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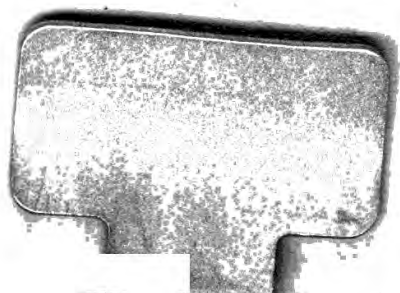
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Acland. P. 37(19)



[Reprinted from the *Journal of the Anthropological Institute*, May, 1877.]

*On the INHABITANTS of the ADMIRALTY ISLANDS, &c.* By H. N. MOSELEY, Fellow of Exeter College, Oxford, late Naturalist on board H.M.S. "Challenger." With Plates xx, xxi, xxii, xxiii.

THE Admiralty Islands are a group consisting of one large island and numerous small ones. The group lies between latitudes  $1^{\circ} 50'$  and  $3^{\circ} 10'$  S., and longitudes  $146^{\circ}$  and  $148^{\circ}$  E. It forms the north-westerly termination of the long curved chain of large islands and groups of islands which stretching roughly N.E. and S.W., is composed of the New Ireland, Solomon, and New Hebrides groups. The main island of the Admiralty group is distant from New Hanover, the nearest large island of the chain, about 130 miles, and from the nearest point of New Guinea about 150 miles. The main island is oblong in form, and is about 50 miles in extreme length and 16 in extreme breadth. The area of the entire group is about 550 square miles, *i.e.*, about twice the size of the Isle of Man and three times that of Middlesex. The main island is mostly of small elevation, but contains mountains rising to a height of about 1,600 feet, which were visible to the eastward of the anchorage of the "Challenger," in Nares anchorage. The examination of the islands made by the Expedition was confined to the extreme north-western portion of the northern coast of the main island in the neighbourhood of Nares Bay, and to the numerous small outlying islands, which, lying just off the coast, shelter that anchorage.

The land surface in the vicinity of Nares Bay consists of a series of low irregular ridges rising one above another, with wide flat expanses at the heads of the bays on the coast, which are



scarcely or not at all raised above the sea level, and are thus in a swampy condition. The mountains appear from their form to be volcanic, and it is probable that the obsidian used by the natives for their implements comes from them. A trachytic lava was found to compose one of the outlying islands, and a similar rock was observed on the mainland where it begins to rise. A platform of coral sand rock forms the coast line of the main island in many places, and a similar rock is the only component of most of the small outlying islands on which the greater part of the natives dwell. The Admiralty Islands from their position with regard to the equator have an extremely damp climate. They are densely wooded.\*

*Zoology of the group.*—A few remarks on the animals of the islands may not be out of place. Besides the pig and the dog there are of mammalia, two species of fruit bats (*Pteropinae*), and an opossum (*Cuscus*). A dugong and a dolphin are also killed by the natives.

Of birds the most abundant are the fruit pigeons (*Carpophaga oceanica*), which feed upon the wild coffee and nutmegs, and roost in vast numbers upon one of the small outlying islands. We saw or procured about 28 other species of birds, including an eagle, a lory, a kingfisher, &c., most of which appear nearly allied to or identical with those of the Echiquier Islands.† Small tree swallows (*Collocalia*) fly about amongst the cocoanut trees, and all day flocks of terns and noddies (*Sterna lunata*, *Anous*), follow in the still waters within the reefs the shoals of skip-jacks (*Caranx*) as they pursue the smaller fish. The shores are inhabited by several species of shore birds. Of reptiles there are two species of turtle common here, *chelone midas*, and *imbricata*, the latter the source of the principal article of barter of the natives, tortoise shell. In the swamp pools is a species of crocodile, of which the natives are in great dread. There are also at least one species of land and one of sea snakes (*Hydrophidæ*), and the natives showed themselves acquainted with the danger of handling snakes. A gecko and blue tailed lizard (*Euprepes cyanura*) are also present and abundant.

*Literature relating to the Admiralty Islands.*—An Account of a Voyage round the World in the years 1766, '67, '68, '69. By Philip Carteret, Esq., Commander of H.M. Sloop "Swallow." Hawkesworth's Voyages. London, 1773. Vol. I.

Labillardiere, Relation du Voyage à la Recherche de "La Perouse." 1791. Paris, an. VIII. T. I, p. 255.

\* For an account of the vegetation of the island, see a paper by the author on the subject in Journ. Linn. Soc. Botany. Vol. XV, p. 73.

† An account of the birds of this group is published in Proc. Zool. Soc., 1867, p. 828. Hartlaub. On a Collection of Birds from some less known localities of the Western Pacific.

The above translated by John Stockdale. London, 1800. Vol. I, p. 296.

Voyage de Dentreasteaux à la Recherche de "La Perouse." Rédigé par M. de Rossel. T. I, p. 131.

Extracts from the above are to be found in general works, such as Waitz' *Anthropologie*, Meinike' *Die Inseln des Stillen Ocean*, &c.

*History of the Islands.*—The Admiralty Islands were discovered by Captain Philip Carteret, of H. M. sloop "Swallow," on September 14, 1767. Captain Carteret lay off small outlying islands to the south of the group. Twelve or fourteen canoes came off, and the natives at once attacked him by throwing their lances into the midst of his crew. He had to fire on them, and although he made efforts to conciliate them these were entirely unsuccessful. From a statement made by Dentreasteaux it appears that shortly before 1790 the Islands were visited by a frigate commanded by Captain Morelle.

In 1791 the "Recherche" and "Esperance" sailed from France, under the command of Dentreasteaux, to search for the missing "La Perouse," the "Recherche" having on board of her as one of the naturalists M. Labillardiere.

In the previous year, 1790, the English frigate "Syrius" was wrecked on Norfolk Island, and a Dutch vessel which conveyed her commander, Commodore Hunter, to Batavia, passed by the Admiralty Islands. Whilst she was in sight of the shore, canoes full of natives put off towards the ship, and showed a desire to communicate, and being indistinctly seen in the distance their white shell ornaments seen on their dark skins were taken for white facings on French naval uniforms, and their reddened bark cloths for European fabrics, and Hunter was persuaded that here were relics of the unfortunate "La Perouse."

Dentreasteaux received information at the Cape of Good Hope by a special despatch vessel sent for the purpose from the Isle of France, of what Commodore Hunter had seen, and he in consequence visited the Admiralty Islands with his two ships, arriving off the Islands in July, 1792. He visited the outlying islands of Jesus Maria and La Vandola lying to the eastward, and then coasted along the northern shore of the main island to the same spot as that visited by the "Challenger." He communicated with the natives by bartering with them from his ships and from boats, but seeing no trace of any European relics amongst them, he concluded that Commodore Hunter had been mistaken in the manner already described, and set sail without effecting a landing. Two separate accounts were published of Dentreasteaux's cruize, one by himself, edited by Mr. Rossel,

the other by M. Labillardiere. Both contain very interesting information concerning the Admiralty Islanders, the account by Labillardiere being most complete in this respect, and accompanied by large plates of natives and weapons, and a view of Dentrecasteaux Island. These accounts will be referred to in the sequel.

No European appears to have landed in the Admiralty Islands before the visit of the "Challenger" Expedition, which extended from March 3 to 10, 1875.

*Anthropology of the islands.*—In treating of the characteristics of the Admiralty Islanders, the information will be classified under the series of headings adopted in Waitz's "Anthropologie."

*Domestic animals.*—The only domestic animals possessed by the natives of the Admiralty Islands in any abundance are pigs. These are partly kept in enclosures around the houses, partly run half wild over the inhabited islands. The pigs are small, lean, and black coloured, and appear never to develop large tusks. No ornaments of large pigs' tusks were seen in the possession of the natives. If therefore, as I believe, from signs made by the natives, is the case, there are wild pigs on the main island of the group, they must be unlike the Papuan pigs in this respect, and resemble more the New Hebrides breeds. Two dogs were seen on Wild Island. I saw one of these a puppy. It was white, smooth haired, like a fox terrier in appearance, and very like a dog which was in the possession of the natives at Humboldt Bay. No dogs but these two were seen amongst the natives. No rats were seen on any of the islands. No fowls were seen in the possession of the natives, but I obtained a plume of cock's feathers worn as a head-dress from one native. Fowls must therefore exist in the islands somewhere, but are probably scarce, as only this one plume was seen.

*Physical characteristics.*—The following measurements were taken :—

Measurements in Inches of Natives of the Admiralty Islands, taken by the late R. Von Willemoes Suhm, being of Natives of Wild Island, except 6, 7, 8, 9, taken on board the ship by Von Suhm and H. N. Moseley.

	Height.	Breadth.	Arm, length.	Leg, length.	Foot, length.	Hand, length.	Nose, length.	Forehead, length.	Ear, length.	Breasts, length.		
Women.	1. Old woman, 40 years ca. ..	15	28	..	10	7	..	..	..	7		
	2. Young girl, 15 years ca. ..	61½	15	25	33	..	1½	..	2½	..		
	3. Older women of mean size ..	60	12	25	..	9	6¾	2	..	6½		
	4. Old female ..	63	..	..	..	8	..	..	..	..		
	Mean ..	61	14	26	33	9½	7½	2	2½	6¾		
Men.	1. Young man ..	67	16	29	37	9½	7	2	2¼	2⅝		
	2. Adult ..	63	18	28	35	10½	7	2⅝	2⅞	3⅞		
	3. Adult ..	66	17½	27½	34	9½	..	2	2½	..		
	4. Adult ..	66	17½	28½	..	..	..	..	2⅝	..		
	5. Oto ..	67	17½	..	..	..	..	..	..	..		
	6. Adult ..	64¾	..	..	..	..	..	..	..	..		122
	7. Adult ..	63	..	..	..	9¼	..	..	..	..		
	8. Adult ..	62½	17¼	27½	33½	10¼	8	1½	3	3		133
	9. Young .. (photographed).	66½	16	27	34	10	7½	2	3¼	..		126
Mean ..	64⅞	17⅞	28	34⅞	9⅝	7½	2	3	3	3	3¼	127



*Further measurements* of numbers 8 and 9. 8. Girth of chest with arms held up, 36. 9. Girth of chest, 33. Breadth of foot just behind origin of toes,  $4\frac{1}{2}$ . Girth at umbilicus, 30. Round buttocks, 34.

*Two heights of adult men* taken by me, 68 and  $60\frac{3}{4}$ .

The measurements of the legs were taken from the great trochanter of the femur to the sole of the foot. Those of the breadth from tip to tip of clavicles. Those of the hand from the inner margin of the palm to the tips of the middle finger. Those of the forehead from the root of the nose to the commencement of the hair. The chest girth measurements were taken with the arms upheld.

Average specimens were selected by von W. Suhm as far as possible. The mean height of the men, as will be seen from the table, is about 5 feet 5 inches. Whilst the tallest man measured was 5 ft. 8 inches, and an unusually short one only a fraction over 5 feet. The mean height of the women is 5 ft. 1 inch.

It is difficult, and possibly of little value, to compare the measurements here obtained with those given in the Anthropological part of the Novara publications, Vol. III, since the methods of measurement differ widely. I have, however, by adding together the lengths there given separately for fingers, hand, forearm and arm, and treating this as the length of the arm obtained, the ratio of the length of the body to the length of the arm in several races, and compared it with the similar ratios in the case of the Admiralty Islanders, using the averages of the measurements where available. The results are shown in the following table:—

	Measurements in millimetres.		
	Height.	Length of Arm.	Ratio of height to length of Arm.
New Zealanders, men .. ..	1757	859	2·04
Australian men .. ..	1675	819	2·04
Australian women .. ..	1596	770	2·07
Tahitian women .. ..	1614	772	2·09
German men .. ..	1680	789	2·1
German women .. ..	1544	713	2·1
Admiralty Island men .. ..	1646	711	2·30
Admiralty Island women ..	1549	660	2·30

Whence it appears that the Admiralty Islanders are short armed.

The race is of average height, but the weight is, as usual with savages, below that of Europeans, 126 lbs. (nine stone) as com-

pared with 150 lbs., about the weight of an average Englishman.

The natives contrasted at first glance with the Papuans of Humboldt Bay in being far thinner and lankier. I saw but one native that was at all fleshy, although such were not uncommon at Humboldt Bay.

The usual colour of the natives is a black-brown, often very dark, and darker than that of the Papuans of Humboldt Bay. The young girls and young boys appear much lighter as a rule than the adults. Some one or two of the younger women were of a quite light yellowish-brown, as was also one young man, who came from a distance to the ship to trade. I saw no old women who were light coloured.

The arms and legs of the men are covered with a short sparse curly black hair, which appears as if growing in separate locks,\* exactly as in the Humboldt Bay natives. Hair is rarely present in any quantity on the back or chest, but in a few exceptionally hairy examples it was well marked.

The hair of the head, which is worn long only by the younger adult males, formed in them a dense mop, projecting in all directions 6 to 8 inches from the head. It appeared less luxuriant in growth than that of the Papuans of Humboldt Bay.

The hair is crisp, glossy, and extremely elastic, and every hair rolls itself up into a spiral of small diameter.

In general appearance thus it is fine curly, like that of Fijians. On comparing it with a very small sample of hair of the natives of Humboldt Bay taken from several native combs, the Papuan hair proves to be somewhat coarser, but in other respects the two hairs are closely alike, the diameters of the spirals of the curls being the same. Some hair from a native of Api, New Hebrides, is of about the same coarseness as the Admiralty Island hair, but the curls are of much smaller diameter. The hair of the Api Islanders seems to be remarkable for the fineness of its curls. In Tongan hair the curls are of far larger diameter than those of the Papuan or Admiralty Island hair.

The fineness of the curl of the hair in various Polynesian and Papuan races which I have seen, seems to be pretty constant in each race and characteristic. It might be estimated by measuring the diameter of the circles formed by the separate spirally twisted hairs, and taking the average of several measurements. No doubt a certain curve of the hair follicles corre-

\* This appearance is probably merely due to the tendency of the hairs evenly distributed at their bases to collect together and combine into curls, and must not be taken to imply necessarily the existence of a condensation or aggregation of hair follicles at certain spots producing hair growing in separate locks, which condition was formerly erroneously supposed to occur on the scalps of Papuans. The body hairs form small curly locks in other races.

sponds with and produces the curl in the hairs, as in the case of the hair follicles of the negro as discovered by Mr. Stewart.\* But the amount of curve will be peculiar to each race. The hair of both head and body of the Admiralty Islanders is naturally black, that of the head being of a glossy black.

A very slight trace of whiskers is present in most of the men as a small black streak on the very upper part of the cheek, looking like a continuation of the hair of the crown almost. Regular bushy whiskers were seen only in the case of one man, who had a continuous frill round his face, formed of conjoined whiskers and beard. This man was also remarkable for the greater hairiness of his body, hence I imagine that whiskers and hair generally on the face are exceptional, and not removed by shaving. One or two men had short pointed beards without whiskers.

Eyebrows were generally absent, very probably shaved off (the natives made signs when offered razors, that they used obsidian knives for shaving). I saw eyelashes long and well developed in some youths.

The eyes are not in the least oblique, and open full and widely. The iris is of a dark brown. The forehead is somewhat flattened. There is usually a well marked depression at the origin of the nose, the brow thus overhanging somewhat. The cheek bones are prominent, the face diminishing rapidly beneath them, to terminate in the straight fronted chin. The nose is usually short, with wide alæ and flattened tip. The nostrils are not patent in the adults, or only just to be seen into under the alæ.

In the children the noses are more flattened, and the nostrils somewhat more patent. The septum nasi in all the adults is perforated, and the lower margin of the perforation usually dragged down by the suspension of ornaments, so that in a profile view of the face the large aperture in the septum is looked through by the observer.

Some of the natives, as at Humboldt Bay, have most remarkable long Jewish noses. About 1 in every 15 or 20 has such a nose. I at first imagined that this form of nose was produced to some extent by long action of excessively heavy nose ornaments, but I saw one youth of only 16 or 17 with such a nose very fully developed, and I saw more than one woman with a well marked arched nose with dependent tip, and the women appear to wear no nose ornaments. An incomplete mixture of two races may possibly exist here, but unfortunately I did not carefully observe with this view whether the natives with Jewish

\* Charles Stewart, M.R.C.S., F.L.S.; note on the scalp of a negro. "Microscopical Journal," 1873, p. 54.

noses showed other points in common in which they differed from the remainder of the population. One of the most marked instances of these peculiar features was that of the head man or chief of Wild Island (Oto).

The lips are of a light brown, very slightly pinkish. They are usually very little prominent, and are not unusually large. The chins are usually straight in front, not rounded, and not prominent, sometimes apparently receding. The jaws are wide. The lower line of the jaws is remarkably straight and horizontal. The lobes of the ears are enlarged and dragged into a long loop by the weight of suspended ornaments. The penis is usually of moderate size. I saw only one man who had a remarkably large one.

Some few of the women were large and stout. One woman that I saw must have been 5 ft. 6 in. in height, but such women were exceptional.

Drawings of the heads of three natives are given, enlarged from photographs in Pl. xxiii, figs. 1, 2, 3.

*Variability.*—The occurrence of Jewish noses in a certain number of the Admiralty Islanders has already been described. As another instance of variability, I may state that I saw one boy on Wild Island who, though in other respects just like the rest, had his hair quite straight. Light coloured skins were rare, but I saw one man and two women whose skins was of a light yellow colour.

*The language of the Admiralty Islanders.*—The language of the Admiralty Islanders has been hitherto entirely unknown, and I believe that the short list of about 55 words, besides the numerals, obtained by me, represents all the information at present existing on the subject.

I was continuously engaged in botanical collection during the short stay of the "Challenger" at the islands, and was only able to pick up a few words now and then in the intervals of my other work.

The difficulty of obtaining correct vocabularies from savages, of whose language the investigator is entirely ignorant, is well known, and has been commented on by many writers on anthropology and philology. I was well aware of these difficulties, and I used great caution, and believe that the words which I obtained are mostly correct. The words were all carefully written out before comparison was made between them and vocabularies of other languages, or with one another; and various proofs of their correctness were found when the comparisons were instituted, such as the close similarity of certain words to words in other languages having a similar meaning, and the curious formation of the numerals to be presently described,



all of which were not known or noticed at the time the words were taken down.

I met with the following difficulties with the Admiralty Islanders in obtaining words from them. The natives seemed always ready enough to give the names of particular birds which had been shot, as of two kinds of pigeons and a parrot, or of a cuscus, hermit crab, or any such object which they considered was strange and novel to the inquirer, and one for which he wished to learn a name; but immediately they were asked for the word for the nose, or arm, or any such object common to the inquirer and themselves, they seemed to grow puzzled and suspicious, and to wonder why one could want to know the name of a thing for which one must have a name already. Some men were suspicious from the first, and refused sullenly to give any words at all, and prevented others from giving any. Some would give one or two only, and then refuse further information, whilst I came across two who gave me at least ten words each, quickly one after another, but then, like the rest, failed me. Several of the words I was able to test the correctness of by using them with success to the natives in inquiring, *e.g.*, for human skulls and those of turtle, &c., and offering "one skull one hatchet," sip batu hama sip samil. The words are given in the table, written on the phonetic system, according to the method now generally adopted for expressing Polynesian languages. Some difficulty was found in expressing certain sounds, and especially a sound which seemed to lie between a and o. I wrote down the word for head (batu), whilst my lamented colleague, R. von Willemoes Suhm, wrote it down as botu, and I could not make up my mind as to which way of writing the word was more correct, although I heard it used very frequently.

The following is a list of the words obtained, to which is appended a list of the proper names of a canoe crew which were taken down by Mr. R. Richards, paymaster of the "Challenger," and by him kindly given to me.

*Words of the Language of the Admiralty Islands, collected mostly on Dentrecasteaux Island, but partly also on Wild Island.*

Numerals.	1 Sip.	10 Sangop. (The hands held
	2 Huap.	with the fingers pointed
	3 Taro.	forwards, and closed side
	4 Vavu.	by side, are clapped once
	5 Lima.	when sangop is used.)
	6 Wono.	11 Sangop sip.
	7 Hetarop.	12 Sangop huap.
	8 Anda huap.	20 Hungop.
	9 Anda sip.	30 Turongop. (So taken down.
		Tarongop ?)

At the use of hungop the hands are clapped twice; at turongop, thrice. Reckoning after 10 is transferred from the fingers to the toes. I saw this done for 11 and 12; probably it is extended to 20.\*

Yes .. .. .	u.
It is or is .. .. .	ara.
Carpophaga oceanica .. .. .	ban.
Dove Ptilinopus .. .. .	u, from the call of the bird.
Parroquet Trichoglossus .. .. .	sibbi.
Hermit crab, Cænobita .. .. .	mwam.
Turtle .. .. .	bue.
Pig .. .. .	po.
Cuscus .. .. .	gohai.
Fish, a caranx, also a selachian .. .. .	uke, probably a general term = fish.
Applied to the skull of a fish hung up	niharu, probably the name of this fish.
Woman .. .. .	bibi.
Man .. .. .	hama, inferred from botu hama.
Boy .. .. .	naru.
Head .. .. .	botu, or batu, or between the two.
Hair of head .. .. .	langam pui?
Ear .. .. .	darinya.
Nose .. .. .	noa.
Eye .. .. .	manna.
Teeth .. .. .	luvo.
Tongue .. .. .	arimè.
Belly .. .. .	lau.
Arm .. .. .	bui } limb ?
Leg .. .. .	bui }
Penis .. .. .	piem.
Human skull .. .. .	batu hama = head of a man.
Pig's skull .. .. .	batu po.
Turtle's skull .. .. .	batu bue.
Tortoise shell .. .. .	bue bu.
Tortoise shell .. .. .	another term, valus.
To eat .. .. .	huyan?
Tree .. .. .	kau.
Cocoanut tree .. .. .	niu. I think also all palms. It was applied to the Areca palm.
Pandanus .. .. .	muoi.
Artocarpus sp. .. .. .	un.
Edible Colocasia .. .. .	lor. Applied to the plant growing in an enclosure.
"    " .. .. .	mwa. Applied to the roots brought off for sale.
Sago (prepared) .. .. .	abi.
Plaintain Musa .. .. .	mborru, pronounced with vibration of the lips. I could not properly catch the sound.

\* The idea of counting on the feet as well as the hands still survives in Great Britain. An Irish car-driver in Co. Mayo, last autumn, used the expression to me, "as many times as I could count on my fingers and toes" for a score. The use of the toes in counting is apt to seem extraordinary to civilized Europeans who constantly wear boots and shoes and sit on chairs. The majority of mankind who squat on the floor or ground and have their toes generally exposed, and from their posture near to their hands, naturally pass to the toes in counting after having exhausted the hands.

Betel pepper.	Chavica	betel..	..	mbung.	
Sugar cane	..	..	..	bowai.	
Hippopus shell	..	..	..	puke.	
Beads	..	..	..	bujam.	
Fish net	..	..	..	pu.	
Stockade	..	..	..	manu?	
Drum (large wooden)..	..	..	..	dan.	
Armlet of trochus	..	..	..	lan.	
Large earthen pot	..	..	..	oo?	
Native cloth. A narrow strip of bark cloth worn as T bandage.				orlau.	
Hatchet	..	..	..	samil.	
Iron	..	..	..	} laban.	Laban is the term given to the peroxide of manganese, which the natives use to blacken their bodies, and has evidently been transferred to iron, because of the metallic lustre and weight of both bodies.
Oxide of manganese	..	..	..		
Canoe	..	..	..	doan.	
Paddle	..	..	..	baban.	
Water	..	..	..	wai.	
Lime used in betel chewing	..	..	..	way.	
Chief	..	..	..	Oto?	This term was applied to an apparently head man at two separate islands: Dentrecaux and Wild Islands.
Land snail	..	..	..	masin.	
Crocodile	..	..	..	saluan.	

About 68 words.

*Names of the Men forming the Crew of a Wild Island Canoe, Admiralty Islands.*

Taken down by Mr. R. Richards, Paymaster, R.N.

The Chief of Wild Island	..	Oto.
His sons	.. ..	{ Susu.
		{ Shibaya.
		Yare.
		Heve.
		Pomoi.
		Banawayi.
		Babaiu.
		Balusu.
		Babaru.

*Remarks on the foregoing Vocabularies.*—The system of notation is a decimal one. With regard to the numerals, it will be seen that whilst the earlier numbers up to 5 correspond to some degree with the Malayo-Polynesian forms, and that the word for 5 is the almost ubiquitous lima (hand); the higher numerals are peculiar, and the terms for 8 and 9 are formed by subtraction

from 10, 8 being 10 — 2, and 9, 10 — 1. Anda huap is 8, huap meaning 2; and anda sip is 9, sip meaning 1. Hence anda must mean less or minus.

The plan of making numerals by subtraction is well known as existing amongst several races. Mr. Tylor, in his "Primitive Culture," cites the instances of some North American races, and of the Ainos of Yesso, where the words for 8 and 9 obviously mean 10 — 2, and 10 — 1.\*

The following are the Aino numerals, which I have extracted from Langsdorff's travels, those only being given which show the subtractive method of formation of the numerals 8 and 9.

*Numerals of the Ainu.*

Numerals.	Ainu of Kamschatka.	Ainu of the Kurile Islands.	Ainu of Jesso.	Ainu of Gwait of Tschoka.
1	ssinep.	ssyhnāp.	schinep.	schineni schnepf.
2	tuup.	dūph.	toopu.	toni tup.
8	tubis.	dūhpyhs.	tobishchanbe.	tobischanbi. tubischambi.
9	ssinepis.	ssyhnaphys.	schnipischanbe.	schinpischanbi. schnebischanbi.
10	uupis.	ūpyhs.	wanak.	wambe. wambi.

Numeral 7 shows no subtractive form.†

I have not been able to refer to Prof. Pott's paper on the art of counting, cited by Mr. Tylor,‡ so that I do not know how wide may be the range of this peculiar expedient in the formation of numerals;§ but it does not exist in any Polynesian language, as far as I have been able to ascertain from examination of numerous vocabularies;|| and Mr. Tylor gives the Polynesian formulæ for numbers above 5 as 5.1, 5.2, 5.3, 5.4.¶ In the Melanesian languages, to which class the language of the Admi-

\* "Primitive Culture." E. B. Tylor, F.R.S. London, J. Murray, Vol. I, p. 269.

† "Voyages and Travels in various parts of the World during the Years 1803, 1804, &c.," by G. H. Von Langsdorff. London, H. Colburn, 1813, p. 361. Specimen of the languages of the Ainu.

‡ "Die Quinäre und vigesimale Zählmethode bei Völkern aller Welttheile." Halle, 1847. Supplemented in Festgabe zur XXV Versammlung Deutscher Philologen, &c., in Halle, 1867.

§ In the dialect used in the central group of the Nicobar Islands, where 1 is hayang and 9 hayang hata, it is probable that the name for 9 is subtractive, but that for 8 is obviously not so formed. "Voyage of the 'Novara.'" Scherzer, English translation. Vol. III, Appendix A.

|| Unless possibly at Ebon Ralik Islands. See Turner's Tables of Languages in "Nineteen Years in Polynesia." London, 1861.

¶ Tylor, *l.c.*, p. 261.



rality Islanders might be expected to conform, the higher numerals are formed, as 2nd 1, 2nd 2, 2nd 3, &c. And I can find no trace in any of them, as given in Von der Gablentz' treatise on the Melanesian languages, of any other method of formation.\* Neither does this method occur in any of the 33 languages of the Malay Archipelago given by Mr. Wallace, except possibly in the case of the Sula Islands (No. 20 on the list in Wallace, Malay Archipelago). There is lastly no trace of such formation in the Louisiade or Papuan languages, as far as I have had access to vocabularies.† Thus the language of the Admiralty Islanders would stand alone amongst all surrounding races, were it not that in one island, in Micronesia Yap, in the Carolines, an exactly similar formation of numerals occurs, the subtractive formation being in this instance, extended to the numeral 7, as well as 8 and 9.

The following are the numerals of Yap, taken from the latest source of information:—‡

1. Darip.
2. Lakrue.
3. Odelipp.
4. Enninck ningk.
5. Ellall.
6. Ennill.
7. Medelipp.
8. Meruk.
9. Meripp.
10. Erregak.

It will be seen that the numerals are very different from those of the Admiralty Islands, although the method of formation is the same, and I should not lay stress on the resemblance were not there other connections between the languages. It is a remarkable fact that the language of Yap is distinct from that of all other Micronesian languages, except that of the island of Ngoli, colonized from it.§ And apparently it is the only Micro-

\* "Die Melanesischen Sprachen." H. C. von der Gablentz. Abhn. der K. Sachsischen, Gessell der Wiss, 1861.

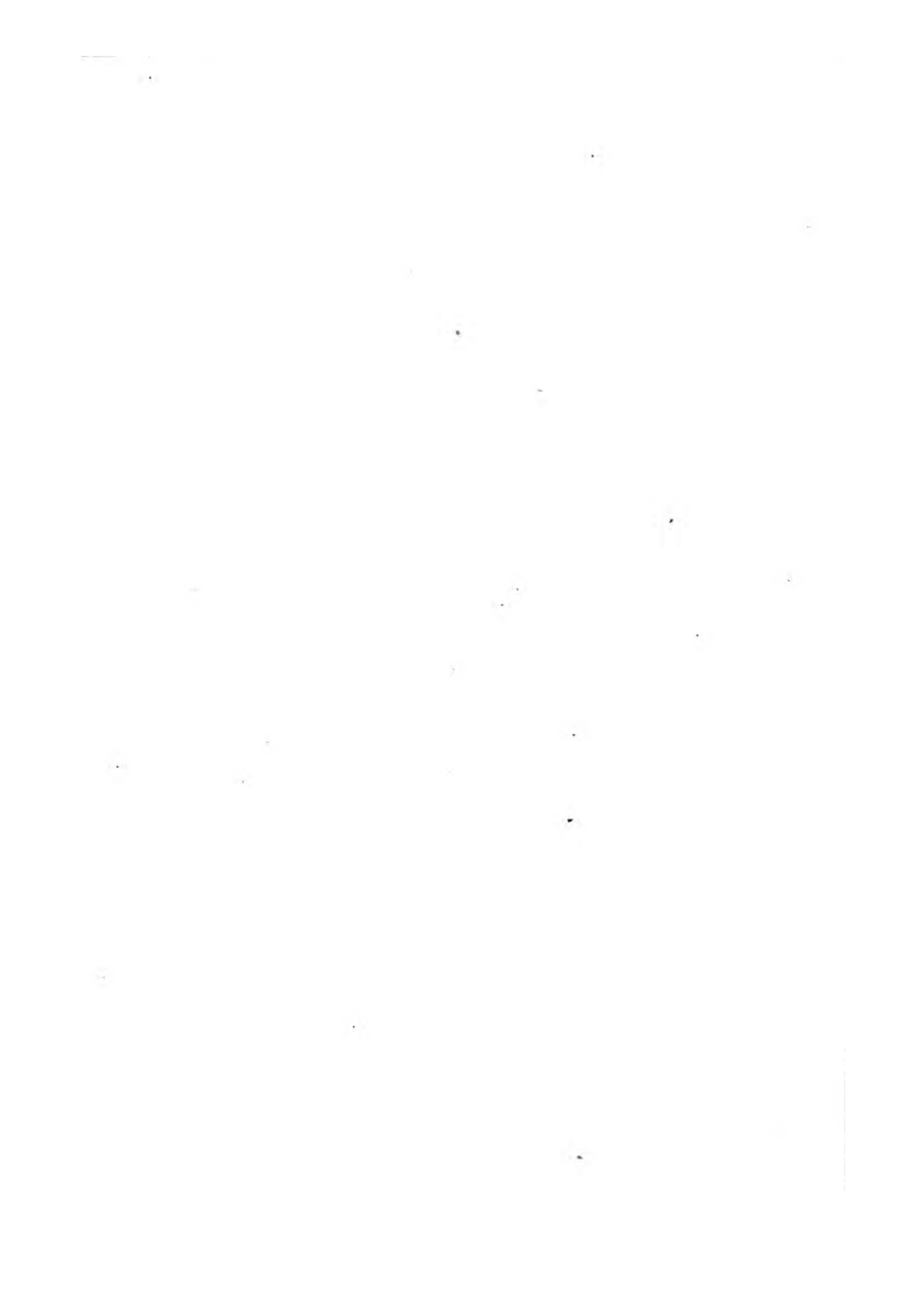
† "Voyage of the 'Rattlesnake.'" McGillivray.

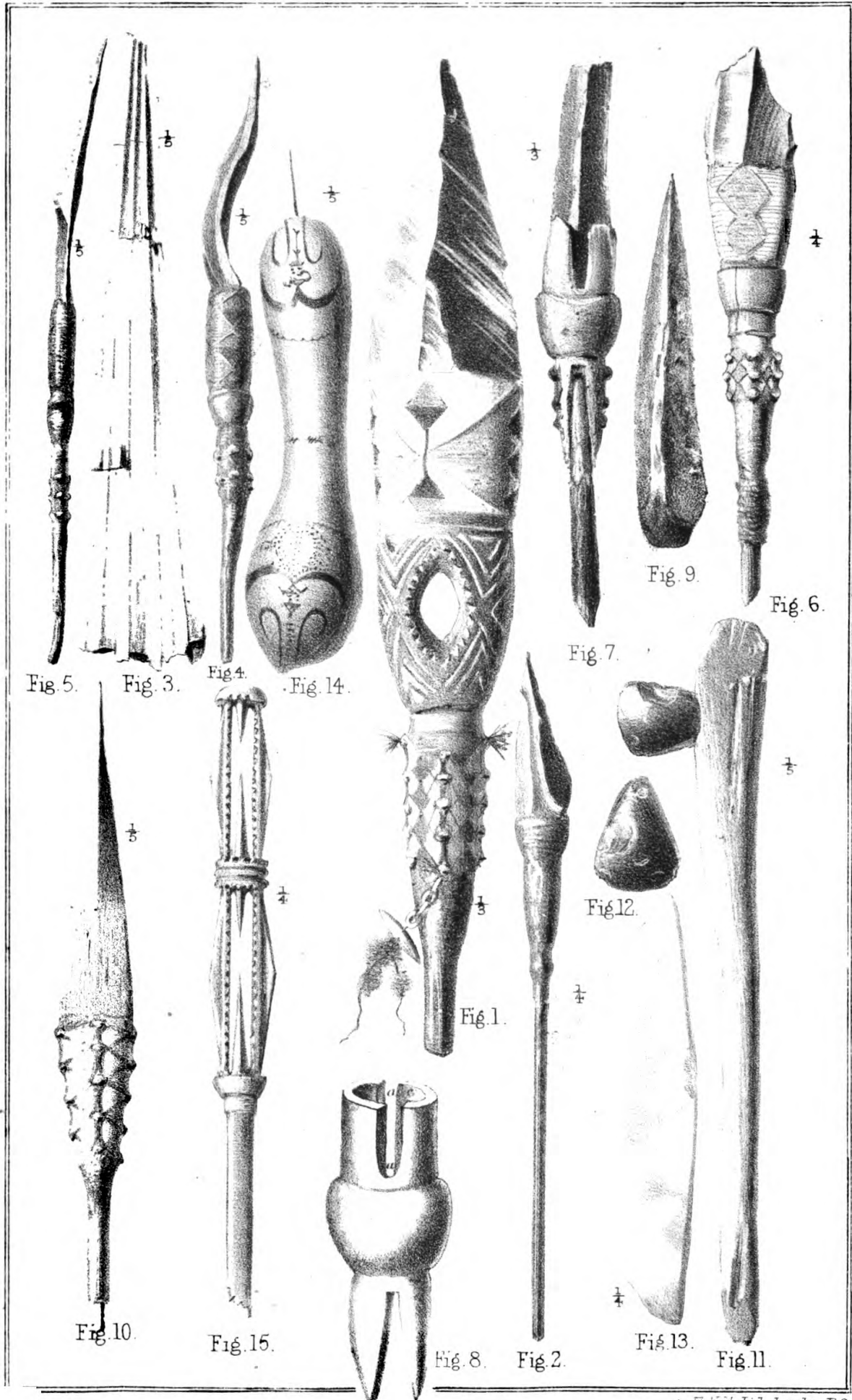
"Voyage of the 'Fly,'" Vol. II, Appendix.—R. G. Latham, on the General Affinities of the Languages of the Oceanic Blacks.

"Ein Beitrag zu der Kenntniss der Sprachen auf Mindonao, &c." Dr. A. B. Meyer, "Tidschr voor Indische Taal Land en Volkenkunde." X Deel, 1873. Batavia, p. 441.

‡ Die Carolinen Insel-Yap oder Guap. Nach den Mittheilungen von Alf Tetens und Johann Kubary. Journal des Museum Godeffroy. Hamburg. Heft II, 1873, p. 12, &c.

§ Chamisso. "Gesammelte Werke," Bd. VI, 1836-9, 103. Cited in "Waitz Anthropologie," Bd. III.





nesian language in which the numerals are formed in the manner in question.\*

The Yap Islanders are amongst the few Western Micronesians who chew betel, and they are believed to have learnt the habit from the Malays, but it is remarkable that their words for areca nut and the lime used with it differ entirely from the Malay words, and appear closely allied with those in use at the Admiralty Islands.

Lime is in Yap, waej; in Admiralty, wav; in Malay, kapur. Areca nut, Y., mbun; A., chavica, betel leaves, mbung; Malay, areca nut, pinang. The word mbung is applied in the Admiralty Islands to the leaves of the betel pepper, in Yap to the areca nut, but it is possible that at the Admiralty Islands the word includes areca nut as well as the leaves. I cannot find words for these widely spread chewing requisites closely resembling mbun and wav in any other of the Malay or Papuan languages, except perhaps the form of the Malay kapur in Wokan Aru Kavar.† But in the very copious list of native names of plants of the East Indian Archipelago, by G. J. Filet,‡ the Malay word niboeng is given as the name of a species of Areca palm, *Areca nibung*, whilst djambeh = *Areca catechu* and pinang areca alba, and *A. glandiformis*. Possibly the word nibung may be the origin of the Admiralty and Yap mbun, though the *Areca nibung* has a small fruit not used for chewing as far as I know. The terms for betel and areca nut used at the Louisiade are very different, but the word for lime, hawi,§ possibly is allied to wav. In New Ireland the term for lime is emban; areca nut, boual; betel pepper, poque.|| At Dorey, New Guinea, areca nut is mereun; betel pepper, naiel; lime, affer. Possibly the Admiralty Island terms mbung and wav come from mereun and affer, and the islanders learnt the habit of chewing from thence. One or two further resemblances

\* See Vocabularies in "Hale's Ethnography and Philology of the U.S. Exploring Expedition." Philad., 1846.

Cheyne. "A Description of the Islands of the Western Pacific North and South of the Equator." London, 1852.

Marsden's Miscellaneous Works. London, 1834, p. 796.

Turner. "Tables of Languages in Nineteen Years in Polynesia." London, 1861. I have been unable to refer to v. Kittlitz "Denkwürdigkeiten auf einer Reise nach d. Russ. Am. Mikronesien u. Kamschatka, 1826." Gotha, 1858.

Lesson "Voyage autour du Monde." Paris. Pourrat frères, 1839. T. ii, p. 531 (numerals of Hogolu).

† "Korte Woordenlijst van de Taal der Aroe en Key Eilanden." H. C. Eijbergen. "Tydschr. voor Indische Taal Land en Volkenkunde." Batavia, 1864, p. 557.

‡ "Inlandische Plantennamen Bijeenverzameld en in Alphabetische Orde gerangschikt door, G. J. Filet. Naturkundig Tydschrift voor Nederlandsch Indie." Batavia, Lange and Co., 1859, 4de ser, 5de deel, p. 1.

§ McGillivray, *l.c.*, p. 317.

|| Lesson, *l.c.*, t. ii, p. 54.



between the Yap language and that of the Admiralty Islanders occur, but most of the words are very different. Woman is in Y., bepinn, in A., bibi; hair, Y., lulegenn and pui, A., langam pui; arm, Y., peei, A., bui. These are resemblances in words which are to a great extent peculiar in the languages. Words like niu, cocoa nut, and hama, pimaon, man, are widely spread sounds for the same meanings.

It is possible that the resemblances between the Admiralty and Yap languages may have no real significance, and would disappear were any but a mere fragment of the Admiralty Island language available for comparison, but it is at all events worth having attention drawn to it. The Admiralty Islands are distant at least 850 miles from Yap, and almost the whole of the Carolines, the Louisiades, New Guinea, and many other islands lie much nearer. The possible drifting of a Yap canoe to the Admiralty Islands might account for the similarity of words such as those for lime and betel in the two islands, but not for the peculiar method of counting, since different words are employed in the two cases.

The Admiralty Island language contains many words of direct Malayo-Polynesian affinity, and it is in these, and not in the other forms, which might be supposed to be of Melanesian affinity that it resembles the language of Fiji and of the N. Hebrides. The following table shows these Malayo-Polynesian words:—

*Comparison of Admiralty Island words with those of Fiji, Polynesia, and the N. Hebrides.*

	Admiralty Islands.	Fiji.	Polynesia.	N. Hebrides.
Man.. ..	hama.	tamata.	various similar sounds.	
Father ..	..	tama.	tama.	
Breadfruit ..	un.	uto.	ul (Rotumah) ulu Samoa.	ulu.
Water ..	wai.	wai.	wai.	wai (Annatom).
Cocoanut ..	niu.	niu.	niu.	
Ear .. ..	darinya.	talinga.	talinga.	talignan (Mallikolo).
Tongue ..	arime.	eama.		
Eye .. ..	manna.	mata.	mata.	
Tree.. ..	kau.	kau.	kau.	
Pig .. ..	po.	Similar sounds, such as puaka, in both Melanesian and Polynesian languages.		
Fish.. ..	uke.	ika.		

I have not been able to find resemblances between the other

words of the Admiralty Islands and those of Melanesia ; indeed they seem remarkably different, and even in the case of the few New Ireland words given by D'Urville\*, there seem to be no resemblances, nor do any occur in Rosenberg's† short list of words from Humboldt Bay, New Guinea, with which place Dr. von Willemoes Suhm thought the Admiralty Islanders were acquainted from their understanding the native name of the bay Telok lintju.

The word used by the Admiralty Islanders for iron, laban,‡ is interesting. It is not a modification of any European name, which they possibly might have heard on their first acquaintance with it, but they apply to iron the same word by which they denote the ore of manganese, which they use to blacken their bodies, and which no doubt has been very long in use by them. Hence laban means metal or substance with metallic lustre generally rather than iron.

With regard to the grammar of the language it may be remarked that there seems to be an absence in it of indication of cases in the substantive by means of prefixed particles. Batu hama is a man's head ; batu po, a pig's ; batu bue, a turtle's ; bue bu, turtles' shell. The terms were very frequently used during purchase of these articles, and no connecting particle was heard. In all Melanesian languages such particles exist.§

*Expression of the emotions.*—A native expressed *astonishment* and *admiration* at the vast size of our ship to me by holding up his hands vertically, with the palms facing forwards, and moving them upwards with a series of jerks as if to express the great height.

Another man put his finger in his mouth in expressing astonishment.

The natives, when talking in an eager excited manner amongst themselves, ran their voices occasionally into a kind of falsetto, producing a sort of affected girlish tone. I noticed the same peculiarity amongst the men of Api, New Hebrides.

*Rage.*—I had an opportunity of seeing the chief, Oto, in a furious rage. His upper lip was raised so as to show his teeth, which were clenched ; his brow was wrinkled, his eyes starting, and his head lowered and jerked towards the object of his wrath as if he meant to attack him with his teeth. He had a most horrible appearance.

\* "Voyage de Découverte de L'Astrolabé." D'Urville: Philologie. Paris, 1834, p. 143.

† Rosenberg, "Nat. Tydsch. voor Neder. Indie," xxiv, Deel., Batavia, 1862, p. 333.

‡ Labillardiere gives the word for iron, constantly uttered by the natives, as capelle. He must have mistaken the sound.

§ Von der Gablentz, *l.c.*, p. 256.

*Delight*.—A man clapped his hands to express his delight at being towed along rapidly in his canoe by the steam pinnace.

*Suspicion* and *surprise*, as when the natives saw the steam pinnace for the first time, was expressed by knitting the brows.

*Laughter* is as usual. In the young, in which the nostrils are usually considerably patent, it produces a curious effect. The upper lip is carried far up, and the septum nasi being carried with it, the patent nostrils, so conspicuous before, disappear, and reappear as the grin ceases.

*Grief*.—A man at Dentreasteaux Island nearly cried with rage and grief at not getting a hatchet like his neighbours. The muscles of his face, especially those round the eyes, were violently contracted, and twitched convulsively.

*Affirmation* is expressed by slightly jerking the head up, as at Fiji.

*Negation* is expressed by a most extraordinary and peculiar method. The nose is struck on its side by the extended forefinger of the right hand, the motion being as if the tip of the nose were to be cut or knocked off. This sign was invariably used to express refusal of proffered barter, or that a native had not got some article asked for. It is capable of various modifications. The quick decided negative is given by a smart quick stroke on the nose. In the doubtful, hesitating negative, the finger dwells on its way, and is rubbed slowly across the nose.

Attention is attracted by a sort of hissing sound, tsit tsit.

*Beckoning* is performed with the hand held erect with the palm forwards, and moved towards the person beckoned to.

On the first canoes approaching the ship, paddles were held up and waved to express friendship.

*Diseases*.—The fungoid skin disease (*Pityriasis*) so common at Humboldt Bay, the Aru and Ke Islands, was not at all common amongst the Admiralty Islanders. I saw only four or five cases of it. One man had a large tumour on the side of the face, attached to the ear; another a large tumour in the groin, which Dr. Crosbie, Staff Surgeon H.M.S. "Challenger," thought was a femoral hernia.

*Population*.—As far as we could conclude from the extent of our observations, the Admiralty Islands are very thinly populated indeed. The main island about Nares' Anchorage is entirely uninhabited, but a small settlement was found on the shore to the east, not far from the mouth of a small river. This settlement was apparently recently established. The natives must certainly at one time have lived or squatted at various spots all over the tops of the hill ridges, for the numerous clumps of cocoa nut trees on these ridges almost certainly mark a spot inhabited at some time or other. At present

the natives seem to confine their dwellings almost entirely to the small outlying islands, no doubt for purposes of protection from one another. Only two of the many small islands about Nares Anchorage, Wild Island and Dentrecasteaux Island, are inhabited. On Dentrecasteaux Island, in the fortified village, there are about 22 houses, and about 30 houses in the island in all. The population is probably about 250 or 300; that of Wild Island is greater, probably between 400 and 500. On one evening 42 adult men left the ship for Wild Island. I did not count more than 100 men and boys in canoes around the ship at any one time. Natives from some distance along the coast visited the ship constantly for barter, &c. On one occasion six canoes with about 65 men in them thus arrived in one lot. The population seems to be distributed here much as occurs generally in Melanesia (Waitz, T. III, p. 559), *i.e.*, the settlements are only on outlying islands, river mouths, and eligible spots on the coast, the inland districts being probably uninhabited. Gerland gives the general population of Melanesia as 142 to the square mile.

*Clothing.*—The only clothing worn by the males is a piece of bark cloth. This is about five feet long, and about six inches broad, and is in the form of a long tube or sac, open at both ends, being evidently drawn off the cut limb or stem of a tree entire. The cloth is white when fresh, but is often reddened by the natives. It is worn in the usual T-bandage way. The natives, when they have not this cloth on, wear a shell (*Ovulum ovum*), on the penis. The shell (Pl. xxiii, figs. 4, 5) has its inner whorls cut out, but not so as to widen the mouth very much, if at all, and a very sharp edge is left at the cut surface, and it is extraordinary that it can be worn without inconvenience.\* The shell is usually worn so that its narrow mouth flattens and nips the penis, just behind the glans, but it is not always in such a position. I saw one man alongside the ship who had the shell on in such a way that the prepuce was nipped over the middle of the glans, and the glans flattened out to an astonishing degree. Another with a penis of unusual size, had the shell embracing the end of the prepuce only, which was drawn tight forwards over the glans. The shell was very seldom worn underneath the cloth. When the cloth was put on, the shell was carried in a small bag hung round the neck. The shell was sometimes plain, often tastefully engraved with the usual zig-

\* Several authors, imperfectly following Labillardiere, have described the shell as having a hole bored in it (see Meinike, "Die Inseln des Stillen Oceans." Leipzig, P. F. Rohberg, 1875, 1er th. s. 145), and regarded it as a mere covering. Labillardiere describes appearances of ulceration of the penis as occurring in some instances from irritation caused by the shell. I observed no such condition.



The men wear armlets of *Trochus niloticus* shell, like those of Fiji, the Carolines, &c. They wear often seven or eight on each arm. The rings are neatly engraved with lines forming lozenge-shaped patterns, and form very effective ornaments indeed.

Circular plates, ground out of *Tridacna gigas*, are also worn either as breast-plates or on the front of the head. The discs are faced with plates of thin tortoise-shell, perforated with very elaborated patterns. Pl. xxxi, figs. 1, 2, 3.

Long style-like ornaments of *Tridacna*-shell are worn dependent from the nose. They are closely like those which, in the Solomon Islands, are worn stuck transversely through the septum nasi, but are here always worn dependent by a loop of twine. Ear and nose ornaments are also made of the teeth of the Cuscus of the islands, and crocodiles' teeth. The ears and nose septa are always perforated. Pieces of rolled-up leaf are worn sometimes in the ear (perhaps those of *chavica betel*).

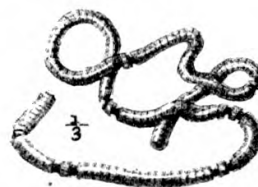
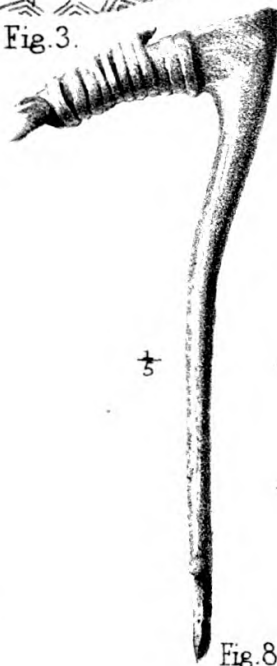
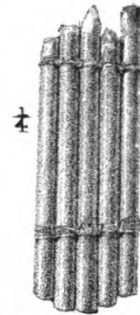
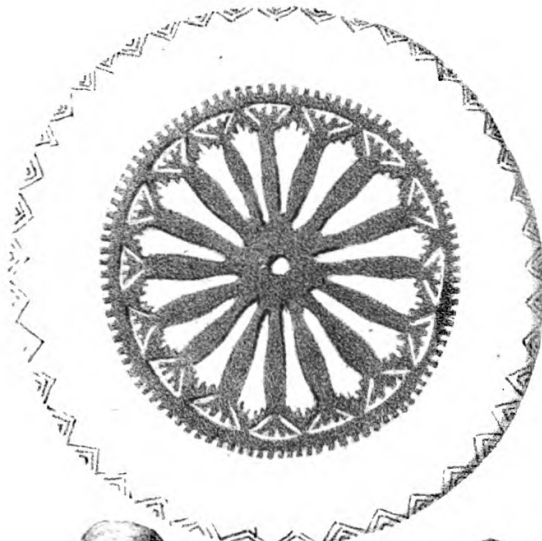
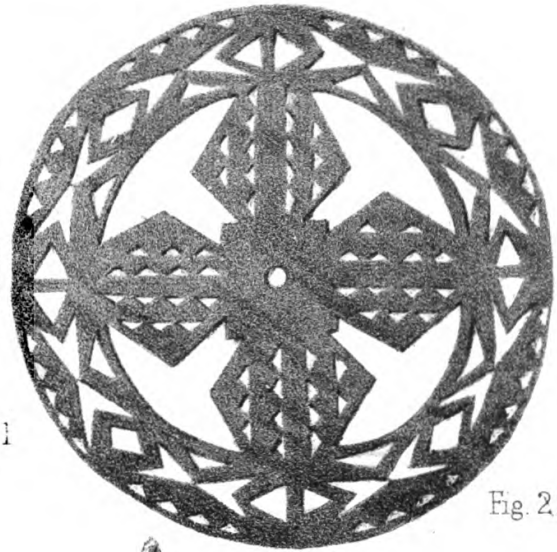
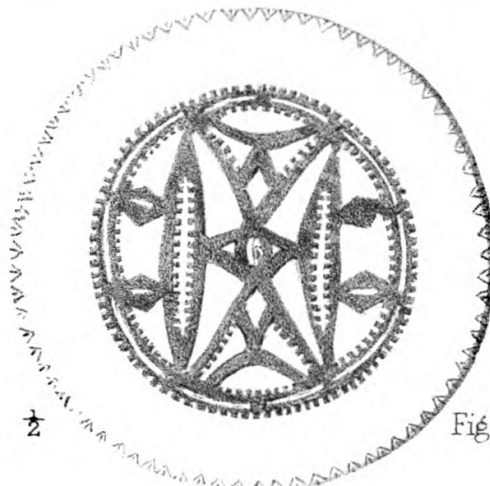
Necklaces of native beads of shell or cocoanut wood are also worn. Rings of tortoise-shell are commonly worn in the ears, as at Humboldt Bay. Both waist-belts and armlets of fine plaited work, with patterns in yellow and black, are common. These resemble those of the Aru Islands and Humboldt Bay.

Charms composed of human bones (Pl. xxi, fig. 7), usually the humerus, bound up with eagles' feathers, are worn suspended round the neck, and hanging down the back between the shoulders.

The body is seldom decorated with green leaves, as at Humboldt Bay. But leaves are occasionally worn, both hanging down the shoulders and on the arms. I saw them once so worn. Flowers, also, are seldom worn, but a single *Hibiscus rosa sinensis* flower is occasionally worn in the hair.

*Hair-dressing*.—The hair in the women, young and old, is cut short all over the head, and worn thus simply, without decoration of any kind. In the boys, the hair is short, I believe cut short, as in the women. Only the young men of apparently from 18 to 30, or so, wear the hair long and combed out into a mop or bush. In the older men the hair is always short. There are probably religious ceremonies connected with the cutting of the hair, for the very large quantities of bunches of fresh-looking hair suspended in the temples are probably not all, at least if any, taken from the dead.

The mop of hair in the young men, possibly the warriors (though numbers of adults still in full vigour had their hair short), is carefully combed out, often reddened, and greased. A triangular comb is worn in it, also plumes of cocks' feathers, fastened to hair-pins or plumes of the Nicobar pigeon, or the night heron. The mop of hair is sometimes constructed by



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means of an encircling band behind the head into a cylinder projecting backwards and upwards, and on this cylinder a sort of bonnet of a leaf of a dracœna, or some other plant, folded over it, is often worn. The hair is not so decorated or cared for as at Humboldt Bay. Nor, *à fortiori*, does it approach in elaboration the head-dressing of Fiji, but one native, who was especially hairy on the face and body, had his hair very carefully cut and plaited behind into four tails, ornamented with knots somewhat in Fijian style. I saw no instance of the powdering of the hair with white, as described by Carteret, nor of the hair of the body being plucked out. I believe that the eyebrows are shaved.

*Tattooing.*—The males are mostly marked with cicatrizations on the chest and shoulders. These cicatrizations are in the form of circular spots, about the size of half-a-crown. They are sparsely disposed over the upper part of the chest and shoulders in front, and sometimes are continued down the back in two lines leading obliquely downwards from the shoulders to meet one another about the middle of the back. I saw no other form of cicatrization than this of circular spots. The marking appears to be assumed only at adult age. No boys had cicatrizations. One full-grown young man of 20 years or so had the spots fresh and raw, apparently raised by burning.

Tattooing is almost entirely confined to the women, with whom it is universal. Two males, however, were tattooed. One, a small boy, had a simple ring-mark round one eye. The other, an adult, had rings round both eyes. These were, however, exceptional cases. The tattooing is not made up of fine dots or pricks, but of a series of short lines or cuts.\* The colour is an indigo-blue. The women are tattooed with rings round the eyes and all over the face, and in diagonal lines over the upper part of the front of the body, the lines crossing one another so as to form a series of lozenge-shaped spaces. The tattooing is sparse and scarcely visible at a short distance, and nowhere are the marks placed so close to one another as to form coloured patches on the body, as in Fijian women or Samoan men.

*Painting.*—The male natives occasionally had their chests and faces reddened with a burnt red clay. Sometimes one lateral half of the face is reddened, the other being left uncoloured. When vermilion was given to the natives they put it on cleverly and symmetrically in curved lines, leading from the nose under each eye, showing that they understood how to use it with effect. No doubt they paint themselves elaborately on festive occasions, in war, &c. They were fond of being painted, and

\* Probably made with obsidian flakes. I am informed that the Soloman islanders are tattooed with short cuts thus made.



two natives who were painted on board all over with engine-room oil-paint, yellow and green, in stripes and various facetious designs, were delighted.

The natives were also often coloured black, the colouring matter used being an ore of manganese which gives their bodies a metallic lustre, like that given by plumbago. The blacking was extended over the faces and chests. The old women were often blackened, and a group engaged in singing an incantation were all blackened. A man, who was possibly a priest, was always most carefully blackened over the face, arms, and chest, and possibly the blackening has a religious signification.

*Betel-chewing.*—The natives nearly universally chew betel, using the pepper-leaf areca-nut and lime together as usual. Some one or two men were observed who did not chew at all, and had no lime-gourds. The lime is carried in gourds of a different form from those used at Humboldt Bay, but perforated in the same manner at one end with a small hole through which the long spoon-stick is inserted. (Pl. xx, fig. 14). The lime is conveyed to the mouth with the stick. At Humboldt Bay ornamental patterns are burnt on the gourds, which are worn on the penis, but the lime-gourds are not decorated. Here all the lime-gourds are decorated, but all with nearly the same pattern.

The use of kaava and of tobacco is entirely unknown to the natives.

The principal vegetable food of the islanders is cocoanuts and sago. The sago is prepared into a farine, and preserved in hard cylindrical blocks about a foot in height, and six or eight inches in diameter. Specimens of the preparation have been placed in the Kew Museum.

A Taro-caladium esculentum is also eaten. It is cultivated in small enclosures adjoining the houses, but to a very small extent, and there are no large clearings or cultivation of any kind which leaves its mark on the general features of the vegetation of the islands as at Humboldt Bay or Api, New Hebrides, Fiji, &c. Plantains are grown sparingly round the houses. A bread fruit tree also grows about the villages. Several wild fruits, a hog plum, Spondias, a small fig, and the fertile fronds of a fern are eaten by the natives, and they have a sugar-cane of better quality than that used at Humboldt Bay. Young coconut trees are planted about the houses, and protected from injury carefully by means of neatly-woven cylindrical fences.

Young coconut trees are also planted with care on the uninhabited islands. (On these subjects, see my "Notes on the Plants of the Admiralty Islands.")

The natives have no yams (*Dioscorea*), nor sweet potatoes.

As animal food they have abundance of fish, their pigs, and the cuscus, which lives in all the islands. They also catch or kill pigeons, and the night heron (*Nycticorax*), and probably other birds occasionally, for eating, and they gather shell-fish, &c., on the reefs and in the mangrove swamps at low tide.

*Cooking.*—The flesh of pigs is roasted by the natives, and served for eating placed on a quantity of the prepared sago in large wooden bowls, which are often elaborately carved. The cuscus is also roasted, and is carried about cold, roasted whole with head, tail, and legs intact, ready for eating by tearing it with the teeth at any moment. I saw no boiling being done, but the earthenware pots made by the natives were evidently used for that purpose.

There are wells on the inhabited islands; they are at some little distance from the houses. They are shallow holes dug in the coral ground. They are kept covered in with sheets of bark, &c., and at each cocoanut-shell cups are hung up for drinking.

*Houses.*—The houses of the natives are built on the ground, and always close to the shore. They are all of an elongate beehive shape, occupying an oval area of ground. On Wild Island they are built of a continuous wall and thatch of grass and cocoanut-leaves or similar material. They thus look like long haycocks somewhat.

In Dentrecasteaux Island many of the houses have their walls built up neatly of wood cut into billets and piled as firewood is in Europe. The roofs are similar to those in Wild Island. They are supported on two stout posts rising from the foci of the oval floor in each house, and by a regular framework of rafters, &c. Shorter posts, placed along the walls at intervals, support the roofs at their periphery and the walls. Very often the ground is excavated to a depth of a foot or so beneath the house, so that the wall is partly of earth, and one has to step down to get into the house.

The dwelling-houses are mostly about 20 to 25 feet long, 10 to 15 feet in height, and about 10 feet in breadth. They have a low opening at one or both ends. To the main supporting posts of the roof are secured a series of wide horizontal shelves placed one above another, and on these shelves food, implements, &c., are kept. I saw these shelves in the women's houses. In some of the houses are also bed places, consisting of rough boards fastened against the side posts of the walls on one side, and supported by short special posts on the other. Arms, implements, &c., are suspended from the posts and rafters. The dwelling-houses have no further furniture. The posts are sometimes curved and painted, and occasionally a human skull is

fastened to a post, or placed under the thatch. Everything about the houses is rough, and there is no neatness as in Fijian buildings. About the houses in the villages bright-red dracænas are commonly planted as ornaments, representing the flower garden in its most primitive stage. The temples are houses exactly like the dwelling-houses, but larger—about 20 feet long, 15 broad, and 20 in height. Some have carved door-posts of wood, the respective carvings representing a male and female figure. The doors are closed by a kind of hurdle.

*Canoes.*—The canoes are more of the Polynesian than the Papuan form, *i.e.*, they have their bows and sterns low, and simply pointed, and not turned up and built so as to form figure-heads, as at New Guinea and the Aru Islands. The canoes' hulls are formed each of a hollowed trunk of a tree, with a single plank built on above it, and a gunwale-piece as a finish. The hollowed-out portion has slightly and equally rounded sides, and is not flat on one side and rounded on the other, as in the Carolines. The mast is stepped in the bottom of the canoe just in front of the horizontal outrigger platform. A pole of about similar length, with a natural fork at the top, is stepped against the foremost end of the cross-bar of the horizontal outrigger, and it and the mast being inclined towards one another, the mast is fitted into the fork at the top of the pole, and roused down with a rope-stay so as to remain firm in that position. The bow and stern are formed of small elongated blocks of wood built on to the ends of the canoe, and level above with the horizontal gunwale-piece. They are ornamented with a simple carved ridge or two, and with ovulum ovum shells, a single row of a dozen or so being fastened on either side. A horizontal outrigger extends from the middle of the canoe on one side, and is connected with a long canoe-shaped float, and opposite to it is an inclined shelf or deck supported on two or three stout projecting beams. A platform is formed with planks on the horizontal outrigger, and on the outer part of this a large store of spears and the mast, sail, &c., is kept. On the inner part the natives sit when not paddling, and stow on it some of their gear, food, articles for barter, &c. ; but most of these are kept on the inclined platform, where also some of the crew often sit. The inclined platform not touching the water, and opposite to the outrigger, seems to be something peculiar to the Admiralty Islands. For figures of a canoe see Pl. xxii.

A canoe which I measured was 39 feet in length, 1 foot 6 inches in breadth, and 1 foot 4 inches in depth in the centre. In girth in the centre from gunwale to gunwale round the bottom, 3 feet 7 inches.

Another canoe measured in length 33 feet. Length of the

solid built on stern and prow, 2 feet. Breadth of the same at the tip, 3 inches. The sloping outrigger or platform was inclined to the water at an angle of about 30°.

It was 6 feet in length, 4 feet in breadth, *i.e.*, in line of junction with the canoe.

The main horizontal outrigger had a length of 10 feet, the stout cross-bar connecting its component pieces being at half its length or 5 feet from the canoe. Its breadth was 4 feet 3 inches. The length of the outrigger float 16 feet. Breadth in centre 5 inches. Depth, 10 inches. Thickness, 4 inches.

Depth of the canoe in centre 1 foot 9 inches. Breadth, 1 foot 1 inch. Two kinds of paddles are used, steering paddles and paddling ones.

The masts are about half the length of the canoe, and are stepped just in front of the outrigger platform. The yards are of about three-fourths of the length of the mast. The mast sail is nearly square in form. It is hoisted to the top of the mast, and set so that one corner is uppermost. The opposite corner does not nearly reach down to the canoe, hence the square sail being high above the water has a very peculiar look when seen over the sea at a distance. As at all Pacific islands, apparently the outrigger platform is the place of honour, and the seat of the head man or chief. Oto, the chief of Wild Island, never occupied any other position, and never touched a paddle.

Small canoes with simple outrigger, holding one or two persons, are used for paddling about the reefs round the islands. The large canoes are manned by from 10 to 15 men.

*Swimming.*—The natives swim hand over hand. They never take a header in diving, but jump in after anything upright, sinking feet first with the body inclined forwards.

*Fishing.*—Long sein-like nets are used for fishing. These nets are probably the property of a community, for they are kept hung up in the temples. I saw one about a fathom in depth and of very considerable length. Hand nets fixed on elbow-shaped frames of wood are also used. Stake nets are used, and lines of stakes are conspicuous objects just off the shore near the villages. I did not see whether the long nets were used attached to the stakes. A set of stakes was seen in the shallow bay near Wyville Point on the main island. Above the stakes on the top of a hill ridge is a clump of coconut trees. There is no village now at this spot; but it was probably once the site of one.

Fish-hooks are used made of Trochus shell (Pl. xxi, fig. 12), all in one piece. They are of a simple hooked form without barb. The natives did not seem to care for steel fish-hooks, and apparently did not, at first at least, understand their use.



It is possible that they have never found out the plan of using bait on a hook. All Polynesian and Melanesian fish hooks which I have seen are of the nature, of artificial baits of bright nacre, &c., imitating small fry in the water. If the natives did not understand the use of baits, it is no wonder that they despised European fish-hooks.

*Technical handiness.—Pottery.*—Large cooking pots of thin earthenware are made by the natives. The large pots are mostly nearly spherical in form, with a narrow neck. Some pots with widely open mouths are also made. Some of them have a pair of simple ring handles neatly turned over on either side. The pottery is not glazed, and is, as far as I saw, almost devoid of ornamentation.

As household implements the natives have likewise large wooden bowls in which they serve up their cooked sago. The men carry gourds full of chunam, with a small hole only at one end, fitted with a carved stick or spoon, for betel chewing. The cloth worn as a T-bandage by the men is made of the inner fibre of the bark of some tree (possibly *Thespesia populnea*), which is removed entire from the cut limb as a sac open at both ends, and 6 feet long. The natives have no regular tappa, *i.e.*, cloth in which numerous strips of bark fibre are welded together side by side. The cloth is sometimes coloured red, but never ornamented with patterns. Good cordage of bark fibre is plentiful, also string, and netted or plaited bags, like those of the Humboldt Bay men.

Waist-belts and armllets (Pl. xxi, fig. 6) are worn made of very finely plaited shreds of Pandanus leaf, or some such substance, of bright yellow and black, in patterns resembling those of the New Guinea and Aru Island natives, and those of the Carolines, although of course far inferior in workmanship to these latter. Rhizomorpha, though it is abundant in the woods on the main island, is not used for the manufacture of ornaments or dress, though it is in Fiji and Humboldt Bay.

The natives possessed considerable numbers of well made and carefully finished models of their canoes of various sizes. It is difficult to see what inducement savages can have to make such models. Sometimes, but rarely, chunam boxes are used which are made of a bamboo joint with a lateral branch retained inside, and made into a loop so that the box hangs as an armllet.

The knives are usually carried in the hair, but I saw one man with a knife in a band on his left arm, as cassowary bone daggers are carried at Humboldt Bay.

*Metals.*—The natives have no metals of their own, excepting the ore of manganese, with which they blacken their bodies. This ore they call "laban," and they have adopted the same term for iron.

They appear unable to work iron at all, since they refused any pieces not of a form immediately applicable to use. They preferred a small piece of hoop iron to a conical mass of iron weighing several pounds.

*Implements.*—The tool in most constant use by the natives is a small adze (Pl. xxi, fig. 8), consisting of a natural crook of wood with a *Terebra maculata* shell bound on to it, the shell being ground down until only one lateral half of it remains. Such small shell adzes were abundant enough still, but in most cases the shell had been replaced on the handle by a piece of hoop iron. Every man almost carried one of these small adzes hung on his left shoulder. From the houses large adze blades made of *Tridacna* and *Hippopus* shell were obtained. (Pl. xxi, fig. 9). They resemble somewhat those of the Carolines, but are very roughly made indeed, only the actual edge being ground. None were seen mounted, and they appeared to have gone out of use. Axes made of hard volcanic rock were also obtained from the houses. They have ground surfaces and are triangular in form, and resemble the stone adzes of the Solomons, but are mounted in an entirely different and very primitive way, as axes, being merely jammed in a slot cut in a club-like billet of hard wood near its end. (Pl. xx, figs. 11, 12). Only one specimen was obtained mounted. These stone implements did not seem plentiful, and the natives valued them highly and required a high price for them; and when I at first showed them a Humboldt Bay stone axe, to try and explain that I wished to buy such from them, they were immediately anxious to purchase it themselves. The chief had a very fine large one, with which he would not part.

The heads of the obsidian-headed spears serve as knives, being cut off just below the ornamented mounting which acts as a handle.\* Long flakes of obsidian are however also mounted specially as knives in short handles. (Pl. xxi, fig. 10.) They are excessively sharp, and used to shave with even, but are of course very brittle. Pieces of pearl oyster shell, usually semi-circular in shape, ground down thin to an edge on the rounded border are used constantly as knives to cut cordage, &c. Knives made of the spine of a sting ray (*Trygon*) are also used. Large ground pearl oyster shells are used to dig with.

*Weapons.*—The Admiralty Islanders have no bows, slings, or throwing sticks, ulas (Fiji), nor clubs. Their only weapons are lances of several kinds, which are thrown with the unaided

\* This is an interesting instance of the same instrument serving different purposes in a rude condition of the arts, other cases of which have been dwelt on by Colonel Lane Fox, F.R.S. Lecture "On Primitive Warfare," "Journal of the Royal United Service Institution," 1867-9.

hand, not even with a cord as in New Caledonia. They have no spears like the Humboldt Bay men, Fijians, &c., to be used at close quarters, and no shields.

The principal weapon is a lance formed of a small, usually flexible shaft of tough wood, a natural stem often, with the bark trimmed off, to the thicker end of which is attached a heavy head of obsidian, which, in size, appears out of proportion with the light shaft. The obsidian lance-head is usually of this conical form, but some have a knife-edge in front, and some are irregular. (Pl. xx, figs. 1, 4, 5, 6.) They are shaped by bold wide flaking. The points and edges are often slightly re-chipped in order to sharpen them, but the original faces and angles are never worked up for the sake of symmetry or balance, but remain rough. Many lances have their edges and points sharp and perfect, though formed entirely by the original flaking. The hinder borders of the lance-heads are simply rounded. They are secured in a socket of wood attached to the end of the shaft by means of a cement, and by being bound round with fine twine. The socket is hollowed out in a separate piece of wood, and in order to facilitate the scooping-out process two slots are usually cut in the faces of the socket. (Pl. xx, figs. 7, 8.) The shaft of the lance is spliced into a V-shaped slot in the lower part of the socket piece. A rounded strengthening piece is retained in the socket piece, between the actual socket and the narrowed part of it, in which the slot for the shaft is cut. A very hard and solid gum is used to bed the lance-head in its socket, and the shaft in its slot, and to mass together the turns of fine twine which secure the whole. In some lances the entire socket piece and the turns of binding twine are concealed by an even thick layer of the gum (Pl. xx, fig. 2), whilst in others the gum is used more sparingly, and the turns of twine and wood of the socket piece are exposed to view. In the former class of lances ornamentation is effected by patterns being incised in the layer of gum, and these have no coix lachryma seeds attached to them. In the latter class the upper turns of twine are arranged in diagonals, &c., separating the ornamental colours, and the actual wood of the socket pieces is carved and coloured. This gum employed is probably the same as is used for caulking the canoe seams, which is obtained from a brown ovoid fruit about the size of a goose's egg. The efficiency of the fixation of the stone head of the lance evidently depends mainly on this gum. The wood of which the socket-pieces are made is hard when dry and old, but probably much softer when cut in the fresh condition.

Many of the lance-heads are of most irregular forms, remaining just as they happened to flake out in manufacture. Some

Fig. 1.

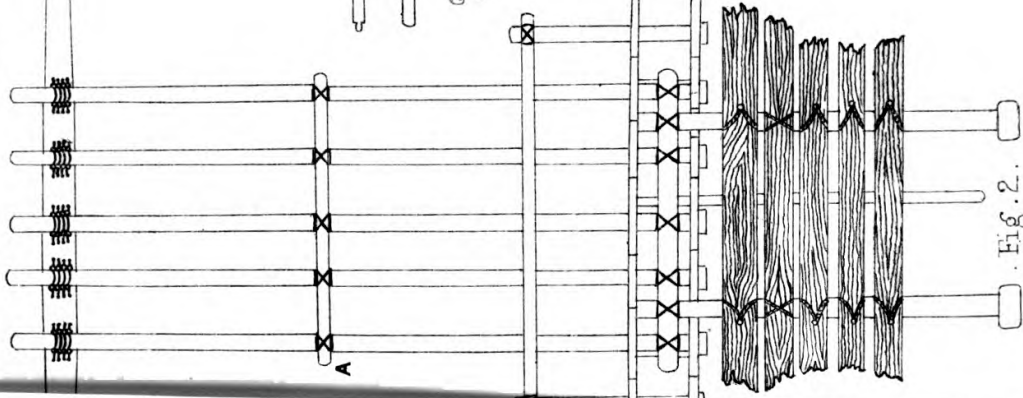
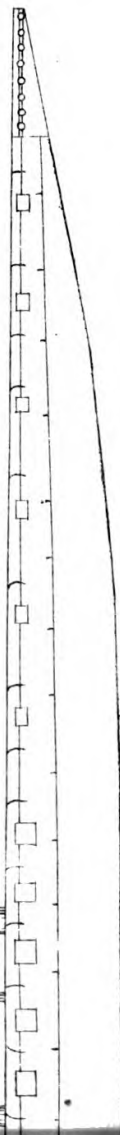


Fig. 2.

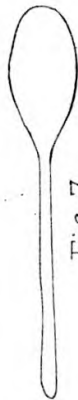


Fig. 7.



Fig. 6.

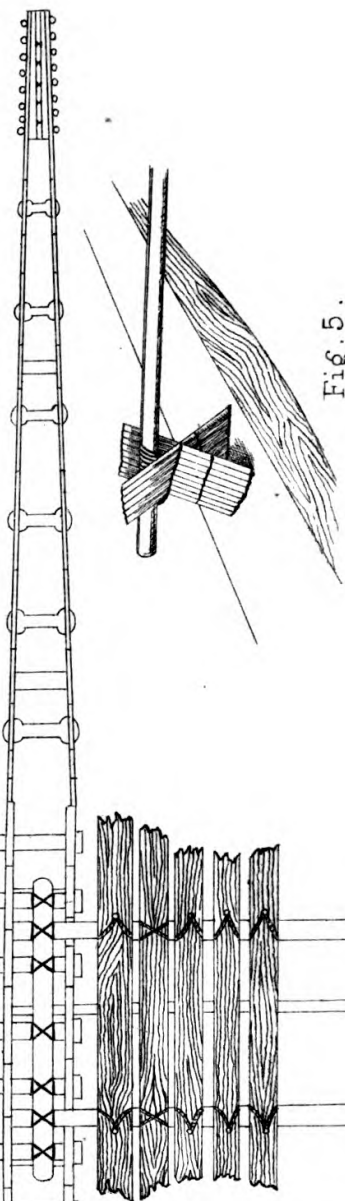


Fig. 5.





are thus extraordinarily long, some curved, &c., &c. They are most formidable weapons, especially to a naked skin. The shaft is an instrument merely for throwing point first a very heavy, excessively sharp pointed, stone, which must cut its way through everything. The socket pieces of the lance-heads are elaborately decorated. Some lances have a lozenge-shaped perforation in the socket piece beneath the head. Some have small tufts of cuscus hair fastened on to them just beneath the head. Two such which I obtained had these tufts wet with some oily substance, but apparently not poison. The heads of the javelins are kept covered with a conical sheath of dried plantain leaf made to fit. (Pl. xx, fig. 3.) The natives possess an enormous store of these weapons. They have piles of them lying on the outriggers of the canoes. On shore the men commonly carried two or three in their hands. In a dispute alongside the ship one of the lances was instantly snatched up and made ready. They are used for hunting wild pigs as well as for fighting. The natives pointed to the mountains of the main island as the source of the obsidian. They parted with the lances readily, and the material must be abundant. The lances are thrown in the usual manner, grasped by the naked hand, being first made to quiver by a shaking motion of the hand for some seconds.

Some of the lances have shafts of a light but rigid reed. Some have large carefully cut sharp-pointed heads of hard wood. The wood is painted of the same colour as the obsidian, and at a short distance looks exactly like it. Some of the wooden heads are longer and larger than any of the stone ones. I several times bought such, thinking I had before me excessively fine obsidian weapons. (Pl. xx, fig. 10.)

Besides the larger lances, small darts are used, having pliant, very light stems about a yard long, and heads of small sharp chips of obsidian, often of very irregular form, apparently the refuse chips from the larger weapons. These darts are carried about done up in bundles of a dozen or so. A guide whom I took on Wild Island carried such a bundle on his shoulder all the way.

Another kind of dart has the stem of reed and a head of hard wood of a somewhat conical form, with a knob at the base of the cone. The darts are of the same length as the others, and are likewise carried in bundles. They are, I believe, thrown overhand, being held by the hinder extremity, and swung round vertically.

I saw no other weapons. There are no defensive weapons, shields, &c. Though there is an enormous abundance of wild pigeons at the island the natives have invented no means of shooting them. They can only climb the trees and catch them at roost, or knock them off the nest.

*Art Carving, &c.*—The natives are extremely expert in wood carving, and show most remarkable taste in their designs. The lance-heads are often carved. (Pl. xx, fig. 1.) The carving taking the form mostly of incised patterns, the effect being heightened and beautified by the use of black, white, and red pigments.

The white coral lime, the red burnt clay, the black, possibly charcoal of some kind. The guardian deities carved on the door-posts of the temples and posts of the houses are ornamented also in the same style. Similar patterns are graved on the ovulum shells and armlets. (Pl. xxiii, figs. 4, 5.) These patterns are all modifications of the lozenge or diamond, and without curves; but besides this, various patterns are burnt in upon the surfaces of the chunam gourds, and in these the lozenge is combined with various curves. (Pl. xx, fig. 14.)

An entirely different class of carving is that of the large wooden bowls which are used for eating out of. These resemble somewhat those of the Solomon Islanders, being, like them, blackened, but in the present case they are most remarkable for their graceful forms and delicately carved handles. The bowls are worked with wonderful precision, considering the tools available, to the circular form, appearing as true as if turned. They are widely open, and are provided with a pair of curved handles, which rise above the level of the tops of the bowls, and are sometimes ring-like, sometimes cut in a delicate spiral. They are always ornamented with perforated carving, and often bear a pair of crocodiles, or roughly executed human figures on their outer margins. The bowls stand always on four short legs, like the Fijian kaava bowls. They never have a circular bottom, no doubt because there are no level surfaces for them to rest upon, and because the idea is derived from a four-legged stool.

A still more remarkable appreciation of symmetry and fertility in design is shown in the patterns which are cut upon the circular plates worn sometimes on the forehead, oftener on the breast. These consist of circular white plates ground down out of *Tridacna* shell, with a hole in the centre for suspension. On the front of this white ground is fastened a thin plate of tortoise-shell, which is ornamented with fretwork, so that the white ground shows through the apertures. The patterns are of endless variety, *no two being alike*, and show all kinds of combinations of circles, triangles, toothing, radiate patterns, &c. The shell background is often graved also at its margin. Symmetry is evidently striven after, but with the appliances available the execution falls short here and there of the design. Nevertheless these ornaments are very beautiful. (Pl. xxi, figs. 1, 2, 3.)

A regular style of ornamentation is preserved for each class of ornaments, weapons, &c. Thus I saw no ovulum shells with

curved patterns like those on the gourds. Both these and the bracelets bore simple patterns of diagonal lines graved and blacked. The spears, also, never bore curves.

The canoes are ornamented with red and white colouring, the ends of the cross pieces, &c., being picked out with paint, but they have no carved prows as have those of Humboldt Bay and Dorey. The sticks or spoons with which the chunam is carried from the gourds to the mouth are often richly carved in the handle. The skulls of turtles suspended in the temples are ornamented with patterns painted in the three usual colours. The human skulls are likewise decorated, and some have eyes of pearl shell inserted into the orbits on a background of black clay.

*Music.*—The musical instruments used are the conch shell, perforated on the side as usual, a very simple Jews'-harp, made of bamboo, of the usual Melanesian pattern, pan pipes, of three to five pipes of different lengths (the New Hebrides natives have pan pipes with three pipes), (Pl. xxi, fig. 5,) and, lastly, drums. These latter are hollowed out cylinders of wood with a narrow longitudinal slit only opening to the exterior. Some of them are small,  $1\frac{1}{2}$  foot or so in length, and are carried sometimes in the canoes. The larger drums I saw only in the temples. They are cylinders, 4 feet in height and  $1\frac{1}{2}$  foot in diameter, and are fixed upright at the entrances of the temples. There were four such at the four corners of one temple. The slit in these is not more than 4 or 5 inches broad, and I do not understand how the cylinders are hollowed out by the natives. Very similar drums exist at the New Hebrides, at Efate, *e.g.*, where they are stuck upright in the ground in circles.\* They seem to be an improvement on the Fijian death drums, which are simple widely open troughs, and a step towards the very narrow mouthed wooden drums or bells of the Japanese. The natives seemed to have no idea of tune, they blew the notes on the pan pipe haphazard. The chief of Wild Island blew a child's tin trumpet with evident satisfaction. He appropriated it from one of his subjects, to whom I had given it, and came off to the ship standing on his canoe platform and blowing it with all his might. The drums were constantly sounded on Wild Island often in the afternoon.

*Dancing and singing.*—The women, both old and young, dance, moving round in a ring with a quick step. The men signified that they danced too, but were not seen to do so. I did not see dancing myself.

I saw some old women performing a kind of incantation.

\* "A Year in the New Hebrides," by F. A. Campbell. Melbourne, George Robertson, 1873, p. 111, figure Fili Id Efate.

They sat on the ground in the yard of one of the houses, four of them sitting facing one another in a circle, whilst two sat outside the circle. They had their faces and bodies blackened. They uttered at regular intervals a chant, ai aiai aiai aiai aiai umm. The commencement was shrill, in a high key, and the terminal umm was sounded low, with the peculiar humming lingering sound, just as in Fijian chants.

*Trade.*—The Admiralty Islanders had possibly traded with Europeans before our visit within tolerably recent time.\* They came off at once to the ship in the utmost hurry, in a strong breeze, thinking probably that she was not coming into harbour, and they held up all sorts of articles of barter. They brought off their tortoiseshell ready done up in bundles, and they knew the relative value of various qualities. The chief had a large European axe, which I believe was not procured from the ship, and many natives had hoop iron adzes. Nevertheless they must have had very little experience indeed, otherwise they would not have taken old German newspapers freely as trade as they did at the first, thinking them to be fine cloth, until rain had fallen. They soon took to making trade goods, shell hatchets, and models of canoes, *e.g.*, which were as badly made as our own trade gear. They understand the rules of barter well, and, as in Labillardiere's time, seem anxious to pay their debts. They pretended, with many expressive grimaces, to be unable to bend pieces of tortoiseshell which they offered for sale, and of the thickness (*i.e.*, fine quality) of which they wish to impress the purchaser. They often thus pretended to try ineffectually to bend very thin pieces indeed, and fully entered into the joke when we did the same with thin bits of hoop iron. They always required to see the hoop iron tested by bending before accepting it. They must trade with one another regularly. They made signs that the ore of manganese which they use came in canoes from a distance eastwards. The native canoes are so seaworthy, and the natives so enterprising and fearless in going to sea, that possibly articles may pass by barter from island to island here over wide distances, even to New Hanover, New Britain, &c.

The natives took all the hoop iron from us which they could get, evidently receiving more than they could use, no doubt intending it for future barter. My colleague, the late R. von W. Suhm, believed that the natives on Wild Island recognized the native name of Humboldt Bay (Telok Lintju), and pointed in

\* There are specimens of Admiralty Island lances and gourds in Col. Lane Fox's collection and in the Christy and British Museum Collections. These have been obtained from Cape York, and no doubt were taken there by tortoiseshell and pearl shell traders who had visited the Admiralty Group.



the direction of New Guinea, having knowledge of the place. Hence he thought that they visited the place to trade. I think, however, that he must have been mistaken. The Admiralty Islanders could never make a stand against a race armed with bows; they would be cut off at once; and had they once seen bows and arrows they would surely have adopted them. (The Australians have not done so at Cape York, though the Murray Islanders come to trade there and bring bows and arrows with them, but then they are far lower in intellect, and have the throwing stick.) Many other circumstances concur against the above hypothesis.

The Admiralty Islanders were anxious to trade with us to the very last, and followed the ship as she left the anchorage, with that intent.

*Position of the women.*—The women are in a state of subjection, as at Fiji. Their favours were offered us by the men, namely, by the Chief, Oto, who pressed the matter, and by others. This is unusual amongst Melanesians, and rather Polynesian. The women have houses to themselves, *i.e.*, there are special women's houses. Whether these are only for unmarried women or not I do not know; I think not. I saw an old woman and a young mother with a new born child in one, which I think was a regular woman's house. The unmarried men have special houses. Polygamy is practised. Oto, the Chief, told R. von W. Suhm that he had five wives. I do not imagine that the aged are killed. I saw several aged miserably lean hags, one especially emaciated and disgusting to look upon, and also old men. On one occasion amongst a party of 42 natives in nine canoes there were two old men, one with grey hair, the other somewhat infirm. Children are carried by the women generally on the back, but sometimes on the hip astride.

The Chief, Oto, pointed out one youth as his son, and took away presents which were given to him.

*War.*—The village at Dentrecaesteaux Island is fortified. A palissade about ten feet high stretches right across the corner of the island, where the village lies shutting this off from the landing place. The path to the village led through a gate-like opening in the palissade, which seemed in not very good repair. The palissade was without ditch or embankment. The village itself was surrounded by a second wall, low, and crossed by styles. At Wild Island there was no fortification. The natives inhabit the small outlying islands, probably for protection from attack. Very few natives were seen living on the main land, and these few at one spot only. Former places of dwelling on the main land appear to have been abandoned. We saw no actual fighting, but in a quarrel about some barter alongside the ship, Oto,

the Chief, attempted to strike a native in another canoe from a distant small island. He was prevented by his own men, who held him back. The opposite party at once got their spears ready, and threatened him with them.

I saw no traces of cannibalism, although an anonymous correspondent of the *Times* newspaper, writing from the ship, appears to have thought that he saw evidence of it. The inhabitants of each small island appeared to be under a separate Chief, and quite independent of each other. The Chief's power seemed to depend on his fighting qualities. The Chief of Wild Island had considerable power. He ordered all the canoes away from the ship on the first evening of our arrival, on our anchoring. He took articles away from men to whom they were given, and made arrangements for each man of a party getting a hatchet, &c. He never paddled himself, and he pushed canoes out of the way when approaching the ship. He, however, clamoured with the rest for presents and trade. He had no ceremonious respect paid to him at all.

*Religion.*—There are several temples in Wild Island. They have already been partially described. One such had as door posts a male and female figure roughly carved in wood, but elaborately ornamented with incised patterns and colour. Between the legs of the female figure was represented a fish. There are in the same figure black patches with white spots, which appear to mark out the breasts. The hair in both figures is represented as cut short, and thus the mop of hair of the warrior is not represented in the male figure. No clothes, *i.e.*, T-bandage of bark cloth, bulla shell, nor ornaments, such as earrings, nose ornaments, breast plates, &c., are indicated on the figures, and the male figure has no weapons. The ears of both figures are, however, slit for earrings, and it is possible that a zone of diagonal ornament passing round the body of the male figure represents the plaited waistbelt commonly worn. On the upper part of the chest of the male figure are a series of circular white ring marks on a black ground, which evidently denote the circular cicatrizations present in all the male natives. In the female figure the tattooing is possibly intended by a wide patch of diagonal ornamentation upon the abdomen, as also by lines drawn round the eyes, and not present in the male figure. In the male figure one lateral half of the face is painted white and the other red. The arrangement of paint in this way is in vogue amongst the natives here as at Fiji. I saw one Admiralty man with one side only of his face reddened, and in Fiji at dances it is common to see natives with one lateral half of the face blue and the other red or black. The penis of the male figure is represented as erect. All the ornamentation on the

figures is of the common zigzag pattern, and formed of a series of lozenge and triangular shaped spaces. The patterns are incised, and coloured of three colours, black, red, and white. The parts coloured white and red are cut in, whilst the patches of original surface left in relief are blackened. Guardian deities such as these are common in Melanesia and Papua, as is also their combination with representations of fish. Careful coloured drawings of the figures were made by Mr. J. J. Wild, artist of the Expedition, and my description of the figures is derived from these drawings.

Another temple had no figures but the four large drums already mentioned. To the rafters and supports of the roofs of these temples inside are fixed up quantities of skulls of pigs and turtles, all arranged regularly, with the snouts downward. The skulls were decorated with colours. With them were suspended large quantities of balls of human hair, some evidently old, others of recent date. These balls or masses of hair were suspended sometimes in networks of string, sometimes in small receptacles of a very open basket-work. Both the bunches of hair and the skulls appeared often to have regular owners, though dedicated in the temple. The natives parted with both freely for barter.

The hair is probably cut off as a religious ceremony. Some men had the hair recently cut off. (See on hair dressing *supra*.) A dugong's and a porpoise's skull were produced for barter. The natives evidently treasure skulls of all sorts. Human skulls are likewise kept stuck up in the thatch of the houses. At Dentrecaesteaux Island, one having an ornament in the nose was suspended to the front of a house over the doorway by means of a stick thrust through holes in the two squamous parts of the temporal bone. This skull the owner could not be induced to part with, but usually they were sold pretty freely, and they were in considerable abundance about the houses, but often much shattered. A dozen only were purchased. The natives are very superstitious. When a group was being photographed, the old women put up two long poles transversely between themselves and it in order to protect themselves from its evil influence. The chief and others were abjectly frightened at a squeaking doll, and signed for it to be taken out of their sight, and expressed a similar fear of goats which we offered them, saying the women would be afraid of them. When I began sounding the big drums in the temple, my guides hastily drew me out of the place in terror, and made signs that the people from the chief's group of houses would come and cut my throat.

A mystery was always made about the principal temple containing the images. Sometimes it was freely open, at others closed, and I was warned back by the chief on two occasions

when I attempted to enter. The temple with the drums was used for the suspension of the large fish nets, no doubt common property.

The charm, made of a human humerus wrapped round with feathers (Pl. xxi, fig. 7), and worn hung round the neck, was taken in the hand and flourished about, dashed against the ground, and used apparently to swear by during a violent harangue of one of the chief men of Dentrecasteaux Island, who wanted possibly to incite the natives to attack our boat, or to try and capture a much coveted bag of trade gear in it. These feather and bone charms are sometimes made of four human ulnar and radial bones, sometimes of hand bones, and one contained the bones of a large bird, probably the eagle (*Pandion haliaetus var leucocephalus*). It is a curious fact that one such charm which was purchased contained an imitation head of a human humerus, cut in wood. Possibly the owner intended to deceive his enemies by this artifice. Some of the officers told me that they made the natives readily understand when they wanted to visit the temple by pointing upwards. It would appear thus that the gods or religious influence is supposed to reside above, an idea still surviving amongst Europeans. The only appearance which I saw of a religious ceremony was the chant of the old women. One man who came off to the ship often, invariably with his body blackened all over with peroxide of manganese, was thought to be a sort of priest. He wore a narrow fillet round his head, with an ovulum ovum shell suspended from it on one side.

*Burial.*—The dead are buried in the ground. Two different natives, one on Dentrecasteaux Island, and the other on Wild Island, explained to me by signs in an unmistakeable way, that the skulls put up about the houses were obtained by burying bodies in the earth, and afterwards digging them up again. The value set upon the skulls and bones as ornaments, and probably also superstitious motives, are no doubt the reason why no marks of burial were seen. No mark is made probably, for fear of the bones being stolen. Two at least of the skulls procured were those of females.

*Character.*—The fact that some of the men restrain themselves and abstain from the use of betel, seems to be a proof of considerable strength of character. I gave a hatchet to a guide at Dentrecasteaux Island as pay, according to promise. He seemed grateful, and presented me with his own shell adze in return, unasked, and he made signs that the others had got enough, and that we were not to give more away; that we were being swindled. The natives seem extremely passionate. Oto was quite furious with rage when he attempted to strike the other





Fig. 1.



Fig. 2.

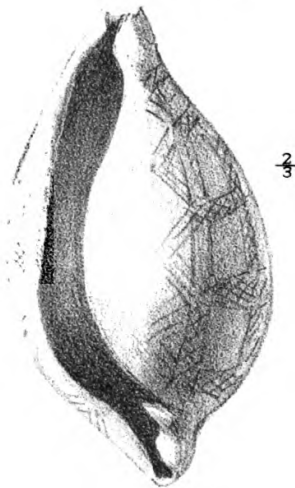


Fig. 5.



Fig. 3.

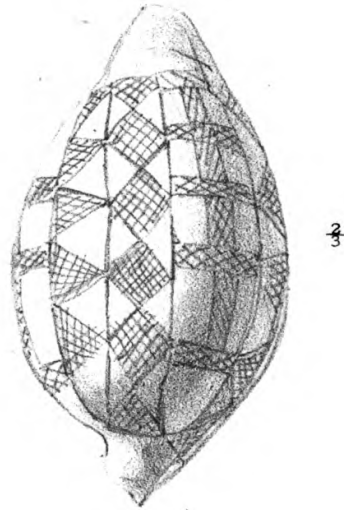


Fig. 4.

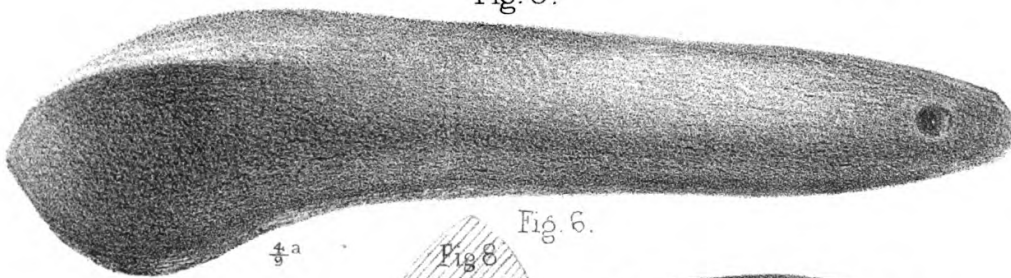
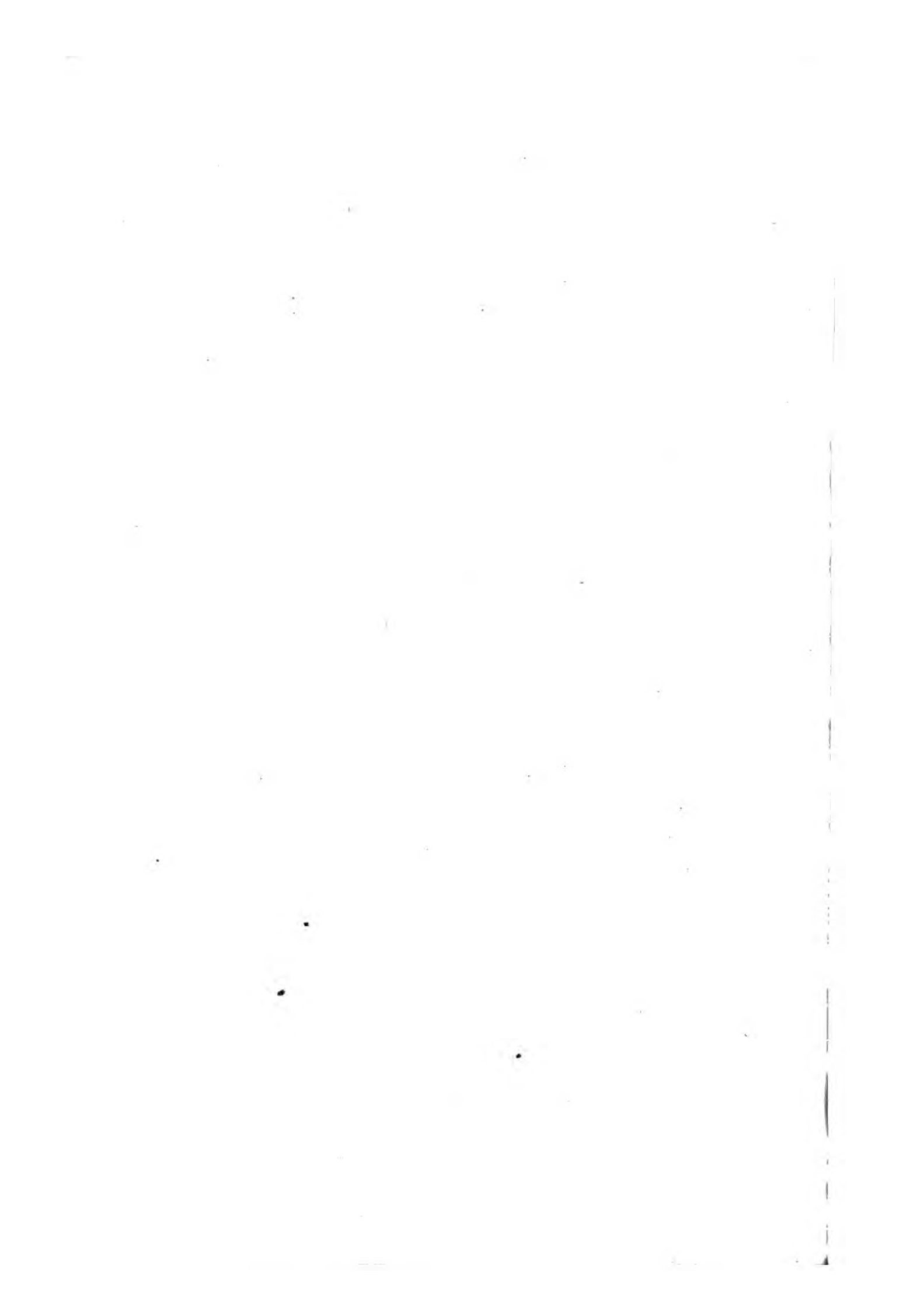


Fig. 6.



Fig. 7.



man. The natives when we saw them in the canoes alongside the ship, as described, were of course, in a highly excited state, the value to them of the iron procurable from us being hardly to be overrated.

The natives are quieter than the Humboldt Bay men. There was comparatively little noise when their canoes were alongside. There was no combined shouting. The natives are rapacious and greedy, and very jealous of one another. The chief showed all these traits in the highest degree. They were ready enough to thieve, but not so constantly on the look out for plunder as the Humboldt Bay Papuans.

*General.*—The natives showed no great astonishment at matches or a burning glass, apparently understanding the latter, and motioning that the operator should wait until the sun came from behind a cloud. Looking-glasses were not at all understood. They were tried in all positions, as ornaments on the head and breast, for example. The natives seemed to see no advantage in seeing their faces in them. In Labillardiere's time they broke them to look for the picture, or man inside. Tobacco and pipes were not understood. Biscuit was eagerly taken and eaten. Great wonder was expressed at the whiteness of our legs and chests by the natives, and the women at Dentreasteaux Island crowded with great curiosity and astonishment to look at a white arm or chest. The natives no doubt thought our hands and faces only painted white, and took our negro on board for a man who had not got the paint on.\*

I am convinced that both the Humboldt Bay and Admiralty Island natives believed that we bought their weapons in order to use them as such. They frequently, when offering spears, &c., showed by signs how well they would kill. They are fond of ornament, though they have not devised anything like the amount of decorations which are worn by the Humboldt Bay men. The chief, Oto, went about with three bright-coloured cricket belts round his middle, but he provokingly wore a sun helmet, given to him by the captain, in order that he might readily distinguish him amongst the crowd, by proxy.

The natives of course did not understand our steam pinnace, nor apparently see in the fire the cause of motion. They came up to the cutter when sailing to get a tow for their canoes, expecting to see her go ahead, head to wind, in the same style.

The natives were much frightened at first at the sound of a gun, and astonished. A guide who went with me when I was shooting birds, stopped his ears at first, and bent down trembling every time that I fired. The natives were, however, not much

\* Dark natives, I believe, often take white men for a race of Albinos, which occur not uncommonly amongst Melanesians at least.

scared by our firing our ship's guns and rockets at night, and came off to the ship next day to trade.

Canoes full of men leave the small inhabited islands every day, and go fishing, or visit the main island in search of fruits, shell fish, &c., whilst the women seem to confine themselves to their small native islets.

*Changes in the habits of the natives in 100 years.*—109 years have elapsed since Carteret discovered the Admiralty Islands, and 84 years since the visit of Dentreasteaux, yet the natives seemed to have changed very little indeed in their habits.

It is remarkable that Labillardiere states that the natives observed by him chewed no areca nut, and that none had their teeth discoloured by it. Lime and betel pepper leaves were used for chewing, but only the chiefs possessed these articles of luxury. Nevertheless Carteret specially mentions betel nut as chewed by the natives whom he encountered. The use of the nut has possibly been introduced into the northern part of the main island, since Labillardiere's time, but is ancient in the southern islands.\*

Carteret does not mention the use of the ovulum shell, but mentions the obsidian-headed lances, earthen pots, &c. The natives of New Ireland preferred iron already in Carteret's time to any other article of trade, but he does not mention whether the Admiralty Islanders were acquainted with iron.

Labillardiere found the Admiralty natives clamorous for iron, and Dentreasteaux thought it probable that they had learnt to know its use from Capt. Morelle's frigate, which preceded him shortly in his voyage.

The natives appear, as was to be expected, less suspicious of strangers than formerly. Their weapons, &c., are just the same as they were 100 years ago, and even the curved ornamental pattern burnt upon the chiman gourds is identical with that in vogue at Labillardiere's visit. When Dentreasteaux approached the islands the canoes came off just as to the "Challenger," and stood off the ships some distance, whilst the chiefs hailed with words. Communication was opened with Dentreasteaux's boats by a slave being driven by repeated blows of a stick, administered by the chief, to swim to the boats with cocoa-nuts, as an *experimentum in corpore vili*. In one respect only besides that of the areca chewing the natives seemed to have altered, and that is that they do not now enlarge the openings in their ears to the enormous extent to which they did in the days of Labillardiere, as shown in his plates, where the loops hang down on the shoulders. Labillardiere says that the natives use their

\* The natives of the Louisiade use areca nut and chunam, only without betel pepper. Macgillivray's "Voyage of the 'Rattlesnake,'" Vol. I, p. 222.



paddles as oars, not as paddles. This, as far as I saw, is not the case.

*Affinities of the Admiralty Islanders.*—The close resemblances of the Admiralty Islanders in one or two matters to the Papuans of Humboldt Bay, and their wide difference in most others, are striking.

The islanders resemble these Papuans in wearing a curious covering on the tip of the penis, and differ apparently in this matter from all other known races, though many Melanesians and Papuans decorate the penis in other remarkable ways; and in using gourds with spoon sticks for chunam. In their stone implements they differ widely from, and are far inferior to, the Papuans. Their houses, weapons, canoes, and modes of expression, differ also entirely from those of the Papuans. In wearing nose ornaments and slitting the septum nasi for them, they resemble Melanesians generally, Solomon Islanders as well as Papuans. The Solomon Islanders and Papuans wear their ornaments stuck through the nose transversely. The Admiralty Islanders use an ornament very similar to that of the Solomon Islanders, but wear it as a pendant. The Papuans were not ashamed of exposing their persons, and taking off their gourds, whereas the islanders were.

The most remarkable fact about the Admiralty Islanders is that of their having no bows and arrows, slings, throwing sticks, or throwing cords for their spears, no ulas, clubs, spears for hand to hand fighting, and no shields. Many other Melanesians have no bows and arrows, as the New Caledonian Loyalty Islanders, and apparently the New Britain and New Ireland races, and the same is the case with the natives of the south-east of New Guinea;\* bows and arrows seeming to commence on the coast only at Humboldt Bay, but all seem to have slings or other additional means of defence. The New Britain people have flint (obsidian) headed "arrows without bows" (lances), and wooden axes.† The examination of the twelve skulls of the Admiralty Islanders obtained may possibly throw some light on their race affinities. Von Willemoes Suhm, who collected them, made some measurements of them, and I believe concluded that they were of Fijian affinity, but I am uncertain.

The natives are, I think, certainly of Melanesian rather than Papuan affinity, and probably will prove nearly allied to the New Hanover natives; but their nearest neighbours are at present very little known. The anthropological results of the

\* "Australia Directory," Vol. II, Notice No. 19. London, 1875, p. 39. Note by Lieut. J. S. Dawson on the Natives.

† "Voyage of 'La Perouse.'" L. A. Millet Mureau. Trans. London, Lackington and Co., 1807, p. 265.

voyage of the German ship of war, "Gazelle," will, when published, no doubt throw light on the matter.

Dentrecasteaux's ships visited the Hermit Islands (Los Erimitanos), and though the canoes of the natives were different, Labillardiere saw one native wearing an ovulum shell.\*

Lieutenant F. W. Saunders, R.N., who visited the Hermit Islands, in H.M.S. "Alacrity," in 1874, says that there are two villages on them; but does not give further information.

*Note.*—A considerable portion of the above paper, though in manuscript at the time, was not read at the meeting.

#### DISCUSSION.

Miss BUCKLAND wished to know whether the Admiralty Islands were included in that which is called the Louisiade Archipelago, as the Bath Museum possessed beads and shell breastplates and ear ornaments from the latter, very similar to those exhibited from the Admiralty Islands? She also wished to know whether the women were the cultivators of the *taro* which Mr. Moseley spoke of as grown in the islands?

Professor ROLLESTON, after expressing his gratitude to the author for the great amount of facts, and especially for the exhaustive enumeration of the various points bearing on the affinities of the Admiralty Islanders, with which they had been favoured by him, compared the paper to the paper on the Aymaras, published some years ago by Professor David Forbes, and said that he hoped that it would be similarly published *in extenso* in the Society's Journal.

In reply to Miss Buckland's inquiry, the author of the paper said, that in geographical position, the Admiralty Islands are far distant from the Louisiade Archipelago, that is to say about 700 miles in a direct line. The whole of New Britain and New Ireland and nearly all Papua lie nearer to the Admiralty Islands than the Louisiade Archipelago, whilst the Solomon Islands lie at about the same distance as the Archipelago.

Nevertheless, there are many resemblances between the Louisiade natives and those of the Admiralty Islands. The best account of the Louisiade Islanders is to be found in Macgillivray's "Voyage of the 'Rattlesnake,'" London, Boone, 1852, Vol. I, p. 190, &c. Besides the resemblances in the shell, breastplates, ear ornaments, &c., mentioned by Miss Buckland, it may be mentioned that the Louisiade natives, like the Admiralty Islanders, carry their lime for betel chewing in "calabashes" (gourds), with carved sticks for spoon it out with. The Louisiade canoes seem to differ in form from those of the Admiralty Islands, and I could find no resemblances between the two languages. The native women were more or less scared during the visit of the "Challenger" to the Admiralty Islands, and hence it was not observed whether they cultivate

\* Labillardiere, *l. c.* p. 272.

the taro or not ; but there can be little doubt that such is the case, as at Fiji and throughout Melanesia.

The PRESIDENT.—I have to say simply, that I am delighted to hear this paper read, on account of the attention that is paid in it to minutiae and the evident accuracy of the observations which the author has made upon these, I may say, almost newly discovered tribes, because I believe that no European has before landed on the Island. When travellers indulge in generalities, as is commonly the case in their description of savage races, they speak of things which all people in the same stage of culture share more or less in common, and which are, therefore, of little use to the anthropologists, but when, as in this case, detailed descriptions are given, we are able to trace connections, and here we can perceive, off hand, some resemblances between the arts of the Admiralty Islanders and other races without giving to the paper that more careful attention and study which anthropologists will devote to it in times to come. In the first place as regards stature ; we see in the averages given, viz., 5 ft. 5 in. for the men, and 5 ft. 1 in. for the women, that there is not that great difference between the males and the females which Professor Rolleston and others have noticed as characteristic of the Andamans, for example, and some other savage tribes, the difference is no greater than would be found amongst ourselves. Then the observation that the children are fairer than the adults is an important one, because I think naturalists will be generally inclined to regard the children as the more probable representatives of the ancestors of the people in regard to colour ; at any rate it will be a point for further consideration. I should like to know whether Mr. Moseley observed any difference between the coast tribes and those of the interior. [The Author replied that his observations were confined to the coast tribes only.] The diameter of the spirals of the curls of hair appears to me to be a new and interesting observation, because the spiral in all probability depends on the section of the hair ; the more oval or tape-like the section, the closer probably the curl ; therefore in the absence of any means of examining the former microscopically, the latter may be taken as typical of the class. The uniform growth of the hair over the scalp and not in patches, tallies with the most recent observations upon Papuan heads. [The author here remarked that although the hair grew uniformly over the scalp, it appeared to grow in patches upon some parts of the body.]

The mode of drawing attention by hissing strikes one as being very universal, and seems to have been adopted independently by many people, no doubt as being the best means of drawing attention without making use of any articulate sound expressing any definite meaning, much in the same way that we whistle to call a cab, or hiss in many parts of the continent of Europe for the same purpose. The continuous loop coil ornament designed upon one of the gourds exhibited is a class of ornament which is common in Assam, and all that part of the continent of Asia, and which I believe to be the pattern from which all those broken coil ornaments which are so

markedly characteristic of New Guinea and New Zealand ornamentation have been derived, and the observation that in the Admiralty Isles different patterns are employed for different classes of objects appears to me important, as tending to show that the patterns have migrated with the objects upon which they are drawn, and the well known conservatism of savages has no doubt been a means of keeping up their association with those objects only. The shapes of the obsidian spear-heads formed, as the author says, just as they happened to flake off, are interesting as showing the natural origin of such forms, and the remark that the spear-heads are used as knives reminds us of like customs in Africa, where the Kaffirs, the Watusi described by Grant, the Fans of the Gaboon, and others, use their iron spear-heads in a similar manner, and which accounts for the form of knife and spear-head amongst savages being so commonly the same. One form of obsidian spear-head I notice amongst the objects exhibited, which consists of a sharp flaked edge on one side, and a chipped edge on the other. Such forms are common amongst the prehistoric flint implements found in Europe, and are usually called knives, because they somewhat resemble one of our ordinary penknives, having a thick back and a sharp edge, but we here see it used as a spear-head, and we observe that the chipping is simply intended to produce symmetry.

Amongst survivals it is most interesting to observe the wooden spear-heads painted black, in imitation of the obsidian blades, and the charm consisting of a human humerus, preserved and bound round as a trophy of the slain, has been imitated in wood by some one who could not obtain a genuine bone, reminding us how, after the Crimean war, gold bullet pendants to bracelets, introduced originally to contain a bullet extracted from the wound of some friend or relative, came into fashion, and were worn for some time by people who had no associations of the kind, like causes producing like results all the world over, amongst people in the same condition of culture. Many of the objects exhibited and the account given of the arts of the Admiralty Islanders generally connect them with those of New Guinea, as described by Dr. Comrie. Amongst these descriptions may be noticed the skulls fastened to the posts of the houses, the betel spoons, the Jews' harp, pan-pipes, and the circular shell ornaments, having curved tortoiseshell patterns attached, all of which occur in New Guinea. The practice of shaking the lance before throwing it has been described in Australia and other places, where darts are used. The particular class of outrigger canoe described by the author as existing in these islands, consisting of an outrigger on one side, with a counterbalancing platform on the other side, not touching the water, is used also in other places. In Samoa we find the first idea of this *weather platform* described by Wilkes. It consists, there, of a simple boom, rigged out on the side opposite to the outrigger, on which the men run out when the outrigger is pressed into the water by the wind, and counterbalance the boat by their weight. It is described also in some of those from the Solomon Isles and parts of New Guinea, and its



distribution led me in a paper which I wrote upon the subject in the 4th volume of this Journal (p. 430), to conjecture that it would be found in some of the islands to the north, which now turns out to be the case.

The absence of the bow in the Admiralty Isles accords with the view I take of the distribution of this weapon, believing it to have spread over a continuous area in the Pacific, and to have missed certain islands. To the best of my belief, though it is dangerous to go upon negative evidence in such matters, it is not used in New Britain or New Ireland, but it is used in Malayta, to the south of the Solomon group; also in Santa Cruz,\* and in all the islands of the New Hebrides and Loyalty group, which is its most southern limit. From thence it is found eastward in most of the islands of the Pacific. Westward we have it throughout New Guinea, and at Cape York, where it is derived from New Guinea. [Mr. Moseley observed that he had been at Cape York, and it was certainly not in general use by the natives there.] Col. Fox continued: I am glad to be informed by the author upon this point; it is certainly known there, as we have it from many authorities, and I have both bows and arrows in my collection which have been obtained from Cape York. They resemble those of New Guinea, both in the shape of the bow and arrows, and the strings of rattan, and the fact of their being but little used, shows only that it is not indigenous, but has been introduced, which I believe to have been the case in many of the Polynesian Islands, a fact which is confirmed also by the name for it, *panna* or *fanna*, being common to many of the islands. It is very important to trace the distribution of this and similar arts. If, as has been suggested by some, the bow was originally universal in the Pacific, and has been discontinued in some of the islands, owing to the absence of large animals and the disuse of hunting, then there would be no reason why the distribution of the bow at the present time should be continuous. I have endeavoured to trace the distribution of the use of the notch for the string at the base of the arrow; unfortunately travellers can seldom be induced to make the detailed observation necessary. The present paper is, however, a great exception to this general defect, and the Institute is much indebted to Mr. Moseley for it. The mention of the fortifications in the Admiralty Isles is of interest. I should be glad to know if Mr. Moseley noticed the use of flanking defence in any of these works; probably from the absence of missile weapons it would not be used. [Mr. Moseley said he had not noticed flanking defence in any of them, but his attention had not been especially drawn to the point.]

In reply to the remarks of the President, the author tendered his thanks to the President and Society, for the kind manner in which his paper had been received. With regard to the question of coast and inland tribes, the author stated that his observations had been

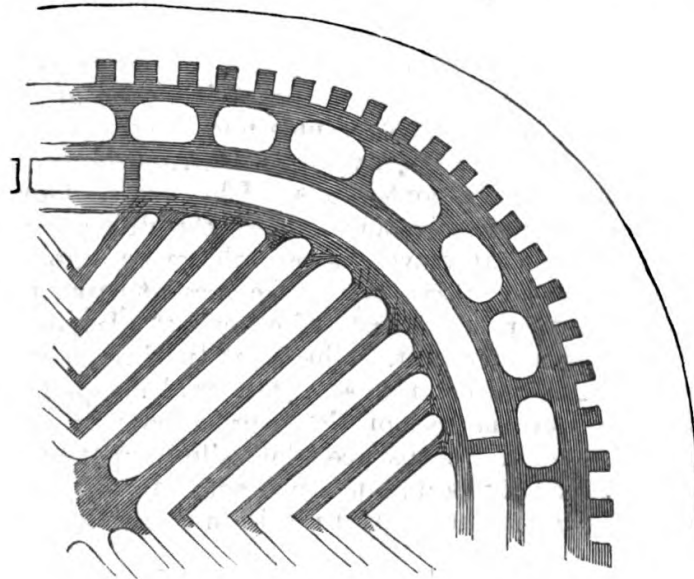
\* From Commodore Goodenough I received arrows obtained by him from Mallicollo, Erromango, Santa Cruz, and Malayta.—A. L. F.



entirely devoted to the coast natives, and that he considered it very possible that no regular inland tribes existed.

The continuous loop coil ornament referred to by the President occurred upon a chunam gourd from Humboldt Bay, and was not observed at the Admiralty Islands. The charm in which a human humerus is replaced by a carved piece of wood made to resemble it, was regarded by the author of the paper as possibly rather an instance of a deliberate attempt on the part of a native to impose upon his fellows, and make them believe that he had secured the real trophy, than as an instance of survival. With regard to Cape York it might be well to remark that savage weapons from all parts of Melanesia and Polynesia, and from Papua, were constantly being brought thither by pearl shelling vessels and small traders, and that they were bought up by such whites as the police in the barracks established at the port, and by them re-sold, mingled together, to visitors.

P.S.—Since the reading of the paper, the attention of the author has been called by Colonel Lane Fox to the existence of almost exactly similar shell discs, with tortoiseshell fretwork ornamental laminae upon their faces, to those of the Admiralty Islands in several other places; and he has been kindly shown specimens of these by Mr. Franks, at the Christy collection. Specimens in the collection from two localities have been kindly sketched by Captain Harold Dillon, and woodcuts of them are here appended. In one of these,



brought by Dr. Comrie, from N.E. coast of New Guinea, the shell disc is concave on the surface, on to which the tortoiseshell plate is fitted. The plate must have been softened by heat, in order to make it fit evenly on the curved surface. Several similar ornamental discs, but flat, as at the Admiralty Islands, are in the Christy collection, from the Solomon group. The fretwork patterns in the ter-

toiseshell are far more delicate and elaborate than are the Admiralty Island ones. One of these patterns is figured in the woodcut. It is most extraordinary that exactly similar ornaments are in use at



the far distant Marquesas group, and a fine specimen of one fitted on a head-band, is in the Christy collection. In it the disc, which in the Admiralty and Solomon Island ornaments is made of ground *Tridacna* shell, is replaced by a disc of mother-of-pearl shell. In all the tortoiseshell disc is fastened to the shell disc by means of a cord, with a knot passed through a hole drilled in the centre of both discs.

The paper was illustrated with maps, drawings, &c., and a large collection of weapons, &c., from the islands were exhibited.

Since the above paper was read, an account of the anthropological observations made by Cap.-Lieutenant H. Strauch, of H.M.S. "Gazelle," has appeared.\* The New Hanover Islanders differ from the Admiralty natives to a greater extent than was to be expected. The men wear no covering to their generative organs at all. They wear their hair much more elaborately dressed than the Admiralty Islanders. They wear no cicatrizations or tattooing. They have much more elaborate wood carving in the shape of masks worn on the top of their heads in dancing, &c., and their canoes have elaborately carved prows, and are different from the Admiralty canoes. They have no bows and arrows, and no defensive weapons, but have clubs,

\* Allgemeine Bemerkungen Ethnologischen Inhalts über New Guinea, die Anachoreten Inseln, New Hanover, New Ireland, New Britannien und Bougainville, von H. Strauch, Capitain-Lieutenant. "Zeitschr. f. Ethnologie." Bastian u. Hartmann, 1877, Hft. I, s. q.

besides lances. The lances have wooden or bone points. They make them quiver before throwing them. They have no carved bowls like the Admiralty natives. The natives of that part only of the island nearest to New Ireland chew betel, and, unlike the Admiralty Islanders and Humboldt Bay men, they carry their betel and lime in bastbags, not in gourds. They have no temples. They have apparently no sago, but have yams, which the Admiralty Islanders have not. They use the same musical instruments as the Admiralty natives, and wear similar shell and tortoiseshell discs on their breasts, and sometimes a larger disc of this kind is mounted as a breast ornament on a band, with a series of smaller similar discs on either side of it, the ornament thus coming curiously near the Marquesan one. They pallisade their villages, and their better houses have the walls constructed as in the Admiralty Islands, of built up billets of wood, which Captain Strauch thinks may possibly act as stores of firewood as well as walls. The commoner houses are all roof, like many Admiralty ones. The Anachorete Islanders do not wear the ovulum shell. They have only lances as weapons. They have certain houses specially decorated, and with human figures carved in wood placed before them, probably temples.

Captain Strauch's paper is to be continued.

DESCRIPTION OF PLATES XX, XXI, XXII, AND XXIII, ILLUSTRATING THE PAPER ON THE INHABITANTS OF THE ADMIRALTY ISLANDS.

*Plate XX.*

Fig. 1.—Fore end of lance, with large obsidian head mounted in a socket piece, which is perforated. Elaborately ornamented.

×  $\frac{1}{3}$ .

Fig. 2.—Fore end of short javelin, with irregular obsidian point. ×  $\frac{1}{4}$ .

Fig. 3.—Sheath made of plantain leaf, used as a cover to the obsidian lance heads. ×  $\frac{1}{5}$ .

Figs. 4 and 5.—Lance heads of obsidian, to show the curiously bent and contorted forms which, produced by accidental flaking, are nevertheless mounted as serviceable weapons. ×  $\frac{1}{5}$ .

Fig. 6.—Obsidian lance head, showing a still wider departure from the typical form. ×  $\frac{1}{4}$ .

Fig. 7. Lance head, with the whipping of twine and coating of cement removed to show the manner in which the obsidian flake is inserted in a socket piece, and the socket piece is spliced on to the lance shaft. ×  $\frac{1}{3}$ .

Fig. 8.—Diagrammatic drawing of the socket piece.

*b.* Wedge-shaped slot for the reception of the fore end of the lance shaft which is cut to fit it.

*c.* Cavity hollowed out for the reception of the base of the obsidian flake.

*a. a.* Slots cut in the walls of this cavity to facilitate its being scooped out.

Fig. 9.—Obsidian lance flake removed from its socket to show the simply rounded outline of its base.

Fig. 10.—Fore end of a lance, with shaft of reed and head of hard wood. The head is painted blackish to resemble obsidian.

×  $\frac{1}{5}$ .

Fig. 11.—Hatchet with ground triangular shaped blade of basalt, mounted by being jammed in a cavity at the end of a club-shaped roughly hewn piece of wood. The mounting of this specimen was made on board the "Challenger," being copied from the only such specimen obtained. ×  $\frac{1}{5}$ .

Fig. 12.—Blade of the foregoing.

Fig. 13.—Half-moon shaped piece of mother-of-pearl shell, with edge ground sharp, used as a knife, &c. ×  $\frac{1}{4}$ .

Fig. 14.—Gourd used to carry the shell lime used in betel chewing. Perforated at the stalk end for the stick or spoon. Ornamented with patterns burnt in upon its surface. ×  $\frac{1}{5}$ .

Fig. 15.—Carved head of large hard wooden lime stick or spoon. This belonged to the Chief.

*Plate XXI.*

Fig. 1.—Disc of ground Tridacna shell, with a second disc of thin tortoiseshell secured on its surface by means of a knotted string passed through a hole in the centres of both. The shell disc is ornamented with engraved lines at its margin. The tortoiseshell disc is perforated with a fretwork pattern. Worn on the forehead or breast. ×  $\frac{1}{2}$ .

Fig. 2.—Disc of tortoiseshell from similar but larger ornament, to show the pattern. ×  $\frac{1}{2}$ .

Fig. 3.—Similar ornament to Fig. 1. ×  $\frac{1}{2}$ .

Fig. 4.—Comb worn by the men with long hair. The teeth are separate pieces of hard wood set in a mass of cement and twine. ×  $\frac{1}{4}$ .

Fig. 5.—Pan-pipes. ×  $\frac{1}{4}$ .

Fig. 6.—Armlet of plaited black and yellow coloured material. ×  $\frac{1}{3}$ .

Fig. 7.—Charm composed of human humerus, bound round with eagles' feathers. Worn suspended round the neck and hanging down the back. ×  $\frac{1}{4}$ .



Fig. 8.—Adze with blade consisting of half a ground *Terebra maculata* shell.  $\times \frac{1}{5}$ .

Fig. 9.—Adze blade made of ground *Hippopus* shell.  $\times \frac{1}{3}$ .

Fig. 10.—Knife consisting of obsidian blade in wooden handle.  $\times \frac{1}{4}$ .

Fig. 11.—Beads of ground shell and some black material.  $\times \frac{1}{3}$ .

Fig. 12.—Fish hook made of ground *Trochus* shell.  $\times \frac{2}{3}$ .

### Plate XXII.

Plans and sections of an Admiralty Island canoe and gear, drawn to scale.

Fig. 1.—View of the outer surface of the canoe from the side, showing, below, the hollowed-out body, above which is the single line of plank surmounted by the rounded gunwale piece, the lashings of which are indicated. At the ends are seen the solid end pieces with their single row of ovulum-shells as a decoration. The positions of the supports of the inclined outrigger are shown by three broken struts. The square heads of the thawts and outrigger-booms are seen projecting under the gunwale-piece. The hull is coloured white, the end pieces and ends of the thawts and outrigger-booms being reddened.

Fig. 2.—Plan of the canoe as seen from above. The planks forming the deck are shown lashed *in situ* only on the inclined outrigger, which is necessarily from its inclined position here foreshortened. The struts supporting this outrigger rest against the inside of the canoe, and are kept down by being passed under a longitudinal stay which is lashed to the ends of the booms of the main outrigger, inside the canoe, for the purpose. The thawts *a, a*, have their outer ends dovetailed into slots cut in the upper edge of the plank streak, and are secured in position by the gunwale-piece above them. The inner ends of the booms of the main outrigger are secured in a similar manner. Struts *b, b*, are fitted in at intervals, which prevent the collapsing of the hull, and strengthen it, and specially strong ones are placed beneath the outer booms of the main outrigger. An extra gunwale-piece is secured over the region of insertion of the outrigger-booms. The main outrigger-booms are steadied in most canoes by two short additional booms and a cross-piece, as shown in the figure, but this additional strengthening is not always present. At about half the entire length of the main outrigger-booms from the canoe a cross-piece is lashed, and it is at the fore end of this cross-piece at the point marked *A*, that the end of the stay-boom of the mast is shipped. The float is secured at a short distance from the ends of the outrigger-

booms. When the canoe is in use the main outrigger-booms are decked with planks from the canoe-hull as far as the cross-piece A.

Fig. 3.—Transverse section through the canoe in a line with one of the outer booms of the main outrigger to show the amount of inclination of the inclined smaller outrigger.

*b.* The stout strut fitted under the outer boom of the main outrigger.

Fig. 4.—(*a.*) Thawt showing the dovetailed ends which fit into the slots in the hull and the flanges which rest against the inside of the canoe.

*b.* One of the struts seen *in situ* in fig. 2. The dotted lines show another form sometimes used.

Fig. 5 shows the means of attachment of the ends of the booms of the main horizontal outrigger to the float. The float is of soft wood (*Hibiscus* or *Thespesia populnea*?). Rows of short sticks of hard wood are driven into the upper surface of this float, being arranged in rows, crossing one another alternately crosswise, and being securely lashed with twine in this position. A rest is thus formed in the upper part of the + where the end of the boom is secured by lashing.

Fig. 6.—Mat sail with its two yards rolled up. Above this the stay-boom with its forked end, into which the tip of the inclined mast is received. Above this again the mast with a hole at one end for the haulyards.

Fig. 7.—Ordinary paddle of one piece, and unornamented. Above this a steering paddle of two pieces and spade-shaped.

### Plate XXIII.

Figs. 1, 2, and 3.—Heads of natives taken from photographs. Fig. 2 wears a cap of *Draccena* leaf, and has a shell adze over his shoulder.

Figs. 4 and 5.—Upper and under views of ovulum ovum shell worn upon the penis. The shell has diagonal and rectangular patterns engraved upon it. The inner whorls are cut away in such a manner as to leave a sharp cutting edge bounding the narrow opening of the shell, into which the glans penis is introduced. This is seen in Fig. 5.  $\times \frac{2}{3}$ .

Figs. 6 and 7.—Views of opposite faces of stone club from Hilo, Hawai Island, Sandwich group.  $\times \frac{4}{5}$ .

Fig. 8.—Triangular section of the fore part of the same.

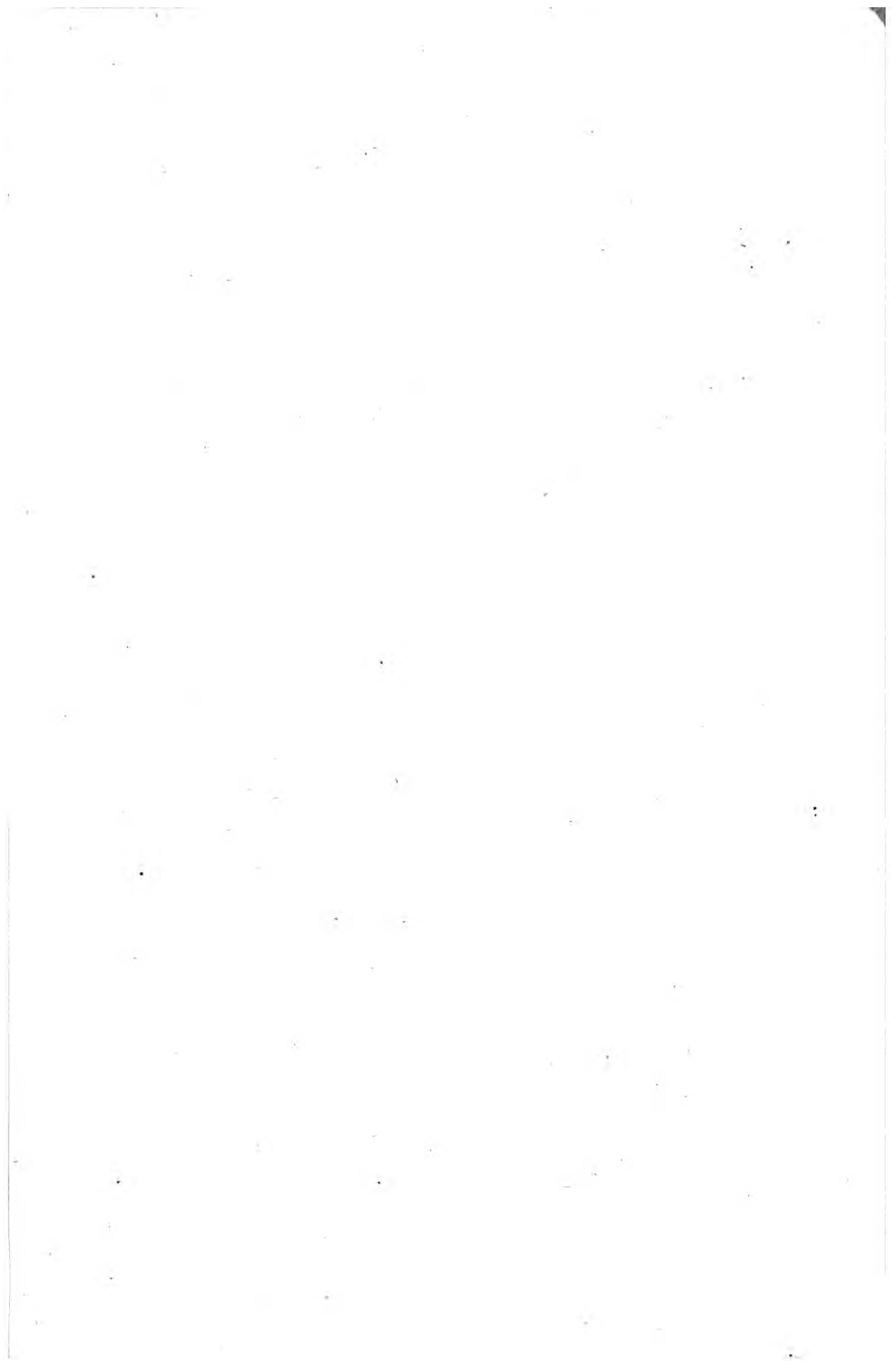


NOTE *by* H. N. MOSELEY *on a* STONE CLUB *from the* SANDWICH ISLANDS, *exhibited by him at the Meeting.*

THE stone club now exhibited was obtained by me at a native house at Hilo Hawai Island, Sandwich Islands. I asked the natives to search for any stone implements they could find, and they found this after considerable hunting. They told me it was called "pohaku newa," which means stone club, and that it was used in fighting to strike blows on the head, being fastened to the wrist with a thong or string.

The object appears to be of an altogether new and undescribed form amongst stone weapons. It is made of basalt, with ground surfaces. It is 10 inches in length. It is cylindrical in form at the proximal end, which is grasped in the hand, and tapers towards that end, which is drilled with a hole for a thong. Towards the other end the weapon becomes gradually triangular in section, from being circular, and ends in a point formed by the meeting of three curved but even surfaces, which where they adjoin laterally form three sharp edges.

The club is of especial interest, because it resembles the New Zealand mere, in being a stone club used in the hand without mounting, and being fastened to the wrist by a cord passed through a hole drilled in the handle end. The mere of course differs in its flattened form, but the ideas are the same, and the existence of this Hawaiian weapon seems to add another link between the Polynesians and their distant offshoot the New Zealanders.





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