. They are essentially *Konkany* languages, if I may be permitted the use of such a word (much wanted in geography) to describe a country lying at the foot of a chain of mountains running parallel to the sea, and intercepted betweeen the two, and of which the Bombay Konkan is a good type. Malayálam extends from Cape Comorin to the Chandagiri river, or, more strictly, perhaps, to Nileshwar, (*Nileswara*,) where a Nair Rajah conquered by Hyder formerly ruled.‖ We have seen that a rude Tamil dialect is spoken on the tops of the Western Ghâts from the great gap to Cape Comorin ; and the language seems gaining upon and extirpating Malayálam both to the north and south. For Tamil, advancing from the west through that singular break in the mountains, having no physical obstacles to encounter, is found pushing its way onward to the west of Palghat, and Palghat itself is more a Tamil than a Malayálam town. The Malayáli is said naturally to shrink from

* Briggs' Ferishta, vol. iii.

† This feeling might be accounted for amongst those who were training their sons for Government offices, as Maráthi, under the Peshwa, was the language of public business; but it was altered by the British Government in 1836 to Canarese: the feeling, however, was equally strong amongst the *Lingayat* traders, who are very numerous in those parts. Thus, the Superintendent of Schools, Assistant Professor *Bál Shástri*, reported in 1845 of a school near Belgaum :—"Several of the Lingayat children, who understand not a word of Maráthi, would yet insist upon learning nothing but reading and writing that language." Much evidence on the subject is to be found in the Reports of the Board of Education.

‡ Madras Almanac for 1834, Appendix, p. 24.

‖ F. Buchanan's Mysore, vol. iii. p. 12.

contact with foreigners,—even from people of his own caste,—whilst the Tamulian is the least scrupulous of all Hindus. Hence the Malayáli retreats from the great roads, from cities and bazars, as eagerly as the Tamil flocks to them; and the former race are to be found isolated with their families in their high walled *parambus* even in parts where the lines and centres of communication are entirely occupied by their more enterprizing eastern neighbours.*

Limits of Tulu.

Tulu is the language spoken in the very limited district extending from the northern limits of Malayálam at the *Nileswara* river, lat. 12° 10′ N., to the *Bhahávara* river, four miles north of *Upi*, 13° 30′. It is broken in upon by many languages, both north and south, and appears to be in a state of progressive decay. To the humbler classes at Mangalore, and within the limits described, the German Missionaries find it is the only language in which they can make themselves intelligible, though they preach in Canarese to the upper classes; and it ascends, as we have seen, in an archaic form, to the top of the mountains in Coorg, 6000 feet high. It is stated, also, that in many parts of Canara Canarese is vernacular;† and the Revd. H. Mögling, who, with his brethren of the Basle Mission, has paid much attention to this language, informs me that it may be considered vernacular from Cunderpore (*Kundapura*) to Honore (*Honavera*,) where Konkani begins. But I am inclined to doubt whether Canarese is strictly vernacular anywhere along the coast, except amongst immigrants. It is the mother tongue, for example, of the *Haiga* Bráhmans, whose principal station is at *Kalyánapura*, a village four miles north of *Upi*, although by race they belong to the northern, or *Gaur* Bráhmans; and so long back as 1803 F. Buchanan found that all Natives of rank spoke it, from the country having been subjected for centuries to princes above the Ghâts.‡ Canarese is now, also, the language of the British Government in this province, and, therefore, a still greater impetus is given to its diffusion, so that it may be anticipated it will become vernacular at no very distant day.

In taking a parting glance at the Malabar Coast,—the Pirate Coast —the Pepper Coast,—as it has been alternately called,—the country of the Zamorin,—of the exploits of Vasco de Gama, and of the even more heroic efforts of St. Francis Xavier,—a country where the richest gifts of nature spontaneously present themselves, and primeval forests,

* MSS. information from German Missionaries.

† Paolini Viaggio alle Indie Orientali, p. 262.

‡ Mysore, vol. iii. p. 103.

tenanted by wild elephants, and almost equally wild races of men, still cumber the earth,—a land of singular physical formation, and peopled by not less singular races,—Nairs, Bunts, Moplahs, Kolis, White Jews, Nestorian Christians,—all affording so many points of European interest, —we may note, as pertinent to the present inquiry, that from the Gulf of Cambay to Cape Comorin, in the narrow strip between the mountains and the sea, the following languages are vernacular:—Gujaráti, Maráthi, Hindustáni, (amongst the Konkani Musalmans,) Konkani, Canarese, Tulu, Malayálam, and Tamil. So much influence on language has the physical face of a country.

II.

After having thus taken what I trust will appear a sufficiently accurate view of the lingual state of British India, the question naturally arises, whether anything can be done, by the exertion of human forethought and prevision, to facilitate a closer intercourse, and greater diffusion of ideas, amongst our Indian fellow-subjects, who are now immured in so many isolated and distinct language-groups. To solve this problem, it is necessary to consult, carefully, the page of history; and, fortunately, the vicissitudes of race and of empire which have occurred in Europe during the last two thousand years, and the accurate records we possess of the events of this period, enable us to apply our experience to the field of Asia with advantage.

On a cursory view, nothing would appear more immutable than language; and some of the phenomena connected with the subject which first strike the eye would seem to warrant the same conclusion. The mother tongue, learnt, not taught, in early infancy, though subject, like a plant, to the laws of growth and spontaneous development, would seem, in its staple, to be proof against any invasion from without, either by a foreign stranger, or even by a neighbour. We may see in this Presidency, for example, Canarese and Maráthi villages lying grouped together on the same plain, and co-existing for a thousand, perhaps thousands of years, yet without any considerable intermixture of their languages. Each village, strong in its own organization, with its three estates of hereditary officers, established clergy, and faithful commons, wants nothing from its neighbour; and the only point of communication on which they ever need to meet, is on some grazing-ground adjoining their common border, which, so far from bringing them into amicable intercourse, may give birth to differences, lasting, like a German lawsuit, for hundreds of years. So, also, in the Swiss villages, spoken of by the historian of Switzerland, where the French and German races meet,

if the stock of each is sufficiently large to enable the social business of life to go on—the marrying and giving in marriage,—the eating and drinking,—the lessons of the school and the ministrations at the altar—without dependence on the other, then the barriers interposed by different tongues—the small differences, which in small minds and small places create mutual repugnance—keep the languages and the races distinct for countless generations. But if any cause, either political or commercial, occur to throw adjoining nations or races into a state of fusion, it is remarkable to observe how speedily an instrument of intercourse springs up, and what great and rapid changes of language ensue. Frequently, by a mere spontaneous movement or tacit convention, nations with different tongues, who have common interests to discuss, seize on some one language, which becomes the medium of intercourse, and is subsequently employed by many different races. Thus, the language spoken by the Genoese and Venetian traders, when they were seeking the commerce of the East in the ports of the Levant and the Black Sea, was soon learnt by the Asiatic inhabitants of those countries; and other European merchants, speedily adopting the tongue of their commercial rivals, a language of the Franks, or *lingua Franca*, arose, which Asiatics and Europeans both made themselves masters of, and which continues to this day. Hindustáni, as spoken in Bombay amongst Persian, Maráthi, Gujaráti, and other inhabitants of the island, with distinct mother tongues, is another example. The use of Malay among the many hundred languages of the Indian Archipelago, where, we are told by a quaint old voyager, it is "epidemick,"* is a still more striking instance of the same kind.

But it has been by the direct action of Government that the more remarkable changes in the languages of different nations have been effected. The historian Niebuhr, in commenting on the rapid process by which the Etruscans succeeded in imposing their language on the inhabitants of ancient Italy, which was then cut up into more distinct tongues than those now spoken in the peninsula of India, supplies a number of parallel cases from his historical stores, and the passage is worth transcribing:—

"Under the rule of a conquering nation which imposes a heavy yoke on the conquered, the language of the latter frequently becomes extinct: in Asia and many other countries, it was the practice to forbid the use of the vernacular tongue, in order to prevent treachery. The Moors were, in many respects, mild rulers in Spain, and the country flourished

* Herbert's Travels, p. 366.

under them; but in Andalusia, one of their kings forbade the Christians to use the Latin language, under penalty of death, the consequence of which was, that a hundred years later not a trace of it occurs. The whole Christian population of Cæsarea spoke Greek down to the eighteenth century, when a Pasha prohibited it, and, after the lapse of thirty or forty years, when my father visited the place, not one of the inhabitants understood Greek. When the Normans conquered Sicily, the only languages spoken in the island were Greek and Arabic, and the laws were written in Greek as late as the time of Frederick II., but afterwards it disappears all at once. The same thing happens in Terra di Leca and Terra di Otranto, where afterwards the names were Italian, while the language of common life remained Greek, until 200 years ago, in the fifteenth century, it died away. In Pomerania and Mecklenburg, the Wendic language disappeared within a few generations, and that without an immigration of Germans, but merely because the princes were partial to the German language: the conquerors of Brandenburg forbade the use of Wendic under penalty of death, and in a short time nothing was spoken but low German. The Etruscans had quite an aristocratic constitution, and lived in the midst of a large subject country: under such circumstances, it must have been of great importance to them to make their subjects adopt the Etruscan language."*

But the subsequent success of the Romans in supplanting Etruscan, and fixing the Latin language deep in the soil, not only of Italy, but of Spain and France, is a more remarkable case than any recorded by Neibuhr, and deserves, perhaps, a closer attention by scholars than has yet been given to it. Take for example the case of France:—At the time of Cæsar's conquest, the language was Gaelic, spoken in three different dialects,† and the country that was able to hold that great general at bay for nine years must have been tolerably thickly peopled. How, then, was the Celtic tongue so thoroughly extirpated? There is no appearance that the Romans colonised France in any great numbers, or that there was any temptation offered to them to settle. The question becomes more difficult to answer when we recollect the subsequent immigration and conquests of the Franks and other German races. Meyer assures us, (though it appears to me doubtful as to any but the dominant race,) that up to the end of the eighth century "il est certain que pendant tout ce temps et un bien plus long encore, le commun de la nation ne parlait qu'une langue d'origine tudesque."‡ Dr. Young,

* Lectures on the History of Rome, translated by Schmitz. London: 1848.

† Sir James Stephen's Lectures on the History of France. London: 1852.

‡ Institutions Judiciaires de l'Europe, vol. i. p. 293. Notwithstanding the high

also, states that the inhabitants spoke Gaelic till the sixth or seventh century, when it was superseded by Rustic Roman.* Here, then, if Meyer is correct, we have the bulk of the nations changing their language from Celtic to Teutonic, and from the latter to that modification of the Roman which subsequently became French; but certainly the change from Gaelic to French was universal.

Some authorities, quoted by Michelet,† would seem to show that it was an established principle of policy with those great masters of political government, the Romans, to introduce their language whenever they could as an instrument of police. St. Augustine states that the "Imperial City" took pains to impose her language as well as her authority on her conquered dependencies, for the sake of good order (*per pacem societatis*).‡ The Roman Digest laid down expressly that the judges of the empire were to deliver their decrees in Latin,‖ and *Valerius Maximus* points out both the fine statesmanlike policy which dictated these ordinances, and the steady Roman consistency (*magna perseverantia*) with which they were adhered to. It does not seem, therefore, very hazardous to attribute the existence of the French, Spanish, and Italian languages, in their respective countries, to the direct institutions of Roman policy, operating at a long period after the original impulse given by government.

Another example of the influence of the governing authorities upon the language of the people may be taken from England. I will pass over the supplanting of Celtic by the tongue of the Anglo-Saxons,

authority due to M. Meyer, this statement is very doubtful. According to Sismondi, (Histoire des Français, i. 52,) the three Celtic dialects spoken in the time of Cæsar had given way to Latin by the fourth century after Christ; and, although the conquests of the Franks carried a Teutonic language all over France, and it became the language of the army and of business, so that all men in office whose mother tongue was Latin were compelled to learn it, (Sismondi, iii. 58,) still the small number of Frankish nobles amongst whom the territories of France were divided, and who in numbers have been compared to English squires of the present day, forbids us to believe that the "bulk of the people" ever spoke a Teutonic dialect. Indeed, we know that Charlemagne, whose mother tongue was German, used to avoid Paris as a residence expressly because the language was the to him unintelligible *patois* of Latin, subsequently to become French. And it is remarkable how very slight an impression the German language has made upon the French, although the Franks in France were more numerous than the Normans in England.

* Encyclopædia Britannica, Art. Language.

† Histoire de France, vol. i. p. 135.

‡ De Civ. Dei, lib. xix. c. 7.

‖ Dig. xlii. i. 48: *Decreta a prætoribus latine interponi debent.*

although that, also, is a very remarkable fact, and not at all to be explained by the usual hypothesis put forward. But on looking at the language of England from the date of the Norman Conquest, it would appear that during the first three centuries there were many periods when it seemed quite uncertain whether Anglo-Saxon or Norman French would become the language of the country. So late as the end of the fourteenth century, the latter was the language of the court, of the nobility—of every one who possessed or sought either power or place. An old monkish writer cited by Thierry* avers that even peasants, in order to appear more *respectable*, (that conventional respectability so dearly cherished by the English race,) affected to talk French with all their might and main (*omni nisu*); and many circumstances seemed favourable for the introduction of the French language during this epoch. The facility of that language to diffuse itself is seen by the readiness with which the Normans abandoned their mother tongue in so short a period as fifty years after they settled in France,† and, further, in its gradual extension over many countries on the French border where tongues of German origin formerly prevailed. But in England other causes were at hand to render its extension more easy. The numerous Teutonic races who had invaded England—the Angles, Saxons, Jutes, Picts, &c.—had all dialects—some distinct languages of their own: with all these was incorporated the Celtic tongue of the original occupiers of the soil; and the result was such a diversity of speech throughout the realm, that it was very difficult for the inhabitant of one province to understand the dialect of another. Chaucer, notwithstanding his bold and patriotic attempt to address his countrymen in English, seems to have been apprehensive that his volume would not be understood out of London, for he thus apostrophizes it:—

> "Read where so thou be or els sung,
> That thou beest understood God I beseech."

Happily, the Teutonic element has maintained its supremacy in the language of England, but the influence, and, I may add, beneficial influence, of the Norman dynasty, over the speech of their subjects, may be seen in this, that French still constitutes one-sixth part of the language of the Anglo-Saxon race.

* Conquète de l'Angleterre, vol. iv. p. 371, 4me ed.

† Within one century of the establishment of the Normans in France, the Danish language had become extinct. "A Rouen même, et dans le palais des successeurs de Rou, on ne parlait d'autre langue au commencement du onzième siècle, que la langue romane ou française." Thierry, Hist. du Conquète de l'Angleterre, vol. i. p. 209.

But the most remarkable example in history of the direct agency of government in introducing a common tongue as an instrument of civilization, is furnished from South America. Mr. Prescott, in relating the policy of the Incas, writes as follows:—

"Another expedient was of a bolder and more original character. This was nothing less than to revolutionize the language of the country. South America, like North, was broken up into a great variety of dialects, or rather languages, having little affinity with one another. This circumstance occasioned great embarassment to the government in the administration of the different provinces, with whose idioms they were unacquainted. It was determined, therefore, to substitute one universal language—the Quichua,—the language of the court, the capital, and the surrounding country,—the richest and most comprehensive of the South American dialects. Teachers were provided in the towns and villages throughout the land, who were to give instruction to all, even the humblest classes; and it was intimated at the same time, that no one should be raised to any office of dignity or profit who was unacquainted with this tongue. The Curacas, and other chiefs, who attended at the capital, became familiar with this dialect in their intercourse with the court, and, on their return home, set the example of conversing in it among themselves.

"This example was imitated by their followers, and the Quichua gradually became the language of elegance and fashion, in the same manner as the Norman French was affected by all those who aspired to any consideration in England after the conquest. By this means, while each province retained its peculiar tongue, a beautiful medium of communication was introduced, which enabled the inhabitants of one part of the country to hold intercourse with every other, and the Inca and his deputies to communicate with all. This was the state of things on the arrival of the Spaniards. It must be admitted, that history furnishes few examples of more absolute authority than such a revolution in the language of an empire, at the bidding of a master."*

III.

It was on considerations such as I have stated above, but the grounds of which I have now set forth in detail, that I ventured some years ago to throw out the following suggestion:—"It is obvious that India is greatly in need of a *lingua franca*, such as French affords in Europe, Italian in the Levant, and Malay amongst the hundreds of different

* Prescott's Conquest of Peru, vol. i. p. 73.

languages of the Indian Archipelago.* Hindustáni supplies the office in many parts of India to the northward of a diagonal line between Bombay and the Bay of Bengal, but even there imperfectly, as we find the Urdu publications of the North West almost wholly unintelligible in our Hindustáni schools of Bombay; and in the south of India a language of a wholly different family, the Tamil, supplies the place of Hindustáni. The English language, therefore, with its uniform written and printed character, and its rich and cheap literature, might gradually assume the beneficial office of a language of intercommunication between different nations, such as we have seen has sprung up spontaneously in divers parts of the world."†

The spontaneous movement in favour of English, which I there alluded to, may even now be seen to be in operation in various parts of India. It will be familiar to most of those who hear me that the Natives of Bombay who are acquainted with English rarely communicate with one another in writing except in that language. The defective nature of the Native cursive character, the *mod* or *mor* of the Maráthi—indeed of most Native writing, in which the tendency to leave out vowel points is so general,‡ leads, no doubt from the dictates of convenience, to the employment of the more distinct and uniform English character. But, for speaking also, if an educated Native at the present day arrives from Upper India, from Bengal, or from Madras, there is no language in which he can make himself so readily intelligible to an educated Native of Bombay as English, and it is the only language which a Native would think of employing if he were writing to a Bengáli friend at Calcutta, or to a Tamil at Madras. In addition to this use of English which mutual convenience dictates, something of the same principle, which led the Anglo-Saxons to affect the French language as a mark of education and refinement, may be seen largely at work amongst our educated Native youth, both at Bombay and in Bengal.

It is the observation of slight indications such as these that should suggest to the legislator how far he may exert himself in his proper province with effect. A saying is attributed to Augustus, that with all the power of the Roman empire he could not succeed in introducing a

* See W. von Humboldt's work on the Kawi language of Java.

† Minute on the State and Prospects of Education in Bombay.

‡ Lieut. Burton, who is a wit as well as a philologist, thus describes the written language of the Sindhian Banyans:—"A system of stenography which admits none but initial vowels, and confounds the appearance of nearly a dozen distinct consonants."—*Scinde, or the Unhappy Valley*, vol. i. p. 239.

new word into the Latin language; and our Indian experience may teach us how futile the acts of legislation frequently are when they clash with old-established habits and prejudices. But when the interests of mankind, or of a large portion of mankind, are concerned, then the statesman who is able to discern the tendency of his age may be able to introduce great changes without difficulty, and to make an indelible impression on the character of the people over whom he is placed as a ruler. No one, I presume, would imagine that an enactment, even under the penalty of death, that Marwádi traders should keep their accounts in English, and write to one another in round German text, would be anything but inoperative; but a government regulation that every candidate for office should be able to pass an examination in English would, in the course of a year or two, fill every cutcherry throughout India with well qualified candidates *(umedwárs)*, who would cheerfully bring themselves up to the required standard. Above all, the language of public business in every country should be the language of the governing authority. It is a surrender of an instrument of power to forego the use of the mother tongue on all solemn occasions, when so much depends on the exact meaning of the words employed, more especially in a country like India, where the languages are so diverse, and where everything is recorded. So well is this understood in Europe, that the French language, which was formerly used by convention (in succession to Latin) as the language of diplomacy, is now abandoned in all solemn memorials, and each nation expresses itself in its own tongue. The Moguls in India maintained Persian as the language of business, and the deep root which the study of that language has thereupon struck in the habits and customs of the inhabitants of Upper India may be clearly seen in the statistical accounts of the North-west Provinces, published by the present Lieutenant Governor, Mr. Thomason, and is another example of the great influence exercised by government over speech. The Maráthas, in like manner, introduced their own language as the language of business, and I have above pointed out the tendency of this institution to attract attention to the language amongst the Canarese-speaking subjects of the Marátha empire. The British Government has very wisely abandoned the use of the Persian language, which is neither the mother tongue of the governing body nor of the people, but in failing to substitute English as the language of record, they have voluntarily interposed an obstacle to the introduction of good government, and have possibly benefitted no one by the act.

But these are topics which it would be unsuitable to press further on

a literary Society. There are subjects, however, in which the interests of literature are so blended with political considerations, that it is impossible to sever them; and language, especially language in India, belongs to this class. In dealing with any question in which the interests of a hundred and forty millions of mankind are concerned, the more attentively the state of present circumstances is considered, so much the more forcibly do visions of the future present themselves. At no previous period of the world's history was India ever held together by such a unity of sway as at the present moment; and at no previous period were large views, embracing her future welfare, so capable of being applied. To the British in India is committed the task of communicating the civilization, the results of science, and the mental energy continually aiming at improvement, which distinguish modern Europe; and in a Society like this, composed of Englishmen, and of men of letters, it may fairly be asked whether any such instrument presents itself for accomplishing these noble ends, as the English language? It is not given to man to penetrate deeply the misty future, and it is impossible to predict what the connection of Europe with Asia may be some centuries hence; but as every Englishman who is jealous of the honour of his country must desire that the name of England, as an enlightened benefactress, should be irrevocably blended with that of India, a British monument, more useful, possibly more permanent, than the pyramids, may be left in the country, but it shall be altogether moral, and not composed of brick or marble.

> "Her monument shall be (some) gentle verse,
> And tongues to be *(her)* being shall rehearse,
> When all the heathens of this world are dead."

And, not impossibly, this monument may be the very language, deeply rooted in India, of our national poet, who continues:—

> "(*She*) still shall live, such virtue hath (the) pen,
> Where breath most breathes, even in the mouths of men."

ART. II.—*Comparative Vocabulary of Non-Sanscrit Primitives in the Vernacular Languages of India.* By the Rev. J. STEVENSON, D. D.

Presented August 1852.

PART II.

In presenting this second part of my vocabulary to the Society, bringing it down to the end of the vowels, few remarks additional to those I have already made are required. There are many roots, no doubt, in the Southern family that cannot be traced into the Northern languages; but I trust I have succeeded in explaining the origin of many Hindustani, and more Maráthi words from the Canarese and Támil. From Crawfurd's Malay Dictionary, kindly lent me by Sir Erskine Perry, I have pointed out several Támil words that have found their way into the Malay, if they be not originally common to the two languages.

There is, in the part before published, the following important agreements:—CAN, agalu, *to dig;* MAL, gali, *to dig;* CAN, aḍayu, *to be, to have;* and TAM, adai, with the MAL, ada, *to be, to have;* TAM, aṭi *delay;* MAL, anti, *to cease.*

In a few of the instances of agreement I have traced between the Northern and Southern families, I scarcely feel satisfied on a revision; but as there are, even in those cases, some points otherwise philologically important, I have allowed them to stand. In the great majority of instances, I feel persuaded that the analogies, when duly considered, will be found real. I have frequently had occasion to remark the difficulty on this subject that arises from the introduction of vernacular words into the Sanskrit by poets, to meet the requirements of their verse, and their embodiment in the dictionaries, through the industry of the lexicographers. But I now find my way more easily in these cases, by attending carefully to the connection of such words with others. If there be a word wholly isolated in the Sanscrit, derivable from no root, and having itself no derivatives, yet easily connected with a Támil or Canarese root, from which a variety of words are found to be derived in the Southern tongues, I set it down as a borrowed word.

COMPARATIVE

Of Non-Sanscrit Primitives of the chief

No.	CANARESE.	TA'MIL.	MALAYA'LIM.	TELINGA.
23	ಅಡ್ಡಿ	அடக்கம்	அடேஞ்சின்	అడ్డి
	Addi	Adakam	Atenchin	Addi
	Obstacle	Restraint, subordination	Obstruction	Opposition
	Obstructio	Continentia, subjectio	Impedimentum	Impedimentum
24	ಆಡಕೆ	அல்ல; அல்லல்	അളീകम्	అళీకము
	A'duke	Alla; algal	Aḷikam	Aḷikamu
	Calumny	It is not; deficiency	Falsehood	A falsehood
	Calumnia	Non est; defectus	Mendacium	Mendacium
25	ಅಣಕ	அணை-க்கு	അടിമുഗു, കുനു	అణగ్గు
	Anaka	Aṇí, krhadu	Aṭimuga, kunnu	Ananggu
	Private, compact	To embrace, to tie	To undergird	To be pressed down
	Secretus, compactus	Amplecti, vincire	Succingere	Deprimi
26	ಅತಕ; ಅತುಕ	அது; தைத்தல்	തൈപ്പ	అతుక
	Ataku; atuku	Atu; taital	Taippa	Atuku
	A patch; to join	A stitch; sewing	Sewing	To be joined, a patch
	Assumentum; conjungere	Sutura	Consutura	Conjungi, assumentum
27	ಅತ್ತೆ	அத்தை	.....	అత్త
	Atte	Attai	.....	Atta
	A mother-in-law, a sister-in-law	A mother-in-law, an aunt	.....	A mother-in-law, an aunt
	Mariti mater, glos	Mariti mater, amita	.....	Mariti vel uxoris mater, amita

No. 23 is closely allied to No. 13, which see. Perhaps originally this was the transitive, and the other the intransitive form of the root, the former meaning obstruction without agency, and the latter implying it. The Malay *adang*, stopped in the way, is here to be added.

No. 24.—The Hindoostáni and three of the others here are Sanscrit words, if the Sanscrit word itself, as I suspect in this instance, has not been borrowed from the vernaculars, and originally derived from the Tamil அல்ல, the negative verb of common use in that and the Malayalim language.

No. 25.—The Gujarathi word here is also Maráthi.

No. 26.—We have here a striking connection for the words meaning *a patch* ON A GARMENT, running through all the languages but the Singhalese, where the cognate word means *patch* in the sense of a *spot*, &c. It is hardly necessary to say that the Sanscrit roots अति and टक्कि *to bind*, have not been considered sufficient to account for these words. They are much more naturally derived from the Canarese; and the Sanscrit radical अ is not that I have seen ever dropped in Hindi and Maráthi, so as to allow of the derivation being made from the first; nor is the Sanscrit initial ट capable of becoming त Besides, no Sanscrit words in any such sense as *patching* or *sewing* are derived from either of these roots. The Canarese ಅ, on the contrary, is

VOCABULARY

Vernacular Languages of India.

SINGHALESE.	MARA'THI'.	GUJERA'THI'.	HINDI'.
අඩු	අड	અड	अड
Aḍḍa	Aḍ	Aḍ	Aḍ
Deficient	Obstruction	Obstruction, obstinacy	Contrariety
Imperfectus	Impedimentum	Obstructio, pertinacia	Contrarietas
අලීක	आळ	અल	S अलीक
Alíka	Aḷ	Al	Alík
A falsehood	Calumny	Injury, harm	Falsehood, unreal
Mendacium	Calumnia	Injuria	Mendacium, falsus
අඩංගුව	अडस	અडचण	अट्टना
Aḍanguva	Aḍas	Aḍchan	Aṭṭna
Humbled; containing	Tightly, compactly	Confinedness	To be tightened, to be contained
Depressus; capax	Arctè, compressè	Compressio	Comprimi, contineri
තික. තෝත	थिगळ	થિગલું	थेगली
Tik, tita	Thigaḷ	Thigalun	Thegali
A spot, a freckle	A patch	A patch (of cloth, &c.)	A patch (on a garment)
Macula, lentigo	Assumentum	Assumentum	Assumentum
අත්තා	आत	.....	.....
A'ttá	Ata	.....	.....
Maternal grandmother	A paternal aunt	.....	.....
Materna avia	Amita	.....	.....

often dropped, and ත easily passes into ඩ, while the ලු is a common termination for nouns. The English *tack* and the French *attacher* are no doubt connected with this Canarese word; and probably the Malay *tampal*, a patch.

No. 27.—The Sanscrit अत्ता, *a mother, an elder sister, a maternal aunt*, would sufficiently account for these words, if it were unquestionably Sanscrit; but being uncommon, except in theatrical compositions, which admit of great latitude in their vocabulary, it is probably derived from the vernacular tongues. The wide diffusion of the meanings *a mother-in-law* and *paternal aunt*, which do not exist in the Sanscrit, and the non-occurrence of the meanings *mother* and *elder sister* favour this idea. The English *aunt* and German *tante* are no doubt connected with this number, as may perhaps also the Hindi and Persian *(átá)* اتا, *a father*, also perhaps आतृ, *a governess*.

N. B. अत्त (*atta*) there, in Canarese, and the corresponding words in the other languages, are too nearly allied in sound and sense to the Sanscrit अत्र (*atra*) here, to suit our purpose, though they may be independent of it. The same is the case with ಅದ್ದು and ಅದ್ದು *(adachu* and *adavu)* to press down or humble, which may be derived from the Sanscrit अधः (*adhah*) down, and possibly also अद् (*addu*) to dip, to dye. So likewise the pronoun ಅದು (*adu*) is almost the Sanscrit अद्: *this* or *that*.

No.	Canarese.	Ta'mil.	Malaya'lim.	Telinga.
28	आनु; आने	यानै	आन	आनु
	Anu; ane	Yánai	A'na	Anu
	To support; an elephant	An elephant	An elephant	To recline, to bear
	Sustinere; elephas	Elephas	Elephas	Inniti, sustinere
29	अप्पा	अप्पन्	अप्पन्	अप्प, अब्ब
	Appá	Appan	Appan	Appa, abba
	Father, sir	Father, sire	Father, sir	Father, esquire
	Pater, domine	Pater, domine	Pater, domine	Pater, eques
30	अप्पड	अप्पम्	अप्पम्	अप्पडमु
	Appad	Appam	Appam	Appadamu
	A fried cake	Bread	Bread	A pancake
	Laganum	Panis	Panis	Laganum
31	अबुकु; बुक्कणि	.....	.....	अबक; बुक्क
	Abuku; bukkani	.....	.....	Abaka; bukka
	To press down; a powder	.....	.....	A ladle; a powder
	Deprimere; pulvis	.....	.....	Spatha; pulvis
32	अब्ब	अप्पा	अप्पा	अब्बब्ब
	Abba	Appa	Appa	Abbabba
	O strange, alas	Strange, alas	Ah, oh	Strange, alas
	Papae, eheu	Papae, eheu	Eheu, oh	Papae, eheu
33	अम्म, अव्व	अम्मै; अम्मा	अम्म	अम्म
	Amma, avya	Ammai, ammá	Amma	Amma
	Mother	Mother, mamma	Mother, madam	Mother, madam
	Mater	Mater, mamma	Mater, domina	Mater, domina

No. 29.—अप्पा is also a Scindian word for father. In the Himalayim Boda the word is *áyá*, in the Dhimal *amma*. Among four Yeniseian tribes the word used is *am* or *ama*, according to Klaproth; and this number is, too, evidently the same with the Aramean *abba*, to require attention being drawn to it. The Malay has *abang* for our sir, or sire. Among the Siberian Tartars *ab* and *obo*, according to Klaproth, are used for father. The Coles use *apai*; the Himalayan Lepchos, *abos*; the Bhotiyas and Murmis and Dhimals, *aba*; the Bodas, *ápha*; while on the Malabar coast in Tulu, *appe* means a mother; and among the todas on the Nilgherry Hills *aph*. This number then is an example of a decidedly aboriginal Indian word.

No. 30.—This number in the South seems a non-Sanscrit word for *bread*, but is, as we come North, confounded with the Sanscrit अपूप, which perhaps is derived from the same source.

N. B. The Canarese अप्पन *(appana)* for tax, and other words in the Southern tongues of the same sense, seem connected with the common Sanscrit root आप् (*ápa*) to obtain, and are therefore omitted.

No. 31.—बुक्क in Sanscrit means *to bark, to speak, to give pain*. None of the derivatives have any close relation to the last sense. It is true that a blow with the fist will generally give pain; still no one would consider to give pain and to beat as synonymous expressions. But perhaps *beating* is the true meaning of the word, from which the noun बुक्क: for *the heart*, is ultimately derived.

SINGHALESE.	MARA'THI'.	GUJARA'THI'.	HINDI'.
අඳු	अन्दू	.....	S आन्दू
Ayatu	Andu	.....	Andu
An elephant	An elephant's chain	.....	A chain to tie an elephant
Elephas	Elephantem vinciens catena	.....	Elephantem revinciens catena
අප්පා	आपा, आबा	.....	आपा ; आप
Appá	Apá, ábá	.....	Apa; ap
Father	Sire, esquire	.....	An elder sister ; his honor
Pater	Pater, eques	.....	Sor. maj. natu ; eques
S අපූප	अपूप	.....	.....
Apúpa	Apúpa	.....	.....
A thin cake	A pancake	.....	.....
Laganum	Laganum	.....	.....
.....	बुका ; बुकी	.....	बुकनी ; बुक्का
.....	Buka ; buki	.....	Bukni ; bukka
.....	A powder; a blow with the fist	.....	Powder ; a handful
.....	Pulvis ; colaphus	.....	Pulvis ; manipulus
.....	अबब	.....	अबे
.....	Ababa	.....	Abe
.....	O strange	.....	Sirrah
.....	Papae	.....	Improbe
අම්මා	आयी ; आबा	.....	आबा
Ammá	A'yí ; áyá	.....	A'yá
Mother	Mother ; a dry nurse	.....	A dry nurse
Mater	Mater ; nutrix	.....	Nutrix non lactescens

No. 32.—In the Canarese some nouns are derived from this interjection.

No. 33.—This word is probably the same as the Sanscrit अम्बा *a mother*, but there can be as little doubt that it is not an original Brahmanical word, but introduced from the populace along with the bloody superstitions of Durga, whose name alone in Sanscrit and Hindi it properly is. The proper Sanscrit is मातृ for *mother*. This word then leads to the Arabic أم *a mother*, امت *a nurse*, a word which in the form of *amah* is common for a wet-nurse in India. अमा in Maráthi nursery language means *a mother's breast*. In Scindian both अमा and आई are used for mother; *ama* is also used in Malay.

N. B. The Canarese अविलु *foolishness*, is most probably derived from the Sanscrit उलूक *an owl*, in the same way as the Hindi उल्लू which means an *owl*, and figuratively, *a fool*. Also अरळु *to decoct*, may be derived from अर्क, *essence obtained by decoction, &c.* अरळु *to blossom*, has no evident connection. The nearest word in the Sanscrit is अक्षक an *eyelash*, but it can hardly be derived from it. अरसु *a king*, is, I believe, nothing more than the Sanscrit राजा; the word is derived from the Tamil. In that language र becomes र as a general rule, and the prefixing of अ has already occurred to us several times, and is a very common thing, as well as the shortening of the vowels. It may still be from the Canarese आरिसु *to choose*.

No.	CANARESE.	TA'MIL.	MALAYA'LIM.	TELINGA.
34	अरि ; अरहु	अरिं – ग्रदु	अरियुन्नु	अरयु
	Ari ; arahu	Arhighradu	Arhiyunnu	Arayu
	To know ; to inform	To know	To know, to comprehend	To inquire
	Noscere; narrare	Cognoscere	Noscere, intelligere	Exquirere
35	अरचु, अरसु	अरत्तल्, अरवम्	अरवम्	अरचु
	Aruchu, arusu	Arattal, aravum	Aravam	Arhachu
	To bawl, to call out	Clamour	Sound, noise	To roar, to clamour
	Clamare	Vociferatio	Vociferatio	Vocem edere
36	अरि	अरंम, अळि	अऴक; अलिव	अर्मिलि, अलु
	Arhi	Arham, aḷi	Aghka; aliva	Armili, arlu
	Love, fondness	Virtue, compassion	Beauty ; compassion	Love, affection
	Amor, blandimentum	Virtus, benevolentia	Pulchritudo ; misericordia	Amor, desiderium
37	अलगु, अलुकु	अलैप्पु	अलयुन्नु	अलकु
	Alagu, aluku	Alaipu	Alayunnu	Alaku
	To shake, to quake	Agitation, vexation	To be agitated	Fear, terror
	Vibrare, tremere	Tremor, angor	Contremere	Metus, tremor
38	अलि ; अले	अलै	अल ; अलकटम्	अल
	Ali; ale	Alai	Ala; alakatan	Ala
	To wander; a wave	The sea, a wave	A wave ; the sea	A wave of the sea
	Vagari; fluctus	Mare, fluctus	Fluctus; mare	Fluctus
39	अळङ्ग; अलति	अलङ्गम्	....	अलङ्गमु
	Aḷanga; alati	Alangam	....	Alangamu
	A rampart ; a measure	The wall of a fortress	....	A rampart
	Vallum; mensura	Agger	....	Vallum

No. 34.—This word hardly travels into the Northern tongues, though with its derivative so common in the Southern. The harsh *rh* of the Tamil is, when doubled, pronounced like *tt*, hence the comparison with the Hindi; but see No. 27, where there is given another connection.

No. 35.—This number is no doubt connected with the particle अरे found in most of the languages, and also in the Sanscrit dictionaries, and used as an interjection in *calling to* or *addressing* inferiors. In Sanscrit it is all isolated and alone; in the Southern vernaculars it is connected with a large class of words, having the sense of *calling*, and the Malay arip, *to scream*. In Maráthi रडणे evidently from the Sanscrit रुदन is used in the sense of *weeping*; but it is never interchanged with the words of this number where the initial vowel is evidently radical.

No. 36.—This is a very satisfactory series. The first Singhalese, of which the meaning is the most remote, is derived from a verb that means *to lay hold of*, and has a compound meaning, *courtship*; it has also आलि in the very same sense as the Hindi, and there can be little doubt that this last word has found its way into Sanscrit books from the vernaculars.

Nos. 37 and 38.—I am not sure that I ought to have separated these two numbers, as vibratory motion is intimately allied with that of the waves of the sea. It gives me, however, the opportunity of bringing out the connection between all the different vernaculars more thoroughly. There is to be added to No. 37 the Bengáli *hila* and the Uriya *halibára*, the Punjabi *hilauna*, and perhaps the Burmese *ilok-the*; at any rate the Javanese and Malay *alih*, to move, to migrate. The nearest Sanscrit root is चल (*chal*), which means the same thing, although there may be here such a connection as

SINGHALESE.	MARA'THI'.	GUJERA'THI'.	HINDI'.
.....	.....	.....	आतू
.....	.....	.....	A'tu
.....	.....	.....	A female teacher
.....	.....	.....	Institutrix
अरगलय	अरड, ओरड	.....	.....
Aragalaya	Arad, orad	.....	.....
Noise, tumult	Bawling, noise	.....	.....
Clamor, strepitus	Vociferatio	.....	.....
अल्ला ; आले	आळ, आळि	आळ	आलि
Alla ; alai	A'ḷ, áḷi	A'ḷ	A'li
Nearness ; desire	A longing after	Fondness	A woman's female friend
Propinquitas ; desiderium	Desiderium	Blandimentum	Feminæ amica
अलनवा	हलणे, हिलणे	हालवुं	हालना
Allanavá	Halaṇe, hilaṇe	Hálavun	Hálaná
To put in motion	To shake	To shake	To shake
Agitare	Vibrare	Vibrare	Vibrare
अलञ्जर	हेलकावा	.....	हलोरा
Alanjara	Helkává	.....	Halorá
An earthen water-pot	A wave	.....	A wave, billow
Vas fictile	Fluctus	.....	Fluctus
.....	अलङ्ग.	.....	अलङ्ग.
.....	Alanga	.....	Alanga
.....	A long building	.....	A side, entrenchment
....	Stabulum, &c.	.....	Latus, agger

may exist among languages of different families; there can be no such thing as derivation, for no example can be pointed out either of the dropping of an initial ह, or of changing it into ह. The nearest Sanscrit for a wave is लहरि, but here also derivation is out of the question. The exceptional word हलन , found in Wilson's second edition, with no other words in the least connected with it, and translated "rolling or tossing as in sleep," has no doubt been adopted by some Sanscrit writer from the vernaculars; but though No. 37 were on the ground of this word given up, the remarkable agreement in No. 38 in the spoken tongues, without any corresponding Sanscrit word, will still remain a remarkable coincidence, only explainable from the existence of a non-Sanscrit basis. *Alih* in Malay means to move, to migrate. Compare also the Greek ἅλος, the *salt sea*, with the Tamil.

No. 39.—Perhaps the Maráthi points out the derivation from the Canarese of the word for a rampart: it may thus be ultimately connected with the Latin *longus*, and the Sanscrit लम्ब, but the sense of a *rampart*, which it bears in the South, and *military intrenchment* in the Hindustáni, without any such meaning belonging to any derivative of लम्ब in Sanscrit, as may be supposed to take place from the Canarese अलगि, plainly shows an original and independent connection between the Northern and Southern vernaculars. We may often find an original connection between words in languages of different families, owing to the influence of a primitive tongue from which all are descended, if such a tongue there was, or from unknown circumstances. All we contend against in such instances is, that the words have been borrowed on either side. The word *alang* in Javanese means *a cross*, in Malay *a cross-beam* and a *sand-bank*, but not a *rampart*.

No.	CANARESE.	TA'MIL.	MALAYA'LIM.	TELINGA.
40	अव ; अवन Ava ; avana He, that ; his Ille ; suus	अवन् Avan He, that Ille	अवन् Avan He, that Ille	अयन Ayana He, (honorific) Ille (honorificè)
41	आवि ; आविगे A'vi ; ávige Steam ; a potter's kiln Vapor ; fornax	आवि Avi Vapour, smoke Vapor, fumus	आवि Avi Vapour Vapor	आवि ; आवमु A'vi ; ávamu Vapour ; a kiln Vapor ; fornax
42	आयु A'yu To choose Deligere	आवनम् ; आवल् A'vanam ; àval Intimacy ; longing Familiaritas ; desiderium	आवु A'vu (interjec.) How pleasant Quam jucundè	....
43	आरु A'ru To be appeased Placari	आर्; आर्-ग्राडु A'rhu, arhu-grhadu A river; to be appeased Amnis ; placari	आर्, आर्हिक्कुन्नु A'rhu, arhikkunnu A river ; to cool, to appease Amnis ; restinguere	आर् ; एर् A'rhu ; erhû To be appeased ; a river Placari ; rivus
44	आले A'le A press Torcular, prelum	आलै A'laí A press for sugar-canes Sacchar. exprim. torcular	आल A'la A shed for an oil press Molæ tentorium	अल्लु Allu To plait, to twist Contorquere

No. 40.—To this number add Bengáli ऊ and Hindi वु *that*, the Uriya आपण *self*, the Scindian पाण *self*, the Dhimál वा *he*; the Tibetan वु *this*, and वेा *that*, are perhaps more easily connected with the Sanscrit सु, which in Uriya becomes से and तत् gives rise to the Marathi तेा and Gujaráthi ते, and is connected with the Burmese *tho*. It appears to me that the original form is the Hindustáni आप. The long vowel in the vernaculars easily passes into the short, and non-initial प into व; thus in Tamil पाप becomes पाव as it does also in *Mágadhi*, see *Kalpa Sutra*. In the Maráthi and Gujaráthi आपण becomes a comprehensive plural of the first person, including all parties present. The Malay *awak*, self, is no doubt connected with this number.

N. B. आवळी जावळी a term of the Canarese and Maráthi, being ultimately derived from युग्म, *a pair*, is omitted; as also अळिधु, *to be loose*, as possibly intimately connected with शिथिल *loose*.

No. 41.—Whether अवि, the word for *vapour* in the Southern tongues, be Sanscrit or not, I cannot tell. In the Tamil dictionary *wind* and *breath* are among its meanings, but the most discordant words there often obtain the same sound; as for example, there is अय *luck*, a pure Sanscrit word, and under the same heading अय *a mother*, for which see No. 33. However this may be, and whether the connection between the two meanings we have given be intimate or not, the word for a *potter's kiln* seems an unexceptionable instance of connection between the Southern and Northern families, and would imply a certain stage of civilization before Brahmanical influence was

SINGHALESE.	MARA'THI'.	GUJARA'THI'.	HINDI.
ඔ	आपण ; आपला	आपणो	आप ; अपना
U'	Apan ; apalá	Apano	A'p ; apna
He	Self ; ours, (honor)	Ours, (honor)	Self ; ours, (hon.)
Ille	Nos ; &c. nostrum (hon.)	Nostrum, (hon.)	Nos ; nostrum, (hon.)
.....	आवा	.....	आवा
.....	A'vá	.....	A'vá
.....	A potter's kiln	.....	A potter's kiln
.....	Fornax figularis	.....	Fornax figularis
.....	आवड	.....	.....
.....	A'vad	.....	.....
.....	Love, desire	.....	.....
.....	Amor, desiderium	.....	.....
ආර	विरा	.....	आरुक
A'ra	Virhá	.....	Aruka
A stream	A brook	.....	A par. cooling drug
Rivus	Rivus	.....	Medicam. refrig.
ආල	आला	अल	.....
A'la	A'la	Al	.....
Large	A tie, restraint	Injury	.....
Extensus	Ligamentum	Damnum	.....

exerted over the Indian Aborigines. The Malay and Javanese words *abu* and *awu*, for *ashes*, are likely connected with this word.

No. 42.—Seems intimately connected with No. 36. The Javanese word *ayu* handsome, is no doubt also connected with Canarese.

N. B. ओलिसु *to listen*, is not connected apparently with words in the other tongues.

No. 43.— Is perhaps ultimately connected with the Sanscrit अणस् *water*, though I scarcely think it can be derived from it. In the Southern tongues *ara*, for *a river*, is a common word, and used by the vulgar in Ceylon, though quite unknown, even in the higher quarters of the Peninsula. The *med*, substance, found in the Hindí dictionary, I derive from the Southern family, and suppose it a remnant of that family which had lingered in the North. But what I want to be especially marked is, the figurative sense that runs through the Southern tongues and extends to the Maráthi, for the ळ and र are so frequently interchanged, that the use of the former is a matter of no importance. The river, *Arno*, in Italy, and the Latin *urna*, a water-pitcher, are likely connected with the Sanscrit अर्णस् The *Arar* mentioned by Cæsar seems nearly the same as the South Indian word for *a river*. In Malay, *arung* means the sea, and is nearer our word than the Sanscrit *árnava*, आर्णव.

No. 44.—Though the meanings of the words under this number are rather diverse, I suppose they may be derived from one radical.

N. B. The word आवु in Canarese and Telinga, with आ and आवै in Tamil, meaning *a cow*, I cannot connect with the Northern family, nor reduce to a Sanscrit root, unless we sink the Sanskrit ग.

No.	CANARESE.	TA'MIL.	MALAYA'LIM.	TELINGA.
45	ಇಕ್ಕು, ಇರಿಸು	ಇರುತ್ತು-ಘ್ರದು	ಇರುತ್ತುನು	ಇರ್ಹುಕು
	Ikku, irisu	Iruttu-ghradu	Iruttunnu	Irhuku
	To place, to put	To place on, to press down	To place, to set	To press into
	Ponere	Ponere, deprimere	Deponere	Interponere
46	ಇರ	ಇರು-ಕ್ಹಾದು	ಇರಿ-ಕುನು	.....
	Iru	Iru-krhadu	Iri-kunnu	.....
	To be ; to remain	To be, to remain	To be, to remain	.....
	Esse ; manere	Esse, manere	Esse, manere	.....
47	ಇರ್, ಇರಡು	ಇರು, ಇರಂಡು	ಇರು, ರಂಡ	ಇರು
	Ir, eraḍu	Iru, iraṇḍu	Iru, raṇḍa	Iru
	Both, two	Both, two	Both, two	Two, both
	Ambo, duo	Ambo, duo	Ambo, duo	Duo, ambo
48	ಇರುಳು	ಇರುಳ	ಇರಿಳು	ಇರುಲು
	Iraḷu	Iruḷ	Iriḷu	Irulu
	Night	Darkness	Darkness	Darkness
	Nox	Tenebrae	Tenebræ	Tenebræ
49	ಇಂಗ್ಲ·ಳ	.....	ಏಂಗಾಲಂ	ಇಂಗ್ಲ·ಳಮು
	Inggal	.....	I'nggálam	Inggalamu
	Live coals	.....	Charcoal	Fire, charcoal
	Anthraces	.....	Anthrax	Ignis, anthrax
50	ಇಳಿ	ಇಱ, ಇಱೈ	ಇಟಿಯುನು	ಇಳುಗು
	Iḷi	Iḷ, iṭai	Iṭiyunnu	Ilugu
	To descend ; to halt	Not to be ; consumption	To fall to pieces	To die
	Descendere ; aistere	Non esse; pthisis pulmonalis		Mori
51	ಇಳಿಗಿ	.....	ವಿಲ್ಲ	ವಿಲ್ಲು
	I'ligi	.....	Villa	Villu
	A sickle	.....	A bow ; a steel spring	A bow
	.....	.....	.....	.....

Nos. 45 and 46 are intimately connected. ಇರ is in sense the अस् of the Sanscrit, and not the भू; the *esse* or *existere* of the Latin, and not the *fieri*; the *be* and not *become* of the English. The latter of these senses belongs to the South Indian ಆಗು, given above.

No. 47.—Contains the common word for *two* in the Southern tongues and an uncommon word in the Singhalese. The Maráthi word seems evidently connected with the others. The word ಇರ indeed is uncommon, and दुसरा from the Sanscrit is used both for *other* and *second*. I cannot think that ಇರ is derived from द्वितर. The त would not have been thus dropped.

No. 48.—The Maráthi word means also *rosin*, the Sanscrit राल; but it is easier

SINGHALESE.	MARA'THI'.	GUJARA'THI'.	HINDI'.
.....	रतणे	.....	.....
.....	Rutane	.....	.....
.....	To run into	.....	.....
.....	Penetrare	.....	.....
ඉරියව්ව	एरी, एरवी	.....	.....
Iriyadvava	Eri, eravin	.....	.....
Existence; position	Spontaneously	.....	.....
Existentia; situs	Sponte, ultro	.....	.....
ඉරුණුව	एर	.....	.....
Iruṇṭata	Er	.....	.....
Two, double	Other	.....	.....
Duo, duplex	Alius, alter	.....	.....
.....	राळ	.....	.....
.....	Raḷ	.....	.....
.....	Ruined, disgraced	.....	.....
.....		.....	.....
.....	इंग.ळ	इंग.रा	.....
.....	Inggaḷ	Inggará	.....
.....	A live coal	Live coals	.....
.....	Anthrax	Anthraces	.....
.....	इळा	.....	.....
.....	Illa	.....	.....
.....	Consumption; exhaustion	.....	.....
.....	Consumptio	.....	.....
.....	इळा, विळा	.....	.....
.....	Iḷa, viṭa	.....	.....
.....	A sickle	.....	.....
.....	.....	.....	.....

to derive the meaning given from *night* than from *rosin*, unless *pitch* be the common idea, and the Sanscrit राल, also derived from the Southern tongues.

No. 49.—This word is put down in most of the dictionaries as derived from the Sanscrit अङ्गार *a live coal*, but in Maráthi the pure Sanscrit word is quite common, and not another instance can be given of such a conversion. The genius of the language is to lengthen and not to shorten, and the corruption of अंगार is आंगार. इंग.ळ then is an aboriginal word. The Hindi follows the Sanscrit, and the Gujárathi is influenced by both. *Ingle*, in Lowland Scotch, means *a blazing fire*.

No. 51.—There is a Sanscrit word इळि said to be *a small sword*, but possibly after all derived from the vernaculars, in which the leading idea is *a bent instrument*.

No.	CANARESE.	TA'MIL.	MALAYA'LIM.	TELINGA.
52	उक्कु,	उक्कम्	S.उक्खम्	उक्क
	Ukku	Ukkam	Ukhyam	Ukka
	To boil, to seethe	Sultriness	Boiled	Sultriness
	Bullire, coquere	Æstus	Coctum	Æstus
53	उप्पु; उप्पळ	उप्पु ; उप्पळम्	उप्प	उप्पु
	Uppu ; uppu;	Uppu ; uppalam	Uppa	Uppu
	Salt ; quicksand	Salt ; a salt marsh	Salt	Salt
	Sal ; syrtes	Sal ; æstuarium	Sal	Sal
54	उप्पे; ओप्प	मरवुप्पु ; ओप्पु	ओप्पम्	ओप्पु
	Uppe ; öppa	Maravuppu ; öppu	öppam	öppu
	Steaming in lye-water ; pretty	Potash ; beauty	Polishing	Beauty
	Lixivia dealbare ; nitius	Sal lixivius ; splendor	Politura	Splendor
55	उब्बु	उप्पुगदु	.....	उब्ब; उब्बु
	Ubba	Upugrhadu	.....	Ubba ; ubbu
	To swell	To swell	.....	Great moist heat ; to swell
	Turgere	Turgere	.....	Æstus ; tumor
56	उमे	उर्हुगल	उर्हक्कम्	उरक
	Ume	Urhugal	Urhákkam	Uraka
	Mute, dumb	Tightness	Sleep, rest	Silently, quietly
	Mutus	Constrictio	Sopor, quies	Tacitè, placidè

No. 52.—The Malayalim and Singhalese words are both found in the Sanscrit, as well as in several of the vernacular dictionaries. The proper corresponding Sanscrit word, however, is उक्थ, which though allied with, can hardly be called the root of our words.

N. B. The Canarese उमि *to spit out*, may be derived from the Sanscrit उद्ग *to cast off*. The Canarese उण्डे and Tamil उण्डै *a ball of anything*, the Maráthi उण्डा *a lump of dough*, are connected with the Sanscrit उण्डेरक *a ball of flour*, and are omitted though probably here also the Sanscrit is the derivative. The Canarese उण्ण *to eat*, I derive from अन्न as उन्न.ड from अंगुष्ट, &c. In Maráthi and Canarese we have a curious word, उचापत *lifting goods on credit*, probably from उच; also Canarese उज्ज *a pair, or match*, perhaps from उभय or युज and उडु *the lap*, from उदर.

No. 53.—I feel now doubtful of the connection between the two Canarese words in the first column. I thought the Tamil word for *a salt marsh* might be the link, but perhaps such a Sanscrit word as उप्पखण्ड may be the original, whence the Maráthi and second Canarese are deduced. There is a Sanscrit word for *condiments*, उपस्कर which cannot have any connection with this word, as उप is the prepositive.

SINGHALESE.	MARA'THI'.	GUJARA'THI'.	HINDI'.
S.उक्ख	उकडणे	उकरवु	उकलना
Ukha	Ukaḍane	Ukaravu	Ukalana
A saucepan	To boil, to seethe	To boil, to be hot	To boil
Anthepsa	Coquere	Ebullire, fervere	Coquere
.....	उपळ	.....	.....
.....	Upaḷ	.....	.....
.....	Marshy ground	.....	.....
.....	Pratum palustre	.....	.....
ओपन-गवना	ओप	ओपणी	ओप
Ōpana-gavaná	Ōp	Ōpaṇi	Ōp
To polish	Polishing, bleaching	A burnisher	Polish, lustre
Polire	Politura, dealbatio	Politor	Politura, nitor
.....	उब ; उभड	उभरवु	उभ ; उभरना
.....	U'b ; ubhaḍ	Ubharvun	Ubh ; ubhurná
.....	Sultriness ; gushing out	To swell	Moist heat ; to swell
.....	Æstus ; profluvium.	Tumere	Æstus ; turgere
.....	उग	उग्ग.	उंघ
.....	Uga	Uṇgga	U'nggh
.....	Silently, still	Sleep, rest	Nodding, sleeping
.....	Tacitè, placidè	Sopor, quies	Dormitans

No. 54.—The connection of the two words in the Canarese is presumed from the ease with which the *u* and short *o* pass into one another. The word उप्पु like our word *salt*, is applicable to all saline bodies, and to potash among the rest. Hence we get the sense of bleaching cloth, and next of rendering other articles brilliant. This is a widely diffused and important aboriginal word, extending even to the Malay, which for *polish* has *upam*. It is a defect in the Devanágari alphabet that it makes no distinction between the long and short *e* and long and short *o*.

No. 55.—Perhaps the word for *moist suffocating heat*, which occurs in some of the languages, may not be derived from the word *to swell*, though the heat meant is that which makes seeds germinate, trees bud, &c. The Malay *aba*, to glow, or to feel warm is likely connected with this number.

No. 56.—The meanings in the members of this series are pretty close, but the forms are not so close as usual.

N. B. The harsh *r* sometimes written *rr* will henceforward be written *ṛh*.

N. B. The Canarese ಕಿಡಿ *blaze, flame*, &c. is probably continually connected with, if not derived from ಕಿಡಿ : in the sense of *fire, flame*, &c., and both with the Hebrew אור *ur*, fire.

No.	CANARESE.	TA'MIL.	MALAYA'LIM.	TELINGA.
57	उरळु Uralu To roll; to die Volvere; mori	उरंकम् ; उरपु Urakam; urapu Descent; death Descensus; mors	ऊरुन्नु U'runnu To pull off Extrahere	ऊरळु U'ralu To roll; to fall down Volvere; cadore
58	उलट Ulaṭa Topsyturvy Inversè	उळि Uḷi Disgrace Infamia	उलयुन्नु Ulayunna To move; to be reduced Movere; reduci	उलुगु Ulugu To die Mori
59	उलु ; उळि Ulù; uli To plough; a chisel Arare; scalper	उऴु-घडु ; उळी Uzhu-grhadu; uli To plough; a chisel Arare; scalper	उऴव ; उळी Uzháva; uḷi Tillage; a chisel, a barb Agricultura; scalper, spiculum	उळि Uli A chisel Scalprum
60	ऊळिग Uḷiga Service; items Labor; articuli	उऴ-क्रडु Uzha-krhadu To suffer; to apply the mind Pati; studere	उऴ्कलम् Uzhkalam Retinue, insignia Pompa, regis insignia	उलाकु Ulaku A mem. of goods Bonorum schedula
61	एक्कटाळि Ekkataḷi Mocking, jeering	एक्कचक्कम् ; एक्कर् Ekkachákkam; ekkar At random; low language	एक्कञ्चक्कम् Ekkanchakkam Contention	एक्किरिन्त Ekkirinta Making faces; derision

Nos. 57 and 58 seem intimately connected, though they appear still referable to two distinct roots. The only Sanscrit words that seem nearly connected with them are लोल *tossing, rolling*, and उल्लोल *a wave*. The vernaculars, however, have all the र, which the Sanscrit never has in those words, and if they had been derived from the Sanscrit, how can we account for all taking the र. The Singhalese word रळ *rael*, meaning *a wave*, is probably also derived from the same source. The commonness of many of the words in the list, and the number of derivatives in use, show these to be no exceptional or foreign vocables, but genuine members of the aboriginal Indian tongue. The connection of the former number with our English word *roll* is not a little remarkable; as well of *loll*, for *putting out the tongue*, with the Sanscrit लोला *a tongue*, and लोल *shaking*. The Maráthi has रंधणे for *to polish*, and रंधणी for *a carpenter's plane*; the Hindi रुखानी means *a chisel*.

N. B. The Canarese उसुबु *sand*, the Maráthi ओसाड *waste land*, &c., have been omitted, as nearly connected with the Sanscrit ऊष *saline earth*, though which is the original may still be questioned.

No. 59.—The Malayalim and Singhalese come near, both in sense and sound, to the English *awl*. It is singular to notice how the Maratha's put a न before the vowel, in the word for *a husbandman*. They also frequently change the ळ into ण. Husbandmen are called in Tamil उऴवोर् *uzhwor*.

N. B. उळि *to be left*, in Canarese, and उरणे in Maráthi, can be derived from the Sanscrit उर्वरित; also उळ्ळ *possessing*, from उण्डु definitive verb *it is*; both the corresponding words in the Southern tongues have no derivative, as far as I know, in those of the North.

SINGHALESE.	MARA'THI'.	GUJARA'THI'.	HINDI'.
उलेल ; रोदल	रूळ ; रुळणे	रोलवुं	रोलना
Ulelá ; rodula	Rúḷ ; ruḷaṇe	Rolavun	Rolaná
Whirling ; a wheel	An anklet ; to jingle	To roll, to polish	To roll, to smooth
Circumagens ; rota	Annulus ; tinnire	Volvere, polire	Volvere, polire
अल्ल	उलटा	उलटुं	उलटा
Alla	Ulaṭá	Ulaṭun	Ulṭá
A waterfall	Inverse, reverse	Reverse, opposite	Reverse, contrary
Cataracta	Inversus, reversus	Reversum, adversum	Reversus, adversus
उल	उलणे ; कुळंबी	....	उलनना
Ula	Ulaṇe ; kuḷambi	....	Ulananá
The point of an instrument	To crack ; to split ; a husbandman	....	To be laid on one side
Teli cuspis	Rimas agere; agricola	....	Inclinare
उलियम	उळीग	उलझावुं	उलझाव
Uliyama	Ulíg	Uljháwun	Uljháw
Palanquin service	A return present	To entangle	Embroilment
Sellæ pensilis portatio	Remuneratio	Implicare	Turbamentum
....	वेंकावळ्या, वेंचकुळ्या	....	....
....	Venkawlyá, venchkulyá	....	....
....	Mimicry, grimaces	....	....
....		....	....

N. B. The letters ऋ, ॡ, are purely Sanscrit, and do not exist in the vernacular tongues. They are merely the semi-vowels र and ल with the French *u*, a vocal sound, which is only found in connection with these two liquids, and considered by Sanscrit grammarians as vocalizing these two consonants. The Maráthi Brahmans, who have retained the different shades of sound peculiar to Sanscrit letters, pronounce as above described, or as the German *ü*. The Devanágari has but one *e* and *o*, and that long; but the Southern vernaculars have a short *e* and *o* also. The words beginning with the short *e* are often corruptions of Sanscrit words beginning with other vowels, as एंजलु *crumbs*, from उच्छिष्ट in Maráthi उष्टें and एट्टु *eight*, from अष्ट. Sometimes a guttural is dropped, as from गणना *calculation*, we get एणिके, unless this be from अङ्क कम. These words are accordingly all passed over. In the same way, by dropping a dental, we get the Tamil एळ्ळ् and Canarese एळ्ळु *an oil seed;* and hence एण्णे *oil*, from the Sanscrit तिल : and तैल whence तेल in Hindi and Maráthi, for *oil*. It is curious that in Maráthi the त is always dropped in compounds; thus we have एरंडेल for *castor-oil*, from एरंड and तेल showing a Southern influence.

No. 61.—After two or three derivatives we have एकु to *card wool* or *clean cotton*, whether it is connected with this number or not, I do not pretend to say; perhaps it is the root whence they all come, as the Telinga एकु means both *to defume*, and *to clean cotton*.

N. B. एगटु *pungent*, is doubtless from अग्निष्ठ and एक्कुरे *an ascent*, from अग्र. On the same principle एचर *warning*, is derived from विचार *consideration*, and so of others that I need not particularize. एयु *to shoot an arrow*, may come from आय and च्यु, and possibly एरका *a hole*, from छिद्र. At any rate these have no correspondent words in the Northern tongues.

No.	Canarese.	Ta'mil.	Malaya'lim.	Telinga.
62	ಎಟ್ಟು, ಎಟಕು	ಎಟ್ಟು-ಗ್ರಹದು	ಎಟಾಕೂಟಮ್	ಎಟ್ಟಕೆನಿ
	Ettu, etaku	Ettu-grhadu	E'ṭákútam	Ettakeni
	To reach	To reach, to aim at	Hazard, difficulty	With difficulty
	Pertingere	Assequi, moliri	Periculum, difficultas	Vix, difficile
63	ಎಡ, ಎಡರ	ಅಡೆ; ಅಡುಪು	ಅಟ	ಎಡ
	Eḍa, edara	Aḍai; aḍapu	Aṭa	Eḍa
	Place, abode	Incubation; a hearth	Incubation	Place, interval
	Locus, domus	Incubatio; focus	Incubatio	Locus, intervallum
64	ಎಡ	ಏಣ; ವೆರಿ	ವೆರ್ರಿಯನ್	ಎಡಮ; ವೆರ್ರಿಡಿ
	Eḍa	Eṇa; verhi	Verhiyan	Eḍama; verhadi
	The left	Poverty; fury	A madman, a begger	The left; madness
	Sinistra manus	Paupertas; furor	Insanus, pauper	Sinistra; insanies
65	ಎದಚಡಕ	ಏತನ	ಹತಕನ್	ಹತಕುಂಡು
	Edachaḍaka	Etana	Hatakan	Hatakuṇḍu
	Timidity	A deceiver	A coward	A coward
	Metus	Fallax	Timidus	Timidus
66	ಎದರ; ಇದಿರು	ಎದಿರ್	ಎತಿರೆ	ಎದುರು
	Edaru; idiru	Edir	Etire	Edurhu
	The front; presence	The opposite, before	The opposite, before	The front, opposite
	Pars adversa; præsentia	Regio contraria, coram	Pars contraria, coram	Prima acies, contraria

No. 62.—The Sanscrit अट्ट *to surpass*, will not account for this genuine aboriginal word, which does *not go beyond* but comes up to the mark with difficulty.

N. B. ಎಡಹು to *stumble* or *strike against*, is connected with the root आड. The Canarese ಎದತನ and Telinga ಎದುತನ *obstinacy* and *severity*, and these with the Sanscrit चड *violence*. Whether एणे *proportion*, is derived or not from मण I would not decide. In Maráthi we have उडणे *to rise*, and उतणे *to swell up*, both originally from the Sanscrit; probably then, the Canarese ಎತ್ತು *to raise*, and the allied words are from the same source, or at least intimately connected with it.

No. 64.—Though for comparison some extraneous words have been added, I do not think it likely that they are all from the same root, though I think the roots nearly connected that designate *left-handedness* or *madness*, or *folly* or *intoxication*, all which senses the second Tamil word bears.

No. 65.—It is not probable that words radically connected, yet with such various forms, should have been derived from the Sanscrit, nor that चतक *a coward*, should have been so transmogrified. It is rather to be inferred that चतक itself is a mere

SINGHALESE.	MARA'THI'.	GUJARA'THI'.	HINDI'.
.....	अटपणे	अटपटु	अटना
.....	Aṭapaṇe	Aṭapaṭu	Aṭana
.....	To reach, to accomplish	Difficult	To be filled up
.....	Pertingere, assequi	Difficile	Repleri
.....	अड्डा	.....	अड्डा
.....	Aḍḍa	.....	Aḍa
.....	A place where labourers meet to be hired	.....	A public place
.....	Forum	.....	Forum
.....	वेडा, डावा	.....	.....
.....	Veḍa ; ḍava	.....	.....
.....	A madman ; the left	.....	.....
.....	Insanus ; sinistra	.....	.....
थतिय	थडथडणे	.....	थडियाहा
Hatiya	Haḍhaḍaṇe	.....	Haḍiyáhá
Panting	To tremble	.....	Timid, bashful
Anhelans	Tremere	.....	Pavidus, verecundus
एदिरी	एथे	.....	इधर
Ediri	Ethe	.....	Idhar
Against, adverse	Here	.....	Here, hither
Adversus, hostilis	Hic	.....	Hic, huc

formation from the Telinga or Malayalim than a derivative of the Sanscrit इव, from whence it could not, according to the rules of etymology in that sense, be well derived.

No. 66.—A glance at the Canarese word will show at once that we do not need to go to the Sanscrit अत्र to get the Hindi word, which by-the-bye is almost identical in meaning and sound with the English *hither*. Suppose we endeavour to derive इधर from the Sanscrit इदम् *this*, we shall not even then get the र till we go to the Canarese, the locative of which is इदरल्लि and the genitive इदर. The Maráthi never changes the Sanscrit अ to र, and therefore must have the same origin.

This number in the Canarese and other Southern tongues has many derivatives in the sense of *opposition*.

N. B. एदे *the breast* or *heart*, is no doubt हृद्. This in Scindian assumes the Praerit form of हिंओएडु. *E'du*, a porcupine, is derived, according to the Telinga dictionary, from एदु *to protect*, which itself is connected with No. 66, which like the Greek αντι has the double reference, of *protection* and *opposition*.

No.	CANARESE.	TA'MIL.	MALAYA'LIM.	TELINGA.
67	ಎನು ; ಎಂದು Ennu ; endu To say; to that effect Dicere ; cujus tenor est	ಎನ್ಗ್ರದು ; ಎಂದು Engrhadu, endu To say ; on purpose for Dicere ; idcirco	ಎന്ന Ennu Therefore ; to that effect Idcirco ; cujus tenor est	అను ; అని Anu ; ani To say ; to that effect Dicere ; cujus tenor est
68	ಎಲ್ಲ Ella The whole, thoropgh Universus, prorsus	ಎಲ್ಲಾಂ Ellám All, the whole Omnis, universus	ಎല്ലാം Ellám All, the whole Omnis, universus	ఎల్ల Ella All Omnis
69	ಏಳು; ಏಳಿಗೆ Eju ; élige To rise ; growth, elevation Oriri ; incrementum	ಎಳ್ಚುಚಿ Ezhuchi Elevation, haughtiness Sublatio, superbia	ഏഴു Ezhu, Produce, height Fructus, altitudo	ఏలుక Iluku To start Exsilire
70	ಏಲೆ Ele Thread Filum	ಎಳಿನಿ ; ಎಲ್ಲೆ Ezhini ; ellai A curtain ; bounds Aulæum ; termini	ഏഴ ; ഏല Ezha ; ella A trellis ; a boundary Cancelli ; terminus	ఏల Ella A boundary Limes
71	ಓಗುದೆಸು, ಓಯಕ್ಕನೆ ಓಕ್ಕಾಳಂ Ogudesu, oyakkane Okkálam To vomit, to feel nausea Vomere, nauseare	Qualm Nausea	ഓക്കാനം Okkánam Squeamishness Nausea	ఓకరించు. Okarinchu To retch Nauseare
72	ಓಡು ; ಓಡು Oṭṭu ; oḍu To collect together ; a tile In plicas colligere ; tegula	ಓಡು Oḍu A tile ; a skull Tegula ; calva	ഓടിട്ടുന്ന ; ഓഴലി Oṭiṭunna ; ozhi Tile ; a hiding-place Latebra	ఓడి Oḍi The lap Sinus

No. 67.—I have given already a reason for not deriving this from the Sanscrit अण. Instead of changing ण to न, the current of the vernaculars is quite in the opposite direction; and they all mean *to say* or *tell*, but never *to sound*. The pluperfect participle also, which becomes in all of them that have the verb, a particle meaning sometimes *therefore*, and sometimes *to that effect;* and in most instances, though there was not space to note it both, is a very singular coincidence; and it is scarcely less so that the Singhalese and Malayalim which have not the verb should retain the particle, while the Maráthi, which changes the form of the verb, should change also the particle to make it assume the regular participial form. This singular idiom is scarcely capable of a literal translation into English. Thus for the phrase *he went off, saying he would return immediately*, the Maráthas would say झटकन येऊन म्हणून म्हटल्यावरच गेला; literally, "*I will instantly return*," *having said, after saying, he went off*. Yet this strange idiom runs through all these languages.

N. B. If the Canarese ಎರಗು *to bow*, and ಎರಚು *to sprinkle*, have no connection with the Sanscrit रिंखण *creeping, as a child*, and रेचन *purging*, they have no correspon-

SINGHALESE.	MARA'THI'.	GUJARA'THI'.	HINDI'.
එනිසා	म्हणणे ; म्हणून	.....	.....
Enisá	Mhaṇaṇe ; mhaṇún	.....	.....
On that account	To say ; to that effect	.....	.....
Idcirco	Dicere ; cujus tenor est	.....	.....
එළි	अलेल्	.....	अलम्
Eli	Alel	.....	Alam
Public	Arrant ; thorough	.....	The human race
Communis	Merus ; prorsus	.....	Genus humanum
අලියා	अळणे	अलबेला	अलबेला
Aliya	Aṭaṇe	Albela	Albela
An elephant	To attain puberty	A coxcomb	A fop, *a swell*
Elephas	Adolescere	Tumidus	Tricarum gloriosus
එළෙනවා	एळें	.....	.....
Eedenavá	Elen	.....	.....
To entwine	A thong fastening the cart to the yoke	.....	.....
Convolvere	Jugi loramentum	.....	.....
ඔක්කාරේ	ओकणे	ओकवुं	ओकना
Okkáre	Okaṇe	Okavun	Okaná
Vomiting	To vomit	To vomit	To vomit
Vomitus	Evomere	Vomere	Vomere
ඔඩොක්කුව	ओटी ; ओंटी	ओटलो ; ओटवुं	ओट् ; उत्त
Oḍokkuva	Oṭi ; oṇṭi	Otalo ; otavu	Oṭ ; utta
A pocket in the folds of the robe	A verandah ; the lap	A verandah ; to hem	A skreen ; plaits of cloth
Sinus	Porticus ; sinus	Vestibulum ; prætexere	Velum ; plicæ

dents in the Northern family. एळ *young, tender*, is probably connected with the Mar. ओला *fresh, tender*, from S. ओल *moisture.*

No. 68.—It is singular how this word should come so near the English *all*, and the Arabic ﷲ used in the *Urdu*. There is here no approach to the Sanscrit, yet it is a very common word in all the Southern tongues.

No. 69.—The Southern root here explains some singular words in the Singhalese and Northern family.

N. B. I cannot find any traces of the Canarese ओद and ओन्दु one, *unus*, in the Northern family, unless in No. 77, though they run through all the Southern. C.ओगि *to bleach*, may be connected with S.ओजस् *splendour*. Also C.ओडु *to catch*, and allied words ; and Mar. ओढणे *to draw*, are from the Sans. वोढा from the root वह् *to bear, obtain*, &c. वद् *to kick, impede*, &c. seems peculiar to the South. Also ओरगु *to fall, to die.* Again, C. ओरते and M.ओढा *a stream*, are from वह् *to flow.*

No.	CANARESE.	TA'MIL.	MALAYA'LIM.	TELINGA.
73	ಓಡ Oḍa A boat Navicula	ஓடம் Oḍam A boat, a ferry-boat Cymba, ponto	ഓടം Oṭam A boat, a wherry Cymba, scapha	....
74	ಓಡಂವದು Oḍamvaḍu To convenant Pactionem facere	ஒட்டு Oṭṭu Conjunction ; a vow Unio ; votum	ഓടം Oṭam A bet, a wager Pignus, spontio	ఒడ్డు Oḍḍu To bet or wager Pignus opponere
75	ಓರ Ora Edge, margin Margo	ஓரம் Oram Hem, margin Fimbria, margo	ഓരം Oram Side, edge Latus, margo	ఓర Ora Side, edge Latus, margo
76	ಓರಟ್ಟು Oraṭu Coarse (as cloth) Crassus	....	കോടി Koṭi Unbleached (cloth) Non dealbatus	కోరా Kora Unbleached Non insolatus
77	ಓರಲು Oralu [ed To become acquaint- Usum intercedere	ஒருமை Orumai Singleness, concord Unitas, concordia	ഒരുമ Oruma Unity, fellowship Unitas, familiaritas	ఓరిమిక Orimika Friendship, union Amicitia, conjunctio
78	ಓರೆ Ore To rub Fricare	ஓர்ப்பம் Orbgam Restraint ; poverty Continentia; paupertas	....	ఓరేయక, ఓరయు Orbeyak, orayu Rubbing, to rub Fricatio, fricare
79	ಓಲ ; ಓಲಿ Ola ; oli Unwilling ; a pledge Nolens ; pignus	ஒத்தி A pawn Pignus	ഓല Olla —Must not Nequaquam	ఓలయి ; ఓలి Olayi ; óli Not consenting ; a dowry Nolens ; dos
80	ಓಳ್ಳಿ Olli Good ; well Bonus ; bene	ஒள ; ஒளி Oḷ ; oḷi Good ; light Bonus ; lux	ഒളി Oḷi Light, splendour Lux	బళా, భళా Balá, bhalá Bravo Euge
81	ಓಲೆಕಾರ Olekára An armed peon Miles pedisequus	ஒழுங்குமு. Ozhunggu Orderly disposition Dispositio	ഒരുക്കം Orukkam Preparation, readiness Adaptatio	ఓలయు Olayu To be proper Aptum esse
82	ಓಸರ O'saru [out A fountain, to ooze Fons, rimis effluere	ஒத்தி Otti Aside Seorsum	ഒളി ; ഒളിവ Oli ; oliva A pond ; flowing Lacus ; fluens	ఒసరించు Osarinchu To move aside Seipsum subducere

No. 74.—Gives us an instance of the prefixing the guttural ಕ್ in the Northern tongues.

No. 75.—Furnishes us with a striking instance of the prefixing of the guttural ಕ್ in the Northern tongues, of which we have seen some previous instances. See also the next number.

SINGHALESE.	MARA'THI'.	GUJERA'THI'.	HINDI'.
ඔරුව	ढोडी	ढोडी	ढोला
Oruva	Hodi	Hodi	Hola
A boat, a canoe	A boat, a canoe	A boat	A flat bottomed boat
Cymba, scapha	Navicula, linter	Navicula	Navicula
ඔණ්ඩුව	ढोड	ढोड	ढोड
Onṭṭuvá	Hoḍ	Hoḍ	Hoḍ
A wager	A wager, a bet	A wager	A wager
Pignus	Pignus, sponsio	Sponsio	Pignus
අයලේ	कोर	कोर	कोर, ओर
Æle	Kor	Kor	Kor, or
The side of the body	Edge, verge	Edge, border	Edge, side
Corporis latus	Margo, ora	Margo, limes	Margo, latus
කොරදුරු ; කොරළු	कोरा	कोरो	कोरा
Koradus ; korus	Kora	Koro	Kora
Unripe (grain); rough	Unbleached (cloth)	Unbleached	Unbleached, &c.
Immaturum ; scaber	Non dealbatus	Non dealbatus	Non dealbatus
අයලෙනවා	ओळख	ओळखाण	ओरी
Ælenava	Oṭakh	Olkháṇ	Orí
To love, adhere to, &c.	Acquaintance	Acquaintance	A protector, a patron
Amare, adhærere	Familiaris usus	Familiaritas	Patronus
.....	ओरपणे, ओरखडणे	वलोरिओ	.....
.....	Orpaṇe, orkhaḍaṇe	Valorio	.....
.....	To scratch, to lacerate	Laceration, a scratch	.....
.....	Scabere, lacerare	Laceratio	.....
.....	ओल	ओल	आल
.....	Ol	Ol	Ol
.....	A hostage	A hostage, a bail	A hostage
.....	Obses	Obses, vas	Obses
.....	ओला ; भला	भलो ; भलाई	भला
.....	Ola ; bhala	Bhalo ; bhalái	Bhalá
.....	Profitable ; good	Good ; goodness, prosperity	Good, well
.....	Lucrosus ; bonus	Bonus ; bonitas, felicitas	Bonus, bene
අයරලනවා	वलावा	.....	.....
Æralanva	Walává	.....	.....
To escort	An escort, a guard	.....	.....
.....	.....	.....	.....
අයලලනවා	ओसाड ; आसरणे	ओसरवुं	ओर; ओसरा ओसरी
Ælalanavá	Osaḍ ; osarṇe	Osaravun	Or ; osara osree
To open the sluices	Desolate ; to subside	To subside, to recede	Origin ; by turns
Aquam emittere	Desertus ; subsidere	Subsidere, recedere	Origo ; vicissim

No. 77.—Here the root is no doubt ඔරු *one*, the ර being sometimes changed into ල in the North.

No. 80.—We have here a curious process of transformation into the Hindustani from the Tamil. The ඔ easily becomes व, the व becomes next ब, as in the Telinga, and finally म. In the next number the ඔ of the Tamil stops in Maráthi at the first stage of ब.

ART. III.—*Second Memoir on the Cave-Temples and Monasteries, and other Ancient Buddhist, Brâhmanical and Jaina Remains of Western India.* By JOHN WILSON, D.D., F.R.S., Honorary President of the Bombay Branch of the Royal Asiatic Society.

Presented September 1852.

SINCE the publication, about two years ago, of the Memoir on these interesting antiquities, various additional discoveries have been made concerning them, which, with a view to facilitating further research, it may now be proper to bring before the notice of the Society. Our narrative of these discoveries shall be of the simplest character; and we shall venture on no inferences connected with them which do not appear to be of an obvious character.

We begin, as on the former occasion, with **Rock-cut Temples, and their Appendages** for the accommodation of priests and monks.

CAVES NEAR KONDATI, IN SALSETTE.

Some time ago, we had an opportunity of visiting the Buddhist excavations about a mile and a half from the village of KONDATI, in Salsette. On that occasion we discovered four additional excavations on the western side of the hill, making, with those found on the eastern side, the number of sixteen. The settlement of monks there must, then, have been considerable. On a former occasion we spoke of it as an offset from the more extensive and well-known establishment at *Kánherí*. But of its comparative antiquity we shall not at present venture to state an opinion. The form of the letters on the Kondatí inscriptions certainly appears as ancient as that of most of the inscriptions at Kánherí. We recognized at once in it the word *Gautama*, a name of Buddha; and when a fac-simile is obtained of it, and it is compared with others found elsewhere, there will be little difficulty felt in its decipherment and translation. The cave inscriptions cannot, to any considerable extent, we are persuaded, be successfully dealt with in an isolated form. For a successful decipherment of them, and the

grouping of the Pálí words, of which they are principally composed, and which are but little known, however closely they approach the Sanskrit, a general collation of them is absolutely necessary. The labours of Lieutenant Brett, employed by Government in taking them all in fac-simile, under the direction of our Cave Commission, when brought to a close, will give our Orientalists the fullest opportunity of doing justice to them.*

On a former occasion we had an opportunity of exhibiting to the Society some drawings of these caves at Kondati, made by a young man in the employment of Mr. Law and Dr. Gibson. There is nothing very remarkable either about their architecture or sculpture, though a group of figures on the left of the entrance to the room containing the *Dhágob*, which is now considerably injured, appears to have been well executed. It is a peculiarity of these excavations, that they are made at the very top of the hill on which they are situated. The superincumbent rock left above them is little more than sufficient to form for them an adequate roof. We have seen no caves in any other part of India corresponding with them in this respect.

CAVES OF ELEPHANTA.

Since the appearance of the Memoir on the Cave-temples, in 1850, a large clearance has been made of the earth, stones, and rubbish accumulated in front of the northern aisle of the ELEPHANTA Caves. This was effected by a subscription of upwards of two thousand rupees by the society of Bombay, raised principally by the zealous exertions of Captain French. It has led to the discovery of two interesting objects of sculpture, a pair of moveable leo-griffs hewn out of a compact porphyritic basalt, remarkably well executed, which guard the staircase, which has now been brought to light. The counterpart of these leo-griffs, made of the same material, and of the same form, we lately observed in the Bráhmanical excavations of the "*Dhumár Lena*" at *Elora*, as

* Since this paper was read to the Society, we have had the pleasure of receiving Professor H. H. Wilson's lecture on "The present state of the cultivation of Oriental Literature." The following extract from it is quite in unison with these remarks:— "Translations of some of them [the cave inscriptions] have been attempted; but it may be doubted if we can yet place much reliance on either the transcripts or the translations. The former evidently require collation before they can be satisfactorily interpreted. The services of a scholar, well acquainted with Sanskrit, and with the modifications of the Nágarí alphabet found in India, are required, who may compare the transcripts with the originals on the spot, and verify or correct them, at the same time that he takes careful copies of such as have not yet been transcribed."

they are popularly called, which some years ago we had noted as remarkably like the caves of Elephanta, both in their general plan and mythological figures and groups of figures. A new link of connexion between the Shaiva temples of Elephanta and Elora has thus been unexpectedly obtained. The reddish basaltic stone of which the leo-griffs are made is not to be found *in situ* in the island of Elephanta. As far as we can judge, it is from the same quarry that has furnished the material for the modern structural temple of *Ahilyá Bái*, of the Holkar family, at the village of Elora, which, we learn from a valuable communication of Colonel Twemlow, lies a little to the northward of the *Indra Sabhá* at Elora. If this opinion be correct, it must have been brought to Elephanta at considerable expense.

The commonly received theory of the Shaiva character of the great Elephanta Cave has lately received additional illustrations from our learned Vice-President, Dr. Stevenson, who, in his ingenious paper, inserted in the last number of our journal, has given a notice of its mythological figures, more condensed than that which is found in the admirable paper of Mr. Erskine published in our Transactions.

CAVES IN THE KONKAN, AT CHIPALUN, PATAN, &c.

In the Memoir on the Caves we mentioned, under the heading of "Caves in the Konkan unvisited by Europeans," the probable existence of several series of religious excavations, of which we had received native reports, especially from a well-known Bráhman antiquarian, Vishnu Shástrí. One of these series, at CHIPALUN, has been found by Mr. Arthur West, C.E., at present engaged in the Engineer Department under Government. It is about a quarter of a mile south of the town. It consists of a tolerably large room, twenty-two feet long, fifteen broad, and ten high, containing a Buddhist *Dhágob* at its farther end; two or three smaller caves, one of which is now filled up with earth, for the accommodation of monks; and a deep tank for holding water, thirteen feet square, on the surface. With a ground plan of these caves we have been furnished by Mr. West.

Four miles north of PATAN, near the road leading from *Chipalun* to *Karhád*, Mr. West has discovered another small series of Buddhist caves. They consist of a room with a small round *Dhágob*, six feet in diameter, and of a *Sháld*, or hall, nineteen feet by eighteen, with an elevated seat at one of its corners, and three recesses or closets at its inner extremity, of which the middle one is the smallest.

Two small caves we lately noticed for the first time in a *khind*, or pass, between REVADANDA and AMBEPUR. They have at present no

distinctive character; but they were probably originally places of repose for Buddhist travellers passing from the ghâts to the coast.

We have received pretty distinct intelligence of the existence of some important series of caves in the mountainous territory lately belonging to the *Pant Sachiva*, which has been very little explored, or even visited, by Europeans.

CAVES NEAR AURANGABAD AND ELORA.

Connected with the neighbourhood of AURANGABAD and ELORA, Colonel Twemlow, whose antiquarian zeal and conciliatory dealings with the natives in all his inquiries are so well known, has, through the Bombay Government, brought to the notice of our Society several excavations which have been hitherto overlooked. The following is a quotation from the Colonel's communication:—

"On an ancient fort, three miles SE. of *Daulatábád*, now in ruins, but which must formerly have equalled, if not excelled Daulatábád in strength and extent, are numerous cave-cisterns, some having pillars, aptly elucidating the original object of the excavations to have been *accumulating of water in high places*. These cisterns of water, like those of Daulatábád, might have the front retaining wall cut down; and the excavations could then be formed into caves and dwellings.

"The hill is called '*Chaman Tenkadi*,' or by some '*Chamar Tukadá*.' It was visited lately by Dr. Bradley and myself, and the dimensions of the caves were taken by Dr. Bradley, who will, no doubt, describe these ancient excavations.

"The fortress had a tunnel entrance, but it has either fallen in, or been purposely destroyed. There was an upper and a lower fort; the upper fort had a space of level interior about 300 yards by 50.

"There is a similar ancient fort, named (by the moderns) *Rohillá-ghad*, about twenty miles east of Aurangábád, containing water-cisterns and caves. They have been filled up, however, by the Natives of the adjoining villages, as they gave refuge to tigers, and other beasts of prey, which descended on any cattle straying near their lairs. This hill or fort was ascended by me, in course of the search made (in the month of May 1849) for Rohillá plunderers, and has since been visited by Dr. Bradley, with a view to descriptions being given of the caves and cisterns.

"In addition to the '*Caves of Aurangábád*,' described as the northern series, there are several other caves facing the east and north, in
2 3 the range of scarped trap hills, which probably formed the southern,

and part of the eastern outer fortifications of the ancient city of '*Bhadravat.*' They have been visited by Dr. Bradley.

" In a hill near the village of *Sitárá*, three miles south-east of the cantonment of Aurangábád, there are two rude excavations, the commencement of caves.

" On the western face of the hill immediately north of the Caves of Elora, called '*Mhaismalá*,' there are some small caves. This hill is much visited by the native Waidyas, or doctors, for medicinal herbs, and has on it mounds of stones, as if ruins of ancient buildings.

" There is at least one cave on the western scarp of the hill immediately south of *Rauzah*, in the hill called the "*Cavalry Rama*": it has no sculptures in it, and used formerly to be a hiding place of the Bhíls."

Of the more important excavations now mentioned by Colonel Twemlow, an extended and interesting account by Dr. W. H. Bradley has been forwarded to the Cave Commission, by Captain Cuthbert Davidson, Assistant Resident at Haidarábád, at the request of the Resident at the Court of his Highness the Nizám, Major General Fraser. Though this document has been already published in the Madras *Journal of Science and Literature*, and communicated to the Royal Asiatic Society, an analysis of it, with copious extracts, may be here introduced, to complete our general notices of the Cave-temples of Western India, as far as they have yet been brought to light:—

" In the hill north of Aurangábád, and within half an hour's walk of its walls," says Dr. Bradley, " are seen some ruined Buddhist and Jaina cave-temples, half concealed amongst fallen rocks and earth. Much of the sculpture still remains in tolerable preservation, and gives a pleasing idea of what the state of the arts was in this country, where now nothing of the sort exists. The temples have been wrought in the same table-land that contains the Caves of Elora." The hills in which they are found are " of amygdaloidal trap, of varying degrees of induration, and rising at their highest points to about 700 feet above the plains." A whitened mark, about two-thirds up the ascent, indicates the level at which the first and principal series of them is to be found. This mark is at a small Jaina cave, now devoted to the Tirthankar *Neminâth* by the present Jainas of Aurangábád. The other excavations, however, are all manifestly of a Buddhist character.

Dr. Bradley divides these caves into three groups, which are scattered over a space about a mile and a half in extent. His description of them commences with those of them which are farthest to the west.

First Group.—After alluding to three caves now filled with earth and rubbish, Dr. B. gives a particular account of those which are accessible. Of these—

1. The *first* "is a small cave, consisting of an anterior vestibule and sanctuary, with a passage round it. The entrance into it is rendered somewhat difficult by fallen rock and bushes." "In the half-choked ante-room, Buddhist figures are seen ranged right and left on the walls in compartments, the seated figures of Buddha having the legs either dependent or crossed, with the hands invariably placed in an attitude of devotion. The vestibule fronting the sanctuary has the roof supported by two square pillars and two pilasters, well sculptured. The sanctuary is fourteen feet square and ten feet high, with the door towards the south: a passage, three feet broad, passes the whole way round. In front of the door is seated the image of Buddha, nine feet high as sitting. The legs rest on the expanded calyx of the lotus, and the hands are disposed in the usual attitude of contemplation—represented here by the thumb of the right hand pressing the little finger of the left. A thin drapery seems to cover a portion of the idol, the folds of which become apparent round the neck, lap, waist, and across the thighs, the ends being gathered and grasped in the left hand. Neither beard nor mustachios are visible. The hair of the head is arranged in small conical curls, terminating in a round knot or bunch on the summit. The ears hang low, with stretched lobes, pierced in the same manner as seen in the *Jogis* of the present day. No ornament appears upon the figure, unless a small hemispherical protuberance upon the forehead, about the size of a marble, deserves the name. The *Sinhásan*, or lion-throne, on which the figure is seated, has maned lions right and left, supporting the bench. Behind are represented several animals. At the base is an elephant crouching, with his trunk curled up beneath his head. Immediately above him rests a four-legged animal in a rearing attitude, carrying a human being on his back. He has a neck scaly like a dragon, a goat-like head, with protruding eyes, and four short horns, two curving backwards and two upright. His tail and claws are like a lion's. This fabulous animal is constantly represented in old Hindu temples, and at Elora is seen as one of the nondescript animals supporting Mahádeva's grand hall in *Kailás*." "At the top of all, and on a level with the upper part of the throne, appear the head and shoulders of some open-mouthed probiscidean monster." "Winged praying figures kneel on either side of the head of the idol, behind which appears a nimbus. Over the image in each corner are seated figures of Buddha in high relief; and the walls right and

left have similar figures placed one above the other, in four rows, some having the legs crossed, others hanging down. Each figure has subordinate attendants. The doorway is simple. Sockets are let into the jambs for the doors, which turned on pivots, and were bivalved, fastening by a bar across. A plain pillar-moulding forms the door-frame outside, with a simple lintel, surmounted by ornamental carved work of pagodas, having roofs approaching a bell shape. Each pagoda contains three niches, the centre one holding Buddha seated, and the two on either side standing figures of *Bodhisatvas*. On each side of the door stand gigantic *dwárpáls*, or doorkeepers, nine feet high, each accompanied by a figure canopied under five heads of the hooded snake. The colossal figures are generally present in Buddhist caves, either as *dwárpáls*, or within the sanctuary as attendants upon the idol, and invariably represented as most opposite to each other in costume. It is not so with the equally colossal *chauriwálás* (fly-flappers), that generally accompany them in the sanctuary, who are always habited alike. The doorkeeper on the right is richly ornamented: he wears a high pointed jewelled cap, the most prominent decoration upon it being a seated figure of Buddha, carved on a round ornament in front; the throat and neck are encircled by collars and necklaces; and the arms and wrists are adorned by armlets and bracelets richly cut. In the ears, which are long lobed and split, are placed earrings, the right of which is globular, and studded with elaborate representations of jewellery, whilst the left is a disc of some two three inches in diameter." "A narrow fillet confines the waist above the navel, falling down in front, in waving cords. Around the loins three or four folds of a chain, arranged in square links, are passed, whilst the *shelá*, or robe, crosses over the upper part of the thigh from right to left, and is held in the left hand. The right supports a long stalk of the lotus, on the calyx of which rests a small cross-legged figure of Buddha. The attendant figure with the snake canopy wears a diadem, jewelled necklace, and armlets. Both hands grasp the lower portion of the lotus. Over the *dwárpál* appears a flying figure, bearing a necklace of flowers. The doorkeeper on the left side has much the character of the Hindu penitential ascetics of the present day. He is represented devoid of all ornaments: in lieu of the jewelled cap, he wears his own hair twisted turban-fashion round his head, elfin locks falling over either shoulder. Upon his left shoulder hangs the skin of an antelope. Below the navel, a band passes round the body, from which hangs a narrow fold of drapery. The right hand holds a rosary, while the left supports a slender waving lotus stalk, on which a seated figure of Buddha rests. The snake-canopied

attendant and flying figure are counterparts of those on the opposite side. The walls of the vestibule and passage passing round the sanctuary are covered with compartments, holding high reliefs of Buddha seated on a lotus, the stem of which is grasped by two figures wearing wigs and tiaras, canopied by snakes. Two smaller stems, springing from the principal stalk, support attendants on their flowers, who appear to be repetitions '*en pettit*' of the *dwárpáls* of the sanctuary. Buddha sometimes is represented with the legs crossed, as well as dependent: the hands as seen in the sanctuary, with one exception, where the back of the right hand rests upon the left palm."

2. The *second* is a *Vihára* cave, of fifty feet square, exclusive of side cells and sanctuary, to a great extent filled with sandy mud. "The wall of the outer veranda is pierced by three doorways, leading into the hall, which is twelve feet high, and the roof is supported by twelve pillars and four pilasters. These have rectangular plinths, with shafts rising in a rectangular manner for about a fourth their height, and then breaking into polygonal shapes, fluted or plain, encircled with richly decorated bands and fillets of rosettes and beading, surmounted by a capacious capital, either cushion-shaped, or that peculiar form known as the vase and falling leaf, where the capital is vase-like, with elegantly carved leaves, drooping in spiral volutes from the points of the abacus. The architrave resting on the pillars is enriched with sculpture, generally representing Buddha seated with females, surrounded by a profusion of gracefully arranged and well-sculptured foliage. Medallions, ornamented with lions, elephants, and nondescript animals, serve to support the whole entablature. A medallion in demi-relievo occupies the centre of the shafts in the side pilasters, of Buddha and females, with very beautifully designed fillets and bands in bead-work surrounding it. The same medallions are frequently repeated upon the pillars generally throughout. In several instances statuettes of females standing, or fat males seated, with chancellors' wigs, are placed at the corners of the square pillars; and as these pillars are arranged in pairs, no two of which resemble each other, great variety of design is seen. The frieze resting on the architrave fronting the entrance is covered by a series of sculptured figures in demi-relief, divided into thirteen compartments, evidently referring to Buddhist subjects. The sculpture is nine inches high, and clearly and cleverly executed. The first compartment represents a naked male figure seated on a throne, with a child upon his knee. He wears an ornamented high pointed cap, and jewelled necklace. An aged female, seated on the ground in front, is

 holding towards him another child, whilst behind, two naked male

figures are sitting, who, by the high caps, and wheel earrings they wear, appear to be *jogís*. One of them holds forth his hand, as though he were exhorting. Behind the principal seated figures are wigged attendants, a female *chauriválá* on his right, and a male on his left, both furnished with the least possible quantity of clothing. Another attendant carries something like a book or box. The second compartment represents a bear, wearing a jewelled collar, riding on the back of a tiger. A male and female appear, offering presents in front. Musicians, in niches above, are playing various instruments, one of whom is using the plectrum, instead of striking with the fingers. The third group represents the same principal figure seated on a throne, with a female, in a state of nudity, standing by his side, two male wigged figures being in attendance. The fourth group is a subject not easily reconciled with the mild tenets of Buddhism, which inculcated respect to life. The impalement of a man is here represented: the executioner is employed binding the victim to the stake, which has been thrust through the body, passing out at the left side of the neck; a dog stands near the stake, and a little beyond is a female. A forest is supposed to be represented, by the variety of foliage occupying the back-ground. The fifth compartment shows an obese old man, seated, listening to a female on her knees, playing some instrument. He wears a large wig. Over-head appears suspended a range of bells. The sixth compartment contains a naked male, with a female figure, seated on a throne, his left hand holding hers. Various wigged figures are dispersed about, one carrying a vessel, into which he dips his hand. Another in front rests in a half kneeling and sitting attitude. This appears to represent circumstances attending the celebration of marriage, judging by the joined hands, and the attendant with the vessel for the libation of water, which is to be poured over the hands thus united, and may have reference to Buddha's marriage with *Yáshodharáa Devi*. The next compartment shows an old man in a flowing wig, mounted on the back of a person, who bends under the load he carries: an attendant in the rear appears lending aid. Four other figures are in the back-ground, two with flowing wigs, and two wearing bob-wigs. The eighth group is a battle piece, in which bows and arrows, swords, and oblong shields are used. The battle is continued on into the next compartment, where a colossal figure is thrown down, to whom a wigged figure appears addressing himself. Two men with snake-hoods, and two naked females, fill up the space beyond. The ninth group shows Buddha reclining on a bench within a forest, entering into *Nirvána* [ultimate repose]: a pig is represented on the left of the bench, and a tiger on the right; the

heads of both being directed towards the prostrate figure. A man mounted on a horse appears in the left corner. The horse is in action, and wears a plumed crest between the ears. At the opposite corner a holy ascetic is seen seated under a palm-tree, with a tiger on his right. Above him, in compartments, are half figures of snake-hooded, and wigged attendants, both male and female. Two horses' heads are observable amongst the foliage of the back-ground. The tenth group appears divided into three portions. In the right corner is an old man in an ample wig, seated on the shoulders of another man. The centre represents the entrance of a natural cave, overshadowed by trees, into which the two figures just noticed appear entering, and the left corner is occupied by an assemblage of figures in all sorts of wigs, large and small, the principal figure being the old man, who appears in the act of teaching. A figure with a *jogi's* cap, and wheel earrings, is seated at his feet; a canopy of foliage extends over-head. The eleventh compartment represents a procession of figures mounted on horses and elephants, preceded by two men, the one blowing the *shinghárá*, the other beating the *dhol*. The horsemen carry straight swords by their sides, and wear wigs. A crested plume adorns each horse's head, and an umbrella of state is carried over the rider's head. One elephant is in motion, whilst the other is lying down, and thrusting out his hind leg for the convenience of the rider to mount, who is in the act of stepping on the elephant's foot for that purpose. An umbrella is also held over this person. The last compartment represents the same principal male and female figures seated on a couch, with drapery. They appear to be listening to the sounds of the *viná*, played by a male wigged figure on the right; and a naked female on the left is apparently accompanying it with her voice, judging by the attitude she adopts. Round the frieze within the hall, a series of sculptured pagodas in high relief are arranged, the alternate ones slightly projecting. Those most prominent contain a male and female figure in amatory dalliance, with females in separate niches, right and left, as attendants: in the niches of the receding pagodas, there are placed a squab fat wigged man, with attendant females. Towards the north and south are recesses in the wall, the roofs being supported by two pillars and two pilasters, whose designs differ very much from those before described. The pillars in the western recess are more exuberant in their decorations than the eastern ones. Cells occupy each corner of the hall, whose dimensions are fifteen feet long, by ten broad. The vestibule to the sanctuary is supported by two pillars and two pilasters, of the same form as seen in the recess, but infinitely more

rich in their decorations. A richly cut moulding skirts the sides and tops of the entrance, arranged in what heraldry terms imbattled lines. The ornamental border represents chain and bead-work, with rosettes; and in each compartment formed of this arrangement of the design, appear figures of amatory couples. Round the cornice above are seen flying figures, bearing necklaces of flowers, and heads of the horned fabulous monster. The pillars and pilasters are of the most exuberant style of decoration, and covered with sculpture from the base to the summit of the capital, the shafts breaking from squares into eight, sixteen, and thirty-two sides, braced round with broad bands, on which amatory figures are shown in demi-relievo, or narrow fillets of bead-work, bells, rosettes, drapery, lozenges, and leaves. A richer effect is produced by the capital being divided into thirty-two sides. The sanctuary contains a seated colossal figure of Buddha, on whose form the light falls, leaving all around in gloom, which incident is not without its mysterious influence. His position is similar to that of the idol in the cave just described, and his lion-throne presents the same decorative sculpture. Gigantic *chauriwálás* stand on either side, with flying figures above. In front, ranged along the sides, right and left, are groups of kneeling figures, male and female. They nearly all wear tiaras and richly ornamented jewelled dresses, the arrangement of the hair being of the most elaborate description: the countenances, with one or two exceptions, betray a Mongolo-Tartar origin, from the breadth of the cheek bones, projecting shape of the lower jaw, and thick lips."

3. A few paces eastward brings us to the ruins of number *three*, a *chaitya* cave. Large portions of the face of the rock have here fallen, carrying with it the whole front, and a great portion of the cave itself. The dimensions are very insignificant in comparison with those of a similar description at Karlá and Elorá. No sculpture nor ornaments appear upon the circular basement. Upon the pillars, and aisles, remains of painted stucco may be observed.

4. The *fourth* cave, the last of this group, is of small dimensions, being only about twelve feet long, by nine broad. It is the one which is conspicuous at a distance, by its having been white-washed. It contains the Jaina image of *Neminátth*, the twenty-second *Tirthankar*.

SECOND SERIES.—This is situated about a mile to the east of that now noticed, and in the same hill-side. It consists of four caves, two of which are much hidden by bushes.

5. The *fifth* excavation, the first of this series, has a ruined external

veranda, inner veranda, vestibule, sanctuary, with passage passing round, and lateral cells, leading off right and left, at either extremity. " The doorway of the sanctuary has two broad steps in front, guarded by doorkeepers, bearing the snake-hooded canopy. Gigantic figures, ten feet high, wearing the high conical cap with the Buddhist emblem, stand at either extremity. On each side of them are a male and female figure, carrying cornucopiæ, and wreaths, hovering over their heads." " The figure of Buddha is the same as those already referred to. His attendants are two tall figures seven feet high, standing on each side of the throne. Two rows of kneeling figures, three feet high, are ranged on either side, five in a row, the females being upon the left, and the males upon the right. The passage running round the sanctuary has lateral cells, whilst two chapels, containing seated figures of Buddha, are excavated in the northern wall facing the side passages."

6. A few yards further east is number *six*, with an outer veranda, a hall or inner veranda, with recesses and sanctuary, and a passage surrounding it, pierced by cells. The outer veranda, as in the last cave, has nearly disappeared. " The inner veranda or hall has the entrance supported by four handsome pillars and two pilasters. The shafts are rectangular, with sculptured scrolled medallions, containing the frequently repeated group of amatory figures. The upper part of the shaft is encircled by a band, on which elephants are cut. Passing down into the hall, or inner veranda, by one step, the doorway leading to the sanctuary is seen immediately in front. It is very richly sculptured." " The two windows to the side passages are as elaborately finished as the doorway." " Between the door and windows we find scuptured on the wall, in very high relief, gigantic figures of two remarkable Buddhist attendants." " There is some remarkable sculpture associated with one of these figures. It is arranged in eight groups on projecting ledges, four on either side of the figure : the parties forming each group seem in the attitude of prayer or supplication. All are looking towards the idol, at the extremity of each ledge. A flying figure, with Buddhist emblems, is interposed, as if forming the communication between the idol and the suppliants. The first group upon the right, commencing from above, is much mutilated. It represents a portion of two figures, kneeling with closed hands. Behind them appears a mass of flaming fire. The second ledge contains three male figures wearing wigs : the outside one holds a sword in his right hand, and a standard in his left ; the centre one carries an umbrella over the other, who is kneeling. The third group represents three figures, bound hands and feet. The fourth shows a ship in full sail, with main-mast and mizen-mast, back

stays, streamers, and mat sails ; a person is steering the vessel with an oar over the counter. Another stands amidships, holding a round vessel in his hands, as does another person in the bows, who, by the necklace and head-dress, appears to be a female. Commencing at the top, on the left side, we have two figures kneeling—a male, with hands joined in prayer, and a female, clasping him round the neck and waist. A maned lion sits behind, holding up one paw. The second group has a male and female praying. Behind them are *Lingas (?)* out of which the heads of the cobra are protruding. The third group is a kneeling figure, beside which stands a Buddhist ascetic praying. An elephant, beneath a mango tree, is behind. The last group is much mutilated, but appears to be a female, seated, bearing an infant in her arms. An old hag with pendant breasts and streaming hair stands over her; serpents are twined round her neck and arm. A Buddhist ascetic is praying behind them. The stucco painting shows an old beldam painted white, in the attitude of dancing. Her left hand holds a snake, which passes round her throat in lieu of a necklace. Her right hand, upraised, points with a forefinger towards a figure beside her. She wears bands of blue beads round her wrists and ankles; her hair hangs in elfin locks over her flaccid breasts. A portion only of a black figure is seen kneeling before her. The richly dressed figure occupies as conspicuous a position as the one just described. He wears a conical ornamented cap, with the Buddhist emblem in front. In the right ear is worn an earring of a wheel-shaped form, whilst in the left he wears a ring-shaped necklace, bar armlets, bracelets, and waist ornaments, as before described in the first cave. On each side are placed male and female figures five feet high, who are, again, attended by dwarfs. The western recess contains a series of figures ranged against the wall, cut in such bold relief as to approach very nearly the appearance of statues. They are eight in number, the first and last representing the two classes of Buddhist religionists ; the intermediate ones are all females. The northern figure is a *Bodhisatva*, holding his robe in his left hand, in the attitude these figures generally are seen adopting. The southern figure is apparently a sacred mendicant. The six females all bear flowers and fruit in their hands, and each have the hair very elaborately arranged. Females were permitted by *Sakya Muni* (Buddha) to embrace a religious life, and this cave may probably have been a convent for nuns. In the opposite recess, two figures are seen seated on cushioned seats with backs. One is a ventricose old man, with a full-bosomed female seated by his side, nursing a child upon her knee. They have attendants behind, and

flying figures above. Standing on brackets at the corners to the north are two well-sculptured females, the size of life. The gallery passing round the sanctuary is ascended by three steps. The sanctuary itself is raised above these two steps again. From the galleries six cells open; and at the further extremity of the galleries are two chapels, containing seated figures of Buddha. The sanctuary is a small chamber, ten feet square, containing the usual seated figure of Buddha, with a lion-throne more than usually ornamented. Out of the mouth of the probiscidean monster is seen rising the gracefully curved neck of the ibis; snake-hooded figures kneel on the back of the throne; and figures bestriding the horned monster, attacking others resting on the kneeling elephant's head beneath, are executed in the best possible taste. Flying figures in pairs are perched above, whilst Buddhist figures, arranged one above the other in three rows, are placed on either side." "The wall on the right of the idol is occupied by a group of females in demi-relievo, standing three and a half feet high. The central figure is a dancing girl, very slightly attired; the rest are playing a variety of instruments, each adorned with an elaborate head-dress." "The opposite wall has some cleverly sculptured figures of the same size." "The doorway is very richly ornamented in the mouldings of the frame-work, and guarded by snake-hooded *dwárpáls*. Right and left of the entrance to the sanctum are ranged along the walls large female figures with attendants. On the right of the door the sculptures are a female very profusely covered with jewelled attire, and ornamented head-dress, her bosom extravagantly proportioned, and holding the stalk of the lotus. Two female attendants, in scanty habiliments, smaller in height, are on either side of her, bearing fruit and flowers; and beyond them stand dwarfs—one, leaning on a crooked stick, seems to bend beneath the weight of the female's hand, resting on his head; above are flying figures. The cornice of the wall is formed of the convex eaves of a temple, in which seated Buddhist figures are represented. The wall on the left of the sanctum door is covered in like manner with a buxom lady, and attendants, similarly attired; but in this cave no praying figures appear above, as on the opposite side, by which we may infer some association between these two females, and the simple and decorated attendants without. The appearance of dwarfs is a common circumstance in eastern mythology, and has a mystical allusion no doubt."

7. "The front of the next *(or seventh)* cave having fallen, no access to it can be accomplished, but by help of a ladder. It measures 27 feet in breadth, by 20 in length, and is an unfinished *Viháru*,

without pillars or sanctuary. There are six cells opening into it, with a window. An opening in the wall towards the east leads to another half-dug cave in the same unfinished condition, supplied with a verandah, which is supported by two pillars and two pilasters. A large portion of the frontage has fallen. This second cave is 20 feet long."

8. "Ascending the hill, some few yards easterly, the *eighth* group of caves is seen, which are not observed until close upon them. The whole length of excavation is upwards of a hundred feet, extending to a depth of sixty." "The arrangement appears to have been an outer verandah, that has slid down the side of the mountain, nothing but a very small portion remaining. The hall extended the whole length of the excavation, from which four caves opened." "The centre one is the largest, having an inner verandah, vestibule, and sanctum." "As you scramble over rocks and bushes into the cave, you have to step across a misshapen mass of rock lying in your path, which, after looking at a second time, you perceive to be the time-worn sculpture of a recumbent figure of Buddha, fifteen feet in length." "Passing onward into the most westerly of the three northern caves, we note the capitals of pillars adhering to the roof, occupied by Buddhist figures in penitential attitudes. The sanctum contains a seated Buddhist idol." "Doorkeepers, seven feet high, stand at the entrance." "A doorway is broken through the wall of the vestibule into the adjoining cave, which is the largest. The vestibule here, as in the last cave, has no more remaining of its two pillars and two pilasters that supported the roof. At each corner of this verandah are placed well-sculptured figures of females in very high relief. This cave is buried in rubbish up to the knees of the figures, from whence to the top of their head-dresses they measure seven feet; each figure is most exquisitely sculptured, that is, the ornaments are with which they are covered, for nothing can be more skilfully or cleverly carved than the jewelled gear and flowers that adorn their head-dresses, or the sharp chiselling and symmetry of chains and links and jewelled ornaments about their persons." "The door of the vestibule has *dwárpáls* of the same colossal proportions, bearing Buddhist emblems in their head-dresses. Flying figures appear above. Within are seated two obese old men, wearing bar armlets; and the door of the sanctum is guarded by *dwárpáls* six feet high, bearing the five-hooded snake canopy; the left one only is finished. The sanctum is in an unfinished condition." "The other northern excavation is of small dimensions. The pillars of the vestibule show the same ruined state as the two others." "In niches of the verandah are figures of Buddha; in the hall, female figures

similar to those remarked in the last cave are seen ; the floor is greatly encumbered with fallen ruins. The sanctuary contains a seated figure of Buddha in a meditative position. The side cave opening to the east is choked up with mud and rubbish, leaving nothing visible but the capitals of the pillars."

THIRD SERIES.—"About a mile to the eastward, in the curve of the same range, two or three caves have been commenced, not one of which was ever finished. The sight has more claims to the picturesque than those we have just noticed, commanding a pleasing prospect towards the adjoining hills."

9. "Number *nine* is the commencement of a cave, the front of which is nearly buried, and measures 18 feet in length, and 9 feet in breadth.

10. "Number *ten* is a cave with outer verandah and hall, 28 feet in length, broken off abruptly after excavating to 13 feet.

11. "Number *eleven* is a cave of large dimensions, consisting of out verandah, hall, vestibule, sanctuary, and side crypts. The breadth of the hall is 46 feet, with lateral cells extending to seven feet on either side. The depth of the rock from the outer verandah to the further wall of the sanctum is 80 feet : all is left in the rough, as if abruptly broken off, and nothing approaching to a finished state but the front of the verandah. Though I have termed the excavations on either side of the hall lateral cells, from the resemblance they now bear to such a use, I am inclined to suppose these side cuttings to have been nothing more than the preliminary steps for forming the side pillars and aisles, which were intended to have surrounded the central hall."

The most important of these caves, now mentioned in detail by Dr. Bradley, we had an opportunity of personally inspecting under the able direction of Colonel Twemlow, in January 1852. Their sculpture, all things considered, is, for India, of a superior character, and was probably executed by native workmen, acting under the direction of Greek or Bactrian artists, whose connexion with others of our caves we shall afterwards have an opportunity of noticing. It appears to us very desirable that the most important of them should be entirely cleared of the earth and rubbish by which they are nearly filled ; and a recommendation to this effect will be made by the Cave Commission to Government. Almost all the larger groups of caves in the Mahárúshtra have their peculiarities calculated to attract attention ; as, for instance, those at Aurangábád are remarkable for their sculpture, those at Elora for their extent and variety, those at Ajantá for their painted scenes, and those at Elephanta for their unique image of the Hindu Triad. It

is wonderful that the Aurangábád caves, most of which are so accessible, should have been hitherto so little regarded.

On a late incidental visit to the Caves of ELORA, we had the benefit of reviewing them under the able direction of Colonel Twemlow, who is so familiar with themfrom his residence in their neighbourhood, and his eagerness in antiquarian research. He is of opinion that the Bráhmanical excavations and monolithic temples are merely Buddhist works, accommodated by additional sculpture of an extended kind to the views and conveniences of the followers of Shiva. For this opinion the arguments are two : large portions of the architecture, as it even now meets the eye, strongly resemble that of the Buddhists in its neighbourhood ; and the centre of the hilly amphitheatre in which the excavations occur would probably be that first occupied by the Buddhists, the original possessors of the locality. In regard to a few of the excavations, it may be correct. The others throughout are so thoroughly characteristic of Bráhmanism, in their general plan as well as in their individual details, that we consider them the product of that system of faith, not, however, without a manifest imitation, in some respects, of Buddhist, or its auxiliary Grecian art.

We have lately come to the conclusion that the Buddhist southern excavations, which now bear the name of *Dherwádá*, were originally denominated *Therawádá*, or residence of the *Therás*, or monks. The *Dhers*, or *Dheds*, as is well known, are a low and degraded tribe of aborigines in Gujarát, and their name was probably given by the Bráhmans to the Buddhist monasteries in contempt.

It is now pretty well known that several of those monsters of iniquity, the *Thags*, when brought to trial in different parts of India, have urged that their horrid profession has a divine sanction in the cave-temples of Elora. When lately there, we observed a group of figures which may have given rise to this idea. It does not, however, support the interpretation which the Thags would wish to put upon it. It merely represents a devotee of Shiva taking refuge with his lord from a Thag about to strangle him in the usual manner of the craft. It proves the existence of the Thags at the time of the first-formed Bráhmanical excavations.

To the probable date of the origin of the respective caves of Elora and other places—Buddhist, Bráhmanical, and Jaina—we shall onwards allude. Some additional helps to a judgment in this matter, of great historical interest, we lately procured at Elora and other localities. We have found none of them in the Sanskrit legend of Elora, which, through the

help of Colonel Twemlow, we procured from the Bráhmans of the modern village of that name.

CAVES IN THE INDHYADRI RANGE.

In our first Memoir on the antiquities of Western India, we expressed our belief, with regard to the excavations at Ajantá, that "it is extremely probable that other groups of caves remain to be discovered in their neighbourhood, which, from representations made to the writer of these notes when visiting it, appears to have been but little explored by Europeans." Shortly after the Memoir appeared, a remark of Captain French at one of our meetings led to inquiries by Capt. James Rose about a cave in Khándesh, which had been seen by Captain French. This cave proved to be of an insignificant character ; but the search for it led to the discovery by Captain Rose of an important Buddhist establishment in the INDHYADRI range in which Ajantá is situated, and not many miles distant from the small station of Kanhar. The following is the original account of his visit to it by Captain Rose, a portion of which, but with a good many important typographical errors, has already appeared in the Society's Journal. We add to it a few notes and observations :—

" On Saturday the 24th [of August 1851] I set out with the intention of visiting the cave with the door near the foot of *Kanerá* fort, which I had never been nearer than the road which passes through the valley below it through the deserted town of PATNA, where an annual *yátrá* assembles. In my inquiries about this cave, and on my way to it, I learnt that it is a very insignificant excavation, which would pass unnoticed but for the conspicuous little door, which doubtless caught your eye as it did mine, but that in a gorge of the hills near it there were real caves, like those near Ajantá.

" As these were to the east of the *Ganesh Ghát*, and consequently nearer *Kanhar* than the cave for which my trip was chiefly intended, and as the sky looked threatening, I determined upon going to them first.

" The road is very difficult, but when the *Pípal-khorá* (the name of the ravine in which the caves are concealed) is gained, the scene of grandeur passes any description I can give. It is awfully and fearfully grand and beautiful.

" When within less than eighty yards of the caves, it was almost impossible to believe the guide that the excavations he described were so near, although he pointed to the exact spot. The ravine is much grander, and the approach to the caves more difficult, than at Ajantá, and there were evident marks of their being frequented by wild beasts ;

but although I was quite prepared for all comers, not even a bear showed itself.

" I have spoken of the *caves;* but only one excavation deserving the name is remaining. This exactly resembles some of those at Ajantá. " The arched roof and pillars, covered with paintings of human figures, etc. are just the same. The figures are very distinct in many instances, and women and men seem to be mixed. There is nothing about them unchaste, and in general they have circles, or what are sometimes called ' glories,' round their heads, similar to those given in the fancied representations of our Saviour.

" One drawing struck me particularly, in which a female is represented with long ringlets, just as ladies sometimes dress their hair in our own times. This figure was quite fair, and yet close to it was a very dark female likeness, of the *Habshí* caste of feature, with very black curly hair.

" The stone here was much more brittle than at Ajantá or Elora ; and consequently some of the pillars are broken, and the excavators failed in their attempt to represent arched rafters, as they succeeded in doing at Ajantá, for the same reason.

" The other three caves here are, in fact, nearly blocked up, from the rock falling down from above. One of them, however, on descending into it over the fragments of rock, is in tolerable preservation, though none of them appear to have been quite completed, as is also the case at Rozah and Ajantá. Where the rock had given way before the chisel, the masons had neatly substituted stone, and this is the case at Rozah, as I observed, or rather Colonel Twemlow did.

" In the painted cave, the paintings are done over a coating of chunam.

" The only sculptures are two or three representations of elephants, tigers, bullocks, and deer, or goats, cut out in small dimensions, back to back, like our lion and unicorn.

" There may have been sculptures and inscriptions ; but if there ever were, they have disappeared into the ravine below, as the rock is constantly giving way.

" These caves the guide (an old man) said were never visited by a Sáhib before, though Maráthás and even Bráhmans come to see them, and bathe in the river below. While I was there, it began to thunder and grow cloudy, and I got a ducking; but I do not regret my visit to the *Pípal-khorá,* and should like to repeat it. I am going to try if there are any more caves in the hills, of which we have not heard. I wonder how it is that none have been found in the *Satpudá* yet. No

natives of this country could, I think, have drawn the cave paintings—the Greeks or Italians must have helped them; and, indeed, at Elora, there is a woman's figure cut out in stone, of such fair proportions as to show it is the work of an artist, quite superior to those who executed the bulk of the unwieldy figures there.

"In the new caves I am alluding to, there is an odd neatness in the little sculptures I have mentioned."

These interesting notes of Captain Rose do not throw any light on the comparative age of these Buddhist excavations. It would be well if the paintings which they bring to light could be speedily copied.

The explanation of the peculiarities of the female figures which are noticed is not difficult. As the Buddhist religion in the ages of its glory prevailed not only throughout India, but throughout the countries lying to the north of its boundaries, and beyond the Indian Caucasus, and Tartary and Tibet, its *Buddhas* and *Dhyáni Buddhas*, and their other metaphysical productions or associates, the *Dhyáni-Bodhisatvas*, are frequently represented as attended by devotees and servitors of varied clime and colour. *Buddha* himself, and the *Dhyáni Buddhas*, and *Bodhisatvas*, in their typical form, as seen in India, Nepál, Ceylon, Barmah, Pegu, Siam, China, and Tartary, are depicted and sculptured with curly hair and rather large lips, which the Buddhists, according to a strange taste, enumerate among the points of beauty. Mr. Hodgson, of Nepál, when examining the learned priest whose answers form the substance of his most interesting and highly valued "Sketch of Buddhism," put to him the question—"What is the reason for Buddha being represented with curled locks?" and he received the following answer:—"ADI-BUDDHA was never seen. He is merely light. But in the pictures of Vairochana, and the other *Buddhas*, we have the curled hair; and since in the limbs and organs we discriminate thirty-two *lakshanas* (points of beauty), such as expansion of forehead, blackness of the eyes, roundness of the head, elevation of the nose, and archedness of the eyebrows; so also the waving curled locks is one of the points of beauty; and there is no other reason for Buddha's being represented with curled locks." Mr. Hodgson adds in a note—"This is the true solution of a circumstance which has caused much idle speculation, though the notion is no doubt an odd one for a sect which insists on tonsure!" The colours of the five *Dhyáni Buddhas* are as follows:—"*Vairochana's* appropriate colour is white; *Akshobya's* blue; *Ratna-Sambhava's* yellow or golden; *Amitábha's* red; and *Amogha-Siddha's* green. Those of their respective *Bodhisatvas* are correspondent.

2 4

It is to be hoped that Captain Rose will be able, as we remarked at the time of his discovery, to explore a considerable part of the *Indhyádrí* and *Satpudá* ranges, which have been hitherto much neglected, and in the latter of which no excavations have been yet found. The connexion with them from time immemorial of the aboriginal *Bhíllas*, the *Phyllitæ* of Ptolemy's geography, who have submitted neither to Bráhmanism nor Buddhism, but who have so long preserved the Turanian worship of ghosts and demons, is no reason why we should not expect to find within it considerable numbers of Buddhist remains. The Buddhist monks could as easily conciliate by their largesses the wild sons of the Indian forest, as the monks of the eastern churches could conciliate the roving sons of the Egyptian, Syrian, and Arabian deserts.*

Of other caves in the same locality now noticed lately brought to light by Captain Rose, he kindly furnished us with the following account, on our meeting him in his camp, the *Kiblah* of many of the aborigines in Khándesh :—

" In a scarp of the hill near the Nizam's village of JINJALA, which is inhabited by a few Mewadis, and distant three kos from the British village of Mendhagaum, an image of Sheshái, the king of snakes, is sculptured, the head and neck being all that is visible above ground, with a cobra's hood extended behind the head, which has the face of a man. The remaining portion of the figure is concealed by earth and rubbish. Near this is the cave of *Ghatotkach*,† fifty cubits long by forty-nine broad, with a large [Buddhist] image and two small figures, one on either side of it, at the inner extremity. The cave has one principal entrance and four small ones, all facing the west. Outside the doors there is a capacious verandah, with three small apartments at either extremity. Inside the excavation there are a few small sculptures in the right hand front corner, where there is also a *ránjan*, or vessel of peculiar form. There are twelve small rooms round the cave inside, and twenty pillars are made to appear to support the roof along the whole centre, of which there is a natural figure.

* For the identification of the *Bhíllas* with the Φυλλῖται of Ptolemy, we are indebted to the invaluable work of Dr. Lassen, of Bonn, the *Indische Alterthumskunde*, now publishing. The learned professor, too, identifies the Καυδάλοι of Ptolemy with the *Chandáls* of the Bráhmans—an agreement which we have long noticed. May their representatives not be found in the modern *Gonds*, who are still numerous about the sources of the Táptí and its affluent the Purná, to the east of the *Bhíllas*? The Πωροῦαροι of Ptolemy are undoubtedly our serviceable friends the *Parwáris* or *Mahárs*, scattered throughout the *Mahárashtra*.

† The son of *Bhíma*, the second son of *Pandu*.

"A new excavation was discovered near this one in August last; it also faces the west. As yet there is only an aperture sufficient to admit a man, who can sit inside with his head touching the roof. There are three doors and three small apartments beyond the large one, on its east side or back; their size could not be ascertained. The dimension of the principal room is ten cubits by six; and no paintings of sculptures are visible in it.

"Opposite the cave of *Ghatotkach* there are some excavations, called those of "*Hidimbá.*"* The caves or entrances are said to be seven in number, though from the jungle only three or four are visible. No one has been into them for a number of years; and there is a tradition that out of ten men who venture there only nine return! On this account the Kárkun did not visit them. The Patel of Jinjálá had never seen them, and did not soon know of a road to them.

"In a scarp near Wákrí (Waisagad?) fort there is a cave twenty cubits by fourteen. It is devoted to *Rudreshwar Mahádeva*, and contains an image of Ganpati, with paintings or sculptures."

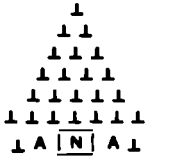
All these caves seem deserving of particular examination.

Connected with the same range of mountains, the *Indhyádrí*, we heard of several other series of undescribed caves, during a journey made at the beginning of the present year. From natives we learnt the existence of a set much filled up with earth, near the village of BOKARDAN, said to be about seven *kos* from the Nizám's village of Sáwangí, and about the same distance from Rahimábád. On the same authority we got notice of the existence of another set, of no great consequence however, at VETAL-WADI, ("the abode of a devil, Vetál,") transmogrified in some of our maps into the Arabic BEITALLAH, (the house of God!) a few miles west of Ajantá. These localities, though we were near them, our professional duties did not permit us to visit. From Major Gill we heard of another series of caves at PATUR, about 80 miles east of Ajantá, and 44 NNE. of Lunár.

To the east of the town of CHANDOR, and on the western sweep of the range now mentioned, and in the face of the hill on which the fort of Chandor stands, we lately discovered and visited a Jaina excavated temple, which has not hitherto been publicly noticed. On seeing the entrance to it from a distance, we made inquiries about it of the natives, who told us that it is only a small niche for *Káliká* or *Devi*. When we saw that they were by no means anxious that we should

* A *Rákshasi* celebrated in the Puránas, the sister of *Hidimba*, a *Rákshas* slain by *Bhíma*.

proceed to it, our suspicions were aroused, and we forthwith made the ascent. On opening a door with which it was closed, we found it to be a small Jaina place of worship, dedicated either to *Párasnáth* or *Neminάth*, with about a hundred monolithic figures, great and small, hewn out of the living rock, though from the door to the principal idol on the interior wall the distance is only about twenty-one feet, while the height is only eight. The principal *Nátha* is squatted in a not unusual form, with the soles of his feet turned up, and his palms placed in an accordant position, so emblematic of the abstract and dreamy contemplation for which the Jaina and Buddhist devotees take so much credit to themselves. His image is about four feet high, and has the lion and *chakra*, or wheel, below. On one side he has two male, and on the other two female attendants, standing. Elsewhere he is honoured by the services of the brute animals, being mounted both on an elephant and lion, tamed by his sanctity. Near one of his figures the twenty-four *Tirthankars* are thus arranged :—



ı *Tirthankars.*
N *Nátha* (principal of the shrine).
A *Attendants.*

The unequivocal Jaina character of the excavation is thus revealed. One of its secondary *Náthas* has his sex changed, having been converted by the Bráhmans into a *Devi* by a liberal besmearment with unguents and paint ; and as such he is venerated by the people. *Devi*, indeed, is now the sovereign of the place. It was never intended, when the shrine was thus transmogrified in her favour, that it should be visited by *Mlechcha* antiquarians. The sculpture in this cave is not bad. It may be about the same age as the Jaina temples at Elora.

From this range we proceed south *per saltum* to the *Sayhádri* range, near KOLHAPUR.

CAVES NEAR KOLHAPUR.

The following interesting communication from Dr. F. Broughton, Civil Surgeon at KOLHAPUR, was addressed to us on the 10th of June 1851 :—

"MY DEAR DR. WILSON,—Since the receipt of your instructive Memoir on the Temples of Western India, I have visited two series of Buddhist caves, which have not, I believe, been before described, and may not, I trust, be deemed by you devoid of interest. The first

I will mention is situated in a hill called *Mhálasá Pathar*, a continuation of the Panhálá range, and distant from thence about six miles. The nearest village is called Badawárá, but the best mark for finding it is a white temple, conspicuous on the western border of the hill, and near which some curious marks in the rock, like the foot-prints of men and animals, are described by the natives as being the impressions made in a conflict there fought between the giants and demons. These caves of Pandu Harí are also celebrated as being the favourite retreat of the renowned robber chief *(rishi ?)* Jaimini, and their situation is well suited to such a purpose, as, concealed in a small ravine, and hidden by trees, none but the initiated are likely to be aware of their proximity. The excavations are formed in a semicircular scarp of amygdaloid, in a wooded ravine, the chord of the arc being 40 yards, and the aspect is due east. Near the centre, and approached by a flight of rudely cut steps, is a temple 30 feet wide and 40 feet long, by 7 in height, opening into an inner chamber 10 feet square, in the centre of which is a ruined block of uncut stone, the remains, I believe, of a *dahgob*. The roof is, or rather was, supported by six separate pillars, and six cut in half relief at the corners and sides; but the soft nature of the rock has been broken up by the growth of the roots of the trees, and the action of water, and the roof has given way, carrying with it many of the pillars, and nearly the whole of the verandah, which once evidently protected its front. To the right of this cave is another, 40 feet long, and 17 wide, being 7 feet 8 inches high, and supported by six pillars of uncut rock. In this is also an inner chamber, containing a mutilated pillar, on which a portion of squaring, and a cut line or edging are visible. In the area formed by the pillars in the outer apartment of this cave is a raised sort of chair, indicating a spot from which some figure has been removed. Much wanton mischief appears to have been committed in these caves, and the *linga* now occupies situations created by the destruction of the original design. To the right and left of these caves, cells about 6 feet square are found: two on the right are approached by steps, and are above the level of the larger caves; those on the left are also two in number, and contain stone seats, and are approached by doorways; and between the cells and the centre cave is some carving on the rock, indicating it as the posterior wall of a chamber which has fallen in. Two half-relieved pillars are surmounted by the following figure :—

To the extreme left is a natural cavern, extending far into the hill, and

from which a stream of a remarkably pure water flows, thus completing the requisites of the recluse.

" The caves of *Panhálá Dari* are situated close to the village of *Panhálá*, in a hill about seven miles from *Kolhápur*, and close to *Jotíbá's dongar*. They are excavated near the upper part of the hill, and the entrance is hidden by trees. They consist of a *chaitya* in the shape of a horse-shoe, 27 feet long, 16 feet wide, and 11 high, containing a *dahgob* 8 feet high, and 21 in circumference, in the centre of which some slight remains of carving are visible, as forming a circle round the pillar in this wise :—

" This temple and pillar, distinctly monolithic, and attesting the design of the excavator, corresponds exactly with the description you give of the *chaitya*, and will I hope authorise me in speaking so positively in my description. On the right of this cave is a spacious *vihára*, 44 feet by 41, but only 9 feet in height, supported by six pillars on each side, and approached by a door 7 feet high and 5 wide, and is lighted by two windows 4 feet square, on either side of the doorway. From the three sides of this hall there are entrances by narrow doorways into seven cells, so that there are altogether twenty-one separate apartments about 7 feet by 6½, and 6 feet high. Some of these cells contained seats, but are sadly dilapidated, as, in defiance of a verandah running along the front, the caves facing the south are filled with water during the monsoon.

" On either side of these caves are nests of cells, on the right hand leading the one into the other, on the left separate. There are four on the right, 6 feet by 4, and on the left three, and externally there are two *vinhás*, affording an abundant supply of water.

" These caves are fast going to decay, from the beforementioned causes, and also from the rain finding its way through the roof, there being only 15 feet of rock from the roof of the temple to the top of the scarp.

" There are some curious excavations also that have lately been cleared out by Captain Graham, in the fort of *Panhálá :* I do not myself consider them as having been used for religious purposes, but will describe them for your opinion. Descending by seven steps, and following a subterraneous passage 5 yards long, 6 feet high, and 2½ feet broad, the passage turns suddenly to the left, and after another couple of yards, describes a semicircle again to the left, and opens into a

chamber about 8 feet square, in which is an uncut seat. A doorway leads into another similar apartment on the left, in which is also a seat and a niche in the wall, for a lamp is found in both, which, from the blackened appearance of the rock, would seem to have been used. On the right is a similar sized room, in one corner of which is a deep pit, at the mouth of which a groove is carefully cut in the rock, into which stone of a different material is fitted, so as to close the entrance. Above the centre of the middle chamber is a square well-cut aperture, in fact a trap-door, on the two sides of which places have been cut to let in a bar, by which the aperture could be closed. The impression on my mind is that the staircase was cut to facilitate the formation of the retreat, and afterwards filled up, and the trap-door only used as the entrance. This subterranean abode could never have been a pleasant habitation, particularly when the door was closed above. That this door was closed is probable, by the blackened walls, where lamps have been used, and which would not be necessary if the traps were left open. From the evident design of concealment, both of the external aperture and the pit's mouth below, I am disposed to think it was contrived for the security of property, and sometimes probably as a refuge for persons in times of danger. This excavation is situated on the side of the *Koti*, and is now surrounded by villages. Its situation does not indicate any wish for retirement, as it is in the midst of buildings of all descriptions; but the object appears to have been concealment, and was, most probably, intended for treasure.

"I should be glad to hear your ideas on this point, and apologizing for the length of my letter, may I beg of you to make any use you think fit of the information it contains."

The Buddhist excavations here brought to notice by Dr. Broughton are the most southern in the Western Ghâts with which we are acquainted. We agree with Dr. Broughton in considering the last-mentioned as not being of a religious character.

CAVES IN KATHIAWAR.

During a visit to Káthiáwar, the peninsula of Gujárat, *alias Saurâshtra*, in 1851, we heard of the existence of several sets of caves hitherto publicly unnoticed. A list of these we received from Habib Khán, a Muhammadan gentleman of *Junágad*, to whom we have been indebted for information on several occasions, and whom we then met in the camp of the Political Agent of the province, Lieutenant-Colonel William Lang.

In the DATAR mountain, part of the Girnar group, there is an

artificial cave, in which ten or twelve persons may be accommodated. Like the víhár caves called the KHAPARAKHODI, at *Junágad*, in its neighbourhood, and those of *Talajá*, in the same province, which we noticed on a former occasion, and others now to be mentioned, it has no images, a circumstance to which we shall afterwards advert. The hardness of the primitive rock out of which it is hewn may account for the smallness of its dimensions, as compared with those in the sandstone below.

On the sacred GIRNAR itself there are two similar small excavations. The localities of the others we simply mention according to Habib Khán's notes :—

1. In the OSAM hill, near the temples of Mahádeva and Khandobá.
2. In the GOPINATH hill.
3. In the DHANK hill, one of considerable size, called the KHAPARAKHUDI.
4. In a hill near SETANA.
5. In a hill near KHADIA.
6. Near PATTAN, (Somnáth?) one called HINGLAJ.
7. In the SANA hill, in the district of the *Gir*.
8. At GORAKHMADHI and GORAKHNATH, probably in the same district.
9. In the KALA-HADYA hill, in the province of *Bardá*.

From Rámjí, a Mehta in the service of Lieutenant Black, one of Colonel Lang's Assistants, we received a memorandum of the existence of caves at the following places :—

1. Between the villages of KHADATI KHAN and KHAMARDAND, in the province of *Bardá*.
2. Near the large tank at SARDHAR.

Khachar Bhoj mentioned the following places as having excavations :—

1. In the SALEMAL hill.
2. At a place near WADWAN, called KHEMISA.
3. In the hill of KAKANDA, called MEWARDA.
4. In the hill of MANDAVA, called DEVESHWAR.
5. At DEVAGHARI, near the village of *Bhadalí*.
6. At BHOERA-GAD.
7. In the JOGI, near the village of *Kánámátrá*.
8. In the PALITANA hill.
9. At DWARKA.

Most of the caves in these lists are but of small dimensions; but this may be owing to the difficulty of working in the hard rocks in which most of them are constructed. It is hoped that particular accounts of them may be soon received from competent observers.

The number of caves which have lately been brought to notice in the West of India is altogether remarkable. Many, however, there is reason to believe, exist in various districts which have not yet been heard of by Europeans. With a view to encourage efforts being made for their being brought to light, the Bombay Government, with considerate liberality, has authorized the Cave Commission to offer rewards, varying from twenty-five to a hundred rupees, for the discovery of any series hitherto overlooked, according to its importance. By the promise of these rewards, European gentlemen interested in antiquarian research may probably induce some of their native acquaintances to make minute inquiries in the different districts to which they find access. Lieutenant Brett is engaged by Government, under the direction of the Cave Commission, in taking *fac-similes* of the cave inscriptions, which he does by an ingenious process by the use of gutta percha. Mr. G. S. Wilson has furnished the Cave Commission with specimens of *fac-similes* of some of them well executed in plaster of Paris.

AGE OF THE RELIGIOUS EXCAVATIONS.

Before leaving the religious excavations of Western India for the present, we must advert to the question, perhaps of most interest connected with them,—that of the time of their construction. On this subject we formerly made the following remarks:—

"Mr. Fergusson has made the important discovery that the Bráhmanical *Kailás*, which strikes the beholder as the most remarkable of the whole [of the Elora groups], is formed after the type of some of the structural temples of the south of India, particularly the great pagoda at Tanjor; and he says—'I have no doubt in my own mind that the Chola, or at least some of the Karnata Rájás were the excavators of this temple, and the restorers [rather propagators] of Sivite worship in the Dekhan; my own impression is, that we must ascribe this either to Rájá Rajendra or Keri Kala Cholan, and that consequently the date given by Mir Ali Khan to Sir Charles Malet is very near the truth, if applied to this excavation at least, and that it was made in the first half of the ninth century of our era.' Works of such magnitude as the Kailás temples would require the wealth and enterprize of such sovereigns as the Cholas were. The resources of the local princes, the Chalukyás of the Dekhan who preceded them,

and of the Devagíri Rájás who followed them, were quite inadequate to their execution, and that of the Elephanta and other Shaiva temples near Bombay. Somewhat posterior, in point of age, to Kailás, must be those Bráhmanical temples of Elephanta and Salsette, in which various imitations of the Bráhmanical excavations of Elora appear. Looking at them collectively, we have long, on mythological grounds, been disposed to limit the age of the Bráhmanical excavated temples by the eighth or ninth century after Christ. On several of their figures the small box, containing the emblem of Shiva, worn by the *Lingáits*, is represented, and the Lingáits did not appear in the south of India till considerable modifications were made in the course of time in the peculiar forms of Shaivism introduced or supported by Shankar A'chárya. The Chola Rájás were the patrons of the Lingáits, who, to the worship of Mahádeva or Shiva, add the practice of the *Yoga*, without reference to caste, with a view to final emancipation. Professor Wilson notices the profession of the Yoga in the eighth century, and he properly observes that the Bráhmanical temples in the subjects of their sculptures, and the decorations of Shiva and his attendants, belong to the same sect. It is remarkable that this form of the Hindu religion has vanished from the Maráthá country, which it is not likely it would have done had it enjoyed the continued patronage of the Devagíri Rájás reigning over this locality, the last of whom was overcome by the Muhammadans A. D. 1293.

"There are evidently imitations of parts of Kailás in the northern group of Caves at Elora, commencing with the series nicknamed the Indrasabhá. These, then, must be posterior, in point of execution, to the first half of the ninth century. We agree with Mr. Fergusson in thinking that some of them, as stated in a passage which we have quoted from him in connexion with the Násik caves, belong to a period of transition ; but others of them we hold, both from their figures and emblems, to be decidedly the work of the Jainas, by whom at this day some of them are claimed, as that called Párasnátha. These Jaina excavations are probably the workmanship of the opulent Jaina ministers of the Rajput, Elichpur, and Devagíri Rájás. They are probably not older than the eleventh or twelfth centuries, when the Jainas of Western India made great efforts, as they are now doing, to extend their faith."*

A remarkable corroboration of the general views here stated, but one warranting a more definite adjustment of them, we obtained at Elora in

* Journal of Bombay Branch of the Royal Asiatic Society, Jan. 1850, pp. 83,84.

January 1852. When examining the Jaina excavation of Párasnáth, which is of the same workmanship as the larger Jaina excavations, we discovered an original inscription, a small portion of which in an incorrect form had been furnished to Dr. Bird, giving the date of its formation as *Shaka* 1156, equivalent to about A. D. 1234, which makes the JAINA temples at Elora 618 years old at the present time.

In the inscription referred to, the name of the hill in which all the Elora excavations are made is the *Virolla Parvat*, or Mount of *Virolla*. This word, we have little doubt, is formed from the name of *Vira-Chola*, one of the Chola Rájás, who flourished, according to one of the papers of the Mackenzie Collection, quoted by Professor H. H. Wilson, who mentions the extensive conquests of his race, about A. D. 917.* This gives an antiquity to the most remarkable of the BRAHMANICAL temples of Elora and those of Elephanta, which are of the same type, of about 935 years; or, to deal in round numbers, it makes them to fall at least within the present millennium. As formerly, we are still of opinion that the *Jogeshwari* Bráhmanical temples of Salsette are considerably more modern than those of Elephanta and Elorá. The sculpture and architecture of them, it struck us on a late visit to them, are not of the Southern Indian type, like those of the great works now mentioned, but of the Rajput or Gujarát types, as we see exemplified in various districts to the northward, as in Káthiáwár, Pattan, and Mount Abu. Of the same character is the remarkable structural Shaiva temple of Amarnáth, about six miles from Kalyán, which, though of hard black basalt, shows a delicacy of workmanship which could be attained only by artisans accustomed to work in softer stone, the marble of the north. Whether this work is to be attributed to the Devagiri Rájás, or the Rajput sovereigns of Anhalwárá Pattan, we shall not positively say.†

The age of the BUDDHIST excavations in the West of India remains to

* This theory of the hill receiving its name from *Vira-Chola* may explain the fact that it cannot be identified in the narratives of the Chinese travellers (written previous to its receiving this denomination), so ably analyzed by Colonel Sykes.

† Before we had visited the temple of Amarnáth, which, we would remark, is one of the most interesting objects for inspection in our immediate neighbourhood, we were inclined, from the drawings of it which we had seen, to reckon it of the same era as the Elephanta caves. The *Trimurti* which is found at it, however, occupies a very subordinate position. It is in one of its external niches. It is certainly grotesque enough, as formerly observed. But the supposed representation of clerical or legal bands on the breast of the front figure is a conceit of our limner. Instead of finding there the representation of a pinafore for a beard, we observed only the veritable facial vegetation of Brahmá himself, as embodied, with Vishnu, in the all-engrossing Shiva.

be noticed in our present connexion. We are not without data which may help us to an approximation to a satisfactory solution of this question also. The death of Shákya Muni, or Buddha, has on the most satisfactory grounds been fixed as occurring in the year 543 B. C. As has been well shown by Hodgson, Burnouf, and Lassen, the use of images, and the veneration of relics, were adverse to his own system, philosophically considered; and we may venture to say that all the excavations which have images and *dahgobs* as essentials of their construction must have been so far posterior to his removal as to leave time sufficient for the development of the veneration and mythical regard for him as a distinguished teacher which they embody. The excavations at Junagád, at the base of the celebrated mountain of Girnár, and proximate to the rock on which are engraved the well-known edicts of *Ashoka*, have no images; and, as we have seen, the want of images is a peculiarity, as far as known, of all the ancient excavations of the peninsula of *Saurâshtra*. None of the monasteries or temples in *Mahárâshtra* can be older than the arrival in the Maráthá country of the first Buddhist missionaries mentioned in the extract from the Mahavanso which we formerly adduced, and which missionaries were dismissed to their work in the seventeenth year of the reign of Ashoka, or 246 A. C.*

An allowance, in fact, must be made for a season of continuous

* For an elaborate investigation of all the dates connected with the origin and progress of Buddhism, see Lassen's *Indische Alterthumskunde*, vol. ii.

For the sake of connexion we may here repeat the extract from the *Mahavanso* to which we here refer:—

"The illuminator of the religion of the vanquisher, the thero [patriarch], son of Moggali, having terminated the third convocation, was reflecting on futurity. Perceiving (that the time had arrived) for the establishment of the religion of Buddha in foreign countries, he despatched severally in the month of 'Kattiko,' the following theros to those foreign parts. He deputed the thero Majjhantico to Kásmira and Gandhára [Kandahár], and the thero Mahádevo to Mahisamandala [Mysore]. He deputed the thero Rakkhito to Wanawási [in the north of the Karnatic], and similarly the thero Yona-Dhammarakkhito to Aparantaka. He deputed the thero Maha-Dhammarakkhito to MAHARATTA; the thero Mahá-rakkhito to the Yona [Bactrian] country. He deputed the thero Majjhimo to the Himawanta country; and to Sowanabbúmi the two theros Sono and Uttaro. He deputed the thero Mahá-mahindo, together with his (Moggali's) disciples Ittiyo, Uttiyo, Sambalo, Bhaddasálo (to this island [Ceylon]), saying unto these five theros, 'Establish ye in the delightful land of Lanká the delightful religion of the Vanquisher.'—*Turnour's Mahavanso*, p. 71. According to the *Mahavanso*, these missionaries obtained most marvellous success. Of the missionary to the Maráthá territory it is said:—'The sanctified disciple Maha-Dhammarak-

labour, before success was experienced by these missionaries. The southern group of caves at Elora, as formerly remarked by us, may be the oldest Buddhist establishment in the west of India. It is, comparatively speaking, in an open and easily approachable country, while the other establishments are principally in mountain recesses, which would likely not be penetrated till the Buddhist faith had made some progress in the adjoining districts. It is of great extent, and of

khito, repairing to Mahâratta, preached the *Mahanâradakassapo jataka* (of Buddha). Eighty-four thousand persons attained the sanctification of *magga*, and thirteen thousand were ordained priests by him."—*Mahavanso*, p. 74.

These Buddhist missions took place immediately after the third synod of the Buddhists, in the reign of *Ashoka*, the *Dhammasoka* of the Mahavanso, and the *Devánám Prya Piyadasi Rájá* of the Girnar rock tablets, whom, *per incuriam*, we inconsistently confounded in a portion of our paper with the *Devanan piatisso* of Ceylon, (his contemporary during the latter part of his reign,) when we were offering a few remarks on the difficulties felt by Professor H. H. Wilson, in his able paper on these tablets, about the admission of their Buddhist character, which we have maintained from our first acquaintance with them.

Professor Lassen will excuse us for introducing the following extract of an interesting letter which we had the pleasure of receiving from him, under date the 22nd April 1851, bearing on the matters here alluded to:—

"I agree with you in identifying the king *Devanám Prya Piyadasi* of the inscriptions at Girnár and in other places, with *Ashoka*. Besides the testimony of the *Mahavanso*, I adduce, as a proof of their identity, the repetition of that title by his successor *Dasharatha*, with the difference that he usually adds his own name to distinguish himself from his predecessor. Another instance of a title being used instead of a proper name by the Buddhists is the name *Dharmawardhana* given to *Ashoka's* son *Kunála*. (*Indische Alterthumskunde*, ii. 270.) As *Ashoka's* authorship of the inscription found at Bhatra, in which he addresses the convention of *Magadha*, can hardly be doubted, it may be presumed that the others also are to be ascribed to him. The chronological difficulty that *Maya*, who died 256 B. C., is mentioned in an inscription dated 240, I am prepared to obviate by the supposition that *Ashoka*, shortly after his accession, had sent ambassadors to the Greek kings, and therefore recorded these names in his inscriptions. (*Indische Alterthumskunde*, ii. 242.) It is true that no allusions to any of the names of *Buddha* occur in them. *Stúpas* and *Viháras* are, however, spoken of in the inscriptions of Dhauli, and the Bo-tree appears with its sacred character in them. (*Indische Alterthumskunde*, ii. 256.) I may add that the prominent place which *Dharma* occupies in the mind of the author of the inscription (at Girnar) speaks for his having been a Buddhist, and that Professor Wilson's hypothesis, that the shadow of a name should have been made use of in order to give authority to the promulgation, appears to me highly improbable." Ashoka's claim to the inscriptions, on the readings of which much light has been cast by Professor Wilson's revised translation, must now, we think, be reckoned indubitable.

general simplicity; and it is evidently the nucleus around which, as an ancient undertaking, the other excavations—Buddhist, Bráhmanical, and Jaina—have been aggregated. The excavations at Ajantá, it appeared to us on a late incidental visit to them, show indubitable tokens in their wondrous paintings—now being transferred to the view of Europe by the accurate pencil of Major Gill—of the influence of Grecian art, and were, in all probability, the work of limners from Bactria, attracted to India after the spread of Buddhism in the Trans-Indian provinces. Indigenous Indian art has at no period of its history, as far as we are aware, shown an approximation to them in point of propriety and excellence; and certainly it did not do so about the times immediately prior and posterior to the Christian era, if we may be allowed to form a judgment from the rude coins it then produced. On the lion-pillar fronting the great Chaitya excavation of Kárlá, we have found the name of the General (Náyaka) AGIMIT *(Agnimitra)* of the *Shunga* dynasty, which succeeded the *Maurya* to which Ashoka belonged;* and other traces of the same dynasty, to which Mr. Prinsep, in his Tables, gives a reign of 110 or 112 years, from A. C. 178 to A. C. 66. That these excavations were made about this period—when the Bactrian influence over India must still have been considerable—we have obtained striking proof in the discovery of the name of the Greek THEONIKOS, (probably the architect of the whole work,) in an inscription on one of the interior pillars.† Dr. Stevenson tells us that in the inscriptions at Kanherí, with which he has been lately busy, he has found traces of the posterior *Andhra* dynasty, which, according to the same authority, was from A. C. 21 to A. D. 408. We have discovered, on the other hand, a limit to the time of the power of the Buddhists, at least in most of the districts to which we refer, by finding in the *Rájáwali*, under the head of

* The inscription marked I, in the accompanying lithograph (plate xii.) of this Pálí inscription, in Nágarí letters is अगीमीत नायकस सिंहथंभ दानं, *agimita nákas sinhathamb dánam*, the lion-pillar, the gift of the general Agnimitra (अग्निमित्र नायकस्य सिंहस्तंभ दानं.)

† This inscription, as taken by us some years ago, and communicated to Dr. Bird, will be found in the accompanying lithograph, marked II, and collated with the *fac-simile* of Lieut. Brett. When resolved into the Nagari letters, it reads thus:— धनक्षज यवनस सिंहधयार्ं थंभ.दार्ं *Dhanakkaj Yawanas sinhadhyánam thamb dánam*, (in Sanskrit धनक्षज यवनस्य सिंहध्वजार्ं स्तंभ दार्ं) the lion-bearing pillar, the gift of the Greek *dhanakkaj*. *Dhanakkaj* is as near an approximation to the Greek *Theonikos* as could be expected. On the Kárlá inscriptions we observe some valuable genealogical *documenta*, probably embracing also some hitherto unknown local dynasty.

Ujjayn, the name of *Khanderáo*, (the *Ráná Chandra* of Prinsep,) by whom, according to the legends of the Mhálasá Mahátmya (so called from Khanderáo's wife) of the Jejurí temple, in which he is deified, they were driven from the Maráthá country, and massacred in the Karnátik to the incredible number of *yelkot*, (still the watchword of the followers of Khanderáo or Khandobá,) seven crores. Khanderáo flourished about the year 620 after Christ. Posterior to this overthrow of the Buddhists are all the Hindu Puránas, or legendary works, which, by the comminglement of ancient traditions and modern fables, are intended to form the reproduction of Bráhmanism. It is probably from the share which the Maráthá Bráhmans had in the destruction of Buddhism, by urging on the exertions of their local princes, that they began to exalt themselves so much as they have done among the priesthood of India; which is the more remarkable as the body of them profess to be the followers of the Southern Shankar A'chárya, who did for Bráhmanism by the pen what Khanderáo did for it by the sword. It is curious to mark their pretensions and scrupulosities, as they are brought to notice in the *Sahyádri Khand* of the *Skanda Purána* :—

"The Brahmans are represented to be of ten classes ; the five *Gaudas* and five *Drávidas*. Mention the origin of the whole of them in extension. Mahádeva says :—The *Dravidas*, *Tailingas*, *Karnátas*, *Madhyádeshgás*,* and the *Gurjaras*, are reckoned the five *Dravidas*. The *Trihotras*, *Agnavaishas*, *Kányakubjas*, the *Kanojas*, and the *Maitráyanas* are accounted the five *Gaudas*. The ten classes of Bráhmans are produced from the Rishis. The customs of these vary in different countries, according to the extension of the earth. The *Gayatri*, *Vedas*, and *Karma* (works) are the duty of all Bráhmans. We have not (at present) to inquire into the ordinances pertaining to the six *Karmas*. In the matter of eating and feeding, the Bráhmans are in the place of all the Gods. The *Karmá* of marriage is regulated according to descent and genealogy. The *Desha-dosha* (or district-fault) of the *Gurjaras* is the using of water kept in skins. The great fault of the people of the *Dakshin* (South) is cohabitation with slave-girls. In the *Karnátik* they don't rinse the teeth ; in *Kashmir* there is the prostitution of the wives of *Bhattas* ; in *Tailinga* there is riding on bullocks ; in *Dravida* there is eating in the morning without ablution. In these countries these are the faults which are to be reckoned.

* Dwellers in the *Madhya-desha*, or middle country, which is said to extend from Násik to Belgáum.

The *Gurjara* women are without the breech-band, and the widows among them wear spencers. The *Trihotras* and the *Kanojas* are eaters of flesh, and devourers of fish."* Here, it will be observed, the *Madhya-deshgás* have no fault whatever.

The period of the Buddhists in the West of India, we may conclude, on pretty sure grounds, extended from the middle of the third century before, to the middle of the seventh century after Christ, when Bráhmanism, by the sword of Khanderáo and its other heroes, recovered its ancient power, and assumed the form in which it now appears. A defendant of Buddhism overcome by Khanderáo appears to have been a person named *Mala*, a *Daitya* or Titan according to the legend, who was slain by Khanderáo. To the second and first centuries preceding the Christian era we are warranted in ascribing the more remarkable Buddhist excavations in our neighbourhood, though some of them may be of a somewhat posterior date.

Structural Temples.

The fruits of our research under this heading, since the publication of our first Memoir, are but very scanty.

The remarkable Bráhmanical temple of *Ambarnáth*, about six miles from Kalyán, probably coeval with the excavations at Jogeshwar, in Salsette, we had an opportunity of visiting in March 1852, with Messrs.

* The Sanskrit of this curious passage, from the first chapter of the *Uttara Rahasya* of the *Sahyádri Khanda*, we subjoin, as the work from which it is extracted is extremely rare :—

ब्राह्मणा: दशधा: प्रोक्ता: पंच गौडाश्च द्राविडा: । तस्य सर्वस्य उत्पत्तिं कथयस्व सु
विस्तरं ॥ १ ॥ महादेव उवाच द्राविडाश्चैव तैलिंगा: कर्णाटमध्यदेशगा: । गुर्जरा
श्चैव पंचैते द्राविडा: पंच कथ्यते ॥ २ ॥ त्रिहोत्रा दशवैश्याश्च कान्यकुब्जा कनोजया: ॥
मैत्रायणाश्च पंचैते पंचगौडा: प्रकीर्तिता: ॥ ३ ॥ ब्राह्मणा दशधाश्चैव उत्पत्तिसंभ
वा: । देशदेशविधाचारा: एवं विस्तरते मतो ॥ ४ ॥ सर्वेषां ब्रह्म गायत्री वेदकर्ममयो
विधि: । षटकर्म विधियुक्तेन नाच तस्य विचारणा ॥ ५ ॥ भुंजित्वा भोजयित्वापि
सर्वदेशेषु ब्राह्मणा: । योनिसंबंध कर्मंच स्वशाखा सूत्र संश्रय: ॥ ६ ॥ धर्मांतु गुर्जरे चै
व देशदोषं प्रकल्प्यते । दक्षिणे दासिममर्न दोषं चैव मद्रदभुतं ॥ ७ ॥ न दंत धौतं
कर्णाटे काश्मीरे भट्टमारिज: । तैलिंगे मातुलसंबंध प्रातरन्नंतु द्राविडे ॥ ८ ॥ एवं देशेच
दोषाश्च स्वदेशेच प्रकल्प्यते । गुर्जरो कक्षपाशीना विधवाच सकंचुकी: ॥ ९ ॥ त्रिहो
त्राश्च कनोजाश्च मांसभुक् मत्स्यभुंजका: । कान्यकुब्जा भ्रातृगामी देशदोषाश्चजायते ॥ १० ॥

Grant Duff, in his History of the Maráthás, (vol. i. p. 11,) speaking of the *Chittpáwan*, or *Konkanasth* Bráhmans, says :—" They carefully suppress or destroy all copies of the *Sahyádri Khand*, where their origin is mentioned, and a respectable Bráhman of Wái was, a few years ago, disgraced by Bájí Ráo, for having a copy of it." The work, there can be little doubt, was composed by the Bráhmans of the *Madhya-desha*.

Smith and McCulloch; and we were all greatly struck with the excellence of its architecture. We have already noticed it incidentally in this paper.* It is well worth the attention of visitors from Bombay, who will soon find conveyance to its neighbourhood by our new railway.

It is about the discovery of the remains of structural Buddhist temples throughout the country that we have felt the most interest. Several such, we have been assured by Col. Twemlow, have been converted into Muhammadan mosks at Rozah, above the caves of Elora. For our satisfaction, when we were last there, the Brigadier caused considerable excavations to be made in the *Kálá Masjid*, to which he found access by persuasion, backed by golden arguments. Their result was the discovery of the fact that that place of Muhammadan worship had undoubtedly at one time been a temple of Shiva, probably taken from the Buddhists, its original founders, by the Bráhmans. At the neighbouring village of KADIRABAD two images of Bhawání, executed in the exact style of the Bráhmanical figures at Elora,—one of which was procured and presented to us by Colonel Twemlow,—were ploughed up a short time before our visit. The diggings which were afterwards effected at the place revealed indisputable traces of an ancient temple. Some small images of Buddha, and other remains of one of his shrines, we noticed built in the walls near the gate of the town of PHALMARI, about fourteen miles distant from Rozah, on the way to Ajanta. Buddhism seems to have thoroughly pervaded the Maráthá country during the days of its triumph in India.

Ancient Sites.

Colonel Twemlow directed our attention to various indications of a very extensive town having existed in very remote times in the neighbourhood of Rozah. The legends current among the natives respecting its origin are very absurd. They attribute its foundation to *Yuvanaswa*, one of the earliest kings of the Solar dynasty; but in his times, even if they are not entirely mythical, none of the Aryan kings had settled in this part of India. A sovereign named *Purchand Ráy* is, in their traditions, also connected with it. Some of the Musalmans absurdly enough couple it with the Queen of Sheba, whose capital has been identified with the town now bearing the name of *Mareb*, in Arabia Felix.

Of the extent of the ancient city of Rozah, Colonel Twemlow thus writes, in a letter forwarded to the Bombay Government, on his receipt of our first Memoir:—"If a visitor to Rozah stands on the high

* See page 369.

mount east of the Saracenic gate of entrance to Rozah from the north, (on which mound there is one tree,) and thence looks east towards an ancient lake or tank, called 'Sultán Taláo,' he will observe the ruins of the northern inner wall of the city, the ridge west of the Saracenic arch being the prolongation west. If he passes his eye over the modern town of Rozah (which occupies merely a small part of the site of the vast old city), he will see in the distance the fortress of Daulatábád: all the intervening plain for about six miles must have been covered with buildings of the old city. The central bázár, Chabutra, is on a mound, with a tree growing out of the terrace, about a mile or so north of the village of Kághaswárá. Daulatábád, and the scarped hills which run from the fortress towards Aurangábád, probably constituted the outer defences on the south. The visitor should then proceed through the modern town of Rozah to visit an ancient reservoir of the city: he will be conducted to it if he asks for the '*Ganj Ráwan Sálah*' or the '*Pari Taláo.*' It is situated about two miles south-west of Rozah. It has about fifty ranges of cut stone steps, arranged in a semi-circle, and was fed by six lakes or tanks of supply, formed in the hills west of it by successive *bands* across two valleys. The site of this old city, and perhaps its traditional history, must have pleased Mahmud Taghlak Sháh, who twice attempted to force the population of Delhi to remove to it. The mint or *Taksál* of this king was close to the *Pari Taláo.* In this mint were coined the mohurs and rupees (of copper gilded and silvered over) that formed the fictitious currency which enabled the Taghlak kings to give away their lakhs. When this dynasty declined, these copper coins became of but little value. They are turned up by the plough of the modern cultivator. I sent twenty-five of them to Sir John Malcolm when Governor of Bombay, and some of them will in all probability be in the Museum of the Society."

Among the ancient sites formerly pointed out by us as specially worthy of notice is WALABHIPUR, in Káthiáwár, or the peninsula of Gujarát. Our wishes respecting an examination and description of this remarkable place, generated by the allusions to it of Colonel Tod and Dr. Alexander Burn, have been fully anticipated by the publication in part 1 of vol. xiii. of the Journal of the Royal Asiatic Society of the interesting notes of B. A. R. Nicholson, Esq., of the Bombay Medical Service. An incidental visit which we paid to the place in January 1851 along with the Rev. James Wallace gave us an opportunity of observing the accuracy of Dr. Nicholson's paper when it came into our hands. On the occasion here referred to, we had all

due assistance given us by the Gohel chief to whom it belongs. He had neither seen nor heard of any of the copper-plate grants which throw so much light on the dynasty which made it its capital after the subversion of the *Sah* kings of *Saurâshtra*, and the names of the members of which have been re-arranged on pretty sure grounds by the Rev. P. Anderson in No. xiv. of our Journal.

About two stages to the southward of *Walabhi* lies the town of SIHOR, also mentioned as a place of great antiquity by Colonel Tod. Our visit to it convinced us that the Colonel has not formed a mistaken judgment respecting it. The ancient name of the place was *Sinhapur*, from which the modern name is obviously derived. We are disposed to consider it the capital of the *Sinhas* who made the first *Aryan* invasion of Ceylon—from which it, perhaps, received the name of *Sinhaldwip*,—and the seat of whose authority, we concur with Professor Lassen in thinking, must have been in Gujarát. We make another conjecture respecting it. It was probably the capital of the *Sah* kings (*Sinha*, as Mr. E. Thomas supposes,) of *Saurâshtra*. Their coins we found wholly unknown in the locality. Though they have been procured in many parts of India, from Kach,—where they have again been lately found by Major LeGrand Jacob, —to Elichpur and Nágpur,—from which places specimens have been forwarded to us by Brigadier Mackenzie, N.A., and the Rev. Stephen Hislop,—it is remarkable that none of them have been known to have been found in the peninsula of Gujarát till a few months ago, when some were brought to the notice of Colonel Lang, who has sent them to us for inspection. These coins, which have been so ably dealt with by Mr. Thomas, bear evident marks of Grecian influence. Of the *Sah* kings we may get additional information when Professor H. H. Wilson publishes his version of the latest of the Girnar tablets, which is looked for with great interest.

Ancient Sepulchres.

Most able papers on the most interesting class of these remains have been received from Captain Meadows Taylor, the continuation of which will appear in this number of the Society's Journal. He denominates them the "Druidical" or "Scytho-Druidical Remains." They are found in several places in Southern India. There can be no doubt of their great antiquity. With a rather striking illustration of this fact we conclude this paper.

Some months ago certain Funereal Remains, which had been found by Commander Jones, I. N., and Mr. Hall, in the mount of Gehráreh,

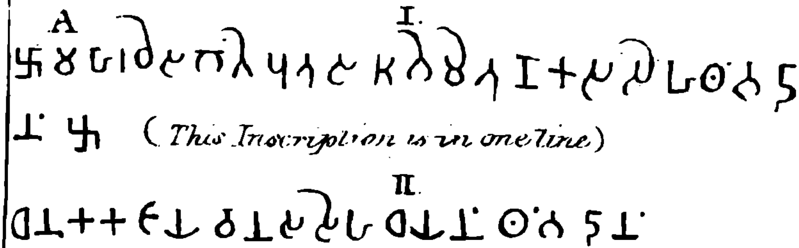
near Bagdád, were forwarded to the Society by the Bombay Government. Having been asked to report on them, we expressed our desire, in the first instance, to obtain some further information from Commander Jones as to the situation in which they were found; but on further considering them, and comparing them with certain figures illustrating an article in a late number of the Journal of the Royal Asiatic Society, we made the following statement respecting them on the 15th July last :—

"With reference to my note of the 10th of June on the Funereal Remains from Gehráreh forwarded to Government by Commander J. F. Jones, I. N., I beg to direct the attention of the members of the Society to the annexed drawing of these remains made by a Hungarian friend, and the close resemblance in form of the coffin-shaped trough of clay to another of the same material and position, east and west, found by the late Captain Newbold in a granite tomb, which had been covered by a cromlech among the ancient sepulchres of Panduvaram Dewal (temple of the Pandavas) near Chittur, in North Arcot, as described in a paper from his pen, published in the first part of volume xiii. of the Journal of the Royal Asiatic Society just received.

"Speaking of this sarcophagus, Captain Newbold says :—'It was a coffin-shaped trough, rounded at the extremities, and deeply rimmed at the edges, 6½ feet long, ten inches deep, and from 1 foot 10 inches to 2 feet broad. It was filled with hard earth and human bones. At A, which lay to the east, were the fragments of a skull and pieces of pottery. It stood on eight terracotta legs, which rested on the floor-slab of the tomb, 1 foot 3 inches long, and about 3½ inches in diameter at top, tapering gradually at the bottom, which terminates in two convex rims. Beneath the head of the sarcophagus, on the floor-slab, stood a small elegantly-shaped vase of fine black clay, filled with ashes and earth. Others, of common red terracotta, stood below, which were filled with earth. The villagers state, they have found rice in them.' The dimensions of the Gehráreh coffin appear in the drawing to which I have referred. The identity of the shape, and the correspondence of material, and of the breadth of the rim, with those of that found by Captain Newbold are certainly very remarkable.* Captain Newbold's sepulchres are those of the series denominated the Scythian, which have been found in various parts of the South of India. 'Whose bones, then,' he asks, 'do these huge blocks of granite cover? Throw down one of the side slabs, with its circular aperture,

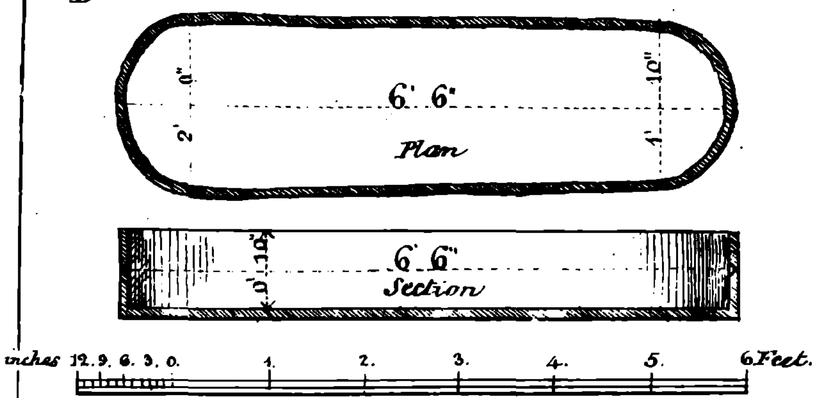
* See accompanying lithograph. (Plate xii.)

A

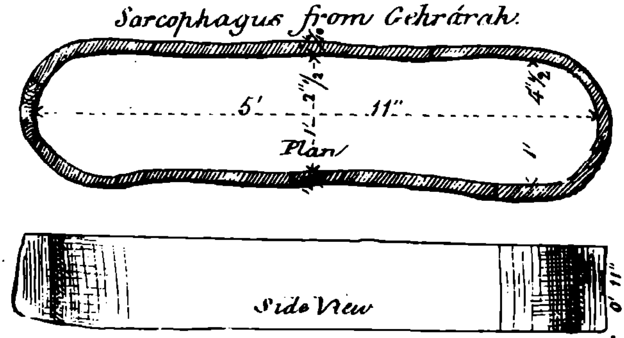


The coffin-shaped trough of Pánduvaram Déwal.

B



Sarcophagus from Gehrárah.



of the sepulchre of Panduvaram Dêwal, and we have the cromlech or dolmen. Clear away the cyclopean superstructure, and we behold the Druidical circles and the cairn. If we turn our eyes northerly to the mountains of Circassia, we there start with surprise on seeing an absolute fac-simile of the mysterious tombs of Southern India, with the circular aperture. (Vide Engraving in Bell's Circassia.) The Circassian sepulchre is similarly beyond the reach of history. Nor is it difficult to find a family resemblance to the Indian circles and mounds, with their contents of human bones, spear heads, ashes and pottery, in those which so thickly stud the vast steppes of Tartary and Northern Europe. They appear to me to be the almost only tangible vestiges remaining to us, except Holy Writ, of certain similarities in the languages of nations now wide asunder, and the traditions which prevail in almost every Eastern nation of an extensive migration, at a period of high antiquity, of one family of the human race, radiating in various directions from one given centre, at a time when the whole earth was of one family and of one speech, which the Lord confounded, and from thence did scatter them abroad upon the face of all the earth : in a word, they are the foot-marks of the builders of Babel—witnesses of the truth of sacred history—all eloquent in their silence, similarity, and distinctness.'

" It is curious that in the neighborhood of Babylon itself here referred to, a sarcophagus has been found exactly agreeing with that procured in India. The fact I think well worthy of notice. With the information which we have already elicited from Commander Jones, it may aid us in coming to a conclusion respecting the remains forwarded by him to India, and our finding a new proof of ethnographical connexion in remote times."—J. W.

Our learned member Dr. Buist has directed attention to the oriental character of certain of the monumental antiquities of Northern Europe, delineated by Mr. Chalmers of Auldbar.

It is in the elucidation of ethnographical relations, and national and religious history, that our antiquarian researches have their highest value.

P. S.—1*st February* 1853.—Since this paper was put in type, we have received some interesting notices from Dr. W. H. Bradley of the caves near *Vetálwádi* and *Bokardan*, of the existence of which, as we have elsewhere mentioned, we heard for the first time in February last. A more detailed account of these discoveries we hope shortly to receive from Dr. B.

Mr. Fallon, after painting the figures at Elephanta in a masterly style, has entered on the delineation of those at Kárlá.

ART. IV.—*Notices of Cromlechs, Cairns, and other Ancient Scytho-Druidical Remains in the Principality of Sorapúr.* By Captain MEADOWS TAYLOR.

Presented October 1852.

IN a former communication I submitted to the Society some remarks upon the ancient Celtic-Scythian or Druidical Remains of the Sorapûr District, and having understood from the Secretary that further details, accompanied, if possible, by plans of the various localities, would be acceptable, I have completed them as far as practicable, from time to time, and as I had opportunity during district tours, and now beg to transmit the result.

It has been very satisfactory to me to observe that the subject has excited considerable interest among antiquarians; and all the successive investigations I have made have only the more strongly served to impress me with the belief, not only that the remains I have discovered here, and those that have been discovered by friends with whom I have been in communication in other parts of the country, are identical with those on the Nilgherris, but supply ample proof that they belong to the same race of Celtic-Scythian people, who, at a very early period in the history of man, penetrated westwards into Europe, and of whom such peculiar and striking memorials exist. I need not here recapitulate the grounds of this supposition—which are detailed in my former communication—further than to state, that as in Europe, the remains here are divided into three general classes :—

1*st.*—*Cromlechs*, or erections of large slabs of stones, generally open at one side, and formed of three large slabs for walls, and one for a roof. All the cromlechs I have seen are empty.

2*nd.*—*Kistvaens*, or erections smaller than the cromlechs, constructed on the same principle, but closed on all sides. In some of them a circular hole, from six to nine inches in diameter, exists in one of the sides; and on removing one of the side-slabs, and opening out the interior, it is found to contain earthen pots, glazed with a red or black colour, which contain charcoal, earth, and portions of human bones and ashes—evidently the remains of

the dead, which were collected after cremation, and finally deposited in these sepulchres. I may remark that these pots or urns are found covered with fine earth, which was probably placed over them as they were successively deposited. Whether it may be attributed to the greater age of the kistvaens over the cairns, or that more water or damp has found its way into them, I cannot say; but though I have opened many kistvaens at Rajăn-Kolur and Hăggăritgi, I have not succeeded in obtaining any perfect urns from them, those that were found being so decayed and rotten that they could not be separated whole from the earth in which they were imbedded.

3*rd.*—*Cairns*, or small tumuli, surrounded with single, double, and treble circular rows of large stones or rocks; of which, as regards contents, there were two varieties. In some, as at Jiwargi, Andôla, &c. bodies have been buried, the skeletons of which are discoverable on excavation, accompanied by small and large urns, jars, fragments of iron weapons, tripods of iron, arrow and spear-heads, all the iron articles being very much decayed. Many of the smaller earthen vessels have been recovered in a perfect state from cairns which I have opened, and are well finished specimens of pottery, having a black or bright red glaze, or in some partially black and red inside and out. These cairns are by no means confined to the interment of one body: in some two, and in others remains of many adults and children could be traced, by the pieces of skulls and bones; while it was evident, also, that the children had been burned, and their bones and ashes interred in urns. In some cairns it was found that the bodies had been placed upon the natural floor of the grave, and the earth filled in; but in the larger cairns there are cists or stone coffins, formed by slabs of limestone, with upright sides, and slabs as covers and for flooring, forming two and three coffins adjoining, in which were skeletons resting upon the ground-slabs or floor. Above the covering remains of other skeletons were found in some instances, particulars of which will be more fully noticed in their proper places. These cists or coffins were usually found at a depth of from twelve to fourteen feet from the surface, and it is evident that great care and labour was bestowed upon the construction of the graves. The other class of cairns, which do not differ in outward appearance from the others, contain large earthen pots or urns, of the same description of pottery, red and black, which are filled with charcoal and human ashes, and portions of bones and earth, evidently showing that after the burning of the dead the remains were collected and deposited in these cairns, as they were deposited in the kistvaens. From the above result it may be

assumed that there were two sects of the same people, one of which burned their dead, and deposited the remains in kistvaens or cairns, and the other which buried their dead, and with them the weapons of the deceased, with probably funereal offerings of grain, &c. which were placed in the urns or jars, which in some instances nearly surround the stone cists in which the skeletons lie.

4th.—To these remains I am enabled from my investigatious to add a fourth, which I have nowhere seen noticed before. There are large rocks, which have been placed regularly in diagonal lines, having open squares between each four rocks, the spaces in the squares being, most probably, and as will be explained more fully hereafter, intended for cairns. These remains are in many respects most curious and interesting : there might be doubts, perhaps, of their belonging to the same race, whose places of sepulture are so remarkable, if there were not cairns mingled with the rocks, showing, as will be seen by the plans, that they were placed as they exist by the same people.

The remains hitherto discovered by me exist in seven talooks or pergunnas of the Sorapûr State—*Korikăl*, *Hunsgi*, *Malgătti*, *Răstapur*, *Măddarki*, *Andôla*, and *Nellugi*. These adjoin each other, and reach from the SW. corner of the Sorapûr territory in an irregular manner to the N. and NW., and from the Krishna river to the Bhima. It is evident that some spots were more favoured than others—whether as having been more sacred as burial-places, or whether as being near the location of large and permanent encampments, it is difficult to state. In the large cemeteries, as at Rajăn-Kolur and Jiwargi, the remains cover a large space of ground, and are very numerous ; at the others, as will be seen by the plans, they are of smaller extent. In all situations, however, and whether in large or small groups, they perfectly preserve their several distinctive characters. I shall commence with the Korikăl talook, and take the others in order as they occur.

PLAN I.—CAIRNS AND KISTVAENS AT HAGGARITGI.

These are situated on a waste piece of land of a dry and gravelly character, about a mile and a half south of the village, near the bank of the Dône river : the ground slopes gently to the south, and is partially covered with low trees and bushes. There is cultivation all round the spot adjoining, and among the cairns, many of which have been disturbed by the plough, but the kistvaens have been respected. There is no cromlech at this place. Of the twenty-three kistvaens, some are of large size, others much smaller. They are constructed of slabs of grey

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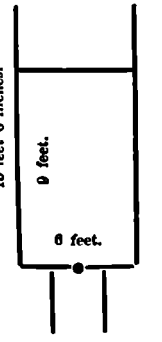
KISTVAENS NEAR RAJAN-KOLUR.

limestone, obtained from the eminences near, and these, in some instances, are of considerable size, and must have been transported with much difficulty and labour. Except in one instance, there is no difference in the arrangement of the erections here and at Rajăn-Kolur : they are four large slabs of stone set upright in the earth, and covered by a fifth, which projects over the walls, forming effectual protection from the rains. One kistvaen is, however, as remarkable for its size as for a peculiarity in the entrance, which I have not noticed elsewhere, and which may be thus illustrated :—



The front slabs form, as it were, an entrance enclosure in front of the sepulchre: the dimensions of the side slabs are very remarkable, being 15 feet 6 inches long, by 6½ feet high, and 4 inches thick. They are let into the ground about 2 feet, so that the erection was about 5 feet high in appearance. It had slabs laid down for a floor. This kistvaen was the most finished of any, and the most perfect. The sides appeared to fit closely, and there was no appearance of damp or decay ; but on examination it yielded nothing but the remains of pots or urns, none of which could be got out entire, with portions of bones, ashes, and charcoal, mixed together. I much regretted afterwards that this fine specimen had been disturbed and broken in the examination, not having been present when it was opened. Two others were also examined, with the same result, but no cairns. It is evident, however, from their being in the same locality, that all belonged to the same tribe, and that it was of the sect which burned their dead, and buried their ashes. No remains of weapons, beads, arrow-heads, &c. were found in the kistvaens, and as the pots or urns which contained ashes and bones were for the most part much broken, it was almost impossible to discover how many had been deposited in each erection. In the largest there were distinct traces of seven large pots, with portions of others of smaller size, the number of which could not be ascertained. Some of the other larger kistvaens have sides measuring 13, 12, 10, and 9 feet respectively, by 4 to 7 feet broad or high, and the top-slabs in proportion. I did not measure the smaller ones, which are generally from 6 to 8 feet long, and 4 to 5 high.

PLAN II.—CROMLECHS AND KISTVAENS AT RAJAN-KOLUR.

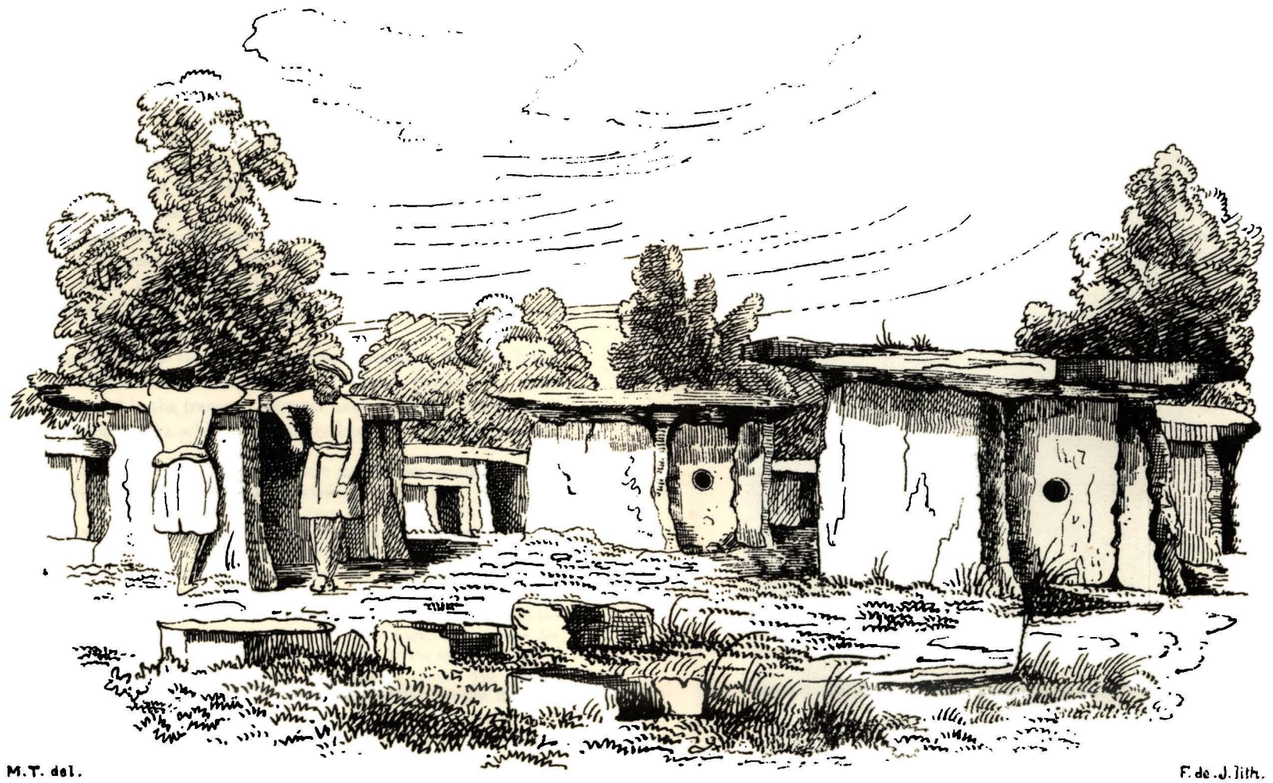
This very remarkable group of remains was the first which I had observed in this district ; and though I had passed it on several occasions,

each time with increased conviction that they could be no other than Celto-Druidic, from their exact resemblance to those in Wales, I forbore to come to any conclusion. On visiting them, however, in the latter end of 1850, in company with the late Dr. A. Walker, during a geological excursion, I halted at the village, and devoted some time to their examination. This convinced me that there was at least a curiously strong analogy, if no more, between these cromlechs and those of Wales, so strong that it amounted almost to conviction of their identity ; and on Dr. Walker's return to Hyderabad he sent me the number of the *Madras Journal of Literature and Science* (No. xxxii.) in which Captain Congreve's able article on the Druidical Remains on the Nilgherris is published. Perusal of this interesting narrative and detail left no doubt whatever on my mind in regard to my previous supposition. The style and plan of erection of these monuments—their size and contents—the peculiarity of the round hole in one of the end slabs of some of the kistvaens (for it is not universal)—the same traditional belief that they were the houses of fairies or dwarfs a span high, but endued with enormous strength, peculiar alike to Sorapûr, the Nilgherris, Britain, France, &c., agreeing so minutely and perfectly in every locality—all combined to induce me to make the Society acquainted with the discovery of Druidic antiquities in the Dekkan which had not before been noticed, or suspected to exist.

The dimensions of these remains are very various, in fact of all sizes, from the largest cromlech, of which the south side is open, to the smallest possible enclosure, made by four slabs of stone, not exceeding in some instances 2 feet square, if so much. The plan of the erections is similar to those at Häggăritgi in all respects—that is, when open, three large slabs let into the ground, with a top-slab ; and when closed perfect in its four sides and cover. The dimensions of the largest were—

Side-slabs.....15 feet 3 inches long, each.
9 feet 4 inches high, of which 3 feet, more or less, are let into the earth.
8 to 10 inches thick.
Top. ....13 feet 9 inches long.
13 feet broad.
9 to 12 inches thick.
End-slab... ...6 feet broad.
9 feet high, including what is in the ground.
9 to 10 inches thick.

The interior of this cromlech measures more in length and breadth



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LARGE KISTVAENS RAJAVOLLU

than the others, and is 6 feet by 9 ; but in others, and in the generality of the largest closed cromlechs or kistvaens, the interior space is 6 feet long by 4 broad, in which, as before stated, the funeral urns are deposited. A sketch of this cromlech is marked No. 1. The dimensions of two of the largest kistvaens are respectively :—

Side-slabs...12 feet by 9.
Top.....12 feet by 10 feet 6 inches.
9 to 12 inches thick.
Side-slabs...12 feet 9 inches by 9 feet.
Top.....13 feet 3 inches by 10 feet 9 inches.
1 foot to 9 inches thick.*

These two appear, one to the right and one to the left of Sketch No. 2, and that in the centre is about the same dimensions. Sketch No. 3 shows some of the smaller kistvaens in another part of the ground, and No. 4 part of the group nearer the village of Rajăn-Kolur. In this sketch the cromlech partly shown on the right hand is nearly, if not quite, as large as the largest of the main group, and is higher, but it is not so neatly constructed. Some of the others shown are partly open and broken, the sides and tops of some having fallen in, or been removed.

It is impossible to view these numerous remains without being impressed with a sense of the enormous labour required in their construction, and in the transport of such huge masses of heavy stone. The stone employed is a schistose grit or sandstone, which occurs in a bed

* Note.—Compare the above dimensions with those of two cromlechs in the island of Anglesea, as quoted by Captain Congreve :—

" In the woods behind Plas Newydd, near the Menai Strait, are some very remarkable Druidical antiquities. Amongst them are two vast cromlechs. The upper stone of one is twelve feet seven inches long, twelve broad, and four thick, supported by five tall stones. The other is but barely separated from the first, and is almost a square of five feet and a half, and supported by four stones. The number of supporters to cromlechs is merely accidental, and depends upon the size or form of the incumbent stone. These are the most magnificent we have, for a middle-sized horse may easily pass under the largest. In the woods of Llugwy, indeed, there is a most stupendous one of a rhomboidal form. The greatest diagonal is seventeen and a half feet, the lesser fifteen, and the thickness three feet nine inches, but its height from the ground is only two feet. It was supported by several stones. In the woods at this place are some Druidical circles nearly contiguous to each other."

The large Rajăn-Kolur cromlech would, therefore, appear to be a finer specimen than either of these, which are, I believe, the largest in Great Britain ; the thickness of the upper slabs, in comparison with those of Rajăn-Kolur, is the only superiority.

lying between the limestone bluffs above Rajăn-Kolur and the granite ranges to the S. and SW., from half a mile to a mile and a half broad. The bed, when nearest the granite, is very hard in texture, shows a strong lustre on fracture, as if it had been partially fused by heat, or granitized, and it is from these portions, which cannot be nearer than a mile and a half from the spot where the erections have been made, that the largest slabs have been raised and conveyed. The sandstone changes its quality when not in contact with the granite, and is softer and more friable. It appears to resemble, if it be not identical with, the Bunter Sandstone, and is traversed by coloured bands—pink, grey, purple, and yellow.

To have removed these masses at all must have required peculiar mechanical skill, as well as great application of force and labour; and their transport for so long a distance, and erection, particularly in the placing of the covering slabs, is almost unaccountable, with the means we may suppose a rude and pastoral people may have possessed. All things considered, this group is by far more remarkable that than of Hăggăritgi, and in relation to the number and size of the cromlechs and kistvaens, may fairly take its place with the most remarkable of any of these remains hitherto discovered, whether in India or in Britain, France, Denmark, &c. None of the erections on the Nilgherris appear to approach them in size, and those opened by Captain Congreve agree with the dimensions of the middle and smaller sizes of the Rajăn-Kolur and Hăggăritgi groups. It will be observed by the plan that several cairns are intermingled with the stone erections, thus connecting the two as belonging to the same people. Several of these have double circles of stones, and have been carefully constructed; others are with single rows, and are less complete. I have not been able to examine any of these as yet, but I should presume, from trials elsewhere, that they would be found to contain funereal urns only; and the ground on which they are is so hard, that as excavation of it to any depth would have been impossible, the urns have most likely been placed upon the rock, and covered with earth and loose stones, and have, therefore, most probably become decayed by the action of damp: it is only when they have been interred at a considerable depth from the surface that I have found them perfect. The whole of the ground covered by the erections is rock covered with a shallow surface of moorum, into which the slabs have been fixed, resting upon the rock; and this may account for the entire preservation of most of them. None of them, in the large group at least, appear to have been disturbed or examined at any time, and they are respected

by the natives of the vicinity as the houses of the dwarfs, termed Morás, who inhabited the country in former ages before man. Locally they are known by the designation "Mora Mannee" or Morás' houses, but I have not been able to obtain any definition of the term "Morá." The main group stands on a slightly elevated spot with a gradual slope to the south, about half a mile SW. of Rajăn-Kolur, and near the high road to Korikăl. The smaller group is nearer to the village, and adjoins the high road.

PLAN III.—CROMLECHS, &C. NEAR BELSETTIHAL.

This village is situated about three miles NE. of Rajăn-Kolur, on the high road to Sorapûr, and the remains are near the range of limestone hills about half a mile WNW. of the village. There are very few of them entire, portions having been broken down and carried away, apparently for the slabs of stone; others have fallen in. Some of them are small open cromlechs, and others kistvaens of the medium size of those at Rajăn-Kolur, and none present any particular features for remark. The erections have not been arranged upon any plan, but are scattered over in a long irregular line near the hills, and at their base. I did not think them of sufficient importance to have any opened or examined, but in respect to construction and appearance there is no difference between them and those at Rajăn-Kolur. If possible, from their ruined condition, they may be more ancient than the others.

PLAN IV.—CAIRNS AT CHIKANHALLI.

In the month of October 1851, when taking levels and surveys for the bund of a new tank near the village of Chikănhălli, which is about nine miles from Sorapûr, on the road to Talikota, *vid* Bohnal, I came very unexpectedly on a considerable group of cairns, which are situated on a small gravelly spur of a rock-granite range of hills about half a mile NW. from Chikănhălli. These cairns, large and small, are twelve in number, and are for the most part carefully constructed, with single and double rows of circle stones, and very perfect. The largest, on the summit of the elevation, had a treble row of stones round it, laid very regularly. The cairn was sixteen feet in diameter of the inner ring of stones, and, as I had remarked at Jiwargi and other places, the usual entrance stones at the SW. side were regularly placed, as also two stones NE. and SW., on the top of the tumulus. I had the large cairn on the summit of the knoll opened and examined. After digging a trench through loose stones and earth NE. and SW., in the direction of the top and entrance stones, beginning

from the SW. entrance, to a level with the surrounding ground, or probably three feet, the lower excavation was carefully commenced from the same side. About four feet from the surface of the ground two large stones, or rough or irregular slabs, similarly placed to those in the cairns at Jiwargi, were met with, lying in the same direction as the entrance stones, but sloping and directing downwards. Following these, and at a depth of ten feet from the surface of the ground, some remains of pottery and bones were met with, and the excavation was continued to the bottom and around very carefully. The floor of the cairn consisted of slabs of stones, and was about five feet broad, and six feet long. On these a number of earthen pots or jars had been placed, of much larger size than any found at Jiwargi. Some of these were broken ; some were too firmly inbedded in the earth and gravel of the sides of the cairn to be got out whole ; but seven were recovered perfectly entire, or only slightly chipped, with their contents. The whole of the interior of the cairn was cleared out, until the natural gravelly walls of the excavation alone remained, but no traces of iron weapons, utensils, or small cups and urns, as at Jiwargi, were found. All the vessels got out whole had covers : they are of sound glazed pottery, of the same bright red colour as is generally met with, and, though not unlike the ordinary ghuras or chattees used by natives, are yet of peculiar and more elegant forms, the bottoms being more pointed. These pots contained portions of partly calcined human bones, ashes, and pieces of charcoal, mixed with earth, as in the kistvaens of Häggăritgi and Rajăn-Kolur. The sides of the excavation were of strong moorum or gravel ; but the earth that had been filled in was soft, and without stones, and of the kind called "pandri mutti" by the natives, and must have been brought from some distance, as there is none anywhere near the spot. This earth had evidently been filled in after the urns had been deposited. It was impossible to ascertain how many had been originally deposited in the cairn, as so many broke on the earth being moved ; but as well as I could estimate, there must have been at last from fifteen to twenty of various sizes, all having the same contents : those recovered were, however, the largest. I examined all the adjacent hills, in the hope of finding cromlechs or kistvaens, but without success, and I cannot hear of any other groups of cairns in this vicinity. I did not consider it necessary to open any more of the cairns, as it was evident that they belonged to the sect which burned their dead and buried their ashes only, without weapons, or smaller cups and utensils, and it is probable, I think, these cairns, which contain urns with ashes in them,

belong to the same sect as those which used kistvaens for the same purpose, wherever stones could be conveniently obtained for their erection.

It is possible, also, that the cairns and kistvaens were family sepulchres, in which, as each member died in succession, his ashes were collected and deposited in the cairn. At the same time, the labour of opening out the whole, from top to bottom, on each successive occasion of a death, would have been almost equal to the construction of a new cairn ; and if this system had been followed, a greater mixture of gravel of the soil of the spot with the soft whitish earth placed about the urns might have taken place, which would have been observable now. It is more probable, I think, that the cairns may have belonged to the tribe collectively ; that as members died their ashes were preserved by their families in urns, and when a sufficient number had accumulated in the tribe they were deposited in a cairn, and finally closed up. This hypothesis appears, perhaps, more reasonable than the other ; and may account as well for the perfect condition of these urn-cairns as for the manner in which the light earth was first placed, then covered by gravel and moorum, and finally by stones and earth intermingled, to the top of the cairn, around which the double or single circles of large stones were placed.

REMAINS NEAR THE SHAHPUR HILLS.

These are of a very varied and interesting character, and it is necessary to describe them separately. The first met with, coming from Sorapûr on the Shahpur road, about nine miles from Sorapûr and three from Shahpur, is near the small village of Vaibăthălli, and lies immediately to the east of the high road, after passing the village in the direction of Shahpur. The road passes through a portion of it, so that the locality can easily be found. A plan of this curious spot is numbered 5, and attached.

I presume it to have been ground regularly marked out for a cemetery of cairns, and the labour bestowed upon it has been enormous. The ground has been marked out in parallel or diagonal lines, leaving a square of from eighteen to twenty-four feet between each four points, which would be enough for an ordinary cairn ; the points of the squares and the lines being formed of large granite rocks, which have evidently been rolled down the neighbouring hills, and placed in the situations they now occupy—but at what expense of labour, and with what patience ! These rocks are irregular in shape, and of various sizes ; but the average of them is not less than six to

seven feet long, by three to four thick or high, and very many are at least half as large again. The sides of the square, as it very nearly is, gave twenty rocks west, by twenty south, which, if the whole were complete, would amount to four hundred rocks; but a portion on the north-east corner and north side has not been completed, or the rocks have been removed, and about fifty would be required to complete the whole. Those laid down in the plan are from actual survey measurement, and the vacant spaces are as they exist. The whole of the ground is usually cultivated, but the size of the rocks has defied any attempt, if ever made, to remove any of them. I assume that the squares marked out must have been for cairns, as there are five,—two with double rows of stones, and three with single,—near the centre of the field, as shown in the plan; they are all very perfect, and have not been disturbed. The tradition attached to the spot is, that a king had once his encampment there, and the pieces of rocks were laid down for his horses and elephants. The place, therefore, in Canarese and Hindustani, is known by the name of "The King's Stables."

North of this field is another piece of cultivated ground, in which there are twenty-eight cairns, large and small—one with a triple circle of stones, which forms a considerable tumulus, two others with double circles, and the rest single. In one place four of the cairns are surrounded by what appears to have been a low wall, but most of the stones have been taken away, and as several of the cairns have evidently been broken by the plough, and the circle stones disturbed, it is possible that in the lapse of time, and constant cultivation of the field, many others may have been disturbed. Enough, however, remain to render the spot in connection with the rocks very remarkable and interesting. I was not able to have any of these cairns examined, but shall not fail to open the principal one and examine it the next time I am encamped near the spot.

PLAN VI.

Is of a small group of cairns on a waste spot of ground below the tank of Amrawătti, on the lands of Vaibăthălli. There are five of them, one with a double circle of stones, the others with single. This group lies about a quarter of a mile W. or NW. of the preceding, and presents no particular features for remark.

PLAN VII.

Is of a rather remarkable barrow or tumulus, and cairns, in a field on the lands of *Rakhămgira*, through which the high road from Shahpur to Săggi passes, and about a mile north of the last

mentioned group. This tumulus has been formed with much care and labour, and though I tried to have a trench dug through it, in order to ascertain its contents, the ground was so hard, and the moorum and stones had united into so strong a mass of concrete, that I was obliged to abandon it at the time, and have not been able to resume it. One of the cairns on the mound has a triple circle of stones, two double circles, and one single, and the whole of the mound is evidently artificial, the field around it being perfectly level. Originally there was one or more rows of stones all round the base, but these for the most part have been disturbed and removed. I have seen no tumulus so marked in character as this, in the Sorapûr country, and on this account it merits more particular examination than I have been able to bestow upon it. In the same field are ten other cairns, eight in one group NW. of the large tumulus, and two by themselves SW. All these are insignificant in comparison with the others.

Not very far from the foregoing, perhaps a mile, and in the valley into which the road from Shahpur to Săggi turns, is a remarkably large insulated granite rock, near a small rivulet which feeds the Amrawătti tank. This rock is about twenty feet high, and eight to ten yards in diameter, of a round irregular form. When I first saw it, it was surrounded by a double ring of large stones, very regularly placed, with two larger rocks as entrance on the south side ; but the Wăddiwars employed in the repair of the tank have, I find, removed and displaced nearly all the circle stones. This rock, as I saw it first, had a very remarkable appearance, and impressed me with the belief that it must have been marked out as a place of worship or sacrifice. Captain Congreve, in his article before referred to, gives several instances of rocks on the Nilgherris as encircled by stones, and with which the one I mention exactly corresponded in all respects. I believe the same kind of Druidical remains is well known in Devonshire and in Cornwall, so that it is at least satisfactory to have found among the Sorapûr remains one striking corroboration of identity with those of the Nilgherris and Britain, even in this particular.

PLAN VIII.

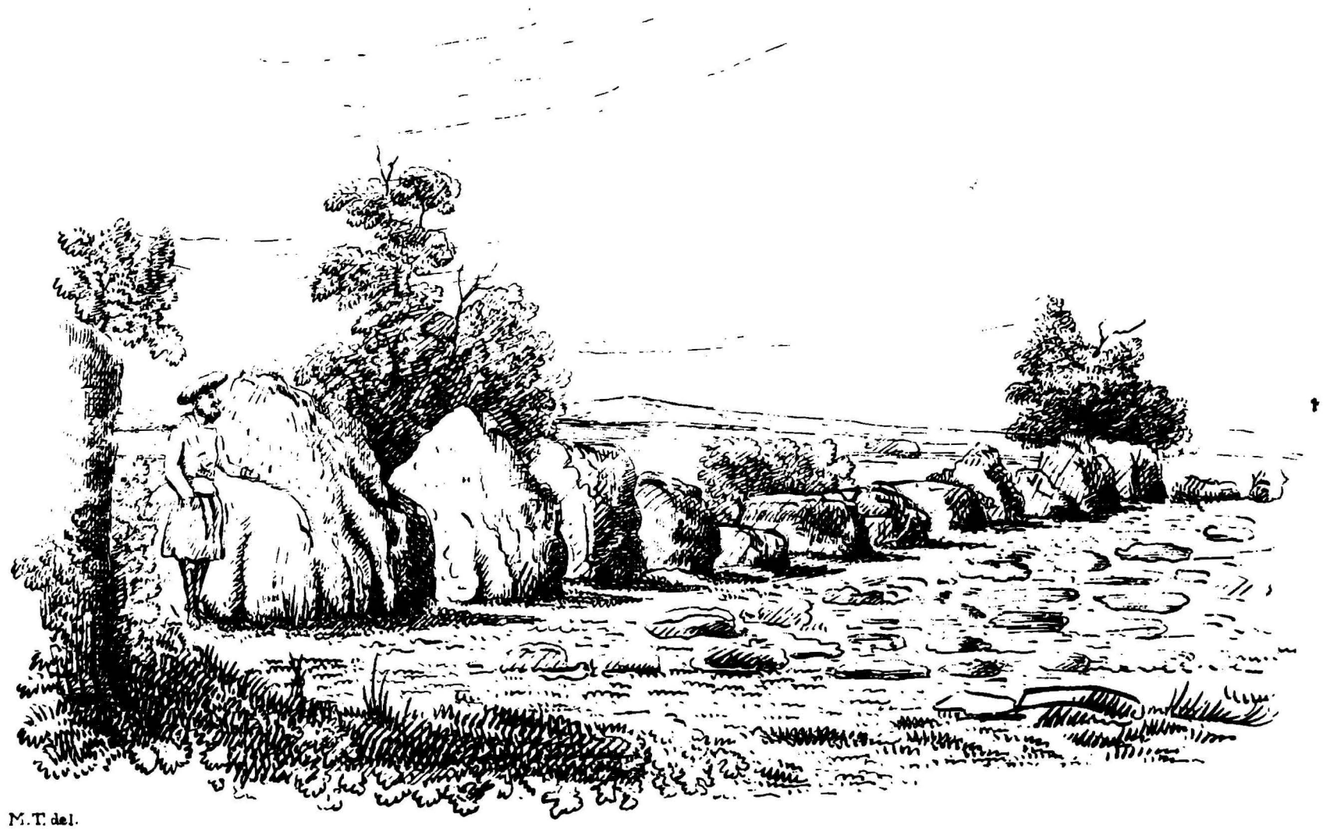
This, as will be observed by the plan, is a smaller collection of rocks, in something the same plan as the larger one at Vaibăthălli. It is close to the hills, and upon the high road from Săggi to Shahpur, near a small tank, and about a quarter of a mile from the large barrow. The rocks have not been completed to form exact squares in all instances, and, with a few exceptions, are not generally so

large as those at Vaibăthălli. Among them are two cairns, but of no remarkable size or construction.

Again, about a mile further north, and close to the eastern gate of the town of Shahpur, there is another group of lines of rocks similar to those already mentioned, which has once been as large, or nearly so, as that at Vaibăthălli ; but the rocks placed here were, perhaps, for the most part of smaller sizes, and many have been removed, or are at least wanting ; so that the lines are only perfect where they were too large to be stirred. Part of the space is a cultivated field, part is occupied by the high road, and the remainder is on waste ground to the east. As the lines of rocks were so imperfect, I did not survey the place, which is remarkable only in connection with the two others already mentioned. It could not, however, be overlooked by any one acquainted with the characters of these antiquities, as the rocks which remain have a very peculiar appearance in the ploughed ground, apparently so regular, and where, except these, are no others of any description. I could not find traces of cairns among these rocks ; if there were any originally, they have been long ago obliterated by the cultivation of the greater portion of the land in which they are, and which is of excellent quality.

PLAN IX.—TUMULUS AND ROCKS NORTH OF THE SHAHPUR HILLS.

I consider this as by far the most remarkable of the remains about Shahpur, if, indeed, it does not much exceed in interest even the cromlechs, in the enormous labour with which the outer lines of rocks have been placed as they are. I had no idea of its existence until one day when encamped at Shahpur, in June last year, and having to examine a well near a temple which required repair, I came upon the tumulus quite by accident, as I was riding across the fields. It transpired, however, that the place was well known to the people, who have a legend regarding it, which was told me by my companion, the Pujári of the temple, to this effect :—Once upon a time a party of Bedins had brought up a large spoil of cattle and goats from a neighbouring district, and on their return quarrelled about the division of the booty. As they happened at the time not to be far from the temple of Amlapur Hănăman, which is held very sacred among these people, and it was near day, they agreed to stop and ask the opinion of the god as to what they should do. The cattle, therefore, were collected in a group,—the bullocks and buffaloes outside, the cows and calves next, and the sheep and goats in the centre,—and all lay down to rest. When day dawned the thieves went to the temple,



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TUMULUS OF ROCKS SHAHPUR.
(south line).

which is hard by, and alone in the plain ; and, having reminded the god of sundry offerings to him before they set out on their raid, to which and to his favour they were indebted for a successful foray, they stated that, try as they would, they could not bring themselves to a conclusion as to the disposal of the proceeds ; and, though loth to trouble him, begged him to step down to where the cattle lay, and decide the quarrel, or it would end in all of them fighting among themselves and being slain, which would bring great discredit upon him. The god was willing to be arbitrator, got off his pedestal, and proceeded as he was to the place where the cattle stood, and, having selected some good cows and buffaloes for the Brahmins of the temple, proceeded to divide the rest according to his notions of justice. This, however, was by no means so easy as he supposed : he was accused by all the thieves of favoritism, and that because such a man had made a sacrifice on such a day, and another had not ; a third had a vow to fulfil, and another had made none ; he was evidently prepossessed in favour of his votaries, and could not be a judge at all—so the best way, as they had at first proposed, was to settle the quarrel by the sword, and whoever should be victorious in the end was to take all. Upon this the god fell into great wrath, declared his reputation would be ruined for ever if a parcel of roving Bedins came and fought in his holy precincts, under his very nose ; and after (according to my informant) a liberal abuse of the female relatives of the party, declared not a beast should move. Gradually, then, and to the horror of the Bedins, the cattle sunk down motionless, and became stone. The Pujári, when he had got thus far in his story, triumphantly exclaimed—" There ! you see the truth of the story verified ; for see, the sheep are all black, and the other cattle grey, and of all colours, stricken as they lay !" I ventured to remark that some of the rocks were very tall for cows and buffaloes. " Ah," said he, " that's true ; but you forget that men were giants in those days, and so their cattle were large too ; we are pigmies now in comparison ;"—and as he seemed quite satisfied with his own conclusions, it was no use to gainsay them. The stones are therefore considered as a proof of the miraculous power of the Amlapur Hănăman, though the Bedins hint that it was a spiteful trick of the god to turn so many good beasts into stone for such a trifle as a few lives.

It was at once, however, very evident what the stones were, and a very striking appearance have they in the wide plain when the ground is clear of crops. A long and correctly formed parallelogram of 400 feet by 260, composed of huge masses of granite, encloses a smaller

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figure of smaller rocks, and these a tumulus rising about ten feet above the surrounding ground. The circle of stones at the summit was of superior diameter to any I had seen : the sides of the tumulus were covered with large black rocks of greenstone, and these surrounded on three sides by a double row, and to the east by six rows of granite rock, partly incomplete, and of smaller size. The tumulus measured sixty feet in diameter between the circle of stones on the summit, which was bare and level ; the slope southwards and eastwards from the west, as the ground has a natural inclination to the south, was sixty feet ; and that on the north and west, where the ground rose, was forty feet. On the slopes of the SW. and NE. corners were two other smaller circles of black stones, of smaller diameter ; and the rest of the greenstone rocks had been placed, apparently without regular design, so as to cover the whole of the slopes on all sides, the parallelogram enclosed by them being 190 feet north and south, by 160 feet east and west. The exact number of these black rocks it was impossible to ascertain correctly, as also the positions of all ; and after several attempts to have them corrected, and to lay them down correctly, I was obliged, for want of time, to give the matter up, and to judge as far as possible by my eyes, counting and measuring the outside lines, and counting and filling up the rest by portions as they appeared to lie. The inner lines of granite rocks, and those of the main outer line of the parallelogram, were carefully counted and measured, and laid down in the plan by observation, in their proper positions, and with reference to the scale of forty feet to an inch. I extract from my field-book the measurements of some of the largest rocks of the outside lines. It would be tedious and unnecessary, perhaps, to give the whole :—

	Length.		Breadth.		Height.		Girth.	
	ft.	in.	ft.	in.	ft.	in.	ft.	in.
Rock..	10	5	7	4	5	1	26	9
,, ...	9	0	8	0	4	3	24	6
,, ...	10	1	9	7	5	2	27	9
,, ...	7	2	4	3	4	0	24	3
,, ...	8	6	8	2	6	8	26	3
,, ...	9	0	5	6	7	3	25	6
,, ...	9	0	4	3	8	9	21	0
,, ...	7	6	8	1	3	8½	24	9
,, ...	9	0	7	6	5	0	20	9
,, ...	9	5	8	4	5	8	27	2

The weight of each might be computed, but I have not attempted it. The rest are but little short of these dimensions, varying from 8 feet

4 inches long, 6 feet broad, and 4 feet high, to 6 feet long, 5½ feet broad, and 3 feet 9 inches high, which is the smallest of any. How these rocks were moved, and placed as they are, so regularly, it is impossible to conceive. The nearest granite rocks are those on the hills of the Shahpur range, which, opposite to the tumulus, is quite a mile and a half distant, and there are no others anywhere in the plains for miles around. The geological character, indeed, of the country, changes after leaving the hills, and the limestone formation commences. I can, therefore, come to no conclusion but that the rocks, which are identical in character with those of the Shahpur range, were rolled down from them into the plain, and from thence rolled, or otherwise conveyed onwards to their destination. The removal of one of these masses of granite would be an almost impossible undertaking with the means at present obtainable in the country; and yet there are fifty-six placed here, all of which have been brought from the hills across two nullas, one of which has rather steep banks, at least fifteen feet deep, of soft earth—a serious obstacle. Great as has been the labour to transport and erect the slabs of sandstone and limestone of which the cromlechs and kistvaens of Rajăn-Kolur and Hăggăritgi are constructed, the means employed there sink into insignificance when compared with the transport of these great rocks. How many men were employed in the undertaking—how much time—what mechanical or other means—it is impossible to conjecture; but they stand, monuments of the faith of bygone ages, alike immoveable and imperishable. Sketches Nos. 4, 5 and 6 will give, perhaps, a better idea of them than any description. No. 6 shows the south side, and No. 5 the east, in which the largest rocks are situated, and are as correct as to shape and situation as I could make them. The greenstone rocks in the slope of the tumulus are no less worthy of remark, and their great weight for their size, and the distance from which they have been brought, evince the patience and perseverance of the people who transported them. Generally speaking, these are from four to six feet long, and from two to three feet broad and high, mostly of an irregular round figure. The nearest bed or dyke of greenstone rocks among the granite hills is about five miles from the tumulus, to the SW., and these rocks must, therefore, have been brought from thence, either upon carts, or rolled or carried by men. The former supposition is, perhaps, the most probable, as these people may have had rude cars, such as are now used by the Wăddiwars or stone-workers of the country; many of the rocks are, however, too large to be transported by these means.

Having completed my survey, I proceeded to ascertain the contents of the tumulus, and directed two trenches to be cut through the mound, one north and south, A to B, the other east and west, C to D. These trenches were six feet wide, and were begun from the natural ground, so that the contents of the mound would, I trusted, fully appear. Nothing, however, was found in the shape of the remains of urns, weapons, or cists, as in others. A few pieces of broken pottery were found now and then, but nothing worth preserving. Where the trenches crossed each other the excavation was continued to some depth, but without success, the moorum being hard and compact, and had evidently never been disturbed. The trenches ultimately gave sufficient clue to the object and construction of the tumulus; for layer after layer of ashes, partially burnt bones, and bits of charcoal, and earth and sand burned or run into slag, as it were by the action of fire, proved that successive cremations had taken place in great numbers, down to the floor of the ground. It was evident that as a body was burned, the spot had been covered over with soft greyish earth,—pandri mutti,—and the tumulus had risen by a succession of these layers, which were in some places five and six in number, all of the same character.

It is possible, therefore, that this spot was the place where all the dead of the tribe were burned; that their ashes were collected in part, and removed to be buried in cairns, as at Chikănhălli; and that when the tribe migrated the tumulus was completed, and finally sealed and secured by its circle of stones on the slopes as I have described; or it may have been, that on the death of a great chief many persons were sacrificed, their bodies burned, and the tumulus constructed at once. The great number of indications of one body having been burned on each spot, and the successive layers of fresh earth and ashes, with burned earth and slag, incline me more to the former supposition than the latter; and, as far as I could ascertain from the trenches, which laid bare the whole of the interior by sections of nine feet deep at the crest of the mound, and six broad, there seemed to be no portion of it, including the slopes, which were free from the indications I have already noticed. It is evident, not only from the labour bestowed upon the tumulus, but from the remains at Vaibăthălli, Rakhămgira, and Shahpur, all on the east side of the hills, as well as those on the north, that there must have been a large encampment or settlement of these people about Shahpur. I have looked in vain, however, for any traces of ancient walls, or indications of habitations, if I may except one doubtful spot, not far from the rock which had circles of stones round it, and

which shows some traces of old walls, as well as small pieces of red glazed pottery. The Shahpur range is a mass of granite, 700 to 1,000 feet high above the plain, intersected by deep ravines, and very rocky. I thought it probable, perhaps, that cairns or cromlechs might be found on the summit plateau, which is some miles in extent; but the parties I sent could find nothing, and I was not able to examine the hills myself. I am not aware that there are any other remains in the vicinity of Shahpur but those I have described.

PLAN X.—ROCKS AND CAIRNS AT IJERI.

A group of trap rocks, which have been placed in the same manner, and apparently with the same intention, as those near Shahpur, lies upon a rising ground about a mile west of the village of Ijéri, of the Nellugi talook. A few rocks are wanting to complete the squares, but the arrangement is obviously regular, and some of the rocks are of large size,—eight to ten feet long, four to six feet broad, and three to four feet thick,—and, from the nature of the stone, very heavy. The rocks have been brought a mile and a half or two miles, from the ravines to the north or west. There are two cairns among this group, each occupying the area of a square, but they did not appear of sufficient consequence to have opened. South-west of the same village, about half a mile on the road to Bălbatti, there are three other cairns, one of large size, of which the circle of stones is double; the other two are of smaller dimensions, and have only single circles. The village of Ijéri is situated about eighteen miles to the NW. of Shahpur. I have not been able to discover any of these or other Druidic antiquities in the intermediate line of villages, nor in any of those immediately around it; but it is evident that there was an encampment here, and, as the ravines abound with grass and water, large herds of cattle would have found ample sustenance.

PLAN XI.—CAIRNS AT MANDEWALLI.

This village belongs to the same talook as the preceding, and is situated about the centre of it, about twelve miles NW. from Ijéri. In the month of February of the present year, as I was travelling from Almella, in the British territory, to Ijéri, I passed these remarkable remains, which are situated about a mile NW. of Măndewalli, on the Jeritgi road, on a rising ground of hard moorum and rock, covered with large trap rocks. Among these the four principal platforms are very distinct, and have been constructed with immense labour and patience. They consist of double and treble rows of large rocks, joining each

other, surrounded by a square of rocks of similar size, the intervals being filled up with smaller rocks, placed so as to touch each other in most instances, and forming a complete and almost impenetrable covering to the ground beneath, which rises to the apex of the cairn, where from four to six rocks have been placed together as a seal to the whole. Part of the largest cairn is incomplete, the cultivation having gradually encroached upon it, and the rocks being scattered about. Between the three large platforms and the single one to the north there are two small cairns, no way remarkable, and to the right of the road to Măndewalli six other cairns in a group, on an open gravelly spot. These present no particular features for remark, and seem in every respect the same as those noticed in other places. I did not halt at Măndewalli, but as soon as possible sent a party of men with a Karkoon to open one of these remarkable cairns ; but they returned in a few days, saying that it was impossible to remove the masses of rock, which, one over the other, were tightly jammed together. A few pieces of pottery were found, broken urns, which showed the platforms to be true cairns ; but whether pertaining to a tribe which buried or burned its dead, complete investigation could alone determine. It is probable that other cairns may be found on the lands of this village, and in the purgunna, particularly on the slopes of, and among the grassy ravines which descend from the high land about Ijéri and other villages on the plateau, and I purpose, if possible, to renew my examination this year.

PLAN XII.—CAIRNS AT JIWARGI.

I now return to the village, the remains at which were the subject of my first communication to the Society. The plan sent will give an exact idea of the situation of the cairns, and their number, the whole having been carefully surveyed by me, and Sketch No. 7 of the general appearance of the ground. There are 268 cairns in all, small and large : the plan distinguishes those which have single and double rows of stones round them, as well as those which I have opened, and those which, composed of slabs of limestone placed parallel to each other, are, as it were, square or oblong open cists, and in which, except a few potsherds, every remnant of former deposit seems to have disappeared. To the south of the cairns, near the bank of the Jiwărgi nulla, are the evident remains of a small village ; foundations of walls built of stones and mud ; heaps of mounds ; and in every direction portions, small and large, of the same red glazed pottery as is dug out of the cairns, are lying about, as also in a field adjoining,

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CAIRNS AT JIWARGI.

where they are turned up by the plough. I cannot, therefore, refuse to consider that this may have been the Scythic village whose inhabitants were, perhaps, with others from surrounding camps, buried in the cairns ; without, indeed, it was merely the place where pottery was made, and which may have required roofed houses for drying and manufacture. It would be desirable to have trenches dug through some of the ruined mounds ; and should I visit Jiwărgi this year, I will endeavour to have this done.

In April and May I was so severely indisposed that I could not effect so much as I wished in the way of examination of cairns ; but in all four large ones were opened, and several smaller cists, square and oblong, and I proceed to detail what appears most remarkable in the examination.

In one of the large cairns there were two regular cists, or stone coffins, one of which, on the east side, contained one skeleton, the other, on the west side, two, of which *one skull only* was in the cist. The whole of these skeletons were perfect enough to have shown the missing skull if it had been placed anywhere in the cist, or had been on the body ; and one of the two skeletons in the west cist had a head ; the other had two of the neck vertebræ attached to the spine, which may favour the supposition that the body—apparently that of a woman, from the smallness of the bones – had been beheaded. Above the cist, and met with as the excavation continued from above, were distinct remains of four other bodies and skulls, with smaller bones, and portions of a few skulls of children. The remains of the bodies were by no means regularly disposed ; indeed, from the positions of the bones, they seemed to have been pitched into the grave at random, one over another. None of the skulls were found attached to the bodies, or in the places they ought to have occupied in the earth if the bodies had been interred whole, but were found confusedly here and there, without any reference to the skeletons. This cairn contained comparatively few urns or pots, and no remnants of weapons could be found, beyond a few undistinguishable portions of iron, completely corroded. The most perfect skeleton in the cist to the east was five feet two inches long, and was that of a male adult ; the others did not appear to me to be as much as five feet, but they were so confused that I could not make any satisfactory measurements.

The other large cairn, which indeed is a considerable tumulus, near the centre of the group, was of the usual depth,—that is eleven feet from the crest of the mound,—and contained a large cist four feet ten inches long inside, by three feet broad, and was formed into two divisions by a

slab of limestone, lengthways ; the divisions being, respectively, to the east two feet broad, and to the west one foot. There were two skeletons in the larger portion of the cist, laid over each other, the upper one *face downwards*, the other and lower one on its side, the heads of which were properly attached to the spine; but on the top of these heads, and so discovered before the bodies below, a skull was placed *upright* in the middle by itself, with vertebræ attached it. This skull was nearly whole when got out, but the dry hot winds caused it to crumble away almost entirely in the course of the day, which I much regretted. The cover of this cist was nearly perfect, only one slab, towards the feet of the skeletons, having fallen in, so that it is impossible that any skull could have fallen down through the earth to the bodies below. In the cist, therefore, were two skeletons, placed as I have described, with an *extra skull*, evidently placed where it was found after the bodies had been deposited. The portion of the cist one foot broad contained urns and pots filled with earth only, some of which—the small ones inside larger ones—were very perfect. Of the large ones none came out entire, and the remains of an iron knife and a spear-head were among the urns, some of which, with the spear-head, were sent to the Society.

Now the excavation had been most carefully carried down in my presence after the first bones were met with, for I wished much to have further proof that persons had been beheaded and interred—in other words that human sacrifices had been made. From time to time bones were met with, but very irregularly, and much decayed. Two skulls were found, but not with other bones, nor with spinal vertebræ. It was impossible to judge exactly how many bodies were interred there, but I should think five or six adults, independent of those in the cist that I have now to make more particular mention of. The whole of the upper earth had been taken up as far as the covering slabs of the cist, and thrown out of the grave, except a portion over the head of the cist. On breaking into this, bones were found, and the earth then carefully picked away from them. Tracing and exposing them, the result was the disclosure of a skeleton lying transversely, that is east and west, on the lid of cist, and lying upon it. The body was headless; but after a little more search the skull, at the time nearly perfect, was found, as it had evidently been placed, in the centre of the body, and resting upon the pelvic bones. The skull was upright, and looked to the south. It was so entire that I wished to take it to my tent to draw it at leisure, but on attempting very gently to remove it, it fell to pieces in my hands.

I was too ill when the other two cairns were opened to examine their contents as I had done these, but my people, now accustomed to observe, told me that on the floor of one cairn (it had no cist) there were three skeletons, lying north and south, and four skulls, and that bones had been met with confusedly, as the digging descended, with portions of skulls; and that there were only a few pots, none of which came out whole. In the other, also without a cist, there was only one skeleton on the floor of the grave, with a few pots to the west of it, at the usual depth; and that very few bones, and only one skull, had been met with as the excavation proceeded.

I have before stated that none of the open cists yielded anything, though one was exceedingly promising in appearance. It was composed of four large slabs of limestone let into the earth to within a foot of the surface; in fact, not unlike a large cromlech or kistvaen, let down till nearly covered, but without a top. The sides were eight feet six inches long by five feet eight inches broad; the ends five feet broad by five feet six inches high. The interior contained nothing whatever that could be distinguished, beyond a few broken potsherds, and some much decayed pieces of bone. None of the smaller cists, of which several were examined, yielded anything. In all these cairns precisely the same method of construction as described in my last communication was found to exist; 1*st*, the circle of stones; 2*nd*, the tumulus within them, composed of loose stones and earth; 3*rd*, the entrance stones, laid NE. and SW. Then, on digging down from the entrance stones, the two other large slabs were found, leading to the foot of the cist; next, the cist, at a depth of from eleven to fourteen feet from the surface, and eight to ten feet from the bottom of the upper entrance stones, the body of the grave being filled with fine earth, without stones. No one passing from the Bhima at Ferozabad to Jiwărgi by the high road can possibly miss this interesting group of remains; and it is well worth the while of any traveller to turn aside from the road to examine the spot. It is easily found by an old Mahomedan tomb and a single tree by which the road passes, and on the left of the road as you go to Jiwărgi, and opposite to the tomb, are black trap circles of large stones, which are the cairns.

PLAN XIII.—CAIRNS ON THE LANDS OF ANDOLA.

I had discovered this group of cairns the year before, but had not been able to examine any of them. They occupy a small elevation immediately to the right of the road leading from Chărmur to Andôla, about half way distant, or a mile and a half from each village.

They are about five miles SE. of the Jiwărgi cemetery. The elevation they are upon is waste, and is composed of limestone shale, harder than that at Jiwărgi, slightly covered with dark coloured earth. In all there are forty cairns and cists distinguishable, but the villagers informed me that the ground had been formerly cultivated in parts, and it is probable some of the smaller cairns may have been obliterated, especially on the ground to the W. and NW., which is softer, and the soil deeper than that on the crest of the ridge. In appearance these cairns are precisely the same as those at Jiwărgi, the circles of stones, double and single, being carefully placed, with the entrance stones in several above the ground: one cist, of slabs of limestone let into the earth, is eight feet long by four wide; the rest are smaller, and appear to be graves of children. I had two of these cairns opened with considerable labour and trouble, for the surface stones and portions of shale had become so hard, that it was with great difficulty that the workmen could break through them with the pickaxe. Those selected were the largest of the main group on the summit of the ridge, and were eighteen feet in diameter inside the circles of stones, had large entrance stones, and were in every respect complete and undisturbed. I give in Plan xiv. sections of both of these graves.

No. 1 was the first opened at the entrance stones. As the excavation proceeded, a great quantity of bones, large and small, were found in the softer earth below the upper concrete, and several portions of skulls. I was present at part of this examination, and nothing could have been more confused than the appearance of the bones lying in all possible directions. For the most part they were harder, and in better preservation than the bones usually found, but very brittle; and as there was no apparent guide from their positions to the positions of the skeletons, there were none found as perfect as I could have wished. I observed, however, here, as at Jiwărgi, that there was no apparent relation of the skulls when found to the bones of the skeletons, except in one instance, where the bones led to the position of the skull, and the body had evidently been laid down in the proper line of the cist: this was immediately over the cist, and resting upon it. Above this, some skulls were found towards the foot of the grave, to the SW., others in the opposite direction, among the earth; but with the exception of the one I have mentioned above, *not one* in connection with the skeleton bones. Remains of eight skulls were found in this portion of the grave. The cist of this cairn was very perfect, and lay ENE. and WSW. by compass, and was made of slabs of limestone, five placed transversely as a floor, neatly joined with single slabs for sides 5 feet

6 inches long, and 1 foot 9 inches high. The slabs are 2 inches thick. The head and foot slabs were 6 feet long by 1 foot 9 inches high, and the whole was divided into two equal portions or cists 3 feet wide. The covering slabs were all perfect, except one at the foot, which had broken and fallen in. On removing these the cists were found to contain two skeletons each, those to the east being of a larger size than any I had yet seen, and fully filling the cist: they had been laid as nearly as possible one over another, and were apparently perfect. Those on the west side were smaller and more decayed, but the skulls were in their proper places: from the smallness of the bones I supposed them to be of women. Again, to the west of the cist, and between it and the natural wall or side of the grave, were many remains of human bones, for the most part small and delicate, apparently those of children, with several remains of their skulls; but it was impossible, from the decay of all, to trace the skulls to the skeletons. A few pots were found at the head and on the west side of the cist, large and small, and some perfect, but in nowise different from those of the Jiwărgi cairns, either in shape or colour.

Cairn No. 2 (vide plan) was eighteen feet broad inside the circle. The excavation proceeded as in the one preceding, but an attack of fever prevented my seeing it. My people, however, reported it to be exactly similar to the preceding one; that bones were found lying in all directions, some transversely, some diagonally, and some direct, with portions of skulls here and there confusedly. The remains of five skulls, with portions of leg, thigh, and arm bones, and some vertebræ, were brought to me, but all broken in removal.

I had directed the cist to be reserved for my own inspection, and as soon as I could, went to see it. I found it entirely perfect, none of the cover having fallen in. On removing the upper slabs, the cist appeared divided into two portions; the one to the east being 5 feet 6 inches long, by 2 feet 2 inches broad. The other to the west was 1 foot 2 inches broad by 5 feet 6 inches long, and there were slabs for the floor. In the eastern, or larger cist, was one skeleton only, which was very distinctly traceable from the feet upwards, the smaller bones being distinguishable, though they crumbled immediately, as also the pelvic bones and vertebræ. I trusted, therefore, to find the skull at least perfect, and attached to the skeleton, but to my surprise, on reaching it, I found it separate from the body, and lying with the face to the NE. corner of the cist, and the top of the cranium to the SW. part of the skull rested upon the bone and shoulder of the left arm. It is not very possible that the head could

have got into the position it was by the body having been interred upon its belly, which I have found the case in some instances, though not many, as then the jaws would have been towards the body ; whereas the whole was entirely reversed, and must have been placed separate from the body. The plan of the cist (No. 17) gives the exact position of the head as it lay, and Sketch No. 8 its size and shape, traced without removing it. The measurements round the head were as follows :—

From feet of skeleton to SW. side of skull or top of cranium. 3 feet 6 in.
From head stone inside to NE. side of jaws and neck..... 1 „ 7 „
From face to west side of cist or middle slab..... 1 „ 1 „
From back of skull to east slab..... 0 „ 5 „

Some urns and pots were found, as usual, upon the west side of the cist, most of which were broken in removal, and a few pieces of iron much decayed. On a small shelf, however, of the side of the cairn, in a hollow which had been made for it, an urn in perfect preservation was found, which contained no earth, and only some light dust, with some bones, very white and delicate, which I conjectured to be those of a mungoose. These, with other bones, were sent by me to Dr. Carter, the Secretary of the Society, with some specimens of pottery found in the cairns. He informed me, in acknowledgment of the several articles, that the small bones were those of a guana, and that a portion of the jawbone of a canine animal, probably a dog, had been found with the other bones. This was the only instance in which I had met with such remains, and the pot or urn in which they had been placed had evidently been put aside with care. I had purposed to open another of these cairns,—that on the crest of the rise near the small nulla, which is perfect, and had double rows of circle stones,—but I was obliged to leave Jiwărgi from continued illness, and the work was not commenced.

Enough, however, in relation to my former communication, has, perhaps, been stated, to show the contents and construction of these very ancient graves, and to establish their identity with other Celtic-Scythian graves and cairns elsewhere examined in India, as well as in Europe. Nor can there, I think, be any room to doubt that human sacrifices, as I ventured to suggest in my last paper, in reference to the position of the skull, which was then described as found by itself among the urns at the head of a cist, took place to a considerable extent when a body or bodies were buried. The positions of skeletons without heads, lying in all directions, as if confusedly flung into the graves; the positions of skulls found without reference to skeletons ; the very remarkable instances in the Jiwărgi cairns of a skull being found inside a perfect cist placed upright between those

of two skeletons ; and of a skeleton being found lying transversely across the cover of the cist without a skull, the skull itself having been placed upright, and upon the middle or pelvic bones, with the face to the south—all serve to impress me with the conviction that the bodies so found were those of human victims. Whether the skeletons decapitated were those of women or men, I regret I have not sufficient anatomical knowledge to determine. Captain Congreve, in his most valuable article, quoting from Herodotus in Melpomene, recounting the funeral of a Scythian king, states that "after the body has been transported through the various provinces of the kingdom, it is placed on a couch set round by spears. His concubines are then sacrificed, and a mound of earth is raised over the king and his women."* Other works upon this subject might probably afford details of Scythic or Celto-Druidic customs in this respect, and of human sacrifices, probably of both men and women, slaves, captives, and concubines ; but I regret I have none to refer to. Captain Congreve mentions, however, the sacrifice of children by the Scythians, and Thautawars of the Nilgherris ; and in these cairns the bones of children are found with the others interred in the graves, while in some they have been burned and placed in urns. May we suppose, therefore, that children, as well as men and women, were sacrificed in funeral ceremonies ?

In respect of the funeral urns or pottery, the forms of those which I have recovered here are simpler, probably from their greater antiquity, than those found on the Nilgherris, and are generally or for the most part without ornament. The material appears to be the same. I have no work to refer to by me in which I could compare the shapes of the urns and cups found here with those of Europe ; but I see that they are in some instances identical with several given in a description of the "Kodey Kulls or Pandoo Koolies," at Chataperambah, on the Beypoor river, in Malabar, by J. Babington, Esq., (*Transactions of the Literary Society of Bombay*, vol. iii. 1820 ;) and that the iron instruments—an iron tripod, a spoon lamp, spear-heads, &c. are also identical with others found here in cairns, not of precisely the same construction, but agreeing in general principles.

At the village of Kolur, of the Andôla talook, about four miles due north of Jiwărgi, there are the remains of six large cairns on an elevation near the bank of the river Bhima, which are surrounded by single and double circles of trap rocks, like those at Jiwărgi. They are in one line north and south, at the interval of a few yards from each

* Vide extract from Rollin's Ancient History at conclusion.

other, and, being of the same construction, present no particular features for remark. I was not able to have any of these opened. These are the last cairns I had found to the northwards, and though I had made repeated inquiries from the native authorities of the Gulburgah district, I have not been able to discover any Scythic remains north of the Bhima in this direction.

CHAPTER II.

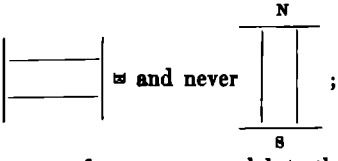
Having detailed all the remains I have as yet found in the Sorapûr district, I now pass to notices of such remains in other districts, which have been kindly supplied to me by friends who have observed them. The first are from the letters of the Revd. G. Keis, German Missionary at Bettigherri, in the Dharwar Collectorate, to whom I showed some of the Sorapûr remains, cromlechs as well as cairns, and who thus became familiar with their appearance.

PLAN XIV.—CROMLECHS, &C. NEAR KOSGI.

The town of Kosgi is situated about nine miles south of the Tungbhuddra, and eighteen miles north of Adwani, in the Bellary Collectorate. The cromlechs lie in a corner formed by three hills, joining each other about one mile south of the town. Nos. 1 and 2 are closed erections (kistvaen); No. 1 has a circular opening in the southern slab, as also has No. 2. The dimensions of the interior are in both instances 6 feet high, 5 feet long, and 4 to 4½ feet broad. Both erections stand on the solid rock, without any covering of earth upon them. No. 2 has a pavement slab, 4½ feet long and 3½ feet broad, so that an empty space of 6 inches broad remains on the eastern and northern sides, filled up with fragments of stone and rubbish. This I scarched all through, but could find nothing, except small fragments of red and black pottery, a small piece of kindled wood, and a piece of bone, apparently of the skull of an animal, and not burned. No. 3 opens to the south, is of somewhat larger dimensions, and stands also on the solid naked rock. I searched in vain for anything in it.

No. 4 is a smaller erection, more than half buried in the earth. Its dimensions within are 3 feet from north to south, 3½ feet broad from west to east, and 4 feet high. The southern slab is not pressed by the side slabs, nor by the covering slab, so that it could easily be taken out if the earth were removed. The inner space was filled up with

earth, of which the upper third, that is so much as is above the ground surrounding the erection, seems to have been filled up by ants. I could not see any remains of pottery, or indeed of anything whatever. There are a number of similar erections round No. 4. Some of them have still the covering slab on them, and others not. As a characteristic distinction of these erections it appeared to me that the side-slabs are much thinner than those of Numbers 1, 2, 3, 4, and 5 ; that two-thirds of them are buried in the ground, but they always present



the form ⊠ and never ; and that their greatest dimensions are not from one cross-slab to the other, as in Nos. 1, 2, 3, but from one side-slab to the other.

No. 5 are remains of erections similar to Nos. 1, 2, 3, tumbled to pieces. It does not appear to me that any of them ever contained anything. No. 6 are segments of single and double circular rows of stones, of which the uppermost parts appear above the ground. It seemed to me as if the different segments were not the fragments of one large circle, but of several smaller ones. The space within these circles, and around and along No. 4, and the fragments about it, is the only spot where the solid rock has a covering of earth, which in the middle may be 5 to 6 feet in thickness.

The hypothesis which suggested itself to me in consideration of the actual observation on the spot was, that Nos. 1, 2, 3, and 5, were small houses of a nomadic tribe, whilst Nos. 4 and 6 were their burying-places—No. 4, one-third above the ground, because it was not deep enough, and No. 6, in the midst of those circles of tombs similar to No. 4, all covered with earth where it was deep enough.

PLAN XV.—CROMLECHS NEAR YEMMI GUDA.

From Hămpi, (Beejanugger) I crossed the Tungbhuddra opposite Anagundi, from which place I went in the direction of Yemmi Guda (the hill of the buffaloes), and arrived that evening at Mallapur, about four miles north, or rather NNW. from Anagundi. I asked the Patel for the "dwarf houses" at or near Yemmi Guda: he told me that there was a whole village of them on the top of a high hill just midway between Mallapur and Yemmi Guda, that is about four miles north of Mallapur, and four to five miles SE. from Yemmi Guda ; and that he had heard of dwarf houses in the immediate

neighbourhood of the latter place, while the dwarf houses were known to all the neighbouring villages. So I concluded this to be the settlement of which you were told by the Kanacgiri man. Next morning I went with the Patel and some other persons, and, after a good deal of strolling about, we succeeded in finding the dwarf village, and I refer you to the sketch and description.

Near Mallapur itself, on the side of the valley, is another settlement. The remains of some twenty to thirty erections and graves are to be seen, but none of them preserved wholly. Of a third settlement, with a number of erections still standing, I heard, on the right bank of the Tungbhuddra, about five miles SW. from Anagundi. I have now not the least doubt, that if properly searched, such settlements would be found scattered here and there over the whole of the Deccan and Southern India in all the hilly parts; and equally certain it appears to me, after having seen the settlements at Kosgi and Yemmi Guda, that the large erections, open and closed, were houses, and not tombs; but that the tombs are separate from them, and differ in size and structure from the houses. I only beg you to re-examine the settlement at Rajŭn-Kolur after you have read this, in order to find out whether, on closer examination, it does not agree with my observations and hypothesis.

Altogether in this place, including those that are still standing, and those that are fallen, the remains may amount to nearly a hundred, and they lie about in the utmost irregularity between the granite rocks. The direction from north to south predominates, but there are erections in every direction, as the plan shows, the most part of which was sketched from actual observation. The circular opening in the middle of one of the slabs is irregular, and its corners in some of them are as irregularly situated as possible. Preference seems to have been given to no particular quarter of the heavens, as the plan shows, in which the dot indicates the form and direction of the opening, taken by actual observation. The dimensions of the erections differ considerably: Nos. 1, 2, and 3 were measured. Of No. 1, the side-slabs are 9 feet long, and 6 feet 5 inches high, and the cross-slab 7 feet broad by 9 feet long. No. 2 is also an open house, almost of the same size. No. 3 is a closed one 8 feet 5 inches long, 8 feet 5 inches high, and 6 feet 5 inches broad. No. 1, as well as many other erections, closed and open, has a circular wall round it $2\frac{1}{2}$ feet high, 4 feet broad, and 5 feet distant from the corners of the erection. All closed erections have a slab for the pavement or floor, and all are erected on the naked solid rock. In none of them could I find any remains, as of pottery, &c.

THE BURYING-GROUND.

On it I measured Nos. 1, 2, 3, 4, and 5. No. 1 is a triple tomb, 7 feet long within, and each space between the slabs 3 feet broad, exactly corresponding with the size of a full-grown body, with some inches left all around. No. 2 measures within 5 feet 5 inches long, and each of the spaces 2 feet broad. No. 3 is evidently the tomb of a child, 3 feet long, and 1 foot broad. No. 4 a double tomb, 6 feet 5 inches long, and 2 feet broad each. No. 5 a double tomb, 7 feet long, and 2 feet broad. Both spaces are covered by one large slab. On No. 1 are two separate slabs. I saw no circular sepulchral cairns like those in the Sorapûr country.

The whole settlement lies on the top of a granite hill about 500 to 600 feet high, and is situated on a kind of saddle between two heights. Granite blocks and large fragments lie scattered abroad over the whole of the settlement. The houses lie on a gentle slope, on the southern or south-eastern side of which a small tank is to be seen, that is a collection of water in a natural hollow of the rock. To the north of the place below the slope, on a level spot covered with sandy soil, and overgrown with grass and bushes, lies what I consider to be the burying-place.

The Yemmi Guda cromlechs are all of granite. The solid rock is of such a structure that the uppermost strata may be easily lifted up by a lever. In one instance I discovered a line of little holes made in the rock by a small chisel, just in the same way as the Waddiwars do at the present day, only that the instrument was much smaller than those now used by them. This was the only trace of instruments I could discover. It is not improbable that these tribes may have used fire for the purpose of raising the necessary granite slabs, and for the erection of them they had certainly some simple mechanical apparatus. Mr. Leonberger told me of a case in which one of his relatives in a village near Stuttgardt, in Wurtemberg, discovered a similar stone grave about ten feet below the surface on a small hill. Mr. Leonberger's description of it corresponds as nearly as possible with your description of those tombs at Jiwărgi : the skulls also seem to have been distinguished by the same peculiarities ; for the villagers talked for many years of the enormous and curiously-shaped teeth they found in that grave. Beside the skeleton of a full-grown person, there were two *smaller ones* buried in it.

I have forgotten to state two observations, viz. that on the SE. corner of this cromlech settlement the tank naturally formed in the solid granite rock has the appearance of a well, and is from six to

eight feet deep. I mention this because it is striking that all the settlements have water near to them, which seems to me in favour of the theory that the large erections above the ground had been used as habitations, and not as tombs, or depositories of urns with human ashes, for which no doubt the lower and half-buried erections were used. The second point which I forgot to state is, that in some parts of the path by which we descended from the hill through the jungle on the southern side towards Mallapur, there were rows of flat stones to be seen laid down in the water-courses, so as to form an ascending path over them up to the settlement. I have no doubt that the occupiers of the settlement laid down these stones, for no other persons could have had any interest to do so in the midst of these jungles. As there is another small settlement down in the valley on the SW. side of Mallapur, it appears that the path between the two places was much frequented, which circumstance would again favour my theory that the large erections on the solid rock were used as habitations, whilst the lower small sandy plain was used as a burying-ground, in which unmistakeable tombs are to be seen.

When I was at Guli Guda, talook Badami, I found a cairn and three cromlechs or kistvaens of the smaller size, 2½ by 3 feet, half buried in the ground. This settlement is close under a tank, and I have no doubt parts of it may have been covered by the bund. When I was at Dharwar Mr. Young, one of the Assistant Surveyors, told me he found a large settlement near the village of Giwalli, two koss east of Guli Guda. I shall not fail to visit it on my return, and to give you an account of it.—(*Extracts from the letters of the Revd. G. Keis.*)

REMARKS ON MR. KEIS' OBSERVATIONS.

As far as the Rajăn-Kolur and Hăggăritgi remains are concerned, I cannot agree with Mr. Keis' hypothesis that the erections were houses. No open cromlechs exist at Hăggăritgi; all are closed kistvaens, both at the sides and top, and so closely that it would have been impossible for anything larger than a rat or a lizard to have got inside. Those opened had been deeply let into the earth, and it required a great deal of labour to throw down one of the side-slabs, so as to expose the interior. The contents I have already described as agreeing with those noted by Captain Congreve. All the kistvaens have not the circular aperture; nor where it exists is it in any case large enough for any human being except a mere child to pass through it. None of these, therefore, by any possibility, could have been dwelling-houses of full-grown adults; for we see by the skeletons, that though

these people were not tall, yet they were thick-set and stout, and the idea of anything but the largest cromlech containing a family is not tenable.

At Rajăn-Kolur there are a few cromlechs open to the south, but by far the greater number of the erections are kistvaens closely put together, and all that I opened, whether with holes in the side, or without, contained the same urns full of charcoal, earth, burnt bones, and ashes, as at Hăggăritgi. Many of these are upon the solid rock, and others where the soil is a few inches only in depth; but in these instances earth had evidently been filled in. What the precise intention or use of the cromlechs was seems to have puzzled many learned antiquaries, and many theories have been advanced on the subject. My own impression is, that they were temples in which the sacred fire was kept burning, and where ceremonies for the dead—perhaps sacrifices—were performed. They have no appearance, beyond their construction, of dwelling-houses, and even the largest of them at Rajăn-Kolur,—nearly as large as any yet discovered in the world,—would afford very short and scanty room for a family.

The circles of stones or walls round the cromlechs mark, even more strongly than in the others, their Druidical character. Captain Congreve states that "at Ter Dryn, in Anglesea, are also relics of a circle of stones, *with the cromlech in the middle*, but all are imperfect." And other instances are given of "temples with walls of rough stone about them," not only on the Nilgherris, but in Wales, Anglesea, Dorsetshire, &c.

Of the character of the remains at Yemmi Guda I have no doubt: the only remarkable point about them is that so many should be empty. Closer examination might help, perhaps, to correct this impression as to all, and perhaps also to show that the tombs in the sandy plain below the cromlechs were those of the tribe, or portion of the tribe, which buried the dead; though, from the fact of there being tops to some cists, this may be doubted; and that the whole belong to the same tribe at different periods. I much regret that Yemmi Guda is too distant from my district to enable me to pay a visit to this remarkable place, which is evidently worth minuter examination than Mr. Keis had leisure to bestow upon it. The situation of the remains on the summit of a high hill suggests that it may have been one of the fortified camps of these tribes, and it is not improbable that traces of circumvallation or entrenchment might be discovered among the jungles, or on the tops of the hills. Yemmi Guda is situated in H. H. the Nizam's Territory, in the talook of

Kanacgiri, and would be easily accessible from Dharwar or Bellary. It is evident to me that many remains not yet known exist in the Dooab between the Krishna and the Tungbhuddra ; and if the Scythic tribes spread along the Upper Ghâts,—which I conjecture to have been the place in the first instance of their irruption,—these remains, and those which exist in the Sorapûr country, which I have traced as far as the Bhima, are evidences of the journeys and locations of the tribes to the eastwards, in the direction of the centre of the peninsula, where it will be seen they abound.

That the Bellary district has many there can be no doubt, from the subjoined list kindly supplied by Mr. Pelly, Collector of Bellary, who, at my request, collected reports from the Tehseldars of the Collectorate. I expected, as a link between the Southern Dekhan and the Nilgherris, that the Bellary district, and perhaps Mysore, would afford evidences of the residence of Scythic tribes, but I was hardly prepared to find that so many existed as are detailed in Mr. Pelly's list, which amount in all to 2,129. All these lie to the south and south-east of Bellary, and from what Mr. Keis has stated, I am of opinion that others may be found to the NW., and perhaps west also of Bellary. The remains appear to consist principally of cromlechs, kistvaens, and open cists ; and it is probable, in regard to the latter, as remarked of the remains at Dhavah-doola-conda, that the top-slabs may have been removed by villagers for their houses. Those at Mudhegăllar, which are the most numerous, are evidently kistvaens, or closed cromlechs, having four side-slabs, and one as a cover, one of the sides having an aperture in the centre. None, or but few, of these erections appear to have been examined by the Tehseldars, which is to be regretted, though there can be no doubt, agreeing in form and construction as they do with those in Sorapûr and elsewhere, that funeral urns would have been found in them. Of the whole, 73 are returned as having walls round them, probably as some at Yemmi Guda, but there is no mention of cairns existing separately from the erections, nor are any measurements recorded. In regard to the whole, there is the same tradition as exists here, in Great Britain, France, &c., that the erections were constructed by dwarfs, and the same name, "Mohorie" or "Mora," agrees with that of these districts. The term "Gujari" is new to me, but appears to have the same local signification as the other.

I was in hopes that some considerable remains might have been discovered in the Dharwar and Belgaum Collectorates ; but with the exception of those noted by Mr. Keis at Giwalli, in the Badami talook

of Dharwar, I have heard of no others. It is not improbable, however, that direct communications may have been made to Government on the subject by the Collectors, in pursuance of the circular issued.

REMAINS IN THE VICINITY OF HYDERABAD (DEKHAN).

From what I had heard from the late Dr. Walker, whose curiosity and interest had been excited by what he saw of the Druidical remains of this district, I supposed that several groups of cairns were to be met with in the vicinity of Hyderabad ; but it was not until I had engaged the co-operation of two zealous friends there that I was able to ascertain any particulars of them. They prove to be entirely cairns, and in far larger numbers than I had any conception of, or than exist in the Sorapûr country. I have not been able to obtain plans or surveys of the localities as I wished, nor even to have an account of the numbers of the cairns in each, but am enabled by my friends Dr. Bell and Captain Doria, to give some interesting particulars of cairns that have been opened by them, and of their contents.

1*st*.—The cantonment of Secunderabad is six miles north of the city of Hyderabad. At the western extremity of it, beyond the horse artillery lines, and those of a regiment of native infantry which adjoin them, there is a large field of cairns on the slope of a rocky hill, leading down to the Hassain Sagor Tank. These are described to be of single and double circles of stones ; the cairns to be placed irregularly as to position—that is, not in lines or rows ; and of all sizes, from 12 to 24 feet in diameter ; the area enclosed in the circle-stones being heaped up with small stones and earth, forming a small tumulus. There are no cromlechs or kistvaens. I am not aware that any of these have been opened ; at least I have no particulars of any.

2*nd*.—Near the hill or rock of Moul Ali, about four or five miles NE. of Secunderabad, and in an open elevated plain, part of which forms the Hyderabad race-course, there is another large field of cairns, containing, I understand, some hundreds similar to those noted above. Some of these have been opened, and I subjoin an account of two received from Dr. Bell :—

" We have again been at what ——— calls the sinful occupation of digging up men's bones, and with some success ; as in one or two respects the cairns are different from those at Narkailpalli, although not materially so. Hampton and I opened two at Moul Ali, where they are in plenty. The same arrangement of the parallelogram exists, and the same directions are taken as at Narkailpalli—the long direction of the graves (N. and S.) ; and the peculiarity consists in the

tops not being covered by granite slabs. In one it was partially so, but in both, the whole interior was filled up with loose stones and earth, evidently not carelessly thrown in, but placed with care. This made it tedious work for the coolies, and destructive work to the pottery, for scarcely any was got out entire. However, what was recovered does not differ in shape from the drawing of that which you sent me. The *bones are all mixed*, so that I could trace no position likely for a body to be placed in."* In one cairn the articles in the accompanying sketch (No. 9) were found. The bell is very perfect, and is copper, with an iron tongue, which is still *in situ*, and moveable. The other things I take to be links of a chain. There are several. The size of the interior of the cairn was nearly the same, 6 feet long, 6 feet 6 inches deep, and 3 feet broad. Both the cairns here and at Narkailpalli are near trap (greenstone ?) dykes, and at both places the circles are formed with blocks of granite, and the central pile, of black stones from the dyke.

3rd.—At a small village about midway between Moul Ali and the cantonment of Bolarum there is another group of cairns, similar in all respects to the others, but not so numerous: of these, one or two have been opened, with similar results to those of Moul Ali.

4th.—The discovery of these groups led to investigations in other quarters, and Captain Doria, who is employed in the construction and repair of the high-roads to Masulipatam and Madras, found that the high-road at Narkailpalli and Haitipamla passed through large fields of them. Hearing of these, Dr. Bell, in whose division of statistical investigation these villages are situated, visited the spot; and I copy his letter to me on the subject:—

"I have just returned from Narkailpalli, and certainly there are cairns to be seen in abundance: a large patch to the south of the travellers' bungalow, another to the west, and a third to the south of the village, the shape of each being a parallelogram; but I did not observe that the circles were arranged in diagonal lines or straight ones, and there were no upright stones to mark the regularity of the position, as you described to me. The circles described by the stones were so variable in diameter as to give me the idea that no regular arrangement had been attempted, but the parallelograms extended from east to west in all. The generality of these cairns have immense quantities of small stones thrown upon them; some a few only, and others none; and it was one of the latter that I opened. After clearing away the

* This agrees with the confusion observable in the Jiwărgi and Andôla cairns.

earth to the depth of 2 feet 6 inches, we came upon the covering slabs, which were three in number: these were raised, and the size of the enclosing slabs measured. The side ones were 5 feet 10 inches by 5 feet 4 inches, the end ones 2 feet 4 inches by 5 feet 4 inches, the one at the bottom 5 feet 10 inches by 2 feet 4 inches. The top was closed by three pieces. On clearing away the fallen earth, we came upon a row of pots at both ends, and in the centre a skeleton, lying in such a position as to leave no doubt but that the corpse had been placed upon its belly. A piece of iron was found among the bones of the left hand. In one of the urns were portions of the bones of a child calcined; the rest were empty, or partially filled with earth.

"This no doubt was a small cairn; for two others had been opened by natives, and the slabs in them (which they were unable to remove) were double the size I have mentioned, and so also were the diameters of the superficial circles. This was only 16 feet from east to west, and 18 from north to south. In all three the graves extended north and south, and my skeleton had its head to the north."

I enclose a sketch of two of the vessels. (Vide Nos. 4 and 5 of Sketch No. 10.) Dr. Bell subsequently informed me that he had met with patches of cairns in the Elgundal Sircar, near the Jaghir village of Telghir, in latitude 18° 35′, long. 77° 16′, six miles from the large town of Tarapilli: these differ in no respect from those he had seen before, and he regrets he had not time to examine them.

Captain Doria, who was encamped on the same spot, made several excavations at Narkailpalli, and I subjoin his letter on the subject, dated 12th April 1852, Camp at Kătăngur:—

"I received a few days ago your letter relative to the cairns, about which I shall be glad to give you any and every information in my power. I opened ten or twelve of them at Narkailpalli, and other places, but they were so tremendous in size and depth that it is a work of some considerable labour.

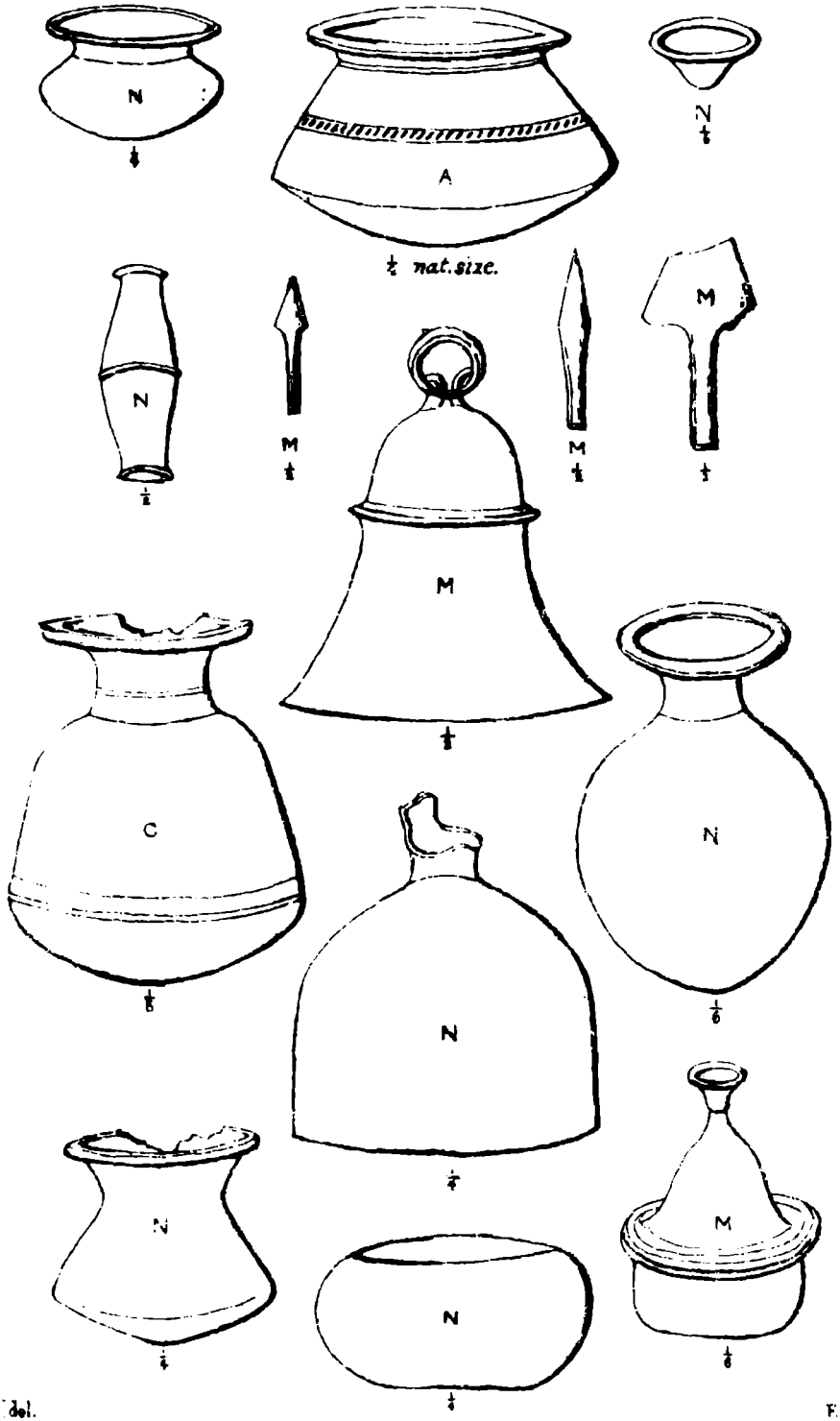
"They present themselves in this part of the country in large masses or numbers, never in any regular figure, but generally along and around the base of some stony slope or hill, though they do occur on the open plain and banks of the river. Whether the former positions have been assumed from the facility of procuring the stones which fill up the upper part of the mound which caps them, and of the large circles of stones which encircle them, I know not; but it is an observation I have made, that they are always in a stony vicinity. They are innumerable about here, amounting to thousands: you can hardly move two or three miles in any direction, without meeting some of them. From

the Musy river, on both banks, in a SE. direction by Anapilly hill and Narkailpalli, where they surround the hill, (800 feet high on the north side,) and extend a little to the east; there are none on the west, and only a few on the south, but some hundreds on the north, some very large. At Haitipamla, and down to Davarconda, they abound. The high road runs through a regular field of them at Haitipamla; but, with the exception of the stony vicinity, I do not see any peculiarity in their construction or position in regard to one another.

"In size there is a difference, some being of gigantic dimensions, and composed of blocks of stone, very difficult, nay impossible, to remove without mechanical assistance, both as to the size of the stones which compose the outer rings of the tumuli, and also the large slabs which form the inner cell or tomb wherein the body or bones are placed. The diameter of some of the large tumuli is from thirty to forty feet; others again are much smaller, and on them a much less amount of labour has been bestowed. The depth of some of the large ones is very considerable. You first dig through a mound of from three to five feet deep, out-cropping, and bounded by these immense circle-stones, and composed within of smaller stones and earth, which brings you down to the level of the ground about. When you dig down again some eight or ten feet, you reach the regular tomb, which is composed of eight immense slabs of gneiss or granite, forming an enclosure of eight to nine feet long and four to five feet broad, giving a total depth from the top of the mound to the bottom of sixteen to twenty feet. In digging through the mass of earth I have invariably found earthen jars of various shapes, some with covers, some open like saucers, and others much like the earthren chatties now used by natives, except that some are beautifully glazed, and something in shape like these figures, placed at the south corners or feet of the tombs, and about half away between the slab and the top of the ground. These jars sometimes

contain calcined bones, but others are merely full of earth, as if they had been placed there empty, or filled with something that has decayed, (I conjecture rice or grain,) and given place to native earth.

"In the cell itself, which is always filled with white-ants' nests, I have always found more jars similar to the first, and filled, like them, with burnt bones and earth. I have generally found the skeleton entire under white-ant earth, but the bones so decomposed that they have fallen to pieces almost on the slightest touch. The cells are



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A. ANDOLA C. CHIKANHALLI M. MOULA ALEE N. NAIKARPALLI.

always due north and south, and the skeleton placed in the same direction. At the head, or north end, I have generally found a piece of iron, which might have been a knife or a sword, but almost rusted away, and also arrow-heads of the double-barb shape.

In one I found a mass of iron, which must, when new, have weighed several pounds. I also found round the neck of a skeleton a charm or ornament, composed of enamel, and bored through, for suspension I imagine. In some of the cells an upright stone slab, some two feet high, divides the cell into two parts, always longitudinally, that is north and south. In one cell I found a bell of copper, much corroded, about an eighth of an inch thick, and six inches diameter, which I shall send you with some of the pottery, and shall be glad to open more cairns for you if you wish it.

" I do not think myself that these remains are so ancient as people imagine, but I incline to the opinion that they belong to a wandering race of people, Nomades, whose only habitations, except their tents or huts, were those built for the dead; for people who could build so well and so substantially for the dead would surely have left something in the way of temples or other buildings for the living cotemporary with the tombs, if they had existed as a settled people. The bones found in the pots lead me to suppose, either that only one sex was burned, and the other buried, or that each tomb was not the resting place of one individual, but that each belonged to a family; and that when a second body was buried, the bones of the first were taken up, placed in a jar, and re-buried. In the tombs with a division two bodies were in each, one on either side. I am not enough of an anatomist, nor are the bones so strong as to bear the handling, necessary to determine the sex of the owner." In a subsequent letter he writes:—" I have not been idle about the cairns: we have found several other masses or groups of them; but as yet the ground is so fearfully hard that I have not opened them. There is a village a few coss from this, Nacracul, where the people tell me there is a coss of land covered with them." Again, " Camp near Davarconda":—" The cairns are innumerable about here, and of immense size; they are composed inside of one enormous slab below, two sides, two ends, and one or two slabs on the top, built in this fashion—

with a division about two feet high in the centre, lengthways. The depth of the cairns about ten feet, all north and south, with the skeleton laid north and south, *on its face*. No one

seems to care for the cairns, or to open them. The people say they were built by the Rajuses."

Captain Doria again wrote, 13th August, forwarding me the two copper bells, one from Moul Ali, the other from Narkailpalli, and the copper cylinders, arrow and spear-heads, pottery, &c., which I have drawn from actual measurement (sketches numbered and attached): all these articles will be transmitted to the Society on the first opportunity. Captain D. mentions that he has discovered another new place, where there must be at least two thousand cairns, and is about to open several of them for me. Should I hear anything of interest from him, it shall be transmitted hereafter as a postscript to this communication.

CAIRNS NEAR GURMATKAL.

As I was proceeding by dâk last year to Hyderabad, I observed what appeared to me a large field of cairns about two miles west of this town; the circle-stones were large blocks of chert. I had not time to examine them closely, and, unfortunately, having been detained, I passed the same place at night on my return, but I have marked the locality for future investigation, as lying nearly midway between Sorapûr and Hyderadad, on a high and fertile plateau, which breaks into deep grassy and woody ravines to the south, while the country is amply supplied with water; it would in all probability have been a favourite resort of the nomadic tribes, and would serve to prove that they had marched off to the north-east from Sorapûr instead of north or north-west to the Central Dekhan.

It will be evident to the Society that the whole of the Hyderabad cairns are of the same character as those in the Sorapûr district, on the Nilgherris, and in Europe. The same circles of stones, some gigantic; the same interior cists, differing only in the quality and size of the slabs used; the same vessels interred, having in them calcined bones, ashes, and charcoal; the skeletons in the cists; the calcined bones of children in urns; the iron implements and weapons, beads, &c.; the same laborious and patient construction of the cists and graves; above all, the discovery of two *bells*, leave no doubt whatever in my mind of the identity of the whole as Scytho-Celtic or Druidic monuments, and completes the only link wanting in the chain of identity. The discovery of a bell has been wanting in the Sorapûr cairns as yet opened, but it is evidently a matter of entire chance where one may be found. Captain Congreve mentions that he opened forty-six cairns in the Nilgherris, but only found two bells; Captain Doria ten or twelve, and only one; Dr. Bell three, in one of which one was found. It is probable,

perhaps, that these articles were sacred in the families of chiefs or priests, as they are among the Thautawars of the Nilgherris at the present day, and that the cairns in which they are found were those of chiefs or priests. I subjoin a few extracts from Captain Congreve's article, not only to prove the identity of these bells with those in cairns at the Nilgherris, but to substantiate the Celtic-Scythian character of these and other articles.

Mr. Hough, in his Letters on the Nilgherris, says :—" A few of these barrows have been opened; in one were found *iron heads of spears*, about four inches long, very well finished, and in a perfect state, but they began to corrode soon after exposure to the air. The same barrow contained *one bell* entire, and the broken fragments of another.

" Hearne, who is justly ranked with Leland, Ashmole, and Anthony-a-Wood, as an eminent antiquary, tells us that on one of the stone monuments at Stanten being opened, it was found to contain a spear, and a large *bell*, with a screw at the end of it.

" Douglas, in his *Nenia Brittanica*, recording the opening of the barrows in Greenwich Park, states that among other articles found in them were *spear-heads*, *iron knives*, and some cloth.

" The resemblance thus shown to subsist between the Thautawar and Scythian barrows and their contents is too striking to be the result of accident: the fact of so unusual an article of grave furniture as a *bell* being found in both cases is very singular.

" In opening a cairn six miles to the north of Conoor, *two bells* were found among a great number of other antiquities.

" I said lately that bells were frequently found in digging open the cairns; indeed I discovered two in a cairn at Conoor. With reference to this fact, and in further proof of the cairns having belonged to the ancestors of the Thautawars, I quote the subjoined passage from Harkness' description of a singular aborginal race, inhabiting the summits of the Nilgherri Hills :—

" ' A bell, which is generally deposited in some niche within the temple, is the only object to which they pay any reverence. To this they pour out libations of milk, but merely as to a sacred implement. They do not sacrifice or offer incense, or make any oblations to it, significant of its having any latent or mystic properties.

" ' To each Teriri (priest) is attached a herd of milch buffaloes, part of which are sacred, and from which the milk is never drawn, the whole being allowed to go to the calves. One among these sacred animals is the chief. Should it die, its calf, if a female one, succeeds to its
2 B office. Should it have no female calf, the bell before mentioned is

attached to the neck of one of the other sacred ones, and being allowed to remain so during that day, a legal succession is considered to be effected.

" 'In the morning the Pol-Aul milks one portion of the herd, carries the milk into the temple, leaves the bell with a small portion of it, and of such portion of it as he may not require he makes ghee.' —*Madras Journal*, No. xxxii. pp. 95, 96.

" The bell was an object of superstitious regard among the Celto-Scythians, who buried it in their graves. Speade, in his *Chronicles*, represents an ancient Briton with a lance in his hand, to the end of which was fastened a bell."

The foregoing will, perhaps, be deemed sufficient proof in regard to the Celtic-Scythian character of the bell, as found in the cairns in the Hyderabad country. In other respects, of pottery, burial of the dead, &c., there is, as I have already stated, no difference worthy of notice. The colour of the pottery also agrees with those of the Nilgherris, and these again with those of England. Captain Congreve remarks on this subject :—" It is very remarkable that the resemblance between the urns found in the English barrows and the urns of the Nilgherris extends even to the material. In some of the Dorsetshire barrows the urns are made of a highly finished and glazed red pottery. Many of the Nilgherri urns have been admired for this rich red glazing, particularly one discovered by Mr. Moegling. The zig-zag or arrow-headed moulding, which is the usual ornament of the Celtic urns, is conspicuous on all found on the Nilgherris. I have not as yet found any entire urns with the zig-zag moulding, but I have seen it in several instances on broken pieces of pottery, red and black, found in the cairns."

Need I trace the analogies further ? I think not ; as in what I have detailed there must be ample proof, to the most sceptical, of the various points of resemblance and identification on all the subjects I have noticed : that the Celtic-Scythian tribes settled more numerously in the direction of Hyderabad, or SE. from it, about Nalgundah and Davarconda, than they did in this, or even the Bellary district, there can be no doubt. Those tracts, and for some distance along the north and south banks of the Krishna river, are, even still, principally low grassy jungle and forest, well supplied with water. They are the favourite resorts of the Brinjaris, who carry grain and salt for the capital, and were no doubt well fitted to the pastoral Scythians. Only a very small portion of that district has been examined by Captain Doria, and it is impossible to say in what numbers the cairns may not exist in other localities of the centre of the peninsula than those he has mentioned.

The late Captain Newbold, it is known, had discovered great numbers of ancient remains near Chittoor.

The remains of the Celtic-Scythians as yet discovered in the Dekhan and Carnatic may be classed as follows :—

1. Cromlechs without circular enclosures.
2. Ditto with ditto.
3. Kistvaens with and without circular apertures in one monolithe, containing urns filled with earth, bones, ashes, and charcoal.
4. Open cists.
5. Barrows containing one or more cairns, as at Shahpur.
6. Cairns with single, double, and treble circles of stones.
7. Cairns with cists of stone below, containing skeletons, remnants of weapons, bells, urns, cups, and other pottery. Sorapûr, Moul Ali, Narkailpalli, Davarconda, &c.
8. Cairns containing no cists, but urns filled with ashes, bones, &c., as at Chikănhălli.
9. Temple, or large altar rocks, surrounded by a double ring of large stones and entrance, as at and near Shahpur.
10. Diagonal lines of stones or rocks, as at Vaibăthălli, Shahpur, Ijére, &c.
11. Square platforms, enclosing cairns, as at Măndiwalli.
12. The large tumulus and rocks at Shahpur.

The three last have no representatives among the authorities quoted by Captain Congreve, nor among his own discoveries ; but who can doubt that they belonged to the same people ? The links that are still wanting are—

1. Remains of circular forts, with trenches round them, as on the Nilgherris, Old Sarum, near Stonehenge, and Cærleb in Anglesea.
2. Barrows, with trenches round them.
3. Circular basins in beds of rivers.
4. Tolmen, or holes bored in rocks.

Tors and loggan-stones exist in thousands all over the rocky granite hills of the Hyderabad country and Sorapûr ; and in many places the granite rocks are piled on each other in most fantastic shapes, with separate tors crowning them, and appearing as if a push would throw them over. Many of these may have been sacred.

On all other points, I must consider the identity to be complete, and I am assured that further investigation, wherever these ancient monuments may be found, will only serve the more to confirm what I have already detailed.

I am not sufficiently experienced in the antiquity of this subject to presume to offer more than a few very general observations upon it; but I cannot believe that one of such general antiquarian and ethnological interest can fail to excite attention and investigation, in proportion as the actual monuments of Celto-Scythic tribes are found to exist in India, and, being examined, are found to agree in all respects with those of Europe. I cannot, with the ample proofs before me, admit the opinion that such resemblances are merely accidental, as is suggested by the Revd. Dr. Schmid in a notice of the subject in connection with the papers of Captain Congreve and the Revd. W. Taylor. In no country that I am aware of are the rites of burial of the ancient inhabitants so marked and peculiar in character, and so entirely agreeing in detail as those of the Celto-Scythic tribes in the east and west; and if the aborigines of India had been all of the same character and religion at the period of these remains, it is only fair to suppose that these cairns and cromlechs would not be found confined to particular localities, but would be universal all over the continent; and their construction, defying alike the hand of time and the changes of faith, would have preserved them wherever they had existed. Further, that had this particular and very peculiar mode of sepulture been universal among the ancient tribes of the world, they would be found to exceed any that have been as yet discovered, whether in Europe, or in Asia and India, and would also be more generally diffused than they are found to be. Many parts of Africa are well known, and have been carefully observed by antiquarians, ancient and modern; yet I am not aware that any traces of Celto-Scythic occupation, as existing in these monuments, has ever been discovered. Though Dr. Carter surmises them to exist in Southern Arabia, which is far from improbable, America, South and North, has its ancient graves and tumuli of a character peculiarly their own. In Europe they are by no means universal, being confined to particular localities, where from authentic history it is indubitable that Celts of the Druidic faith overran the country, and finally settled. In India, it is true, we have no such confirmation by history, and the migrations of the tribes from Scythia cannot be so distinctly traced south-eastwards by these memorials as they can be to the west. The Romans and Greeks have preserved historical records of the migrations of savage pastoral and warlike tribes from Central Asia from time to time, and through many ages, to the west, where they gradually settled, but there are none such in India; and reverting to those dark ages when India, before the Buddhists and their successors the Hindus, was a country without civilization

of any kind, possibly inhabited by a Hameatic race, we may presume, from the memorials we find to exist corresponding with these general migrations of the Celtic-Scythians, east and west, that other hordes of the same people at a far earlier period of time may have directed their course southwards, and gradually settled in those fertile spots in India where we now find their remains. Mere distance appears to be no objection to this hypothesis ; nor, in the nature of the country, nor its climate from Central Asia to the Deccan and Southern India, is there any physical obstruction to the gradual migration of hordes of pastoral people, alike from their food and habits accustomed to rapid travel and conquest. After settlements had been made, it is not, perhaps, probable that the original stock of invaders was long reinforced from their native country. Other outlets for emigration were found east or west, and these were followed with greater perseverance, and up to a later period of time, on account of the more temperate and bracing climate to which they led, than those to warmer and more relaxing regions.

By what routes these tribes invaded India I will not presume to assert ; but it is not improbable, I think, if public attention is continued to the subject, and the Provinces of Scinde, Lahore, &c., or those which, from geographical position, afford most presumption of having been the routes of migration, are duly explored, that traces may be found of the same memorials as exist in the Dekhan and Southern India, which would amount to proof, or strong presumption, of the lines of march. In the act of migration, the graves and stone erections would necessarily be more incomplete than those constructed by a settled people ; but it is not, perhaps, improbable, that evidences of settlements would be found.

Assuming, then, from the ancient monuments in existence in the districts I have already enumerated from my own observation, and from those in more Southern India, on the Malabar Coast, (the Pandoo Coolies) and especially on the Nilgherris, (all agreeing generally and particularly in construction and contents, not only with each other but with those of Europe with which we are best acquainted,) that Celto-Scythic tribes did inhabit these countries,—we have fortunately, in corroboration, the most interesting proof, perhaps, of all, that they were such, in the roots of their ancient language being traceable in Tamul, and from it to Canarese, Teloogoo, and Malyalum. Dr. Schmid's knowledge of the present dialect of the Todawars or Thautawars enables him to state that this, with the more modern languages just mentioned, " are links of a closely connected and unbroken

2 B * chain of dialects of one original language ; and that the Todawar

dialect is by far more closely connected with the Tamul than the Canarese." He, in fact, assumes it to be more ancient than the Tamul, which in its turn is more ancient than the others. Captain Congreve gives some striking resemblances of words in use among the Todawars with Celtic, Gothic, and ancient Tamul; but the most striking and interesting fact I have met with on this subject is that given by Dr. Schmid, who states that Dr. Rückert, Professor of Oriental Languages in the University of Berlin, had discovered, and independently from his own studies and investigations, that the Tamul language has a remarkable analogy with Tartar dialects. Dr. Schmid is therefore confirmed in his previous supposition and hypothesis, "that by comparing the genius of the Tamul language with that of other tongues, the race or tribe which afterwards split into Tamulians, Malialis, Canarese, and Telingas, must be a Caucasian or Himalayan race, and must have immigrated into the plains of India very early." Nor, in connection with this, is it the less remarkable, that the memorials which exist should *only be found* in the districts in which one or other of these dialects of Tamul, or Tamul itself, at present exist. That of Sorapûr is Canarese, of the Hyderabad Country Teloogoo, of Mysore and Bellary Canarese, of the Malabar Coast Malialum, while pure Tamul exists in Arcot, &c., where these remains are found. I have no doubt, therefore, that under the encouragement for inquiry and identification which presents itself in all forms, these eminent philologists and others will continue their investigations on the subject, which cannot fail to prove of the highest interest, and which, even beyond the fact of actual remains, will establish the migrations and settlements of Celto-Scythic tribes by the roots of their ancient language—the highest proof of all. In the Revd. W. Taylor's paper (No. xxxiii. *Madras Journal of Literature and Science*) I find the following speculations, which have reference to the above, and may be quoted in illustration :—

"When the Pauranical accounts of the Hindus close, the ascendancy of barbarous races is mentioned. Sir William Jones gives the names Abhira, Gardabin, Cauca, Yavana, Turashcara, Bhurunda, Maula. Wilford gives Abhiras, Sacas, Tushcaras, Yavanas, Maurundas, Maunas, and Gardhabinas; and Southern Tamil MSS. as stated by me in *Or. Hist.* MSS. vol. i. p. 247, give Abiral, Gardhabiyal, Buva, Phigal, Yavunal, Maruntiral, and Mavunal. Now of those names the Abhiras are probably Affghans, the *Sacas* are Scythians, *i.e.* Siberians; the Tushcaras, Parthians or Turcomans, and the Marundas or Maunas, or Mavunal, most probably Huns. It is now some eleven years ago since I read a little Tamil book prepared by the Revd. B. Schmid for

a seminary, and I found him stating from German authorities that the Huns had ravaged India as well as other countries. I have very recently conversed with Dr. Schmid on the subject; and I believe that there are many German works that may throw light on the emigration of people from east to west. Wilford considers the Marundas or Maunas to be Huns. The Tamul has no aspirate, and Mavunal may be (without the Sandhi) Mă-Unal, the great Hun people. The Abhiras are sometimes considered as equivalent to Ar-viral, or six-fingered people; and tribes so distinguished are said to have been known. A wide field enough is certainly opened; but if the Celtæ were known in Lesser Asia, by the names of Titans and Sacks, and as the Cymri in Wales, that alone is almost sufficient to throw a light upon the existence of cromlechs in the Carnatic. For the Sacks were doubtless a branch of the Sacæ or Scythians (not descended from Gomer, but closely related); then it may follow that the Danes, Cymri and Scythians had customs in common—the use of the cromlech (I will add cairn also) being one of them; and that the Sacæ or Scythians penetrated through the length and breadth of India seems more than probable."

Of the existence of barbarous tribes in India before the establishment of Hindu dominion, there is ample proof, which I need not enter into. We see that under the irruption of Bhuddistic and Hindu tribes, that the aborigines of India, for so these Celtic tribes must have been in relation to them, were gradually absorbed; that their language was changed, and their mode of life; that village communities were established; towns, cave and other temples gradually completed; and civilization, and the use of written language, and with it theology and science, gradually introduced. It must needs have been in the outset that these civilizing influences, carried forward by more powerful and more warlike tribes than the Scythians or their rude descendants, who probably encountered them, soon obliterated in Southern India all traces of the ancient Druidic faith, and that the people who had held it either mingled with the conquerors, or fled into impenetrable jungles, or mountains inaccessible to them. Such a remnant we may well presume the Todawars to be. Their almost European colour, and Caucasian features; their pastoral lives and social customs, food, mode of burial, and sacrifice; their great antiquity, as allowed by the Buddagars, and traceable beyond the Pandawar dynasties—the memorials of whose victories over them are found upon the Druidic cromlechs; the great number of cromlechs, kistvaens, cairns, barrows, circular forts, &c. &c., and their contents, agreeing with those of the plains—probably the most ancient; their even present freedom from

idolatry, while surrounded for ages by Hindus ; their reverence for the sun and fire; even their mode of dress, all corresponding with Celtic customs and usages ; above all their language, admit, I think, of no doubt that they are the only true remnant in India of the most ancient of the Scythian tribes, and that they were driven to the Nilgherris from the plains, where I believe these memorials to be more ancient than those on the Nilgherris, and more purely Scytho-Druidic. Captain Congreve classes the remains on the Nilgherris into three kinds. The oldest are the simplest. In the others are found traces (by figures, &c.) of Bhuddistic or Jain corruption, which occurred probably when the Jains had possession of the hills, and from which the Todawars are again become free. The height of the mountains; the coldness of the climate ; the deep belt of almost impenetrable jungle which surrounded them on all sides, and its extreme insalubrity—all combined to preserve them from any serious molestation by the Jain or Hindu kings; and the salubrity of the climate above, suited to their originally hardy constitutions, has preserved them hitherto in vigour, though reduced to a comparatively small remnant.

I will not attempt to offer an opinion on the antiquity of these remains. Druidism, or Druidic-Scythism, one of the most ancient religious beliefs of the world, is here evident ; and while we find that all comparatively modern irruptions of Central Asiatic barbarians into Europe, the Huns, the Getæ or Goths, the Alani, &c. were idolaters, we are carried back insensibly beyond them to the ages of a simple faith which was held by their progenitors, and followed in those parts of Asia and Europe in which the emigrant hordes gradually settled, where their memorials are found to exist. The identity of these remains, however widely separated from each other, I can see no reasonable ground to doubt under the evidences before me, and trust that the Society may be enabled to obtain such further information of Scythic monuments, and their contents, as may lead to a more complete understanding of the districts inhabited by the tribes. My impression, however, is, that they will be found principally in, if not entirely confined to, the central, southern, and western portions of the peninsula—in short, to those districts in which the traces of their ancient language are most apparent.

" But what the same historian, Herodotus, liv. c. 71, 72, relates concerning the ceremonies observed at the funerals of their kings is still more extraordinary. I shall only mention such of those ceremonies as may serve to give us an idea of the cruel barbarity of this people. When their king died, they embalmed his body, and wrapped it up in

wax : this done, they put it into an open chariot, and carried it from city to city, exposing it to the view of all the people under his dominion. When this circuit was finished, they laid the body down in the place appointed for the burial of it ; and there they made a large grave, in which they interred the king, and *with him one of his wives*, his chief cup-bearer, his great chamberlain, his master of the horse, his chancellor, his secretary of state, who were all put to death for the purpose. To these they added several horses, *a great number of drinking vessels*, and a certain part of all the furniture belonging to their deceased monarch, after which they filled up the grave, and covered it with earth."—*Rollin's Ancient History*, vol. ii. p. 467.

Extracts from Mr. J. BABINGTON'S "*Description of the Pandoo Coolies in Malabar.*" (*Trans. Lit. Soc. Bombay*, vol. iii. p. 324.)

"Like the Pandoo Coolies on the eastern side of the Ghauts, the Kodey Kulls, Topie Kulls, or Pandoo Koolies, are generally to be found on the tops of eminences, or on the sloping sides of such hills in Malabar as are not wooded. They seem to vary in their shape according to the nature of the soil or rock on which they are constructed." The Kodey Kull consists of a stone like a native umbrella (from which it takes its name) placed over an excavation, and the Topie Kull an erection shaped like a mushroom : in the former, urns, human bones, arms, iron instruments of various shapes, and sometimes beads of different shapes, colors, and materials, were found, but in the latter nothing. "There are many places in Malabar where the Kodey Kulls are found ; but in no situation do they exist in greater numbers and preservation than on a hill named Chataperambah, which is excavated in every direction with caves of this description. It is singular that the Malayalum or Malabar name of this place should give a complete description of it ; being literally *the field* (compound, &c.) *of death*, Chatum peramba. Whether this coincidence is accidental, or the name was given to it originally, and handed down to the present race, I know not ; but I am inclined to be of the latter opinion, as there are several other places in the district with the same name, and I understand also of the same description with this spot, which is situated on a hill rising abruptly from the southern bank of the Beypoor river, and about five miles to the eastward of the village of that name." "It is almost unnecessary to say that there is no record of these antiquities, of the period of their construction, or the use for which they were originally intended."

Statement showing the particulars of Dwellings of Human Beings

(Communicated by C.

No.	Names of Talooks.	Names of Villages.	Distance and direction from Bellary.		No. of Dwellings.	Particulars of			
			Direction.	Distance, Miles.		Having a slab of stone on each of three sides as walls, and one above as roof, leaving one side open.	Having a slab of stone on each of four sides as walls, and one at top as roof, one of the side-slabs having an aperture in the centre.	Having a slab of stone on each of four sides as walls, and one at top as roof.	Compounds or enclosures built of stones enclosing dwellings of the above three descriptions.
1	Koodilghee	Halsagarum	S.	45	200	..	..	..	..
2	Hoovinhudgully	Rajahvalum	S.	56	33	..	..	..	31
3	Raidroog.....	Mullapoorum....	S.	30	485	..	3	..	18
4	,, ...	Addagoopah	S.	30	525	..	..	..	17
5	,, ...	Gollahully	S.	30	200	..	..	..	6
6	Kodecondah	Kondapoorum...	SE.	..	1	..	..	..	1
7	,, ...	Poolair.....	SE.	..	1	..	..	..	..
8	Dhurumaveram.	Moodhegulloor..	SE.	..	580	..	580	..	..
9	,,	Dhavadhoola-condah.	SE.	..	104	104	..	..	..
		Total.....			2,129	104	583	..	73

N. B.—Four of the Sketches and the figures of the Bells, Pottery, lithographed, the rest, with the Plans, are unavoidably postponed for a

of dimunitive stature, situated in the Bellary District.

PELLY, Esq., Madras C. S.)

Dwellings.			Extracts of Urzees of Tehseldars on the subject.
Having a slab of stone on each of four sides as walls, without any at top.	Having a slab of stone on each of three sides as walls, without any on the fourth side or top.	Having a slab of stone on each of four sides as walls, without any at top, one of the sides having an aperture.	
200	..	..	Tradition says that former Governments caused dwellings of the descriptions alluded to to be erected for a species of human beings called Mohories, whose dwarfish stature is said not to have exceeded a span when standing, and a fist high when in a sitting posture, who were endowed with strength sufficient to roll off large stones with the touch of their thumbs. The dwellings in question contain nothing.
..	2	..	It is said that these dwellings belonged to a sect of human beings called Mohories. It is not known when and by whom they were erected for the Mohories, nor is any description given of them.
48	132	284	It is said that human beings of a diminutive size, called Mohories, occupied these dwellings.
51	243	214	It is said that these dwellings belonged to Gujaris, by whom they were anciently inhabited.
85	81	28	It is said that these dwellings belonged to Gujaris, and that they were anciently occupied by that class of creatures.
..	..	..	It is said to be a pagoda of the Pandwahs. On being dug up, a smooth long stone was found therein.
..	..	1	It is said to be a pagoda of the Pandwahs. On being dug up, some iron nails and plates were found therein.
..	..	..	It is said that human beings, dwarfs, called Gujaris, resided in these dwellings; that they were erected with no other material but flags of stone, from fear of showers of fire, and that the beings were under a yard in stature. One or two of these buildings were dug up, but nothing was found. The dwellings situated near Dhavadhoolacondah are without the flags that were placed on the top as roofs; they were carried away by the merchants of the village for their houses. It appears that a being of the description above given from Podhatoor visited Cullandroog a short time ago.
..	..	..	
			[No measurements of any of these remains have been forwarded.—M. T.]
384	458	527	

&c. which accompanied Captain Meadows Taylor's paper, have been future opportunity.—*Secretary.*

ART. V.—*On the Form and Structure of the Shell of Operculina Arabica.* With a Plate. By H. J. CARTER, Esq., Assistant Surgeon, Bombay Establishment.

Presented May 1852.

THE interest which attaches to the forms and structure of Foraminifera is naturally very great, for no one can have seen their beautiful little shells, and the extensive tracts in the Nummulitic series, which are almost entirely composed of their remains, without wishing to know something of the animals by which they were constructed.

Fortunately many are now living to help us out in this respect, and although for the most part very small, yet here and there are found sufficiently large, as will hereafter be seen, to afford us almost all the information we could expect to obtain, were the fossil species living, even in their largest forms.

In the month of June 1847, I communicated a paper to the Society, containing among other observations, a summary up to that time of all that was known of the structure of Foraminifera ; and by way of introduction, as well as for the purpose of rendering this paper more complete and more useful, I will here insert the latter, adding what has been done since, and then a description of the form and structure of the shell of *Operculina Arabica*, which will, I think, elucidate all that has hitherto been stated of, and leave little to be added to, the general structure of Foraminiferous shells, both recent and fossil.

" For ten years after D'Orbigny gave his description of the animal of Foraminifera, no one appears to have taken much trouble to question its accuracy, until Dujardin took up the subject in 1835, while residing at Toulon (where he had ample opportunities of testing the truth of D'Orbigny's imaginary discovery), and after having carried on his researches most perseveringly for some time, at length came to the conclusion, communicated to the Académie Royale des Sciences de Paris in the month of June of the year mentioned, that the Foraminifera were not Mollusca, nor did they belong to any of the established classes.

" In describing their organization, Dujardin stated that all their

chambers were occupied by a red or orange coloured animal matter, highly contractile, and possessed of the consistence of mucus ; that this was susceptible of extending itself into threads which were filled with irregular granulations, but without the presence of any organs. On carefully observing these animals in their living state, he had seen, with a high magnifying power, in *Miliola* a soft mass projecting from its aperture (analogous to the substance of the interior), which slowly underwent a change of form, and from which a tuft of minute filaments radiated from a common centre of attachment ; these filaments prolonged themselves in ramifications to five times the diameter of the specimen *(Miliola)* from which they proceeded, and at length became of such extreme tenuity, as to be followed only by changing the direction of the rays of light. Further, he observed in these filaments a movement of *reptation*, by which the animal advanced from 5 to 6 millimetres per hour. The filaments appeared to be composed of a primitive animal matter, which extended itself forward in the manner of roots ; hence the name *Rhizopoda* which Dujardin proposed for these animals. In *Miliola* and *Gromia* these filaments came from their aperture ; in *Crestellaria* from the last chamber, and in *Vorticialia* from different pores of the disk.

" As to their manner of reproduction, Dujardin had noticed during the previous year, that in *Troncatulina*, the animal matter was grouped together in certain cases in globular masses, as the green matter of *Zygnema*.

" Finally, in concluding his communication he states, ' We see that it is impossible to keep these animals among the microscopic Cephalopoda : what rank shall be assigned to them ? ' *

" The discovery then of the animal of Foraminifera appears to be due to Dujardin.

" In November 1835, he exhibited at Paris several living specimens of *Vorticialia* and his genus *Gromia*, † and during that winter continued his researches into their organization with a view to establishing the relation that might exist between them and Infusoria.

" In comparing them with Infusoria, he states, in a note addressed to the Académie Royale des Sciences de Paris‡—' I have always been guided by an idea suggested by Bory St. Vincent, who, after having seen the living *Rhizopoda*, was struck with the great analogy which

* Acad. Roy. des Sc. séance Juin 22, 1835.

† *Ibid*, séance Nov. 15, 1835.

‡ Séance Fev. 1, 1836.

existed between the filamentous prolongations of these animals and the expansions of the *Amœba* or *Proteus*, and directed my attention to the point.'

" Lastly, Dujardin exhibited before the Acad. Roy. des Sc. at Paris in 1836 * some animalcules, called by Ehrenberg *Arcella aculeata*, but which Dujardin regarded as freshwater Foraminifera, and through these he imagined the series to be continued from the *Amœba* to *Miliola*,— that is, through *Difflugia*, a species of *Amœba*, to *Arcella*, from the latter to *Gromia*, and from *Gromia* to *Crestellaria*, and thence to *Miliola*.

" After Dujardin, Ehrenberg took up the subject, and the result of his researches is as opposed to D'Orbigny's description as it is confirmatory of Dujardin's observations.

" In a memoir read at the Royal Academy of Sciences at Berlin in 1838, † Ehrenberg stated that the Foraminiferous shells were inhabited by elegant little bodies which played an important part in nature, and the fossilized remains of which might frequently be found to number more than a million in a cubic inch of chalk ; also, that after a series of observations made on recent species both living and dead in the Red Sea and elsewhere, he had come to the conclusion that their place in the animal kingdom should be among the Bryozoa.

" In the month of October 1839, ‡ Ehrenberg also exhibited living specimens of these animals to the Academy at Berlin, [two,] which were taken at Cuxhaven, and in January 1840 he exhibited ten other species of these animals, § at the same time communicating the following observations on their organization :—

" ' The first and largest cell of these animals, sometimes also the second, and occasionally as far back as the fourth, contain only the transparent part of the animal ; beyond this, the cells are filled with two large organs differently coloured. One and the principal is an alimentary canal, thick, gray, greenish, which, like the whole of the body, is articulated ; this extends itself from chamber to chamber, and its divisions are united by an œsophagus or siphon. When the shell is removed by acid, the siliceous carapaces of Infusoria which the animal has swallowed may be observed (in *Nonionina* and *Geoponus)* as far back even as the last articulation of the alimentary canal. The structure of this canal,

* Séance Juin 11, 1836.

† *Ibid*, séance de 16 Janvier 1840. L'Institut, No. 350, Sept. 1840, p. 309.

‡ Acad. Roy. des Sc. Berlin, séance de 16 Janvier 1840. Vide l'Institut, No. 350, Sept. 1840, p. 309.

§ *Ibid* [and Taylor's Scientific Memoirs, vol. iii. p. 342].

is not polygastric but simple ; expanded in the articulations, and possessed of a single aperture, which is situated anteriorly. In *Nonionina* the articulations are distinct, and connected by one siphon ; in *Geoponus* they are multiple, and each set connected by its proper siphon.'

" Independently of the alimentary canal, a horny brown yellowish mass is seen in every articulation of the spine, the first excepted : this, which is granular, Ehrenberg considers to be the ovary.

" In searching for a purely negative character, Ehrenberg states that it consists in the want of pulsatory vessels ; that while he has always recognized pulsations in the Mollusca and the smallest aggregated or compound Ascidia, he could never do so in *Nonionina* and *Geoponus*, the two species of Polythalamia (Foraminifera) which he more particularly examined.*"—*Jour. Bombay Br. As. Soc.* vol. iii. pt. 1, p. 158.

This is all that had been discovered up to the time of my compiling this paper. I had seen the filamentous prolongations myself, and, on dissolving off the shell of a species of *Robulina* (D'Orbigny), had found a brown mass occupying the chambers (as it then appeared to me) in loops, in the largest or last formed ones, and diminishing posteriorly ; it was also constricted at each end of the loop by the narrow aperture in the septum, and thus beadded, as it were, posteriorly, where there were no longer any loops, but a simple dilatation of the substance of each chamber. I will not now vouch for the complete accuracy of these observations, for they were made on board ship, with a simple lens and under considerable disadvantages ; and other people have not since described the internal substance of the chambers as occurring in loops, nor have I since seen it in this form myself.

About the time I wrote this paper, MM. Joly and Leymerie were engaged in the miscroscopical examination of Nummulites, and the results of their investigations were made known through the 'Comptes Rendus' on the 24th Oct. 1847. Meanwhile, too, Dr. Carpenter examined the fossilized remains of Foraminifera generally, and his communication on the subject was read before the Geological Society of London, 2nd May 1849, together with some extracts from Mr. Williamson's description of the animal and shell of *Polystomella crispa* (Trans. Microscop. Soc. vol. ii. p. 159), which I shall here insert, with Dr. Carpenter's remarks, as the whole appears in the 'Quart. Journ. Geol. Soc.' vol. vi. pt. 1, p. 28, for I have not Mr. Williamson's paper to refer to :—

"Of the contained animal itself, which he obtained by dissolving

* Acad. Roy. des Sc. Berlin, séance de 16 Janvier 1840, and Scientific Memoirs, Parts X. and XI.

away the calcareous matter of the shell with dilute acid, Mr. Williamson says, that it consisted 'of a very thin external membrane filled with gelatinous matter.' 'No trace of minute internal organization, such as a specially located intestinal canal, or ovaries, could be detected by Mr. Williamson'; nor was he able in any instance 'to discover with certainty the presence of any foreign bodies in their interior.' The several segments are described by him as connected by a series of prolongations, which pass through the septa near their inner margins. The segments at first formed have only single connecting necks; but the number of these soon increases, and the outer segments are connected by ten or more such necks, which pass through as many distinct orifices in the septa. If all these orifices were brought together on the central plane, so as to coalesce into one, they would exactly correspond with the single perforations in the septa of Nummulites. The animal of *Polystomella* is considered by Mr. Williamson to derive its nutriment from pseudopodia, which are projected through numerous minute apertures over the whole surface of the shell. He has not clearly traced these pseudopodia, however, into connection with the segments occupying the interior whorls, which, like those of Nummulites, are invested by those of later formation; but he mentions (as Ehrenberg had done) that near the umbilicus they are projected in fasciculi; and he states that the surface of the central calcareous nucleus (which is formed by a thickening of the walls of the smallest cells) is pitted by small but deep depressions, which may be designed to facilitate the exit of the pseudopodia from the innermost convolutions. Mr. Williamson goes on to point out, that to these pseudopodia must be attributed the deposition of new matter upon that portion of the central nucleus which is not covered by the investing whorls; and in this view he is in accordance with M. D'Orbigny, who, in his recent work, 'Sur les Foraminifères Fossiles du Bassin Tertiaire de Vienne,' fully recognizes the power of the pseudopodia to secrete the calcareous covering. I may remark, that I cannot see how the investing layers covering the disk of *Nummulites complanata*, and the other species of the same group, can be formed in any other way; since in these the chambers are only marginal, the segments of the animal not extending over the disk; and we have no reason to believe in the existence of any external mantle, spreading over the whole surface, whereby these investing layers could be formed."

We now come to the structure of the shells, to which, of all others, both in description and illustrations, Dr. Carpenter appears to me to have contributed most,

MM. Joly and Leymerie seem to have gone no further than to have shown, that in fossil Nummulites exist hemispherical granulations or little circular depressions, corresponding to granulations both on the external and internal surface of the shell, and that these are nothing more than perforations with which the shell was pierced during the existence of the animal. Also, that there existed a similunar hole in each septum arching over the margin of the preceding whorl, and that the rest of the partition was imperforate. (Mém. sur les Nummulites, Sect. B. p. 20.)

Dr. Carpenter, however, whose investigations were carried on independently of those of MM. Joly and Leymerie, has gone much further than this, and therefore it will be as well to give a short summary of all that he has observed.

Commencing with the septa, he states *(loc. cit.)* that each consists of two layers, by which every chamber has its own proper wall, and that the intervening portion, which he terms the "*interseptal space*," "must have been vacant in the recent shell, unless occupied by the soft parts of the animal itself;"—"that each septum is perforated by an aperture, close to its junction with the margin of the preceding whorl" (as he believes was first observed by D'Orbigny, and figured first by Mr. Sowerby); and, "that these perforations pass through *both* layers of each septum, so as to establish a free communication between one chamber and another." That this case is different, however, "with regard to certain more minute apertures, which may be seen by a careful examination, under a sufficient magnifying power, to exist on the surface of every septum, though not consistent either in number or position"; "they penetrate that layer only of the septum on whose surface they open," "and establish a communication between each chamber and the adjoining interseptal spaces." "Other apertures of the same kind may be generally traced, on careful examination, in the walls of the chambers that form the surface of the whorl; and these too appear to communicate with the interseptal spaces by channels burrowed into those walls."

"Thus the cavity of each chamber communicates with that of the one before and behind it in the same whorl, by the large aperture first mentioned, which frequently appears as if made up by the coalescence of a number of smaller perforations (fig. 7 *b*.), suggesting the idea that the animal substance which originally passed through it was not a single large canal, but was composed of a bundle of minute tubes or threads. This idea is confirmed by the circumstance, that the outer margin of the included whorl (fig. 7 *c*.) frequently presents a series of furrows,

corresponding to the notches at the inner edge of the septum (*b*). Each cavity also communicates freely with the interseptal spaces on either side by the smaller apertures and passages last described ; and from this space, as we shall presently see, there was a free passage to the external surface of the shell.

" The texture of the shell itself differs remarkably from that of any of the Mollusca with which I am acquainted, approaching that which I have described in the common Crab (Reports of the British Association, 1847, p. 129). It is everywhere perforated by a series of tubes of extreme minuteness which pass directly from one surface to another, their openings being plainly visible on each (fig. 16). The diameter of these tubes is about 1–7,500th of an inch, and their distance from each other about 1–15,000th. In a thin vertical section of the shell (fig. 15) they are seen to run parallel to each other, and to be free from sinuosities or interruptions. The whole of this portion of the shell, therefore, is minutely porous. The structure in question can be seldom clearly distinguished in those Nummulites which have had their texture altered by calcareous or siliceous infiltration ; but as the appearances which these present correspond closely with those exhibited by specimens of *N. lævigata* which have been subjected to the same change, I have no doubt that the tubular structure in question is common to the whole group." " All the Nummulites which I have examined present a remarkable departure from this structure in that portion of the shell which forms the margin of each whorl. Here, instead of an assemblage of minute, closely-set, parallel tubuli, we have a much coarser arrangement, the solid substance being perforated with a smaller number of tubes of two or three times the diameter of those last mentioned, which pass in a radiating manner from the inner to the outer surface. Some indications of this difference are seen in fig. 4 ; but it is much more clearly displayed at *b*, *b*, fig. 15, which represents a portion of a very thin section taken in the same direction, and viewed by transmitted light. The openings of these tubes on the outer margin of the whorl are not readily discernible, partly in consequence of the somewhat oblique direction of the orifices, and partly through these being usually covered with a calcareous incrustation. When this has been removed by the application of dilute acid they are easily seen when properly looked for, as was first pointed out to me by Mr. J. Morris."

Lastly, Dr. Carpenter has observed, in addition to the tubes which run from the punctations on the surface into the chambers of the Nummulite, another " series of perforations of considerable size, which pass directly downwards from the exterior, through the superposed

investing layers of the successive whorls, however numerous, until they reach the floor and chambers of the central plane, which they do *not* penetrate." These, he feels satisfied, " always terminate *over the septa*, and actually pass into the *interseptal* spaces."

Now let us see how far these statements are confirmed by the structure of the shells of *Operculina Arabica*. These were obtained in the following way :—

While medical officer on the survey of the south-east coast of Arabia, I observed that Foraminifera were frequently brought up on the grease of the ship's sounding lead, and after this I obtained the loan of a lead, which I used to cast for this particular purpose myself. They were found to be most numerous in about 10 to 20 fathoms of water, rather in sandy than in muddy bottoms, scanty in deep water, and never (by the lead) among rocks and coral-ground. In one bed passed over, which was several miles in diameter, in about 20 fathoms of water, and about six miles off shore, the grease of the sounding-lead came up covered with them at each throw ; they were the largest living specimens I have ever seen, and principally consisted of the genus *Operculina* (D'Orbig.), *Discorbis* (Lam.). Most measured from 2 to 3-12ths of an inch in horizontal diameter, and one or two 3-10ths. Some contained animals, and others were empty ; the latter were readily distinguished from the former by their pearly whiteness ; while those which contained animals were invariably covered with a thin greenish cuticle like the deciduous epidermis of shells generally.

The following is a description of this *Operculina*, which, as it is most probably a new species, I have designated by the specific name of " *Arabica*."

Operculina Arabica (H. J. C.).

Description.—Free, equilateral, oval or discoidal, thin, flat or wavy ; formed of one spire increasing gradually, not embracing ; regular, equally apparent on both sides ; consisting of 3–4 whorls, contiguous, enlarged on the outer border. Chambers numerous, 1–75, narrow, apparent on both sides, increasing gradually in length and breadth from a semitransparent, prominent, central cell ; radiating, reflected in their outer third to a point, particularly in the last-formed whorl ; divided by semitransparent septa, and covered externally with a green substance like the epidermis of shells generally. Intercameral communications numerous in the septa of the last-formed whorl, the largest long, narrow, and crescentic, arching over the margin of the preceding whorl.

Dimensions.—1-6th of an inch in horizontal, and 1-96th in vertical diameter ; widest part of last whorl 1-24th of an inch (Pl. IV. fig. 1).

Observations.—This description is chiefly taken from one of the largest and most regularly formed shells I possess. They are by no means always plane, but, on the contrary, frequently wavy, like Nummulites ; and the chambers sometimes increase in size more rapidly than at others, causing the shell to assume a more or less elongated or oval form ; the chambers are also sometimes broader, sometimes narrower ; and occasionally a septum only extends part of the way out towards the margin of the whorl, when it suddenly bends backwards to meet the preceding one, or it may stop short altogether, and then the chamber behind and before it coalesce at their outer parts. Irregularities of this kind in the formation of the chambers of Foraminifera are not at all uncommon, and apparently so usual in *Nummulites lævigata*, that they would seem to constitute a character. The imperfectly developed chamber extending from the margin of the foregoing whorl outwards instead of in the opposite direction, seems to point out the course in which the chambers are formed ; and if each chamber is to be regarded only as the full development of a single animal, the imperfect one must be considered as an abortion, and those which have coalesced as a monstrosity. Most frequently there is here and there a large opening in the shell, over one or more of the chambers, which leads into the latter ; they are more or less round, larger or smaller, and the smoothness of their margin would seem to indicate that they had been formed by the animal itself, if not by some other animal.

Microscopic Examination.—The chambers of the shell, after the green cuticular substance has been removed, are found to be covered externally with large and small papillæ ; the former 1-2,150th, the latter 1-8,600th of an inch in diameter (fig. 2). The former also are about twice their own breadth apart, and the latter occupy the intervals between them ; both are confined to the areæ over the chambers ; they do not appear over the septa nor on the margin of the shell. The large papillæ appear to be imperforate, while the small ones appear to present each a puncture in the centre. The septal spaces, as well as the central cell, are semitransparent, and the former have a single, beaded line of semitransparent papillæ along their course.

The internal surface of the chambers merely presents the small papillæ with their puncta ; there are no large papillæ on it, and their cavities are otherwise complete, with the exception of the channels of intercameral communication, and some minute vascular apertures which will be presently mentioned.

The septa (fig. 5 *b*, *b*) occupy, transversely, about 1-6th of the breadth of the chambers, and each septum incloses within its walls two calcareous tubes or vessels, one on each side, some little distance below the contiguous surface of the shell (fig. 7 *a*, *a*); these we shall call *interseptal vessels*. They are irregular both in their size and course, though generally about 1-1,900th of an inch in diameter, in the last-formed septa of a shell having the dimensions of the one described, and diminish in calibre backwards or towards the first-formed whorls. Each vessel commences in the centre of an intricate network of smaller ones, spread over its own side of the margin of the preceding whorl, and under the layers of the shell (*f*, *f*, *f*); these networks, which are joined together, we shall call the *marginal plexus*. In its course each interseptal vessel gives off two sets of *ramusculi*, and the marginal plexus one set. Of those coming from the interseptal vessel, one set terminates on the surface of the shell, particularly about the borders of the septum (*d*, *d*); the other goes into the walls of the shell, and through the septum, to open probably on the inner surface of the chamber (*e*, *e*, *e*); while the set from the marginal plexus opens on the margin (*g*, *g*, *g*). As this vascular system appears to extend throughout every part of the shell, and must be for the circulation of some fluid, we will call it the *interseptal circulation*. It would have been more proper to have commenced with the *ramusculi*, as we shall see hereafter that they appear to absorb the fluid which is subsequently transmitted into the larger vessels, but at this period of our description it would not have been so intelligible.

We have now to examine the internal structure of the shell, and commencing with that part forming the walls of the chambers, we observe that it is pierced by innumerable tubes, which pass directly downwards from the small papillæ on the external, to the small papillæ on the internal, surface of the chambers (fig. 3 *d*, *d*). I could see no tubes passing down from the large papillæ, which I have before stated to appear imperforate, like those over the septal spaces. These tubes are about 1-9,000th of an inch in diameter, and about the same distance apart; they are vertical over the centre of the area of the chamber, and slope outwards at its boundaries, but do not pass through or extend over the margin of the shell, neither over the septal spaces, nor over the central cell; hence the semitransparency of the two latter, and the fringy, beaded appearance which the tubes present at these parts, particularly around the central cell, where they assume the form of rays.

Besides these tubes, a vertical section of the shell presents a series of horizontal lines 7-8 or more in number, parallel to each other, but

not equidistant (fig. 3 *c*, *c*); these appear to be the lines of contact of the layers of which the shell is composed.

Lastly, we come to the margin, which exhibits a very curious and interesting structure. It is almost entirely composed of calcareous *spicula*, arranged parallel to, but overlapping each other (fig. 4). These spicula are 1–237th inch long, and 1–900th of an inch broad, transparent, apparently hollow, and pointed at each extremity; they appear to be straight, although, from their position, one would be inclined to think that they must be a little curved. When a transverse section is made of the margin, we observe that it consists of upwards of 100 of these spicula, which form a triangular bundle or cord (fig. 6 *a*), the apex of which is directed inwards or towards the chambers, and the base (*a*) outwards to form the free, rounded margin of the shell: while its sides are overlapped by an extension of the walls of the chambers, which open as it were to receive it. Its base presents a regularly wavy outline (when viewed in the transverse section) from the longitudinal arrangement of the spicula, which do not appear to be covered by a layer of the shell; and parallel to its sides run the papillary tubes of the chambers (*b*), becoming more vertical as they increase in distance from this position; while towards its apex appear the divided large vessels of the marginal plexus (*c*). In the transverse section also, when reduced to a thin layer, transparent intervals appear in the form of zigzag lines radiating from the apex to the circumference of the cord, which would seem to indicate that the spicula were arranged in it in more or less horizontal planes, dipping towards the apex.

It will naturally now be asked, how this spicular cord (fig. 5 *h*, *h*), which commences with the first cell, terminates; but I regret that there is not a single specimen in my possession to afford the information. This arises probably from the extreme thinness of the last-formed chamber; for with the two or three preceding ones, it is almost always broken or absent. All I can state in connection with this is, that there are always more or less vessels of the marginal plexus cut through or broken in a transverse section or fracture of the spicular cord, and frequently a large one close to its apex, which after the shell has been filled with a solution of carmine, and then laid in pure water, purges it almost completely from the colouring matter with which it had been filled; a broken interseptal vessel will also do this. Hence it is not impossible, that a natural opening of the kind may exist at the termination of the spicular cord, for this purpose; but, then, it has nothing to do with the spicular cord itself, of the natural termination and uses of which I am equally ignorant. It should here also be mentioned,

that when a thoroughly empty shell, which may be known by its pearly whiteness, is gently laid on the surface of a solution of carmine, so as to float there, the latter is seen, first to colour the margin, then the interseptal vessels become filled, and lastly the *walls* of the chambers; none of the semitransparent parts of the shell become coloured. This will take place sometimes in a few hours, but with some shells it requires a day or two for its completion. By keeping one side of the shell dry the air is enabled to pass out of it, while the solution enters the depending side, and in this way the whole of the hollow structure of the shell becomes coloured. When the shell is washed and dried in this state, the carmine is seen to be chiefly in the interseptal vessels, and this is perhaps the best way of tracing out the terminations, or rather origins, of the *ramusculi*. On the other hand, when the shell is placed in pure water, and watched with a magnifying glass, a stream of carmine particles will be seen slowly issuing from the vessels of the marginal plexus, at the broken end of the spicular cord, or from any other part of the large whorls, where an interseptal vessel may have been broken; and after a time, according with that which the shell has taken to imbibe the colouring matter, it will become perfectly white again. Whether this be owing to the watery distension of the gummy fluid suspending the carmine, or a natural consequence of the structure of the shell itself, further observation must determine. The fact of the carmine accumulating at the orifices of the *ramusculi*, as it would in a filter, seems also, with what has just been stated, to point out the course of circulation in them; and if we may be allowed to carry out the analogy still further, which is now seen to exist so strikingly between Foraminifera and Porifera, we might compare the interseptal circulation in the former to the aqueous circulation in the latter, and thence might infer that the water entered by the *ramusculi* or small pores, and came out by the larger ones, gathered together into one vessel, opening in its natural state at the end of the spicular cord; but until a perfect specimen be obtained to determine this, all must of course remain conjectural.

Growth.—From what I have stated respecting the existence of a substance, resembling the cuticle of shells, over the external surface of *Operculina Arabica*, and the presence of innumerable puncta, which appear to be connected by tubular communications with the chambers beneath, it is not unreasonable to infer, that by this arrangement successive additions may be made to the external surface of the shell, and the laminated structure, which it presents on a vertical section, thus formed; while the addition of chambers would appear to com-

mence from the opening in the septum close to the preceding whorl, and an interseptal vessel, arising, as before described, from its marginal plexus, to extend outwards, on either side, *pari passu* with the chambers to the circumference, which it may fall short of or not, as already stated. Again, it would appear that this addition does not take place singly, but that there are always two or more chambers (fig. 8 *b*, *b*, *b*,) in process of formation, the last being the smallest, and that, one after another, they gradually reach the margin. I have come to this opinion, not from the recent specimens of *Operculina* in my possession, in which, as before stated, all the last-formed chambers are broken, but from having observed the ochraceous casts of microscopic nautiloid species of Foraminifera which have been fossilized, to present this form, when dissolved out from their matrix.

Analogy to Porifera.—When Dujardin, guided by the suggestion of Bory St. Vincent, was struck with the analogy which exists between the filamentous prolongations of Foraminifera and those of the *Amœba* or *Proteus*, he could have little thought, that however nearly the latter might be allied to the Sponges, the former would be found so similar to them in their compact structures. Who, indeed, looking at the nautiloid form of a foraminiferous shell, and an amorphus piece of sponge, would say that they bore the least resemblance to each other? Yet they are, as we have seen, most intimately allied, both in their fleshy and their compact structures. It must be now generally allowed, that the rhizopodous nature of Foraminifera is identical with that of the *Amœba* or *Proteus*, and through the latter with the sponge-cell; and in addition to this, we have the former, at least the genus *Operculina*, still more nearly allying Foraminifera to the Sponges, by possessing a spicular structure, if not a circulating system also, like that of sponges. It is curious, too, that without any reference to the use of the pores in these two orders of animals, they should have received names of the same signification, as if the intimate relationship which is now found to exist between them was instinctively anticipated before it was proved by demonstration. The genus of Porifera to which *Operculina* comes nearest is, of course, the calci-sponges, that called *Grantia*, after their distinguished discoverer Dr. Grant; and of this genus it would seem to approach nearest to the tubular species, which have but one vent.

Structure of the Shell of Operculina compared with Nummulites.—It will be very gratifying to those whose investigations of the structure of Nummulites must have been attended with so much labour, difficulty, and doubt, to see how satisfactory the examination of a

recent foraminiferous shell, so nearly allied to *Nummulites* as that of *Operculina*, confirms and elucidates their observations. The vertical tubes passing from the surface of the shell to the interior of the chambers (see Dr. Carpenter's illustrations, fig. 15, *loc cit.)* ; the intercameral communication (*id.* fig. 7 *b*) ; the linear markings or grooves immediately under the latter (*id.* fig. 7 *c*), which appear to have been produced by the previous existence of a spicular cord in this position ; and the radiating lines (*id.* fig. 15 *b*, *b*), caused by the arrangement of the spicula in horizontal layers inclined towards the apex of the cord, with the sloping papillary tubes on each side of it.—The " minute apertures" (*id.* fig. 7 *a*), which only penetrate *one* layer of the septum, and others which open on the internal surface of the walls, are probably the orifices of the *ramusculi* of the interseptal vessels which go in this direction.—And the " perforations of considerable size, which pass directly downwards from the exterior through the superposed investing layers of the successive whorls" " until they reach the floor of the chambers of the central plane, which they do not penetrate" (*id.* fig. 8 *a*) ;—the vertical interseptal vessels, or an enlargement and union into one tube of the *ramusculi*, which pass upwards and downwards from the horizontal interseptal vessels as seen in *Operculina*.

The latter, that is, the union of the vertical with the horizontal interseptal vessels, I have been able to make out in some specimens of *Nummulites acuta*, Sow. (Geol. Trans. 2nd Ser. vol. v. pl. 24, fig. 15), which have had their cavities thoroughly infiltrated with ochraceous oxide of iron ; as well as everything else mentioned by Dr. Carpenter ; and, with the exception of the spicula themselves, everything that I have seen in *Operculina*. MM. Jolly and Leymerie seem to me to have described one thing, and to have figured another. They describe the papillary tubes, and seem, from the distance between them, to figure the orifices of the vertical interseptal vessels (pl. 11 *op. cit.*), which Dr. Carpenter has particularly described.

The columns represented by Sowerby in *Lycophrys ephippium* (Geol. Trans. *loc. cit.* fig. 15), and to which Dr. Carpenter has alluded (*loc. cit.* p. 26), appear to me to be made up of the papillary tubes which descend from chamber to chamber (fig. 9 *g*, *g*), and which in purely calcereous fossils are filled with a white opaque matter, but in those infiltrated with oxide of iron, with ochraceous matter ; while the intervening parts are composed of the septal substance, through which the interseptal vessels pass to the surface and margin in *Orbitoides* as well as in *Nummulites*.

The same system of circulation would also appear to be carried on in

Orbitolites, where the mass is made up of spheroid or ovoidal cells: for if the nearly flat Scindian species, which has a papillary eminence in the centre of the convex side, be rubbed down, the latter presents a ramification of transparent substance like that filling the septal spaces of *Nummulites* and *Orbitoides*; which, radiating upwards and outwards from this eminence, passes into the general structure of the shell.

The transitionary forms of the chambers in *Operculina*, through *Nummulites* and *Orbitoides*, to *Orbitolites*, would, when viewed in a vertical section, appear to be thus:—In *Operculina* there is a single plane of spear-head shaped chambers; in *Nummulites* a central plane of conical chambers, with layers of compressed ones above and below it; in *Orbitoides*, a central plane of quadrangular chambers, with numerous layers of compressed ones above and below it; and in *Orbitolites*, a mass of circular or ovoidal cells more or less definitely arranged. Hence, if these be their respective peculiarities, *Orbitoides Mantelli* will, from Dr. Carpenter's illustration (fig. 31, *loc. cit.*), belong to the latter, and would therefore be now more properly named *Orbitolites Mantelli*.

One other observation I would here make with reference to geology, viz. the natural union which now seems to be pointed out between the Chalk and the Nummulitic series, by the great prevalence of the same class of animal remains in each—that is to say, the abundance of flints which indicate the previous existence of *siliceous sponges* in the former, and the myriads of Foraminifera, which are closely allied to the *calci-sponges* in the latter.

EXPLANATION OF PLATE XVIII.

Fig. 1. *Operculina Arabica*, natural size.

Fig. 2. Large and small papillæ on the external surface of the shell, highly magnified.

Fig. 3. Vertical section of the shell over the chambers, highly magnified, showing:—*a*, *a*, large papillæ; *b*, *b*, small ditto; *c*, *c*, horizontal lines indicative of the layers of the shell; *d*, *d*, vertical tubes.

Fig. 4. Spicula *in situ*, highly magnified.

Fig. 5. Diagram of horizontal section of three large chambers of the shell, showing the interseptal vascular system and spicular cord: *a*, *a*, *a*, chambers; *b*, *b*, *b*, septa; *c*, *c*, *c*, interseptal vessels; *d*, *d*, *d*, *ramusculi* coming to the surface of the shell; *e*, *e*, *e*, ditto, going to the walls of the shell, &c. through the septa, the dotted lines indicating those branching out into the former; *f*, *f*, *f*, marginal plexus; *g*, *g*, *g*, *ramusculi* of margin; *h*, *h*, spicular cord; *i*, half-formed septum, with termination of interseptal vessel.

Fig. 6. Diagram of vertical section of the shell to show the form of the spicular cord : *a*, margin or free surface of spicular cord ; *b*, vertical or papillary tubes, here sloping outwards on each side the cord ; *c*, truncated vessels of the marginal plexus ; *d*, *d*, small channels of intercameral communication ; *e*, grand semilunar or crescentic channel of ditto ; *f*, septum.

Fig. 7. Diagram of vertical section to show the situation of the interseptal vessels ; *a*, *a*, interseptal vessels ; *b*, septum ; *c*, grand channel of intercameral communication ; *d*, part of spicular cord.

Fig. 8. Enlarged view of first-formed chambers of *Operculina Arabica* : *a*, central cell or chamber ; *b*, *b*, *b*, probable forms of last chambers in process of development.

Fig. 9. Diagram of vertical section of *Nummulites acuta*, Sow. : *a*, spicular cord ? ; *b*, truncated vessels of marginal plexus ; *c*, *c*, chambers of central plane ; *d*, *d*, vertical interseptal vessels (the " perforations," &c. of Dr. Carpenter) ; *e*, *e*, horizontal interseptal vessels ; *f*, *f*, *f*, chambers on each side the central plane ; *g*, *g*, *g*, *g*, vertical tubes.

Art. VI.—*Note on the Pliocene Deposits of the Shores of the Arabian Sea.* By H. J. Carter, Esq., Assistant Surgeon, Bombay Establishment.

Presented October 1852.

This note had reference more particularly to Major Turner's specimens of the strata from the neighbourhood of the harbour at Kurrachee.

The author stated that the geological interest which attached to them arose from their similarity to other deposits which existed throughout the whole Western Coast of India, and were found also, in part, on the South-Eastern Coast of Arabia, and on the African coast and islands opposite. These were the last raised portions of the shores of the Arabian Sea, and seemed to be the only step on to the trap of Western India, to the " tertiary" deposit in the southern part of Cutch mentioned by Colonel Grant, (*Geol. Trans.* 4to, 2nd series, vol. v. p. 302,) and to that mentioned by the author himself on the SE. Coast of Arabia. (This vol. p. 93, Group 2nd.) General Cullen had presented to the Society, through

Dr. Buist, specimens of blue clay and lignite which extend between Cannanore and Cape Comorin. Major Fulljames had witnessed the same kind of clay with lignite in boring for water at Gogo, in the Gulf of Cambay ; the Society's museum contained abundance of a similar kind from the island of Bombay ; and now Major Turner had forwarded the same from Kurrachee.

This clay was covered at each place by a variable conglomerate ("Miliolitic Deposit," see description of, this vol. p. 94, Group 3rd), formed of the detritus of the surrounding rocks, together with sea-sand and shells. Thus, while the clay, from the minuteness of its particles, appeared to be the same throughout, it might reasonably be inferred to differ just as much in mineralogical composition as the conglomerate which superposed it at the different localities mentioned, both having been more or less derived from the same sources. About Cannanore it appeared to consist of the detritus of the laterite and trappean rocks ; at Kurrachee of that from the older limestone rocks and sandstone of the neighbourhood, and at Bombay of the trap rocks ; while at Gogo it seemed, in addition, to have the remarkable ossiferous conglomerate, probably brought down by the rivers emptying themselves into the Gulf of Cambay.

The conglomerate, or miliolitic deposit, was the one common on the coasts of Arabia and Africa mentioned, existing in the former sometimes but a few feet above the sea, at others in portions on the scarps of the cliffs some hundreds of feet above it, and at others in extended tracts, reaching some miles inland. The author considered the Poorbunder stone to be part of the same deposit, and the so-called "gold sandstone" found in the creeks along the coast of Cutch to be identical with the latter. The golden lustre about the particles appeared to be yellow ochre, interlaminated with the nacreous layers of the fossilized foraminiferous shells, of which it is principally composed ; unless it might be pyrites,—iron, both in the state of an oxide and a sulphuret, having a great tendency to locate itself in the cavities of these minute shells, insomuch that on one part of the Southern Coast of Arabia, where the formation of the coast was entirely composed of the miliolitic deposit, in a fine state, and upwards of 200 (?) thick, with a cliff upon the sea—the beach beneath (composed of the detritus of the latter) in one part, presented a black patch, consisting of hardly anything else but the particles of oxide of iron, which had been washed out from the lighter and more fragile parts of the foraminiferous shells in which they had been deposited.

That this deposit extended a considerable distance inland in some parts might be seen from its forming the south-eastern extremity of

the great desert of Akhāf, on the South-east Coast of Arabia. (This vol. pp. 33, 34.) It also existed in a "creek nine miles north" of the town of Bhooj in Cutch, from whence Major Le G. Jacob had sent portions of the so-called "gold-stone" to the Government; and there were portions of miliolite* (red and yellow) in the Society's museum, which had been presented by the late Lieutenant Blake, from the town of Mandu, under the Vindhya Range, 140 miles up the valley of the Nurbudda; while Major Fulljames had just forwarded to the Society specimens of orbitoliferous limestone from the western spurs of the Rajpeepla Range, on the southern side of the Nurbudda, which belonged either to the nummulitic or tertiary formations (Grant) of Cutch. The sea, therefore, extended much further up the Nurbudda formerly than it does at the present time, and here, where these fossiliferous rocks come in contact with the trap of India, the different geological ages of the latter might, perhaps, receive some elucidation.

It was difficult to say to what geological age the lowest part of the blue clay belonged. Major Fulljames states, in his interesting observations in the 1st volume of the Society's Journal, that after conglomerate and sand had been bored through to the extent of 35 feet at Gogo, the blue clay was met with; and although the boring was carried on 360 feet, it was "never passed through." Major Turner mentions a similar account of a bore at Kurrachee. Until, therefore, sufficient fossils had been collected from these deposits, to ascertain how many of their representatives now existed in a living state, their real geological age could not be determined.

There was an interesting fact also connected with the quantity of mineral copal which is found with the lignite mentioned, on part of the Malabar Coast, viz. that Dr. Vaughan had stated† upon good authority, that the fine copal which is brought to Bombay from Africa is dug up at a considerable distance below the surface of the ground from the African coast opposite Zanzibar, by Sidis employed by the Imaum of Muscat, who claims this produce. The co-existence of the same kind of mineral resin on both sides of the Indian Ocean is not less remarkable than that the beautiful copal, hitherto conjectured

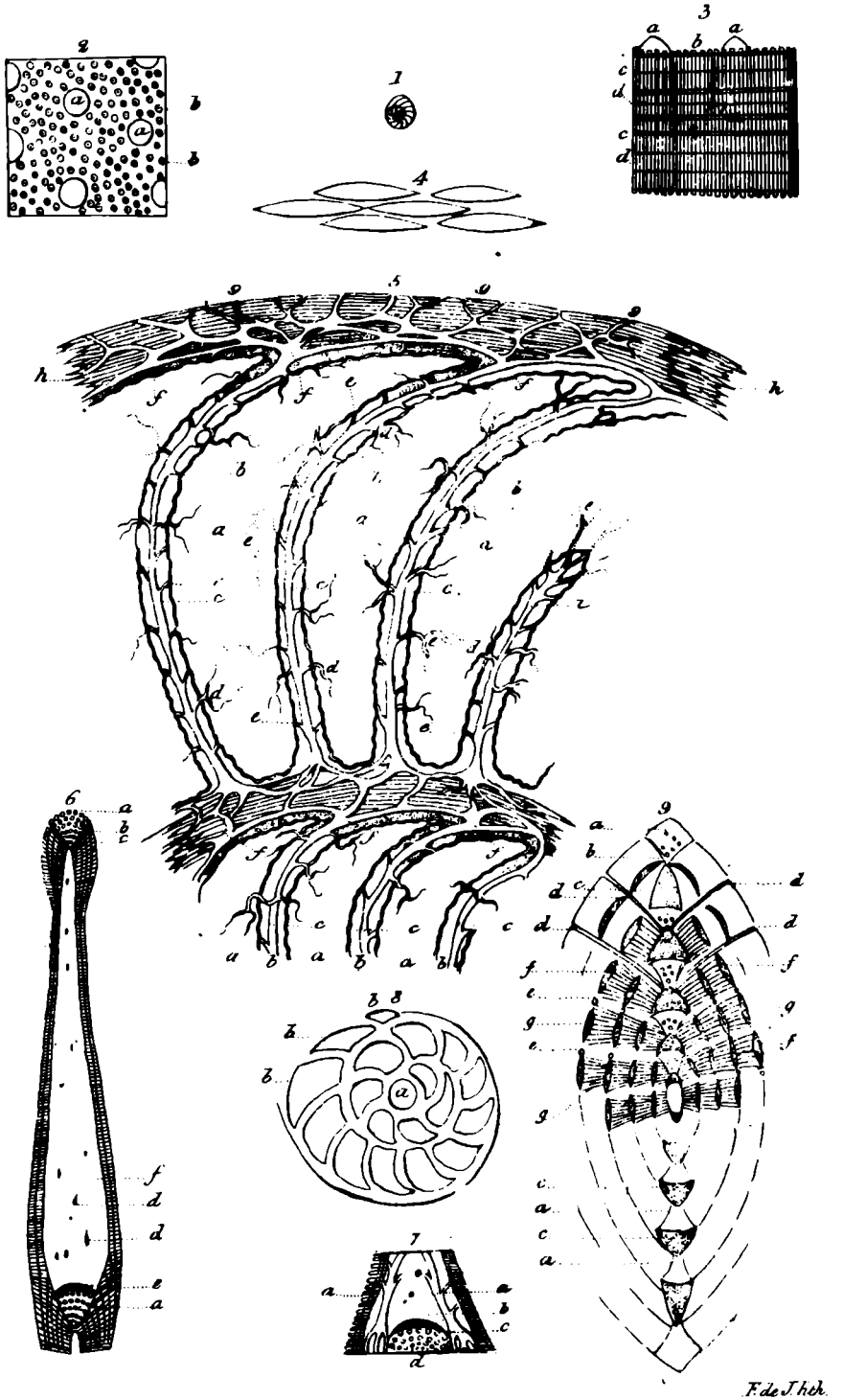
* At first, this rock looks anything but fossiliferous, and it is not until portions of it have been polished, and exposed to the action of weak acid and water, that its real structure becomes evident. It is then found to abound, among other organic remains, with a microscopic coral, which resembles *Favosites* in miniature, in the section, and is sometimes branched. To what formation this miliolite belongs future observation must determine.

† Trans. Med. and Phys. Soc. Bombay, No. I. New Series, Appendix No. 1.

to be the exudation of a living tree in Africa, should be dug out of the ground, and perhaps from a blue mud or clay like that imbedding a similar material on the Malabar Coast.

Another circumstance worthy of consideration was, whether this blue clay or mud had not followed the effusions of trap, while the great sandstone formation of Cutch and India had been connected in like manner with the decomposition of the granite rocks. In this case the lowest part of the clay would be coeval with the first effusions of trap, and *vice versâ*.

The conglomerate or miliolitic deposit in some parts existed without the clay, and sometimes below certain deposits of it. At Bombay there was in some parts a calcareous sandstone under the blue clay, like the miliolite of Poorbunder, in Khattyawar. Thus some of the conglomerate, or miliolitic deposit, might be older, and some younger than the blue clay ; the former, when very fine, being almost entirely composed of the calcareous remains of microscopic foraminifera, and therefore almost wholly marine in origin ; while the latter, being chiefly the detritus of decomposing rocks on shore, brought down by the rains, was almost wholly of terrestrial origin. Again, the clay itself might be mixed with more or less calcareous matter from the sea and elsewhere, so as to form an impure or argillaceous limestone, like that of the Malabar Coast. In all the specimens of the clay that the author had seen from the localities mentioned, the calcareous matter of the shells was more or less white and pulverulent ; the animal matter gone, and the lime beginning to assume a crystalline arrangement.


F. de J. hch.

ART. VII.—*Extracts from the Proceedings of the Society for the Year* 1851-52.

MEMBERS ELECTED.

FROM 11TH DECEMBER 1851 TO 29TH NOVEMBER 1852.

J. Warden, Esq.	Commodore Sir H. J. Leeke, I. N.
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Westergaard (N. L.), Bundehesh, Liber Pehlvicus, e vetustissimo codice Havniensi descripsit, duas inscriptiones Regis Saporis primi adjecit..	———
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Zeitschrift der Deutschen Morgenlandischen Gesellschaft. Heft II. III. IV. fur 1851. Heft I. II. fur 1852.	The Ger. Or. Soc.

FOR THE MUSEUM.

Batrachian Reptile, large, *(Rana ?)* remains of, from the carboniferous shale of Bombay	Dr. A. H. Leith.
Butterflies, species of, (100) from the neighbourhood of Bordeaux	Dr. G. Buist.
Coal, from the freshwater strata near Love-grove, in the Island of Bombay.	Dr. A. H. Leith.
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———Ditto (one) ditto ditto	Govt. of Bombay.
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Rock-specimens and Fossils, from the Island of Bombay, illustrative of its Geology. (See list, p. 211.)	Drs. A. H. Leith & H. J. Carter.
——— from the Southern Maratha Country, collected from the neighbourhood of Dharwar and Belgaum—from the primitive rocks, metamorphic strata and trappean effusions of that locality	Lieut. A. Aytoun.

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Shell limestone, specimens of, from Bates Island, in the Gulf of Cutch	Lieut. Taylor, I. N.
Silurian fossils and minerals, a large collection of, from Wales.	Captain C. W. Tremenheere.
Cuneiform inscriptions on a slab of gypsum, and on a brick, from the ruins of Nineveh (fine specimens).	Parry Jones, Esq.
Telingi manuscript on palmyra leaves.	Govt. of Bombay.

ORIGINAL COMMUNICATIONS.

	COMMUNICATED BY
Barr, (Captain C.,) Report on the Condition, Customs, and Pursuits of the Mangs of the Kolapoor Territories.—11*th November* 1852.(*a*)	Govt. of Bombay.
Carter, (H. J., Esq.,) Geology of the Island of Bombay.—11*th December* 1851. (*b*).	The Author.
———————On the form and structure of the Shell of Operculina Arabica (new species).—13*th May* 1852. (*c*).	———
——————— Note on the Pliocene Deposits of the Shores of the Arabian Sea.—14*th October* 1852. (*d*).	———
———————On the larger forms of Fossilized Foraminifera in Sindh (with a plate).—11*th November* 1852. (*e*).	———
McLeod, (J., Esq.,) Sketches and Descriptions of some of the Cartilaginous Fishes inhabiting the sea near Kurrachee.—10*th June* 1852. (*f*). .	H. B. E. Frere, Esq.
Mitchell, (Revd. J. M.,) Recent Investigations in Zend Literature.—12*th February* 1852. (*g*). .	The Author.
Perry, (Hon'ble Sir E.,) On the conflicting views of	

(*a*) See next No. (*b*) p. 161. (*c*) p. 430. (*d*) p. 445.
(*e*) See next No. (*f*) Ditto. (*g*) p. 216.

	Communicated by
European Scholars as to the Races inhabiting Polynesia and the Indian Archipelago; and as to the Languages spoken by them.—13*th May* 1852. (*h*).	The Author.
Perry, (Hon'ble Sir E.,) On the Geographical Limits of the principal Languages of India, and the feasibility of establishing English as a *Lingua Franca*.—15*th July* 1852. (*i*).	———
Stevenson, (Revd. J., D.D.,) Theory of the Great Elephanta Cave.—13*th May* 1852. (*k*).....	———
———Translation of a Sanskrit Inscription in the Great Cave at Kenery, in the Island of Salsette.—15*th July* 1852. (*l*)	———
———Comparative Vocabulary of Non-Sanskrit Primitives in the Vernacular Languages of India, Part II.—12*th August* 1852. (*m*)	———
———On the Historical Names and Facts contained in the Kenery Inscriptions.—14*th October* 1852. (*n*)	———
Taylor, (Captain M.,) Notices of Cromlechs, Cairns, and other Ancient Scytho-Druidical Remains in the Principality of Sorapûr, with Plans and Illustrations.—14*th October* 1852. (*o*).....	———
Wilson, (Revd. J., D.D.,) Brief Memorial of the Literary Researches of the late William Erskine, Esq.—15*th July* 1852. (*p*)	———
———Second Memoir on the Cave-Temples, and other Ancient Buddhist, Brahmanical, and Jaina Remains of Western India.—9*th September* 1852. (*q*).....	———

PROCEEDINGS, OFFICIAL, LITERARY, AND SCIENTIFIC.

The letter from Messrs. Longman and Co., having reference to the reprinting of the *Transactions of the Literary Society*, stating that the copper-plates had been destroyed, and proposing terms for replacing

(*h*) p. 242. (*i*) p. 289. (*k*) p. 261. (*l*) See next No.
(*m*) p. 319. (*n*) See next No. (*o*) p. 380. (*p*) p. 276. (*q*) p. 340.

them with lithographs, &c., was handed over for the consideration of the Committee of Management. It states as follows :—

" The cost of copying the engravings in lithography, independently of the printing, would be about £150 ; and the cost of printing 250 copies of the work, and plates, would be about £350. In this amount the binding is not included, but this would not amount to a great sum."—*8th January* 1852.

Government letter No. 91 of 1852 transmits copies of the Census of the town and island of Bombay, taken by Captain Baynes on the 1st February last, and of the correspondence which passed between Government and the Police Authorities regarding this and the census taken on the 1st May 1849. Also copies of the returns of the census which was taken on the 26th August last. These records are for deposit and reference in the Society's library, and not for publication, as they are not considered trustworthy, but may furnish much useful information on a future occasion, when it may be deemed advisable by Government that another census should be attempted.

Government letter No. 196 of 1852, stating that the employment of Ensign F. P. F. Brett, of the 11th Regiment N. I., to take fac-similes and impressions of the cave-temple and rock inscriptions in Western India, had been sanctioned by the Supreme Government of India, for one year, and that instructions would be given from the Military Department for placing Mr. Brett's services at the disposal of the Cave-Temple Commission, was handed over for the guidance of the latter.

Government letter No. 336 of 1852, forwarding copy of a communication dated the 11th December last, from W. Elliot, Esq., Madras C. S., on the subject of cave-temples in India, was also delivered to the Cave-Temple Commission, and will appear in their general abstract of communications on these subjects, which will be published in the next No. of the Society's Journal. It makes mention of some caves not noticed in Dr. Wilson's Memoir, viz. at Badami ; Eiwally, a village on the banks of the Malpurba ; and at the village of Undavalli, on the banks of the Kistna ; also offers, for the use of the Society, sketches of the figures contained in the cave at the place last mentioned.

The Secretary was directed to forward the best thanks of the Society to Mr. Elliot, for his valuable communication, and to state that the sketches mentioned therein would be most acceptable to the Society.

The letter from J. J. Loth, Esq., states in reply to the Society's, proposing an interchange of journals with the Madras Society, that the Committee of the latter assent most willingly to the proposal,

and have directed a copy of all the numbers published since 1840, inclusive (viz. those which are not in the Society's library), to be transmitted by the first favourable opportunity for presentation to the Society.

The letter from E. Salisbury, Esq., Corresponding Secretary of the American Oriental Society, is accompanied by a copy of the last number of their Journal, and expresses their desire to keep up an interchange with the Journal of the Bombay Society.

The Revd. J. M. Mitchell read his paper on Zend Literature, (see p. 216,) being a continuation of one on the subject read about eighteen months ago. He briefly referred to the continuation by Dr. Roth of those investigations connecting the mythology of the Veda and the Zendavesta, which had been so skilfully commenced in his dissertation on the legend of Feridun. Mr. Mitchell's paper was mainly occupied with an explanation of the very important papers and works of Dr. Spiegel, Professor of Oriental languages at Erlangen, copies of which he laid on the table. The most important of these are—1*st*, Papers in the Journal of the Royal Academy of Sciences of Münich, and in the Journal of the German Oriental Society. These are chiefly occupied with the discussion of the criticisms on the text of the Zendavesta ; 2*nd*, A new translation of the 19th Fargard of the Vendidad, with copious notes, critical and explanatory ; 3*rd*, A Grammar of what the Professor calls the Parsi language ; 4*th*, An edition of the Zendavesta itself.

With regard to the new version by Spiegel of the 19th Fargard of the Vendidad, Mr. Mitchell submitted a translation of the German into English, and also an English version by Mr. Dhanjibhai Framji, of the Gujarati translation by Dastur Framji Aspandiarji. Doubts had often been expressed, and by none more loudly than some of the Parsis themselves, as to the correctness of Framjee Aspandiarji's version, and as no other translation into Gujarati is accessible, (the one executed by the late chief Dastur Edulji Darabji being locked up, apparently, in the archives of the Panchayet,) it is of importance to fix its value. The result of a careful comparison of the three versions aforesaid is, that while Anquetil is perpetually departing both from Spiegel and Framji, the latter two agree in most things of importance. Spiegel tells us that he has no acquaintance with Gujarati versions, so that this coincidence between the Professor and the Dastur is a strong *primâ facie* evidence that they are both right.

With regard to the "Grammar of the Parsi Language," the learned Professor has found, in studying the multifarious writings included

in the Zendavesta, and the works therewith connected, that the treatises included under what is temed *Pehlivi* are in fact in two different languages; and to one of these, for want of a better name, he has affixed the name Parsi language, and has entered, in the work in question, into a full examination of its character. He finds it intermediate between the proper Pehlivi (Huzvaresh) and the modern Persian. Many things in the latter, otherwise unintelligible, are cleared up by it. It seems related to the Deri dialect, to which, again, the idiom of the great national epic of Persia, the Shah Nameh, approximates. Besides this distinction in the works generally termed Pehlivi, the so-called Zend also divides itself on careful examination into two languages, or dialects. Spiegel finds that the 2nd Part of the Yaçna is written in an idiom very considerably different from that of the 1st Part, and apparently more ancient. He holds that the oldest part of the Avesta is the 2nd Part of the Yaçna, the next oldest the Vendidad, and the next the 1st Part of the Yaçna.—See this subject fully examined in a remarkable paper in Weber's *Indische Studien*, vol. i. pp. 303—315.

But the most important of all Spiegel's labours is his edition of the Zendavesta itself, which is now in the press at Vienna. A copy of the first part of the work was submitted to the Members present, and was much admired for the beauty of the typography. The Oriental part will consist of 3 vols. 8vo., and will contain the original text, the Pehlivi version, a copious list of various readings, and, finally, a German translation of the whole. The only edition of the Zendavesta procurable at present is a Bombay lithographed edition, a huge folio, which sells very dear. On this the elegant edition of the Professor will be an immense improvement.

The Society resolved to take two copies of the work, and to open a subscription list, which will remain in the library, for Parsis, and others interested in this matter, to put down their names for copies. The Professor's letters report his work as both "cheap and elegant," but he has forgotten to state the exact price. The whole Zend and Pehlivi will probably be under Rs. 15.

Mr. Fallon having forwarded to the Cave-Temple Commission three oil paintings, together with the plan and elevation of the Caves of Elephanta, they were laid before the Meeting, and gave great satisfaction. The Secretary was requested to take charge of them until the remainder were ready for transmission to Government.—*12th February* 1852.

A Copper-plate Charter was laid before the Society, respecting which the Revd. P. Anderson stated as follows:—"I place upon the table for inspection two copper-plates forwarded to me from Guzerat by A. Kinloch Forbes, Esq., who writes thus:—

"'I procured them from the aunt of the present Thakoor of Wulleh, after unheard-of difficulties. The old lady had shown them to several wise men of the East, who, as they knew nothing about the contents, merely returned them with the remark that the *treasure* alluded to in them was not in her *naseeb*. She made me promise to return them with my own hands, and let her know what the meaning of the inscription is,—also she insisted that the Thakoor should pledge his word that when the treasure was found she should have a fourth share; all which stipulations having been agreed to with due solemnity, she remarked that she had four or five other such, which I might see when the present was returned. They told me the plates were dug up with the others in the middle of the ruins at Walleh many—fifteen or twenty—years ago.'

"It is to be hoped that this old lady is not anticipating her good fortune, and living upon her great expectations. The letters on the plates, it will be perceived, can nowhere be very distinctly traced, and in many parts are quite illegible. However, I have ascertained that this is a grant of land made by King Síláditya of Valabhipura. A genealogical list of kings is given as usual, and their names are distinctly traceable. They are follows:—

"'1 Guha Sena; 2, His son Dhura Sena; 3, His son Síláditya; 4, His younger brother Isbara Graha; 5, His son Dhara Sena; 6, His younger brother Dhara Sena; 7, His son Dhara Sena; 8, His son Dhruva Sena.'

"This list is precisely the same as that given in the *Bengal Asiatic Society's Journal*, vol. vii. page 967, and three-fourths of their plates are similar to those of which an account is there given. The actual grant contained in the latter part of the inscription now before the Society is illegible, but perhaps some members of the Society may be able to decypher more than I have succeeded in decyphering. Síláditya is a family name, and probably the donor in this instance is Dhruva Sena, but it appears to be impossible to ascertain this with any degree of certainty."

The publication of No. xv. of the Society's Journal was announced.—11*th March* 1852.

Letter No. 1138 of 1852 forwards copy of a Census of Bombay, taken on the 20th August last, to be placed, as before directed, among the records of the Society for reference, but not for publication.

Colonel Twemlow, in his letter dated 10th ultimo, calls the attention of the Society to the remains, apparently of oyster shells, from their form and nacreous lustre, which are seen adherent to the trappean rock between Nagotna and Mhar, where the road is being widened, "just before descending to the level of Dazgaun, and the sulphur (hot) springs near that village." Colonel Twemlow considers the ridge cut through in widening the road to be about 100 feet above the level of the sea, and recommends a further examination of the spot, as he had not time or instruments to effect this.

Several impressions of long inscriptions taken from the rock-cut caves in the island of Salsette by Lieutenant Brett were laid on the table. The manner in which these have been obtained is most satisfactory. Mr. Brett uses Gutta Percha for this purpose. It is heated in water until sufficiently softened to admit of being spread over the rock, and pressed into the cavities of the letters. After this the letters, now in relief, are carefully smoothed down to a common level with a hot iron; printers' ink is then passed over them, and they are impressed on cloth or paper. As soon as a sufficient number of copies have been taken, the Gutta Percha is again boiled down, and applied over the next portion of the inscription, and so on until the whole is obtained.—*8th April* 1852.

The letter dated 14th ultimo, from H. B. E. Frere, Esq., Commissioner in Sindh, accompanied by the communication mentioned, (p. 458,) states that Mr. McLeod will be happy to send the Society specimens and descriptions of all the cartilaginous fishes obtainable at Kurrachee, for the Society's museum and Journal, should they be considered acceptable for these purposes.

The Secretary was requested to present the best thanks of the Society to Mr. Frere, and to state that the present would be highly acceptable, and the publication of Mr. McLeod's sketches and descriptions of universal interest, as well as any other contribution on objects of natural history in Sindh or its neighbourhood.

With reference to the antiquities sent from the plains of Gehrareh in Mesopotamia by Commander Jones, I. N., to the Government, and which had been submitted to the Rev. Dr. Wilson for examination, Dr. Wilson stated, that without further information respecting them, it would be impossible to give a satisfactory opinion of their age or

antiquarian value. That he did not think they were so old as had been imagined by Commander Jones, though he spoke with much deference on this point ; and requested that some observations, which he had prepared for the purpose, might be forwarded to Government, with a suggestion that they should be submitted for Commander Jones' consideration and reply, before the question of the final disposal of these remains was settled.

The Secretary was directed to act in accordance with Dr. Wilson's request.

The remains of the Batrachian reptile above mentioned, which is another animal added to those already found by Dr. Leith in the carboniferous shale of Bombay, appear to consist of the *tibiæ* of a frog, much larger than *Rana pusilla* of this formation. Dr. Leith concludes from measurement that they must have belonged to one at least three inches long, but until other parts of the skeleton are found this cannot of course be satisfactorily determined any more than the kind of reptile to which they did belong ; although there can be very little doubt of the latter.—10*th June* 1852.

With reference to the Government letter No. 2322 of 1852, requesting the Society to make known, as extensively as possible, the intention of the Society of Arts in London to hold an exhibition of the arts and manufactures of India in the spring of 1853, the Secretary was requested to take steps for carrying into effect the wishes of Government as soon as practicable.

The following letter was received from Barron Hammer-Purgstall, with the 1st vol. of his *Literaturgeschichte der Araber*, &c.

To the Secretary of the Asiatic Society of Bombay.

Sir,—If the Asiatic Societies of India are the first who claim the thanks of all Orientalists, for the spirit raised by them in Asia, Europe, and America, for the edition and translation of Oriental texts, they are also the first to whom I owe the honor of having been named their member. They rank therefore the first in the line of the seven Asiatic Societies, which are the object of the dedication of my history of Arabic literature.

Presenting the two first volumes of it to the honorable Asiatic Society of Bombay, in order to testify my respects and thanks, I have the honor to remain, with the highest regard,

Sir,

Your most humble and most obedient Servant,

(Signed) Hammer-Purgstall.

The Secretary was requested to acknowledge the receipt of this letter, &c., with the Society's best thanks, and to forward for the acceptance of the Author in return a copy of each of the numbers of the Society's Journal which are not out of print.—15*th July* 1852.

The Government letter No. 2653, dated 17th July last, stating that the Supreme Government had been pleased to sanction the appointment of Mr. Fallon for a further period of twelve months, was handed over for the guidance of the Cave-Temple Commission.

With reference to Commander Jones' note, offering to forward three beautifully sculptured slabs found among the ruins of Nineveh for the museum, if the Society would bear the expense of the water carriage from Nineveh to Bombay, the Secretary was requested to accept Commander Jones' kind offer, provided the expense was not very great, at the same time soliciting the Government to allow the slabs to be brought down by the H. C. vessels as far as might be practicable.

The Rev. Dr. Stevenson stated that he had examined the gold coins from the Purundhur and Sewnere talookas, submitted with the Government letters Nos. 4028 and 4201 of 1851, and was of opinion that they belonged to some Hindu coinage, but he had not seen any previous specimens of them. They are stamped on one side only, and bear a star in the centre, with a conch on one side, and the rudiments of rather ancient Hindu characters on the margin. Dr. Stevenson thinks that they should be sent to England, for the examination of some able antiquary.

No. xvi. of the Society's Journal was laid on the table.—12*th August* 1852.

The following propositions by the Honorable Sir E. Perry, Kt., President, which had been circulated for the opinions of the Committee of Management, were submitted to the Meeting :—

1st.—Members out of the Presidency shall pay only fifteen (15) Rupees per annum, for which they shall be entitled to a copy of the Journal.

2nd.—Officers of Regiments stationed in Bombay shall be allowed free access to the Library, on a written order from the Colonel of their Regiment, but shall not take out books to their private residence.

3rd.—Native students, in like manner, who desire to pursue their studies, shall be allowed free access to the library, on a written order from any Member of the Society ; the order mentioned in this and the last rule to last for a year.

These, after some discussion, having been modified, it was proposed by the Honorable the President, seconded by the Rev. Dr. Stevenson, and resolved unanimously—

That it is expedient to introduce alterations in the rules in accordance with the principles expressed in the above propositions, and that these be referred to the Committee of Management, with a request that the Committee will draw up some new rules in accordance with the spirit of them for consideration at the next Anniversary Meeting.

The letter from Lieutenant Brett was accompanied by a plan and fac-similes of all the inscriptions in the Caves of Nasik. Mr. Brett stated also that he was going on to the Caves of Ellora for a similar purpose.

Respecting the coins above mentioned, which were forwarded by Dr. Wiehe, and which fortunately happen to be more perfect specimens than those belonging to Government which were partly described in the minutes of last meeting, the Rev. Dr. Stevenson stated as follows :—

"The coins from the Purundhur and Sewnere talookas are what are called *Huns*. The *Hun* is the original coin from which the Madras pagoda, so named from the figure of a Hindu temple on the reverse, is derived. The Hun should be the third of a tola, or 60 grains ; the Madras pagoda is only 45.83, but according to Prinsep's useful tables, page 39, most of the older Huns weigh from 50 to 52.90 grains ; our coins weigh no less than 59 grains, which is within one grain of the full standard itself. I mention this, as it is of itself a considerable argument in favour of the antiquity of these coins. The form of the coins is singular, being somewhat like an oval shield, convex on the one side, and concave on the other. The convex side is unstamped, and the concave has in its centre a lotus (Kamal), which conventionally by the Hindus is figured with eight leaves. On the margin the letters *Shrí Ramá* are stamped in rather ancient characters, but not differing materially from the present Devanágari type : on the opposite side is the conch (Shankha), one of the emblems of Vishnu, with a bunch of pearls attached to it. To the right of the letters is a figure, which I suppose to be the head of the mace (Gada), another emblem of Vishnu ; on the margin opposite to this, is the discus or quoit (Chakra), a third of Vishnu's emblems. The coin, then, was probably struck by a worshipper of Ram, probably of the sect of Rama Nuja, which some centuries ago prevailed greatly in the Canarese country, on which Punderpoor borders. In looking over the list of Vijayanagar sovereigns contained in the twentieth volumne of the Asiatic Researches, and copied in Prinsep's useful tables, Table XLVI., I find that the family of Bukka, raised to the throne by

the famous Vidyáranya, was superseded by that of Sri Ranga in 1450 A. D. The former of these families were worshippers of Siva, which we know was the sect of their *Gurus*, but all the names of the latter family show they were sectaries of Vishnu. Thus Sri Ranga's son was named Ram Chandra, his Narshina, and so on ; Krishna Deva, one of the family, extended his sway as far as Gujárat, but his son Ram Raja was killed during a Mahomedan invasion, and the kingdom, though not extinct till long after, was then shorn of its glory. Our coins, then, I should suppose, must have been struck by some one of those monarchs, in the palmy days of their sovereignty, when ruling over the best parts of the Deccan, from between the middle of the 15th and middle of the 16th centuries of our era."—*9th September* 1852.

Major Jacob's letter is accompanied by a translation of a Persian MS. entitled a History of Bokhara, which, at the suggestion of Sir Alexander Burnes, had been given to him in London in 1834, for this purpose, but which Major Jacob, after having perused a little, considered too puerile and inane to deserve further notice.

This having been represented to the Oriental Translation Committee, they were of a different opinion, and requested Major Jacob at his leisure to complete the translation : from various hindrances, however, Major Jacob has not been able to fulfil his task until the present time, and he has now forwarded the original with translation complete, for transmission to the parent Society.

The Secretary was requested to inform Major Jacob that, at the request of its Oriental Translation Committee, his translation, &c.would be forwarded to the Royal Asiatic Society by the earliest opportunity.

In reply to Dr. Buist's letter, calling the Society's attention to a memorandum of the Mahratta literature published at the lithographic presses of Bombay, which had been presented by R. X. Murphy, Esq., in November 1843, but never printed ; and suggesting the desirableness of a compilation of all information that could be obtained on the subject as a test of the intellectual progress of the people. The Secretary was requested to acknowledge Dr. Buist's communication with thanks, and to state that the Society, having been informed that the Rev. Dr. Wilson was engaged in drawing up a complete catalogue of all the typographed and lithographed works which had yet been printed for the " Deccan Vernacular Society," were desirous of leaving it in his able hands for the present.

The following letter was received from the Rev. Murray Mitchell, respecting the printing and translation of the Parsi religious books by

Professor Spiegel, and the Zend Dictionary under preparation by our member Dhunjibhai Framji :—

My dear Sir,—As I cannot attend the meeting of the Asiatic Society to-day, I shall be much obliged to you if you will kindly communicate to the Society the following extracts from a letter which I have recently received from Professor Spiegel, of Erlangen. It will be seen that this zealous Orientalist is making rapid progress with the important works he is bringing out in connexion with Parsi archæology.

In reference to his edition of the Zendavesta, the Professor writes as follows :—" The printing of my work is going on without interruption. The original text of the Vendidad is completed, the printing of the various readings has proceeded to the 6th Fargard [chapter] of the Vendidad ; also the first five Fargards of the *Pehlivi Translation* are out of the press. In the course of the autumn of this year the first volume will be ready. As to price, the complete edition of the *Zendavesta* will cost at Leipsic six dollars (10 dollars=15 rupees), and will therefore at Bombay not come so high as 15 rupees. I think you will find the price cheap enough, when you consider that my edition will contain not only the Vendidad, Yaçna and Vispered, but also the Pehlivi translation of these works ; also the yeshts, and the smaller liturgical pieces."

So far writes the Professor in reference to the Zendavesta in the *original languages*. An equally important subject is the translation of it which he is making. It was formerly intimated to the Society that Professor Spiegel was busy with a translation of the Zendavesta into German. He now mentions that the German translation of the Vendidad is ready (that is apparently out of the press).

But a still more interesting fact is that the Professor intends to furnish also a translation in *English*. He thus writes on the subject : —" As for the English translation, I shall gladly undertake it, and I shall enlarge the introduction for the use of English readers who have not the means of consulting the works referred to in the German edition. The Imperial Press of Vienna is willing to print the work in the same size as the edition on the original text."

Regarding Mr. Dhunjibhai Framji's Zend Dictionary, Professor Spiegel says :—" I have read the prospectus of the dictionary with much satisfaction, and I heartily wish the work may speedily be completed. I have not yet had time to collect subscribers, but I shall have the prospectus inserted in the next No. of the *Zeitschrift der Deutschen Morgenlandischen Gesellschaft*, [Journal of the German Oriental Society,] and I doubt not many copies will be subscribed for in Germany."

The Professor farther says in reference to his own work :—" Nothing can be more gratifying to me than to have my work brought to the notice of the Parsis, not so much in the hope of selling many copies (for as I have the patronage of both the Austrian and Bavarian Governments I have no pecuniary loss to fear), but because I am convinced that we may still learn much from the Parsis ; and I wish to get out of them what they do know as soon as possible, and before it vanishes entirely."

I trust that the last extract, as well as the warm interest which Professor Spiegel expresses in regard to Mr. Dhunjibhai Framji's Zend Dictionary, will stimulate some of our Parsi fellow citizens to literary investigation connected with their own ancient literature. In particular our zealous fellow member Mr. Dhunjibhai Framji must feel encouraged by the warm interest which the most learned Orientalists on the Continent take in his forthcoming work.

(Signed) J. M. MITCHELL.

The Rev. Dr. Stevenson V. P., read his paper on the Historical Names and Facts contained in the Kenery Inscription. The first name noticed was that of Chairakya, the celebrated minister of Chandragupta, the Sandracottus of the Greeks, who has a Cave dedicated to his memory under the name of Dramila. He then made some remarks on the name Rohinimitra, found in one of the inscriptions, which he endeavoured to connect with the royal family of which Pushpamitras was the founder, and the name of whose descendant, Deva Bhuti, written there Bhoti, appears at Carlee as the constructor of the elegant cave-temple near that place, and the name of one of whose sons is inscribed on the pillars in front of it ; leading us to infer that the cave must have been constructed about B. C. 70, at which time that sovereign reigned over Majadh, which he conceives received about that time the name of Maharashtra, "the great kingdom." He next mentioned that the names of two of the kings near the end of the Andhra dynasty, Gautamiputra and Yaduya and Sri-satkarni are found both at Kenery and at Nasik. This is the dynasty of kings mentioned by Pliny as powerful in his time, and which swayed the sceptre for four hundred and fifty-six years.

The latter of the two abovementioned kings is mentioned in the annals of China, where he is called Yuegnai, as having sent an embassy there in A. D. 428. The great Satraps of Western India, first the deputies of the Græco-Bactrian sovereigns, and afterwards independent monarchs, are also mentioned. A minister of one of them constructed a cistern at Kenery, and the son of one of them excavated a cave at

Nasik, whose date Dr. Stevenson makes out to be A. D. 484. Buddhaghosha, the Buddhist Apostle of Pegu and the Eastern Peninsula, who left India for Ceylon in A. D. 410, is also mentioned as having been at Kenery, and having dedicated there an image to Buddha.

The caves, as mentioned in the inscriptions, were intended to be some of them Buddhist temples, others convocation halls for the priesthood to meet in, others lodging houses for monks, others refectories and alms-houses. They were constructed by relations and connections generally of the above mentioned persons, or by rich goldsmiths of Calian and the neighbouring cities, or by devotees, who, having abandoned secular pursuits, seem thus to have bestowed their property ; the most curious fact, however, regarding the caves at Kenery mentioned was, that in the great tope opened a few years ago by Dr. Bird, there was originally deposited a Buddha tooth-relic. The date on the copper-plate accompanying it is plainly stated in words to have been the year two hundred and forty-five, which was A. D. 189. This relic is also mentioned in some of the rock inscriptions. The great cave is mentioned as then in existence, though it was not probably excavated long before that period.

Another curious fact in reference to the cave at Carlee is, that a Greek is mentioned in two of the inscriptions, and though there it is not expressly stated, Dr. Stevenson thinks it highly probable that he was the designer and superintendent of that excavation, which, as being the first, served as a model for the rest of these curious and laborious works.—14*th October* 1852.

Parts of Captain Charles Barr's paper on the Mangs of Kolapoor were read. It goes minutely into their mode of life at home and abroad; of the parts which they inhabit ; their superstitions and their religion ; their forays, their precautions, and the distribution of their spoil. Everything almost connected with them appears in this valuable communication, but the vocabulary of their language, which the Society trusted the author would furnish, if in his power ; and if not, that some one in the Kolapoor district would kindly take up the subject, as the origin and early history of these races receives more elucidation from an inquiry of this kind, almost, than from any other investigation.—11*th November* 1852.

ANNIVERSARY MEETING.

MONDAY, 29TH NOVEMBER 1852.

The Minutes of the last Meeting having been read and confirmed, the following Report of the Committee of Management for the year 1851-52 was read by the Secretary :—

MR. PRESIDENT AND GENTLEMEN,—It is our pleasing duty to lay before you a more favourable report of the state of the Society's library, museum, and finances, than has fallen to the lot of your Committees of Management for many years past.

2. During the year 16 resident and three non-resident Members have been elected, that is 13 more than during 1850-51.

3. One hundred and seventy-seven books and pamphlets have been presented to the Society, and thirty donations to the museum.

4. The original communications have amounted to seventeen.

5. To the library 197 works, or 341 volumes, have been added to the different classes, as per annexed list, that is 40 works or 180 volumes more than last year.

6. 502 volumes have been bound or re-bound, and 24 repaired.

7. The greater part of the newspaper files have been stitched and roughly bound, while the rest are undergoing collation and the same process, so that within the next two months the newspaper room, which was in total confusion, and almost buried in dust, will have the whole of its contents cleared and arranged, and made easily available. It will require, however, the addition of a frame work round the walls, which will not be expensive, and which your Committee feel assured you will sanction.

8. The Alphabetical Catalogue is steadily progressing, and it is hoped will be ready for issue by the middle of next year.

9. The old process of stamping the Society's Books, which had been discontinued for long time, has been renewed, and nearly all the most valuable works now bear, on different parts, the impression of the Society's seal.

10. The Malcolmson Testimonial has been completed, the books stamped and lettered, and the whole form a handsome and valuable case, headed " Malcolmson Testimonial," in the Museum. The subscriptions, with interest, amount to Rupees 2,732, 15 annas, 7 pies, of which Rs. 2,535, 12 annas has been expended, and the rest is kept for contingencies.

11. The museum has been almost entirely remodelled. The

additions and alterations in the cases sanctioned at the last Anniversary Meeting have been effected ; and the additional space which has thus been gained has enabled the Conservator to group into separate departments, with room to spare, the different objects of natural history and antiquities possessed by the Society. These, which were for the most part strewed about the museum in confusion, have now each their proper place assigned to them.

12. One case has been devoted to specimens of the primitive and trap rocks with their minerals of Western India ; another to a complete collection of the rocks of the island of Bombay, to which it is intended to add, in process of time, specimens of all the shells found on its shores, as well as specimens of the other objects of natural history which may be common or peculiar to it. The fossilized bones from the island of Perim have also been grouped into one case. Minor groups of minerals, rocks, and fossils, illustrative of the geology of the basaltic district of Western India, the primitive rocks of the Southern Mahratta Country, Cutch, Sindh, Arabia, and Aden, have been placed together in the tabular cases. Also collection of fossils from the older lakes of Central India.

13. The large collection of earthy minerals occupying that half of the tabular case next the Secretary's room has been re-arranged and provided with trays, also the collection of metallic minerals in the other half.

14. The shells occupy the upper part, or the tabular surface of this case, and are in process of arrangement. One case has been devoted to corals, which have been collected from the neighbouring seas. And the few other objects of natural history belonging to the classes of fishes, reptiles, and mammalia have also their separate apartments. So that everything now in the museum may be found in its proper place as far as general grouping is concerned ; but they still require a most important addition to make them further useful ; for in their present state they are little better than objects of mere curiosity—that is to say, they require to be named, numbered, and catalogued, that they may be made available for the purposes of instruction, and of greater interest to the passing observer. But this your Committee consider a work of time and labour, and one which can only be done under a person who is thoroughly acquainted with the specimens. Your Committee, therefore, cannot expect this to be fulfilled satisfactorily by any but a competent and paid Conservator.

15. The Society has published the usual number of its Journal, viz.

xv., for 1851, also a small number, viz. xvi., for the present year, and another is in the press, which will appear in January next.

16. The balance in favour of the Society is little less than that of last year.

Dr. Buist, seconded by T. L. Jenkins, Esquire, proposed :—

1st.—That this Report be accepted, and that the Society express their thanks to the Committee for the great care, labour, and ability with which it has been prepared.

2nd.—That the Committee be recommended to proceed with as little delay as possible with the Descriptive Catalogue of the Museum, without which it is impossible to attempt anything like a study of the specimens ; and that this, being completed, be published in an Appendix to the new Library Catalogue, now in progress of preparation, or in a separate form, as indispensable to make the Museum of any practical utility.

This was unanimously carried.

The following letter was read from the Hon'ble Sir E. Perry :—

" To the Secretary B. B. R. A. Society.

" Sir,—In consequence of my purpose to depart for Europe this day, I beg to tender the resignation of the offices of Vice-Patron and President, which I now fill by the favour of the Society ; and I respectfully offer my best wishes for the prosperity and yearly increasing usefulness of the institution.

" I am, sir, your most obedient Servant,
(Signed) " E. PERRY."

It was then unanimously resolved, on the proposition of P. W. LeGeyt, Esquire, V. P., seconded by G. Buist, Esquire, LL.D. :—

" That the Society record its deep sense of the valuable services rendered to it by the Hon'ble Sir Erskine Perry, during his Presidentship, and its regret that it should so soon have been deprived, by his departure to Europe, of the great advantage of his literary talents and acquirements."

Election of President.

P. W. LeGeyt, Esquire, seconded by A. Malet, Esquire, *Vice-Presidents*, proposed in an appropriate speech relative to his numerous and long continued labours in behalf of the Society, and his general literary attainments, that the Rev. J. Stevenson, D.D., should be elected *President* of the Society, in succession to the Hon'ble Sir E. Perry ; which, having received the general consent of the meeting, Dr. Stevenson returned thanks for the honor conferred on him, and

expressed his desire to continue, as heretofore, to further the objects of the Society to the best of his ability.

Election of Vice-President.

The election of the Rev. Dr. Stevenson to the Presidentship having caused a vacancy among the *Vice-Presidents*, Colonel C. Waddington, C. B., Chief Engineer, was, on the proposition of the Rev. Dr. Stevenson, seconded by Colonel W. Wyllie, C. B., unanimously chosen for this appointment.

The following Gentlemen were elected for the Committee of Management, Museum Committee, and Auditors for the ensuing year, viz :—

Committee of Management.

S. S. Dickinson, Esq.	J. Harkness, Esq., A.M.
Lieut. Col. J. Holland.	Captain J. G. Forbes.
William Howard, Esq.	Thomas L. Jenkins, Esq.
A. H. Leith, Esq.	J. Ritchie, Esq.
Rev. P. Anderson, A.M.	M. Stovell, Esq.

Museum Committee.

A. H. Leith, Esq.	J. Harkness, Esq., A.M.
H. Conybeare, Esq.	J. F. Watson, Esq., M.D.
G. Buist, Esq., LL.D.	H. J. Carter, Esq.

Auditors.

A. Spens, Esq. Captain J. G. Forbes.

In accordance with a resolution of the Society, passed at its meeting held on the 9th September last, that the Committee should bring forward propositions for the reduction of the subscription of non-resident Members—the issuing to all members a copy of the Journal gratuitously ; the admission of *bonâ fide* students gratuitously—and the admission of Officers of regiments stationed at the Presidency on a certain amount of subscription, it was resolved that—

1st.—Non-resident Members shall only pay fifteen rupees per annum.

2nd.—All Members of the Society shall be entitled to a copy of the Journal.

3rd.—Any Member of the Society may introduce (subject to the control of the Committee of Management) one individual, either Native or European, to the advantages of the library while engaged in literary or scientific pursuits ; the Member being held responsible for any books taken out from the library by the person he has introduced, and the

introduction not to continue for more than twelve months, nor to be given to any but *bonâ fide* students of science or literature whose circumstances prevent them from joining the Society as regular Members."

The proposition for the admission of Officers of regiments stationed at the Presidency on a reduced amount of subscription was, after much discussion, again referred to the Committee of Management for further consideration.

The following work has been added to the "MALCOLMSON TESTIMONIAL" :—

CUVIER (le Baron GEORGES) Leçons d'Anatomie Comparée, deuzième édition. Paris, 1836 à 1846, 9 vols. in 8.