

Notes on Ethnographical Accessions.

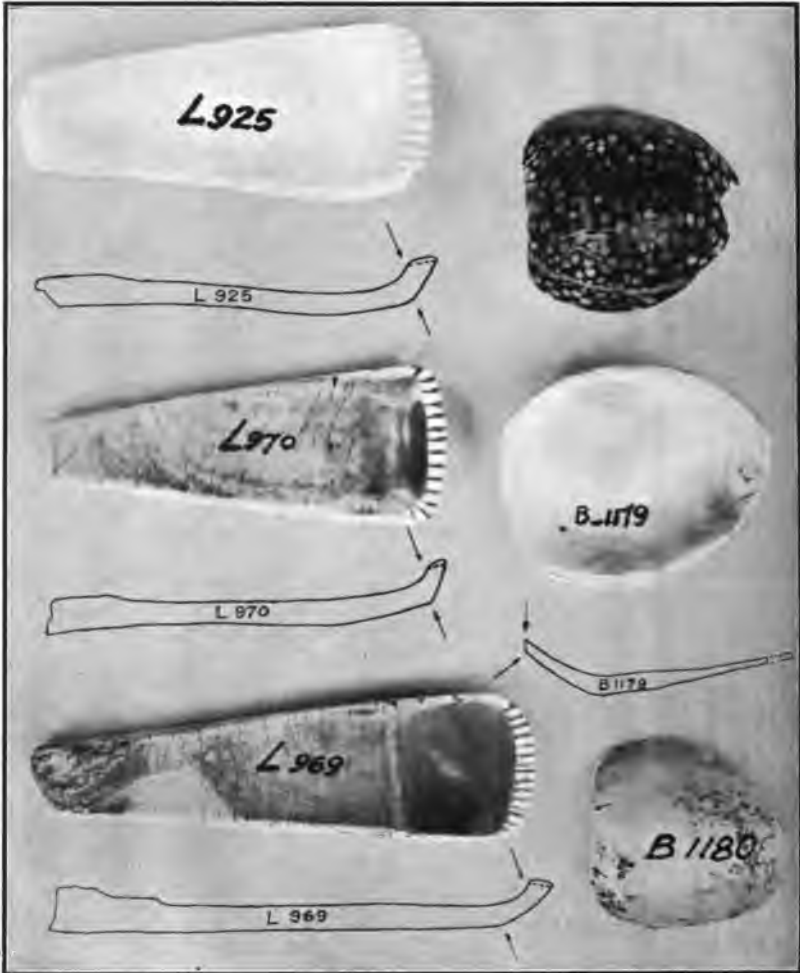
BY JOHN F. G. STOKES.

SOME HAWAIIAN SHREDDERS AND SCRAPERS.

WHEN we view the apparently complete Hawaiian collections in the Bishop Museum, it may be difficult for us to realize that some of the implements, which must have been most common, are now among the rarest. This remark would apply more particularly to specimens of less permanent nature than stone. As examples, might be quoted, the bambu knife and the file of coral; neither of them was in our collections until found on Kahoolawe in 1913. Such tools, simple in their structure though effective enough for their purpose in the hands of their users, were from the nature of their material the first to give way before the imported metal implements, and, not being of interest as curios, have been easily forgotten.

Another such implement was the early form of the *wa'u niu*, coconut-shredder, used for preparing *kulolo* (the Hawaiian dessert made by cooking together shredded taro and coconut meat, sweetened with milk from the unripe coconut). The first example of this early form, to come to our knowledge, was one ploughed up in 1915 at Hauula, Oahu, 1000 feet from the sea, by an employee of Mr. Edgar Henriques, and loaned to the Museum for casting. L 925, Fig. 1. It was a wedge-shaped section of a cone shell (probably *Conus quercinus*) serrated on the interior apical margin. In 1916, Mr. A. L. C. Atkinson found two more, of the same material, on the beach at Kihei, Maui. L 969 and L 970, Fig. 1.

The specimens found were shown to several middle-aged or elderly Hawaiians at various times, and it is interesting to note that all but one of them failed to recognize the shredders until the indented edges were pointed out, and then the use was at once described. The one referred to was John Penchula, from Kau, Hawaii, now a janitor in the Museum, who remembered seeing his father using such an implement. For use the shredder was bound, teeth upward, to a straight stick which rested on a stone and the ground, with the shredder projecting over a dish, and was



1. HAWAIIAN SHREDDERS AND SCRAPERS.

held by the foot. The material to be shredded was taken in both hands and pressed downward against the teeth.

In Fig. 2 is a shredder (L 969) mounted on the ascending prong of a branched stick, by Penchula, after the fashion of one used by his father. It is very similar to a Micronesian pattern. The method of mounting and applying the shredders would no doubt follow individual taste to a large extent. Kulolo is a deli-

cacy still in demand, although a pudding made of arrowroot is rapidly replacing it on account of the simpler preparation of the latter. The implement now used for kulolo is a long piece of iron (often a flat file) serrated at one end, sometimes set in a wooden handle. The operator either stands or sits on it. In the Hawaiian Group we have not come across anything similar to the convenient contrivance used for the purpose in the Marquesas Islands, con-



2. SHREDDER, WITH SUPPORT.

sisting of a wooden stool with a projecting arm and a grater of coral bound to the outer end.¹

There is some variation in the design of the shredders illustrated. Fig. 1. To the right of the arrows in the cross sections are shown the portions which were shaped (by grinding). Nos. L 925 and L 970 are of a similar and effective pattern, the cutting angle in each being directed upward, and a sharp edge obtained. No. L 970 has apparently seen more use and undergone sharpening by further grinding on the upper edge of the shell section. A comparison of these two specimens will demonstrate this probability. The serrations in both are regular. No. L 969 has not been so evenly serrated, nor does it appear of such good design, since the cutting edge is rounded. It has been much worn.

¹B. P. Bishop Museum Memoirs, II, 377, Fig. 178.

According to PENCHULA, sections of the *Cassis* and other large shells were used, in addition to the *Conus*, as was also the hard wood *kauila* (*Alphitonia excelsa*) indented as usual. From a Kauai native it was learned that the naturally serrated edge of the *opihi* (*Patella* spp.) served the same purpose. It was held in the hand, not mounted. The *opihi* was also used as a spoon, and as a scraper for gourds similarly to the specimens now to be described.

Among deserted house foundations on the south coast of Molokai, Mr. A. F. Judd and Dr. C. Montague Cooke found, in 1916, three dorsal sections of large cowries, which had been artificially broken out, apparently, and further modified by grinding at one end. They are illustrated in Fig. 1, B 1162, *Cypræa intermedia*, B 1179 and B 1180 *C. mauritiana*. One, B 1179, was in very good condition and furthermore was perforated at the end opposite the sharpened part. As shown in the cross section, it had been ground to a very sharp edge, the face of the grinding being parallel to its short axis. The others are much worn, (B 1179 is also broken) and do not now show a sharpened edge.

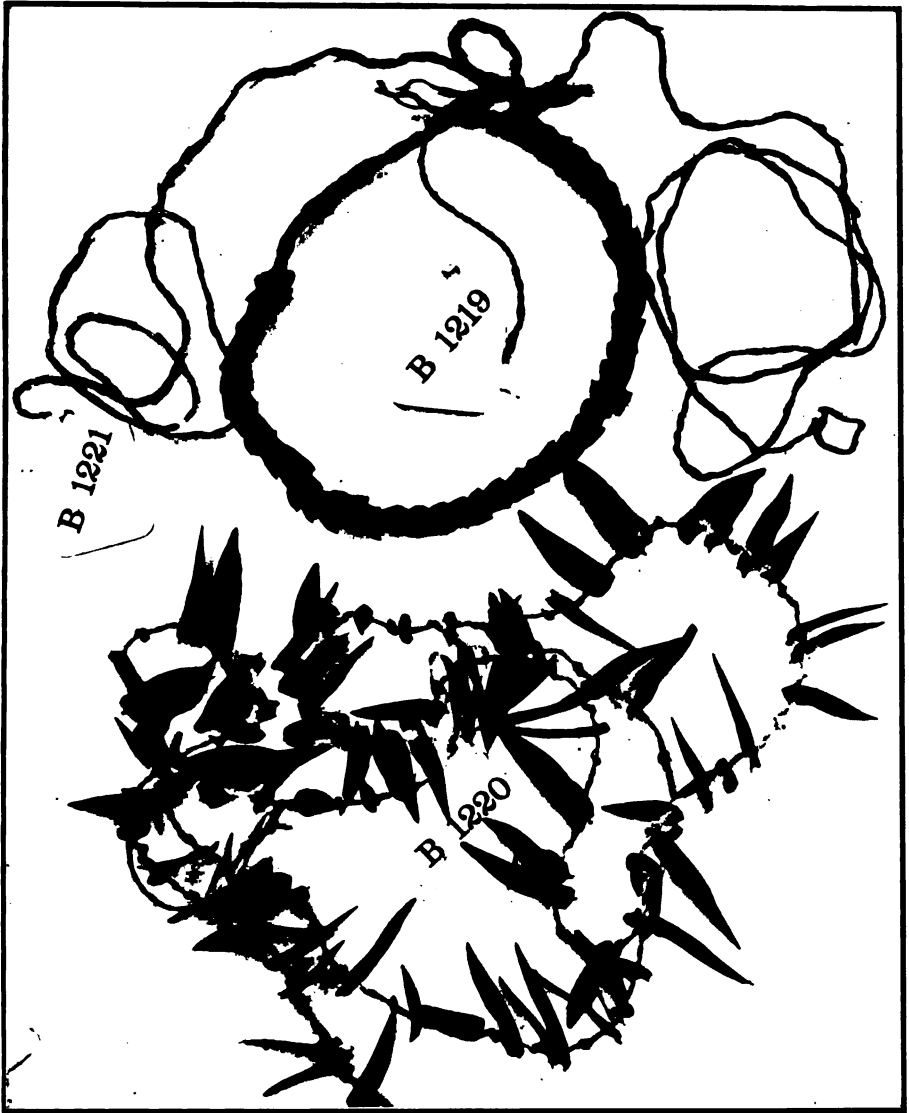
These shells, in addition to being used as coconut-scrappers, were used for cleaning out the pith from the interior of the gourd vessels.¹ In the part of Molokai where found, the latter was probably the principal use for these particular specimens. In operation the shells were held in the hand. In the gourds in the Museum, the pith has been very cleanly scraped away, and the sharp cutting edge of No. B 1179 would have been well adapted for the purpose. By experiment, this scraper was found to accurately engage the interior surfaces of coconuts and gourds.

The Hawaiian name applied to these scrapers would be variously *wa'u ipu* or *wa'u niu* (gourd-scraper or coconut-shredder), accordingly as the implements were used.

BETLE NECKLACES FROM NEW GUINEA.

Necklaces of beetles' parts from New Guinea, a form of ornamentation unusual in the Pacific, have recently come to our attention. They were brought to Honolulu by Mr. Max Frech, first officer of S. S. Prinz Waldemar, who generously divided his treasures with the Museum. He obtained them from an engineer, of another steamer, who had secured them on an expedition many

¹The gourd vessels were described by Dr. Brigham, B. P. B. M. Memoirs, II, 321.



3. BEETLE ORNAMENTS. KAISERIN AUGUSTA RIVER, NEW GUINEA.

miles inland on the Kaiserin Augusta River, N. W. German New Guinea. Mr. Frech, who has traded for many years on the New Guinea coast, says that he has not seen them in the possession of the coast natives.



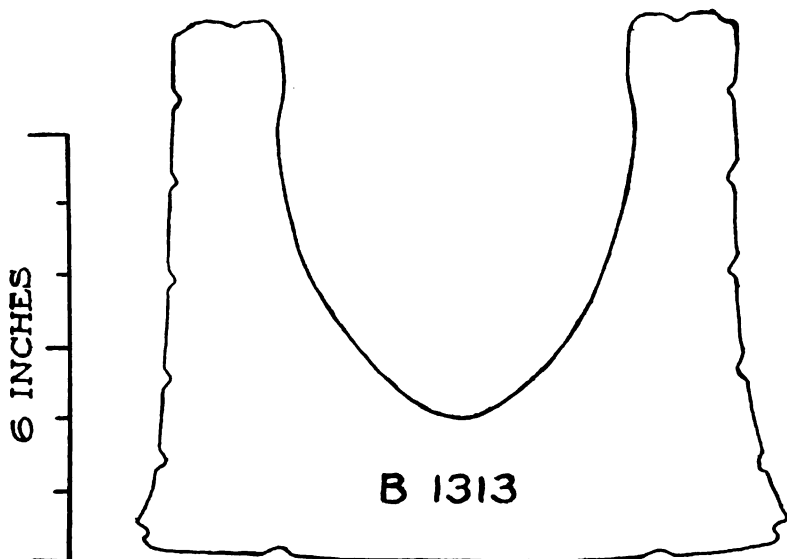
4. RINGED STONE MORTAR.

According to Mr. J. C. Bridwell, they are the prothoraces, elytra and femora of two species of Buprestid beetles, probably of the genus *Chalcophora*. In Fig. 3 are shown: B 1220, a complete string of the elytra; B 1221, half a string of the femora; and B 1219, part of a string of the prothoraces. Their beautiful iridescence, the dominant brilliant green changing to old gold, was the cause of the levy on the insects for their glittering coverings. In Nos. 1219

and 1220, the string is of native manufacture, and in 1221, of cotton thread. The cord of No. 1220 is knotted between each wing sheath. In this specimen, a somewhat musical tone results from the rattling of the necklace.

ORNAMENTED MORTAR OF STONE.

In Fig. 4 is illustrated a cylindrical stone mortar found on the uplands of Helemano, Oahu, and presented to the Museum by Mr. Robert S. Thurston. Hawaiian mortars were not unknown to the



5. SECTION OF STONE MORTAR.

Museum,¹ but this specimen is worthy of special notice on account of the presence of many grooves encircling the exterior. There are six on the exterior wall, two on the upper rim and one on the bottom. Their presence in the latter two places would indicate that the motive was ornamentation, not utility.

Considering the necessarily bulky requirements of such an implement, the Hawaiian cylindrical mortar had been developed into a form which was not inelegant, as may be seen in those pre-

¹ They were used for obtaining oil by crushing kukui nut kernels, as already described by Dr. W. T. Brigham, B. P. B. M. Memoirs, I, 364-366.

viously illustrated.¹ The rings would thus add a slightly greater degree of refinement. They have apparently been made by pecking, and have not been subsequently smoothed, as was the original surface of the exterior. The stone is a basalt, of a degree of fineness similar to that in the other cylindrical mortars. The specimen is 200 mm. high, 223 in diameter at the base. The cavity is 143 mm. deep, 123 in diameter at the mouth, and 127 a quarter of the way down, and converges at the bottom. A cross section is shown in Fig. 5.

AN HAWAIIAN SLING.

The sling was always considered an effective arm in Hawaiian warfare, and the great care with which the sling-stones were made² would seem to bear this out. Yet the only Hawaiian sling in our collections heretofore, No. 4812, has been a somewhat crude contrivance of loosely braided bast fibre of the hau (*Paritium tiliacum*) with the braiding broadened (like matting) in the middle for a pocket. Fig. 6. On the handles, the braiding is three-ply, each fold consisting of two or more flat, overlying strands of the fibre, rounded and not twisted over the turn (thereby avoiding an entirely flat braid). Toward the pocket, other strands were inserted, thickening the cord, but not increasing the number of folds, until the pocket was reached. Here the technique changed from cord-braiding to mat-plaiting, but the latter was less regular than usual with matting. It has the appearance of a hasty and untidy job, and is in strong contrast to the neat corded work in which the Polynesians in general, and the Hawaiians in particular, were so adept. One of the handles is short, apparently broken.

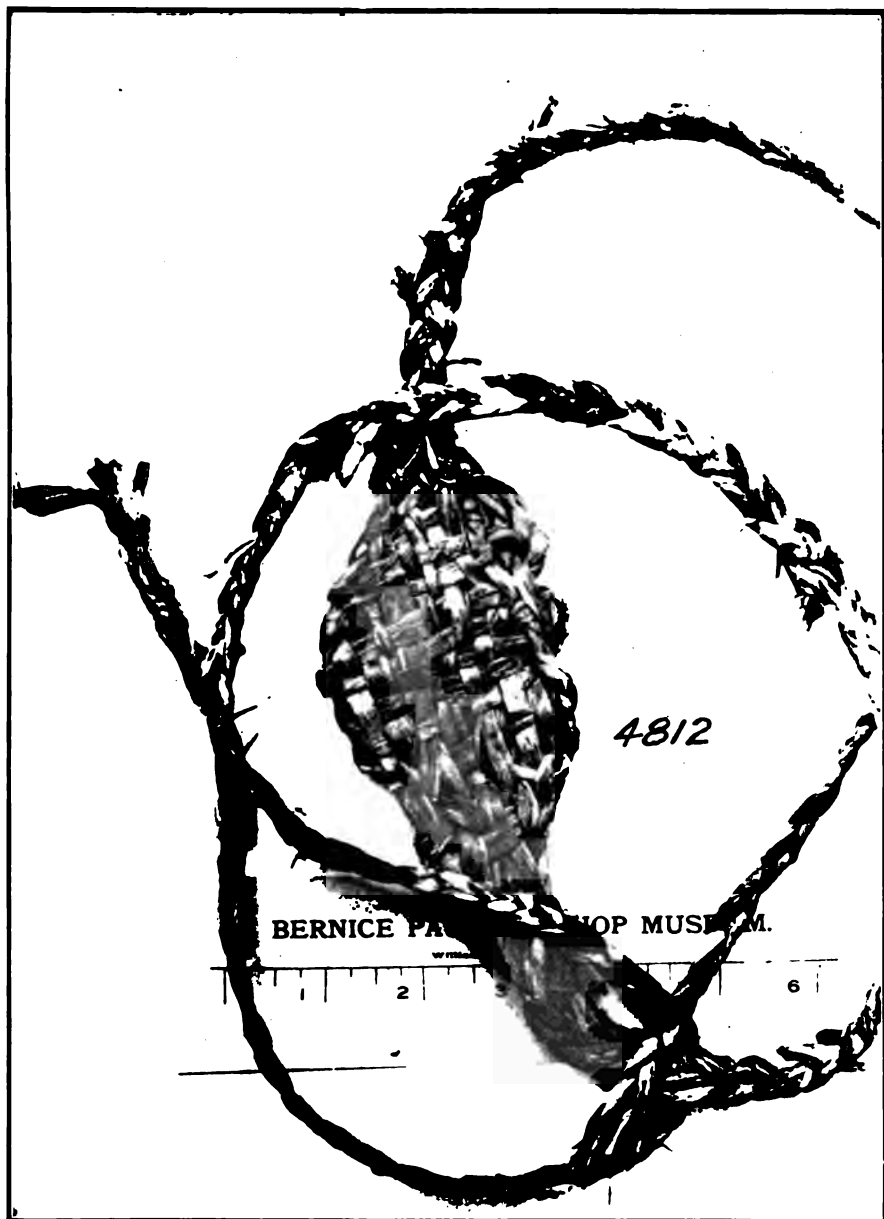
King's description³ might have been applied to similar specimens: "The slings have nothing singular about them; and in no respect differ from our common slings, except that the stone is lodged on a piece of matting instead of leather."

Cook saw sling-stones on Kauai, as clearly shown by his reference to "some oval pieces of whetstone well polished, but somewhat pointed towards each end,"⁴ but apparently not the slings. His description, immediately preceding the above, of the pieces of

¹Op. cit., Fig. 28. A spherical form, from Hawaii, was illustrated in Occasional Papers, V, 43, Fig. 6.

²W. T. Brigham, B. P. B. M. Memoirs, I, 344-346.

³Cook's Third Voyage, London, 1784, III, 152, relating to the island of Hawaii. ⁴Op. cit., II, 248. [236]



6. HAWAIIAN SLING, HAU FIBRE.

hematite "artificially made of an oval shape divided longitudinally, with a narrow groove in the middle of the convex part. . . . it weighed a pound" undoubtedly applied to the *pohaku lu hee*, or stone sinker¹ for the octopus trap. To this stone, he said, "was applied a cord of no great thickness." It is questionable if this cord was a sling as Cook inferred; more than probably it was the cord for fastening to the stone the appliances of the trap.²

Rev. Wm. Ellis noted on the island of Hawaii that ". . . they employed the sling, and their stones were very destructive. The slings were made of human hair, plaited, or the elastic fibres of the cocoa-nut husk. . . ." ³ Human hair for cord was not uncommon in these islands, although its principal use was in ornamentation. Since he made no special mention of the pattern, it is to be assumed that the Hawaiian sling of his description resembled in form those he had seen in Southern Polynesia. Of the latter, he gives the following details, intended to apply to the southern groups in general: "The most dangerous missile was the *uriti* or stone, from the *ma* or sling. The latter was prepared with great care, and made with finely braided fibres of the cocoa-nut husk, or filaments of the native flax, having a loop to fasten it to the hand at one end, and a wide receptacle for the stone in the centre."⁴ The description of the shape would probably answer for the Hawaiian specimen in Fig. 6, if the latter were undamaged.

A model of a very neat appearing sling (Fig. 7) has been given to the Museum by Mr. Edgar Henriques. It was made to his order by S. W. Kahikina, of Kiilae, Kona, Hawaii, and, according to the maker, represents the form once used in this group. Its principal characteristic is the replacement of the pocket by two loops, which are well adapted to hold the double conical sling-stone. The material is the Hawaiians' most durable fibre, *olona* (*Touchardia latifolia*). It will be noticed that, in this example, as in No. 4812, the technique changes; but from twisted cords to braided loops. One character not present in the older specimen is the arrangement of the handles. The held cord of this sling ends in a running loop for the wrist, while the freed cord terminates in a large knot.

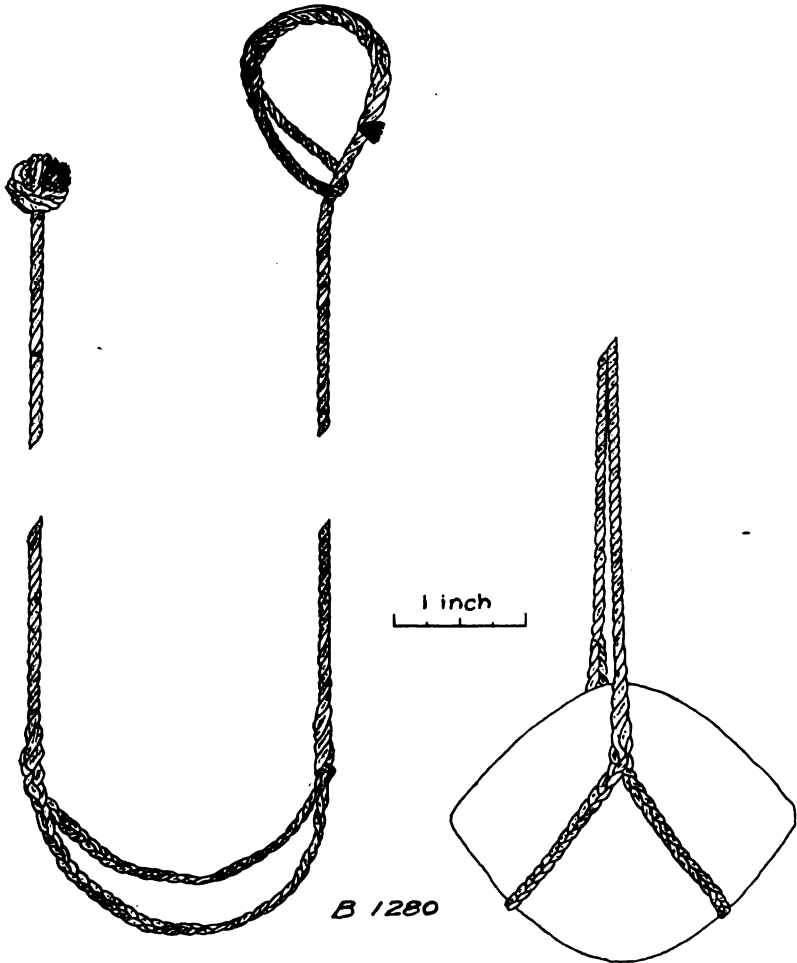
¹ B. P. B. M. Memoirs, I, 351, 352, Fig. 14, and Pl. XXXVI-XXXIX.

² Op. cit., Fig. 14.

³ Ellis, *Tour through Hawaii*, London, 1828, p. 141.

⁴ Ellis, *Polynesian Researches*, London, 1830, II, 490.

There are in the Museum no slings from Southern Polynesia to compare with Ellis' account, but there are some from the Caroline Islands, of thickly braided coir, which are provided with a large plain loop for the wrist, and not the running loop.



7. MODEL OF SLING MADE OF OLONA FIBRE, WITH SLING-STONE.

Going farther afield were found slings from the west coast of New Britain, and the neighboring Siassi Islands, in which the pocket is a fold, of palm leaf-sheath fibre, attached to twisted or braided cords of other material. The held cord in each of the

two slings did not terminate in a loop, but a large tassel of the sheath fibre. These islands are, of course, outside the Polynesian area.

Ellis' other notes on the Southern Polynesian weapon are interesting. "The sling was held in the right hand, and, armed with the stone, was hung over the right shoulder, and caught by the left hand on the left side of the back. When thrown, the sling, after being stretched across the back, was whirled around over the head, and the stone discharged with great force."¹ They were, he said, powerful and expert marksmen, and the stones when (as was general) thrown horizontally four or five feet from the ground, were seen with difficulty, and often did much execution.² He noted further that the Hawaiians slung their stones with great force and precision, and were supposed to have been able to strike a small stick at fifty yards' distance, four times out of five.³ The latter were very expert in avoiding a stone, if they saw it thrown.⁴

The stones seen by Ellis, in the South, were water-worn pebbles, and some "sharp, angular and rugged." The latter may have been the double conical form, artificially shaped, found through Polynesia, Micronesia and Melanesia. He failed to see the latter type (outlined in Fig. 7) in these islands, as he mentioned only those which were stream- and beach-worn.

In Dr. Brigham's description⁵ of various Oceanic sling-stones, he seems to infer that the pointed oval stone was so shaped that it could be made to revolve on its axis by the skill of the slinger and thereby attain directness of aim. I would be more inclined to attribute a simpler motive in the manufacture and to suppose that the development of a longer axis was a requirement necessary to prevent the stone from rolling out of the pocket of the sling.

A POI-POUNDER PLATTER OF STONE.

The wooden platters or troughs, on which poi was pounded, have been described and figured by Dr. W. T. Brigham.⁶ The ordinary form was a long, wide and thick platter, slightly concave on the upper surface, with straight parallel sides and rounded ends, and was generally large enough to accommodate a worker at each

¹ Polynesian Researches, II, 490.

⁴ Tour, p. 141.

² Polynesian Researches, II, 491.

⁵ B. P. B. M. Memoirs, I, 345.

³ Tour, p. 133.

⁶ B. P. B. M. Memoirs, II, 316-318.



8. PAPA KUI POI POHAKU. MAUI.

end.¹ Another and shorter form for a single worker was of rarer occurrence.² So far, all the poi-pounding platters seen were of wood.

An interesting variant of the material for this utensil was found in the possession of Mr. A. Gross, of Wailuku, Maui, and kindly presented to the Museum by that gentleman. It was of stone (Fig. 8), and its size would indicate that it was intended for a single worker. While its outside periphery is only approximately circular, the pounding surface is quite so. The measure-

¹ B. P. B. M. Memoirs, II, 316-318, Fig. 109.

² Op. cit., Fig. 110. [241]

ments are: Two greatest chords, 702 and 652 mm. ($27\frac{1}{2}$ and $25\frac{1}{2}$ inches); total height, 191 mm. ($7\frac{1}{2}$ inches); diameter of concavity (pounding surface), 545 mm. ($21\frac{1}{2}$ inches); depth of concavity, 83 mm. ($3\frac{1}{4}$ inches).

It was found upon enquiry among Hawaiians on the north coast of Maui that poi-pounding platters of stone were not unknown, and that the poi-making was done more quickly on stone than on wood. However, they were not much in favor for the reason that the stone poi-pounders or pestles were frequently broken by such use. No other such stone platter has come under our observation.

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