



Notes on a Collection of Skulls from the Islands of Mallicollo and Vanikoro, in the New Hebrides Group

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NOTES on a COLLECTION of SKULLS from the ISLANDS of MALLICOLLO and VANIKORO, in the NEW HEBRIDES GROUP. By GEO. BUSK, F.R.S. and V.P.A.I.

THE skulls which form the subject of the present communication, comprise eight from the Island of Mallicollo, and three from that of Vanikoro, both islands belonging to the New Hebrides group. Of the Mallicollese skulls three were presented a short time since to the Royal College of Surgeons, by Dr. A. Corrie, R.N., and the others, together with those from Vanikoro, were sent to the President by the widow of the late lamented Captain Goodenough, by whom they had been procured.

The collection altogether is of especial interest, and more particularly the Mallicollese crania, inasmuch as no specimens from that island have apparently ever before come under scientific inspection, although at the same time the shape of the heads of the inhabitants, from the time of the discovery of the island by Captain Cook, has been known to possess striking peculiarities. It had also, as will afterwards be more particularly noticed, attracted the attention of the illustrious Blumenbach.

The Island of Mallicollo, or Manicollo, is, I believe, the second in size of those constituting the New Hebrides group, and lies in lat. $16^{\circ}25'$ S. and long. $167^{\circ}57'$ E. Of the interior of the island, which is of considerable size and supposed to be very populous, little or nothing is known beyond the circumstance that it is densely wooded. And intercourse with the natives has, from the first, been so difficult and dangerous that but little is known of their manners and customs, nor in that respect has anything of importance been added to what is stated by Captain Cook and the two Forsters, who accompanied him, all of whom appear to have been deeply impressed with the peculiar physical and mental characteristics of the natives. Of these the fullest particulars are given in the account of the younger Forster, and it will be interesting to cite some of the points adverted to by him.

He describes the natives of Mallicollo "as of a blackish brown colour, the hair black, frizzled, and woolly. Their features," he says, "are more extraordinary than all the rest. They had the flat broad nose and projecting cheek-bones of a negro, and a very short forehead which had sometimes an unusual direction, being something more depressed than in well-formed men. Their slender form, their ugly features, and their black colour often provoked us to make an ill-natured comparison between them and monkeys. We should be sorry, however," he goes on to remark, "to supply Rousseau, or the superficial philosophers who re-echo his maxims, with the shadow of an argument in favour of the Orang-outang system."

But notwithstanding this pithecoïd aspect, he states that "they were the most intelligent people we had ever met with in the South Seas; they understood our signs and gestures as if they had been long acquainted with them, and in a few minutes taught us a great number of words." Their language was wholly distinct from that general language of which several dialects are spoken in the Society Islands, the Marquesas, the Friendly Isles, the Low Islands, Easter Island, and New Zealand. The most singular sound was a shake or vibration of *brrr* together. Thus," he says, "what they wanted in personal attraction was made up in acuteness of understanding." He notices a fact also which is of some interest on the present occasion, since one of the skulls from Vanikoro is coloured in the same way, viz. that "some of the women covered their heads with the orange powder of turmeric root, and some had daubed their face and others their whole body with the same colour."

Mr. G. Forster also remarks that the natives in some parts of New Guinea and Papua seem to correspond in many particulars with what may be observed among the Mallicollese; and concludes with the observation, which all subsequent voyagers have merely confirmed, "that we chiefly observed two great varieties of people in the South Seas—the one more fair, well limbed, athletic, of fine size, and a kind, benevolent temper; the other blacker, the hair just beginning to become woolly and crisp, the body more slender and low, and their temper, if possible, more brisk, though somewhat mistrustful. The first race," he states, "inhabits Otaheitee and the Society Isles, the Marquesas, the Friendly Isles, Easter Island, and New Zealand, whilst the second peoples New Caledonia, Tanna, and the New Hebrides, especially Mallicollo."

The elder R. Forster, speaking of the natives of Mallicollo, describes them as a small, nimble, slender, black and ill-favoured set of beings, that of all men he ever saw border the nearest upon the tribe of monkeys. Their skulls (meaning, I presume, their heads), he remarks, are of a very singular structure, being from the root of the nose more depressed backwards than in any of the other races of mankind which they had formerly seen. He also notices the harshness of their features and the breadth of the cheek-bones and face, giving the whole countenance a highly disagreeable aspect. He notices the circumstance, also, that some were hairy all over, which was likewise observed in the natives of Tanna and New Caledonia, with whom the Mallicollese agreed in their black colour and woolly hair. He adds the remark, that the depression of the forehead in the latter "may perhaps be artificial."

The above quotations are given mainly for the purpose of

showing that from the first the negrito character of the natives of the New Hebrides was fully recognised, and that among the Melanesian races those of the Mallicollese population were peculiarly distinguished by the form of the head or skull, which was such as in the eyes of a competent observer to lead to the suspicion that it might be due to artificial deformation.

As I have already said, although apparently no skulls from Mallicollo had come into the hands of collectors, their peculiar conformation (or rather that of the living head) was noticed by Blumenbach in the second edition of his work, "*De Generis Humani Varietate nativâ*," 1781, p. 87, where in speaking of his fifth form of skull (the Malayan), to which he refers that of the South Sea Islanders generally, he adverts to the inhabitants of the Island of Mallicollo as affording an exceptional form, and not, as Dr. Barnard Davis* seems to imply, as typical of his fifth variety of man.

This remarkable peculiarity of form is well shown in the present collection, from which two well-marked specimens have been selected for the purpose of illustration (Plates i. and ii.).

One of the most striking features presented in the Mallicollese skulls, and which is in greater or less degree common to them all, is the extreme flattening or depression of the frontal region, accompanied with a not very strongly marked depression immediately behind the vertex, whilst at the same time there is no flattening in the occipital region. This peculiar deformation can only, I think, be regarded as artificial, as was suspected by R. Forster. It might be effected by a piece of bark or wood being bound on the forehead by a band passing round the back of the head and over the vertex in a figure of eight fashion.

This accords in some respect with what is stated by Dr. B. Davis† with regard to a skull from Noukahiva, one of the Marquesas Islands, "which," he says, "has much the appearance of having been distorted by art, and if so, probably in the mode used by the Caribs of St. Vincent figured by Goss."‡ But I would remark that a considerable difference exists in these two instances in the circumstance that in the Carib skulls, as in the Peruvian, &c., there is evidence of counter-pressure by a flat surface upon the occiput, which is wholly wanting in the Mallicollese skulls.

In further support of the notion that the peculiar frontal

* "On the Peculiar Crania of the Inhabitants of Certain Groups of Islands in the Western Pacific," 1866, p. 1. (*Natuur k. Verhandel. v. d. H. Maatsch, d. Wetensk &c. Haarlem. xxiv. Deel.*)

† "Thesaur. Cranior," 1867, p. 319.

‡ "Deformations Artificielles du Crâne," Pl. vi. fig. 3.

depression in the Mallicollese cranium is artificial, I would advert to the fact that in those from Vanikoro, an island only a few miles distant, and inhabited, as it would seem, also by a similar Melanesian race, there is no such depression, as will be seen in the figures given of skulls from Vanikoro (Plates iii. and iv.), nor, so far as I am aware, has the same cranial deformation been observed in any other Melanesian race. Nor have I been able to find any reference to the practice of artificial deformation amongst that race elsewhere.*

This feature therefore may be, perhaps, at present regarded as limited to the Island of Mallicollo, which is in itself a very remarkable circumstance.

The other characters of these skulls are more or less common to the Melanesian or Negrito race in general, if we except, perhaps, the Andamanese. Amongst these characters will be remarked (1) the small size of the calvaria or cerebral part as compared with the facial portion of the skull; (2) the great development of the mastoid region, as is particularly shown in the skull R.C.S. No. 5,402 K, Plate ix., which also shows (3) the great prominence of the zygomatic arches and the comparative narrowness of the frontal region; and (4) the intervention of the temporal between the parietal and alisphenoid, which is also shown in No. 5,402 I, Plate x., and in several others of the skulls in the collection, and which, as is well known, is so common a condition in the Tasmanian and Papuan branches of the Melanesian race.

5. In the general preponderance in length of the parietal longitudinal arc over the frontal the New Hebridean skulls are distinguished from the Tasmanian, and agree, so far as my observations extend, with those from New Guinea.

6. In several of these skulls the two median upper incisors have been removed during life, a practice, as is well known, pursued by many and (geographically) very distant branches of the Papuan and Australian races.

Regarding the present collection as affording fair average specimens of the New Hebridean race, if they are compared with other of the lower dolichocephalic races and with the modern European as a point of comparison, it will be observed from the data in Table II—

1. That in *general dimensions* they stand the lowest with the exception of the Veddahs and Andamanese, but are nearly on a par with the Intratropical Negro, Hottentot, and Bushman.

2. That in the *frontal region* they are the most deficient of any except the Bushman, Veddah, and Andamanese, rather

* It is said that the Samoans distort the children's heads, but in what direction they are distorted has not been described.

exceeding the Intratropical Negro, and being equal with the Hottentot.

3. That in the *parietal region* they exceed all the lower races enumerated in the Table, except the Tasmanian. The number representing this region in the European skulls is greater, but if we regard the higher number, by which the "*general dimensions*" of the European skulls are expressed, it will be seen that the parietal region in the New Hebridean is proportionately rather more developed. It would seem that this excess is mainly due to the greater length of the parietal longitudinal arc, or of the sagittal suture, and not so much to lateral expansion of the middle cerebral lobes. And this appears to me one of the most marked characteristics of the New Hebridean crania.

6. In the proportionate dimensions of the occipital region the New Hebridean skulls agree very closely with the Hottentot, Bushman, Australian, Tasmanian, and Intratropical Negro, whilst they exceed the Veddah, and still more considerably the Andamanese, and are much behind the European.

7. The mean cubic contents of the skulls in the present collection are equal to about 76 cub. in. for those from Mallicollo, and about 82 for those from Vanikoro; one of the latter, however, contains 85 cub. in., and the other, that of a young female, only 79. And as among those from Mallicollo, two contain 78 cub. in., and one 80 cub. in., the cubic capacity of the male skull might probably be regarded, on the mean, as about 78 or 79 cub. in. In Dr. B. Davis's Tables the mean capacity of New Hebridean crania, exclusive of Mallicollo, appears to be about 83 cub. in.

With respect to other peculiarities of these skulls I would remark:

1. On the great altitudinal index presented by those from Vanikoro, in one of which it is as much as .844, and in the other two, .802-.826, or on the mean about .823, which is a higher figure than I have obtained from skulls of any other race, not even excluding those of the brachycephalic type. The comparative value of this character will be seen in the last line in Table II.

Taking the whole present collection, the mean altitudinal index is about .773, and this is very nearly the same as that assigned to the New Hebridean and New Caledonian skulls taken together by Dr. Barnard Davis. As the latitudinal index is .709, the difference between the two is 64. In the other races enumerated in the Table the difference varies from 17 and 20 in the Bushman and Tasmanian, to as much as 83 in the Veddahs. But in the skulls from Vanikoro the difference rises to 115, and taking the entire collection of New Hebridean skulls it is 64. From the data afforded in Dr. Barnard Davis's "*Thesaurus*," the difference in the case of New Cale-

donian skulls appears to be about 90, and 50 in those from the New Hebrides group.

It would appear, therefore, that among the Melanesian race of the New Hebrides and New Caledonia, in many cases the skull presents an unusually high altitudinal index.

This is quite in accordance with Dr. B. Davis's observations with respect to the great prevalence among the natives of the Solomon Islands, New Caledonia, the Loyalty Islands, the New Hebrides, and the Feejees, of long, narrow, and high calvariae, and "by which," as he says, "they are decidedly and distinctly characterised." To this form of skull he has applied the term *hyspi-stenocephalic*, which is perhaps also equally applicable to the skulls of the Veddahs, so far as I am acquainted with them.

2. With respect to the degree of prognathism in the New Hebridean skull, as shown by the "gnathic index," it would seem that though considerable, more especially in one of the Vanikoro skulls (a young female), still, upon the whole, it is less marked in the New Hebrideans than in either the Australian or Tasmanian, though rather greater than in the Hottentot or Bushman; and very much more so than in the Veddah and Andamanese, being about the same as in the Intratropical Negro.

3. Another striking feature of these skulls is the great expansion of the zygomatic arches. They appear to me to be the most decidedly phænozygous of all skulls that I am acquainted with.

Subjoined are Tables showing—

I. The various measurements of the New Hebridean skulls in the possession of the Royal College of Surgeons, and those sent by Commodore Goodenough, most of which have been liberally presented by our President to the College; and

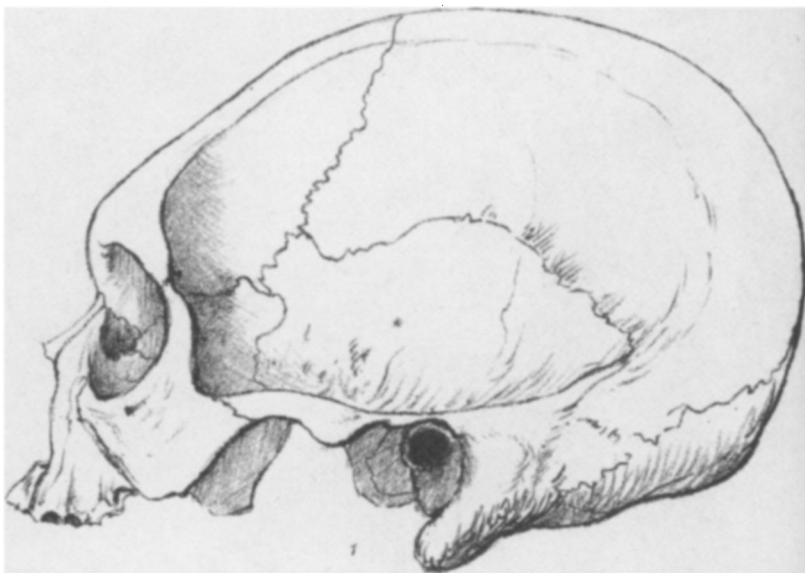
II. A table showing the general dimensions, together with those of the three regions of the skull, with the cubic contents and various indices of the crania of most of the lower races of man, contrasted with the average modern European.

The numbers in the first four lines of this Table are merely comparative, and are not intended to indicate any absolute values. In order to render them intelligible to those who may not have noticed what I have said elsewhere, I may briefly explain that the figures in each of these lines are obtained simply by adding together the respective dimensions under each head in Table I.

Thus, for instance, the numbers in the line headed "General dimensions" represent the sum of the mean *length*, *breadth*, *height*, and *circumference* of the skulls in each column, whilst those representing the different regions are made up by adding together all the numbers relating to that region, as they appear

I.—TABLE OF DIMENSIONS, &C., OF ELEVEN NEW HEBRIDEAN SKULLS.

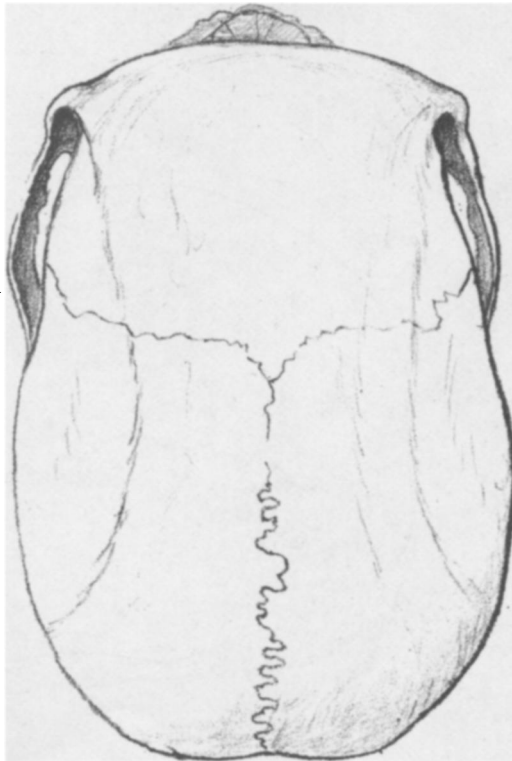
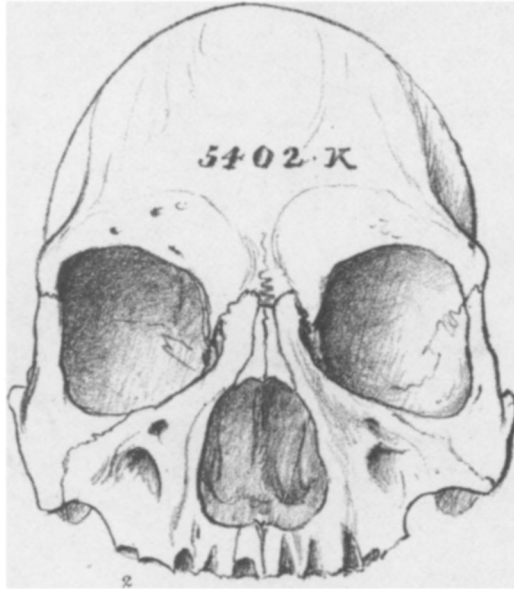
			Mallicollo, C.S. 1. ♂ [5402 I.]	Mallicollo, C.S. 2. [5402 I.]	Mallicollo, C. 3.	Mallicollo, F. 4. [5402 O.]	Mallicollo, F. 5.	Mallicollo, F. 6.	Mallicollo, F. 7.	Mallicollo, F. 8.	Vanikoro, F. 1.	Vanikoro, F. 2. ♂	Vanikoro, F. 3. [5402 E.]
1	Length	...	7.1	7.0	7.3	7.4	7.1	7.0	7.5	6.9	7.1	6.75	6.9
2	Breadth	...	4.95	5.2	5.1	5.4	5.15	5.0	5.1	4.7	5.0	4.8	4.9
3	Height	...	5.3	5.0	5.6	5.6	5.5	5.4	5.7	5.2	5.7	5.7	5.7
4	Least frontal width	...	3.9	3.7	3.6	3.7	3.8	4.1	3.9	3.6	3.9	3.6	3.7
5	Greatest „	„	4.2	4.1	4.2	4.3	4.5	4.6	4.6	4.0	4.3	4.3	4.3
6	Parietal width	...	4.7	4.75	4.5	4.8	4.9	4.6	4.8	4.5	4.8	4.8	4.7
7	Occipital „	...	4.4	4.25	4.3	4.4	4.1	4.4	4.1	4.1	4.5	4.2	4.0
8	Zygomatic „	...	5.0	5.2	5.0	5.4	5.2	—	—	4.7	5.1	4.6	5.3
9	Frontal radius	...	4.1	3.8	4.0	4.3	4.3	4.3	4.8	4.0	4.6	4.4	4.7
10	Vertical radius	...	4.5	4.3	4.4	4.75	4.6	4.5	4.8	4.3	4.75	4.6	4.8
11	Parietal radius	...	5.0	4.8	4.8	5.2	5.0	4.8	5.1	4.8	4.9	4.8	4.8
12	Occipital radius	...	4.3	4.3	4.2	4.5	4.3	4.0	4.2	4.2	4.0	4.0	3.8
13	Maxillary radius	...	4.0	3.8	4.1	4.2	4.1	4.0	4.3	4.0	4.5	4.1	4.1
14	Fronto-nasal	...	3.4	3.5	3.5	3.5	3.7	3.5	3.9	3.6	3.65	3.5	3.7
15	Circumference	...	19.3	19.75	20.0	20.0	19.9	19.8	20.5	19.0	19.9	19.2	19.2
16	Longitudinal arc	...	14.0	13.9	15.0	15.4	14.7	14.7	15.4	14.1	14.8	14.6	14.9
17	Frontal „	...	4.9	4.6	4.6	5.0	4.9	4.9	5.5	4.5	4.7	5.0	5.0
18	Parietal „	...	4.8	5.1	6.1	5.8	5.2	5.2	5.6	5.3	5.6	5.0	5.4
19	Occipital „	...	4.3	4.2	4.3	4.6	4.6	4.6	4.3	4.3	4.5	5.0	4.5
20	Frontal transverse arc..	...	10.9	10.6	10.8	11.5	11.8	11.8	12.3	10.8	11.8	11.6	12.2
21	Vertical „ „	...	12.0	11.5	11.7	12.5	12.2	12.2	12.7	11.3	12.4	12.2	12.6
22	Parietal „ „	...	13.1	12.8	12.8	13.5	12.8	12.8	13.3	12.6	13.0	12.8	13.0
23	Occipital „ „	...	12.0	11.3	11.0	12.0	11.0	11.0	11.0	10.7	11.0	11.0	10.8
24	Latitudinal index	...	.695	.742	.698	.729	.725	.714	.680	.681	.704	.711	.710
25	Altitudinal „	...	.746	.714	.767	.756	.774	.771	.760	.752	.802	.844	.826
26	Gnathic „60	.30	.60	.70	.40	.50	.40	.40	.85	.60	.40
27	Contents	... cub. in.	78.	73.	78.	80.	—	75.	—	72.	85.	79.	—



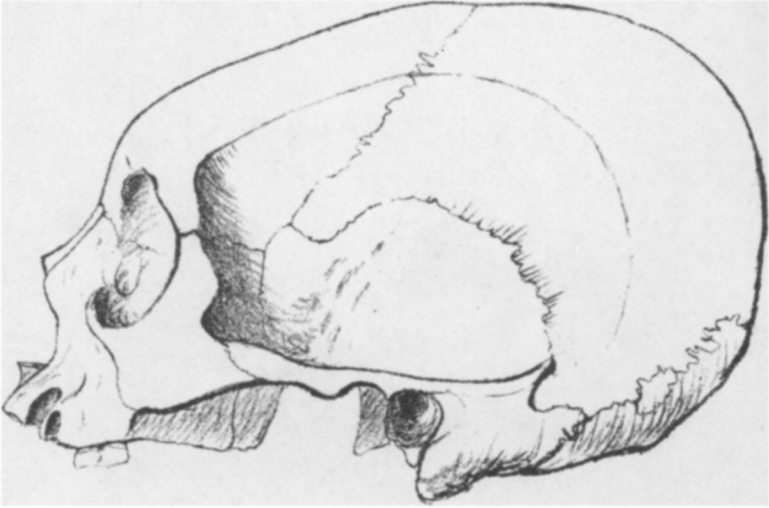
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G.B. del.

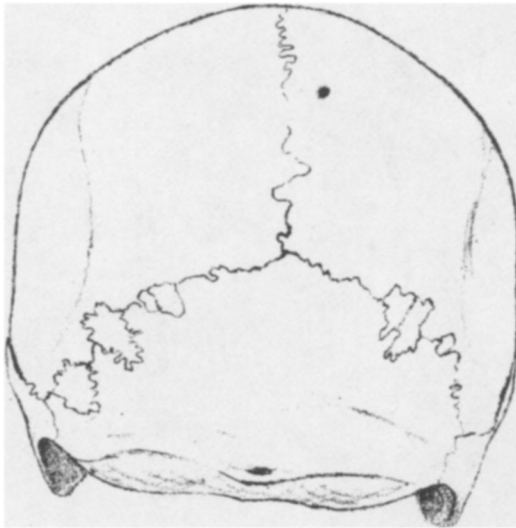
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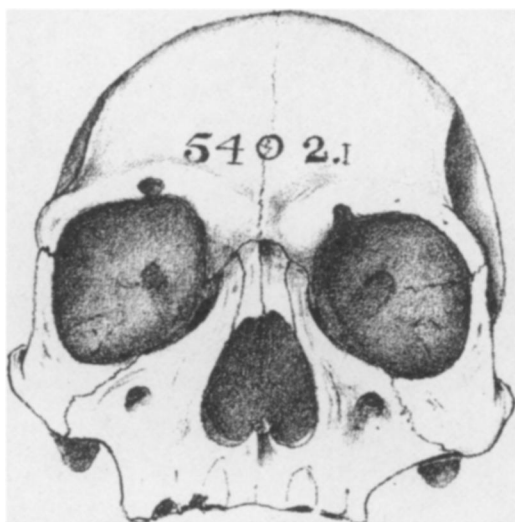
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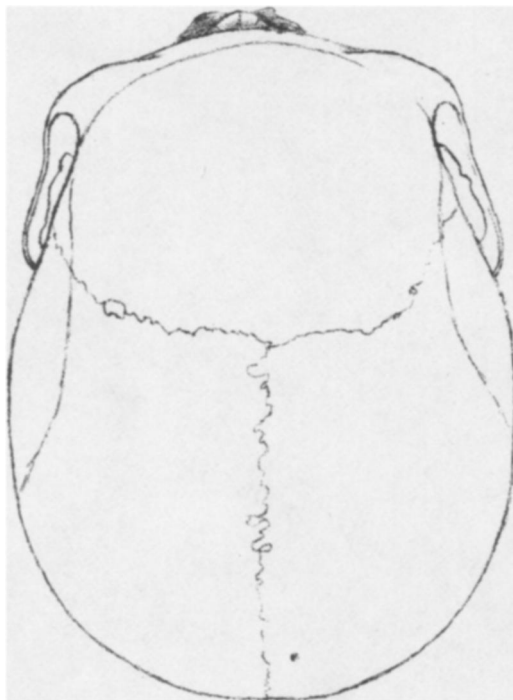
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allicollo.

in the Table. For instance, with respect to the frontal region, I add together the *least frontal width*, the *greatest frontal width*, the *frontal radius*, and the *frontal transverse and longitudinal arcs*; and so of the rest.

The *gnathic index* represents the difference in length between the *maxillary* and *fronto-nasal radii*, which in a perfectly orthognathous skull are exactly the same.

II.—TABLE SHOWING THE COMPARATIVE DIMENSIONS, &C., OF VARIOUS DOLICHOCEPHALIC SKULLS.

		European— dolichocephalic.	Intratropical Negro.	Hottentot.	Bushman.	Veddah.	Andamanese— brachycephalic.	Australian.	Tasmanian.	Polynesian. B.D.	Vanikoro.	Mallicollese.	New Hebrides. G.B.	New Hebrides. B.D.	New Caledonian B.D.
1	Genl. dimensions...	.385	.372	.375	.374	.355	.356	.375	.383	.382*	.369	.370	.369	.375*	—
2	Frontal region ...	.477	.455	.461	.457	.447	.442	.461	.472	—	.464	.461	.460	—	—
3	Parietal „ ...	.285	.268	.275	.275	.263	.273	.267	.283	—	.279	.279	.279	—	—
4	Occipital „ ...	.248	.234	.238	.241	.229	.227	.235	.242	—	.234	.241	.240	—	—
5	Cubic contents ...	*92	*87	*80	*77	—	—	*81	*82	*88	82	76	77	*83	*89
6	Latitudinal index...	.742	.721	.745	.759	.718	.812	.706 ⁽¹⁾	.756 ⁽²⁾	.773*	.708	.710	.709	.720*	.700
7	Altitudinal „ ...	.775	.765	.783	.742	.801	.821	.761 ⁽³⁾	.736 ⁽⁴⁾	.793	.823	.755	.773	.770*	.790*
8	Gnathic „ ...	.20	.56	.41	.42	.22	.38	.70	.60	—	.68	.50	—	—	—
9	Difference between altitudinal and latitudinal indices ...	33+	44+	38+	17÷	83+	9+	55+	20÷	20+	115+	45+	64+	50+	90+

(1) .710—B.D. (2) .730—B.D. (3) .743—B.D. (4) .743—B.D.

* The numbers with asterisk as taken from data afforded in Dr. B. Davis's "Thesaurus."

DESCRIPTION OF PLATES.*

Plate IX.—Skull from Mallicollo, in the collection of the Royal College of Surgeons.

Fig. 1.—Norma lateralis.

Fig. 2.— „ facialis.

Fig. 3.— „ occipitalis.

Fig. 4.— „ verticalis.

Plate X.—Skull from Mallicollo, in the collection of the Royal College of Surgeons.

Fig. 1.—Norma lateralis.

Fig. 2.— „ facialis.

* These four plates have been kindly contributed by Prof. Busk.

Fig. 3.—*Norma occipitalis*.

Fig. 4.— „ *verticalis*.

Plate XI.—Skull from Mallicollo, in the collection of the Royal College of Surgeons.

Fig. 1.—*Norma lateralis*.

Fig. 2.— „ *facialis*.

Fig. 3.— „ *occipitalis*.

Fig. 4.— „ *verticalis*.

Plate XII.—Skull of young female, which is coloured with turmeric, from Vanikoro.

Fig. 1.—*Norma lateralis*.

Fig. 2.— „ *facialis*.

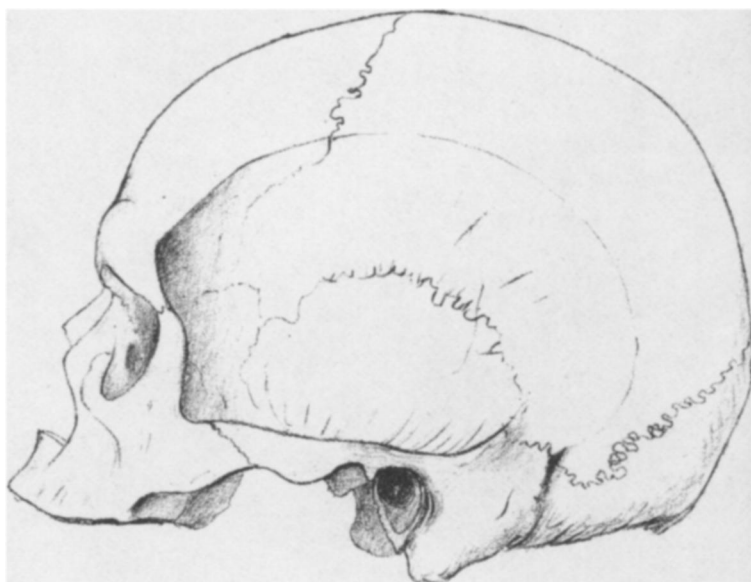
Fig. 3.— „ *occipitalis*.

Fig. 4.— „ *verticalis*.

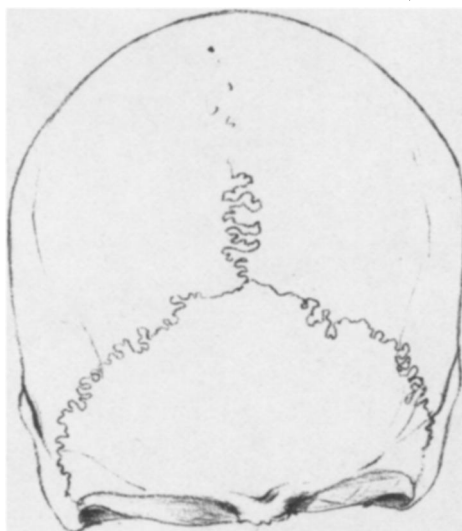
All the figures are half the natural size.

DISCUSSION.

Mr. WOOD said: Professor Busk in the course of his lecture, when remarking on the apparently artificially deformed skulls from Mallicollo, stated that these were the only instances among the South Sea Islanders of skulls so deformed. In the course of my last voyage in the South Seas, in the year 1873, I visited "Futuna," or Hoorne Islands, situated in lat. 14.14 S. long. 178.7 west. While yet at some distance from the island, several canoe loads of natives boarded me, and I at once noticed the extraordinary flatness of the backs of their heads. During my stay at the island I called the attention of one of their chiefs to this fact, who informed me that it was their custom to place a heavy roll of "tappa," or native cloth, on the heads of the young children, with the object of giving their heads a high and shallow shape, which is considered to be ornamental. I now beg to exhibit a very bad photograph of these natives, taken under considerable difficulties. Still, the centre figure and that on the right of the picture will, to some extent, illustrate what I wish to explain. After leaving Futuna I visited Wallis's Island, or Uvea, situated in lat. 13.23 S. 176.11 west, and found that the same practice was in vogue there. I may add that my servant, a native of Rotumah, who is with me here, assures me that the Tongans also practise this, and from the appearance of the Tongans' heads I do not doubt it. In support of my statements I will quote Ellis's "Polynesian Researches," vol. ii. p. 15—"The facial angle is frequently as perpendicular as in the European structure, excepting when the frontal and the occipital bones of the skull were pressed together in infancy. This was frequently done by the mothers with the male children when they were designed for warriors" (Tahiti). I will also quote Marsden's "History of Sumatra," pp. 38, 39—"The women have the preposterous custom of flattening the noses and compressing the heads of children newly born, whilst the skull is yet cartilaginous. . . . Captain Cook takes notice of a similar operation at the Island of Ulitea."



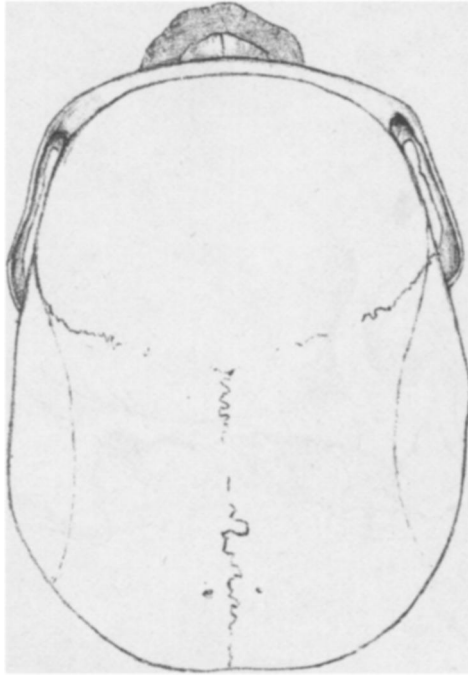
1



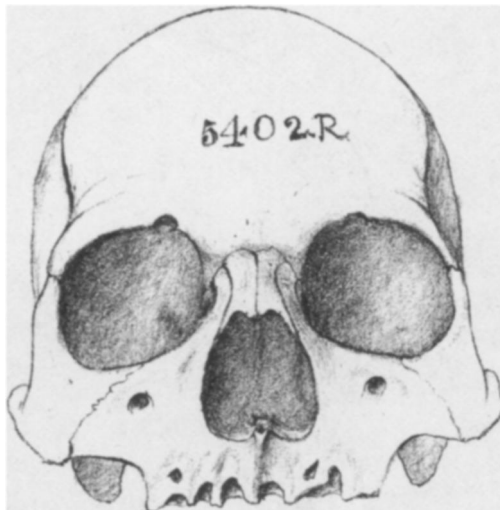
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C.B. del.

V



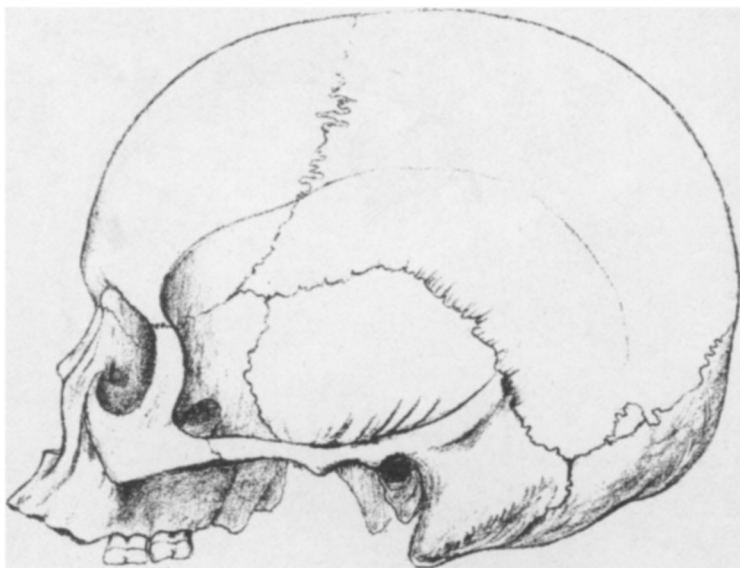
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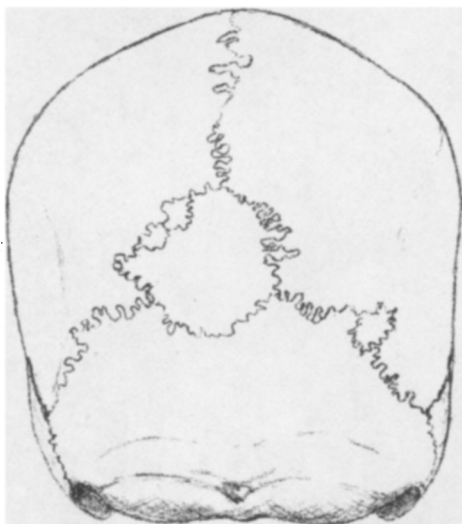
2

W. West & Co. imp.

anikoro.



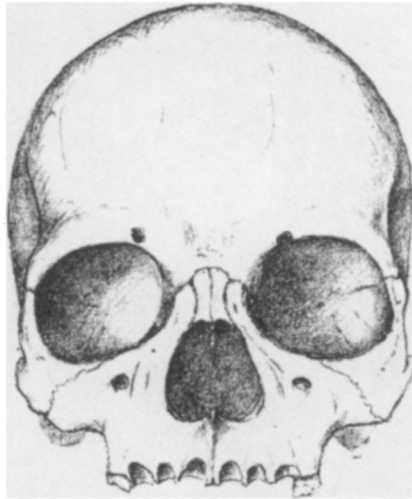
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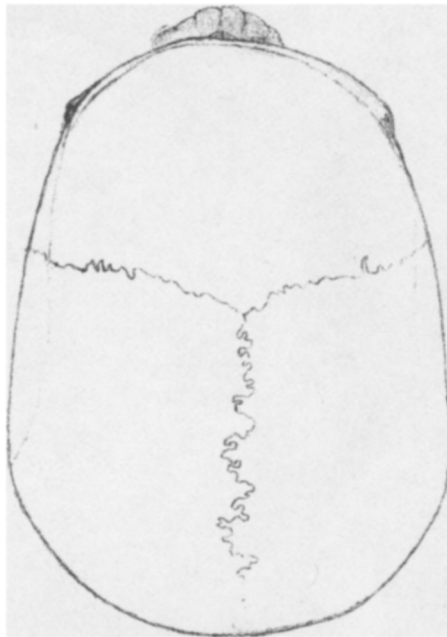
3

G.B. del. et lith.

Va.



2



4

W. West & Co. imp.

nikoro.