mythical personages of other tribes. Speaking of skeletons found in the Moa caves, &c., Dr. Von Haast notices that they were all buried in a crouching position. It will be interesting to read a few instances of comparison with the Maori usages (known to us all) that occur in the work "Early Man in Britain," describing the Neolithic men. "The dead were buried in these tombs as they died, in a contracted or crouching posture. . . . For purposes of defence, they constructed camps, with well-engineered ramparts either of stone or earth, and fosses, sometimes as many as three or four ramparts being formed one above the other. The ramparts probably bore palisades. . . . The intercourse between the Neolithic tribes was greatly facilitated by the use of canoes, formed of the trunks of large trees, hollowed partly by the action of fire, and partly by the axe, and propelled by means of a broad paddle. . . . A flint arrow-head two inches long, and a 'wooden sword' have also been met with in the peat close by. . . . This kind of traffic is proved to have extended over enormous distances in the Neolithic age by the distribution of the axes made of nephrite or jade, a material as yet unknown in its native state in Britain or the Continent."

With these quotations, I conclude.

So many matters of interest grow up as one proceeds, so many paths are seen along which one would like to tread, that my great difficulty, in this article, has been to compress without leaving some important matter unnoticed. Many offers of kindly help are being made to me, and I feel sure that, before many years have passed, we shall, by study of this subject, have added to the scientific information of mankind, and written an interesting chapter in the history of the Colony.

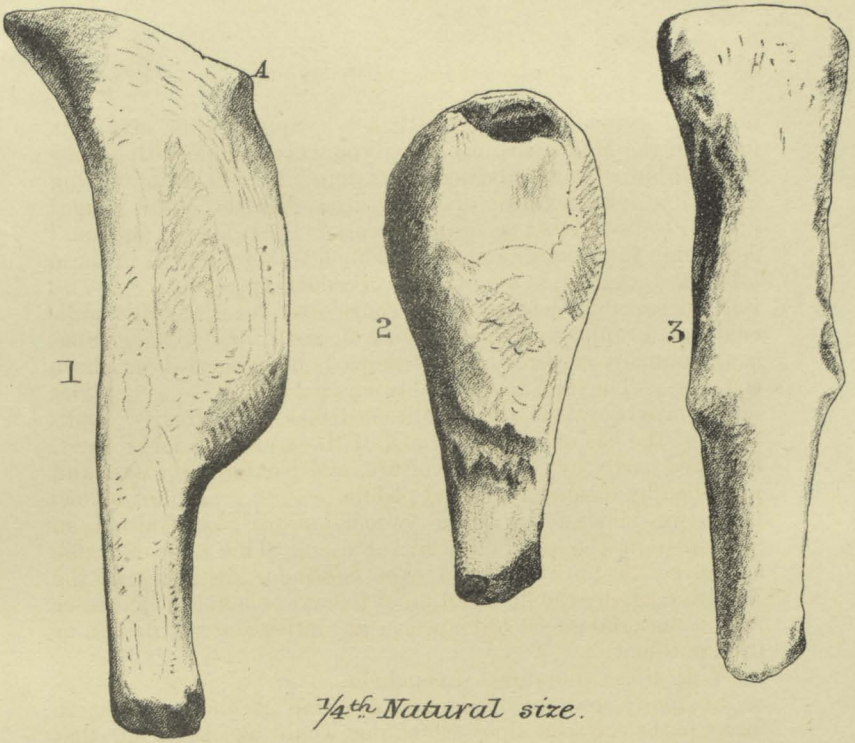
Art. II.—*On the Stone Weapons of the Moriori and the Maori.*

By Professor Julius von Haast, C.M.G., Ph.D., F.R.S.

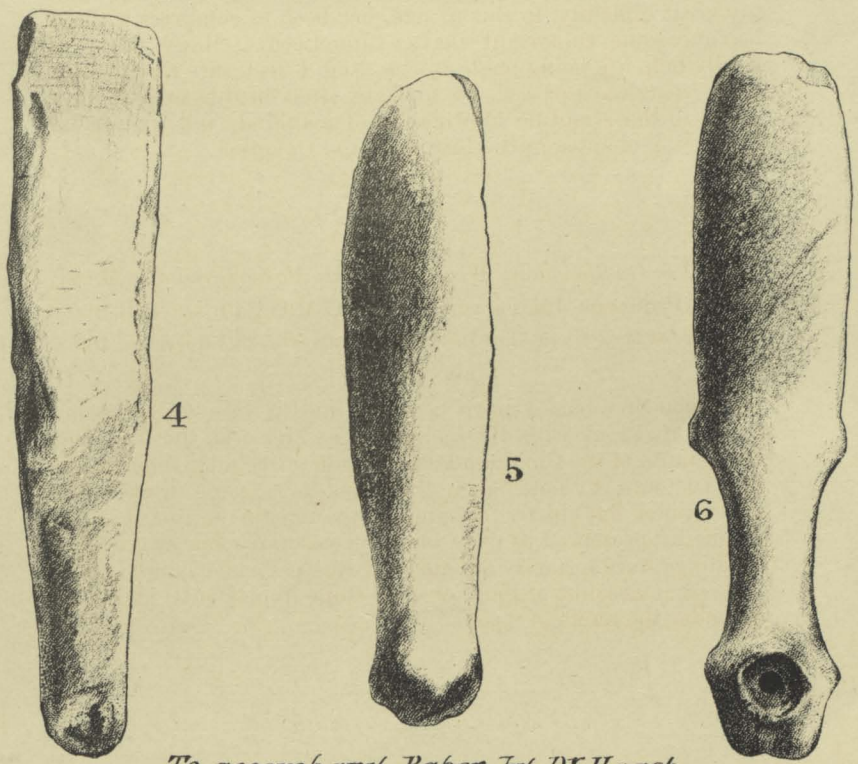
[*Read before the Philosophical Institute of Canterbury, 26th November*, 1885.]

Plates I. and II.

For some time past I have been waiting in vain for some one more conversant with the history of the Morioris, those ancient inhabitants of the Chatham Islands, to describe fully their habits and customs, to note down their folk-lore, going back many generations, but chiefly to delineate the remains of their ancient handicraft preserved to us in burial places and spots where their dwellings were formerly situated. I was particularly anxious to have some account of those curious stone implements, known to us under the name of "*patu*."



1/4th Natural size.



To accompany Paper by Dr Haast.

Though the Canterbury Museum, owing to the liberality of Mr. E. R. Chudleigh and other friends from the Chatham Islands, possesses a fine series of these remarkable stone clubs, I should not have ventured to offer any remarks upon them, had I not lately received two unique stone weapons, found near the Hinds and near Oamaru, which (as I shall show in the sequel) have, in their primitive mode of workmanship and peculiar forms, some affinity with the "*patus*" of the Chatham islanders. Wishing to obtain as reliable an account as possible of the knowledge possessed by the Morioris of the present day of the method of manufacture and use of these remarkable stone weapons, I addressed myself to Mr. A. Shand, at present temporarily residing in New Zealand, for many years a settler in the Chatham Islands. He has the reputation of being not only a close observer, but also as one well acquainted with the history and traditions of the Morioris. That gentleman, in a letter dated Auckland, 30th September, has most obligingly given me a series of interesting notes which have afforded me an excellent insight into the whole subject. I think I can do no better than give at full length the contents of his letter in this communication. As to the names of the stone weapons and axes of the Morioris, and the mode of making them, Mr. Shand states that "*toki*" is the general term for all stone axes, including the lesser kind "*toki paneke*," and chisel, "*whao*" or "*puru-puru*," all of which were used for a considerable time after the discovery of the island by Captain Broughton, Nov. 23rd, 1791, in fact, until the advent of the Europeans (Sydney sealers and whalers), about 1830 and 1836, when all stone implements were laid aside or thrown away.

The stone axes and other implements were first roughed out by fracturing and chipping with other ones until the approximate shape was obtained. I may here add that the stone implements are made of lydian stone, aphanite, dioritic and basaltic rocks, for the greater part doubtless obtained on the Chatham Islands, though there are some specimens in the Canterbury Museum, received from that locality, of chert and of some other material which appear to have been imported from New Zealand.

After the approximate shape had been given to these stone axes, the Morioris used grindstones, "*hoanga*." These were made of a coarse sandstone, generally found on the sea coast at various places. They had generally a flat surface, were otherwise somewhat round, and varied in size from 7 inches to 12 inches on the average. This "*hoanga*" was placed flat on the ground, and the implement ground by rubbing it to and fro thereon with water. Numbers of these "*hoangas*" are to be seen at the islands, easily recognisable by the hollow in the centre, shaped like a saucer, a sign of their frequent use. Mr.

Shand observes that he need scarcely remark that the operation was tedious in the extreme; and one can easily see that such was the case by the examples of ill-ground axes, especially some of the smaller ones with round shoulders, "*uma*," unreduced, like an ill-ground European axe. On the other hand, however, there were a number of really beautifully finished axes, "*toki*," that must have taken an infinite amount of time and skill to get into such a perfect shape.

There are many unfinished axes lying about at the Chathams in the rough state, evidently intended to be ground, but afterwards thrown away. When not using them, the owner generally hid his "*tokis*" to avoid their being stolen. Now and again a number so buried are discovered in ploughing, or in digging up old places of residence. Mr. Shand observes that he has never seen, in fact doubts the existence of, any of the "*toki-titaha*" or large axes used by the Maoris, and common also to New Guinea, used for chopping the top and bottom edges of a cut, the ordinary form being used to cut out the chip by chipping sideways like an adze. It may be of interest, Mr. Shand continues, to state that the mode of making and tying a handle on to the "*toki*" or large stone axe was identical with that of the Maoris, of which race the Chatham islanders evidently formed a part in the original departure from Hawaiki. This is shown also by their traditions, legends, and the causes assigned for their leaving their so-called Hawaiki home.

The Morioris also used flint "*mata*," which they split into thin, irregular, wedge-like shapes, as knives, there being no volcanic glass ("*tuhua*") obtainable in any quantity, although a reef of it is known to exist under water at the south-east corner of the island at Manukau. The micaceous clay-slates or argillaceous schists, with layers of quartz, occurring on the northern coast of the main island—of which specimens were first brought to New Zealand by Mr. H. H. Travers in 1868, and which I described in Vol. I. of the Transactions*—were used for making the "*patus*," and were also employed in the same way as the "*mata*" (flint), though their edges cannot be made so sharp as that of the latter. Both are used with or without handles in cutting up grampus or any other variety of whale for food, the blubber of which was considered a great relish by the Morioris.

Entering upon the main subject of these notes, it appears that the Morioris, doubtless after looking in vain all over the island for a suitable material for the manufacture of their war weapons, which would take a fine polish, were at last compelled to have recourse to the argillaceous schist before referred to, to which the small layer of quartz, interlaminated with the argil-

* "Trans. N.Z. Inst.," vol. i., p. 128.

laceous layers, gave a considerable degree of hardness. From the traditions attached to these remarkable weapons, it is evident that a long time must have elapsed since they were manufactured, and some of them brought to such perfection, considering the material from which they were shaped.

It is clear that the same process of polishing the uniformly hard material, from which the Morioris made their "*tokis*" or stone axes, could not be applied to these war-clubs, and that the principal work of forming them consisted in the chipping process. When the proposed form was thus obtained, they proceeded to give the war-clubs some little polish, as much as was possible without removing the loose argillaceous or micaceous matter between the quartz layers. In some instances the layers were so very thin and intimately blended with the rest, that a far greater polish could be given to the material worked upon. In describing the different forms of their war-clubs, I shall return to this subject. Besides the large weapons made of nephrite (greenstone) to which exclusively the Maoris apply the term "*mere*," they also used stone weapons of similar form, manufactured from melaphyre, aphanite, and other fine-grained basic rocks, for which weapons the generic term "*okewa*" was used.

The Morioris, on the other hand, who did not possess any nephrite weapons or implements, had several names for the peculiar stone weapons they at one time used for offensive and defensive purposes.

They restricted the term "*okewa*" to a peculiar bill-hook shaped war-club, of which No. 1 is a reduced representation. These okewas range from 12 inches to 16 inches in length, with a breadth of $3\frac{1}{2}$ inches to $4\frac{1}{2}$ inches, and a thickness in the centre of an inch to an inch and a half. The weapon figured No. 1 is a remarkably well-worked specimen 15 inches long, 4 inches broad, and $1\frac{1}{4}$ inches thick; it is worked to as sharp a rounded edge as the nature of the material would allow. In this instance the micaceous schist is of a more uniform character, the quartz layers being very thin and inconspicuous. I may draw your attention to the sharp prominence at *A*, by which the edge is divided into two unequal parts, the upper portion above it sloping more rapidly backwards. We possess some of these *okewas* in the Canterbury Museum, which are only six inches long. They were either children's toys or attempts towards the learning of the manufacture of these implements. A second form (No. 2) has the shape of a club. It is named "*pohatu taharua*." The specimen is $10\frac{1}{2}$ inches long, $4\frac{1}{2}$ inches broad, and $1\frac{1}{2}$ inches thick. The quartzose layers are much thicker, so that less finish could be given to it. Both sides are flat, the edges only being rounded off, except at the handle, where on one side the material has been so far removed that the curvature goes over the whole surface.

It is not nearly so well finished as the *okewa*, but it may be possible either that the owner of this stone weapon was not such an accomplished workman, or that the same attention was not bestowed upon any other form as upon the bill-hook shaped one, which, according to all appearance, was the most esteemed form.

We possess another specimen of this shape, about the same size, of which one side is perfectly flat, being formed of a quartz layer, whilst the other or rounded portion, owing to the thickness of the quartz layers, could only be partially finished. There are two other forms of the same material to which the term "*pohatu taharua*" is also to be applied. No. 3 is 14 inches long, 4 inches broad at the upper end, $2\frac{3}{4}$ inches in the middle, and $3\frac{1}{4}$ inches at the lower end of the shaft above the handle. It will thus be seen that towards the middle it curves inwards, and thus has a form different from any other, as it possesses four projecting points. It is flat and rather thin, having only a thickness of 1·1 inches at its thickest part. There is no attempt made to polish it except at the handle. It has altogether an unfinished appearance. No. 4, also a "*pohatu taharua*," resembles the foregoing form in shape, with this exception—that for the first 5 inches it is of nearly the same breadth, and only gradually diminishes in breadth till the handle is reached. It has, therefore, no prominent points. It is $15\frac{1}{2}$ inches long, 3 inches broad, and $\frac{3}{4}$ of an inch thick. The blade, as in the foregoing, is quite flat, being the natural division plane of the schist. Both edges are roughly chipped, but both the upper edge and the handle have received some slight polish, or perhaps, more correctly, have been rubbed down.

It appears that the term "*patu*" (to kill) was applied only to the *okewas*; in fact, Mr. Shand is convinced that it is very doubtful if it is a correct term at all, but rather one adopted by Europeans and retained as a term generally understood, being chiefly used in a descriptive sense.

According to Mr. Shand: "Manslaying was prohibited generations back, in the time and by the command of their ancestor Numuku and others, shortly after the arrival of their ancestors in their canoes Rangimata, Rangihona, and Oropuke, the last being commanded by Moe a Rauru, whose *hapu* or *iwi* were former antagonists of the people of the other canoes, and who found their way to the island some time after them. They fought on the island, and it was ordered by Numuku and others that fighting and manslaying should cease for ever; that in all future quarrels (a long pole, '*tupurari*,' about 8 feet to 10 feet long being used) the first blow causing blood to flow, if even by a slight abrasion of the skin, was to end the fight. This, however, did not prevent the person so injured from returning in like manner and seeking satisfaction at some other time for his

bleeding head, cracked skull, or barked skin, as the case might be."

As by the genealogy of the Morioris they have existed twenty-seven or twenty-eight generations on the island, it must have been a very long time ago that by that law of their ancestor Numuku all weapons such as *okewas*, *taos* (or spears), &c., were laid aside, the latter being placed on rests at their sacred places of sepulture. *Tuahu* were only produced on the occasion of "*tohinga tamariki*," a sort of baptismal ceremony; hence the making of *okewas* fell into desuetude, and that of any other warlike weapons known to their ancestors.

Concerning the stone implements used by the Maoris and their ancestors, I have already stated that they called all those made of nephrite (greenstone) *mere*, and the rest *okewa*. It is evident that the stone clubs, possessing the same form as the *mere* but made of hard black igneous rocks, are of a far more ancient date, though they have been worked with great care, and their form and polish are perfect. They have been found in such positions that there can be no doubt as to their great age. I was therefore much interested in obtaining two Maori stone implements, which are very different in form from those just alluded to, and which in many respects agree far more with the stone weapons of the Morioris than with those of the Maoris.

One of these, found during the draining of an extensive swamp at the Hinds, and presented to the Canterbury Museum by Mr. E. H. Dobson, is roughly made of greyish dolerite rock. It is 13½ inches long, 3 inches broad, and 1½ inches thick in the centre. It has a resemblance to the *okewa* of the Morioris, in so far that only one side (different from the form of the *mere*) has been prepared for striking by being brought to a sharp edge, and that it has no hole through the handle for the purpose of passing a strap to be fastened to the wrist. The handle is also of a very primitive character. The process pursued in its manufacture appears to me identical with that of the Morioris, the implement being first chipped and afterwards roughly ground down, though at one spot an attempt has been made to give it a more perfect polish. This is the only weapon of the kind, viz., possessing a striking edge on one side only, that I have ever seen in New Zealand; and the position of the swamp, of enormous extent, is such that it may have been deposited therein during many generations past.

Another stone implement of very great interest to the ethnologist is one that was lately presented to the Canterbury Museum by Dr. de Lautour of Oamaru. It was obtained in deep ploughing at Windermere, on the Kakanui River, near Maheno, Oamaru. It is made of a similar micaceous schist to that of which the *okewa* (No. 1) of the Morioris is manufactured,

a schist which is a not uncommon rock in New Zealand. At the first glance we are struck not only by the peculiar form but also by the mode of manufacture, as it has been rubbed down in the same manner, and has thus the same somewhat flaky appearance, as the Chatham Islands weapons. What distinguishes it from the form of the *mere* are the prominent points above the handle, so that in this respect it resembles the weapon No. 3 from the Chatham Islands. Similar prominences also occur below the handle. Here a hole has been bored for the passing of a wrist-fastener. However, the whole weapon is very imperfect as to form and workmanship, and may also date back to a time when the manufacture of these weapons was in its infancy. The following are the dimensions of this remarkable stone weapon: Total length, 14½ inches; greatest breadth, 3½ inches; at prominent points above handle, 3¼ inches; greatest thickness, 1¼ inches.

Until further specimens of the same material and form are found of these remarkable New Zealand stone weapons, it would be premature to speculate upon the affinities between them and the stone weapons of the Morioris; but it seems evident to me that they date back to a time anterior to the discovery of nephrite at the West Coast, and its subsequent use in the manufacture of *meres*, which must have supplanted the inferior material used till that time.

ART. III.—*Notes on the Difference in Food Plants now used by Civilized Man as compared with those used in Prehistoric Times.*

By W. T. L. TRAVERS, F.L.S.

[*Read before the Wellington Philosophical Society, 29th July*, 1885.]

THERE has been a good deal of learned discussion as to whether man was originally destined for a vegetarian or not, but however interesting this question may be in connection with his descent, it is one of no importance now in relation to his food, because his existing structure not only enables, but practically requires, him to extend his choice, in that respect, to the animal as well as to the vegetable kingdom. And he can, as a rule, do this with especial advantage, for by using a mixed diet he not only economises physiological labour, but also saves his excretory organs from a large amount of profitless work which would otherwise be thrown upon them.

But although a choice of food is thus given to him, the varying circumstances under which he exists on earth, determine, to a considerable extent, the direction in which that choice should be made. Within the tropics, for example, where any large consumption of flesh food would inevitably produce injurious