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ART. XIV.—*On some Ancient Mounds of Scorious Ashes in Southern India.* By T. J. NEWBOLD, *Lieut., Madras Army.*

(*Read January 1, 1842.*)

ABOUT the middle of 1836 I sent to the late Mr. J. Prinsep, then Secretary to the Asiatic Society of Bengal, a brief account of a hill of ashes, situate at Budigunta, about eleven miles W. from Bellary, in the Ceded Districts, which he published in the *Journal of the Society* for October of the same year under the head of "Note on the occurrence of Volcanic Scoria in the Southern Peninsula;"—a title given by himself to the communication, from which it may be inferred that he was inclined to consider the ashes (specimens of which were forwarded) as of volcanic origin.

At that time I was in doubt as to the nature of the hill, but certainly did not suppose it to be volcanic, and contented myself with describing its dimensions, external configuration, surrounding formation, appearance of the ashes, &c.; and giving a summary of the local traditions of the Hindus, and opinions of the Madras Pundits regarding its origin.

In 1838, in the January number of the *Journal of the Madras Branch of the Royal Asiatic Society* a note appeared on this and similar collections of ashes, grounded on information chiefly afforded by myself, and written by my friend Mr. Cole, its talented Secretary, who coincides in opinion with Dr. Benza, to whom specimens were likewise sent, that the ashes are pieces of ancient kunkar (nodular and tufaceous carbonate of lime) more or less calcined and semi-vitrified; "which probably, having been long exposed to the atmosphere, have imbibed again some carbonic acid." An engraving of the Budigunta hill of ashes, from a drawing furnished by my friend Lieut. Lawford, of the Engineers, accompanies Mr. Cole's note, previous to the publication of which I had also been led to conjecture, that the ashes were the produce of ancient furnaces for the burning of lime; but expressed, at the time, my reason for doubting this supposition, a doubt which subsequent circumstances have tended to strengthen.

Since the publication of the notices alluded to I have had an opportunity of examining more of these singular mounds, and of opening one to its base; but, before entering into the result of this exploration, it would be advisable to afford some idea of the extent over which they are scattered, their situations, magnitude, shape, and general character.

Cavelly Venkata Lutchmia, President of the Madras Hindu
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Literary Society, informs me, that during thirty years' travel with the late Colonel Mackenzie, he observed similar mounds in Mysore, viz., two in the Chittledroog country, called *Búdigunta* and *Búdibetta*. He observes, "There is also a capital in Mysore, named *Búdiha*, and a place in Sundah, on the frontier of Nugger, called *Búditippa*, all named after these ashes, *Búdi*, in Canarese, signifying ashes; hence *Búdi-gunta* is literally the 'Hill of ashes.'" The ashes composing these mounds, he goes on to say, are similar to those now forwarded to the Society: some are, however, of a lightish brown, and harder in substance, and are supposed to be of greater antiquity than the white variety.

I have seen mounds of similar ashes scattered about in secluded spots among the rocks of the Ceded Districts. There are two at the eastern base of the Copper Mountain west of the Cantonment of Bellary; two to the N. E. among the Peacock hills, and one amid the rocks in the vicinity of the ruins of Bijanugger. But that of *Búdigunta* near Bellary, already mentioned, is the largest and most remarkable. It is a dome-shaped mound, about 46 feet in height, and 420 feet in circumference, situate at the top of a sequestered pass embosomed by dark-coloured hills, and rocks of greenstone and of ferruginous and silicious schists, whose sombre hues are strangely contrasted with the grey cineritious aspect of the mound they environ. It is composed of masses of scorious ashes, pretty firmly agglutinated, and partially covered with long rank grass. They project from the sides in several places like steps: towards the summit they are whitish and friable, and appear to have been crushed; but nearer the base are seen larger masses having a mammillary and stalactiform superficies, shining, semi-vitrified, and often hard enough to scratch glass. The internal structure of the more calcined portions is highly vesicular, not homogeneous, but imbedding in its cavities whitish friable ashes, and hard dark green or black cellular cinders. The more scorious portions are of various shades of green, approaching black, grey, and white; the embedding substance consists of friable earthy ashes of various shades of brown and white, the prevailing hue of the whole at a distance being a cineritious white. In riding over the hill a hollow sound is elicited by the hoofs of a horse, or by the percussion of any heavy substance. The summit is slightly convex; on it I found a fragment of clink-stone, and of hornblende rock; the latter appeared to have been excavated by art, probably a portion of some ancient vessel.

The mounds at the base of the Copper Mountain are much smaller and flatter, and appear to have been piled by human hands

into the form of irregular parallelograms. The dimensions of the largest are 34 yards by 29 yards. The surrounding formation is gneiss, granite, and greenstone schists, intersected by basaltic dykes.

The mounds at the Peacock hills lie among rocks of granite traversed by an enormous basaltic dyke, 40 yards in breadth, walled in by precipices of granite which rise in some places about 100 feet above the mounds of ashes at their base. The latter have somewhat the shape of depressed truncated cones: that nearest the rock rises to the height of about 15 feet, having its N. E. side higher than that to the S. W. The summit is tabular, slightly concave, and girt in by a low rugged wall, composed of semi-vitrified blocks of scorious ashes loosely piled together, and from 6 inches to 4 feet high, giving it the appearance of a small crater. Its longest diameter is 31 yards. The surface is covered with friable ashes of a light greyish-brown colour, on which lie a few angular fragments of granite, of a rude pottery, and a spheroidal nodule of greenstone, 3 inches in diameter, which on being fractured exhibited long radiating crystals of actinolite shooting through its internal structure. The sides of the mound are formed of masses of scorious ashes imbedded partially in the cineritious earth: its circumference, including a short talus, amounts to 202 yards.

I made two excavations in this mound:—the first commencing near the summit, exterior to the wall of ashes; the second from the centre of the summit down to the base. The first substance dug through was a layer of earth both of an ashy grey and whitish brown colour similar to that of *Búdigunta*, streaked with horizontal bands of brown hue, and of a soft chalky texture, portions of which were slightly unctuous to the touch. This layer, which was $4\frac{1}{2}$ feet thick, contained thin seams of whitish ashes.

Below lay a bed of scorious masses, No. 1, 2, 3, and 4¹, resembling those of *Búdigunta* and the Copper Mountain, in a state more or less of vitrification, mingled with whitish pulverulent ashes about 5 feet thick. This was succeeded by a layer of the ashy earth first cut through, No. 5, about a foot thick, in which were scattered a few black nodules, which from their weight, texture, and deflagration with nitre, were probably fragments of the charcoal often used in the fires of which these ashes are doubtless the result. Underneath followed a bed $2\frac{1}{4}$ feet thick of a dark earth, which before the blow-pipe first reddened and finally fused into a greenish grey enamel. Below all lay a bed 3 feet thick of angular gravel, the detritus of the granite and greenstone rocks on which it rested.

¹ The numbers in this paper refer to specimens in the museum of the Royal Asiatic Society.

As these mounds have been considered by some persons of volcanic origin, I have entered a little more into the detail of the surrounding formation than might be deemed necessary: it may not be irrelevant, however, to add that all those that I have examined rest on the detritus of the surrounding rocks, which has, itself, the solid rock below for its basis. None of the scoriæ, except some of the most vitrified portions, resemble those usually thrown out by volcanoes, nor are any modern volcanic products, such as lava, sulphur, obsidian, pumice, &c., found in the vicinity.

All the ashy earths, and most of the less vitrified fragments of the scorious ashes, effervesce slightly with dilute sulphuric acid; and at first, as previously observed, I was inclined to consider them as the result of ancient furnaces for burning lime, but on referring them to Lieut. Lawford, the Engineer of the district, he informed me that no such ashes result from the native limekilns of the present day; an opinion corroborated by my own examination of them. Most of the cyclopean masonry of the walls of ancient Hindu forts and cities is executed without mortar, and the houses of the humbler classes were constructed entirely without it. For what use, then, were such enormous limekilns, even admitting them to be so? The present limekilns used by the Europeans in India, for the construction of their cantonments, barracks, hospitals, which are usually built of brick, or stone, and mortar, would leave but few traces, if neglected, ten or twelve years hence.

I examined also the brick-kilns, the pottery, iron, and glass furnaces of the Hindus. The slags of the three first are strikingly different from the scoriæ of the mounds, being heavier, not effervescent with acids, less vesicular, and of different shades of brown, red, and black. Portions of the glass frit resemble No. 3, but its general character is far more vitreous, fritty, less cineritious, and coloured with more varied and lively shades of green, and having no admixture of the soft chalky ashes.

Having found on many occasions some clue to the truth in the tradition of natives, extravagant and wild as at first sight they appeared, I made inquiries among the curnums and village elders of the localities; the results were traditions, all of a similar general stamp, viz.:—that the mounds of ashes are the burnt bones of the enormous giants or "*Rakshasas*" of old, immolated during the demifabulous periods of the *Mahābhārat*. All were agreed as to their great antiquity, and that similar ashes are no longer produced except by the burning of dead bodies.

On referring these legends and opinions to the Pundits of

Madras, they perfectly coincided in their general drift; and their president, Cavelly Venkata Lutchmia, added that the ashes are those of the funeral piles of heroes and other remarkable persons of antiquity; and some of great religious sacrifices performed by holy Rishis in their hermitages.

Following this clue I sought the recent funeral pyres of that caste of Hindus that burn their dead, and there found ashes strongly resembling No. 2. The harder and semi-vitrified portions were formed from the calcination of the bones; while the ashes resulting from that of the muscular and fatty matter, mingling with those of the charcoal and fuel, formed a soft whitish grey earth resembling No. 5, though not consolidated. In both the ancient and recent scorix small fragments of quartz may be seen imbedded; derived probably from the granitic soil on which the fires were kindled, and which, with the alkali of the wood ashes, have probably assisted the process of vitrification: for little doubt can exist that the cineritious and vitrified aspect of the substance composing the mounds, its highly vesicular structure, the result of gaseous extrication, have not been caused otherwise than by the agency of fire. Like the recent human ashes, they fuse before the blowpipe into a greenish grey fritty enamel; some of the less calcined portions giving out a distinct animal odour, though not equally strong in the ancient ashes. Both are often hard enough to scratch glass, highly vesicular, of various shades of green, brown, and white, and resemble each other in external configuration and internal structure. On the whole, however, the human ashes are of a lighter and less vitreous character, arising evidently from the less degree and continuance of heat to which they were exposed, and from the circumstance of the bodies at the present day being generally burnt singly on separate pyres. It often happens, among the poorer classes, that sufficient fuel is not provided for the entire consumption of the corpse. I have seen portions of the skull, and larger bones of the human frame, not only left unburnt, but even with portions of the muscles and tendons adherent, lying near the expiring embers, a prey to the squalid vultures and kites that usually hover around these dreary spots, hardly to be scared away from the horrid repast.

The greater weight, density, and higher state of vitrification of the scorious ashes of the mounds, may be accounted for by the greater intensity of heat under pressure to which they were subject. For if we are disposed to admit there are gleanings of truth in the tradition of the Hindus, that these ashes are really animal remains; or if, after a more minute analysis than I have the means of

rendering, they prove to be what they certainly most resemble, it is apparent from the density exhibited in the section of the mound opened, the large size of the masses of the scorïæ, and their state of vitrification, that they must have been the result of one, or perhaps two, enormous and long-continued fires. It is quite certain they cannot be the ashes of individual funeral piles collected into heaps: the latter are rarely aggregated into masses more than six inches long; and it may be added that the mounds are almost always found in sequestered spots at a distance from any town.

The ashy earth accompanying them shrinks and emits a peculiar and disagreeable odour when subjected to a red heat; it fuses, *per se*, before the blowpipe into a whitish blebby enamel. The less vitrified portions of the recent human scorious ashes effervesce feebly with acids: owing perhaps to the free lime, which exists, according to Berzelius, in the proportion of about 10 per cent. in calcined human bones, having attracted carbonic acid from atmospheric exposure; a remark equally applicable to the ashes of the mound and to limestone from which the carbonic acid has been expelled by fire.

Since the above was written, Mr. Davies, of Manchester, who has kindly examined the scorïæ of the ancient mounds, has discovered phosphoric acid with lime in two of the three specimens sent him for analysis: a fact which leaves but little doubt of their animal origin.

With regard to historical evidence, Hindu records are silent on the subject of these mounds, beyond mention of some of the places to which their proximity has given name. It is, however, a well known fact, that many of the ancient tribes of India burned their dead, as is practised by some castes of Hindus at present, and we are informed in the *Parasu Rama Vijaya*¹ of women consuming themselves, *en masse*, on the same pyre with the bodies of their husbands slain in battle. The women of a whole aboriginal tribe are represented, in an old Tamil record, as causing a great pile of fire to be kindled, into which they leaped, and died execrating their enemies, the Hindus, who had cut off the males of the tribe to a man by treachery.

While it seems more than probable that the most considerable of these mounds are the ashes of the slain, burnt collectively after some battle field,—monuments perhaps of the bloody struggles that took place between the early Brahmanical settlers in Southern India and the savage aborigines, handed down in the records of the former as *Rakshasas*, giants, and demons,—still, in justice to the opinions of

¹ Taylor's Report on Mackenzie MSS., *Madras Journal*, for April, 1838, p. 355.

the Pundits, I must admit, though reluctantly, the possibility of some of them being the remains of great sacrificial holocausts performed by the Rishis of old in their solitudes, since the ancient annals of the country abound in allusions, both to bestial and human sacrifices (*Meria puja*) on a fearful scale of magnitude, made for the attainment of supernatural power, for the discovery of hidden treasure, in propitiation to malign spirits, and to the deities supposed to preside over agriculture and commerce¹. In the *Chola purva Patayam*², Kachi Vira Kamachi, one of the confederates against Salivahana, the Jaina Sovereign of great part of India, and founder of one of the celebrated Hindu eras, appears as a negociator with the local *Durga*, and promises her 1008 human sacrifices from the people of his tribe. In the *Káli-amman-púrvotaram*³, a record of Madura, Nijangaráyen is mentioned as having sacrificed 1000 elephants, and 1000 sheep to *Káli*; and in the *Bhagavata Purána*⁴, Prithu is said to perform 99 horse sacrifices (asvamedha yágam). One of *Prithu's* grandsons made a sacrifice for 1000 years, and another is represented as having made the whole world a sacrificial plain. Other instances of the magnitude of animal sacrifices among the ancient Hindus are not wanting; but, in the wish to abridge this paper, already too long, I refrain from citing them.

I cannot conclude, however, without observing that while the natives of India have been singled out as the subject of severe reproach for the waste of animal life in such offerings, it is often forgotten that similar sacrifices have been made by the priests of the most enlightened nations of the earth; especially during the darker periods of the fitful history of mankind. Witness the Druidical human sacrifices in our own land, not many centuries before the great Alfred; the human sacrifices of Egypt; the great sacrifice of Solomon⁵, perhaps the largest on record in the world, of 22,000 oxen and 120,000 sheep; the sacrifices to the manes of the dead, familiar in the history of the nations of northern Europe, and the nomade hordes of Tartary; and the hecatombs and holocausts of the Greeks and Romans. According to Herodotus⁶, Cræsus attempted to propitiate the divinity at Delphi by costly sacrifices; among others, by one of 3000 of each kind of animals. Charges have been made

¹ Vide Mackenzie MSS., *Madras Journal* and Dubois's works.

² ditto ditto for April 1838, p. 279.

³ ditto ditto — October 1838, p. 246.

⁴ ditto ditto ————— pp. 225, 226, 228.

⁵ 2 Chron., c. vii, v. 5.

⁶ Clio 50.

against the Karadi Brahmans, as also against the Jews of Damascus, for human blood shed in performance of certain mysterious rites; but in neither instance clearly proven. Human sacrifices, it is certain, still obtain among the Khoonds; but this horrid custom, I am happy to observe in a recent paper, is in a fair way of being entirely rooted out by the vigorous measures of Lord Elphinstone.