

Comment M. Wallace le sait-il? Le lui ont-elles dit? N'importe, il le sait."

It is a pleasure to read anything so brilliant as this, but it hardly seems to touch the point of my argument. Male birds *do* sing at pairing time to the females. Mr. Darwin says in his "Origin of Species," "All those who have attended to the subject believe that there is the severest rivalry between the males of many species to attract, by singing, the females." Female birds *do not* sing. These are facts, and they perfectly accord with the theory of the perfection of song having been developed, in the *males*, by sexual selection. In man the facts are all different. Savage women have generally no *choice* as to their husbands, as has been so fully shown by Sir John Lubbock; and in the few cases where a choice is open to them, there is not a particle of evidence to show that a musical voice ever determines that choice. Still less reason is there to think that this quality determines the male savage in choosing his wife. Yet a wonderful musical organ has been developed in both sexes, of which the use to man in his struggle for existence has not yet been shown. Surely here is a difficulty which required facts and arguments for its elucidation rather than a brilliant display of wit.

Again, in reply to my arguments as to the total absence of hair from the back of man, we are told that it should be no difficulty to a person who believes that *hairy* mammals and *feathery* birds have been derived from *scaly* reptiles ("Remarques," pp. 27, 28). But surely this is not the argument of a Darwinian. For the hair and the feathers are *useful* to their several possessors, just as the scales were to their ancestral reptiles; whereas the very essence of my difficulty is, that the nudity has *not* been shown to be *useful* to man. M. Claparède thus concludes his remarks on this subject:—"Que M. Wallace soit au moins conséquent dans la question de la chute des poils. Si l'intervention d'une Force supérieure lui semble nécessaire pour épiler le dos de l'homme, qu'il sache se résoudre à la faire agir de même sur l'échine de l'éléphant, du rhinocéros, de l'hippopotame ou du cachalot." But the four mammals here mentioned are *thick-skinned* animals, one *aquatic*, one *amphibious*, the other two inhabitants of *hot* countries, lovers of *shade* and of *marshes*. Can anything be more clear than that, in all these cases, the hair was little or not at all wanted, and, owing to their habits, was very probably even injurious, and has therefore partially disappeared by means of natural selection? while the extinct mammoth and woolly rhinoceros are instances which prove that it always re-appeared when the needs of the animal required it. If the hair disappeared from the back of tropical man by the action of the same law which caused it partially to disappear from the tropical elephant, we must ask why it did not re-appear in the arctic Finns and Esquimaux, as it re-appeared in the arctic mammoth? It is rather for me to say—"Que M. Claparède soit au moins conséquent dans la question de la chute des poils."

The last point on which my critic remarks is my argument, that the brain of savage man is in advance of his needs, and therefore could not have been acquired by natural selection; and he asks, why I do not apply the same reasoning to many other cases, especially to that of the great group of birds with a complex larynx, comprising all the singing birds, yet having many species which do not sing. He says (p. 29), "Ces oiseaux possèdent dans leur larynx un organe beaucoup trop bien conformé pour l'usage qu'ils en font. Il est donc nécessaire d'admettre l'intervention d'une Force supérieure pour façonner cet appareil, inutile aux oiseaux qui le possèdent, mais calculé en vue de générations nouvelles qui, dans un avenir plus ou moins éloigné et dans des conditions déterminées apprendront à chanter. Que M. Wallace aurait-il à répondre à une semblable argumentation?" My answer is, that the cases are not parallel or similar; if they were so, I should certainly adopt the same conclusion in both. To make them logically comparable, it would be necessary to

prove that all the earlier forms of the group had the vocal organs fully developed, but did not sing; or what might be held to indicate this, that at present only a few species sing, while the great mass do not. But so far from this being the case, the majority of the species of the group have musical or sonorous voices, and there is no evidence to show that the vocal apparatus was fully developed before the power of singing began to be exercised. Man, on the contrary, stands alone in the development of his brain, and M. Claparède does not rebut the evidence I have adduced to show that the brain in savage and prehistoric man was in advance of his requirements.

In concluding his remarks, M. Claparède endeavours to impale me neatly on the horns of a dilemma, as follows:—"Ou bien M. Wallace a eu raison de faire intervenir une Force supérieure pour expliquer la formation des races humaines et guider l'homme dans la voie de la civilisation, et alors il a eu tort de ne pas faire agir cette même force pour produire toutes les autres races et espèces animales ou végétales; ou bien il a eu raison d'expliquer la formation des espèces végétales et animales par la seule voie de la sélection naturelle, et alors il a eu tort de recourir à l'intervention d'une Force supérieure pour rendre compte de la formation des races humaines." These are his last words, and they seem to me to be the weakest in the whole paper, being a pure begging of the question. They assume that man presents no phenomena which differ in kind from those presented by other animals, whereas I have adduced a number of such phenomena which my critic has neither disproved nor denied. My whole argument is founded on certain facts, and on these facts only. My critic admits the facts, does not refute my arguments, yet maintains that I should give up my conclusion, because the theory of Natural Selection *must* apply equally to man and the rest of Nature, or to neither. But why must it do so? Darwin himself claims no such universality for it. He admits that even the common origin of animals and plants rests only on analogy, and that "it is immaterial whether it is accepted or not." But M. Claparède is more Darwinian than Darwin himself, and would, I presume, say that, either all animals or plants must be descended from one common ancestor or, that no two species are thus descended. I maintain, however, that man is descended from a lower animal form, but I adduce facts which go to prove that some other law or power than Natural Selection has specially modified him. If Darwin is not anti-Darwinian in admitting, as he does, the possibility that animals and plants may not have had a common ancestor, I may surely deny that I am anti-Darwinian when I show that there are certain phenomena in the case of man that cannot be wholly explained by the law of Natural Selection.

I must not conclude without thanking M. Claparède for the very flattering terms in which he has spoken of the larger portion of my work, and also for the general accuracy and fairness with which he has condensed my views and arguments in the last essay, to which he especially takes objection. A. R. WALLACE

#### THE NATURAL HISTORY OF MAN\*

IN the two handsome volumes before us is contained such a mass of interesting information concerning our less cultivated brethren as has surely never yet been collected by one writer or in one work. The first volume is occupied with Africa, that vast, and, as recent researches show, densely populated land, whose peoples present a greater variety of manners and customs and languages than any others upon the globe, and the second treats of

\* "The Natural History of Man: being an Account of the Manners and Customs of the Uncivilised Races of Men." By the Rev. J. G. Wood, M.A., F.L.S., with new designs by Zwecker, Angas, Danby, Handley, &c. Engraved by the Brothers Dalziel. 2 vols 1868-70. (London: George Routledge and Sons.)

the American tribes, the inhabitants of Australia and New Zealand, with India, China, Japan, and Siam. A short notice is also given of the long-perished lake-dwellers of Switzerland.

The general plan pursued by Mr. Wood in his account of different nations is necessarily very similar. The

obtainment of food and the manufacture of the means of getting it—the bow and arrow, blow-tube and poisoned shaft, the canoe, the javelin, the club, the boomerang, or lasso; war and the requisite weapons or means of defence; dress, simple and slight as it often is; and religious observances of one kind or another, constitute, with the



SURF-SWIMMING IN THE SANDWICH ISLANDS

initiatory ceremonies attendant upon entrance into manhood, marriage and death, the principal occupations and events of the life of the savage, and these, of course, form the staple of Mr. Wood's work. To do this well, however, is no slight task, considerable reading and comparison of the accounts of travellers is required, and

the whole has to be worked up into the form of a continuous narrative. Mr. Wood appears to have carefully selected his authorities, and has taken only what he considers trustworthy and reliable. To give some idea of the method adopted, we may refer to his account of the Zulu Kaffirs, who he considers to have descended

from the northern regions of the Continent to their present abode, and who, as is well known, are a dark-skinned but highly intelligent race. While possessing some of the characters of the negro, as the crisp, woolly hair, large wide lips, and dilated nostrils, they differ radically from him in the possession of a lofty and intellectual forehead, a more prominent nose, high cheek bones, and a nameless but decided cast of countenance. As a people, they are devoid of care, requiring no clothes, building huts of the slightest construction, and obtaining food with the greatest facility. Their reasoning powers are highly developed, and they delight in controversy. Mr. Wood then proceeds to describe the life of a Kaffir from infancy to old age, including an account of his dress, ornaments, and ceremonial observances.

To the account of the Kaffir there succeeds an equally interesting and trustworthy description of the Hottentot and

of the Bosjesman or Bushman. Then follow accounts of the Korannas, the Namaquas, Bechuanas, Ovambos, and the numerous tribes of Southern and Central Africa. The facts recorded appear to have been drawn from many different sources, as Baines, Chapman, Moffat, Lichtenstein, Anderson, Burchell, Petherick, and, of course, largely from the narratives of Livingstone, Speke and Grant, Sir Samuel Baker, Du Chaillu, and Burton. The incidents selected to illustrate the character and habits of each race are, in general, very pertinent and striking, and render the whole work as amusing as it is instructive. Thus the love of finery innate in the African is well illustrated in the following story:—"An English vessel arrived at an African port, a large part of her cargo consisting of stout iron wire; nearly the whole of this was bought by the natives, and straightway vanished, no one knowing what had become of it. The mystery was soon solved.



THE LAKE-DWELLINGS OF THE ORINOCO

Suddenly the Kaffir belles appeared in new and fashionable costume. Some of them had been to towns inhabited by Europeans, and had seen certain 'cages' hung outside the drapers' shops. They inquired the use of these singular objects, and were told they were the fashionable attire of European ladies. They straightway burned to possess similar costumes, and when the vessel arrived with its cargo of wire, they bought it up, and took it home for the purpose of imitating the white ladies. Of course they had not the least idea that any other article of apparel was necessary, and so they wore none, but walked about the streets quite proud of their fashionable appearance."

The extraordinarily despotic power possessed by the chiefs of many of these tribes over the property and lives of their subjects constitutes a very remarkable chapter of their history, and is illustrated by Captain Speke's account of M'tesa, the king of the Waganda, to whom a

rifle having been presented, he loaded it, and handed it to one of his pages, telling him at the same time to go and shoot somebody in the outer court. The page, a mere boy, took the rifle, went into the court, and in a moment, to Captain Speke's horror, the report of the rifle showed that the king's order had been obeyed. This barbarian was in the habit not only of flogging his wives fearfully with whips made of hippopotamus hide, but of killing them without the slightest remorse. Speke states that scarcely a day passed without some woman being led forth to execution.

In the account of the Andaman Islanders, their consummate skill in the use of the bow is described; their harpoon arrows, with which the Mincopies catch the larger fish, and which are very similar to those of Vancouver's Island, their beautiful canoes and extraordinary rowing, or rather paddling powers, beating our best crews with facility; and their family affection. To this succeeds an

account of the scarcely more civilised natives of New Guinea, with their tufted hair, active climbing habits, and curious weapons. Then follows a description of the natives of the Polynesian Islands, the Fiji with their wonderful coiffures, their ingenious manufacture of veils, fans, baskets, and canoes, their warfare and cannibalism; the Solomon Islanders and natives of New Hebrides; and after these the natives of Borneo and Sumatra, and the various American tribes.

We append an account of the surf-swimming of the Sandwich Islanders, with an illustration, as copied by Mr. Wood from the now, we fear, seldom-read "Captain Cook's Voyages," who gives the following spirited account, which will not improbably be new to many of our younger readers:—"The surf, which breaks on the coast round the bay, extends to the distance of about 150 yards from the shore, within which space the surges of the sea, accumulating from the shallowness of the water, are dashed against the beach with prodigious violence. Whenever, from stormy weather, or any extraordinary swell at sea, the impetuosity of the surf is increased to its utmost height, they choose that time for this amusement, which is performed in the following manner. Twenty or thirty of the natives, taking each a long, narrow board rounded at the ends, set out together from the shore. The first wave they meet they plunge under, and suffering it to roll over them rise again beyond it, and make the best of their way by swimming out into the sea. The second wave is encountered in the same manner as the first, the great difficulty consisting in seizing the proper moment of diving under it, which, if missed, the person is caught by the surf, and driven back again with great violence, and all his dexterity is then required to prevent himself from being dashed against the rocks. As soon as they have gained by their repeated efforts the smooth water beyond the surf, they lay themselves at length on their board, and prepare for return. As the surf consists of a number of waves of which every third is remarked to be always much larger than the others, and to flow higher on the shore, the rest breaking in the intermediate space, their first object is to place themselves on the summit of the largest surge, by which they are driven along with amazing rapidity towards the shore. If by mistake they should place themselves on one of the smaller waves which break up before they reach the land, or should not be able to keep their plank in a proper direction on the top of the swell, they are left exposed to the fury of the next, and to avoid it are obliged again to dive and regain the place from which they set out. Those who succeed in their object of reaching the shore have still the greatest danger to encounter. The coast being guarded by a chain of rocks, with here and there a small opening between them, they are obliged to steer their board through one of these, or in case of failure to quit it before they reach the rocks, and, plunging under the wave, make the best of their way back again. This is reckoned very disgraceful, and is also attended with the loss of the board, which I have often seen with great terror dashed to pieces at the very moment the islander quitted it. The boldness and address with which we saw them perform their difficult and dangerous manœuvres was altogether astonishing, and is scarcely to be credited." These swimmers used often to pass nearly a mile seaward in order to enjoy the rapid motion of their return as long as possible. Both sexes and all ranks unite in it, and even the very chiefs themselves, who have attained to the corpulency which they so much admire, join in the game of surf-swimming with the meanest of their subjects. Some of the performers acquire a wonderful amount of skill, and, not content with lying on the board, sit, kneel, and even stand upon it as they are hurled shorewards by the giant waves. The boards are of various sizes, according to the age and station of the owner. For

adults they are about six feet in length. They are slightly convex on both sides and are kept very smooth, all surf-swimmers cherishing a pride in the condition of their boards, and taking care to keep them well polished and continually rubbed with cocoa-nut oil.

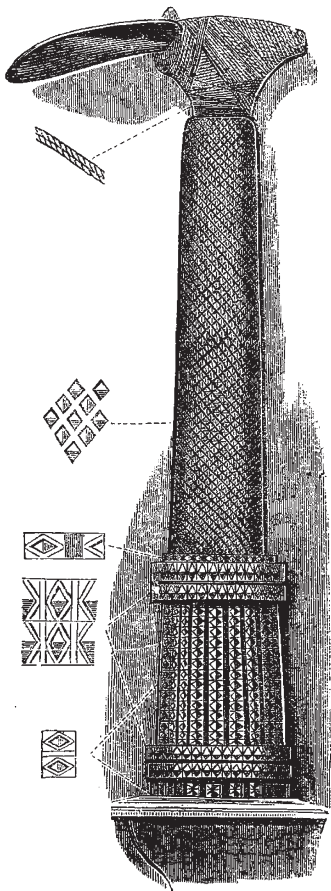
As an example of the wonderful strength exhibited by savages, the case of the Dyaks of Borneo may be cited, one of whom, while on the march with some English soldiers, exhibited it in a very unexpected manner. "The path was a terrible one, up and down steep and slippery hills, so that the Chinese coolies, who accompanied the party, first threw away their rice, and lastly sat down and wept like children. The English sergeant, a veteran accustomed to hard marching both in China and India, broke down at the first hill, and declared his inability to move another step under the load which he carried. Mr. Brooke, who was in command of the party, asked one of the Dyaks to carry the sergeant's burden, and promised him an additional piece of tobacco. The man was delighted with the proposal, and accepted it. He was already carrying food for three weeks, his whole store of clothes, one twelve-pound shot, two twelve-pound cartridges, a double-barrelled gun, a hundred rounds of ball cartridge, and his own heavy sword and spear. So little, however, was he incommoded with this, that he stuffed the whole of the sergeant's kit on his back, and walked off as easily as if the whole load were but a feather weight."

The drawing on page 11 shows the lake dwellings of the tribes inhabiting the Delta of the Orinoco, as described by Humboldt in his "Personal Narrative." "The large tract of land that forms the Delta of the Orinoco (we quote from Mr. Wood) possesses some very remarkable characteristics. It is always wet, but during several months in the year it is completely inundated, the river rising to an astonishing height, and covering with water a tract nearly half as large as England. This seems to be as unpropitious a spot as could be adopted for human habitation, and yet the Waraus (or Guarános, as Humboldt spells the word) have established themselves there, and prefer it to any other locality, probably because their strange mode of life enables them to pass an existence of freedom. Varying much in the height to which it rises, in some places exceeding fifty feet, the Orinoco has the quality of rising year after year to the same height in the same place, so that when a mark is made to designate the height to which the water rose in one year, the same mark will answer year after year with scarcely the slightest deviation." Here the Itá palm thrives, which supplies to the Warau food, drink, clothing, and residence; for, selecting four that grow near each other in the form of a square, and cutting away any intervening trees, he makes deep notches in the trunks some three feet above high-water mark. In these notches are laid beams that are tightly lashed in their places by ropes made of Itá fibres. On these leaves are laid a number of cross-pieces, usually composed of the gigantic stems of the leaves, then a layer of the beams themselves, and finally a smooth coating of mud, which soon dries under the tropical sun, forming a smooth, hard, and firm flooring, that will bear a fire without risk of damage to the wooden structure below. Ten or twelve feet above the floor the Warau constructs a roof of palm-leaves, the corners of which are supported by the same trees which uphold the house.

The extreme mechanical ingenuity of some uncivilised tribes, working with very imperfect implements, is perhaps nowhere better shown than in the drawing on the opposite page of an adze made by the inhabitants of Hervey Islands, and which also gives a very good idea of the excellence of the illustrations in Mr. Wood's work, and of which the following description is given:—

"The lower part of the handle is completely hollow, the native manufacturer having contrived to cut away the wood through the intervals of the upright pillars. As these intervals are not quite the third of an inch in width

the labour of removing the interior part of the handle must have been very great, and the work exceedingly tedious. Even with European tools it would have been a difficult piece of workmanship, and the difficulty is greatly enhanced by the fact that the native who carved it had nothing but a sharp stone or a shark's tooth lashed to a handle by way of a knife. The head of the adze is made of stone, and is lashed to the handle in a way exactly like that which is employed by the New Zealanders, except that it is far more elaborate. As if desirous of giving himself as much trouble as possible, the maker has employed the finest possible sinnet, not wider than packthread, and quite flat. It is laid on as regularly as if wound by machinery, and the native artist has contrived to produce the most extraordinary effects with it, throwing the various portions into a simulated perspective, and making the



THE MANGANIAN ADZE

lashing look as if there were four distinct layers one above the other."

We wish we had space to give the account of the activity of the Monkey Men of New Guinea; of the manipulative skill of the canoe-builders of Fiji, of the Zarabatana with their blow-gun, of the New Caledonian with his sling and javelin, of the extraordinary and cruel rites of the Mandans in the initiation of their youth into manhood, of the cruelty of the Tongans, and a hundred other details of interest; but our readers must refer to the work for themselves. We cannot conclude without a word of praise for the illustrations, which are extremely numerous, whilst many are original, and drawn from implements in Mr. Wood's own collection. We miss an index.

H. POWER

## NOTES

IN stating that we believe that the English Eclipse Expedition is now finally arranged, it is due to the Government to add, and we do so with the greatest pleasure, that it is now quite clear that only a small part of the blame, which certainly attaches to some one, can be laid at their doors. In fact, explanations certainly are due from those who have had the management of the now famous Joint Committee. It appears that a deputation was named, and accepted the trust of representing the requirements of Science to the First Lord of the Treasury, which trust they neither fulfilled nor handed back to the Committee in order that another deputation might be appointed. We next hear of a letter written to the wrong Government department; and last of all, we are informed that the letters of the Government department—the last, we believe, written not later than the beginning of September—stating, among other things, that an application should be made in October, when the possibility of granting ships could be better discussed—have not yet been brought before the Joint Committee, which has just been summoned by the Secretary for the 4th of November, that is, tomorrow. It is not for us to censure such conduct as this, but it is our clear duty to point it out, and we hope the matter will be taken up. In spite of this mismanagement, however, we hear that the Government are prepared to aid both by money and ships when an application shall be made, and we cannot doubt that application will be made. There is still ample time to organise an expedition which shall do much good work, though perhaps it is too late to send out and erect the largest class of instruments. Large instruments, however, will be in the hands of the members of the American Government Expedition, so that this is the less to be regretted.

WE have great pleasure in announcing that Prof. Wyville Thomson, F.R.S., has been appointed by the Crown successor to Prof. Allman in the chair of Natural History in the University of Edinburgh. A vacancy is thus caused in the chair of Natural History at Queen's College, Belfast, for which we understand there are already many candidates.

THE difficulty of providing funds for the establishment of a Professorship of Physical Science in the University of Cambridge has been overcome by the colleges, at a meeting of their heads, taking upon themselves a quota of the rates for improvements and other purposes in the town of Cambridge, which was formerly charged upon the University funds. This sum amounts roughly to more than twelve hundred pounds per annum; so that the University will speedily be able to avail itself of the munificent offer of the Duke of Devonshire, and will doubtless proceed at once to establish a Professorship of Physical Science, and obtain the other aids in the way of laboratory, apparatus, and assistants, that the Professor may require.

THE following notices of lectures this term in Cambridge show that there is great increase of activity in teaching the various branches of Natural Science in that university. Professor Liveing gives a course of lectures on the "Experimental Laws of Heat," and also gives instruction in practical chemistry in the University Laboratory three days in the week. Professor Humphry gives a course on "Practical Anatomy," also a course on "Anatomy and Physiology," and connects with these a "Microscopical Demonstration" once a fortnight, and instruction in "Practical Histology" once a week. Professor Newton gives a course on "Zoology and Comparative Anatomy." Professor Willis gives a course on "Mechanics and Mechanism," and their application to "Manufacturing Processes" and the "Steam-engine." Professor Miller gives a course on "Elementary Crystallography and Weighing." Professor Sedgwick gives a course on "Geology." In Downing College, Dr. Bradbury lectures on "Comparative Anatomy," and Mr. Danby on "Geology." In Trinity, Mr.