TRIMMED PEBBLE IMPLEMENTS OF *KARTAN* TYPE FROM ANCIENT KITCHEN-MIDDENS AT CLYBUCCA, NEW SOUTH WALES.

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(Plate xii, and Figure 1.)

This preliminary note describes a small series of pebble implements from ancient kitchen-middens in the Kempsey district on the north coast of New South Wales. Mr. A. H. Voisey (1934, p. 94) described the site as follows:

> A heavy deposit of shells follows the somewhat irregular line of the old coast almost continuously from Grassy Head to Collombatti, keeping at about the same general height of ten feet above high-tide level. *Ostrea cucullata* and *Arca trapezia* are the most common shells. An occasional gastropod is found, while human bones and pieces of flint have been reported from Collombatti. Most of the *Arca* shells have been broken at the posterior margin, a circumstance indicating that the deposit represents not a raised beach, but an aboriginal kitchen-midden . . . it appears probable for the Kempsey area that the water in which the molluscs lived lapped the old cliffs during the human period, or, in other words, that the emergence which drove the sea eastwards occurred after the advent of the aborigines.

During a reconnaissance to this locality in May 1940, I was able to examine part of these middens, which appear at present as grass-covered mounds extending for some miles along the bank of Clybucca Creek. They are composed of a closely packed mass of the shells of the most abundant gregarious molluscs of mud-flat habitat, the Drift Oyster (*Ostrea cucullata*), Cockle (*Arca trapezia*), Sydney Whelks (*Pyrazus herculeus* and *australis*), and the Sea Snail (*Polinices strangei*), the two former predominating. Mr. T. Iredale, Conchologist at the Australian Museum, has informed me that these molluscs develop in comparatively still water on tidal flats, a condition which existed at the time they were collected by the aborigines (Voisey, 1934, p. 101). The thickness of the deposits is considerable; one pit, dug by lime-burners who have carted away large quantities of the shells, has a face seven feet deep which did not expose the surface upon which the middens lie. Reddish coloured firestones, suitable for crushing into pigment, are common among the shells.

The following implements were collected in the lime-burners' pits, and in and on the surface of the middens:

Cores.—Five specimens. E.48688 is a globular quartzite pebble, 8·5 cm. in greatest diameter and 21 oz. in weight, knapped all over its surface. E.48689–90 are irregular quartzite cores, 7·5 and 10 cm. long, 6 and 19 oz. in weight. E.48694 is oval and high-crowned, 10 × 8 × 6 cm. and 28oz., with a knapped margin along one side and end which may have been used for chopping; it is a coarse-grained, hardened sedimentary rock, not very suitable for flake implements. E.48693 is a flat, rounded pebble, 7 × 7·5 × 3 cm., and 8 oz.; a large flake has been struck from one end, and two small flakes from the other end to form a concave working edge, 2·5 cm. long, on one corner; the material is grey chert.

No prepared striking platforms are present on any of these cores.

Blocks, karta type.—Two specimens made from thick portions of split pebbles, with outer crust surface and inner cleavage face. E.48691 is quartzite, 8·5 × 8·5 × 5·5 cm., and 20 oz., semicircular in section, with a cleavage face at one end, and a trimmed convex edge at the other end. E.48692 is sandstone, 9 × 7 × 5·5 cm., and 14 oz., with a short trimmed edge at one end. The trimming is from the cleavage surface on both specimens.