AUSTRALIAN MUSEUM SCIENTIFIC PUBLICATIONS

Thorpe, W. W., 1932. Ethnological notes. No. 4. *Records of the Australian Museum* 18(6): 302–311, plates xxvii–xxxii. [20 April 1932].

doi:10.3853/j.0067-1975.18.1932.734

ISSN 0067-1975

Published by the Australian Museum, Sydney

ETHNOLOGICAL NOTES.

No. 4.

By

W. W. THORPE,
Ethnologist, The Australian Museum.

(Plates xxvii-xxxii.)

Basalt Hammers, or Pounders.

Through the courtesy of Messrs. Roy Mackenzie and Rex Burns, residents of Mangrove Mountain, some twenty miles west of Gosford, New South Wales, the writer was enabled to dig up, or acquire by gift, several rectangular hammers or pounders, invariably of basalt, of a type hitherto undescribed. The writer was already acquainted with this type of implement, there being several examples already in the Museum cabinets, but of which little was known.

The Trustees possess two from Bulga, Singleton district, New South Wales (registered numbers, E.24709 and E.26035), one from a rock shelter on Wyong Creek, New South Wales (E.11247), and another, not otherwise included, from Mangrove Mountain (E.33473). To these may be added some seven specimens from the collection of the late R. H. Mathews (E.25660–66). These latter were received in an undocumented condition. The locality, "New South Wales", was all the information available, but being also composed of basalt, and knowing that Mathews in his capacity as surveyor spent a good deal of time in the Singleton district, it may be allowed that his specimens were from that area, or southward to the Hawkesbury-Brisbane Water system.

Being associated with the finding of three such implements in a rock shelter, including one of especial interest, induced the writer to figure these relics in this paper. The specimen specially referred to (Plate xxvii, fig. 8), though smaller than the average, still retains the gum cement binding and stringy-bark packing which goes to prove that these implements were sometimes, if not always, hafted.

The three figured specimens (Plate xxvii, figs. 1, 3 and 8) were disclosed at a depth of eighteen inches, in the ashes, soil and debris accumulated in a sandstone rock shelter. Many others are known from the Mangrove Mountain area, and, almost without exception, found at a shallow depth, close to the back wall, which makes it appear that they had been cached by the owners.

The presence also of basalt chips in the rock shelters of that area seems to indicate that this material was used for knives and scrapers. This belief is supported by the almost entire absence of siliceous flakework. In this regard, mention should be made of the discovery of odd scarifiers[1] found so abundantly

[1] Etheridge, R., and Whitelegge, T.—REC. AUSTR. MUS., vi, No. 4, 1907, p. 238.

on our coastal middens. Although the district is geologically Triassic, and abounding in sandstone, the writer was shown an outcrop of basalt boulders, which tends to prove that the material for these pounders was locally obtained.

The dimensions of these specimens are recorded in the explanations to plates at the close of this paper. Two examples (Plate xxvii, figs. 1 and 3) are much alike. They have been flaked down from a larger mass, and been subjected to a smoothing process. The heavier ends show the effects of pounding. There is nothing approaching a cutting edge on either. That the makers were acquainted with the stone axe is undoubted, as a description of several from this area will follow. The definite use of these pounders is still a matter for conjecture. Some of those in the Mathews collection were originally axes, but being used for pounding, they could no longer serve for cutting.

Another specimen (Plate xxvii, fig. 7) was found on the surface at the entrance to a shelter. It is shorter and stouter than the preceding, and all four sides show evidence of use.

The example at one time hafted (Plate xxvii, fig. 8) is much smaller, irregular in shape, and flatter than others. It appears to be a natural block of basalt, and shows wear at both ends.

Massive Flaked Choppers.

In 1928, the writer had the good fortune to discover at Morna Point, south of Port Stephens, New South Wales, several large flaked stone implements, of basalt and porphyritic rock. When the first example was seen, the writer was strongly inclined to disregard it, and consider it to be fortuitous, but further search revealed others, and latterly a workshop for their manufacture was found at Anna Bay. Choppers of the same calibre, but in chert, had already been discovered in the Newcastle district by the late Mr. D. F. Cooksey.[2] These porphyritic and basalt choppers have already been described by the writer.[3] We now find that similar implements occur both north and south from Morna Point. The massive basalt implement, illustrated on Pl. xxvii, fig. 5, together with another (Plate xxvii, fig. 9) were dug up by Mr. Rex Burns, in rock shelters on Mangrove Mountain. These two specimens have been kindly lent by the owner. The larger (Plate xxvii, fig. 5) is ovoid in outline, with a long cutting-edge; thickest in the dorsal region and should have been a very serviceable implement. The figured side shows very few facets, but the reverse is chipped laterally to extend the blade. An experiment was made with one of these choppers on a log of wood. The result was surprising. The weight of the implement combined with the comparatively sharp cutting-edge caused the chips to fly quite readily. It was suggested by Mr. J. S. Falkinder, of Tasmania, that these choppers were used in tree climbing, but they are just as useful for chopping wood lying in a horizontal position.

The other chopper from Mangrove Mountain is more wedge-shaped (Plate xxvii, fig. 9). The blade forms an ideal V-shaped edge; the dorsal area has been flaked to accommodate the hand, while one end has a bull-nose curve which admirably

[2] Thorpe.—Rec. Austr. Mus., xvi, No. 5, 1928, p. 245, pl. xx, fig. 1.
[3] *Loc. cit.*, p. 245, pl. xx, xxi and xxii, figs. 1 and 2.

serves as a rest for the forefinger. This specimen has much in common with a chopper from Morna Point already figured.[4]

For comparison, opportunity is now taken to include six other choppers from Anna Bay and Port Stephens district, New South Wales, all collected for the Museum by the writer. Plate xxviii, fig. 3, is a rather good example from One-mile Beach, Anna Bay. It is of red porphyry, well-shaped, with curved back and retouched cutting-edge.

Plate xxviii, fig. 5, of grey porphyry, was unearthed in a shell midden at "The Gibbers", Tilligery Creek, Port Stephens, during December, 1929. It compares very closely with the preceding specimen.

Plate xxviii, fig. 2, is a compact little chopper, characters in common with one already figured.[5] It is considerably patinated and sandworn. The cutting-edge is definite, one side of the blade following a cleavage line in the stone. The dorsal region is well rounded and adaptable to the hand. Found on a midden at Dark Point, north of Port Stephens.

Plate xxviii, fig. 4, is more rounded than is usual and not so carefully made. The cutting-edge is rugged, but serviceable. The thickest portion of the implement lies across the dorsal area. From a midden at Dark Point, north of Port Stephens.

The last of the series (Plate xxviii, fig. 1) consists of a very massive hand implement composed of grey porphyritic rock, probably acquired by the fire-cracking progress. The unfigured side is flattened. The obverse and dorsal aspect show the weathered margin of the mass when *in situ*. The blade is flaked with a definite bevel, and the cutting-edge serrated by chipping. The greatest thickness lies across the flat dorsal region. By reason of the care taken in the production of the blade, it should have been a very effective chopper. Dark Point, north of Port Stephens. Australian Museum collections, Reg. No. E.32371.

Stone Axes.

Many stone axes have been unearthed in the rock shelters on Mangrove Mountain. Found under similar circumstances, and often in the same shelter as the basalt pounders, these implements show considerable age. They also lack the usual finish one would expect in these cutting tools. All three figured examples (Plate xxix, figs. 1–2, and Plate xxvii, fig. 6) are made of basalt, with the cutting-edges definite, but obtuse. The larger (Plate xxix, fig. 2) is irregular in form, but bears the best blade. The other two are more stocky, asymmetrical, and possessing little character. Probably having been made hundreds of years ago, and although lying below the surface in a fairly dry situation, they have undergone extensive weathering. The surfaces are pitted, and when discovered were coated with a reddish powder. The dimensions and weights are given elsewhere. Presented by Mr. Roy Mackenzie, 1930.

Another specimen (Plate xxviii, fig. 6) prepared by flaking only, from a shelter in the same district, is of a well-known type. The oxidation still adheres, and it possesses a flaked working edge. It is almost identical with the flaked

[4] Thorpe.—Rec. Austr. Mus., xvi, No. 5, 1928, pl. xx, fig. 3.
[5] Thorpe.—Rec. Austr. Mus., xvi, No. 5, 1928, pl. xx, fig. 3.

implements found in the Nepean valley.[6] The same remarks as to age similarly apply. Presented by Mr. Rex Burns, 1930.

Whilst this paper was in preparation, several other axes and stone implements were brought under the writer's notice. Mr. Robert Turner, F.R.A.I., submitted four. Though not unique in character, it was thought advisable to include a description of them. Plate xxix, fig. 4, is a massive asymmetrical implement with a well-defined blade. It has been made from a large natural pebble laterally trimmed. The aboriginal axe has a large range in size. This is one of the heavier type, but its weight and dimensions have often been exceeded.

In common with other parts of this State, the natives of the Sydney district used ground axes. Very few of these have been preserved. This circumstance makes those about to be described of more than passing interest. Plate xxix, fig. 5, is one of normal type provided with lateral depressions and evidence of use as a pounder on the butt end. These hollows have been called "thumb and finger holds", but their special purpose is a matter of conjecture. The claim just made is applicable to some examples, by reason of the position of the depressions, but where they are so close to the blade as in this example, it is practically impossible to hold the implement in this way and use it effectively. The depressions also are not always in apposition, or well defined on one side and not the other. Another suggestion is that they served as "husking holes", but even this use would not invariably apply. This axe was found in the vicinity of the public baths at the Spit, Middle Harbour, a locality known in the aboriginal vernacular as Burrabri.

Plate xxix, fig. 7, is of a different type. It has been partly flaked down to its present dimensions, and the blade is angular to the sides. This is the first known example from Mona Vale, a coastal locality about twelve miles north of Port Jackson. The only noteworthy feature is its almost straight and well-defined blade.

Plate xxix, fig. 8, is a very elementary form; in fact no more than a sharpened water-worn pebble. It also shows slight use as a hammer. On account of it being found in a metropolitan locality it is included. Quibray is an extensive midden not far from the southern shores of Botany Bay, and was, at one time, a large camping-ground of the aborigines.

The opportunity is also taken of describing three axes from the cabinets of Mr. K. M. Cobb. Plate xxx, fig. 1, is another of the massive type, well made by the "pecking process", with slight notches on the lateral margins, showing that hafting was intended. The blade is rounded and tapering, the implement being comparable with the massive forms described by Roth.[7]

Many grooved axes have been found in eastern Australia. The home of the culture seems to have been in the western districts of New South Wales, notably in the region of the Darling River. Such axes occur in Victoria and Queensland. One example was found on the coast at Cape Hawke. Their parallel similitude with the American grooved axe[8] has been frequently noticed. Doubly-grooved types are uncommon; Plate xxxi, fig. 5, is of this type. The grooves do not entirely

[6] Thorpe.—Rec. Austr. Mus., xviii, No. 3, 1931, pl. x, fig. 15.

[7] Roth, W.E.—North Queensland Ethnography, Bulletin No. 7, Brisbane, 1904, pl. xi, fig. 69.

[8] "Handbook of American Indians", Bureau of American Ethnology, Bulletin 30, Part i, 1907, p. 121.

encircle the implement, but they are well defined. The grooves and reduction of the blade have been attained by pecking, which necessitated very little subsequent grinding. Plate xxix, fig. 6, is a very primitive attempt to fashion a flaked axe. It has a resemblance to implements discovered by Seton-Karr in the laterite deposits of Madras. Both sides are coarsely flaked, and a trimmed cutting-edge makes one conclude that it was used in this condition and not ground.

Other axes include a very large basaltic example (Plate xxx, figs. 3–4) discovered by a workman when digging a post hole at Homebush Bay, Port Jackson, in 1927. It could be more correctly termed a "wedge", its weight precluding its use as a normal axe. In outline it is perfect and probably the largest of the lenticular form extant. It is the property of Mr. M. S. Stanley, who loaned it to the Museum for description and reproduction (Cast, L.1682).

Another symmetrical axe (Plate xxxi, fig. 1) comes from Sylvania, George's River, New South Wales. Also composed of basaltic rock and much weathered. It was unearthed by Mr. T. Renouf, and presented to the Trustees of this Museum. Its undoubted antiquity and almost perfect outline are the main characteristics of this surface-pitted specimen.

While on the collecting trip to Mangrove Mountain, west of Gosford, New South Wales, the writer was shown this interesting relic of the Brisbane Water tribes (Plate xxxi, fig. 3). It is one of the very few hafted axes remaining which had their origin in this State. It was found in a rock crevice by Mr. J. White, a local resident, who kindly loaned it for description and temporary deposit in the Australian Museum. It had evidently laid in the crevice since it was placed there by its native owner. The blade is of basalt, the encircling handle being of a split sapling made flexible by steaming while green. Bush resin, locally known as "tuggerah", and bark caulking have been added to keep it in position. Two ties of native cordage, absent when the axe was discovered, have been added to give stability to the implement. The area for this lashing was indicated by being bleached, following on the rotting of the original binding.

Two exceptional examples of aboriginal flakework are shown in Plate xxxi, figs. 4 and 7. These are laboriously flaked on both sides and trimmed on the periphery. Found at Tamworth, New South Wales, by Mr. M. Purcell, it was at first thought that they were finished implements, but a search through the Museum cabinets proved that there were three others (E.9461, E.12677–8), from the same area, fashioned in the same way, but completed with *ground* blades.

An unusual dual purpose implement is shown in Plate xxxi, fig. 2—an axe and chopper combined. Ploughed up near Penrith, New South Wales, by Mr. L. H. Preston, it has a definite ground blade and a serviceable flaked side. This is not a unique specimen, there being another (E.31532) from a neighbouring locality in the Museum collections.

Grooved Implements.

Massive grooved implements, other than axes, more or less cylindrical, have been found from time to time. In 1928 the writer described one of these with a double groove.[9] Since that time he has viewed several cylindrical forms in the collection of the late Edmund Milne, now deposited at Canberra, Federal Capital

[9] Thorpe.—Rec. Austr. Mus., xvi, No. 5, p. 248, pl. xxvii, fig. 2.

Territory, and the Australian Museum Trustees have acquired two others, one of which is now described. On account of being pointed at one end, they have been referred to as "pikes", but this name does not suit the present specimen (Plate xxix, fig. 3). It is roughly fashioned from a flattish mass of stone, the reduction being done by pecking. A shallow groove encircles it medially, and it is provided with a bevelled and flaked working edge. Crude though it is, much labour has been expended on this implement. Found at Oberon, New South Wales, and acquired by exchange. Reg. No. E.34143.

Improvised Pebble-Axes.

Last year the writer described a series of improvised pebble-axes,[10] stating that these were "in the line of the development of the normal ground axe". Since the above was published the specimen figured on Plate xxvii, fig. 2, has come to hand. It was one of a series of axes from Shellharbour, New South Wales, presented to the Museum by Mr. George McAndrew. It definitely proves the correctness of the above statement by being firstly an improvised pebble-axe, with subsequent grinding of the blade. The plain pebble under-surface of the blade has also been slightly ground.

The range of the improvised pebble-axe[11] has been extended from the coast of New South Wales to Oberon, a locality west of the Blue Mountains, by the discovery of the specimen figured on Plate xxvii, fig. 4. This interesting addition was obtained by Mr. James Whiteley, of that district.

Reverting once more to the improvised pebble-axe of our coasts,[12] the writer desires to call attention to a very massive example recently discovered at Bellambi (Plate xxx, fig. 2). By reference to the tabulated list of specimens herein described, it will at once be apparent that it exceeds in weight any former specimen.[13]. In Tasmania, these heavier types also occur. In common with those of ordinary size, it is flaked on one side only. Much labour has been expended in fashioning this implement, especially on the right flank, which could serve as an additional cutting-edge. Another large flaked implement, also from Bellambi, for which the use can only be conjectured is shown in Plate xxxi, fig. 6. The underside is naturally undulating, while the side shown in the figure is definitely convex. Four large flakes have been removed, leaving two projections. The surface is quite vitreous, probably due to the passage of sand over a very considerable period. Reg. No. E.34590.

Stone Files, Used in the Manufacture of Shell Fish-Hooks.

In 1889 the late Director of the Australian Museum (Mr. R. Etheridge), then of the Geological Survey of New South Wales, described a flat, pyriform, stone object,[14] which he discovered in association with an aboriginal interment at North Harbour, Port Jackson. He wrote: "Another implement [of Hawkesbury sandstone] oval pointed in shape, and perhaps used for piercing, or it may be

---

[10] Thorpe.—Rec. Austr. Mus., xviii, No. 3, pp. 92-95, pls. ix-x.

[11] *Loc. cit.*, p. 92.

[12] Thorpe.—Rec. Austr. Mus., xviii, No. 3, 1931, pp. 92-95, pls. ix and x.

[13] *Cf. loc. cit.*, pl. ix, fig. 5 (3 lb. 4 oz.).

[14] Etheridge.—Records of the Geological Survey of New South Wales, i, Part 2, 1889, p. 144, pl. xx, fig. 3.

even used as an ornament. Similar implements to this have been obtained by Dr. E. P. Ramsay, from aboriginal interments, in eastern Australia, but he is unable to suggest their use." Etheridge's specimen is in the Museum collection, registered No. E.12768.

In 1896 the late Charles Hedley unearthed a similar object (Australian Museum, registered No. E.5500) in a rock-shelter at Parsley Bay, Port Jackson. This was tentatively called a "spear-head". While digging out a shelter at Como, George's River, in 1905, the writer found still another of these puzzling objects (E. 22918). A similar experience was repeated at Woollahra Point, Port Jackson, in 1911 (E.19410). During 1928, further specimens were found on the coastal middens at Corrimal and Port Kembla, New South Wales (E.31967 and E.32012).

About two years ago, Mr. W. J. Enright, B.A., of West Maitland, New South Wales, informed the writer that, according to an old black, these objects were used for "sharpening shell fish hooks". This gave a decided impetus to the search for them. Their significance was explained to many collectors, and up till the present time of writing they have been discovered over a range exceeding three hundred miles of coast line, namely, from Port Stephens to Bermagui, New South Wales. Other localities within the limits named include Morna Point, Norah Head, Palm Beach, Port Jackson (in rock-shelters), Quibray, North Cronulla, Bellambi, Corrimal, Port Kembla, Lake Illawarra (north and south of the entrance), Shellharbour, Lake Burrill (in rock-shelter), Murramurang, near Bateman's Bay, Tuross Head and Tilba Lake Beach. No doubt they extend further, especially to the north, until the coral region is reached (see below).

It was then decided to write a description of a series of these objects. Members of the Anthropological Society of New South Wales kindly placed at my disposal about fifty specimens. Finally eighteen were selected as being typical of form and material (Plate xxxxii).

Referring once more to Mr. Enright for written detail, on August 1st, 1931, he communicated as follows: "I do not remember the name my aboriginal informant gave me for the implement you mentioned, but I am endeavouring to find out for you. The information as to the use of this implement came from the head man named 'Tony', who was king of the Kutthung (Port Stephens district). He was a full-blood, and when he gave me the information thirty-two years ago, he was a very old man. He informed me that the implement was used for sharpening shell fish hooks, and I think, from its shape, it would also be used to fashion out the shell fish hooks. I cannot think of any implement they made being applicable for such a purpose."

This *mode d'emploi* is confirmed by Dr. W. E. Roth, who described shell hooks made with *coral* files,[15] at Cape Grafton, Queensland, in 1898 as follows: "Picking a fresh 'pearl' shell (*Perna Cumingii* Reeve), the operator chipped round and round the valve between two stones, until he at last succeeded in breaking it down to a more or less circular plate about 2 inches in diameter, with rough uneven edges. He next placed two pointed pieces of hardwood on the fire, and as soon as their sharpened ends were burnt and charred, put the smouldering extremities close to the centre of this shell-plate . . . and blowing upon them with no incon-

[15] Roth, W. E.—North Queensland Ethnography, Bulletin No. 7, Brisbane, 1904, Section 68, p. 33, figs. 259*a* to 259*f*.

siderable force, caused the flame to play only upon its very centre, which was thus rendered comparatively brittle. But little difficulty was then experienced in breaking through, at this spot, with a pencil of white coral. The hole, once made, became gradually enlarged into the required oval . . . by filing backwards and forwards with the coral, which at very frequent intervals was dipped into water to assist in the grinding. The uneven outer edge of the oval ring so produced was next gradually ground into shape . . . until the desired width of hook was reached. The final processes consisted in very carefully grinding its middle up and down on a sharp vertical edge of rock until a break was obtained, and then finishing off with the rock and coral file into the completed crescentic form . . . . On the Lower Tully River, the hook is similarly manufactured from the *Perna*, the only difference being that no fire is used, the boring of the ring with the coral pencil being commenced very gently and carefully. . . . The following are extracts from Cook's Voyages concerning fish-hooks on the Endeavour River, where such articles are now unknown: '. . . Their fish-hooks are very neatly made, and some of them are exceedingly small' . . . 'bags containing some fish-hooks and lines, a shell or two, out of which hooks are made' . . . and, in reference to their few tools, mention is made of 'some shells and fragments of coral'."

In 1908, Banfield wrote:[16] "The method of manufacture was to reduce by chipping with a sharp-edged piece of quartz a portion of a black-lip mother-of-pearl shell to a disc. A central hole was then chipped—not bored or drilled—with another tool of quartz. . . . Then a segment was cut away, leaving a rough crescent, which was ground down with coral files, and the ends sharpened by rubbing on smooth slate."

We will now consider the forms, size and materials of the stone files found on the coast of New South Wales. Some are cylindro-conical (Plate xxxii, figs. 2 and 5), but more often triangular (Plate xxxii, figs. 15, 17–18), tapering and flat (Plate xxxii, figs. 1, 3, 8, 11–12, 14). In length they vary from four and a half to eleven and a half centimetres. The dimensions of these implements obviously vary according to their degree of use. The material used is white sandstone (Plate xxxii, figs. 6–9), ferruginous sandstone (Plate xxxii, figs. 10–13 and 15–18), phyllite (Plate xxxii, fig. 3) and micaceous sandstone.

For the opportunity of examining such a large series, the writer is indebted to Messrs. M. S. Stanley, R. Turner and J. S. Rolfe; and to Mr. T. Hodge-Smith and his assistant, Mr. R. O. Chalmers, for the tentative identifications of the stones used in the implements described in this contribution. In some cases the size of the specimens figured on Plates xxvii–xxxi is not relative.

EXPLANATION OF PLATES.

PLATE XXVII.

Fig. 1.—Hammer, basalt. 2 lb. $15\frac{1}{2} \times 10 \times 3\frac{1}{2}$ cm. Mangrove Mountain, near Gosford, New South Wales. E.33480.

Fig. 2.—Improvised axe, with subsequential grinding. 1 lb. 1 oz. $13\frac{1}{2} \times 7\frac{1}{4} \times 3\frac{3}{4}$ cm. Barrack Head, Shellharbour, New South Wales. E.34266.

Fig. 3.—Hammer, basalt. $1\frac{3}{4}$ lb. $15\frac{1}{2} \times 10 \times 3\frac{1}{2}$ cm. Mangrove Mountain, near Gosford, New South Wales. E.33479.

Fig. 4.—Improvised axe, indurated sandstone. 1 lb. $12\frac{1}{4} \times 8\frac{1}{4} \times 3\frac{1}{2}$ cm. Oberon, New South Wales. E.34147.

[16] Banfield, E. J.—"Confessions of a Beachcomber," London, 1908, p. 267.

Fig. 5.—Chopper, basalt. 3 lb. 4 oz. 17 × 12¾ × 5¾ cm. Mangrove Mountain, near Gosford, New South Wales. Lent by Mr. Rex Burns. Negative number, 5899.

Fig. 6.—Axe, basalt. 10 oz. 10½ × 5¼ × 3¾ lb. Mangrove Mountain, near Gosford, New South Wales. E.33675.

Fig. 7.—Hammer, basalt. 1½ lb. 11¼ × 8½ × 4½ cm. Mangrove Mountain, near Gosford, New South Wales. E.33655.

Fig. 8.—Hammer, with binding, basalt. ½ lb. 8½ × 7½ × 2 cm. Mangrove Mountain, near Gosford, New South Wales. E.33481.

Fig. 9.—Chopper, basalt. 2 lb. 5 oz. 14½ × 8½ × 6 cm. (dorsal). Mangrove Mountain, near Gosford, New South Wales. Lent by Mr. Rex Burns. Negative number, 5900.

PLATE XXVIII.

Fig. 1.—Massive flaked chopper, porphyritic rock. 4¼ lb. 17 × 15 × 5½ cm. Dark Point, near Port Stephens, New South Wales. E.32371.

Fig. 2.—Chopper. 1 lb. 10½ oz. 11½ × 9 × 6¼ cm. Dark Point, near Port Stephens, New South Wales. E.32372.

Fig. 3.—Chopper, porphyry. 1 lb. 6½ oz. 14½ × 7¾ × 5¼ cm. One-mile Beach, Anna Bay, near Port Stephens, New South Wales. E.34329.

Fig. 4.—Chopper, silicified rock. 1 lb. 9 oz. 12 × 11 × 4¾ cm. Dark Point, near Port Stephens, New South Wales. E.32115.

Fig. 5.—Chopper, porphyry. 1 lb. 8 oz. 14 × 7½ × 6¾ cm. The Gibbers, Tilligery Creek, Port Stephens, New South Wales. E.32138.

Fig. 6.—Flaked axe, basalt. 1¾ lb. 18 × 8¾ × 3½ cm. Mangrove Mountain, near Gosford, New South Wales. E.33648.

PLATE XXIX.

Fig. 1.—Axe, basalt. 11 oz. 10¼ × 6½ × 4 cm. Mangrove Mountain, near Gosford, New South Wales. E.33472.

Fig. 2.—Axe, basalt. 1¼ lb. 13¼ × 8½ × 3¾ cm. Mangrove Mountain, near Gosford, New South Wales. E.33471.

Fig. 3.—Grooved implement, igneous rock (?). 4 lb. 10 oz. 23 × 9 × 7¼ cm. Oberon, New South Wales. E.34143.

Fig. 4.—Ground axe, siliceous tuff. 3¾ lb. 17¼ × 11¼ × 6¼ cm. Seven Mile Beach, south of Port Kembla, New South Wales. Lent by Mr. R. Turner. Negative number, 5972.

Fig. 5.—Ground axe, quartzite. 1¾ lb. 13 × 9½ × 4½ cm. The Spit, Middle Harbour, Port Jackson, New South Wales. Lent by Mr. R. Turner. Negative number, 5972.

Fig. 6.—Flaked axe or chopper, quartzite. 1 lb. 11½ × 8¾ × 4¼ cm. Lake Peery, Paroo River. Lent by Mr. K. M. Cobb. Negative number, 5901.

Fig. 7.—Ground axe, quartzite. 1¼ lb. 11½ × 6¾ × 4½ cm. Mona Vale, near Manly, New South Wales. Lent by Mr. R. Turner. Negative number, 5972.

Fig. 8.—Ground axe, indurated sandstone. 7 oz. 10¾ × 6 × 2 cm. Quibray, Botany Bay, New South Wales. Lent by Mr. R. Turner. Negative number, 5972.

PLATE XXX.

Fig. 1.—Massive axe, or wedge, dolerite. 4¼ lb. 18 × 14 × 5 cm. Cunnamulla, Queensland. Lent by Mr. K. M. Cobb. Negative number, 5899.

Fig. 2.—Improvised pebble axe. 4 lb. 6 oz. 21 × 12½ × 6½ cm. Bellambi, New South Wales. E.34589.

Figs. 3-4.—Massive axe, or wedge, basaltic rock. 7 lb. 12 oz. 11 × 5¾ × 2 in. Homebush Bay, Port Jackson, New South Wales. Lent by Mr. M. S. Stanley. Negative numbers, 5418-19.

PLATE XXXI.

Fig. 1.—Axe, basalt. 2 lb. 6 oz. 18 × 7¾ × 4½ cm. Sylvania, Botany Bay, New South Wales. E.33490.

Fig. 2.—Axe and chopper combined, basalt. 1¼ lb. 15¼ × 9¼ × 2¾ cm. Kingswood, New South Wales. E.34151.

Fig. 3.—Hafted axe, basalt. 2¾ lb. Blade, 16½ × 11½ × 4 cm.; overall, 34 cm. Mangrove Mountain, near Gosford, New South Wales. Lent by Mr. J. White. Negative number, 5809.

Fig. 4.—Flaked axe, incomplete, indurated clay shale. $\frac{3}{4}$ lb. $10 \times 8\frac{3}{4} \times 3$ cm. Tamworth district, New South Wales. E.33441.

Fig. 5.—Doubly grooved axe, quartzite. $2\frac{1}{4}$ lb. $15 \times 10\frac{1}{2} \times 5$ cm. Mena Murtee, Wilcannia, New South Wales. Lent by Mr. K. M. Cobb. Negative number, 5901.

Fig. 6.—Pebble chopper, basalt. 4 lb. 7 oz. $17\frac{1}{4} \times 15\frac{1}{4} \times 6\frac{1}{4}$ cm. Bellambi, New South Wales. E.34590.

Fig. 7.—Flaked axe, incomplete, chert. 11 oz. $9\frac{3}{4} \times 7\frac{1}{4} \times 3\frac{3}{4}$ cm. Tamworth district, New South Wales. E.33442.

PLATE XXXII.

Fig. 1.—Fish hook file, grey sandstone. $1\frac{1}{2}$ oz. 11 cm. Windang, Lake Illawarra, New South Wales, E.34883.

Fig. 2.—Fish hook file, schistose rock. 2 oz. $8\frac{3}{4}$ cm. Murramurang, New South Wales. E.34884.

Fig. 3.—Fish hook file, phyllite. $1\frac{1}{4}$ oz. $11\frac{1}{2}$ cm. Murramurang, New South Wales. M. S. Stanley collection.

Fig. 4.—Fish hook file, schistose rock. 1 oz. 8 cm. Lake Illawarra, New South Wales. M. S. Stanley collection.

Fig. 5.—Fish hook file, fine-grained sandstone. $2\frac{1}{2}$ oz. $11\frac{1}{2}$ cm. Bellambi, New South Wales. E.34885.

Fig. 6.—Fish hook file, clouded sandstone. $\frac{3}{4}$ oz. 7 cm. Windang, Lake Illawarra, New South Wales. R. Turner.

Fig. 7.—Fish hook file, banded sandstone. $\frac{1}{2}$ oz. 7 cm. Palm Beach, Broken Bay, New South Wales. E.34886.

Fig. 8.—Fish hook file, white sandstone. $1\frac{1}{2}$ oz. $9\frac{1}{2}$ cm. Quibray, Botany Bay, New South Wales. E.34887.

Fig. 9.—Fish hook file, white sandstone. 1 oz. $6\frac{3}{4}$ cm. North Cronulla, New South Wales. E.34889.

Fig. 10.—Fish hook file, ferruginous sandstone. $\frac{1}{4}$ oz. $5\frac{1}{2}$ cm. Windang, Lake Illawarra, New South Wales. R. Turner.

Fig. 11.—Fish hook file, ferruginous sandstone. $\frac{5}{8}$ oz. $7\frac{1}{4}$ cm. Quibray, Botany Bay, New South Wales. J. S. Rolfe.

Fig. 12.—Fish hook file, ferruginous sandstone. $\frac{1}{4}$ oz. $6\frac{1}{2}$ cm. Palm Beach, Broken Bay, New South Wales. R. Turner.

Fig. 13.—Fish hook file, ferruginous sandstone. $\frac{5}{8}$ oz. 8 cm. Quibray, Botany Bay, New South Wales. R. Turner.

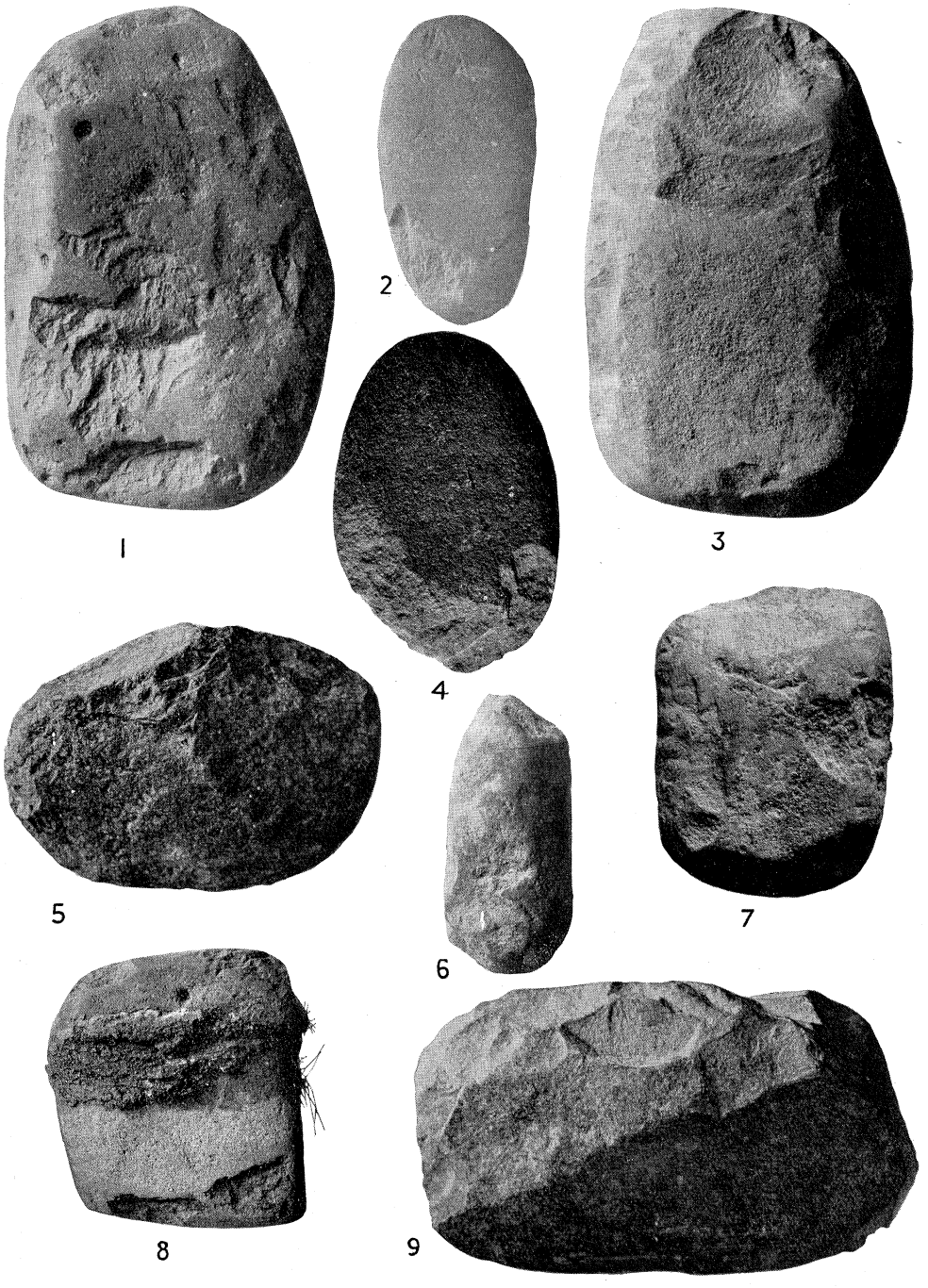
Fig. 14.—Fish hook file, micaceous sandstone. $1\frac{3}{4}$ oz. 9 cm. Murramurang, New South Wales. M. S. Stanley.

Fig. 15.—Fish hook file, sandstone, with ferruginous coating. $\frac{7}{8}$ oz. $7\frac{1}{2}$ cm. Quibray, Botany Bay, New South Wales. J. S. Rolfe.

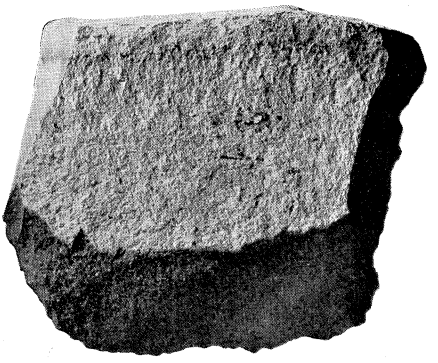
Fig. 16.—Fish hook file, ferruginous sandstone. 1 oz. $6\frac{3}{4}$ cm. North Cronulla, New South Wales. E.34890.

Fig. 17.—Fish hook file, ferruginous sandstone. $\frac{3}{4}$ oz. 7 cm. Quibray, Botany Bay, New South Wales. E.34888.

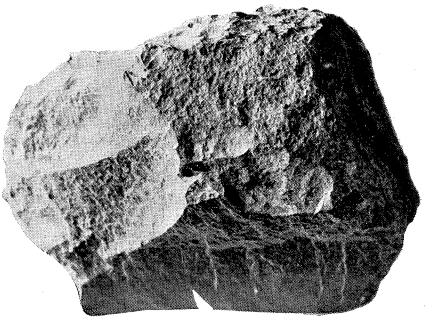
Fig. 18.—Fish hook file, ferruginous sandstone. $\frac{7}{8}$ oz. 8 cm. Quibray, Botany Bay, New South Wales. J. S. Rolfe.



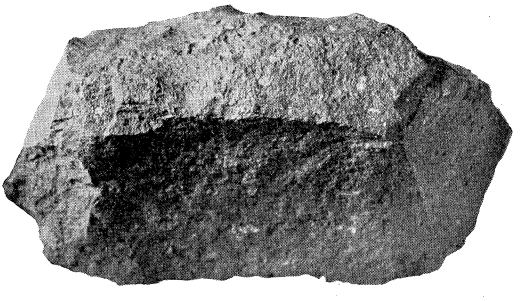
G. C. CLUTTON, photo.



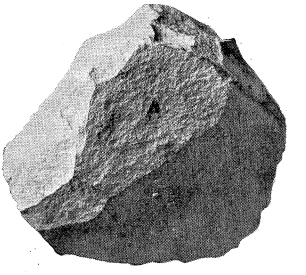
1



2



3

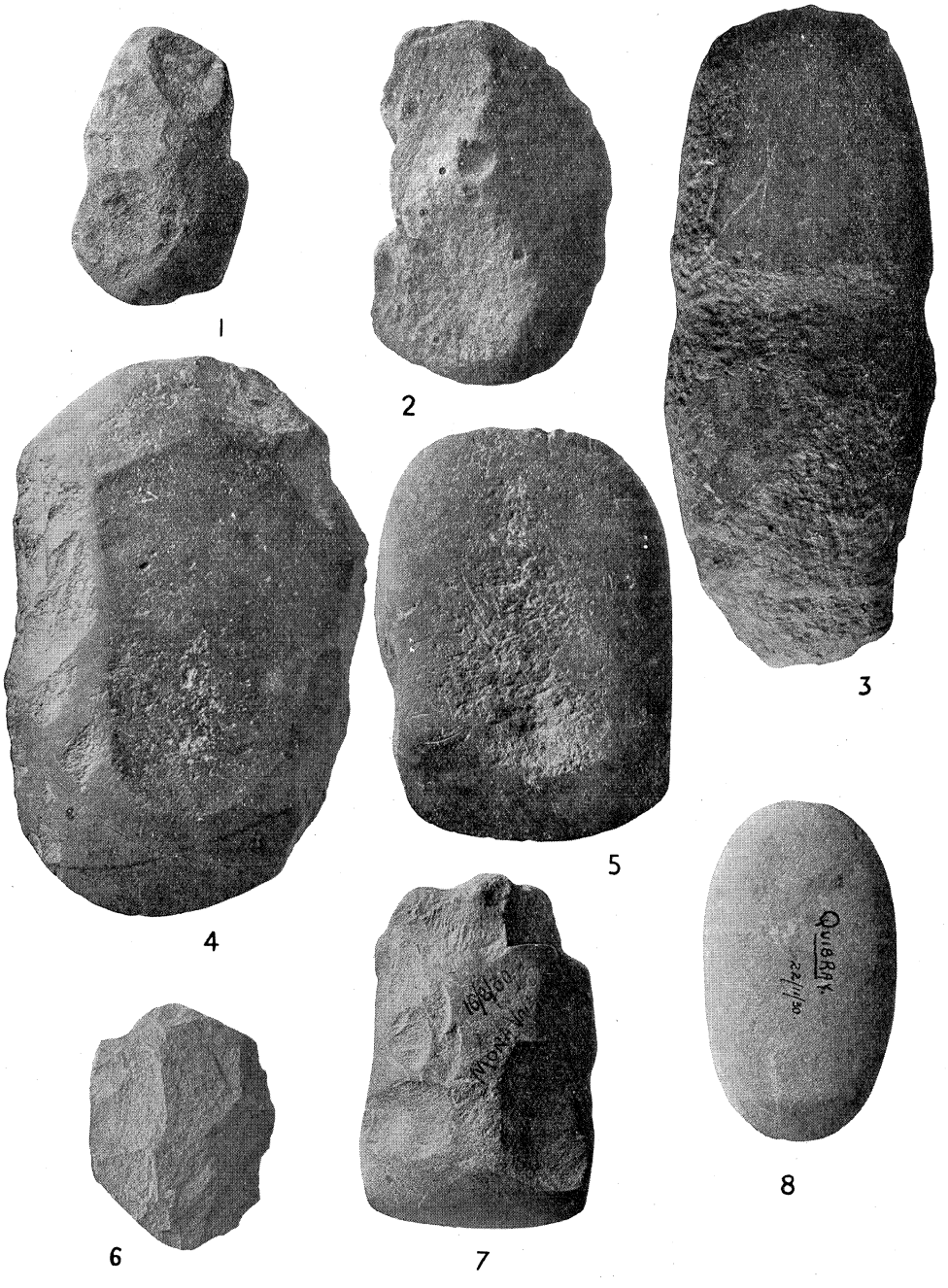


4

5

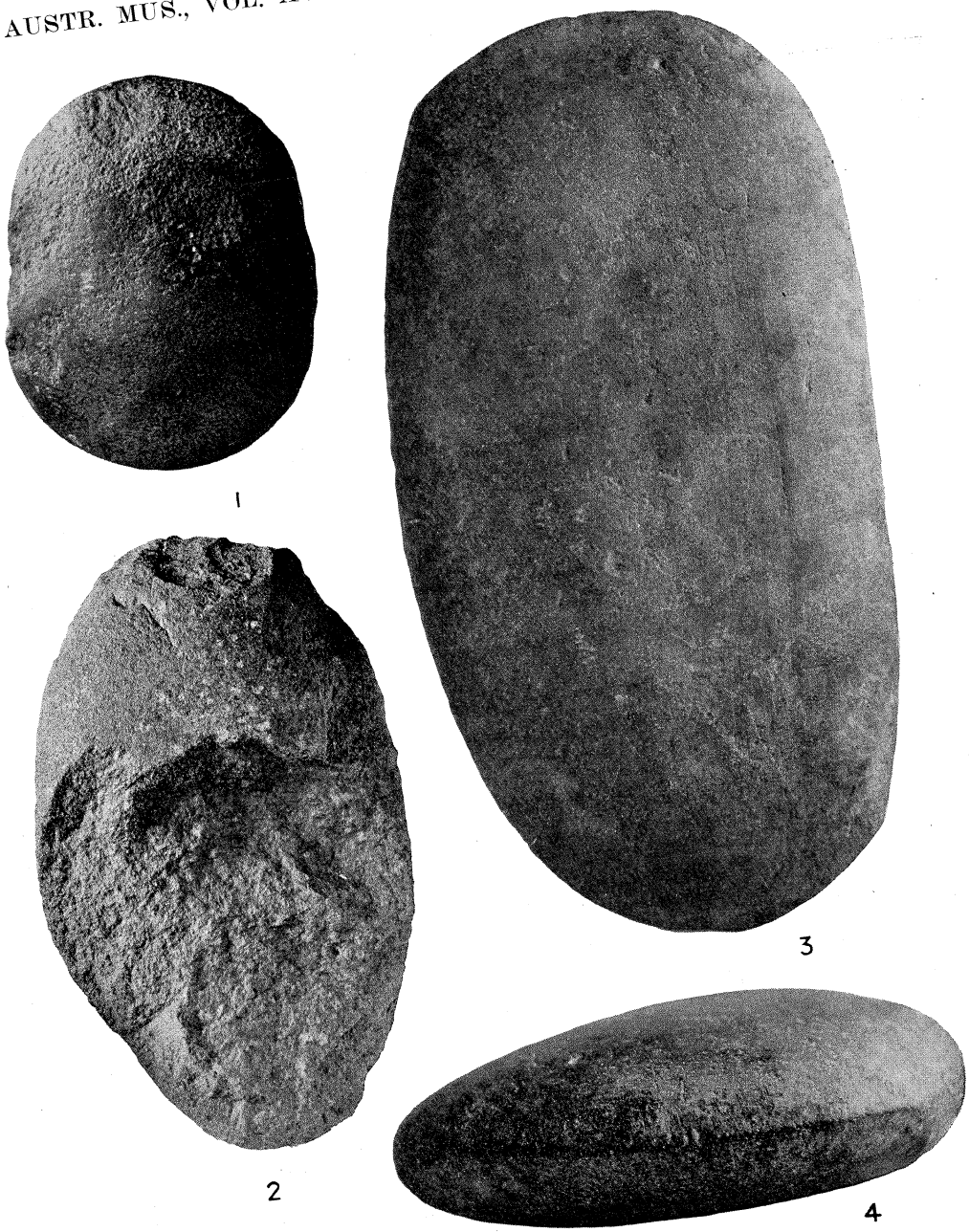
6

G. C. CLUTTON, photo.

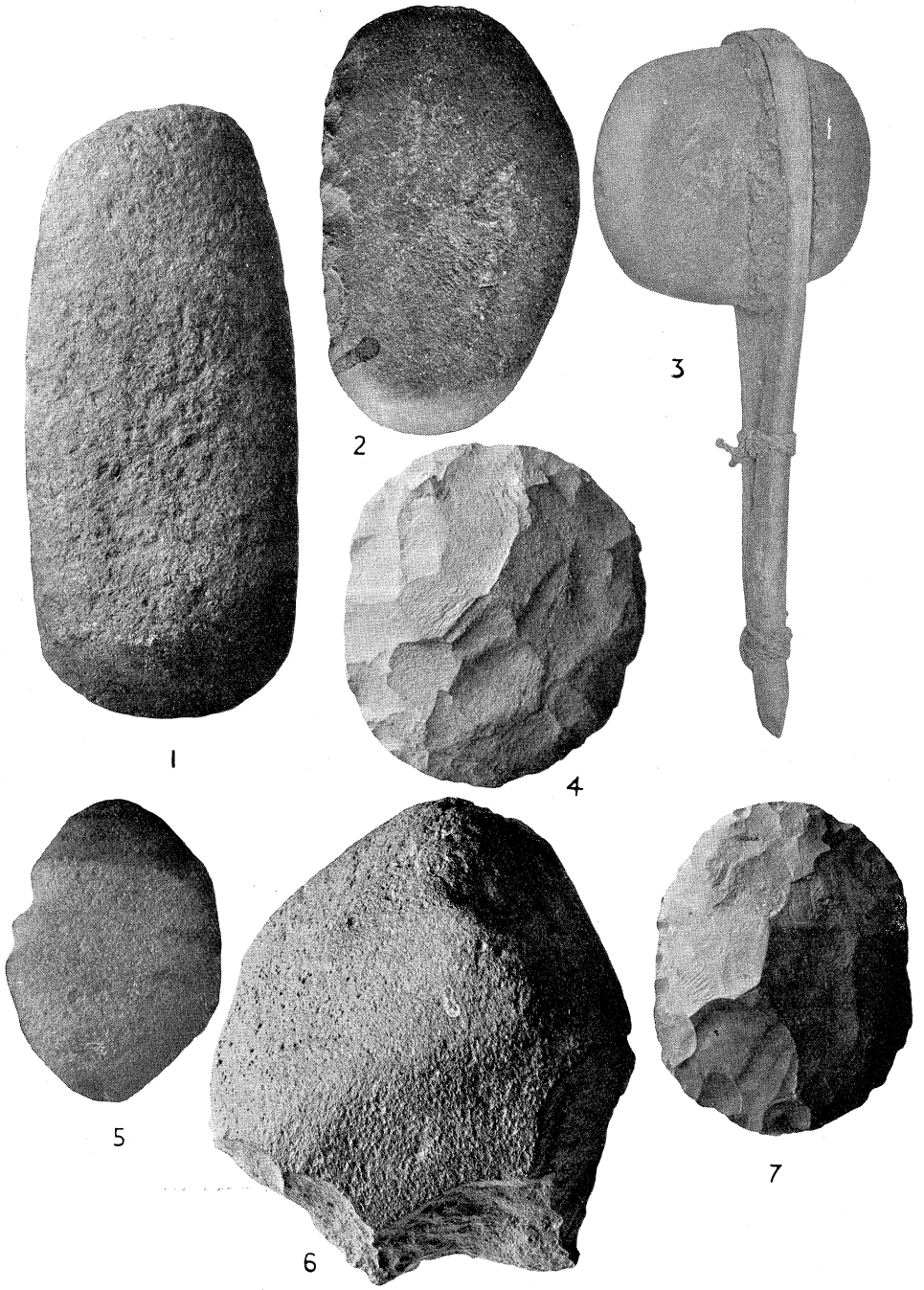


G. C. CLUTTON, photo.

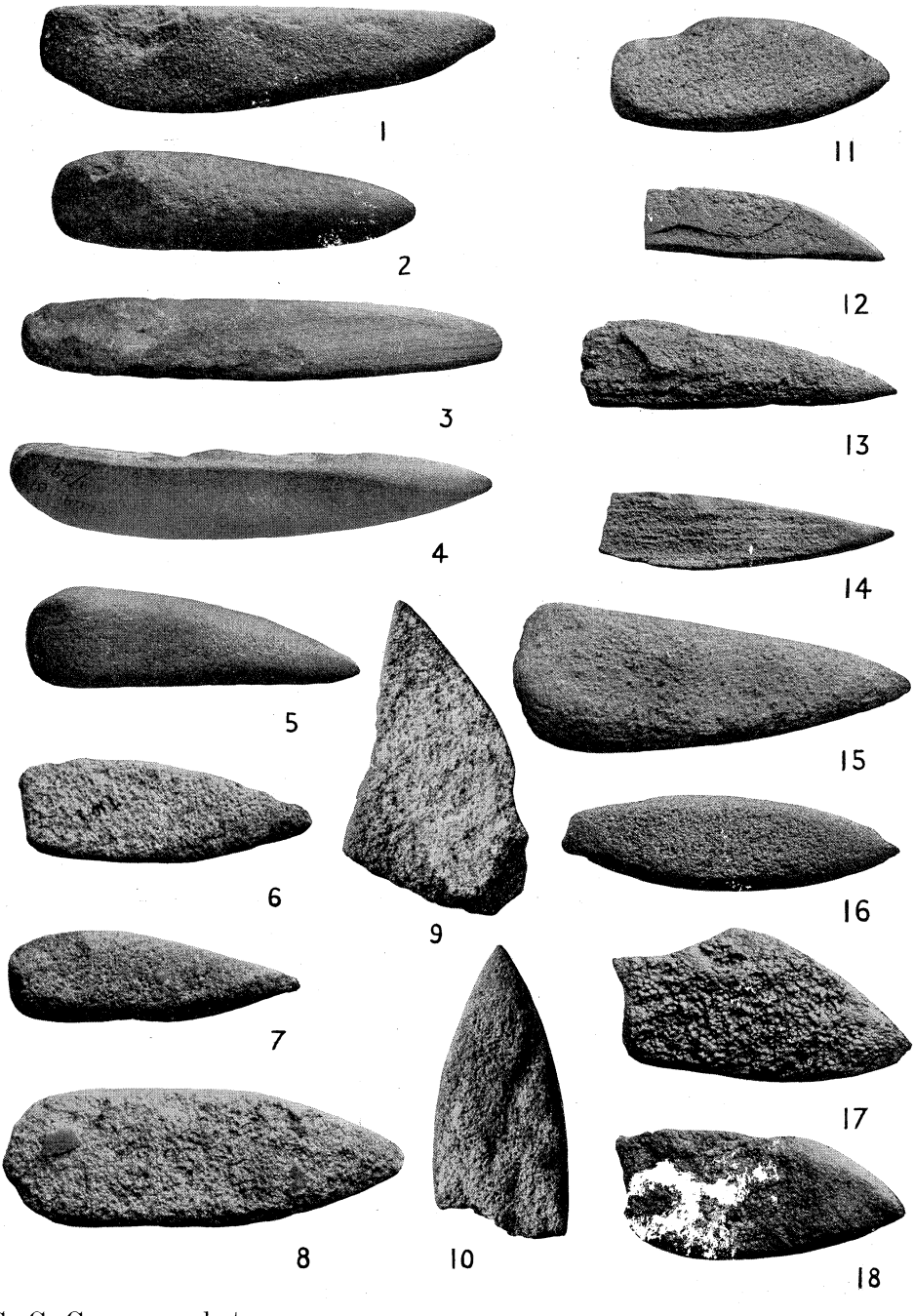
PLATE XXX.



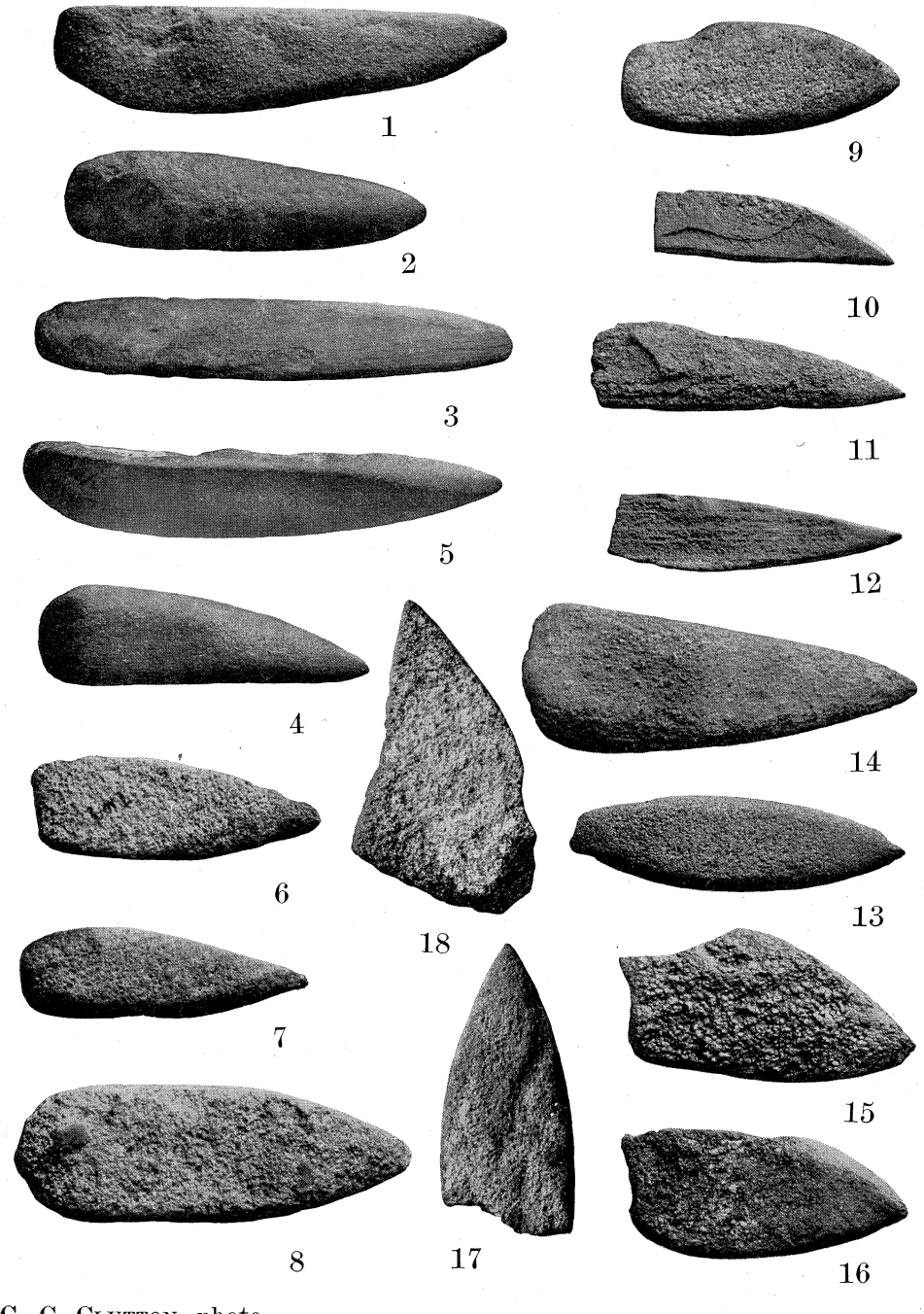
G. C. CLUTTON, photo.



G. C. CLUTTON, photo.



G. C. CLUTTON, photo.



G. C. CLUTTON, photo.

ADDENDUM ET CORRIGENDUM.

Page 267, Figure 1, explanation. For *Rhynchœlaps smithii*, sp. nov. read *Rhynchœlaps roperi*, sp. nov.

Page 308, paragraphs 3 and 5. The late W. W. Thorpe in discussing aboriginal stone files says "Referring once more to Mr. [W. J.] Enright for written detail, on August 1st, 1931, he communicated as follows: 'I do not remember the name my aboriginal informant gave me for the implement you mentioned, but I am endeavouring to find out for you. The information as to the use of this implement came from the head man named "Tony", who was king of the Kutthung (Port Stephens district).'" Mr. Enright inadvertently overlooked the fact that in a paper by himself published in the *Journal and Proceedings of the Royal Society of New South Wales*, Vol. xxxiv, 1900, entitled "The Language, Weapons, and Manufactures of the Aborigines of Port Stephens, N.S.W.", he listed, on page 111, "Dip-oon'-gâ, *a stone used for sharpening shell fish-hooks*", the word sought for.