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6 College Street, Sydney NSW 2010, Australia



# ETHNOLOGICAL NOTES.

No. 3.\*

By

W. W. THORPE,

Ethnologist, The Australian Museum.

(Plates ix-x.)

## Aboriginal Pebble-Axes.

The "improvised axe," "pebble-axe," or "pebble-chopper" is fairly plentiful on the coastal middens of certain parts of New South Wales and Victoria.<sup>1</sup> They are, however, not restricted to the seaboard, typical examples having been ploughed up some thirty miles from the sea. Probably they range still further inland, but because of their apparent unimportance have been passed over, or thought to be of accidental origin. These implements are sometimes disregarded by the ordinary collector, because of their obviously elementary technique. Kenyon<sup>2</sup> not only recognized them as a normal type, but considered them as being in the line of development of the normal ground axe.

The opportunity is now taken of figuring and describing a score or more, of varied technique, from different localities on the coast and the immediate hinterland. There are two forms of this elementary implement. The greater number are flaked at the ends, while others, though rarer, are similarly treated on the side; the latter<sup>3</sup> type conform more to the title of pebble-choppers, because of the technique employed. Both types are flaked from one side only, which process brings about a more or less sharp cutting edge. Their use is conjectural,<sup>4</sup> for, though the normal ground axe is found in association with them, one cannot assume that they were made and used for the same purposes. This is another example of the problem associated with aboriginal stone implements, where the flaked and ground varieties are found side by side.<sup>5</sup>

As implied in the name, these implements are made from water-worn pebbles. Whether these were brought to the coast from the rivers or derived from beach shingle is not known; it is possible that they were obtained from both sources. In addition to igneous material, fine-grained sandstone, quartzite and quartz-felsite were used. The petrological determinations<sup>6</sup> which are included in this article are based on lithological characters only; for precise identifications thin sections would be necessary.

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\* Numbers I and II were published in RECORDS OF THE AUSTRALIAN MUSEUM, Vol. xvi, No. 5, 1928, p. 241, and Vol. xvii, No. 8, 1930, page 348.

<sup>1</sup> Found also in Tasmania, *vide* J. S. Falkinder.

<sup>2</sup> Kenyon, A. S.—*The Victorian Naturalist*, xliii, February, 1927, p. 284.

<sup>3</sup> These are common on the North Coast of New South Wales, *vide* C. C. Towle.

<sup>4</sup> Horne says they were used for "detaching the molluscs." *Victorian Naturalist*, xxxviii, 1921, pp. 48-53.

<sup>5</sup> *Cf.* Spencer, *The Arunta*, London, 1927, pp. 536-7.

<sup>6</sup> Stones identified by T. Hodge-Smith.

Because of their abundance in many localities, it is thought that these axes or choppers, being readily made, were as readily discarded. Be this as it may, these implements do not show signs of considerable use, hence the belief that they were improvised. On the other hand, some examples (Plate ix, fig. 2) seem to have been retouched on the working edges, when it has been necessary to re-sharpen them. The probability of the removed flakes being used has not been overlooked, though this is extremely unlikely. In examining coastal middens one invariably finds that the more suitable and compact siliceous material is made use of for flake-work.

One cannot imagine that these pebble-axes were hafted, as was the practice with many of the ground-edge variety. The belief that the pebble-axe is a stage in the development of the ground axe is tenable.<sup>7</sup> One of the figured specimens shows attrition after flaking (Plate ix, fig. 2). There does not appear to be any uniformity of size, shape or weight in these implements. Apparently any suitable pebble was chosen, some being but ounces in weight, while others weigh a pound or more. The butt ends and flat sides often show secondary utilization, being pitted or bruised by pounding.

All the specimens described were collected by the writer and presented to the Museum, and show the development and variation from the simple to the more complex forms.

The bibliography, arranged chronologically, which follows may prove useful to those who are desirous of studying aboriginal middens, shelters, and workshops, and the stone implements frequently found at these sites.

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<sup>7</sup> Cf. Kenyon, A. S., *Victorian Naturalist*, xlii, February, 1927, p. 284.

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## EXPLANATIONS OF PLATES.

## PLATE IX.

Fig. 1.—Sandstone; removed flakes with one exception, probably due to accident; small. Weight, 8 ozs.; dimensions,  $11\frac{1}{2} \times 7 \times 2\frac{1}{2}$  cms. Locality, Bellambi, New South Wales. Australian Museum registered number, E.33231.

Fig. 2.—Sandstone; bean-shaped; flaked at pointed end; evidence of secondary attrition. Used also as an anvil. Weight, 12 ozs.; dimensions,  $11\frac{1}{2} \times 6\frac{1}{2} \times 2\frac{3}{4}$  cms. Locality, Bellambi, New South Wales. Australian Museum registered number, E.33232.

Fig. 3.—Basalt; flat and ovoid in outline; flaked on end; pitted with pounding. Weight, 8 ozs.; dimensions,  $11\frac{3}{4} \times 7\frac{3}{4} \times 1\frac{3}{4}$  cms. Locality, Murrumurang, New South Wales. Australian Museum registered number, E.33233.

Fig. 4.—Sandstone; long oval in shape; well but irregularly flaked. Weight, 14 ozs.; dimensions,  $14\frac{1}{2} \times 7\frac{3}{4} \times 2\frac{3}{4}$  cms. Locality, Bellambi, New South Wales. Australian Museum registered number, E.33234.

Fig. 5.—Basalt; the heaviest of the series; flaked; cutting edge retouched; ploughed up in alluvium. Weight, 3 lbs. 4 ozs.; dimensions,  $18\frac{1}{2} \times 10\frac{1}{2} \times 5\frac{3}{4}$  cms. Locality, Emu Plains, New South Wales. Australian Museum registered number, E.33235.

Fig. 6.—Quartzite; flat; highly flaked over two-thirds of periphery. Weight, 1 lb.; dimensions,  $14\frac{1}{2} \times 8\frac{3}{4} \times 3\frac{1}{2}$  cms. Locality, Bellambi, New South Wales. Australian Museum registered number, E.33236.

Fig. 7.—Quartzite; irregular in outline; heavily flaked, leaving a rather thick butt. Weight, 1 lb.; dimensions,  $13\frac{1}{2} \times 8\frac{1}{2} \times 4$  cms. Locality, Murrumurang, New South Wales. Australian Museum registered number, E.33237.

Fig. 8.—Basalt; ovoid; thick; removed flakes rather small. Weight, 1 lb. 6 ozs.; dimensions,  $13 \times 9 \times 4\frac{1}{2}$  cms. Locality, Emu Plains, New South Wales. Australian Museum registered number, E.33238.

Fig. 9.—Quartzite? Original form nearly circular; heavily flaked and more pointed than usual. Weight, 14 ozs.; dimensions,  $10\frac{1}{2} \times 8\frac{3}{4} \times 3\frac{3}{4}$  cms. Locality, Murrumurang, New South Wales. Australian Museum registered number, E.33239.

Fig. 10.—Quartzite; heavily flaked and probably retouched, producing a faceted cutting-edge. Weight, 1 lb. 2 ozs.; dimensions,  $11\frac{3}{4} \times 10 \times 4\frac{1}{4}$  cms. Locality, Lake Illawarra, New South Wales. Australian Museum registered number, E.33240.

Fig. 11.—Basalt? Ovoid; figured side almost entirely flaked. Weight, 1 lb. 8 ozs.; dimensions,  $11\frac{1}{4} \times 4\frac{3}{4}$  cms. Locality, Bellambi, New South Wales. Australian Museum registered number, E.33241.

Fig. 12.—Basalt; figured side flaked all over, producing a celt-like appearance. Weight, 1 lb. 6 ozs.; dimensions,  $15\frac{3}{4} \times 7\frac{1}{2} \times 4\frac{1}{4}$  cms. Locality, Emu Plains, New South Wales. Australian Museum registered number, E.33242.

Fig. 13.—Basalt; figured side almost entirely flaked; one margin serrated. Weight, 1 lb. 2 ozs.; dimensions,  $14\frac{1}{4} \times 7\frac{1}{2} \times 3\frac{3}{4}$  cms. Locality, Emu Plains, New South Wales. Australian Museum registered number, E.33243.

Fig. 14.—Sandstone; figured side flaked all over. Weight, 10 ozs.; dimensions,  $12\frac{1}{4} \times 8\frac{1}{2} \times 2\frac{1}{4}$  cms. Locality, Murrumurang, New South Wales. Australian Museum registered number, E.33244.

## PLATE X.

Fig. 15.—Basalt? Considerably pitted with age; cutting edge blunted by weathering; visible scars produced by plough. Weight, 2 lbs. 2 ozs.; dimensions,  $17\frac{1}{4} \times 10 \times 4\frac{1}{2}$  cms. Locality, Emu Plains, New South Wales. Australian Museum registered number, E.33245.

Fig. 16.—Basalt? Also pitted and corroded with age; flaking indistinct. Weight, 1 lb. 9 oz.; dimensions,  $13\frac{3}{4} \times 10 \times 4$  cms. Locality, Murrumurang, New South Wales. Australian Museum registered number, E.33246.

Fig. 17.—Quartzite? Practically a retouched split pebble; margin notched. Weight, 6 ozs.; dimensions,  $9\frac{3}{4} \times 8\frac{3}{4} \times 2\frac{1}{4}$  cms. Locality, Murrumurang, New South Wales. Australian Museum registered number, E.33247.

Fig. 18.—Igneous rock; pebble considerably reduced; working end notched. Weight, 4 ozs.; dimensions,  $8\frac{1}{4} \times 6\frac{1}{2} \times 2\frac{3}{4}$  cms. Locality, Murrumurang, New South Wales. Australian Museum registered number, E.33248.

Fig. 19.—Sandstone? Considerably reduced and irregular. Weight, 5 ozs.; dimensions,  $9\frac{3}{4} \times 6\frac{3}{4} \times 3$  cms. Locality, Lake Illawarra, New South Wales. Australian Museum registered number, E.33249.

Fig. 20.—Basalt? Portion of pebble only, with notched margin. Weight, 7 ozs.; dimensions,  $8\frac{3}{4} \times 3\frac{1}{4}$  cms. Locality, Murrumurang, New South Wales. Australian Museum registered number, E.33250.

Fig. 21.—Basalt; bean-shaped; side-flaked; inclined to thickness. Weight, 1 lb. 5 ozs.; dimensions,  $15 \times 7\frac{1}{2} \times 4\frac{1}{2}$  cms. Locality, Emu Plains, New South Wales. Australian Museum registered number, E.33251.

Fig. 22.—Quartzite; skillfully side-flaked. Weight, 12 ozs.; dimensions,  $11\frac{3}{4} \times 7\frac{1}{2} \times 3\frac{1}{2}$  cms. Locality, Murrumurang, New South Wales. Australian Museum registered number, E.33252.

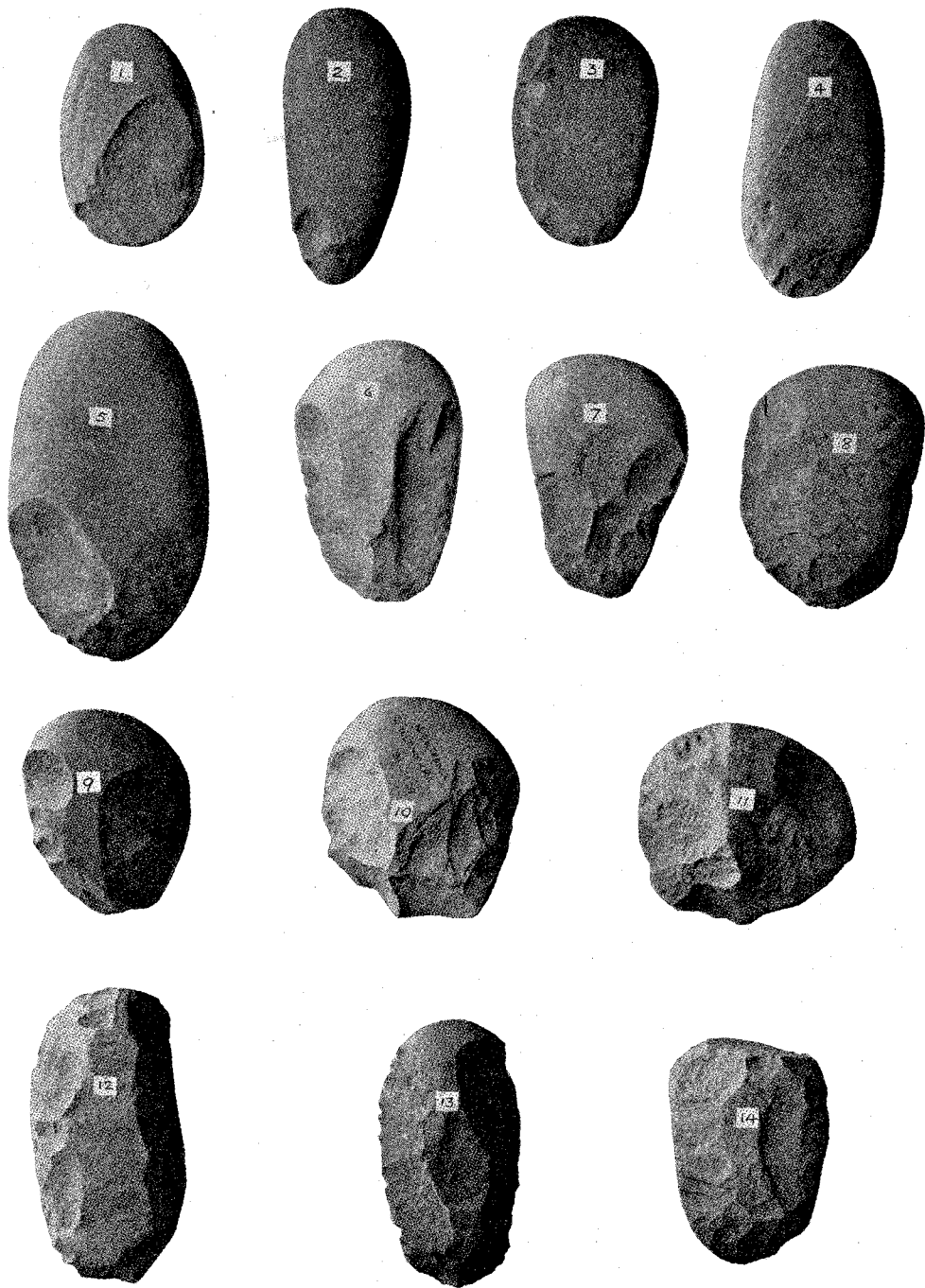
Fig. 23.—Igneous rock; pitted with age; used also as a pounder; flakes removed on reverse side, but probably intentional. Weight, 12 ozs.; dimensions,  $13\frac{1}{4} \times 6\frac{3}{4} \times 2\frac{3}{4}$  cms. Locality, Murrumurang, New South Wales. Australian Museum registered number, E.33253.

Fig. 24.—Quartzite; a pebble considerably reduced. Weight, 8 ozs.; dimensions,  $9\frac{3}{4} \times 6\frac{3}{4} \times 3\frac{1}{2}$  cms. Locality, Kembla Beach, New South Wales. Australian Museum registered number, E.33254.

Fig. 25.—Quartz-felsite; pebble still more reduced, figured side entirely flaked. Weight, 10 ozs.; dimensions,  $11\frac{3}{4} \times 6\frac{1}{2} \times 3\frac{3}{4}$  cms. Locality, Murrumurang, New South Wales. Australian Museum registered number, E.33255.

Fig. 26.—Quartz-felsite; pebble crudely flaked. Weight, 9 ozs.; dimensions,  $11\frac{3}{4} \times 7\frac{1}{2} \times 3\frac{1}{4}$  cms. Locality, Murrumurang, New South Wales. Australian Museum registered number, E.33256.

Fig. 27.—Quartz-felsite; a split pebble with chipped cutting edge. Weight, 8 ozs.; dimensions,  $11\frac{3}{4} \times 9 \times 2\frac{1}{4}$  cms. Locality, Murrumurang, New South Wales. Australian Museum registered number, E.33257.



G. C. CLUTTON, photo.

