

AUSTRALIAN MUSEUM SCIENTIFIC PUBLICATIONS

McCarthy, Frederick D., 1949. Waisted hammerstones from the Mackay District, Queensland. *Records of the Australian Museum* 22(2): 151–154, plate vii. [18 January 1949].

doi:10.3853/j.0067-1975.22.1949.596

ISSN 0067-1975

Published by the Australian Museum, Sydney

nature culture **discover**

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6 College Street, Sydney NSW 2010, Australia



WAISTED HAMMERSTONES FROM THE MACKAY DISTRICT, QUEENSLAND.

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(Plate vii.)

Waisted hammerstones and pounders are rare in Australia, and the excellent series of twenty-five specimens herein described constitutes the only large group collected in one locality in the whole of the continent. They were kindly submitted to me for description by Mr. J. H. Williams, of Mackay, who collected most of them. The first two examples were ploughed up on Mr. P. Furlong's farm at Mt. Jukes, one being found by Mr. Furlong and the other by Mr. B. Woodyard. The series is numbered 3 to 8, 12, 14 to 30, and E.52062, of which Nos. 16-17, 23, and 52062 are now in the Australian Museum and the balance in the Mackay Museum. Nos. 1-2, 9 to 11, and 13 are not hammerstones.

Mt. Jukes, a volcanic neck sixteen miles (25.75 kilom.) east of the main range, is almost surrounded by a crescentic and hilly valley with fertile flats along the creeks. In this valley Nos. 23 to 24 and E.52062 were found. Sir Alec Macartney, whose father owned the original grazing property and farm in the valley, informed Mr. Williams that the area was a favourite hunting ground of the Mackay aborigines whose territory extended southward to St. Lawrence. The valley has three outlets. One is Jordan's Gap, where Nos. 6 to 8, 16-22, and 29 were found; it is a col with a scrub-covered spur on one side and an open-forest covered spur on the other side and the hammerstones were collected on an oval-shaped camp-site about eighty feet (24 metres) long which extends into the Gap. The second outlet is Tecon's Gap, where No. 26 was found, about half a mile (804 metres) to the west. The third outlet is a gorge through which Milson's Creek flows, about one mile (1.609 kilom.) south of Jordan's Gap, which yielded No. 27. Mr. Williams made a thorough search of these outlets because he thought that natives travelling through them might have left implements in such situations for intermittent use.

Nos. 12, 14 to 15, and 25 were collected along Devereaux Creek, near the base of Mt. de Moleyns, eight miles (12.87 kilom.) south-south-west of Mt. Jukes, on the northern arm of the coastal plain; some of these were found by Mr. G. Gaudry. Nos. 3 to 5 came from Seaview, the only coastal site, eight miles (12.87 kilom.) north-west of Mackay and thirteen miles (20.92 kilom.) east of Mt. Jukes. They were ploughed up by Mr. J. A. Edwards on his farm. There is an old camp-site at Seaview in the dunes fringing the beach, on which there are large numbers of water-worn pebbles and lumps of stone.

Description.—The twenty-five specimens are described in five groups to show their range of type and method of workmanship.

1. *Trimmed Blanks.*

Three examples, No. 4 (Pl. vii, fig. 1) from Seaview, and Nos. 16 and 18 from Jordan's Gap, are rectangular flat blocks of grey porphyry, grey and pink granite, with cortex surfaces on their straight sides and ends. One set of flake-scars is present along the top and bottom edges of the lateral margins on both surfaces, but these margins show

no signs of percussion use. They are $16 \times 11 \times 5$, $21 \times 11 \times 4.5$, and $21 \times 15 \times 4.5$ cm. in size, and 3, $4\frac{1}{2}$ and $5\frac{1}{4}$ lb. in weight. Two large spalls have broken off the ends of No. 16 and it is probably a reject.

2. *Waisted Blanks.*

The eleven examples comprise Nos. 6, 8, 17, 19, 20 (Pl. vii, fig. 3), 22, and 29 (Pl. vii, fig. 2) from Jordan's Gap, No. 3 (Pl. vii, fig. 5) from Seaview, No. 12 from Devereaux Creek, No. 26 from Tecon's Gap, and No. 27 from Milson's Creek gorge. They include four rectangular blocks of grey porphyry, grey tuff and pink granite with straight ends and flat sides, two pebbles of brown porphyry with convex ends, one pebble of grey porphyry, and two lumps of indurated shale or tuff. They are from $12 \times 9 \times 4$ to $21 \times 14 \times 6$ cm. in size, and $1\frac{3}{4}$, 2, $2\frac{1}{2}$, 3, $3\frac{1}{2}$, $3\frac{1}{4}$ (2), $3\frac{1}{2}$, $5\frac{1}{4}$, $5\frac{1}{2}$, and $5\frac{3}{8}$ lb. in weight. Nos. 8 and 26 have a battered concave edge on one lateral margin, each about 7×1 cm. No. 22 is triangular in transverse section, with a flat cortex back, sides and ends, and a battered concave 5 cm. long and 1 cm. deep in the middle of the thin margin. Nos. 17, 19, 20 and 29 have a battered concave, from 5×1 to 9×1 cm. in size, in the middle of both lateral margins. No. 27 has a flaked concave on each lateral margin, and a line of flake-scars along one surface at one end. No. 12 is an elongate flat pebble wider at one end than the other, flaked and battered along both shallow concave lateral margins. Nos. 19, 20 and 29 are also pebbles with rounded unused ends. The largest specimen in this group, No. 3, is very thick, has one flat cortex surface upon which something has been rubbed to produce a narrow and shallow groove 1.5 cm. wide; the other surface is crudely flaked to a convex shape, so that the specimen is plano-convex in transverse section. Its two concaves are 8×1 and 9×1 cm. A line of small flake-scars, due to flakes being knapped from the end, is present along the edge of one surface on some of these specimens.

3. *Waisted hammers with straight butt.*

Three examples, No. 7 from Jordan's Gap, No. 14 from Devereaux Creek, and E.52062 (Pl. vii, fig. 9) from Mt. Jukes. They are made of grey granite, pink granite and fine-grained black breccia, are from $15.5 \times 11 \times 4$ to $16 \times 10.5 \times 4.75$ cm. in size, with the greatest thickness 6 cm., and $2\frac{1}{2}$ to 3 lb. in weight. Each possesses a concave, ranging from 5×1 to 9×1 cm. in the middle of both lateral margins. The butt is a straight flat cleavage or cortex surface. The bevelled edges are battered from end to end along the lateral margins and round the convex distal end of each specimen. These three are fine examples, uniform in type, and varying little in size and weight.

4. *Waisted hammers with two convex ends.*

Four examples of the most developed type in the whole series, comprising Nos. 23 and 24 (Pl. vii, fig. 6) from Mt. Jukes and Nos. 15 (Pl. vii, fig. 10) and 25 (Pl. vii, fig. 4) from Devereaux Creek. One is made of breccia, one of grey porphyry, one of a fine-grained igneous rock like andesite, and one of brown grit. They are all long specimens, ranging from $18 \times 16 \times 9$ to $24 \times 16 \times 6$ cm. in size, although one is only 3.5 cm. thick, and are 4 (two), $5\frac{1}{2}$, and $6\frac{3}{4}$ lb. in weight. Each specimen possesses a concave in the middle of both lateral margins, ranging from 5×1.5 to 8×2 cm. Nos. 23 and 25 are thicker at one end than the other. No. 23, the largest specimen, has a straight thick end crudely flaked to a convex shape, and the other end consists of two oblique edges terminating in a rounded point which is battered by use. Nos. 24 and 25 are flaked to a convex shape on both ends, and on the former this battering is continued right around its lateral and end margins; it is limited to both ends on No. 25. No. 15, the thickest example, is only slightly battered on parts of its ends, and apart from the removal of a few flakes on one surface at one end, its ends are both unshaped.

5. *Hammer with encircling groove.*

No. 30 (Pl. vii, fig. 7) from Devereaux Creek District, near base of Mt. de Moleyns, is made of brown sandstone, and one end is missing. The butt and lateral margins are flaked from both surfaces to form a bevelled edge, which is battered along its entire extent. The groove has been made by pecking. It is $14 \times 11 \times 4$ cm. in size and $1\frac{3}{4}$ lb. in weight.

A lenticular blade of grey granite (Pl. vii, fig. 8), $10 \times 10 \times 3$ cm. in size, with straight lateral margins, a flat weathered fracture face as its butt end, and a battered distal end, and two other broken specimens cannot be placed in the above groups.

Characteristics.—These hammerstones possess certain definite characters. The concaves forming the waist, and the lateral and end margins where trimmed, bear a bevelled edge shaped by the knapping of flakes from the upper and lower surfaces. This edge, both in the concaves and elsewhere, was then battered, and this percussive use constituted the main function of the implements. Additional trimming on some specimens in groups 2 to 4 consists of the removal of a line of small flakes along one or both edges of the straight butt and struck from the end down the upper and lower surfaces. The trimming and use have not altered the fundamental shape of the natural lumps or pebbles utilized. Their transverse sections include the rectangular, trapezoid, lenticular and plano-convex forms, which is natural on some specimens and fashioned on others. The range of materials includes soft grits and sandstones, fine-grained hard and tough breccias, tuffs and breccias, and coarse granites, a fact which indicates that the material was not as important as weight in their use.

Uses.—There is no record of the function of these implements in the Mackay district, but they appear to belong to a group of large pounders used for various purposes in the heavily forested country of the Queensland coast. Roth (1904, Sect. 37, figs. 151–54) recorded the use of hafted pebble hammers for loosening sheets of bark by tapping along trenched outlines on the tree, for pounding pandanus and other nuts, and for knapping stone implements, in the Palmer River and the Princess Charlotte Bay areas of Cape York. He also recorded (op. cit. Sect. 38, figs. 160–3, 165) ironwood mallets, up to 7 lb. in weight, used in Cape York for pounding vegetable fibre, nuts and foodstuffs. Thomson (1936, pp. 71–73, Pl. viii) said that rounded quartz and diabase pounding stones are used in Cape York by the Koko'Taiyuri tribe on Edward River, especially for pounding the hard desiccated fruit of the Nonda palm (*Parinarium nonda*). These hammerstones are not worked or shaped in any way, but constant and prolonged use produces a flattened or slightly concave end on them. They are hafted in a withe handle. The ironwood mallets and anvils, on the other hand, he said, are used for pounding most of the other vegetable foods. These stone hammers are much smaller than the waisted type from Mackay.

It is probable that the Mackay waisted hammerstones were hafted on a withe handle and were used for loosening bark sheets, knapping stone implements, pounding nuts and the crude bark-cloth made on the Queensland coast. The battered distal ends on the specimens described vary from a very narrow to a broad flat face, the latter no doubt the result of long usage.

Affinities.—It will be noticed that the ironwood mallets figured by Roth are grooved all round the head as a result of use, but the battering on the concave indentations of the Mackay waisted hammerstones is probably part of the process of fashioning them.

The lenticular edges and transverse section on Nos. 12, 14, 24 to 25, 28 and E.52062 of the Mackay hammerstones resembles technically the broad lenticular blade of the *Yodda* tanged implements (McCarthy, Bramell and Noone, 1946, p. 77, fig. 382), a point which may or may not indicate a similar function for the two types; the *Yodda* implements, however, are completely pecked and some are polished all over their

surfaces, thus representing a much more advanced type technically than the Mackay hammerstones, among which No. 30 is the only one bearing pecking which is limited to its encircling groove.

The most definite comparison that can be made is between the Mackay hammerstones and a series of large hammers from a quarry on Daruka Station, Moor Creek, Tamworth district, New South Wales (McCarthy, 1941). Most of the hammers from this quarry are rectangular and trapezoidal blocks of basalt from 10 to 17 cm. long and from 1½ to 3 lb. in weight. They too are flaked along both edges of the lateral margins in the same manner as the Mackay hammerstones. One of them (op. cit., Pl. iv, fig. 5) is waisted, and identical in shape and size with No. 14 of the Mackay series, others are like No. 22, and some, particularly Pl. iv, fig. 2, which is 35 × 10 × 7 cm. in size and 8 lb. in weight, are similar to group 2 from Mackay.

We can conclude, therefore, that these heavy hammers form a type limited in distribution at present to eastern Queensland and north-eastern New South Wales. Archaeologically, there is as yet no evidence to indicate their age. Mr. Williams, from his field observations, believes that they were used in the Mackay district prior to the introduction of the ground-edge axe.

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EXPLANATION OF PLATE VII.

- Fig. 1.—Trimmed blank, No. 4 of group 1, of grey porphyry, rectangular section. Seaview.
 Fig. 2.—Waisted blank, No. 29, of group 2, of grey porphyry, flattened oval section. Devereaux Creek.
 Fig. 3.—Waisted blank, No. 20 of group 2, of grey granite, lenticular section. Seaview.
 Fig. 4.—Waisted hammerstone, No. 25 of group 4, of grey tuff, rectangular section, battered along all margins. Devereaux Creek.
 Fig. 5.—Waisted blank, No. 3 of group 2, of grey tuff, planoconvex section. Seaview.
 Fig. 6.—Waisted hammerstone, No. 24 of group 4, of grey porphyry, lenticular section, lightly battered on various parts of its margins. Mt. Jukes.
 Fig. 7.—Grooved hammerstone, No. 30, of group 5, of brown sandstone, lenticular section.
 Fig. 8.—Lenticular blade of grey granite.
 Fig. 9.—Waisted hammerstone, E.52062 of group 3, of black breccia, lenticular section, battered along both lateral margins and distal convex end. Mt. Jukes.
 Fig. 10.—Waisted hammerstone, No. 15 of group 4, of brown sandstone, lenticular section. Devereaux Creek.

Photographs by Howard Hughes.

