

After many minute observations upon the measurements of the skulls of the Indian Archipelago and others, and a carefully prepared table of breadths and heights of a large number of skulls, in their relations to their respective lengths, the author proceeds to an elaborate description of the skulls of the mountaineers of Palembang, to which the reader can only be referred.

The whole of Dr. Swaving's letter is of great value to craniologists, as it is a carefully wrought treatise upon the peculiarities of the skulls of the numerous peoples of the Indian Archipelago, by one who has had much more experience and means of observation than any anatomist who has gone before him, one who has turned his opportunities to the best account.

One of the author's notes is curious, as it refers to a rare cross between a Dayak and a Negress. He says: "Negroes produce, with Malay and Javan women, children with woolly, soft, curly, and smooth hair. Lately, I saw a Dayak with a Negress, by whom he had four children, two with lank and straight black hair, and two with woolly hair. Upon the crown of the head of the Negress there was long, spirally twisted hair, and on the horizontal circumference frizzled woolly hair. This Negress was taken as a child by a hadjee on his journey to Mecca, and brought back to Borneo, where she was married to a Dayak, and converted to Islam by the priests. The true Malays have, as a rule, smooth undulating black hair, as well as the Javans." Dr. Swaving does not say this was an African Negress. It might be asked, was she a Negrito?

OCEANIC RACES, THEIR HAIR, ETC., AND THE VALUE OF SKULLS IN THE CLASSIFICATION OF MAN.

BY J. BARNARD DAVIS, Esq., M.D., F.R.S., F.S.A., etc.

IN the January number of the *Anthropological Review* for 1866, (No. XII, vol. iv, p. 47), there is a notice of the late Professor J. Van der Hoeven's "Description of the Skulls of the Inhabitants of the Caroline Islands," to which are appended a few remarks upon different subjects, with a view to explain and illustrate these skulls a little further. The first, second, third, and fourth notes were designed to point out a singular form of cranium, hitherto undescribed, which I

believe to belong to the people of this portion of the Pacific, not universally, but more commonly than to any other race of mankind, and which I designated hypsistenocephalic.* The fifth note alluded to the queries, whether the hypsistenocephalic races are any of them Papuan, and whether the term Papuan is, or should be confined to those species of men, who are distinguished by having the hair not growing equally spread over the scalp, but, in tufts, with bare spots between. The conclusion was "that the name Papuan is not confined solely to races with tufted hair; and that hypsistenocephalism has no connection either with Papuanism, or with tufted hair."

In writing upon such a subject, I believe, I said nothing in a dogmatic tone, for I merely gave the results of my reading and examination of crania. I have never been in the Pacific, and never had the opportunity to examine its various and curious Islanders. The matters descanted upon are of much interest, and the opinion of anthropologists on them can scarcely be said to be settled or uniform. The great want still is fresh observations, made by men whose minds are unwarped by any prepossession or hypothesis, and who shall have had the opportunity of deliberately, patiently, and fully examining the phenomena exhibited by these Islanders in the regions in which they live.

In the latter end of the same year, 1866, appeared Mr. W. T. Pritchard's *Polynesian Researches*. In this interesting work, Mr. Pritchard gives an account of his early life in Tahiti, where he was born; of the Samoan Islands and their inhabitants, where he resided with his father, who was British Consul; and then describes his own career in that capacity in the Feejee Islands.

In the last chapter of this volume, entitled "Polynesian Anthropology," he announces the results of his personal observations during a course of fifteen years, which chiefly embraced Fiji, Tonga, and Samoa, with the contiguous Atoll grouplets. At the outset, he states that "the people who *now* inhabit these three groups are more or less mixed races, though originally they were *unquestionably totally distinct*." This is an important opinion. He says, "the Samoans and Tongans are Malays, the Fijians Papuans. Before going into an enumeration of the various legends and traditions of the Polynesian Islanders, to which Mr. Pritchard attaches considerable importance, he enumerates in the following passage the distinctive physical characters of these people. "Fiji is especially remarkable as the group where the black

* The subject of these remarkable skulls was much more fully elucidated in a monograph, "On the Peculiar Crania of the Inhabitants of Certain Groups of Islands in the Western Pacific," to which are added three plates. *Transactions of the Dutch Society of Sciences of Haarlem*, 1866.

and the copper-coloured races—the Papuans and the Polynesian-Malays—come into immediate and direct contact, and more or less assimilate by intermixture. The skin of the pure Fijian is dark, rough, harsh. His hair, naturally black and copious, is bushy, persistently frizzled, almost wiry, indeed, it seems something between hair and wool. His beard, of the same texture, is equally profuse and bushy, and is his greatest pride. His stature is large, but somewhat less than that of the Tongan and Samoan; his muscular development is more perfect, while his limbs are less rounded, and his figure generally slighter. His eye is restless, his manner suspicious, his movements light and active. The skin of the pure Tongan or Samoan is a dark *reddish-brown*, smooth and soft. His hair though naturally black and copious, is coarse, seldom wavy, generally straight. He is almost beardless, and abhors a hairy chin. His stature is herculean, his limbs well rounded, his figure symmetrical; his manner is quiet and confiding, his actions pre-eminently graceful; his eye is soft and subdued, and his movements, lacking energy and quickness, are deliberate and stately. A comparison of the profile of the Fijian with the profile of the Tongan or Samoan, shows that the former is more prominent than the latter, and the forehead higher and more expansive.” (p. 377). It is worthy of notice how very closely this agrees with Mr. Alfred R. Wallace’s contrast between his Malays and Papuans.* The chapter closes with a number of instances of the drifting of canoes, and thus the involuntary migrations of the inhabitants of the different Polynesian Islands.

Perhaps the most important anthropological portion of this volume is that contained in its appendix. Appendix A is on the “Physical and Psychological Condition of the Inhabitants of Viti, Tonga and Samoa.” In this essay we perceive the philosophy of the writer to be that the natives of these islands are capable of being vastly and indefinitely improved, of being “civilised,” of being converted to Christianity, and that such changes produce or are coincident with some amount of alteration in their physical organisation.

He begins by saying that the chiefs are finer looking men than the commoners; intellectually and physically they are superior, the contour of their features is more striking, more definite, *the skull altogether larger*. “The true cause of the intellectual and physical superiority of the chiefs is in the fact that as leaders, their mental faculties are more continuously active than those of the commoners.” The fact that the stature and appearance of the chiefs are superior to those of the commonalty has been affirmed by Captain Cook and

* *The Malay Archipelago*. By Alfred R. Wallace. Second edition. Vol. ii, p. 103.

others. A Continental writer upon the Indian Archipelago, attributes the same fact to the mixture of Arabian blood, at a remote period, in the families of the chiefs. Mr. Pritchard makes the same statement with respect to the Polynesian priests, and explains the phenomenon in a similar manner. But when he comes to speak of what he considers he has seen, it appears that he is mainly relying upon theory. He says: "Take a Samoan, born under the improved associations and influences, educated at the Missionary Institution at Malua, where mental development is facilitated by withdrawing the pupils from the old associations and influences, and domiciling them within the precincts of the college grounds, where their energies are further stimulated by competition and contrast with each other—compare his skull with the skull of a Samoan born and reared under the old associations and influences; an incipient difference in the form of the cranium is just perceptible. The cranial capacity of the former is just appreciably greater than that of the latter," p. 415. This passage shows that the asserted alteration in the form and size of the cranium is nothing more, at most, than the impression produced upon the author's eye. It is not a fact deduced from actual and accurate observation by measurements, etc., but is an appearance estimated by a glance. The validity of such an appearance, even if seen by others, cannot be regarded as of any great importance. Those who have devoted their efforts to determining the size and capacity of the skull, will know that no reliance is to be placed upon a mere visual estimate—that the eye may easily be misled, and that the worth of observations of this kind is very small indeed, unless based upon very careful measurements. The author further proceeds: "The crania of the *children* of the natives born and reared under the improved moral and intellectual condition, when these children (the second generation under the new development) are themselves under the direct and immediate force of the new associations and influences, especially in the missionary connections, show a yet more appreciable improvement of capacity than the crania of their parents. In the next, *the third generation*, the metamorphosis will, I think, be positive, definite, and unquestionable." (*Id.*) The showing of this appreciable improvement of capacity has a very airy and unsubstantial foundation. Notwithstanding, it may be readily allowed that such an improvement, as we consider it, would be very acceptable and gratifying to our notions respecting ameliorating influences moral and intellectual. It only wants to be proved, not to be assumed, for it would be joyfully accepted by all. No doubt it perfectly corresponds to the author's high appreciation of missionary labours. But what are we to say of other groups of Polynesian Islands, where missionary labours have been going on for ages, and from

the pliant disposition of the islanders have been considered to be pre-eminently successful. Have the Sandwich Islanders, at one period so numerous and so finely developed, been improved physically and morally in such an obvious and striking degree as we might reasonably have expected, if the hypothesis of the author had been true? Able and intelligent observers, who have been long residents in these islands, speak only of both moral and physical deterioration concurrent with the conversion of the natives, and, what is quite consonant and notorious, is the fact of the steady and rapid decay of the people, and the depopulation of the islands to a degree that is quite appalling. With a knowledge of such facts, which are by no means confined to the Sandwich Islands, every reflecting person must entertain a doubt whether the "civilising," which really and only means the diffusing of *our* European notions and customs among these primitive people, in the place of their own, and conversion of these islanders of whom Mr. Pritchard writes, may be attended by their physical development and their moral amelioration. Looking upon missionary efforts among aboriginal races, both catholic and protestant, in various parts of the world, it may be safely said that they have singularly failed. And the question may be asked, with all respect to Mr. Pritchard, has he given us such data as to ensure a reasonable and justifiable hope that they will have a happy and successful issue in the Samoan, Tongan, and Feejeean Islands? We *fear* he has not.

At the conclusion of this Appendix A, Mr. Pritchard enters upon "the interesting study" of the fusion of races and of half-castes. From his observations and remarks, it is apparent that the effects of intermixture of blood are very prone to die out, and that there is no reasonable hope of the production of a new race by the intermarriage of the half-castes. The progeny ceases to be fertile at an early date. This is confirmatory of all we know of the essential and irreconcilable diversity of human races.

We now come to Appendix B, which is a repetition of a communication already made to the *Anthropological Review*, No. XIII, April 1866. This it is more particularly our object to consider. It is entitled "Hair and Crania."

Here Mr. Pritchard sets out with some remarks which are at variance with what former observers have taught us. He does not speak in positive terms; but it is apparent that he regards it as a mistake that any of the natives of the Pacific Islands have that peculiar kind of hair which grows in "separate spiral tufts", with bare spots between. His words are: "The allegation, which has found favour with some ethnologists, that the hair of certain islanders of the Pacific (variously described as Oriental Negros, Negrillos, Negritos, and

Papuans) grows not equally spread over the scalp, but in tufts, with bare spots between, is one which I very much question. So far as I have been able to learn, the hair grows spread equally over the scalp; and I think it will be found that the 'separate spiral tufts' are directly the result of an artificial process" (p. 425). If this be really correct, it would seem that the separation or segregation of the tufts of hair upon the heads of many of these people, which has been spoken of by Mr. G. Windsor Earl and many others, is merely an artificial result of their mode of dressing the hair. Mr. Earl, who was a personal observer, expresses himself quite distinctly. He says: "The Papuans have very few characteristics in common with the brown coloured races of the Indian Islands, but their most striking peculiarity consists in their frizzled or woolly hair, which does not spread over the surface of the head, as is usual with the negroes of Africa, but grows in small tufts, each of which keeps separate from the rest, and the hairs, if allowed to grow, twist round each other, and form spiral ringlets. Many of the tribes keep the hair closely cropped. The tufts then assume the form of little knobs, about the size of large peas, which give the head a singular, but not altogether unpleasing, appearance; for the regularity of these little knobs is so great, that the first idea which strikes a stranger is that they have been produced by a stamp."*

Mr. Pritchard even goes a step further than this, and is inclined to assure us, as the result of his observations, that all kinds of human hair may be trained to present the appearance of the hair of these islanders—*i. e.*, either the separate spiral tufts or the mop-fashion. That the Tongans and Samoans whose hair is straight, not in the least degree crisp and woolly, can by culture reduce their hair to the separate spiral tufts, "looking as if they grew naturally, and there seemed to be bare spots between them."

The subject itself is a curious one, and deserves further investigation, but if Mr. Pritchard's positions are correct, the notions hitherto entertained by anthropologists are quite unfounded, and there could scarcely be anything to prevent a Chinese or a North American Indian presenting himself to some future inquirer with a mop-head, or one with separate spiral tufts and bare spots between them. This view of so high an authority as Mr. Pritchard, may do much at least to unsettle the confidence of anthropologists in these peculiar kinds of hair. We certainly *know positively* that some of the races of South Africa, as the Hottentots and Bushmans have hair growing in separate spiral tufts which have bare spots between apparent to everybody. It is also well known that the hair of these people has a particular confor-

* *Native Races of the Indian Archipelago: Papuans*, p. 1.

mation ; it is very fine and *eccentrically elliptical*, or flattish, like that of the beard and pubes. Upon this quality it is that its excessive curliness depends. And it is also equally well known that some of the Pacific races possess hair of exactly the same structure. *Cylindrical* hair like that of the Chinese and North American Indians might possibly be induced to curl, but it is most likely that a pair of hot curling irons would be indispensable to give it the twist which would not be permanent, but soon effaced. Mr. Pritchard admits that the Samoan hair which he has known to undergo the process that renders its appearance to be that of separate spiral tufts with intervals between them, is naturally *flowing*, therefore will have some ellipticity in its section. He says, "I have observed that, the more crisp and woolly the hair, the longer it will retain the separate spiral tufts after they are artificially produced."

But my chief object is not to throw discredit upon the affirmations of Mr. Pritchard, which I have no right to do, as I cannot use the language of an observer, except as to the structure of the hair itself, but to lay before the readers of the *Anthropological Review* the statements of an experienced observer, who has spent many years in the Pacific, and visited many of the Islands in which the tufted hair occurs. This I am enabled to do in consequence of having recently received a letter from this gentleman, whom I regard as a very competent authority.

Let us hear what he says, first as to the form of the skull, and then with regard to the character of the hair. These are his words, speaking of the natives of Faté or Sandwich Island in the New Hebrides : "The heads of these people are certainly remarkable, long, narrow, and high. I have never seen elsewhere in Polynesia so exaggerated a form of this type. I have some of these people often about me, and never fail to arrive at their nationality by examining their hair. The generality of the natives in Fiji, and I believe most islands to the westward have hair growing in tufts, not twisted by art into tufts, but clearly growing in tufts, with well marked intervals, and may be compared to some varieties of grass, which growing in little bunches permits the soil to be seen between each root. The peculiarity of growth, I believe, will be found most strongly developed in the Faté natives. It is as exaggerated as their type of skull. I have had a man from Faté in the bow of my boat, twenty feet distant from me, with this peculiarity so marked, that looking at him I could distinguish more skin than hair upon his head. Many of the young boys have hair thin, curly, tufted, and so distinct that they are little better than bare-headed." This last remark seems to be quite conclusive against Mr. Pritchard's attribution of these remarkable peculiarities

of hair to art and fashion. And the early portion of the passage appears to be equally confirmatory of what I have asserted respecting the hypsistenocephalic skulls of these Islanders.

Before I proceed to the further statements of my correspondent with respect to the hair of other Pacific Islanders, it will be worth while to allude to an affirmation of Mr. Pritchard, concerning the conformation of the skull among these people. He says, "on the question of crania, it will be well for theorists when treating of the skulls of the Pacific Islanders, ever to bear in mind the practice which prevails, more or less, in all the groups, of squeezing the heads of infants into the locally-admired shape, which shape varies somewhat in every group. Before a child is a month old, its head is made to assume a totally different shape from that designed by nature, whatever that may have been. The shape and development of the crania, are thus, in a measure, the result of an artificial process. In some cases, the tender skull is squeezed on the sides, over the ears, to make the head elevated in the centre. In some islands, it is pressed on the top and on the forehead to make it project behind." (p. 427). I am not aware that I am much of a theorist with respect to skulls. Mr. Pritchard can hardly be acquainted with the opinion of the older anatomists that the brain wholly determines the shape of the skull, now more correctly modified in such a manner as to allow both the brain and the skull to have a mutual causative influence in determining the form of the latter. But the great defect in Mr. Pritchard's argument arises from his supposing that any pressure made upon the head of a new born infant by the hands continued and repeated for *the first month of its life* will permanently alter or modify its shape. Such could not be the case, for both brain and skull are in some measure elastic, and will return to their normal form when the pressure is removed. There are and have been many races of men among whom an artificial shape is, or has been impressed upon the head. This, however, is always done by bandaging, and compresses, sometimes made of wood, which are permanently applied, and not removed until the child has reached the age of about one year. There need be no hesitation in saying that this permanent and continued pressure is the *only* mode to produce an artificial form of the head. Occasional and transient pressure for the first month of life could not effect this purpose at all. Therefore, whatever Mr. Pritchard attributes to an occasional squeeze of the hand of Polynesian mothers may be taken for what it is worth.

Respecting the *colour of the hair* my correspondent will be seen to confirm all that has been asserted by Mr. Pritchard. He writes, "Touching the colour of the hair, I think it right to inform you, every

shade of colour may be found in any island. The natives use lime which turns the hair all shades, from light yellow or tow colour to brown-red. Again, roots and bark of trees are largely used. At Rotumah, peopled by a race well worthy of your attention, the hair frequently reaches in long wavy tresses to the hips. Lime, and an extract of 'dawa' bark, turn it a rich often golden red. Without the use of any of these artificial aids, I think all the natives of these waters, Papuans and Malayo-Polynesians, will be found to possess *black hair only*."

My correspondent's further observations on the hair of these remote Pacific Islanders, and other matters, are well worthy of being preserved. "The whole group of Gilbert or Kingsmill Islands, extending over six degrees of latitude, with one exception, is inhabited by straight, long-haired people. This exception is the north island, marked Pitt's Island on the chart, the Taritari, or Makin of the natives. The people of Taritari have the same language, manners, and customs as those of the other islands in the group, but not straight hair. Strange to say, they have curly 'fuzzy' hair, growing in luxuriant abundance and looking like a large black mop, but not a 'thrum' mop. So large and thick is their hair, always beautifully kept, that men carry miniature spears of hard wood two feet long, generally stuck over their ears. While smoking and chatting, these knitting-needle-like combs are run through the hair, or employed to scratch any part of their scalps, otherwise inaccessible. In fits of anger they are sometimes hastily withdrawn and used as daggers with fatal results.

"The *teeth* of these people cannot well be discoloured like those of Malays. Betel nut is not known, neither is ava, or kava, which so much discolours the otherwise fine teeth of the Polynesians. Most of these people have slight whiskers and moustaches. At Ellice's group, in one island above St. Augustine, native name "Nunemaya," the men are heavily bearded, and not a little proud thereof. Thus, in Gilbert's group, we find straight-haired men, with one exception—the curly-headed Makin men. In Ellice's group, just south of Gilbert's, the men have, as a rule, a dozen straggling hairs for a beard, excepting at the little isle of Nunemaya, where the men have splendid beards.

"*Tattooing* throughout the Carolines, or at least the eastern group, is always in straight lines. The favourite pattern is the fish-bone, placed length ways on the body or limbs.* In Fiji, only two parts of a woman were tattooed, viz., the lips and the labia.

* This is in perfect agreement with the men and women of the island of Gouam in the beautiful Plates 53 and 54 of the voyage of *L'Uranie* and *La Physicienne*. Their legs are tattooed with long streaks, in the herring-bone pattern.

"Throughout the Eastern Caroline Islands and Ellice's group, the custom of keeping ancestral heads, or skulls, prevails. At Apamama (Gilbert's Island), the skull of one old king receives a sort of adoration. In Ellice's group skulls of head chiefs are hung up in houses and taken down periodically, and oiled during the weeping and wailing of women. I was present at one such ceremony. At some Islands the women not only weep, but beat their eyes from time to time with their fingers, until the eyelids are so swollen as to render it necessary to keep in the house for some days.

"The *colour* of the Radack, Ralick, and Kingsmill men has long puzzled me. Among twenty light brown men, one may observe a thick-set fellow as black as a Fijian.

"The *scaly eruption* is very common and very disgusting. I have seen scales absolutely being blown off a man. Perhaps their diet, exclusively fish and cocoa-nuts, with a very, very small allowance of *poipoi*, an Arum, may produce this cutaneous eruption. Fish is more frequently eaten raw than cooked."

Mr. Alfred R. Wallace, the distinguished naturalist, who courageously devoted eight years of his life to researches to promote the study of his favourite science in the islands of the equatorial region of the extreme Western Pacific, to the west of New Guinea, with such remarkable zeal, perseverance and also success, came in contact with some of the races to which the term Papuan is applied. These people, I have long had reason to know, excited his especial attention and interest. In the charming volumes entitled *The Malay Archipelago*, he has introduced frequent notices of them, and attempted to delineate their characteristics with much success. Although, in one sense, subordinate to natural history as usually pursued, his work is rich in anthropological materials, for he always devoted his attention to the people among whom his pursuits threw him, and made them the subject of his keen observation. A notice of Mr. Wallace's work, extending over a number of pages, has appeared in this *Anthropological Review*, No. 26, p. 310. His travels did not extend to the New Hebrides, Carolines, Solomon Islands, or to those to which the term Polynesian is most usually applied. In his general sketch of the typical Papuan race, he says, "The colour of the body is a deep sooty-brown or black, sometimes approaching, but never quite equalling, the jet-black of some negro races. It varies in tint, however, more than that of the Malay, and is sometimes a dusky-brown. The hair is very peculiar, being harsh, dry, and frizzly, growing in little tufts, or curls, which in youth are very short and compact,* but afterwards

* This appearance of the peculiarity of the Papuan hair, as we may call it for want of a better name, in early age, seems seriously to weaken the

grow out to a considerable length, forming the compact frizzled mop which is the Papuan's pride, and glory. The face is adorned with a beard of the same frizzly nature as the hair of the head. The arms, legs, and breast are also more or less clothed with hair of a similar nature" (vol. ii, p. 273). Of the hair of the people of Dorey, in New Guinea, he speaks in the following sentence, "Their colour is a deep brown, often approaching closely to black, and the fine mop-like heads of frizzly hair appear to be more common than elsewhere, and are considered a great ornament, a long six-pronged bamboo fork being kept stuck in them to serve the purpose of a comb; and this is assiduously used at idle moments to keep the densely growing mass from becoming matted and tangled. The majority have short woolly hair, which does not seem capable of an equally luxurious development" (ii, 185). In a later page, Mr. Wallace speaks of "the Negritos, the black woolly-haired races of the Philippines and the Malay Peninsula," and points out the numerous marks of difference which distinguish them from both Malays and Papuans. His concluding sentence is that they "agree very closely in physical characters with each other, and with the Andaman Islanders, while they differ in a marked manner from every Papuan race." This is almost the only evidence to be derived from Mr. Wallace's beautiful book on the subject of hair, who had not the opportunity of seeing those people who are most remarkable for their hair growing in separate tufts. The figure Mr. Wallace gives of the New Guinea men at p. 185, is almost precisely identical, as far as the hair goes, with that of Thakombau, the Feegee chief. Besides the Negritos and the Andaman Islanders, and perhaps more truly than the former, to judge from specimens of each hair which we possess, the lately extinct Tasmanians, a large robust race, had this peculiar frizzly hair, growing in little tufts in a thrum-like manner, which they dressed with grease and red ochre.

One of the most important anthropological conclusions of Mr. Wallace is that the Malays and the Papuans are two distinct races. "In the *Malay Archipelago* we have an excellent example of two absolutely distinct races, which appear to have approached each other, and intermingled in an unoccupied territory at a very recent epoch in the history of man; and I feel satisfied that no unprejudiced person could study them on the spot without being convinced that this is the true solution of the problem, rather than the almost universally accepted view that they are but modifications of one and the same race." (ii, 217). This conclusion is often repeated. Still, Mr. Wallace must not be hastily regarded as belonging to that school of anthropologists, force of Mr. Pritchard's line of argument, in attributing its singular form to art alone, which form may be varied at pleasure.

who maintain the distinct origin of the races of man and their essential differences. Such a doctrine would be quite contrary to the Zoological Philosophy he has adopted. This is displayed in another passage, which may be said to lessen the value of all his preceding remarks upon radical diversity, if we do not mistake its meaning. The passage to which we refer is the following. "I believe, therefore, that the numerous intermediate forms, between the Polynesian and Papuan, that occur among the countless islands of the Pacific, are not merely the result of a mixture of these races, but are, to some extent, truly intermediate or transitional; and that the brown and the black, the Papuan, the natives of Gilolo and Ceram, the Fijian, the inhabitants of the Sandwich Islands and those of New Zealand, are all varying forms of one great Oceanic or Polynesian race." (II, 280).*

Upon another subject of great importance to anthropologists, Mr. Wallace has been induced to say a few words in an appendix entitled "Crania." This appendix is itself an evidence of the author's acute analytical powers. It is introduced by the remark, that "a few years ago it was thought that the study of crania offered the only sure basis of a classification of man." In the infancy of anthropological science such an impression might probably have been entertained. More recently, the opinion has been growing that man, above all other animals, must be taken as a whole, both physically and mentally, and studied in his peculiarities, in order to classify his various and different races with satisfaction. Still, this is far from sufficiently justifying Mr. Wallace's further assertion that "now the opinion is beginning to gain ground, that for the special purpose of classification crania are of very little value." Man is more especially distinguished from all other animals by the great diversity and extent of his intellectual and moral faculties. He is a psychozoon. These peculiarities rest upon the organisation of his brain. This had led that most eminent zoologist, Professor Owen, to place him in a special subclass *Archecephala*. And the different families of man are marked by nothing more characteristically than their differences of mental and moral development, or their civilisation in one of the senses in which that term is applied. This view is strikingly confirmed by Mr. Wallace's own observations, who discriminates the remarkable races of people

* In the last chapter of Mr. Wallace's work, *On the Races of Man in the Malay Archipelago*, there is an admirable epitomised contrast between the two distinct races, the Malay and the so-called Papuan, which is quite unequalled among such graphic "sketches." Mr. Pritchard had previously perceived such a contrast between his Papuans and Polynesian Malays, without, however, making the attempt to delineate it in so elaborate a manner. (*Polynesian Reminiscences*, p. 377.)

he met with, chiefly by their mental peculiarities. Hence the cerebral organisation may be taken as the truest epitome of man, and the index of the place which any particular race (for each race has a series of mental qualities which runs through the whole race with tolerable constancy and uniformity) of mankind occupies in the natural system. This is undeniable. The great difficulty is in ascertaining and appreciating the peculiar cerebral organisation of each race of man. Even if the brain itself could be subjected to the closest anatomical scrutiny, its physiology is at present so unsettled that the results would be doubtful and uncertain. There need be no hesitation in allowing that the skull is an imperfect representative of the peculiarities which each race of man presents. Still, if his most essential differences from other races exist in his cerebral organisation, his skull will probably be allowed to be the most patent and stable image of these diversities. This is about as much as Blumenbach claimed for the cranium.* He did not arrange human races exclusively upon the forms of their skulls. He also included the structure of the body, the skin, and the hair in the definitions of his varieties of man. It was the late Professor Retzius who simplified the arrangement, and based it upon the skull alone. That every other portion of man's physical organisation should be studied, and all the peculiarities observed and described, is as essential for the classification of man as it is for the classification of any other animal. For it must be recollected that this is the practice among naturalists. They may place the teeth, or the organisation of the limbs, etc., as occupying the first place in the classification of the mammalia, yet they constantly find that they are compelled to embrace other structures and peculiarities, not excluding even the habits of animals. Classification ought not to be regarded as so perfect and complete in all the lower animals, and only uncertain in man. Such is far from being the case, and probably always may be. The creation was not made for systematists to arrange and classify. This was not the purpose of the creation. No system yet invented has been sufficiently comprehensive to embrace all the endless divergencies and deviations of nature. It may be safely said that in no classification of human races which is worth the name, can the cranium be left out. On the contrary it must always occupy *the principal place*.

Other mammalia have been classified by their teeth and the forms of their extremities. The teeth of different races of men differ essentially, still, as all races of men live on the whole upon pretty much the same kind of food, all partake of both animal and vegetable diet, there are none of those prominent and obvious differences in their

* *Decas*, i, p. 5.

dentition, such as present themselves among other mammalia as a class. The differences are almost wholly differences of degree only. The extremities again among the different human races vary materially, but not so essentially in their structure as to enable a systematist to classify the races by the differences of that wonderful instrument the hand, or by those of the feet. It was of these organs that Professor Owen once wrote : "The foot by which we stand and walk erect, the hand which so liberated, can apply its matchless structure to do the biddings of a high intelligence, and the organ itself of that intelligence, are severally structures peculiar to and characteristic of the human kind."

In conclusion, it may merely be said, that, unless there are some essential differences in the organisation of the brain, which probably may always elude human scrutiny, there is no more certain means of classifying the different races of man than by taking the whole of his organisation into account, with colour and form, and, especially, primarily and chiefly, his cranium, the form and dimensions of his skull, and his mental and moral faculties. The gross weight of the brain affords some of the most important and most valuable criteria, which *can never be overlooked*, but must be studied and determined by many future labourers for years to come, still, even these materials cannot be employed as so ready a key as might be desired. Partly from the wide range of individual diversities, or "individual varieties" which present themselves in all races, pointed out so clearly by Mr. Wallace, it will be requisite to derive our averages from a much larger number of observations than have hitherto been made. Hence the futility of many recent remarks made upon individual skulls. The skull and the brain will still always remain the truest bases of the classification of human races. And it ought not to be overlooked that all the most eminent craniologists, who had formed the highest estimate of the value of the skull in the natural history of man, as Blumenbach, Retzius, and Van der Hoeven, were equally, if not still more distinguished as comparative anatomists and naturalists.

J. B. D.
