FURTHER NOTES ON THE HABITS OF THE TASMANIAN ABORIGINES.

Pl. XVI., XVII., XVIII., XIX., XX.

By Fritz Noetling, M.A., Ph.D., Etc.

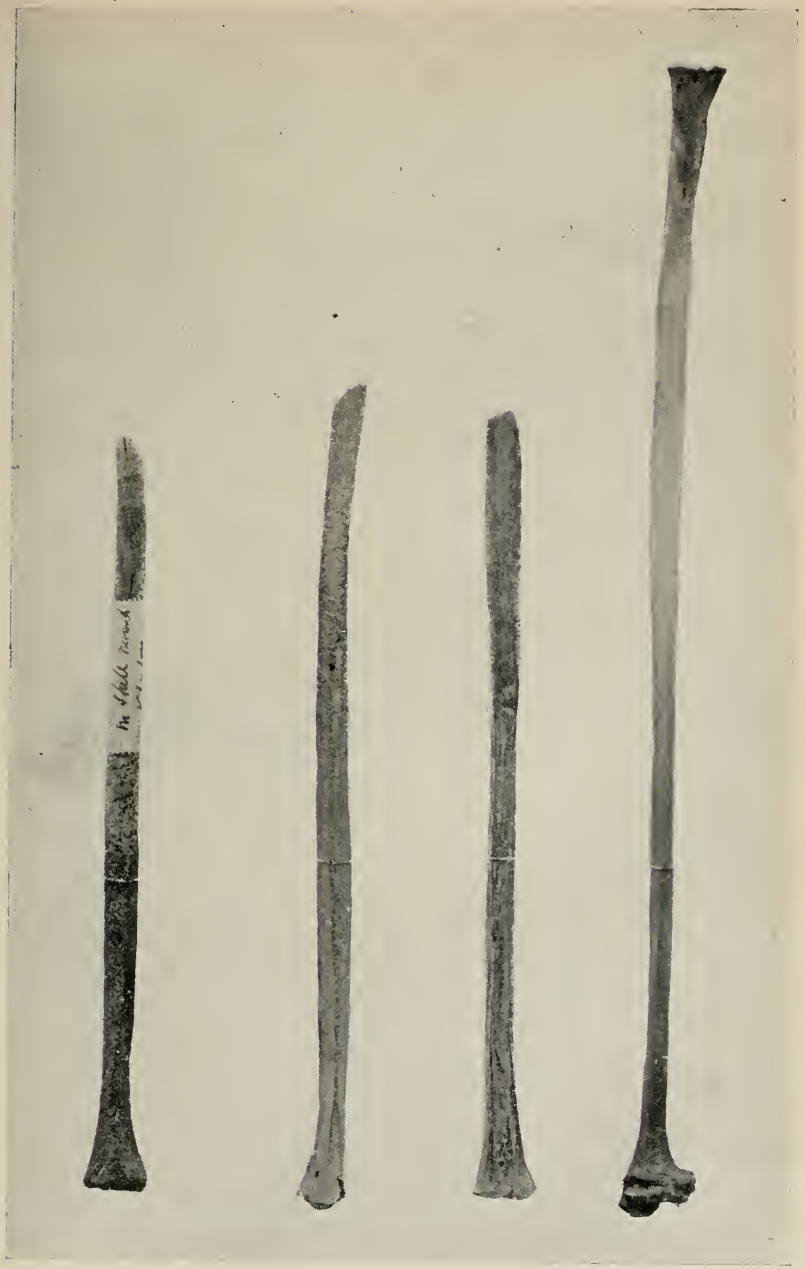
(Read October 9, 1911.)

1. DID THE TASMANIAN ABORIGINES MANUFACTURE BONE IMPLEMENTS?—Pl. XVI.

The question whether the aborigines used bones of animals, either entirely or in fragments, for implements is of great importance. It has hitherto been assumed that bone as a material for implements did not come in to use earlier than the Magdalenian stage. If this be so, all the earlier industries, which, of course, include the archæolithic stage, did not use bone, either as a material from which implements were manufactured, or, indirectly, as a tool to press off small flakes, in order to sharpen the edge. The Tasmanian industry, which, as we have seen, represents the typical archæolithic stage, should, therefore, not know the use of bone. It would constitute one of the greatest anomalies in the evolution of mankind, if it were a fact that the aborigines did include bone among the materials from which they manufactured their implements. I can safely say that there are few persons living who have so carefully studied and examined the camping grounds as I have, but never did I find a single piece of bone that could even, with the greatest stretch of imagination, be considered as an implement; in fact, the almost total absence of bones or fragments therefrom on the camping grounds has always struck me as rather remarkable.

Yet there is a general belief among the amateur collectors that the aborigines manufactured a kind of scoop from bone, and such specimens are greatly valued. Among the great treasures of the Hobart Museum there is a bundle of bones labelled, "Bone implements manufactured by the aborigines."

I had always my doubts as to the authenticity of these bone implements, and I am now in the position to con-



SO-CALLED "SCOOPS" AND THE FIBULA OF MACROPUS BILLARDIERI.

clusively dispel the view that the aborigines ever manufactured implements from bone.

When excavating together with Mr. T. Stephens the great shell deposit in a cave near Rocky Cape, I collected a fairly large number of bones, mostly consisting of kangaroo, opossum, wombat, seal, and numerous bones of birds. The bones were mostly in a fragmentary state, and the larger ones, apparently femur and humerus of kangaroo, were evidently intentionally broken. None of the splinters showed even the slightest trace of use. I had, however, the good luck of finding several of the "scoops," and their appearance seemed to exclude the view of an artificial origin. As these specimens show considerable length, I was pretty certain that they could not come from any other part of the body but the extremities, probably the posterior ones, of a kangaroo; I, therefore, compared the leg bones of a kangaroo, and I could prove the complete identity of the so-called "scoops" and the fibula of the kangaroo.

From Pl. XVI. it will be seen that the fibula of the kangaroo is rather a thin, slender bone, which closely lies on the tibia. The distal end of the fibula is cylindrical, but it becomes deeply concave in the proximal part. The thinnest and most fragile portion of the fibula is almost in the middle of its length, about there where the concave rather broad proximal portion contracts very quickly, and becomes flat, before merging into the cylindrical distal portion.

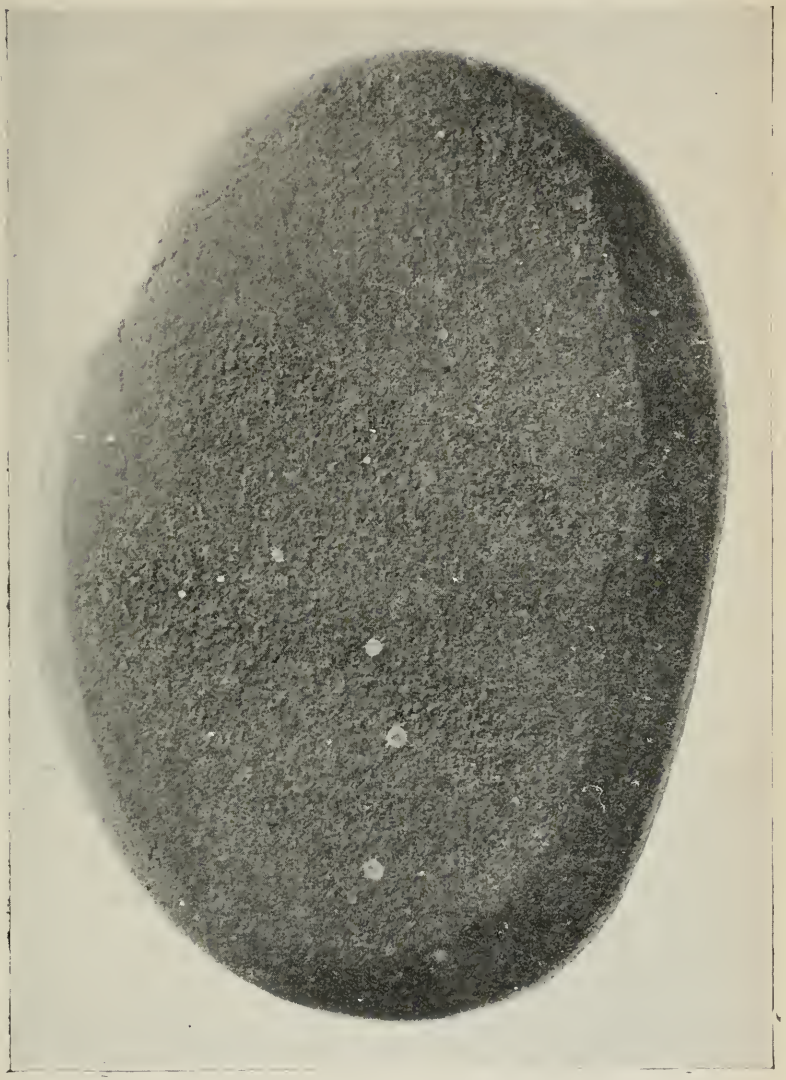
It can, therefore, hardly be surprising that when a kangaroo comes to grief it is usually the fibula that breaks first. I have seen many a kangaroo hunted, and if they fell over a cliff, the fibula was regularly broken, and always at the same place, that is to say, where the bone was weakest. The bone was, therefore, broken into two parts, the cylindrical distal, and the hollowed out, concave proximal part. The concave part, formed the "scoop," so highly treasured by amateur collectors, and its shape was the more suggestive of artificial work, particularly because it was strongly attenuated.

Once more the well-known fact that an actual observation, however simple it may be, is worth more than all the finest theories, is shown to be true. The numerous amateurs who collected these specimens jumped at once to the conclusion that these were "scoops" manufactured by the aborigines, but not one of them did look at the leg bones of a kangaroo.

It must be considered as rather fortunate that, before the statement that the aborigines of Tasmania did use bone in the manufacture of their implements, has been spread through the literature, it could be proved to be absolutely wrong. It is rather remarkable that such a theory should ever be credited even among amateurs, because the question might well be asked: For what purpose could these "scoops" be used? The general belief is that they were used to scoop out the marrow from the bones, and this once more proves how wrong it is to judge from our customs and habits those of a far inferior race. It does not follow that because we use a special instrument to scoop out the marrow from the bones of the big ruminants that the aborigines did the same; in fact, if one thing is certain it is, that they did not. If they wanted the marrow the easiest and quickest way to get it was to smash the bone, and this they did, as has been proved by the broken fragments in the cave deposits. The idea that a primitive human being like the Tasmanian sat down holding in one hand the cooked marrow bone, and in the other the scoop, daintily scooping out the marrow, is intensely comical. Its absurdity becomes more conspicuous still, when we consider that the end of the marrow bone had to be cut off by means of a stone, and that the marrow was obtained quicker and easier by breaking the whole bone at once, than by knocking off one end, and afterwards scooping out the marrow.

I have dwelt at some length on this absurd theory, because it is very illustrative of the way how the most ludicrous interpretations of archæolithic remains can arise.

The archæolithic civilisation did not know the use of bone as a material for the manufacture of implements, and the Tasmanian industry forms no exception from this rule; in fact, we know now for certain that even the most careful examination has failed to discover any specimen of bone that had been used as an implement. It might be argued that in Europe, where the archæolithic civilisation is of great age, the bones had become decayed, and there being no bone implements does not prove that they were not used. From our investigations we know now that the archæolithic civilisation of Tasmania did not know the use of bone as material for implements, and we can, therefore, conclude that this also applies to the same type of civilisation in Europe. Those who held that the use of bone is a more modern invention, which the primitive industries had not yet made, were, therefore, perfectly right, and this view is fully borne out by the researches in Tasmania.



GROUND "SACRED" STONE, OLD BEACH.

2. DID THE ABORIGINES KNOW THE ART OF GRINDING?—Pl. XVII.

It has always been most emphatically asserted that the art of grinding was unknown to the aborigines. My collections have, however, proved that the operation of grinding was not unknown to them. It appears, however, that they never, under any circumstances, used it in the manufacture of tero-watta, but strictly limited it to the manufacture of the flat, so-called "sacred" stone (1). I never found a single tero-watta which even shows the faintest indication of being ground or polished, but I have found numerous sacred stones, which show more or less distinct traces of having been subjected to the process of grinding. I described some specimens in a previous paper (2), but, though the indications may, perhaps, not be quite so convincing, the specimen Pl. XVII. from the Old Beach gives us an absolute proof. This specimen was found by Mr. E. S. Anthony, who kindly presented it to me. It is an oval, very flat diabase pebble, measuring 5 x $3\frac{1}{2}$ to $1\frac{1}{4}$ inch, and weighing 1lb. 8oz. avoir. Both the upper and lower sides are flat, but while the lower side is rough, probably on account of weathering, the upper side has been most elaborately polished and ground. The grinding even extended to the peripheral portion, and fine sharp edges were produced. Three rough marks, extending obliquely across the upper side, form a conspicuous feature, particularly as the surface between them is slightly convex. In my opinion, these marks are incidental, and they represent a portion of the original crust, which was not quite removed when the pebble was ground.

The specimen is well preserved, except for a large fragment broken off from the margin. Now such sharp faces and edges as this specimen exhibits can only be produced by grinding; any other explanation is impossible. Modern man would assume that the stone was ground on another one; at least, if he were to reduce such a stone he would proceed in such a way. The Tasmanian may have proceeded differently; he rubbed and ground the specimen

(1) I prefer to use the term "sacred" instead of "magic" in describing this peculiar group of stones, because it better expresses their nature than the word magic.

(2) Some implements of the Tasmanian aborigines. The Tasmanian Naturalist, vol. 1, No. 3, 1907.

with another stone till desired result was produced. This is unquestionably indicated by the two large "mortars" in which the concavity has been produced by grinding the stone with another one of globular shape.

As a contribution towards the psychology of the Tasmanians, the fact that they had, at least, a rudimentary knowledge of the operation of grinding is of the greatest importance. The question may well be raised, if the operation of grinding was known to them, why did they not use it to improve the tero-watta, but limited it strictly to the sacred stones? The aborigine who ground and polished the specimen (Pl. XVII.) was, apparently, quite aware that he improved it. Under these circumstances it is more than surprising—I always speak from the point of the modern mind—that it never struck him to apply the same process to a tero-watta. It might be argued that the material of the tero-watta was too hard for grinding. This is by no means the case, as I have proved by experiment. Chert or hornstone is easily ground and polished on sandstone; in fact, almost easier than diabase. This proves, in my opinion, that the difficulty of grinding a hard rock cannot have been the reason why the tero-watta were never ground.

The reason must have been quite a different one. The aborigines were not above a certain logical reasoning, as is proved by the production of red ochre (3). But, on the other hand, they were absolutely incapable of conceiving new ideas for the improvement of their implements. This has been amply demonstrated by the peculiar tero-watta described in a previous paper (4). If they could not make such a simple invention as to continue the trimming of the whole edge on both faces, it is not very probable that they applied a process, which was restricted to the "sacred" stones for the improvement of the tero-watta.

There may, however, be another, perhaps, more weightier reason still. I have shown that the sacred stones must in all probability be considered as specimens connected with certain rites or religious notions (5). It may be possible that an operation which was used in the produc-

(3) Red Ochre and its use by the Aborigines of Tasmania. Pap and Proceed. Royal Society Tas., 1909, page 30.

(4) A Peculiar Group of Tronattas. Pap. and Proceed. Roy. Soc. Tas., 1909, page 1.

(5) Some Implements of the Tasmanian Aborigines. The Tasmanian Naturalist, vol. 1, No. 3, 1907.

tion of these specimens was not to be applied to profane purposes. This is merely a suggestion, which may be accepted as a plausible explanation or not.

However that may be, it is beyond doubt that the Tasmanians had already acquired a rudimentary knowledge of grinding, but they applied it to one purpose only, viz., to the manufacture of the sacred stones, and never to any other.

This is one of the numerous strange facts which we meet with in studying the Tasmanian race. In my opinion, this points to one direction only. The Tasmanian race had already reached their highest point of evolution; it was impossible for them to go further; they could not conceive new ideas, or make new inventions, and had the race still existed for another thousand years, at the end of that period they would have exactly been where they were at its beginning. It is unquestionable that the incapability of the Tasmanian race to adapt themselves to new ideas or surroundings accelerated its extinction.

This view has now been proved by so many observations that we may take it as certain that the Tasmanian aborigines represented a race of mental stagnation. They may have been distantly related to the races now inhabiting the Australian continent, but it is absolutely inconceivable how, in the face of these facts, a recent writer (6) could consider the Tasmanian aborigines as an insular type of the Australian aborigines.

Let us consider the logical consequences of this theory. Dr. Basedow admits that the Tasmanian aborigines came to the island previous to its separation from the mainland, and, as a necessary corollary, previous to the arrival of the dingo.

If the Tasmanian aborigines were only an insular branch of the Australian race, we must assume that at the time of their migration to the south-eastern corner of Australia, now represented by Tasmania, the whole of the Australian race was in the archæolithic stage. There is no getting away from this, because the Tasmanians represent that stage, and never got beyond it.

On the other hand, we find on the Australian contin-

6) Basedow, Der Tasmanier Schaedel, ein Insulartypus, Zeitsch. f. Ethnologie, vol. 42, pt. III., 1910, page 175.

ent the palæolithic as well as the neolithic stage. I have very little knowledge of the Australian stone implements, but it appears to me that in the Australian implements there is no lower stage represented than the Solutreen, of which probably the West Australians may be the type. The confirmation of this view may, perhaps, be of great importance, but luckily it does not bear directly on the present question. One fact, however, is absolutely certain, the civilisation of the Australian aborigines represents a much higher stage than that of the Tasmanian aborigines. In other words, the Australians developed (7), while the Tasmanians remained stagnant. At the first glance my theory of the mental stagnation of the Tasmanian aborigines seems to confirm such a hypothesis, but on closer examination it will be seen that such view is untenable. If the mental qualities of the Australian race had the germ of further development, why did only the Australian branch reach a higher stage while the Tasmanian one remained stationary? This question must first be conclusively answered before Dr. Basedow's theory can be accepted.

It is impossible to assume that the struggle for existence is responsible for this. Let us examine the physical conditions under which the so-called two branches lived. The average temperature of the Australian continent is decidedly higher than that of Tasmania; the climate is, therefore, considerably warmer in Australia than in Tasmania. On the other hand, except the northern tropical portion, Australia is much drier than Tasmania. The search for drinking water is certainly more arduous in the Australian continent than in Tasmania. Food was, if anything, probably easier to find in Australia than in Tasmania. Neither in Australia nor Tasmania large carnivorous animals existed as enemies of the human race. If anything, Tasmania can boast of the most ferocious of the two, the tiger and the devil. Human enemies were the same, both in Australia and Tasmania, and we have it on record that the Tasmanian tribes lived in constant internecine war.

The absence of large animalic enemies, the constant intertribal feuds, the plentifulness of food being the same

(7) It matters not the least whether the Australians had already reached the higher stage when they arrived in Australia, or gradually acquired it since their arrival. I feel, however, inclined to believe they represented already a higher stage when they invaded the Australian continent, than its original inhabitants, viz., the Tasmanian race.

for the aborigines of Tasmania as those of Australia, the only real difference is a warmer, more congenial climate in Australia than in Tasmania. Whether the comparative scarcity of water in Australia is of any real importance may be somewhat doubtful, because it is very probable that the natives carefully avoided all those tracts where water is scarce.

Though the Tasmanian climate was more severe than the Australian, it is, therefore, not very probable that the struggle for existence was more arduous in Tasmania than in Australia, and, though an occasional drought may have affected the Australians, the same struggle was not harder in Australia than in Tasmania.

The conditions of life of the Australian aborigines and those of Tasmania were, therefore, pretty much the same, except for the difference in the climate. Is it possible, or even probable, that this difference of climate accounts for the difference in the evolution of the two branches? I fairly doubt it, and it is generally assumed that those races living in a cooler climate are superior to those living in a warmer one. If Dr. Basedow's theory were correct, this general experience would be erroneous, as far as Australia and Tasmania are concerned.

I, therefore, think that, notwithstanding their similarity of the skull, the Tasmanian aborigines are different from the Australian aborigines. Both may be derived from the same stock or root, but it is more than probable that the Tasmanians represent the older, the Australians the younger branch.

We know now for certain that the separation of Australia and Tasmania took place after the disappearance of the glaciers in Tasmania, and after the extinction of the gigantic marsupialia, which, as the palæontological evidence of the Mowbray swamp proves, must have lived up to, what we would call in Europe, historical times. The occupation of the present island by the aborigines has, therefore, taken place in quite recent times, and I estimate the period that has since lapsed at not more than 7,000 years.

Even admitting, for the sake of argument, that this period were too short, is the time since the separation long enough to produce such serious changes in the cranium of the aborigines as Dr. Basedow assumes? I fairly doubt it; but, what is more, why should the mere fact of separation

produce osteological changes in the Tasmanian aborigines and not also in the Australian natives? This statement of Dr. Basedow is absolutely without foundation, and he proves himself by it a worthy disciple of Herr Klaatsch, who enjoys such an unenviable notoriety for superficial work.

In conclusion, I may mention another theory promulgated by Dr. Basedow, viz., the origin of the superciliary ridges. Dr. Basedow believes that they represent a secondary feature, probably due to the intense glare of the sun in Australia. But what about the Tasmanians? Why should they develop such strong superciliary ridges? There is not such a strong glare in Tasmania as in Australia; the rays of the sun are much more oblique in lat. 43deg. than in lat. 35deg. to 15deg., and there was, therefore, no need for the Tasmanians to develop such strong ridges in order to protect their eyes from the glare. The logical consequences of Basedow's theory are almost too ludicrous for words. If he were right all races living under the tropical sun should develop strong superciliary ridges. This is certainly not correct, as far as India is concerned, as I can vouch from my own experience, and I fairly doubt whether the glare of Australia is worse than that of the Indian desert or Baluchistan. All the African and American races living between 43deg. north and 43deg. southern lat. should develop superciliary ridges, if Basedow's theory were correct. The Italians, the Spaniards, in fact, any European living south of 43deg. north lat., should develop strong superciliary ridges to protect his eyes from the glare, but I am afraid that we would fail to discover them. I do not think that many will share Basedow's view as to the origin of the superciliary ridges, and I am probably correct if I assume that far the majority will consider them as what they really are, viz., primitive features.

Since the above was written a very severe criticism of Dr. Basedow's paper has been published in the same journal, Vol. 43, 1911, Pt. II., page 287. Professor Dr. von Luschan, one of the greatest living authorities on craniology, points out that Basedow's paper is scientifically valueless, full of errors, mistakes, and wrong deductions. It is hardly surprising that Professor von Luschan notices Basedow's ludicrous theory, and he says:—"Basedow does not tell us how it could happen that the skull of the Tasmanian became broader and the hair more curly because Tasmania became separated from the Australian continent." Professor von Luschan calls Basedow's paper

"Eine Entgleisung." Literally, this word means "a derailment" (of a truck), but, metaphorically used, it is a polite form of saying that the contents of a paper are scientifically without value; in fact, that they are not worth the paper on which they are printed.

3. DID THE ABORIGINES MAKE TERO-WATTA OF APPARENTLY INTENTIONAL FORM?—

Pl. XVIII., XIX., XX.

I have repeatedly pointed out that one of the chief characteristics of the tero-watta is the absence of every intentional or conventional shape. The specimens here described appear to be contrary to this rule; at least, it is very difficult to imagine that their outline is purely accidental. If this be so, we may well ask: What do these specimens represent? It is impossible to suppress the notion that No. 1, Pl. XVII., does not represent a four-footed animal? The outline is so suggestive that any other interpretation does not appear probable; the two lobes representing the feet are so thin and fragile that if they were ever used for any purpose whatsoever where the slightest pressure was required they would break at once; yet they are most carefully chipped all along the edge. More curious still is, perhaps, No. 2, Pl. XVIII. The view that it represents a double concave scraper, and that the bill between the two concave edges is accidental, is at once disproved by the fact that the point of the bill is carefully chipped and rounded off. If we assume it to be a borer, we may ask why was the point of the drill, which ought to be sharp, carefully rounded off, and what would be the good of such a short, rounded-off point when any sharp splinter could perform the operation of boring much more effectively? If we go through the whole number of specimens that have come under notice, we will see that in every instance there are weighty reasons speaking against their use as implements or tools, and equally weighty reasons pointing towards the assumption that their outline is not purely accidental, but is rather shaped to represent a certain object. If this view be correct, the specimens have to be considered as figure stones, that is to say, stones

which were shaped with the view of representing a certain object. These objects are:—

(1) A four-footed animal.

(2) The human face.

(3) A bird's head.

(4) A snake.

Specimens of this kind are pretty rare, but from the first their peculiar shape induced me to set them aside from the others.

Prof. Schweinfurth described in an interesting paper on the cave deposits of Sicily (8) certain specimens as figure stones (Pierres figures, pierres figurees), which reminded me at once of the Tasmanian ones. Prof. Schweinfurth states that the Sicily specimens mostly represent heads of animals. Much rarer are complete figures, but he did not notice any specimens representing human heads or figures.

The figures he gives of these specimens are, however, not very convincing, and it requires some stretch of imagination to recognise in figures A, B, C, D, E, F, Pl. X., the heads of birds. The most convincing are figures L and M, Pl. XI., though even here a certain imagination is required. However, I do not wish to discuss the probability of Prof. Schweinfurth's views; all I want to point out is, that if the hypothesis with regard to the Sicily specimens be correct, the view I have taken with regard to the specimens here described is still more so, because their outline is much more suggestive than that of the Sicily specimens.

I am fully aware that it is a very delicate subject I am dealing with, and I particularly wish to point out that I do not consider it more than a working hypothesis. I shall be very pleased if anybody else can suggest a better one, because if we accept it we admit that the Tasmanian aborigines had already developed a certain sense of art. This feeling induced them to reproduce in the unwieldy stone certain objects with which they were familiar, animals in the first instance.

(8) Ueber das Hochlen Palaeolithikum von Sicilien, Zeitschr. f. Ethnologie, 1907, vol. 39, pt. 6, page 879.

If we muster the animals of Tasmania we find that the large four-footed animals so abundant in Europe are totally absent. There are only two animals in which the four extremities are well recognisable to the eye, viz., the Tasmanian tiger (Thylacinus) and the Tasmanian devil (Sarcophilus ursinus). In the wombat (Phascolomys wombat) the extremities are very short, almost hidden by the body, and the kangaroo, either resting, but particularly when chased, looks more like a two-footed animal than a four-footed one.

Among the birds, the now extinct emu, with its sharp beak, must have been a conspicuous object. I hardly need to say that the snake, so common in Tasmania, must have been an object of terror to these naked savages.

Last, but not least, there are those specimens which suggest the profile line of a human face, which certainly represent a remarkable feature. When a child draws a human face in profile the most conspicuous part besides the circular head is the nose, added in the shape of a triangle. The specimens here described show this feature in a marked way, and, as I said above, it is impossible to suppress the notion that these specimens really represent what they appear to be.

Whether the hypothesis here promulgated be correct or not, one fact appears to be pretty certain, the outline of these specimens is not accidental, but the result of deliberate work, with the intention to produce a certain shape.

Pl. XVIII.

This is the finest specimen which, so far, has come under my notice. It measures 100 mm. in length, and its greatest height is 71 mm. The thickness is small, the greatest thickness barely exceeding 10 mm.

The rock used is a fine grained hornstone, of dark grey colour, apparently finely stratified. It is covered with rather a thick patina of light grey colour, having a yellowish tinge. The outline of this specimen cannot be better described than representing that of an animal, having a thick body, a rather short, but thickly-set, head, and short, squat legs, and the posterior portion of the body shortly rounded off.

The upper edge forms almost a straight line, and is very carefully chipped from the posterior end to the middle

of the head. Here a piece of the original crust of dark brown colour is still preserved, but there is no marginal chipping up to the anterior end. From here the lower edge is most carefully worked for its whole length. It is obvious from the chipping that the deep anterior concavity of the margin is intentional and not accidental. The chipping is particularly careful at the lower edge of the anterior extremity, and but somewhat less on its posterior side. Unfortunately, a fragment broke off the posterior extremity, though, to judge from the patina, this damage must have been caused at the time of manufacture. It appears, however, that the posterior side was much less carefully chipped than the other edges.

The indical face is flat, and shows the traces of a few large flakes being broken off. The pollical face is flat, but somewhat wrinkled; no bulb of percussion is visible, but it appears probable that it was situated at the point of the posterior extremity.

Well may we ask, what was the use of this remarkable specimen, supposing it were used as an implement? The three concavities might suggest the use as a scraper for spears or hunting-sticks. Assuming this being so, it is impossible to account satisfactorily for the fine chipping of the lower edge of the anterior extremity. This could not have possibly served any useful purpose, because of the thinness of the anterior extremity, which is only 3 mm. At the base where it measures 23 mm. in width, the thickness is slightly larger, being 6 mm., while the total length is 26 mm. If any strain or hard pressure were brought on this thin piece of stone, either at its lower or its lateral edges, it would break off at once. This fact makes it impossible to assume that this part of the stone ever served any useful purpose. The same applies to the posterior extremity.

The upper edge may have been used as a scraper, but, admitting this, we may rightly ask: Why, then, was the lower edge so carefully hollowed out and chipped to such an extent that even the thin piece separating the anterior and the middle concavity was chipped at its lower edge, when all this work was to no useful object whatsoever?

The study of the tero-watta has revealed some strange features of the mental state of the aborigines. Admitting that they did a good deal contrary to modern expectations, it would certainly go too far to assume

FIGURE STONE (ANIMAL ?)

FIGURE-STONE (HUMAN FACE ?)

FIGURE-STONE (HUMAN FACE ?)

N.B.—In the original the left block is reversed; it ought to be turned as shown here.

that they deliberately spent a good deal of work, knowing all the time that it was useless.

I rather think it more probable that the outline of this specimen was deliberately shaped to represent a certain object, viz., a four-footed animal, in all probability a wombat.

The group of specimens now to be described are, perhaps, the most interesting of the whole number, because if the hypothesis of the figure stones be correct they must represent human faces. It may be argued, but the face, i.e., the profile, is not that of an aborigine. Granted that this is so, but can we expect that a primitive race could shape such primitive implements from so unwieldy a material as stone an exact likeness of a human being? That would be exactly the same as if we were to expect a child that makes its first attempt with a piece of chalk to draw an accurate portrait of his father. Nobody could reasonably expect this, and we must, therefore, not expect that the specimens here considered as human faces must represent an accurate profile line of an aboriginal face. It were rather surprising if the aborigines had already acquired such a high perfection in art, considering their otherwise low state of civilisation.

I wish it, however, to be well understood that I do not say that these specmens represent a human face. All I contend is that the outline of these specimens is intentional and not accidental, and if the hypothesis of the figure stones is correct, there can be only one interpretation of these specimens: they were manufactured to represent a human face.

Pl. XIX.

This very interesting specimen was found at Mona Vale. Its length is 84 mm., the greatest breadth 52 mm., the thickness 34 mm. The nature of the rock cannot be quite correctly ascertained; but, to judge from the colour of the patina, and from that of the original crust, as well as the fine conchoidal fracture, the rock must be a hornstone of either grey or dark blue colour. It differs, however, from other hornstones, that large numbers of small perforations or holes, which on the surface are filled with a ferruginous matrix, are irregularly distributed through the substance. The whole surface is covered with a patina of light brown colour, while that portion of the original crust which still adheres to the indical face is of dull red colour.

The outline is the profile of a human turned towards right. On the right side we see, as a most conspicuous feature, a little above the middle, a short, rather broad prominence, rounded off at its end. Above it the edge is deeply concave, but bulges out again, and comes round in an elliptical curve to the left side. Below it the edge is a little less concave, then turns into a fairly straight line, which, before reaching the proximal edge, forms another concavity. The left edge is convex at its distal, concave at its proximal position. The proximal edge is straight.

The pollical face is flat and smooth; no distinct bulb of percussion can be seen. The indical face is strongly convex, and is a good deal worked. The flaking is, however, limited to the right and the left side, while towards the distal end the original crust is still preserved.

The right side conclusively shows that the prominence has been deliberately made by striking off flakes above and below it. The result is a ridge in its middle, which runs from the edge towards the left. The three concavities were eventually produced by three blows of different strength, the top one being the strongest, the lower one the weakest. It can further be seen that these blows were effected after the production of the prominence. The left side has been well chipped, particularly towards the proximal end. The chipping of the indical face has not reduced the thickness of the stone, and it is clear that the reduction of thickness was not desired; otherwise the thin ridge formed by the flaking of the left and right side could have easily been struck off by a simple blow.

I will attempt to discuss the probable uses of this peculiarly-shaped specimen. The most natural suggestion is that it served as a borer, the prominence being, apparently, well suitable for such a purpose. If we examine it, however, more closely we perceive that it is most unsuitable for boring, its end being too blunt and rounded off to be used for making a hole. But supposing it did serve as a borer, what good was it to the left edge, which was quite useless? The original crust proves conclusively that the flake cannot have been much larger than it is now, and that, therefore, the removal of an inconvenient part cannot have been the object of trimming. Further, if the prominence was a borer, why was the lowest concavity of the right edge made? Surely, that little convex part above it cannot have been used as a borer. Perhaps the weightiest objection against the borer hypothesis is the breadth of the prominence. We are sufficiently well informed about

the habits of the aborigines to know that they did not possess any object that required a borer to produce holes from 10-12 mm. in diameter.

The second hypothesis would assume that the prominence was accidentally produced by the edge above and below it being used as a scraper to polish spears. Against this view speaks the fact that the prominence was intentional and not accidentally left. We further know that the lowest concavity was produced by a special blow, and whatever it was meant for it is certain that it cannot have served as a scraper. The same that has above been said about the left side applies to the scraper theory.

If we admit that this specimen was not used as an implement, the only possible view we can take is that it is a figure stone, representing the profile line of a human head.

Pl. XX.

This specimen was found at Melton Mowbray. The length is 57mm., the greatest breadth 44 mm., the average breadth is a little smaller, viz., 31 mm., the thickness nowhere exceeds 21 mm., the weight is

The rock is the typical hornstone of dark blue colour, occurring at Johnston's quarry, Melton Mowbray, and there cannot be the slightest doubt that this specimen was made from a piece of rock that was obtained from the quarry. There is no patina, but a rather thick portion of the original crust still remains on the indical face. The crust is of light greyish colour, and its surface rather ferruginous.

The outline would be elliptical, if the continuity of the curve were not interrupted by a broad two-pointed prominence. The right edge is slightly curved, and passes gradually into the more strongly curved upper and lower edge. The left hand edge is deeply concave in its upper, somewhat less so in its lower portion. Both times the concavity forms an oblique angle. Between these there is a prominence measuring 26 mm. in length, terminating in two points, of which the upper one is longer and sharper than the lower one, which is slightly rounded off. Between the two points the edge is slightly concave.

The pollical face is very smooth and flat, but there is

no bulb of percussion. The indical face is rather convex, and well worked. Upper, right, and lower edge are most carefully chipped. The outline of the left edge was produced by a few large flakes being struck off in such a way that a ridge runs to the extreme end of the two points.

When we examine this specimen we perceive that a good deal of work was spent to produce the regular curve of the continuous upper right and lower edge, and, noticing this, we may well ask, Why was the work not completed all round? Two blows would have been sufficient to strike off the prominence, and a most perfect oval would have resulted. Though the right edge could have served as a scraper, the left edge was perfectly useless. I do not think that anyone will assume that it served as a borer. If it was a borer, why the careful trimming of the other edge? The three concave portions are certainly not accidental. We see distinctly that the upper middle and lower one were produced by striking of a single flake. The flaking was probably executed by means of a sharply-pointed hammerstone, because the spot where the point struck the pollical face can distinctly be seen on the edge.

This specimen affords a still greater problem than the above, and before proceeding further I want once more to summarise the facts that cannot be disputed. These are :—

(1) There is the evident intention to produce a specimen of elliptical shape by the careful trimming of at least 5-6th of the circumference.

(2) The lower, right, and upper edge are most carefully worked.

(3) The peculiar outline of the left edge has been produced by three separate blows, and the three concavities are, therefore, not accidentally produced.

What conclusion can we draw from the above observations? The fact that the left edge is much less carefully chipped than the rest of the circumference might suggest the view that it represents a reject which was dropped before it was finished. I fully admit the weight of this argument, but we may well ask is it possible to imagine that after such an amount of work had been spent in shaping it, it was dropped when two more blows had been sufficient for completion? If the theory of the un-

finished reject were correct, it would add one more fact illustrating the curious condition of the mind of the aborigines by doing certain acts which are impossible to our mind. There is no doubt that the theory of the unfinished reject deserves consideration, yet I am not quite convinced of its correctness. The flaking of the left edge shows that its outline was intentionally produced, but it did not serve any useful purpose. I, therefore, think that this specimen has to be considered as a figure stone representing the profile line of a human face.