

XVI.—*Notes on Stone Implements from the Khasi Hills, and the Banda and Vellore Districts.*—By JOHN COCKBURN, *Late Curator of the Allahábád Museum, Officiating Assistant Osteologist, Indian Museum, Calcutta.*

(Received 1st July ; read 6th August, 1879.)

(With Plates XIV, XV, XVI.)

Stone Implements from the Khasi Hills.

Stone implements have from time to time been found in the Province of Assam, but the specimen figured in Plate XIV (figures A, A¹), is unusually interesting, as being the first stone implement found *in situ* on the Khási Hills. The only previous record of a stone implement from the Khási Hills I can find, is by Col. Godwin-Austen, in P. A. S. B. for 1875, p. 158.* This specimen was picked up on the surface of the road, on the bridge near Col. McCulloch's house at Shillong, and no one who knows the locality can doubt that it had been dropped accidentally, probably from the pouch of some Khasia, a people who venerate celts as relics. Specimen B, (Plate XIV, figs. B, B¹) which I purchased from a Khasia, had a small portion scraped off. This, I was told, had been administered to a sick child in a draught of water. The first specimen (A), which measures roughly 3' 50" in length, by 1' 65" in width, is made of a tolerably hard argillaceous slate. It was dug up at Shillong in December, 1877, on the site of the house at present occupied by Brigadier-General Nation, in the presence of Col. A. Tulloch, then in command of the 42nd N. I., and Lieut. H. Stevens, Adjutant of the Regiment. These officers were superintending a working party of the men of their Regiment who were levelling the site, when one of the men, a Ghurka, came up to them with the celt in his hand, all incrustated as it was with clay, and said it had just tumbled out of a clod he had broken up. On the specimen being shown to me, I at once pronounced it to be a genuine celt, in spite of the soft material of which it was made. I visited the place the same day in company with these gentlemen, and was shown the spot where it was found. This was nearly four feet below the surface in clay. This clay overlies a peculiar sub-gneissose sandstone, and from sections I had an opportunity of observing on an adjoining site about 300 yards north-east of the General's house and elsewhere close by, it averages from five to seven feet in thickness.

I shortly after got specimen (B) from a highly intelligent Khasia in my employ ; he said he had found it near Nongpo on the Shillong and Gauhāti road. There can be no doubt as to the authenticity of this specimen, which is made of the same material (slate) as specimen (A,) and has

* For two other instances of stone implements in Assam, see P. A. S. B., 1872, p. 136.

a similar weathered coating. I cannot certify to the locality, for my Khasia friend had decidedly loose notions as to the value of truth, but am of opinion that it was also found on the Shillong plateau. In shape, it somewhat resembles the small Jade specimens from Yunan and may be considered as a form grading into the shouldered type of celt. I may mention that it bears a good deal of resemblance to the chisel used at the present day in file cutting. These celts of slate could hardly have been used as anything else but agricultural implements, hoés &c., as pointed out by Col. Godwin-Austen; but I would suggest that besides being used as instruments for digging up roots &c., fixed in a rude horn or wood handle, the chief use of celts of the smaller type from 6" to 2", made of greenstone or chert, was *for flaying animals*. The specimen figured at p. 251, Fig. 161, of the *Catalogue of Antiquities of the Royal Irish Academy* well illustrates how these small celts were handled, probably fixed with some hard resin, like the "black boy" gum of Australia, in a cavity scooped beneath the burr of a shed antler with a few inches of beam attached, so as to form a small handle. I was struck with this idea from the facility with which I have seen Chamars in the Cawnpore District, skin Nilgai (*Portax tragocamelus*), with their rude *khúrpas* (an instrument like a flat metal celt, fixed into an obtusely angular handle, made of a branch of a tree and used chiefly for scraping up grass). I have not the least doubt that their aboriginal ancestors used these small celts, which were similarly handled, as deftly for this purpose in their day. I would myself undertake to skin in a couple of hours an animal the size of a heifer with a celt handled and sharpened, and the assistance of a few flint flakes or shells.*

* I find I have been perhaps anticipated in the above remarks by Mr. V. Ball, in a paper read before the Royal Irish Academy on the 30th of November, 1878, but of which I did not see a copy till June last, while my paper was written in the previous November. I here copy this portion of Mr. Ball's paper. "There is one class of stone implements unsuited to any of the above-mentioned purposes, but which being provided with sharp edges it seems very probable were used as skin-scrapers. In connexion with this, I may mention that on one occasion in the Satpura Hills in the Central Provinces, having shot a bear I gave the carcass, with some knives to the people who had brought it to camp, in order that they might take off the skin. These people belong to a tribe who always carry a very small well-sharpened iron axe of a form I have not seen elsewhere. After working for a short time with the knives, they discarded them for the axes, which they removed from their wooden handles, and then placing their thumbs in the holes grasped them firmly in their fingers, and continued the flaying with astonishing rapidity. In a similar way, I believe that the scrapers of stone may have been used for the preparation of skins, which when rudely dressed afforded the only clothing of these early inhabitants." I may here remark that these small curved axes are used throughout Bundelkhand, and that I always carried one myself for many years on shooting excursions.

In connexion with the subject of stone celts, I may mention that it is not generally known that the natives of Upper Assam use a genuine metal celt at the present day. The only record I can find of a somewhat similar implement is in the P. A. S. B. for 1871, p. 83, where a celt of this kind is spoken of as used in Arakan, fixed on a long bamboo handle.

This simple but highly efficient Assamese axe somewhat resembles a modern African axe figured by Sir John Lubbock at p. 28 of the 3rd edition of *Pre-historic Times*, and is almost identical in principle with another modern African axe, fig. 256, p. 370, *Cat. Ant. R. I. A.* It consists of a moderately stout handle of a dark and heavy wood, slightly curved upward at the haft end, where it expands into a hard natural knot. Into this knot is inserted at an angle, a tapering chisel-like blade of iron about 2.25 in. wide at the cutting edge, tapering to a point, and about 8 in. long. An axe of this kind will stand three or four years of hard work without splitting, and the dexterous and efficient way in which it was used excited my admiration. A family or party consisting of five or six males will fell and clear three acres of dense forest in two months, working at leisure. I observed this kind of axe used from Dumduma to Saikwah Ghat on the Sadiya Road, in the hands of Muttucks, Ahoms and Miris. Occasionally these tribes take contracts from tea-planters to clear forest, and, I have been informed, prefer their own tools to the best English felling axes. On one occasion I myself had to fell a considerable sized tree near a clearance at Dollah, near Sadiya, for the purpose of obtaining the eggs of a wood-pecker, and set to work with an English axe. The tree was quite 20 in. in diameter, and I had not gone two inches into the wood, when a man came up bearing one of these primitive axes, and volunteered his assistance, refusing at the same time the proffer of my axe, on the grounds that it was unnecessarily weighty, too broad, and formed a thick and clumsy wedge. In a quarter of an hour he had the tree down, and in a short time more the glistening eggs were in my hand. This iron Assamese celt, which, if found elsewhere, severed from its handle, would be considered of quite the same type as the narrow bronze celts considered by some Antiquaries to have been chisels, suggests the reflection that fig. 252 A. of the *Cat. Ant. R. I. A.*, which has been accepted all over the world as the method in which the flat wedge-shaped celt was handled, more particularly since its reproduction in Sir J. Lubbock's popular and interesting work *Pre-historic Times*, (see p. 25, 2nd edition,) is not quite correct.

In this figure the taper point and a proportion amounting to nearly one-fourth of the instrument, is seen projecting above the handle, while

a cross ligature of tendon or cord gives additional security to keep the head from falling out and the handle from splitting.*

That some celts were so handled has received additional confirmation from a Plate in Fergusson's *Tree and Serpent Worship*, where a man, considered an aborigine†, is represented cleaving wood with a celt, which, as the cross ligature and the projection of a portion of the metal above the handle show, was handled in the manner suggested in the *Cat. Ant. R. I. A.* But figs. 274 to 251 in that work, and all bronze celts of the long narrow type were, I am inclined to think, hafted imbedded in a knot as in the modern Assamese axe. Flat copper celts of exactly the same type as represented in the bas-reliefs of the Sanchi Tope have been found in the Mainpuri District, in the Gangetic Duáb‡ and also in the Balághát District, hardly more than a foot below the surface, indicating their use at a comparatively modern date.§ Copper or bronze (?) implements were, I am inclined to think, in use all over the Duáb in the second century after Christ, in conjunction with iron, which was either too costly to be procured by the poorer classes or too valuable to manufacture agricultural implements of. At this era I would assume that certain tribes of aborigines who yet maintained their independence, in impenetrable jungles or hills in various parts of the country, continued in or were slowly passing out of a stone age. The chert flakes and arrow heads found in Bundelkhand *on the surface* possibly originated at this time, as well as some of the numerous polished celts found in this part of the country.

We know how rapidly savage communities pass from a Stone age into an age of Iron, from the evidence of Capt. Cook regarding the New Zealan-

* A remarkable find of copper implements at the village of Gungeria, Mhow taluk, Bálaghát District, is recorded in P. A. S. B. for May, 1870, (with a Plate), when 424 copper celts and some silver ornaments were found a few inches below the surface of the ground. I would suggest that specimens 1 A, 1 B were socketed as in the Assamese axe, while 3 A, 3 B, 3 C were handled after the fashion shown in the railing at Sanchi, and as divined in the *Cat.* of the Royal Irish Academy. With regard to the very extraordinary silver plates found at the same time, I would throw out the suggestion that they were human ornaments, and not bovine. The only instance of a similar silver ornament worn among savages at the present day, is the possibly analogous thin silver plate, worn on the forehead by the Mishmi women (see Dalton's *Ethnology of Bengal*). It is improbable that the race who made these ornaments venerated the cow at all.

† Fergusson calls these people Dasyus and elsewhere speaks of them as hated and despised aborigines.

‡ P. A. S. B., 1868, pp. 251, 262.

§ A flat copper celt of exactly this oblong type has been found associated with Buddhist remains in the Chaubara mound, Muttra. General Cunningham, *Report of the Archæological Survey*, 1871-72, p. 16, Vol. 2.

ders, and from what we see of the existing Andamanese. Nevertheless, I think we may fairly assume that stone continued to be employed for flakes and arrow-heads &c. long after iron was first introduced. The North American Indians long continued to use flint and jasper for arrow-heads when they were in the possession of abundance of iron tomahawks and knives, and even firearms. Catlin in his work on the North American Indians records how the Western hunter using a gun on horseback was unable to compete with the Red-skin using the bow and stone arrow in the chase of the Bison, and how this flint-tipped arrow was frequently driven right through the ponderous shoulders of the mighty beast, by the sinewy arm of the savage.

There is no reason why a savage should not be able to fell a tree with a good big celt such as the fine specimen, 10 inches long shown in Plate XVI, (fig. G,) sharpened and handled. In fact, marks corresponding to such as would be made by a stone implement, have been discovered on ancient piles in the Lake-dwellings of Europe, clearly showing that such implements were used for cutting wood.

Stone Implements from Banda.

Abú'l Fazl, in the *Ain-i-Akbari*, describing the fortress of Chunar writes: "Near this fort are a race of people who go quite naked, living in the wilds, and subsisting by the use of their bows and arrows. In those wilds are also elephants." I have tracked the Sambar with the descendants of these savages, the modern Kols, not far from Kirwí, a great locality for celts. This brings me to the subject of the Banda implements. None of these celts have been found in their original situation by Europeans, and there seems a good deal of mystery attached to the circumstance of their extraordinary abundance in this tract, and the comparative rarity of such lithic remains elsewhere. I am of opinion, however, that they will be similarly found (on shrines and under trees) nearly as numerous in other parts of the Peninsular of India, inhabited by aboriginal races to within a recent period. Mr. H. P. LeMessurier was the first to draw attention to these remains in Bundelkhand, in *P. A. S. B.* for February, 1861. He was of opinion that they had all been found within a few miles of where their finders had deposited them, an opinion I endorse for reasons to be stated further on. He also personally discovered a chert arrow-head of an European type, twenty-eight miles east of the Cachai Falls (Tons), a discovery of the greatest interest.

In the Proceedings for June, 1862, *J. A. S. B.*, XXXI, p. 323, Mr. W. Theobald, in a short paper, which continues to be the only memoir of importance on the subject, added considerably to our knowledge of these Banda

implements, figured a series, pointed out the principal types, and further extended the area of their prevalence to 200 miles east of the Tons river. He accounted for their abundance in the vicinity of Kirwí by the hypothesis that it was due to some "superstition which induced men of old time, to collect these relics of a still older age, and convey them to the shrines and localities where they are now so abundant, so that celts collected over thousands of square miles are now accumulated about Kirwí and its environs." This supposition of Mr. Theobald's agreed well at the time with the scarcity of other stone weapons in this area, compared with celts—one stone hammer, and a single chert arrow-head being alone recorded by Mr. LeMessurier. In the light of our present knowledge of stone remains within the Peninsular area, I would modify this theory of Mr. Theobald's. In February 1878 I found a number of chert flakes on the eroded surface of a rain-washed field, situated on the bank of a small stream, only a couple of hundred yards away from a tope near the village of Hatwah, in pargana Chibun, district Banda. They were all of a small type, and exactly resembled those from Jabalpur in the Geological Museum. Two of them were perfect, the remaining few were fragments, which when restored would have been from three quarters of an inch to an inch and a quarter in length. Unfortunately they were all lost. Regarding the use of these flakes there can be very little doubt that they were used, held between the fingers and thumb, in making the first incision down the mesial line in the process of skinning, the remainder of the operation being completed with the comparatively blunt celt. The discovery of these flakes led me to make more extended enquiries on the subject than hitherto from natives, some of whom were Bráhmans of intelligence, whose families had been settled in the villages around for generations. The more intelligent of these men, while stoutly maintaining the great antiquity of the celts, and that they (the Bráhmans) had remembered the celts as children under the trees where the implements still remained, and that their fathers had handed down the same story to themselves, admitted that celts continued to be found to the present day; one of the Bráhmans interrogated had found one himself, while the others had all heard of, or seen instances of celts being found in their own village fields. Some of the ignorant were unable to account for the reverence with which they regarded these stone remains; evidently having a sort of confused idea that the celts were in some way connected with the Phallic emblem worshipped by the Hindus. Others considered the celts thunderbolts, calling them—" *Bijli ka puthul*"—lit. "stones of the lightning," an idea which prevails in every quarter of the globe.

I can confirm what Mr. Theobald says regarding the ability of the

natives to recognise the veriest fragment of a celt, pieces in fact which have been declared by educated Englishmen to be fragments of pebbles. The people, however, seem to regard a smooth surface on some part of the implement as an indispensable test of the authenticity of a celt, and failed to recognise flint knives. This would account for the singular absence of palæolithic weapons among these remains in Banda. A seeming exception to this rule is the heart-shaped type of celt, of which No. 4 is a fragment, but these, though chipped, invariably exhibit the best cutting-edge, when perfect, of any I have yet seen, and this is also Mr. Theobald's experience, see fig. 4, Pl. II, of his paper. The same remarks apply to the elongated chipped fragment, No. 13, of my list, (Plate XVI, fig. H) which is polished on the bevelled surfaces forming the edge, and is yet sharp. The stone hammer was probably retained by its finder for the same reason. This hypothesis of mine, is, however, open to objection, based as it is on the absence of palæolithic implements in a tract which yet remains to be carefully explored.

The majority of my specimens were picked up under Pipal trees, sometimes on the road side, but more usually growing on the high bunds of the tanks so common in Banda; a number were removed by me from off a huge Phallus, where they lay in the groove of the female emblem. Specimen No. 2, I found on a stone slab in a ruined temple; Nos. 5 and 7, I found on a mud altar with the hammer described further on. Others are often placed in the fissures and clefts of trees. It is curious that precisely the same idea exists in this part of India on this last point as on the continent of Europe, where the peasantry place celts, called "thunderstones" (as I have often heard them called in Banda), in the clefts of growing trees. I have twice dug out celts with my hunting knife, which were so grown over by Pipal trees; on one of these occasions, only the conical tip was visible! With regard to the finding of these celts by natives, most of them have, I believe, been found in excavations a few feet deep; some have doubtless been turned up by the plough; a large proportion again have been found in watercourses or streams, into which they had been washed along with the soil; others have been found on the eroded surface of fields. In one instance alone did a celt picked up by me show unquestionable traces of having been lately deposited under the tree where I found it. This specimen, which I think I gave to Mr. G. H. M. Ricketts, c. s., c. b., had red sand adhering to it in compact lumps, so hard as to justify the belief that it was part of the original matrix in which the celt was found.

The accompanying table gives details of the types found in Banda, by myself, and my brother William Bruce Cockburn, who first drew my attention to them, has himself collected a large series, and has aided me very materially in searching for them personally.

Table giving Weights and Dimensions of Celts from Banda.

No.	Length.	Greatest Width.	Weight.		REMARKS.
			lbs.	oz.	
1	10.45	4.20	5	2	This magnificent specimen was found by my brother W. B. Cockburn, in the village of Lohra, Pargana Darsenda. I believe it is the finest polished celt of this type found in India. Material Diorite. (Plate XVI, fig. G.)
2	6.66	2.70	1	5	Found in a ruined temple 5 miles from Hatwah, Do.
3	4.50	2.75	1	4½	Of a peculiar massive type. Do.
4	5.41	3.75	1	4½	Chipped fragment of heart-shaped type made of fine-grained trap. Two of the most highly finished specimens I have yet seen from Banda were of this type. I gave them to a brother antiquary and regret not having preserved drawings of them.
5 (D)	4.12	2.90		11	Of fine-grained black trap. Found on mud altar with stone hammer.
6	4.25	2.86		9	Of intermediate size. Diorite.
7 (E)	3.50	2.25		6½	Found on mud altar with stone hammer. Diorite.
8	4.85	2.20		11½	} Of long narrow type, very close to those from Vellore. } Material Diorite.
9	4.50	2.25		8	
10	2.95	2.		4	} Of smallest type. Diorite.
11	2.50	2.05		3¾	
12	5.80	3.70		10	Flat celt .75" thick of indurated shale. This is a very interesting and instructive specimen.
13	4.30	2.		6½	Elongated chipped fragment of fine-grained trap exhibiting a remarkably good edge. Possibly used in the hand in flaying, very much as an anatomist uses the end of his scalpel more for detaching than cutting. (Plate XVI, fig. H.)
14	3.25	2.13			Pear-shaped implement of sandstone bearing evidences of having been subjected to heat. Interesting as being the first implement of this material from Banda.

The above specimens, with a series of 20 more, chiefly duplicates of these types, are in the Geological Museum, Calcutta. A and B (Plate XIV), from Shillong, are in the Indian Museum, as is also a remarkable specimen of stone hammer, which requires a detailed description.

This stone hammer (Plate XIV, fig. C) was picked out by me in February, 1878, off a mud platform, or altar, four feet high, built at the angle formed by two mud huts, three miles south of the village of Hatwah in the District of Banda. There were quite a heap of stones on this platform, most of them water-worn pebbles, and two celts (5 and 7, of Table). There is no specimen of this type of hammer, or more correctly oval tool-stone, in the Geological Museum, and, as I can find no mention of a similar specimen in Mr. Ball's tabulated list of stone implements, I believe it is the first specimen of its kind found in this country. Similar implements have,

however, been largely collected in Europe, and my specimen is a facsimile of fig. I, pl. I of Prof. Nilson's work on the Stone Age, and also closely resembles an Irish specimen figured in the *Catalogue of Antiquities in the Royal Irish Academy*, p. 94, fig. 75. The Banda specimen is obviously a water-worn pebble of a red quartzite, with a tolerably deep hole in one side. It seems that water-washed stones were similarly utilized in Europe during the stone age, for Mr. Wilde says, in reviewing the Irish collection, that "some of these stones are natural water-washed pebbles, others are evidently shaped by art." Regarding the indentation or hole, which is sometimes found on one side only, at others, in precisely similar specimens, on both sides, the Editor of the *Catalogue* is of opinion that it is the first step in the formation of a hole, which it was the intention of the maker to carry right through, and fig. 76, which yet more closely resembles my specimen in size and outline than fig. 75, with a large series in every stage of manufacture, clearly shows this. There can be very little doubt that these so-called tool-stones were used as hammers for cracking small bones, nuts &c. and for lighter work generally, during what must have been a protracted process, the boring. My Banda specimen bears evident marks of the effects of percussion at either end, which it would be difficult to account for otherwise, and from the singular convenience of hold it affords when held between the finger and thumb, it was probably so held and used.

Stone Implements from Madras.

Stone implements of a neolithic type have hitherto been remarkably scarce in the Madras Presidency, there being only one recorded instance in the Society's Journal of a polished celt having been found within this area, (P. A. S. B., 1868, p. 59.)

I have since had a series of polished celts from Vellore of quite the same type as the Banda celts.

This collection of polished celts from Vellore is of the greatest importance. Mr. V. Ball, in his paper "On the Forms and Geographical Distribution of Stone Implements in India," considers the whole of Southern India (coloured red in his map,) as productive of palæolithic implements of chipped quartzite only. Up to the time Mr. Ball wrote, there had only been a single recorded instance of a polished celt having been found within this area, (P. A. S. B., 1868.) After his essay had been printed, Mr. Ball examined a series of polished celts from the Shevaroy Hills, in the British Museum, but he remained inclined to consider this *find* another instance of an outlier. I leave it to the reader to consider whether the accumulated evidence collected now is not quite strong enough to seriously affect Mr. Ball's theory.

The series of ten now exhibited were found on a low rude sort of stone table, under a tamarind tree, near a Mallayam temple, in the

village of Tulleh of the Vellore taluq, North Arcot district, by my friend Flo. W. Tucker, Esq., now of Naini Tal, who was then in the Madras Presidency on Famine duty.

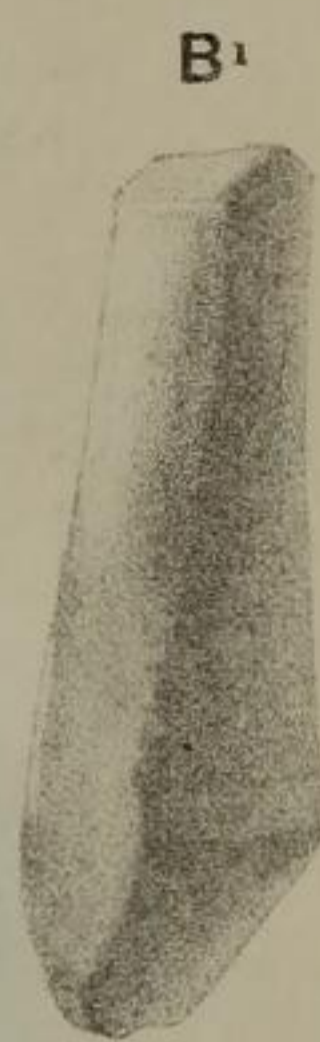
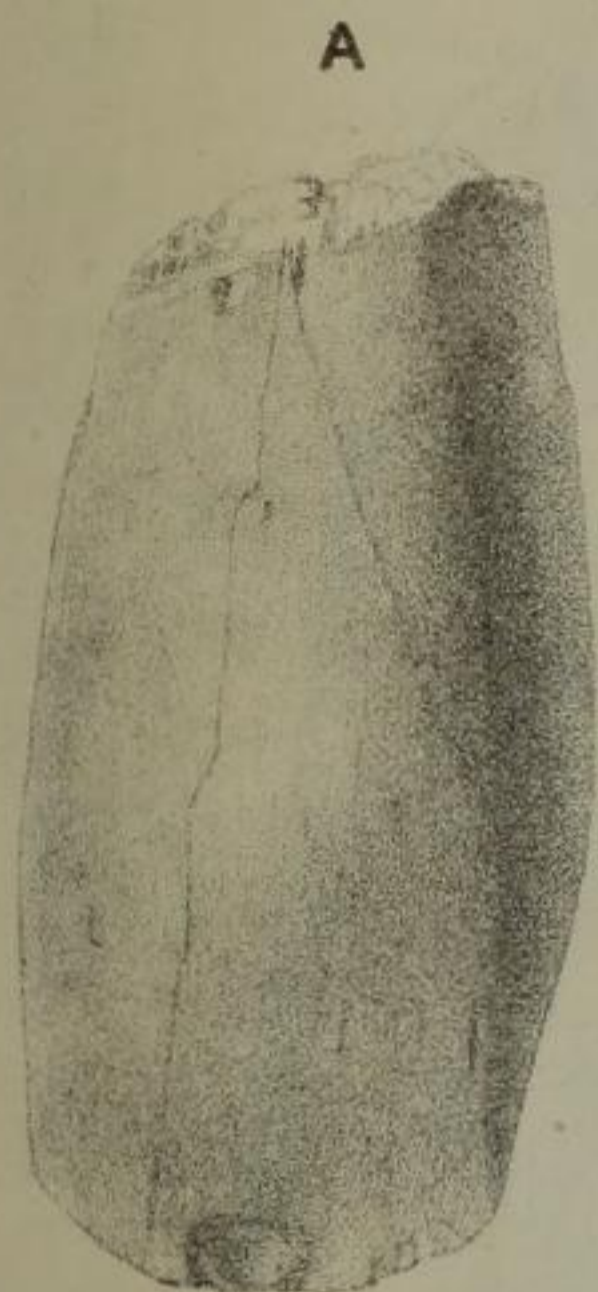
The Vellore celts closely resemble others of the long narrow type from Banda (specimens 8 and 9), and from the red tinge communicated to the surface of these implements, it is probable that these Vellore specimens have also been derived from the surface of laterite beds like the ruder weapons of chipped quartzite from the same district. Three of these Vellore implements are figured in Plate XV, figs. D, E, F.

There are three forms of stone implements, the uses of which are considered by many more or less problematical. 1st, The oval tool-stones and mauls,* of the former of which the specimen described above is a typical example. 2nd, Sledge hammers of stone, such as are held in the hands and used in working metals by African races at the present day. Implements of this type do not appear to have been discriminated in Europe where they doubtless occur, but a very fine Indian specimen from Powari, east of the Sone river, is figured by Mr. Theobald in pl. 1, fig. B, J. A. S. B., Vol. XXXI, (see p. 326 of his paper). 3rd, Spindle whorls, which when found perfect (made of bone) have not exceeded $2\frac{1}{2}$ inches in diameter; but from what I have seen of their use among modern natives, I believe that stone implements of this type from 3 in. to $3\frac{1}{2}$ in. in diameter might well have been so used. 4th, Ring stones or stone bracelets.† This I believe to have been the real use of the large type of flat round stones with perforations large enough to admit the small hand and wrist of a savage. Certain Indian castes at the present day with a strong infusion of aboriginal blood in their veins, Chamars and Pasis in the N. W. P., continue to wear ponderous bracelets on the wrist made of a composition like bell-metal. I have seen these ornaments quite 5 in. in diameter with a triangular section an inch and a half wide at the base. There is what I take to be a typical specimen of this Indian stone bangle in the Geological Museum, which exceeds an inch in thickness on the inner side of the circle, and is bevelled to a sharp edge on the margin.‡ The aperture is sufficiently large to admit a small hand. I

* A circular perforated type of maul surrounded by a groove, of which two were found at Chidizi, in Balúchistán, and described in the Proceedings of the Asiatic Society for July, 1877, should be included in this list.

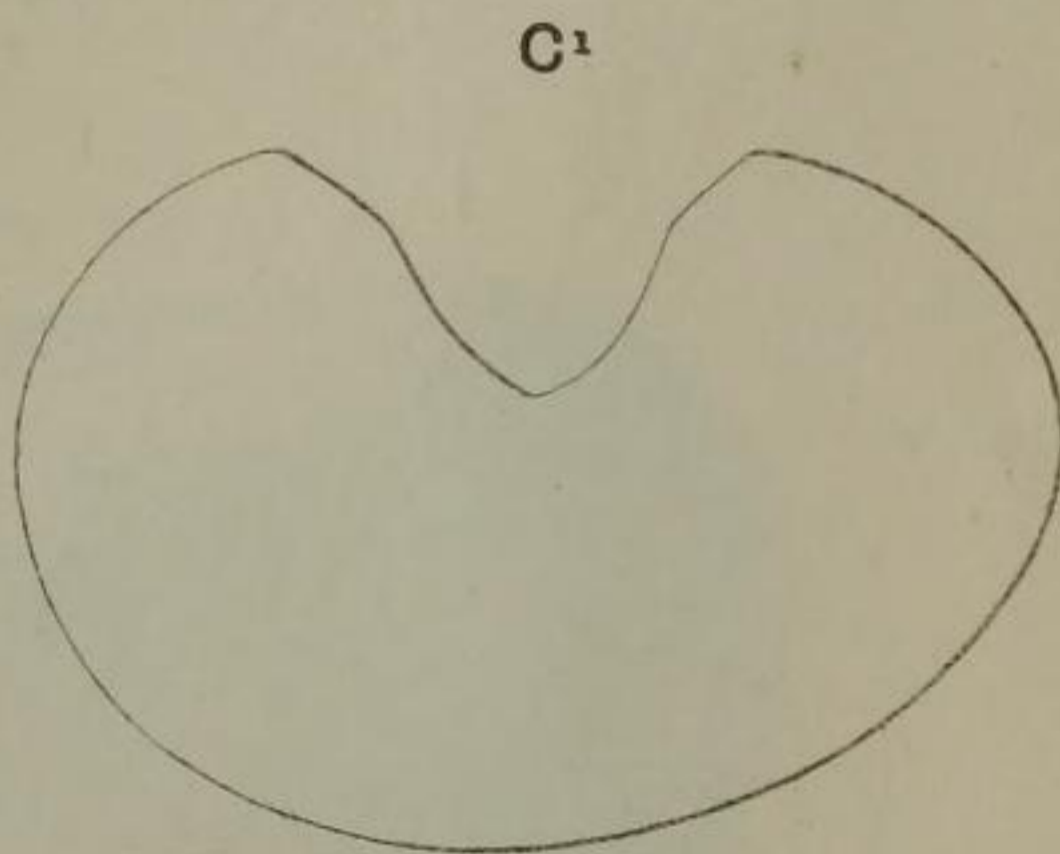
† A fine specimen of ring stone of jade from Burmah, said to be ancient, is described in Vol. I, p. 328 of the *Indian Antiquary*. It measures 4·3 in. in outside diameter, with a hollow in the centre 2·2 in. across, leaving the circle 1·1 in. broad, which is, however, only half an inch thick on the inner side and is bevelled to a sharp edge on the margin.

‡ This specimen has been figured at Plate VII. of Vol. X, Pt. II of the *Memoirs of the Geological Survey* (The Geology of Pegu), and was rightly considered an armlet by Mr. Theobald.

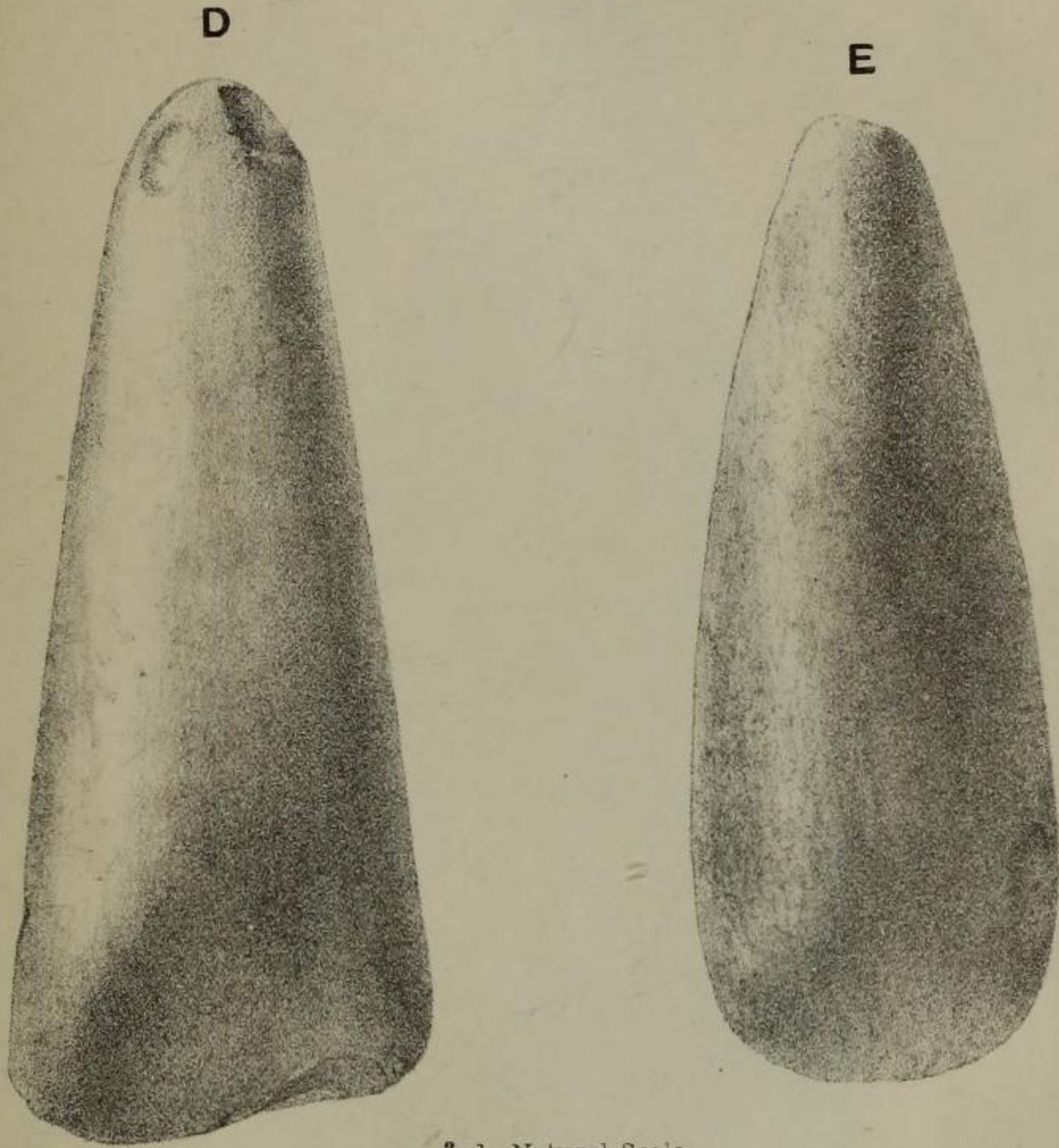


A Celt found *in situ* at Shillong }
A¹ Three-quarter view of ditto. } $\frac{2}{3}$ rd Natural Scale.

B Celt purchased at Shillong }
B¹ Three-quarter view of ditto. } $\frac{2}{3}$ rd Natural Scale

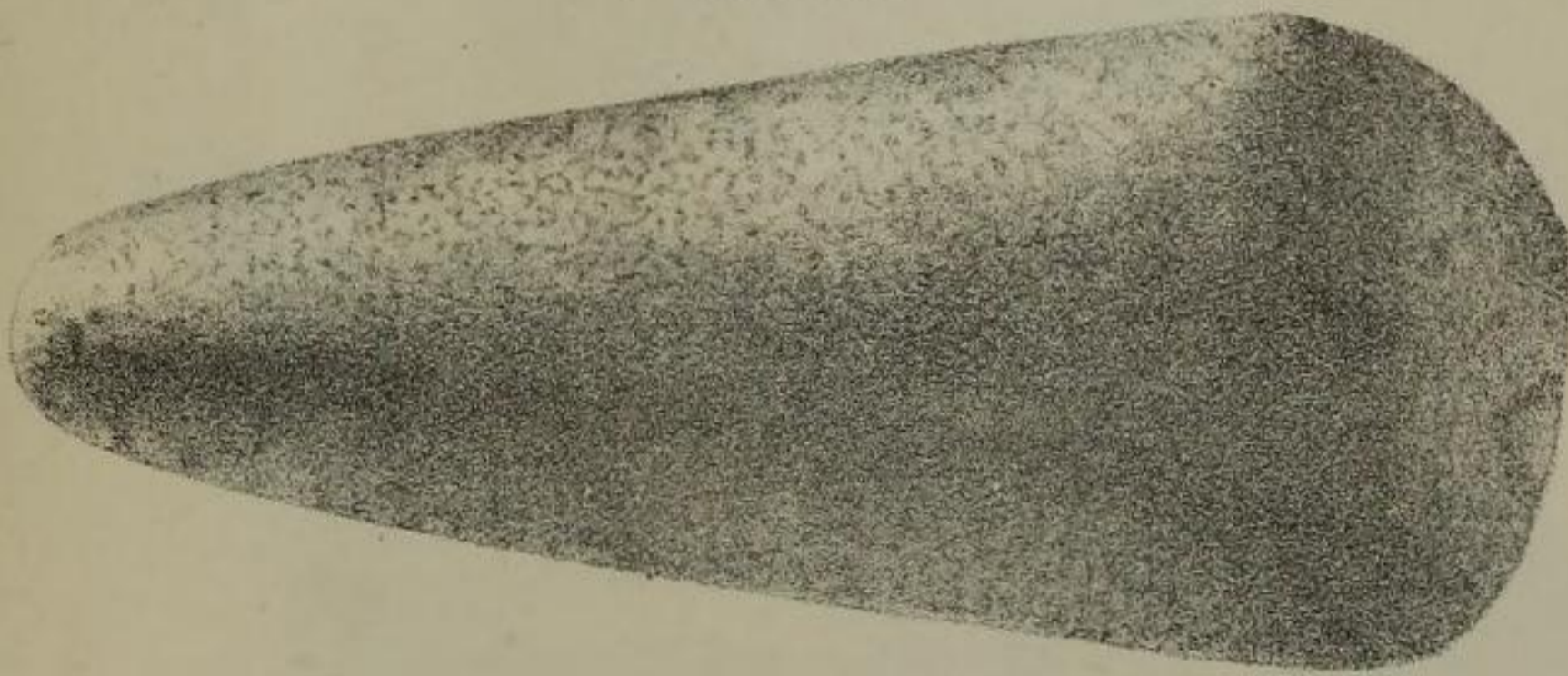


C Oval tool-stone from Banda }
C¹ Section of ditto. } Full Size.

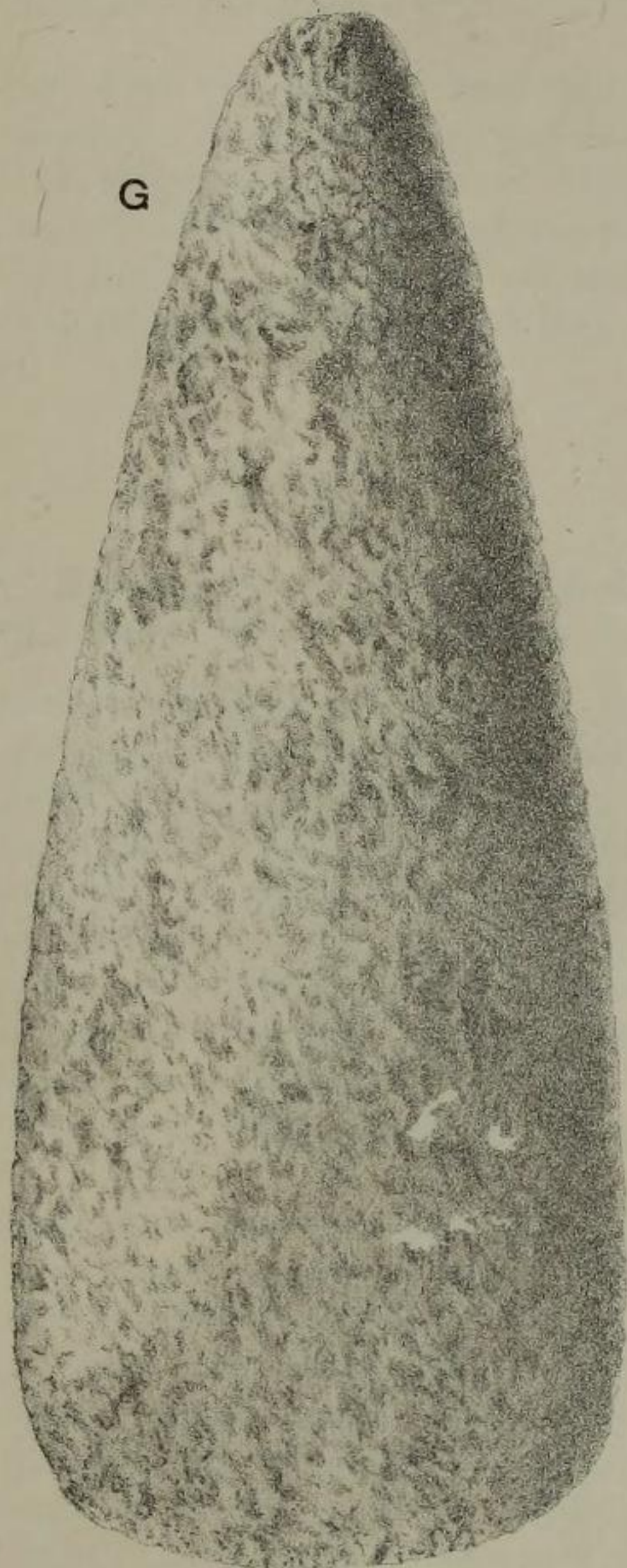


$\frac{2}{3}$ rd Natural Scale.

F Full Size.



D. E. F Celts from Vellore, Madras Presidency.



G Large Celt from Banda, Half Size.



H Elongated chipped implement from Banda, Full Size.

have seen native women screw their hands into bangles barely over two inches in inside diameter. Those with the perforation only $1\frac{1}{2}$ in. in diameter were probably in the course of manufacture. The peculiar conical nature of the orifice on both sides in these specimens is due to the necessarily rotary motion imparted to the borer by the hand and arm. These holes were usually begun on both sides, for the reason that they would be easier to enlarge when so made.



XVII.—*The Ravages of Rats and Mice in the Dakhan during the Harvest of 1878-79.*—By the REV. S. B. FAIRBANK, D. D.

Some years ago, when itinerating in the vicinity of the Perá River, near Ahmednagar, I was astonished at the stories told me about the destruction of whole fields of *Jawári* (*Holcus sorghum*) by rats. I went to the fields, and, though it was after the harvest so that I could not see the progress of devastation, I found the ground thickly dotted with small holes, and marked in all directions by the paths the rats had made, principally in passing from one hole to another. I tried to get specimens of the rats, but failed, as I was then unacquainted with their habits, or perhaps they had gone elsewhere, as the people claimed they had. They must have been the *Mettád* rats (*Golunda mettada*) of whose ravages Sir Walter Elliot wrote fifty-three years ago.

Since I saw those fields I have sometimes heard of injury done to crops by rats, but of nothing very extensive, till their ravages that began at the end of 1878, when the *Rabí* (winter) crops began to ripen, attracted the attention of everybody. There had been destruction before, but when, daily, large quantities of green Sorghum stalks were brought to Nagar for sale, and it was known that they had the night before been cut down by rats, everybody wakened up to the importance of the subject. At first stalks were cut down here and there in the fields, but more were cut as the days went on. And afterwards fields were suddenly attacked and destroyed in a few nights. When food became scarce where they were, the rats gathered their forces and an army of them invaded fields that had not been harmed before and quickly destroyed them. In some places they did not cut down the stalks, but climbed them and gnawed off the ears of grain. Some of the ears thus cut off were eaten or partially eaten where they fell, and some were hauled into their holes by the rats and stored there. A good deal of the grain thus stored was dug up and used for food. The farmers, finding that the rats would not allow their grain to ripen, gathered as many as they could