the sinus between, as before stated, is fairly broad and deep. The insertion plate is absent, at first I concluded it had broken away on either side, but having re-examined the margin under 65 magnifications I have concluded that the shell never possessed insertion plates, and that the extension of the articulamentum which forms the sutural laminæ, ceases at the callus; the tegmentum is folded over at the beak, the anterior margin of this infolded portion consists of a well-defined, narrow, smooth, callus ridge.

Locality.—Table Cape, Wynyard, Tasmania; Tertiary (Janjukian).

Measurement.—6 x 3.5 mm.

EXPLANATION OF PLATE I.

Fig. 1.—*Pseudo-ischnochiton wynyardensis*, n.sp. Holotype, median valve, (a) upper side, showing general shape and diagonal rib, x 6; (b) side view same valve, showing diagonal rib and arched jugum, x 7. National Museum, Melbourne, No. 13,498.

TASMANIAN STONE CULTURE.

SOME NOTES ON DISTINCTIVE TYPES, SPOKESHAVES, BORERS, AND CHIPPING TOOLS, AND THEIR PROBABLE USAGES.

BY

R. W. LEGGE, Cullenswood.

Plates II.-V.

(Read 12th August, 1929.)

Amongst the various and more or less well-defined types of Tasmanian stone implements which have been engaging the attention of students for some time past, there are two distinct and decidedly specialised forms which stand out conspicuously from all the others as having been fabricated for certain definite purposes.

In the following notes they will be termed respectively Spokeshaves and Borers, and it is proposed with the help of two or three plates to give a short description of several series which are fairly representative of the types.

So persistent are these two forms throughout the whole range of Tasmanian stone implements, and so regularly do they conform to type, that, although this is not by any means the first instance wherein they have been described, it is thought that students may still derive some considerable interest from having series of selected flakes exhibiting remarkably well re-touched edges brought directly under their notice.

These types are the more interesting also, in that they have survived right down through the ages from the Middle Palæolithic Period, as indeed practically the whole Tasmanian Lithic Industry has done, revealing, as it undoubtedly does, the most remarkable analogies to the types constituting the chief features of the Mousterian and post-Mousterian Flint Culture.

Taking the so-called Spokeshaves first, a series of 53 has been chosen, which is illustrated on Plates II. and III.

The chief, if not the only, purpose for which these implements were made and used, was for smoothing down spears and waddies after having carefully charred the shafts first to remove the outer and softer layers of the wood, and for trimming off any slight protuberances which might be present.

The writer has found this type occurring in much greater numbers in the ancient native camps on the East Coast than elsewhere, in the Midlands for instance, probably because the material for weapon making was much more plentiful in the dense Tea-tree scrubs along the banks of the coastal rivers, and around the margins of the lagoons. It is not unlikely that during the periodical visits of some of the tribes, the Ben Lomond, for instance, to the Coast in the winter, the men obtained the best shafts for their weapons from these sources. The fact remains that nearly all the specimens comprising the series chosen to illustrate this paper, have come from the great camping grounds at Long Point and Beach End, some 2 miles north of Bicheno; the type has been found to occur in a lesser degree also in the camps along the coast reaching southwards from Oyster Bay to Grindstone Bay, opposite the northern end of Maria Island. It is, of course, more than likely that other collectors than the writer who have entered this field previously, notably, the late Ernest Westlake, Dr. Crowther, and others, have taken up numbers of these Spokeshaves.

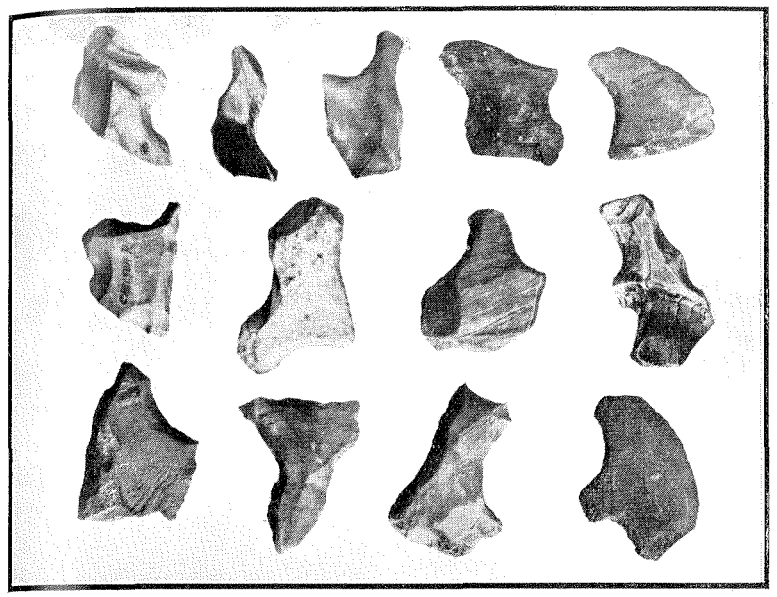
In quite a fair number of instances we find the Spokeshave and the Borer merging in the one specimen, where two concavities appear on the one flake opposite each other, the adjacent edges running together to form a pointed common extremity. The point thus formed, though, is usually more of a drill than that which is found on the Borers or, as they have been called, "Duck-bills" with which we have to deal in this paper.

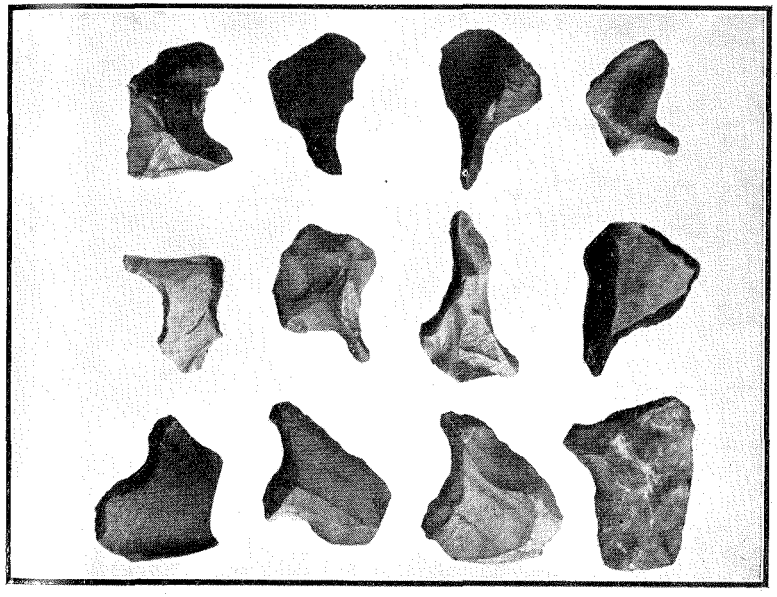
BORERS OR "DUCK-BILLS."

Whilst it is quite reasonable to ascribe the foregoing uses to the Spokeshave, which, from its very shape, makes them fairly obvious, it is neither easy nor prudent to form any definite conclusions as to what were the actual purposes the natives put these so-called "Duck-bill" implements to.

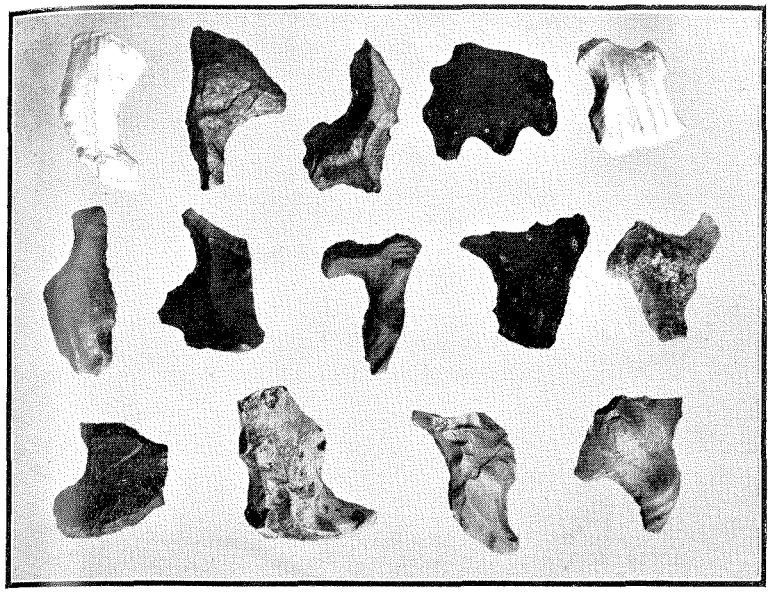
The form is decidedly a conventional one, and there must have been some very definite object in view when it was so persistently fashioned. The spatulate extremity in nearly every case creates the impression that the intention was to have a tool suitable for work for which the finer points or piercers, which are by no means uncommon, were not just what was required.

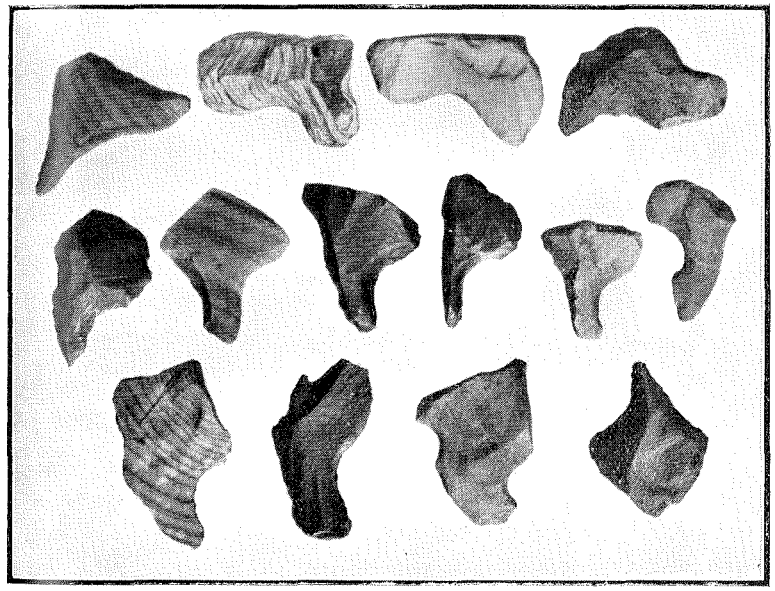
A review of the 17 specimens selected to illustrate the type will clearly show how faithfully the duck-bill form was adhered to. The type may be said to be one, if not the most





Tasmanian Stone Implements.





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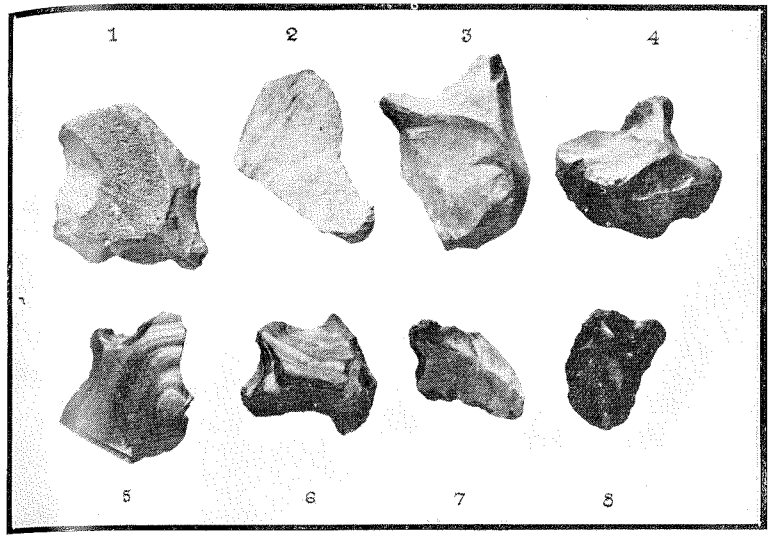

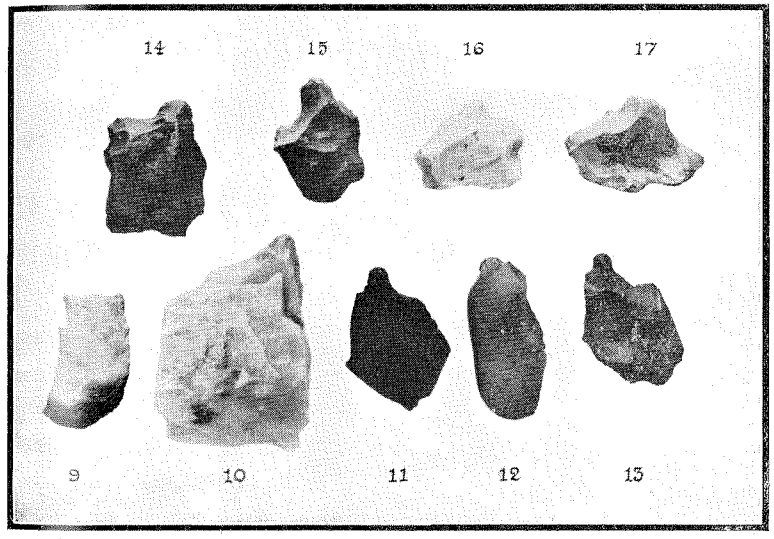

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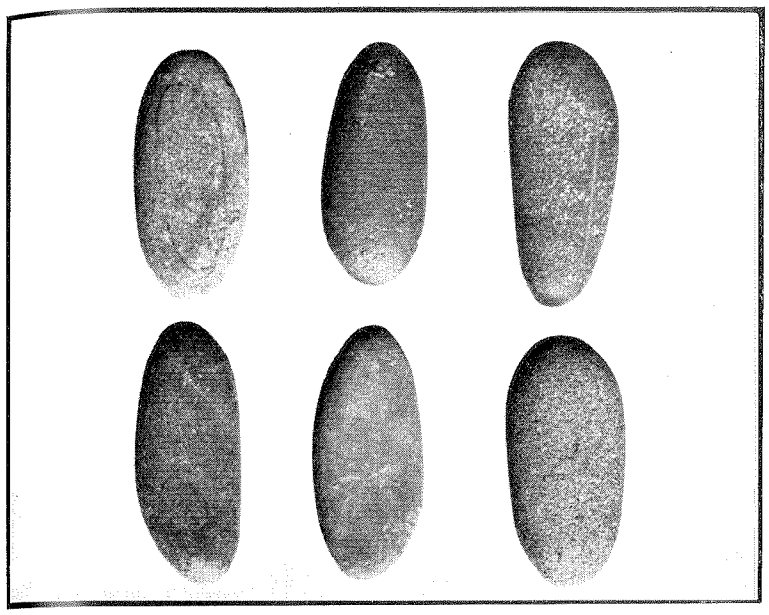

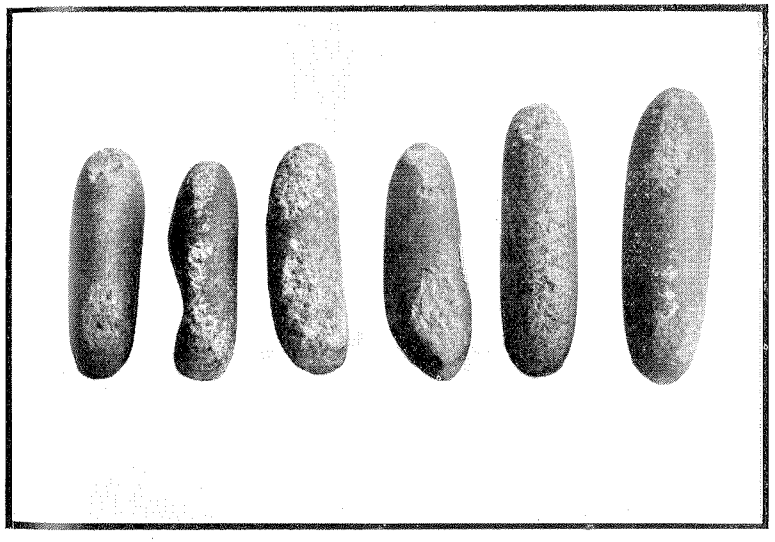

Tasmanian Chipping Tools.

dominant of those figuring in Tasmanian Stone Culture; occurring as it does in miniature or pygmy form, a series of these having already been described by the writer in an earlier paper.

In the series chosen, if we look at Nos. 9, 10, 11, 12, and 13, figured on Plate IV., it will be seen that the point or "duck-bill" forms the sole feature of the flake, that is so far as any secondary treatment is concerned. In Nos. 1, 3, 4, and 5, on Plate IV., we have four (4) particularly characteristic specimens having bold points, three of them flanked on either side by concavities, more or less well defined, but these features do not constitute the main ones, and are but the results of the intentional fashioning of the "duck-bill" itself. That the two features do frequently occur conjointly cannot be denied, but where the delicate chipping of the point itself is so very apparent, as it is in most instances, the conviction becomes strong that the formation of this feature was the main object in view.

No. 6, Plate IV., shows an attempt to form a double point.

The workmanship of the point on No. 8 is particularly delicate, and such finish could only have been accomplished by skilful pressure-flaking, as the facets around it are very minute, and yet so placed as to leave scarcely any traces of a saw-like edge on the under-side; attrition by wind-driven and ever moving sand will doubtless account for much of this smoothness of edge.

In No. 16 we have a specimen of white porcellanite which is of attractive appearance and shape, the latter lending itself admirably to a secure finger and thumb grip. No. 17 is a fine example of the type, though much broader across the point than usually seen, the tool having been fashioned like many others for the sake of the duck-bill alone.

Having arrived thus far with a description of this interesting type, let us now hazard a few conjectures as to what was its chief usage. For what purpose or purposes were these so-called "Duck-bills" made? Why do they constitute such a prominent type in Tasmanian lithic culture? Certain it is there was a very definite use for them, and so far as the making and shaping of spears and waddies is concerned, it may be safely affirmed that this is not likely. From what is known of Tasmanian native crafts such as basket and necklace making, we may be sure that this

implement played no part in these. For the gathering together of the edges of the kelp water-pitchers, the natives would probably have used a fire-hardened and pointed skewer, first piercing the holes with a sharp stone *point*. The "Duck-bill" would not have been suitable for this operation, though again we must not overlook the fact that a blackfellow will pick up the nearest and handiest thing he can lay his hands on to effect his purposes.

The usage for this tool which appeals to the writer as being the most likely one, is in connection with Fire-making.

In Ling Roth's *Aborigines of Tasmania*, facing page 82, there are two illustrations depicting two fire-drills and socket-sticks.

One pair of these was presented to Sir John Lubbock by G. A. Robinson, and the other, from the Barnard Davis collection, reposes in the Pitt-Rivers Museum at Oxford. In referring to these socket-sticks, the author says that "it "was probably the flower stem of *Xanthorrhœa* that was "used, as the stem has a pith-like centre."

Now, a glance at these socket-sticks at once suggests that the holes or sockets appearing along them must have been first started with some boring tool, for it is not reasonable to suppose that they could have been made or begun with the drill-point itself.

No doubt a wood-dust priming was first introduced into the socket before drilling commenced, and from their distinctive shape, it seems extremely likely that the "Duck-bill" was used to gouge out the recess or socket to hold the priming and provide a close fitting place or hole to work the drill in.

In Péron's description of a native "tomb" visited in Oyster Bay, he says: "On the inner surfaces of some of the "best and largest pieces of *bark* some characters were "crudely marked similar to those which the aborigines "tatued (*sic*) on their fore-arms." Duck-bills may possibly have been used for graving these marks.

The specimens selected for this paper are all from East Coast stations, ranging from Orford to Scamander River.

CHIPPING TOOLS.

The study of Tasmanian Lithic Culture, to be anything like complete, should include descriptions, not only of the various types of scrapers and borers, but also of the stone tools with which these were made and finished off.

The flakes struck off the matrix or core-stone with a more or less heavy hammer-stone, did not always have the sharp fortuitous edge needing no further treatment to make of them useful scrapers or knives. It was in the preparation of those flakes which needed their edges sharpening that the Tasmanian implement-maker showed himself to be the equal in skill to any of the Palæolithic peoples who either preceded or were cotemporaneous with him.

The keen student, when examining a series of Tasmanian scrapers, cannot help but admire, even if he does not marvel at, the fine secondary treatment which the edges of many of the pieces coming under his scrutiny will exhibit, revealing a high degree of skilful technique in their finish.

This finish, or, as it is usually termed, secondary treatment, had to be effected with some kind of a stone tool, and it is the object of this paper to give a short description, aided by photographs of a series of what may be called "Tool-stones" which the writer believes to have been used almost exclusively for this purpose.

These tool-stones have been taken up in different ancient camping grounds along the East Coast, and are by no means common. (See Plate V.)

They are all of the same type, elongated water-worn pebbles, from 2½ to 3½ inches long, and averaging 1¼ inches in width.

They all show the same traces of wear in the same spot, namely, on the edges near the extremities, a little to the rear, and all of the twelve specimens selected for description herein, have both edges at either end distinctly worn, a more or less flattened surface being in evidence at these points.

This wear is the result of continual glancing blows struck at the edges of the flakes away from the hand in which the latter were held, and aimed at the opposite edge to that on which the chipping appears. Considerable care, skill, and accuracy must have been employed in the delivery of these blows, although when one learns just how it was done, it does not appear to be so difficult.

Flat ovate pebbles were also used for this work, but the type here described seems to have been the favourite, and possibly was that best suited for the purpose, which must not be confused with that of pressure-flaking, a separate art in itself.