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# The physical characters of the races and peoples of Borneo

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DON DE M<sup>rs</sup> A. BRÉUIL



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## APPENDIX

THE PHYSICAL CHARACTERS OF THE  
RACES AND PEOPLES OF BORNEO

A. C. HADDON

*Introduction*

THE following sketch of the races and peoples of Borneo is based upon the observations of the Cambridge Expedition to Sarawak in 1899 and those of Dr. A. W. Nieuwenhuis in his expeditions to Netherlands Borneo in 1894, 1896-1897, and 1898-1900 (*Quer durch Borneo*, Leiden, vol. i., 1904, vol. ii., 1907).

It is generally acknowledged that in Borneo, as in other islands of the East Indian Archipelago, the Malays inhabit the coasts and the aborigines the interior, though in some these reach the coast while Malayised tribes have pushed inland up the rivers, a sharp distinction between the two being frequently obliterated where they overlap. The condition, however, is much more complicated as we can now distinguish at least two main races among the aborigines.

We have no evidence as to who were the primitive inhabitants of Borneo. One would expect to find Negritos in the interior, as these black, woolly-haired pygmies inhabit the Andamans, parts of the Malay Peninsula, Sumatra, the Philippines, New Guinea, and possibly Melanesia. No authoritative evidence of their occurrence in Borneo is forthcoming, and one can confidently assert that there are no Negritos in Sarawak. Nor are there any traces of Melanesians. It is generally admitted that, assuming the Australians to be mainly of that race, a Pre-Dravidian element should occur in the Archipelago,



and the cousins Sarasin have noted this strain among the Toalas of Celebes and Moszkowski among the Batins of Sumatra; in this connection it is of interest that Nieuwenhuis discovered ten Ulu Ayars and two Punans with straight hair and a "black or blue-black" skin colour; Kohlbrugge,<sup>1</sup> who records this observation, offers no explanation.

Dr. E. T. Hamy in 1877 recognised a primitive element in the Malay Archipelago, for which he adopted the term Indonesian, a name previously invented by Logan for the non-Malay population of the East Indian Archipelago. De Quatrefages and Hamy further established this stock in their *Crania Ethnica* (1882), and de Quatrefages in his *Histoire générale des races humaines* (1889) boldly states that these high- and narrow-headed peoples are "un des rameaux de la branche blanche allophyle" (*l.c.* pp. 515, 521). Keane terms the Indonesians "the pre-Malay Caucasian element in Oceania" (*Man Past and Present*, 1899, p. 231). Various investigators<sup>2</sup> have studied skulls obtained from this region which prove the wide extension of dolichocephaly. Kohlbrugge (1898), who investigated the Tenggereese, Indonesian mountaineers of Java, says: "Les Indonésiens sont dolichocéphales, les Malais brachycéphales ou hyperbrachycéphales. Le sang indonésien se décèle donc par la longueur de la tête: plus celle-ci se rapproche du type dolichocéphale, plus pur est le sang indonésien." Volz confirms Hagen's observations of the existence among the Battak of North Sumatra of two types, a dolichocephalic Indonesian and a brachycephalic type.

The term Indonesian may now be regarded as definitely

<sup>1</sup> Dr. A. W. Nieuwenhuis, "Anthropometrische Untersuchungen bei den Dajak." Bearbeitet durch Dr. J. H. F. Kohlbrugge, *Mitt. aus dem Niederl. Reichsmus. für Völkerk.* ser. ii. No. 5, Haarlem, 1903. Owing to the inaccessibility of this memoir, I have incorporated his more important observations in this essay.

<sup>2</sup> Swaving, G., *Natuurk. Tijdschr. v. Ned. Ind.*, xxiii., 1861, xxiv., 1862.

Hoeven, J. van der, *Catalogus craniorum diversarum gentium*.

Virchow, R., *Z.f.E.*, xvii., 1885, p. (270), in which he states that of 47 "Dayak" skulls in the museums of Paris, Amsterdam, and the Royal College of Surgeons, London, 20 were dolichocephalic, 12 mesocephalic, and 15 brachycephalic. Cf. also *Z.f.E.*, xxiv., 1892, p. (435).

Hagen, B., *Verh. d. Kon. Akad. d. Wetensch. Naturkund.*, xxviii., Amsterdam, 1890.

Waldeyer, W., *Z.f.E.*, xxvi., 1894, p. (383).

Zuckermandl, E., *Mitt. d. Anthropol. Gesell. Wien*, xxiv., 1894, p. 254.

Kohlbrugge, J. H. F., *L'Anthropologie*, ix., 1898, p. 1.

Volz, W., *Arch. f. Anthrop.*, xxvi., 1900, p. 719.

Haddon, A. C., *Archiv. per l'Ant. e l'Etnol.*, xxxi., 1901, p. 341.

restricted to a dolichocephalic, and the term Proto-Malay to a brachycephalic race, of which the true Malays (Orang Maláyu) are a specialised branch.

The next point to discuss is the presence of these two races in Borneo. The Dutch Expedition found three distinct types in the interior of Netherlands Borneo, the Ulu Ayars (Ulu Ajar)<sup>1</sup> or Ot Danum of the upper Kapuas, the Bahau-Kenyahs (Bahau-Kěnja) of the middle or upper Mahakam (or Kotei) and the upper waters of the rivers to the north, and the Punans, nomadic hunters living in the highlands about the head-waters of the great rivers. The first of these may be classed as predominantly Indonesian and the others as mainly Proto-Malay in origin. According to Nieuwenhuis the Bahaus and Kenyahs both remember that they came from Apo Kayan at the headwaters of the Kayan river; they were formerly known as the Pari tribes. In all the tribes of this group the social organisation is in the main similar, and this affinity is borne out by their material culture, thus they may be regarded as originally one people. Tribes calling themselves Bahau now live along the Mahakam above Mujub and include one Kayan group; on the upper Rejang are Bahau tribes under the name of Kayan, and a small section has advanced into the Kapuas area and settled on the Mendalam which again includes Kayans and kindred tribes. All the tribes still in Apo Kayan call themselves Kenyah, as also those of the eastward flowing Tawang, Berau and Kayan (or Bulungan) rivers and those of the upper Limbang and Baram flowing northwards. The Kenyahs of Apo Kayan live along the Iwan, a tributary of the Kayan river (or Bulungan); to the north-east is another tributary called the Bahau which seems to have been the original home of the Bahau people since the tribes of Borneo habitually take their names from the rivers along which they live.<sup>2</sup>

<sup>1</sup> Nieuwenhuis usually speaks of these as Ulu Ajar Dajak. I have more than once deprecated this use of the term "Dayak" as it has simply come to mean a non-Malayan inhabitant of Borneo, for example, we find "Kěnjah Dajak" on his map. In Sarawak this term is confined to the Sea Dayaks and Land Dayaks, for the former I have suggested that the native name Iban be adopted, but I have not been able to find a suitable native name for the Land Dayaks of Sarawak who are probably allied to the Ulu Ayars.

<sup>2</sup> The foregoing statement is taken from Nieuwenhuis, but Dr. Hose sends me the following remarks:

"Pari is the word for *padi* in both Kayan and Kenyah language.

"The Uma Timi and Uma Klap of the Upper Rejang are possibly Bahau

Nieuwenhuis came to the conclusion that the three chief tribes measured by him represented three main groups of the population of Central Borneo, physically and culturally. Mr. E. B. Haddon drew attention (*Man*, 1905, No. 13, p. 22) to the close similarity of the results published by Kohlbrugge (1903) with those published by me (1901). I recognised five main groups of peoples in Sarawak: Punan, Klemantan (or, as Dr. Hose and I then spelled it, Kalamantan), Kenyah-Kayan, Iban or Sea Dayak, and Malay. The Ibans are not referred to by either of the Dutch ethnologists, who, like myself, merely alluded to the Malay element. Kohlbrugge and I included the Bakatan or Beketan and the Ukit or Bukat in the Punan group, and also bracketed together the Kayans and Kenyahs. In Sarawak there are numerous and often small tribes which it is frequently very difficult or quite impossible to differentiate from one another, although the extremes of the series can be distinguished; we therefore decided to comprehend them under the non-committal term of Klemantan (p. 42). I showed that they were of mixed origin, and stated that, "It is possible that the Kalamantans were originally a dolichocephalic people who mixed first with the indigenous brachycephals (Punan group) and later with the immigrant brachycephals (Kenyah-Kayan group) or the Kalamantans may have been a mixed people when they first arrived in Borneo and subsequently increased their complexity by mixing with these two groups" (*l.c.* p. 352). I also made it clear that I regarded the dolichocephalic element as of Indonesian stock and the brachycephalic of Proto-Malayan origin. It was with great satisfaction that I found Kohlbrugge had come to similar conclusions and that the Ulu Ayars exhibit such strong traces of an Indonesian origin, stronger perhaps than those of any tribe in Sarawak, with the possible exception of the scarcely studied Muruts and allied tribes.

tribes but the four Kayan tribes of the Upper Rejang, the Uma Bawang, Uma Naving, Uma Daro and Uma Lesong say that they came from Usun Apo or Apo Kayan as Nieuwenhuis calls it.

"The Kayans in the Kapuas are the Uma Ging, and the only Kayans that I know of in the Bulungan river are the Uma Lekans: there are no Kayans or Kenyahs in the Limbang river.

"Apo Kayan or Usun Apo is the country from which the Batang Kayan river or Bulungan, the Kotei, and their great tributaries rise on the one side, and the tributaries of the Rejang and Baram on the other. It extends from the Bahau river in the north to the Mahakam in the south. The Kenyahs of the Baram are spoken of by the people of the Batang Kayan as Kenyah Bau."

Kohlbrugge states (1903, p. 2) that he has shown for the interior of Sumatra, Java, and Celebes that there are mesaticephalic peoples distinct in other respects from the coast peoples, but not dolichocephalic. He concludes that the (Ulu Ayar) Dayaks, being the only dolichocephals, are the only pure Indonesians, and the rest (Kayans and Punans) are more or less mixed with Malays. The mean cephalic index of 130 Tenggerese of the interior of Java is 79.7, but the Ulu Ayars constitute a uniform group which ranges from 71 to 81.4, of which 9 are 74 or under and 9 are between 74.1 and 76 inclusive, the median of 26 adult males being 74.7.<sup>1</sup> [Although the median Kalabit index in the living subject is somewhat higher, that of the skulls, as well as the cranial index of Muruts and Trings (Table C), is very similar in this respect to that of the Ulu Ayars.]

According to Nieuwenhuis' statistics, as given by Kohlbrugge, there is in the brachycephalic group (Kayans and Punans) a greater range (75 to 93.3, and 1 Kayan woman reaches 97) than in the Ulu Ayars; most fall between 78 and 85, the medians of both being just over 81. There are 8 dolichocephals<sup>2</sup> out of his 43 Kayan men and 4 out of his 25 women, but only 1 Punan out of 14. In his curve of the Kayan indices there is a drop at 82 [a curve of my data shows a similar drop]. "I leave it an open question," he says (p. 13), "whether this break indicates mixture of a dolichocephalic and brachycephalic group; this can only be decided by the study of more abundant material, and requires confirmation from the geographical and ethnographical standpoint. At all events it may be assumed *a priori* that if long-headed and broad-headed peoples occur in the interior of Borneo, then mixed peoples will also be met with, and the Kayans might be such." [An examination of my data will show that there is practically no difference between the Kayans and Kenyahs in this respect.]

A comparison is also possible between the bi-zygomatic breadths made by Nieuwenhuis and ourselves. The figures are those of the minimum, median, and maximum. *Kayans* (43 ♂, N) 126, 139, 153; (25 ♀, N) 125, 132, 141; (21 ♂, H) 132, 141, 150. *Punans* (14 ♂, N) 132, 138, 145; (19 ♂, H)

<sup>1</sup> In order to make Kohlbrugge's data comparable with ours I have in all cases grouped his youths and girls over 16 with the adults, and have left those younger out of reckoning.

<sup>2</sup> *I.e.* having an index of 77.9 and under.

130, 142, 154. *Ulu Ayars* (26 ♂, N) 125, 136, 145. *Land Dayaks* (42 ♂, S) 122, 136, 145.

Kohlbrugge points out that there seems to be no ground for dividing the "Indonesians" into a taller and shorter group since the differences are slight. If this distinction were drawn, the Ulu Ayars (av. 1.571 m., med. 1.551 m.) would belong to the shorter group as would the Enganese (av. 1.570 m.). His 34 Kayan men (av. 1.584 m., med. 1.582 m.) and 14 Punan men (av. 1.583 m., med. 1.569 m.) and the Gorontalese (1.584 m.) are intermediate between these and the Tenggerese (1.604 m.) and Battak (1.605). I also find this distinction untenable, as our Kayans (av. 1.559 m., med. 1.550 m.) and Punans (av. 1.555 m., med. 1.550 m.) are of the same stature or even possibly shorter than his Ulu Ayars, whereas our 16 Kenyah men (av. 1.597 m., med. 1.608) are taller than his Kayans. He adds that the shorter "Indonesians" live in the plains, the taller in the mountains, but he cannot say for certain whether a mountain climate affects stature as many believe. It is to be regretted that Kohlbrugge extends in this instance the term Indonesian to the Kayans and Punans. Taking our measurements I find that the Kenyahs and the Muruts (av. 1.601 m., med. 1.590 m.) are the tallest groups, then come the Iban (av. 1.590 m., med. 1.585 m.), the Kayan and Punan medians come about half-way between the tallest Klemantans (Long Pokun, med. 1.590 m.) and the shortest (Lerong, med. 1.520 m.). The above figures refer to men only, the women are markedly shorter.

Kohlbrugge gives the following information with regard to body measurements: the Kayan women are 14 cm. shorter than the men, usually the difference is 10-12 cm. The span is greater than the stature, the proportion is 105.2:100 in Kayans, 103.4:100 in Ulu Ayars and 106.5:100 in Punans and Tenggerese. In youths it is rather higher than in men. The difference between Tenggerese and Ulu Ayars is due to the latter having shorter arms, especially the upper arms, and the chest of the Bornean peoples is 2 cm. narrower. Other Indonesian peoples have a longer upper arm than the Ulu Ayars, who also have the tibia shorter in proportion to the femur. Kayan and Ulu Ayar men have a comparatively shorter femur than the Punan. The latter thus resemble the Tenggerese, the others have the same relative length as many other peoples of the Archipelago; there is no

difference between the Malays and Indonesians in this respect. The Kayan women have relatively a much longer femur than the men. The shorter tibia makes the whole leg of the Bornean peoples shorter than in others—except that the Punans make it up with a longer femur. Women and young people have longer legs than men. The Punans have the fattest calves approximating to the Tenggerese, the other Bornean tribes are more like the Gorontalese. The chest girth of Ulu Ayars and Tenggerese is almost the same, despite the difference in the breadth of the chest, in which the Ulu Ayars resemble the inhabitants of Atchin measured by Lubbers. The proportion of the length of the foot to the stature is 16:100 in Kayans of both sexes, 15.4:100 in Ulu Ayars, and 15.2 in Punans. But the Kayan feet are shorter than those of the Gorontalese, who have the longest feet in the Archipelago. The other Bornean peoples are the same as Indonesians who resemble the Malays in this respect. The pelvic breadth of the Kayan men and women is equal (26 cm.), though men have the wider chest; the Punan pelvis is narrower than in the other two tribes; but in all three the pelvis is broader than in the Tenggerese.

We must now turn to the evidence of the crania, of which only a very brief account need be presented here. Owing to the fact that the people are head-hunters the skulls obtained by a traveller in any house are necessarily those of another community, group, or tribe than that to which the occupants of the house belong. Consequently it is necessary for a traveller to learn from the inhabitants the provenience of each cranium, and every one in the house knows it. It is useless for analytical purposes to deal with skulls of which the tribe is not accurately known; the information that a skull was obtained in a certain village or on a particular river is, as a rule, of very little value.

In Table C I give particulars of three head indices of 83 crania, of which the history is known in each case. Fifty-eight of these have been presented by Dr. Hose to the University of Cambridge. I have added to these 5 Murut, 1 Lepu Potong, 1 Kalabit, 1 Tring, 1 Bisaya, and 1 Orang Bukit, which Dr. Hose presented to the Royal College of Surgeons, London, 1 Ukit skull in the same museum, 3 Dusun in the British Museum, and 5 Murut, 3 Maloh, and 3 Kayan, which I measured in Sarawak. I

have chosen the cranial length-breadth, length-height, and breadth-height indices, as these are more directly comparable with the corresponding cephalic indices of Table A. A detailed account of these crania must await a more suitable occasion.

The dolichocephalic crania are, as a rule, distinctly akrocephalic, that is, the length-height index is superior to the length-breadth index, but this is not the case with the brachycephals. I find the average length-height index in the living subject of a dozen inland tribes is 72.5 for 131 males and 78.2 for 40 females. That is, so far as our measurements go, the women are more akrocephalic than the men, which is unusual.

The conclusions to be drawn from a somatological investigation are necessarily limited. In my introductory remarks I stated that one could distinguish two main races among the principal groups of the peoples of Sarawak, a dolichocephalic and a brachycephalic, and that the former might be termed Indonesian and the latter Proto-Malay; further, no one group is probably of pure race, though it appears that some may be predominantly Indonesian and others Proto-Malay. I do not for a moment suggest that there was one migration of pure Indonesians and another of pure Proto-Malays which flooded Borneo and by various minglings produced the numerous tribes of that island, though I do suggest that there have been throughout the whole Archipelago various movements of peoples, some of which may have been relatively pure communities of these two races. There can be little doubt that we must look to the neighbouring regions of the mainland of Asia for their immediate point of departure southwards, for we now know that two similar races have inhabited this area from a remote antiquity. The light- (or light-brown) skinned dolichocephals of south-east Asia, assuming for the present that they are all of one race, have frequently been termed Caucasians—for the present I prefer to speak of them as Indonesians—and of these there are doubtless several strains. The light- (or light-brown) skinned brachycephals are usually grouped as Southern Mongols. In the south-east corner of Asia there are probably several strains of these brachycephals which hitherto have been insufficiently studied. Even when an Indonesian element has been recognised in the population of the Archipelago there has been too persistent a practice of terming the

brachycephalic element "Malay." The true Malay, Orang Maláyu, is merely a specialised branch of a stock for which I prefer the non-committal name of Proto-Malay, even "Southern-Mongol" is preferable to "Malay." The Proto-Malay race has its roots on the mainland. It has yet to be shown how far the brachycephals of this region belong to what is here termed the Proto-Malay race or to what extent other, and doubtless allied, stocks are implicated. If, as is very probable, there have been migrations of differentiated peoples from the mainland into the islands, the Bornean peoples may be of more complex origin than the earlier generalisations might suggest. The dissecting out and the tracing of the migrations of these peoples is the work of ethnography, somatology can be of little assistance; all that I have done is to provide a certain amount of material for the use of students in the future. It must also be remembered that the immigrants from the mainland may have had at one time infusions of Negrito or Pre-Dravidian (Sakai) blood, not to speak of Tibetan, Chinese, or other mixtures. Similarly when the first migrations from the mainland took place the fairer-skinned immigrants probably found an indigenous population of Negritos, Pre-Dravidians, and possibly to some extent of Papuans in various parts of the Archipelago. We know that many of the islands, including Borneo, have been subject to direct migrations from India and China, and there has doubtless been a certain amount of movement of peoples from island to island. The racial history of this region is therefore extremely complex.

Dr. Hose has suggested the following classification<sup>1</sup> of the peoples of Sarawak (exclusive of the Malays), which I have followed in arranging the descriptions given below. For the sake of comparison I have recast the data published by Kohlbrugge concerning the three types studied by Nieuwenhuis; it is unfortunate that our several results cannot be more closely correlated.

<sup>1</sup> This was drawn up by Dr. Hose from his general knowledge of the people of Sarawak, and it will be found to agree very closely with the anthropometric data, thus we may regard it as expressing the present state of our knowledge of the affinities of the several tribes.

A CLASSIFICATION OF THE PEOPLES OF  
SARAWAK

- I. Murut Group :  
Murut, Pandaruan, Tagal, Dusun ;  
Kalabit, Lepu Potong ;  
Adang, Tring.
- II. Klemantan Group :  
1. South-western Group :  
Land Dayaks ;  
[Certain tribes of Netherlands Borneo] ;  
Maloh.
2. Central Group :  
a. Baram sub-group: Bisaya, Tabun, Orang  
Bukit, Kadayan, Pliet, Long Pata, Long  
Akar.
- b. Barawan sub-group: Murik, Long Julan,  
Long Ulai, Batu Blah, Long Kiput,  
Lelak, Barawan, Sakapan, Kajaman.
- c. Bakatan sub-group: Seping, Tanjong,  
Kanawit, Bakatan, Lugat.
3. Sebop Group :  
Malang, Tabalo, Long Pokun, Sebop, Lerong ;  
Milanau (including Narom and Miri).
- III. Punan Group :  
Punan, Ukit, Siduan, Sigalang.
- IV. Kenyah Group :  
Madang, Long Dallo, Apoh, Long Sinong,  
Long Lika Bulu, Long Tikan.
- V. Kayan Group.
- VI. Iban Group : Iban (Sea Dayaks) and Sibuyau.

## DESCRIPTIONS OF PEOPLES

## GENERAL REMARKS ON THE METHODS OF TAKING OBSERVATIONS

THE physical characters and measurements of each individual were noted on a separate card, and the bulk of them have been embodied in the following synopses. As my object has been to give a general impression of each group, I have not burdened the descriptions with superfluous scattered observations. The original records are available in Cambridge for any desirous of consulting them. The statistics given refer to the several recorded observations ; where these fall short of the total number it may be taken for granted that as a rule the remainder did not depart markedly from the normal standard of the group in question—the presence of salient characters would be noted, not their absence.

In Table A certain measurements and indices are given of the more important groups in order to facilitate comparisons. Very small groups and half-breeds have been omitted, the object being to summarise the characters of the adults of the larger groups. The median in most cases is practically identical with the average, but where a difference occurs, the median more nearly represents the central type. The indices are based on a calculation to two decimal places ; where the second decimal place is under five it is left out of account, and where five or over the first decimal place is augmented by one. This table should be compared with Table C.

In the other tables all the measurements and indices are given.

HEAD: *Length*, from glabella to most prominent point of occiput; *breadth*, maximum at right angles to above; *bi-auric breadth*, from base of the tragus, pressing firmly; *circumference*, greatest circumference immediately above the glabella; *auricular vertical arc*, from base of tragus over the vertex; *auricular radii* taken with a Cunningham's radiometer from the ear-hole. FACE: *Total length*, from nasion to chin; *upper length*, from nasion to alveolus; *bi-zygomatic breadth*, from greatest prominence of cheek arches, pressing firmly; *inter-ocular width*, between inner angles of the eyes; *bi-gonial breadth*, from the angle of the lower jaw, pressing firmly. NOSE: *Length*, from nasion to angle with lip;



*breadth*, between outer curvature of alæ, without pressure; *bimalar breadth*, from the outer upper corner of the margin of the orbit, pressing firmly (this was usually marked with a soft pencil); *naso-malar line*, between these points over the bridge of the nose.

The term *dolichocephalic* is used to designate a cephalic index of 77.9 and under, and *brachycephalic* one of 78 and over. Heads with a length-height index of 66.9 and under are *platycephalic*, those of 67-69.9 are *mesocephalic*, and those of 70 and over are *hypsicephalic*. The breadth-height limits are 82.9, 83-84.9, and 85. The term *chamæprosopic* is used where the total facial index is 89.9 and under, and *leptoprosopic* where it is 90 and over, the corresponding limit for the upper facial index is -49.9 and 50+. Owing to the character of the nose it was not easy in most cases to ascertain the exact upper limit of the length, and it is probably owing to this that the indices show such marked platyrhiny. Unfortunately these indices cannot be compared with those obtained by Nieuwenhuis, as he measured to the tip of the nose and not to its angle with the lip as we did. The term *leptorhine* is used for noses with an index of 69.9 and under, *mesorhine* for 70-84.9, *platyrhine* for 85-99.9, and *hyper-platyrhine* for 100 and over. The profiles of the nose were compared with the figures in *Notes and Queries* (1892). In speaking of the EYE, by *fold* is meant the Mongolian fold which covers the caruncle. All the irises have a brown colour, being either light, medium, or dark. The observations on the EARS were made by means of MS. notes and diagrams drawn up for me by Prof. A. Keith. He recommended that persons under fifteen years of age or over sixty should not be noted, and that as there is a very marked sexual difference, observations on men and women should be kept quite separate. Variations in every race are, within certain limits, so numerous that he suggested that at least a hundred of each sex should be observed; although the numbers examined of the several tribes is usually very small, their total number will probably be found sufficient to give a fair idea of the more common types of ears. The *types* of ears suggested by Dr. Keith are (1) "European": this applies only to the general shape; the folding, etc., varies enormously. (2) "Negroid": this resembles the "Orang type," but differs in being two-thirds of a circle; that is to say, the Negroid ear has a much greater breadth relative to its height than the ears of Europeans. (3) "Orang": this is the smallest and most degenerate form of ear, seen in its most typical form in the orang utan; it is the common female type. (4) "Chimpanzee": this is the largest and most primitive form of ear, and is found in its typical condition in the chimpanzee; it is commonly, but not always, set at a considerable angle to the head. *Angle*: The ear may be appressed (o), or it may stand out from

the head at an angle of less than 30° (1), between 30° and 60° (2), or over 60° (3). *Lobule*: This is never totally absent, but when it is 3 mm. or less from the middle of the curved base of the anti-tragus it may be called approximately so (o), when 3-10 mm. it is small (1), 10-15 mm. medium (2), over 15 mm. long (3). The lobule may be free or adhere partially or totally to the side of the face. *Descending helix*: The degree of folding varies; there may be none (o), under 2 mm. (1), between 2 and 4 mm. (2), between 4 and 6 mm. (3). *Darwin's point*: It may be absent (o), or present as a distinct tip (1), as an infolded tip (2), as an inrolled knob (3), or as a slight thickening of the infolded part of the helix (4); the position is constant in the upper posterior segment. *Tragus*: This may be absent (o), otherwise it varies in size measured from base to apex, under 3 mm. (1), between 3 and 5 mm. (2), or 5 to 7 mm. (3). Sometimes it has two apices. *Anti-tragus*: This also may be absent (o), or if present the size from base to apex measures as in the tragus under 3 mm. (1), between 3 and 5 mm. (2), or 5-7 mm. (3). *Anti-helix*: It is bent into an angle slightly or not at all (o), the angle does not reach the level of the helix (1), the angle is a little within or a little beyond the level of the helix (2), it is very prominent, distinctly beyond the level of the helix (3). Its prominence is a human feature.

As regards the HAIR, in all cases where there were a number of observations one or two of the oldest men had grizzled or even grey hair. The hair of the head is usually worn long and often attains a length of about two feet, but it is sometimes cut shorter and is occasionally very short. It is usually fairly abundant, but in all groups a few persons have scanty hair. The hair of the face is in all groups either absent or very scanty; the same applies to the body hair. The only scale of SKIN colours we had was that given in the *Notes and Queries on Anthropology* (2nd ed., 1892), but as this was obviously inadequate for the purpose, Dr. Hose prepared a scale for our use in the field, the shades of which have subsequently been as far as possible equated with those of Prof. von Luschan's Hautfarben-Tafel (Puhl and Wagner, Rixdorf); it is these numbers which appear in brackets in the following descriptions, and I have also attempted to describe them in English; the term cinamon is based on the colour of the stick cinnamon of commerce. The colours were usually matched from the inner aspect of the upper arm so as to avoid the darkening caused by the burning of the sun. Besides the information recorded on the cards, a number of additional data on skin colour collected by Dr. Hose are included in the synopses. As regards STATURE the subject is described as *short* when he measures less than 1.625 m. (5 ft. 4 in.), *medium* 1.625-1.724 m. (5 ft. 4 in. to 5 ft. 8 in.), and *tall*

1.725 m. and over; the subject had his eyes looking towards the horizon.

With the exception of the observations by Mr. R. Shelford, mainly on the Land Dayaks and Iban, which are duly noted, all the data on the living were collected by Dr. W. McDougall and myself, either separately or conjointly, and I have to thank him for permitting me to work up the results. Our thanks are due to Dr. Hose, at whose invitation we went to Sarawak, and without whose zeal, knowledge of the country, and wonderful influence over the natives this work could not have been accomplished. Mr. S. H. Ray also assisted us as amanuensis. Most of the figures were tabulated for me by Miss Barbara Friere-Marreco and the remainder by Miss Lilian Whitehouse, who also has greatly assisted me in drawing up this memoir.

#### I. MURUT GROUP

Seven KALABIT men and 3 women and 4 MURUT men were measured. No descriptive details of the Muruts are available.

*Head-form*: The cephalic indices show 7 to be dolichocephalic and 7 brachycephalic; the 3 women are slightly more dolichocephalic than the men, for whom the median is 78.5. One Kalabit is platycephalic, 1 mesocephalic, and 8 hypsicephalic as regards length-height, and all are hypsicephalic as regards breadth-height. Four Kalabits were noted as having oval heads, in 1 the occiput was prominent, 1 ovoid, and 1 woman ellipsoidal.

*Face*: Five Kalabits have pentagonal faces, being rather broad in 3, 2 were long and rather narrow, the jaws are narrow in 2. They show a marked tendency to prognathism, especially dental prognathism. The Kalabits are chamæprosopic as regards both the total facial and the upper facial indices, with one exception in both respects. The forehead has a slight tendency to be narrow and high. The cheek-bones are moderately prominent in 5 men and 1 woman and not prominent in 2 men and 1 woman. The lips are moderately full. The chin is rather small, and retreating in 3. *Nose*: One Murut is leptorhine, 2 Kalabit men are mesorhine, 6 are platyrhine, and 5 hyper-platyrhine. The root is high in 4 Kalabit men, narrow in 3, broad in 4 and 1 woman, and flat in 3 and 1 woman; the base is reflected in 3 of each sex, and straight in 2 men; the alæ are small in 4 men and 3 women, moderate in 3 men, and round in 1 of each sex; the nostrils are rounded in 5 men and 3 women, and wide in 2 men. *Eyes*: The aperture is narrow in 1 man, moderately open in 5 men and 1 woman, wide in 1 man and 2 women; it is straight with no fold in 5 men, straight with slight fold in 1 man, more or less oblique with slight fold in 1 man and 2 women, in 1 woman it is straight and the fold is more developed in the

right eye than in the left; the colour is medium in 1 man, dark brown in 5 men and 3 women. *Ears*: Type European in 3 of each sex, Negroid in 1 man, and intermediate in 2 men; angle prominent in 5 men and 3 women, slightly prominent in 2 men; lobule always distended, in 2 men it is adherent; descending helix infolded under 2 mm. in all but 1 man in whom it is under 4 mm.; Darwin's point absent in 3 men and 1 woman, doubtful in 2 men, infolded in 1 man, inrolled in 2 women; tragus under 3 mm. in 2 men, 3-5 mm. in the rest; anti-tragus absent in 4 men, and 1 woman, under 3 mm. in 3 men and 2 women; anti-helix below level of helix in 2 of each sex, about at the same level in 5 men and 1 woman.

*Hair*: It is straight to wavy in 1 of each sex, wavy in 3 men and 1 woman, wavy-curly in 1 man. The colour is rusty black in 7 men and 3 women. It is moderately abundant and long.

*Skin*: Four are lightest cinamon (12), 1 light cinamon (14), 1 cinamon (6), 2 pale fawn (pale 17), 2 dull fawn (17).

*Stature*: All but 1 Murut man are of short stature, 1 Kalabit man being only 1.485 m. (4 ft. 10½ in.), the 3 women are still shorter, 1 being 1.410 m. (4 ft. 7½ in.), the median for the Kalabits is 1.565 (5 ft. 1½ in.).

#### II. KLEMANTAN GROUP

##### 1. South-western Group

(a) Forty-two LAND DAYAK men were measured by Mr. Shelford.

*Head-form*: The cephalic indices range fairly evenly from 73.5 to 86.9, 19 men being dolichocephalic; the median is 78.4.

*Face*: One is noted as very broad and 2 as prognathous. All but 1 are chamæprosopic as regards the total facial index and all but 6 as regards the upper facial. *Nose*: Nineteen are mesorhine, 17 platyrhine, and 6 hyper-platyrhine; 1 is noted as aquiline, 3 as straight but flat, and 2 have a low bridge; 2 have broad alæ, 1 having a very concave nose, broader than long with an index of 116.2, and wide nostrils, it is evidently abnormal. *Eyes*: A fold is mentioned in 18, of which 3 are slight and 2 pronounced, its absence is noted in 3; 5 have medium brown irises.

*Hair*: It is noted as straight in 6 and wavy in 2; it is black in 8, and 24 have abundant hair; the hair of the face is absent in 7 and sparse in 8, 1 had a stubbly beard.

*Skin*: The colour of the skin is darker than that of other inland tribes, 19 being of a very dark warm cinamon (25) and 4 cinamon (6). It is noted in 1 as much darker when uncovered.

*Stature*: None are tall, 7 are medium, the rest short, 4 being under 1.5 m. (4 ft. 11 in.), the median is 1.577 m. (5 ft. 2 in.).

[Thirty-one male and 4 female Ulu Ayar Dayaks were measured by Nieuwenhuis, of these 5 were boys under 17, and all 4 females were girls of 17 and under. See vol. ii., p. 315, note 1.

*Head-form*: The cephalic indices range fairly evenly between 71 and 81.4, all but 5 are dolichocephalic, the median being 74.7.

*Face*: It is usually of medium breadth; 2 (*i.e.* 6 per cent) have broad faces. The bi-zygomatic breadth ranges from 125 to 145 mm., the median being 136 mm. *Nose*: The breadth-measurements range from 36 to 46 mm., the length-measurements being taken from root to tip are therefore not comparable. Eighteen males and 3 females are noted as having concave noses, 13 and 1 as having broad flat noses, none as straight or narrow, *i.e.* 60 per cent of the Ulu Ayars have concave ("depressed," "sunken," or "hollow") noses. *Eyes*: The Mongolian fold does not occur. The colour is dark.

*Hair*: All had straight hair except 1 man; it is generally rather scanty. The colour is black.

*Skin*: The colour is noted as black or blue-black in 10, brown and yellow in 5, light brown in 20.

*Stature*: None are tall, 3 are medium, and the rest short, 2 being under 1.5 m. (4 ft. 11 in.); the median is 1.551 (5 ft. 1 in.).]

(b) Seven MALOH men were measured by us.

*Head-form*: The cephalic index is essentially dolichocephalic, 3 being low brachycephals, the median 76.8. Two are mesocephalic in the length-height index and none in the breadth-height, all the remainder are hypsicephalic in both respects; 4 are pyriform, 2 oval, and 1 ellipsoidal in shape.

*Face*: Two are pentagonal, 2 rather broad, and 2 long; alveolar prognathism is noted in 3, 1 of which has also general prognathism. Two only are leptoprosopic in their total and upper facial indices. The forehead is somewhat narrow and high, the cheek-bones more or less prominent, the lips are usually moderately full, and the chin fairly well developed. *Nose*: One is mesorhine, 4 platyrhine, and 2 hyper-platyrhine; the profile is equally divided between straight and concave; the base is reflected in 5, deflected in 2; the alæ are rather small and the nostrils wide and rounded. *Ears*: Type European in 5 (1 doubtful), Negroid in 2; angle prominent in 5, slightly prominent in 2; lobule distended in all; descending helix infolded under 2 mm. in 5, 2-4 mm. in 2; Darwin's point absent in 5, inrolled in 2 (1 doubtful); tragus 3-5 mm. in 5 (2 doubtful), rather less in 2; anti-tragus absent in 1, doubtful in 1, under 3 mm. in 5; anti-helix below level of helix in 4, about at the same level in 3.

*Hair*: The hair is distinctly wavy and long; it is rusty black

in 5 and black in 2. There is a moderate amount on the face and none on the body.

*Skin*: Six are dull fawn (17).

*Stature*: All are short, 1 being 1.47 m. (4 ft. 9 $\frac{3}{4}$  in.); the median is 1.585 m. (5 ft. 2 $\frac{1}{2}$  in.).

## 2. Central Group

BARAWAN SUB-GROUP.—This consists of 1 Murik man, 1 Long Ulai man and 1 woman, 8 Long Kiput men, 3 Lelak men, 12 Barawan men and 5 women, 2 Sakapan men, 1 Kajaman, and 4 mixed breeds (*i.e.* mixed with other Klemantan blood).

*Head-form*: Of the longer series the Barawans are the more dolichocephalic, 6 men and 3 women have an index below 78, 1 Long Kiput man and only 4 others being dolichocephalic; the median of the whole series, excluding women, is 79. Most of the men and all the women are hypsicephalic; but 2 Barawans are platycephalic, and 1 Barawan and 2 mixed breeds are mesocephalic in length-height; 1 Long Kiput is platycephalic in length-height and breadth-height, 2 are mesocephalic in both respects, and 1 in length-height only; 1 Lelak is platycephalic in length-height and mesocephalic in breadth-height. The shape is noted as oval in 5 men and 3 women, ovoid in 1 of each sex, round in 3 men.

*Face*: Nine men and 3 women have a pentagonal face; it is oval in 1 man and 2 women, rather long in 5 men, square in 2 men, broad in 1 of each sex. All are chamæprosopic in both respects except 1 Barawan man as regards total facial index and 2 in the upper. The forehead is rounded or prominent in 8 men and 6 women, upright in 4 men and 1 woman, more or less sloping in 4 men, broad and low in 5 men, narrow in 4 men. The cheek-bones are large in 6 men and 1 woman, more or less prominent in 10 men and 3 women, moderate in 11 men and 2 women. The lips vary in thickness, 10 being thin and 7 more or less thick. The chin is fairly well developed except in 6 men. *Nose*: One Lelak is leptorhine, 2 Long Kiputs, 3 Barawan men and 2 women and 2 Barawan mixed breeds are mesorhine; 5 Long Kiputs, 2 Lelaks, 6 Barawan men and 1 woman and 1 mixed breed, 1 Long Ulai man and woman and 2 Sakapans are platyrhine; 1 Long Kiput, 3 Barawan men and 2 women, 1 Murik and 1 Kajaman are hyper-platyrhine. The profile is straight in 10 men and 1 woman, more or less concave in 13 men and 5 women, slightly aquiline in 4 men; blunt tips were noted in 2 cases. The root is more or less depressed in 12 men and 4 women, not depressed in 7 men, broad and high in 3, high in 3, narrow in 3. The base is reflected or slightly so in 16 men and 4 women, straight in 9 and 1, slightly deflected in

1 woman; the alæ are small in 3 men and 4 women, moderate in 4 men, and wide in 5; the nostrils are round in 7 men and 5 women, oval in 10 and 1, and transversely oval in 2 men. *Eyes*: Aperture is moderate in 11 men and 2 women, small in 10 men, large in 1 man. It is straight with no fold in 3 men and 2 women, straight with a slight fold in 1 woman, slightly oblique with no fold in 8 men and 1 woman, slightly oblique with slight fold in 8 men and 2 women, in 1 Barawan man it is slightly oblique with a very marked fold, 11 Barawans have more or less oblique eyes of which 7 have a fold, 4 are straight, 1 of which has a slight fold. Four men have light brown irises, 2 of each sex dark brown, the remainder are medium. *Ears*: Type European in 5 Long Kiputs, 2 Lelaks, 8 Barawans and 2 mixed breeds, 1 Kajaman; Negroid in 1 Barawan mixed breed; orang in 2 Barawans. Angle slightly prominent in 1 Long Kiput, 2 mixed breeds and 1 Kajaman, rather more so in 1 Long Kiput, prominent in 1 Lelak, 5 Barawans. Lobule distended throughout, perforated in 2 Barawans, adherent in 1 mixed breed. Descending helix absent in 1 Long Kiput, infolded less than 2 mm. in 4 Long Kiputs, 1 Lelak, 11 Barawans and 2 mixed breeds, 1 Kajaman; 2-4 mm. in 1 Lelak, 1 Barawan mixed breed. Darwin's point absent in all except 1 Barawan and 1 mixed breed where it is an infolded tip. Tragus under 3 mm. in 4 Long Kiputs, 1 Lelak, 1 Barawan and 1 mixed breed, slightly more in 1 Lelak, 1 Barawan; 3-5 mm. in 1 Long Kiput, 9 Barawans and 2 mixed breeds, 1 Kajaman. Anti-tragus absent in 1 Long Kiput, 3 Barawans; under 3 mm. in 3 Long Kiputs, 2 Lelaks, 7 Barawans and 3 mixed breeds, 1 Kajaman; 3-5 mm. in 1 Long Kiput, 1 Barawan. Anti-helix below level of helix in 2 Long Kiputs, 5 Barawans and 1 mixed breed; about at same level in 3 Long Kiputs, 2 Lelak, 6 Barawans and 2 mixed breeds, 1 Kajaman. The 5 Barawan women have ears of European type; angle slightly prominent in 2, prominent in 3; lobule distended in all; descending helix infolded less than 2 mm. in 4, 2-4 mm. in 1; Darwin's point absent in all; tragus 3-5 mm. in all; anti-tragus absent in 2, under 3 mm. in 3; anti-helix below level of helix in 2, about at same level in 3.

*Hair*: Seven men and 2 women have straight hair, 17 and 3 wavy, and 2 men curly hair; the colour is rusty black in 13 men and 3 women, black in 12 and 3, brown in 1 man. It is generally abundant and long.

*Skin*: Three are cinamon (6), 6 light cinamon (14), 15 lighter still (12), 3 dull fawn (17), 3 pale fawn (pale 17), 4 pale pinkish buff (11).

*Stature*: Four men are of medium stature, 30 are short, of whom 2 men and all 6 women are below 1.5 m., 1 Barawan woman being only 1.395 m. (4 ft. 7 in.); the Barawans as a

whole are shorter than the others. The median for the whole series of men is 1.54 m. (5 ft.  $\frac{1}{2}$  in.).

### 3. *Sebop Group*

Sixteen MALANG men and 4 women were measured.

*Head-form*: The indices show 10 men and 3 women to be dolichocephalic, 6 men and 1 woman brachycephalic; the median is 76.9 for the men. All are hypsicephalic, except 2 men in respect to length-height. The shape is described as ovoid in 7 men, oval in 2, round oval in 1 of each sex, and ellipsoidal in 4 men.

*Face*: It is pentagonal in 10 men and 3 women, ovoid in 1 woman, and lozenge-shaped in 1 man; 6 men have long faces and 2 broad. Alveolar prognathism is noted in 3 men, and superciliary ridges in 3. All are chamæprosopic except 1 of each sex in regard to the upper facial index. The forehead is full in 9 men and 1 woman, broad in 3 men and 1 woman, narrow in 4 and 1, low in 4 and 2, high in 4. The cheek-bones are more or less prominent in 12 men and 2 women, moderate in 2 men, and not prominent in 2 of each sex. The lips are moderately thin. The chin is rather small in 6 men; it is fairly well developed in 7 men and 4 women. *Nose*: 2 men and 1 woman are mesorhine, the rest platyrhine, 2 men being hyperplatyrhine. The profile is straight in 8 men and 1 woman, more or less concave in 4 men and 3 women, slightly aquiline in 2 men, high-bridged in 1, and slightly sinuous in 1; blunt tips are noted in 4 men and 3 women. The root is moderately high in 10 men and 1 woman, low in 6 and 3; it is narrow in 3 men and broad in 9 men and 3 women. The base is reflected in 12 men and 4 women, straight in 3 men; the alæ are small in 11 men and 4 women, and moderate in the remaining men; the nostrils are round in 9 men and 1 woman, wide in 4 and 1, long oval in 2 men and round oval in 1, narrow and elongated in 1 woman, large in 1 man, they are nearly or quite horizontal in 3 men. *Eyes*: The aperture is small or narrow in 7 men and 2 women, moderately open in 5 men and 1 woman; it is straight with no fold in 8 men and 1 woman, straight with a slight fold in 4 men, slightly oblique with no fold in 2 men and 1 woman, slightly oblique with fold in 2 of each sex, the fold being slight in 1 man. The colour of the iris is dark brown in 8 men and 4 women, medium in 7 men and light in 1. *Ears*: Type European in 13 men and 4 women (1 doubtful), approximately Negroid in 2 men, chimpanzee in 1 man; angle prominent in 11 men and 3 women, rather less in 3 men, slightly prominent in 2 men; lobule distended in all but 1 man; descending helix

absent in 2 women, infolded less than 2 mm. in 12 men and 1 woman (doubtful), 2-4 mm. in 4 men and 1 woman; Darwin's point absent in 15 men and 3 women, doubtful in 1 man, infolded in 1 woman (?); tragus under 3 mm. in 2 men, 3-5 mm. in 14 men and 4 women (1 doubtful), double in 3 men and 1 woman of these latter; anti-tragus absent in 6 men and 1 woman, trace in 2 men, under 3 mm. in 7 men and 2 women (1 doubtful), 3-5 mm. in 1 of each sex; anti-helix below level of helix in 11 men and 3 women (1 doubtful), about at the same level in 5 men and 1 woman.

*Hair*: It is wavy in character; the colour is rusty black in 14 men and 4 women, black in 2 men. It is usually long and abundant on the head; 4 men have slight moustaches.

*Skin*: Fourteen are lightest cinamon (12), 2 light cinamon (14), 9 pale fawn (pale 17), 2 light brown (near 17), 5 pale pinkish buff (11).

*Stature*: One man is tall, the rest are short, 2 men and all the women being under 1.5 m.; the median for the men is 1.535 m. (5 ft.  $\frac{1}{2}$  in.).

Eight LONG POKUN men and 10 women were measured.

*Head-form*: The cephalic indices show 5 men and 4 women to be dolichocephalic, 3 men and 6 women brachycephalic; the median for the men is 76.9, for the women 79.4. One man is platycephalic, 3 men and 1 woman mesocephalic and the rest hypsicephalic as regards length-height, all are hypsicephalic as regards breadth-height, in each respect the women being markedly more hypsicephalic than the men. The shape is noted as oval in 1 man and 9 women, round oval in 1 of each sex, ellipsoidal in 1 man and pyriform in 4 men.

*Face*: In 5 men and 6 women it is more or less pentagonal, in 1 man and 2 women lozenge-shaped. All are markedly chamæprosopic both in total facial and upper facial indices. The forehead is narrow in 3 men and 1 woman, broad in 2 and 1, small in 2 women, high or moderate in 2 men and 6 women, fairly prominent in 1 and 2, low in 3 men. The cheek-bones are moderately prominent in 8 of each sex, very prominent in 1 woman, and not prominent in 1 woman. The lips are moderately thin in most cases, but are rather thick in 2 men and 1 woman. The chin is small in 3 men and 6 women (noted as not retreating in 2 women), but is fairly well formed. *Nose*: Four men and 5 women are mesorhine, the rest platyrhine, 1 of each sex having an index of 100. The profile is straight in 7 men and 4 women (the tip being blunt in 4 men and 2 women, and depressed in 3 men), concave in 4 women, "Chinese" in 1 man and 2 women. The root is broad in 4 men and 9 women (flat in 4 of the women), low in 3 men and 2 women, moderately high in 4 of each sex,

moderately narrow in 2 men; the base is more or less reflected in 8 men and 6 women, very much reflected in 1 woman, and nearly straight in 3; the alæ are small in 6 men and 8 women, moderate in 1 of each sex and wide in 1 of each sex; the nostrils are round in 3 men and 7 women, more or less widely open in 6 men and 5 women and small in 3 women. *Eyes*: The aperture is moderately open in 6 men and 7 women, wide in 1 of each sex and rather narrow in 1 man and 2 women; it is straight with no fold in 4 men and 6 women, straight with fold more or less developed in 2 men and 1 woman, slightly oblique with no fold in 2 men, slightly oblique with slight fold in 2 women, and oblique with a trace of fold in 1 woman. The colour is light brown in 1 man, medium in 6 men and 7 women, dark in 1 and 3. *Ear*: Type European in 7 men (2 doubtful) and 3 women, intermediate between European and Negroid in 1 man; angle prominent in 6 men and 1 woman; lobule distended, right adherent in 1 woman; descending helix infolded less than 2 mm. in 7 men and 1 woman, 2-4 mm. in 1 of each sex; Darwin's point absent in 2 men and 1 woman, doubtful in 2 men, distinct tip in one man; tragus under 3 mm. in 3 of each sex, being double in 1 man and 3 women, slightly larger in 2 men, being double in 1, 3-5 mm. in 3 men and 7 women, being double in 4 women; anti-tragus absent in 2 men and 5 women (1 doubtful), trace in 2 men and 1 woman, under 3 mm. in 4 men and 1 woman; anti-helix below level of helix in 6 men and 1 woman, about at the same level in 2 men (1 doubtful) and 1 woman.

*Hair*: It is straight in 1 man, straight to wavy in 1 man and 5 women, wavy in 5 and 3, wavy to curly in 1 man. The colour is rusty black in 7 of each sex and dark brown in 3 women. It is long and fairly abundant on the head; 2 men have beards, one only on the right side.

*Skin*: Seven are lightest cinamon (12), 1 with a trace of green, 5 are dull fawn (17), 2 pale fawn (pale 17), 3 pale pinkish buff (11).

*Stature*: Two men are of medium height, the rest short, the median being 1.59 m. (5 ft.  $2\frac{1}{2}$  in.); only 2 women are over 1.5 m. and 2 are under 1.4 m. (4 ft. 7 in.), the median being 1.47 m. (4 ft. 10 in.).

Five SEBOP men were measured.

*Head-form*: All but 1 are dolichocephalic, the median, being 75.3, 1 is platycephalic in regard to length-height, and 1 mesocephalic, the rest are hypsicephalic in both respects. The shape is pyriform in 2, oval to roundish in the remainder.

*Face*: It is pentagonal in 4, and narrow with rather prominent brow-ridge in 1. All are chamæprosopic in both respects. The forehead is full in 2 and low in 2. The cheek-bones are

more or less prominent in 4, 1 is not prominent. The lips are thin in 3 and moderate in 2. The chin is fairly well developed. *Nose*: Three are mesorhine, 1 platyrhine, and 1 hyper-platyrhine. The profile is concave in 2, straight in 1, and intermediate in 2; a blunt tip is noted in 1. The root is narrow and moderately high in 2, moderately broad in 2, moderately high in 1, and 2 are fairly broad and flat. The base is reflected in 3 and straight in 2; the alæ are small in 3, moderately large and rounded in 1, and wide and horizontal in 1. *Eyes*: The aperture is fairly open in 4, rather narrow in 1; it is straight with no fold in 3, and slightly oblique with a slight fold in 2. The colour is medium brown. *Ears*: Type European in 2, European to Negroid in 1; angle prominent in 2; lobule distended in 1, trace in 1, 3-10 mm. in 2, 10-15 mm. in 1; descending helix infolded less than 2 mm. in 2, 2-4 mm. in 3; Darwin's point absent in 2; tragus under 3 mm. in 1, rather larger in 1, 3-5 mm. in 3; anti-tragus under 3 mm. in 4, 3-5 mm. in 1; anti-helix below level of helix in 2, about at the same level in 3.

*Hair*: It is wavy in 3, straight to wavy in 1, curly in 1; the colour is rusty black in 4, dark brown in 1. It is fairly long and moderately abundant on the head; 1 man has a small moustache at angles of mouth, and 1 has a fairly good moustache and beard.

*Skin*: Two are lightest cinamon (12), 1 light brown (near 17).

*Stature*: All are short, 1 being under 1.5 m.; the median is 1.54 m. (5 ft.  $\frac{1}{2}$  in.).

Ten LERONG men and 5 women were measured.

*Head-form*: The cephalic indices show 4 men and 1 woman to be dolichocephalic, 6 men and 4 women brachycephalic, the median being 78.5 for the men and 81 for the women. Three men are mesocephalic as regards length-height, otherwise both sexes are hypsicephalic both in length-height and breadth-height, the women being more so than the men. The shape is noted as ovoid in 5 men, pyriform in 3 men, oval in 3 of each sex, and round oval in 2 women (1 with vertical occiput).

*Face*: It is more or less pentagonal in 8 men and 1 woman, oval or ovoid in 4 women, broad in 1 woman, and long in 2 men; alveolar prognathism is noted in 1 of each sex and sunken temples and cheeks in 1 man. All are chamæprosopic as regards both total facial and upper facial indices, one man only being an exception in both respects. The forehead is good in 3 of each sex, fair in 3 men, rather narrow in 2 men and 1 woman. The cheek-bones are prominent in 8 men and 2 women, not prominent in 2 and 3. The lips are moderately thin in 4, men but tend to be thick in 2 men and 4 women. The chin is usually well developed, but is small in 2 women. *Nose*: Three men and 1 woman are mesorhine, the rest platyrhine, 1 woman being

hyper-platyrhine. The profile is straight in 4 men and 1 woman, straight to slightly sinuous in two men, "Chinese" in 1 woman, concave in 4 men and 3 women; blunt tips are noted in 6 cases and depressed tips in 3; the root is moderately high in 7 men, narrow in 2, more or less broad in 4 men and 1 woman, rather low in 2 and 1, broad and flat in 4 women. The base is more or less reflected in 6 men and 4 women, straight in 4 men; the alæ are small in 4 of each sex, moderate in 4 men, wide in 1 of each sex; the nostrils are rounded in 5 of each sex, and more or less widely open in 6 men, distended in 1 man. *Eyes*: The aperture is moderately wide in 9 men and 4 women, and rather narrow in 1 woman; it is straight with no fold in 4 men and 1 woman, straight with slight fold in 2 women (in one case trace of fold in right eye only), slightly oblique with trace of fold in 2 men and 1 woman and with fairly developed fold in 1 woman, slightly oblique with no fold in 1 of each sex, quite oblique with slight fold in 1 man. The colour is medium brown in 8 men and 5 women and dark brown in 1 man. *Ears*: Type European in 9 men and 4 women (3 doubtful), Negroid in one man; angle prominent in 8 men (1 doubtful), slightly prominent in 1 man; lobule distended in all but 1 man in whom it is medium; descending helix infolded less than 2 mm. in 9 men and 1 woman (doubtful), 2-4 mm. in 1 man; Darwin's point absent in 6 men, inrolled knob in 1 man; tragus under 3 mm. in 4 men, being double in 3, slightly larger in 1 of each sex being double in both, 3-5 mm. in 6 men and 4 women being double in 1 man; anti-tragus absent in 3 men and 4 women, under 3 mm. in 8 men; anti-helix below level of helix in 5 men, about at the same level in 5 men and 1 woman.

*Hair*: It is straight in 2 women, straight to wavy in 6 men and 3 women, wavy in 3 men. The colour is rusty black in 7 men and 3 women, light rusty black in 1 man, dark brown in 1 man and 2 women. It is nearly always abundant on the head, and is rather long, especially in the women.

*Skin*: Eight are lightest cinamon (12), 1 light cinamon (14), 2 cinamon (6), 4 pale fawn (pale 17).

*Stature*: One man is of medium height, the rest are short, 2 being under 1.5 m., the median is 1.52 (4 ft. 11 $\frac{3}{4}$  in.). Four women are under 1.5 m., one being only 1.39 m. (4 ft. 6 $\frac{3}{4}$  in.).

Seven MILANAU men, consisting of 6 Naron and 1 Miri, were measured.

*Head-form*: All are brachycephalic, but it should be remembered that deformation of the head is practised by these people (vol. i., p. 48), and it is probable that the cephalic index is very rarely normal, consequently the head indices may be neglected. Three

are flat behind and broad in the parietal region, of whom 2 are narrow in front and 1 broad, 3 are more or less ovoid.

*Face*: It is pentagonal in 4, the angle of the jaws is prominent in 1; the Miri man has an oval face pointed below, with small jaws and alveolar prognathism. All are chamæprosopic in regard both to total facial and upper facial indices. The forehead is low and broad in 1, high and broad in 1, low in 1, high in 2, and rather sloping in 1. The cheek-bones are prominent in 3 and moderately large in 4. The lips are moderately thin as a rule, in 1 they are fairly large. The chin is rather small in 4, and fairly well formed in 3. *Nose*: Four men are mesorhine and 3 platyrhine, the highest index being 89.1. The profile is straight in 4, with blunt tip in 2, slightly concave in 2, and sinuous with blunt tip in 1; the root is high in 1, narrow and moderately high in 2, broad and moderately high in 3; the base is straight in 5, reflected in 1, and slightly concave in 1; the alæ are moderate in 3, and small in 1; the nostrils are rounded in 1, broad in 1, moderately oval in 1. *Eyes*: The aperture is moderately wide; it is straight with no fold in 1, slightly oblique with no fold in 3, more or less oblique with slight fold in 3. The colour of the iris is medium brown in 4 and light in 2. *Ears*: Type European in 2, European to Negroid in 1, European to chimpanzee in 1, chimpanzee in 1, orang in 1; angle prominent in 6, slightly prominent in 1; lobule absent in 1, trace in 3, being adherent in 1, small in 2, medium in 1; descending helix infolded less than 2 mm. in 6, 2-4 mm. in 1; Darwin's point absent in all; tragus under 3 mm. in 1, slightly larger in 1, 3-5 mm. in 5, being double in 2; anti-tragus under 3 mm. in 5, 3-5 mm. in 2; anti-helix below level of helix in 3, slightly below in 1, about at the same level in 2, distinctly beyond in 1.

*Hair*: One man had curly hair, 1 wavy, 1 straight to wavy, and 1 straight, but the character was difficult to determine as in all cases but one the hair was cut, being more or less closely cropped in 2 men. The colour is noted as black in 6, and rusty black in 1, and as fairly abundant on the head in 3; several had hair on the face, 2 had small moustaches, 2 had moustaches and short beards, 1 had small beard and moustache and thick eyebrows.

*Skin*: Three are cinamon (6), 1 light cinamon (14), 1 lightest cinamon (12), and 1 pale fawn (pale 17).

*Stature*: One is of medium height, the rest are short but none are under 1.5 m.; the median is 1.562 m. (5 ft. 1½ in.).

### III. PUNAN GROUP

Eighteen PUNAN men and four women were measured by us and one man by Mr. Shelford.

*Head-form*: The cephalic indices show 3 men to be dolichocephalic, the rest of the men and all the women are brachycephalic, the median being 80.9 for the men and 81.2 for the women. Two men are platycephalic both in length-height and breadth-height, 1 is platycephalic in length-height but mesocephalic in breadth-height, 1 is platycephalic in length-height but hypsicephalic in breadth-height, 1 is mesocephalic in length-height but platycephalic in breadth-height, 1 of each sex is mesocephalic in both respects, 1 of each sex is mesocephalic in length-height but hypsicephalic in breadth-height, 1 woman is hypsicephalic in length-height and platycephalic in breadth-height, the rest are hypsicephalic in both respects. The shape is usually ovoid in the men, 2 are noted as pyriform; 3 women have round heads.

*Face*: The shape varies; it is oval in 4 men and 2 women, but owing to the general moderate prominence of the cheek-bones and the smallness of the chin, it becomes pentagonal (3 men) or even lozenge-shaped or triangular (2 men); 1 woman has a broad face and 1 man a somewhat square, while 2 men have long faces. Alveolar prognathism is noted in 1 case and superciliary ridges in 2. All are chamæprosopic except 2 men, 1 being leptoprosopic in regard to both total facial and upper facial indices, the other as to upper facial only. The forehead is upright in 3 of each sex, full in 5 men and 1 woman. The cheek-bones are prominent in 9 men, moderate in 6 men and 2 women, broad in 1 of each sex. The lips are moderately thin except in 2 men and 1 woman. The chin is usually fairly well formed; though small it is not retreating in 5 men. *Nose*: Eight men are mesorhine, 7 men and 3 women platyrhine, 4 men and 1 woman hyper-platyrhine. The profile is straight in 10 men and 1 woman, slightly concave in 6 and 1; the root is more or less depressed in 9 men and 2 women, fairly high and narrow in 4 men; the base is slightly reflected in 9 men and 4 women, straight in 7 men, and slightly deflected in 2 men; the alæ are usually moderately developed, rather thin in 4; the nostrils are oval in 13 or rounded in 4. *Eyes*: The aperture is moderate in 11 men and 1 woman, small in 5 and 2; it is straight with no fold in 5 men, slightly oblique with no fold in 3 men, slightly oblique with a slight fold in 6 men and 3 women and with a more developed fold in 1 woman, moderately oblique with moderate fold in 3 men and with slight fold in 1 man. The colour is light brown in 2 men, medium in 8, dark in 6 and 1 woman. *Ear*: Type European in 8, European to Negroid in 4; angle prominent in 6, more so in 2; lobule distended in 9, absent in 1, adherent in 2, being small in 1; descending helix absent in 3, infolded less than 2 mm. in 6, rather more in 1, 2-4 mm. in 2; Darwin's point a distinct tip in 2, doubtful in 1, absent in the rest; tragus under 3 mm. in 5, being double in 1, rather larger in 1,

3.5 mm. in 7, being double in 1; anti-tragus absent in 2, trace in 1, under 3 mm. in 10; anti-helix below level of helix in 5, about at the same level in 8.

*Hair*: It is straight in 6 men and 3 women, straight to wavy in 2 men, wavy in 8 men and 1 woman, wavy to curly in 1 man. The colour is rusty black in 12 men and 1 woman, black in 5 men, and dark brown in 1 man. It is usually fairly long and abundant on the head, but in 6 men it is noted as thin; 7 have a slight amount of hair on the face and 1 a moderate amount on the legs.

*Skin*: Fifteen are light cinamon (14), 15 lightest cinamon (12), 11 pale fawn (pale 17), and 6 dull fawn or light brown (17).

*Stature*: Two are of medium height, the rest short, 4 men being under 1.5 m.; the median is 1.55 m. (5 ft. 1 in.).

Three UKIT men were measured by Mr. Shelford. They are more brachycephalic than the Punan, their median index being 83.3, but are slightly less chamæprosopic, 2 being leptoprosopic in regard to the upper facial index. All 3 are mesorhine.

The Mongolian fold is very slight in 2. All have straight black hair. One is tall, measuring 1.735 m. (5 ft. 8¼ in.), the other 2 are short.

[Fourteen PUNAN men were measured by Nieuwenhuis.

*Head-form*: The cephalic indices range evenly between 77.5 and 86.1, the median being 81.3; all except 1 are brachycephalic.

*Face*: It is broad in 5 and medium in the rest. The bi-zygomatic breadth ranges from 132 to 145 mm., which is rather narrower than the range obtained by us, 130-154 mm. *Nose*: the breadth varies between 37 and 43 mm., whereas in the Punans measured by us the range was between 34 and 44 mm. The shape is noted as concave in 4, broad and flat in 10, i.e. 29 per cent have "depressed," "sunken," or "hollow" noses. *Eyes*: the Mongolian fold does not occur. The iris is dark.

*Hair*: It is uniformly straight and tends to be scanty. The colour is black.

*Skin*: The colour is light brown in 10, brown and yellow in 2, black or blue-black in 2.

*Stature*: None are tall, 4 are of medium height, the rest are short 1 being under 1.5 m.; the median is 1.569 m. (5 ft. 1¾ in.).]

#### IV. KENYAH GROUP

Twenty-six KENYAH men and 6 women were measured, consisting of 6 MADANG men, 9 Long Dallo men and 2 women, 9 Apoh men, 4 Long Sinong women, and two other men. All these may be taken as pure Kenyahs, and the following data are based thereon.

*Head-form*: The cephalic indices of the three groups given on Table A range from dolichocephaly to brachycephaly, and it is interesting to note that the Madangs, with a median of 78.1, have distinctly the narrowest heads, intermediate are the Long Dallo men, median 80.5, while the Apoh men, with a median of 84, have distinctly the broadest heads. The head in all is markedly hypsicephalic both as regards the length-height and the breadth-height indices. The shape is described as round in 8 men, oval in 2, ovoid in 3, square in 1, pyriform in 3, and long in 2. The 4 Long Sinong women are distinctly brachycephalic, the mean being 83.2, but the average is 85.1, owing to one having an index 93.8. They also are very hypsicephalic.

*Face*: Six men are recorded as having pentagonal faces, 3 broad and 3 long; alveolar prognathism is noted in 2. All are chamæprosopic as regards the total facial index, and all except 1 Madang and 2 Long Dallo men as regards the upper facial index. The forehead is upright in 10 men, 1 is noted as bulging and 1 as sloping. The cheek-bones are moderate in 12 men, prominent in 6 men (1 very marked) and 2 women, and broad in 1 of each sex. The lips are, as a rule, moderately full, but are thin in 3. The chin is fairly well developed. *Nose*: One man is leptorhine, 6 are mesorhine, 13 platyrhine, 6 hyper-platyrhine. The 2 Long Dallo women are mesorhine, the 4 Long Sinong women are strongly platyrhine. The profile is straight in 14 men, a few others varied. The base is slightly reflected in 14 men, straight in 2; the alæ are broad in 5 men, small in 2, and the septum is disclosed in 2; the nostrils are wide in 8 men, elongated in 1. *Eyes*: The aperture is moderate in 10 men, wide in 6 men and 3 women, narrow in 7 men; it is straight with no fold in 6 men and 1 woman and with a slight fold in 5 men, slightly oblique with no fold in 5, and with a slight fold in 4 and 2 women, oblique with no fold in 1. The colour is light in 2 men and 1 woman, medium in 15 men and 1 woman, and dark in 7 men and 4 women. *Ears*: Data were obtained only for the Madang. Type European in 3 (2 doubtful), Negroid 1 (?); angle prominent 2 (?); lobule distended in 4, of medium size in 1 (?); descending helix infolded less than 2 mm. in 2, rather more in 1; tragus 3.5 mm. in 5, being double in 1, 5-7 mm. in 1; anti-tragus absent in 1, trace in 1, under 3 mm. in 3, 3-5 mm. in 1; anti-helix below level of helix in 2, about at the same level in 1.

*Hair*: It is straight in 7 men and 1 woman, wavy in 14 men and 2 women, curly in 2 men. The colour is dark brown in 3 men, rusty black in 15 men and 5 women, black in 5 men and 1 woman. It is usually long and moderately abundant on the head; face hair was observed in 2 men, and a small amount on the body in 5.

*Skin*: The average skin colour is various shades of cinamon;



11 are cinamon (6), 16 are light cinamon (14), 14 are lightest cinamon (12), 9 pale fawn (pale 17), 3 dull fawn or light brown (17), 6 pale pinkish buff (11).

*Stature*: 7 men (3 Madangs, 3 Long Dallos, 1 Long Tikan) are of medium height; the rest are short; the median is 1.61 m. (5 ft. 3 $\frac{1}{4}$  in.). The stature of the 6 women ranges from 1.42 m. (4 ft. 8 in.) to 1.57 m. (5 ft. 1 $\frac{3}{4}$  in.).

#### V. KAYAN GROUP

Twenty-one KAYAN men and 1 woman were measured.

*Head-form*: The cephalic index forms a gradual series with a median of 79.8, all except 5 being brachycephalic. The head is distinctly hypsicephalic, only 5 being mesocephalic as regards length-height. Five were noted as oval, 2 ovoid, 1 square ovoid, 3 round.

*Face*: The form varies, 3 being more or less pentagonal, 2 squarish, 2 round, and 5 oval. All are chamæprosopic except 1 man in the total facial and upper facial indices, and 1 of each sex in the upper facial index. The forehead is upright in 6, and rounded and full in 6. The cheek-bones are moderate in 14, and prominent in 3. The lips are moderately full, being noted as thick in 2 men. The chin is fairly well developed, with 3 exceptions. *Nose*: Ten are mesorhine and the remainder platyrhine, of whom 5 are hyper-platyrhine, 2 of these latter are boys (aged 15); the excessive platyrhiny is due mainly to the shortness of the nose in the three adults. The profile is straight in 16 and moderately concave in 3; the root is slightly depressed in 11 and high in 6; the base is reflected in 11 and straight in 4; the nostrils are transversely oval in 2, oval in 5, and round in 5. *Eyes*: The aperture is narrow in 12 and medium in 4; it is straight with no fold in 8 and with a slight fold in 2, slightly oblique with no fold in 2 and with a slight fold in 6; 1 man with a straight eye and no fold is noted as having a lash fold which is the character of a Mongolian upper eyelid. The colour is light in 6, medium in 10, and dark in 3. *Ears*: Type European in 2, European to Negroid in 3, orang in 3; angle slightly prominent in 2; lobule distended in 5, perforated in 2; descending helix absent in 1, infolded less than 2 mm. in 8; Darwin's point absent; tragus under 3 mm. in 5, 3-5 mm. in 4; anti-tragus under 3 mm. in 8, 3-5 mm. in 1; anti-helix below level of helix in 4, about at the same level in 4, distinctly beyond in 1.

*Hair*: It is straight in 6, wavy in 12, wavy to curly in 1, and curly in 1 (Pl. 22); the colour is rusty black in 12, black in 6, and dark brown in 1.

*Skin*: The average skin colour is a light cinamon (14) or pale fawn (pale 17).

*Stature*: All but 3 of the men are of short stature, the median being 1.550 m. (5 ft. 1 in.).

[Forty-eight male and 30 female KAYANS were measured by Nieuwenhuis, also 1 Mahakam Kayan of each sex. Of these 5 were boys under 16 and 5 girls under 16, who will be omitted from the description where it is possible to distinguish them.

*Head-form*: The cephalic index of the men forms a gradual series from 75 to 85.4 with 6 higher indices; 8 are dolichocephalic, the median of the whole series of adult men being 81.1; that of the women ranges from 75 to 93.2, with a slight weakening in the series about where the median 82.5 occurs; one index, 97, falls considerably outside; 4 are dolichocephalic. The Mahakam man has an index of 78.3, the woman 74.1.

*Face*: One Kayan had a long face, 14 per cent (including children) had broad faces, the rest were medium. In our and his Kayans the bi-zygomatic breadth ranges from 132 to 150 mm., except that two of his are narrower, 126 and 129 mm. *Nose*: Breadth-measurements agree with ours. Two males and 1 female are noted as having concave noses, 35 and 20 as broad and flat, 9 and 8 as straight, 1 of each sex as narrow and straight. These characterisations are of course not mutually exclusive. No convex noses were observed; 4 per cent are concave ("depressed," "sunken," or "hollow"). *Eyes*: The Mongolian fold does not occur. The iris is always dark.

*Hair*: 28 per cent of the males and 17 per cent of the females had wavy hair, 1 man had curly hair, the rest straight. As a rule it is rather scanty, but 30 per cent of the Kayans had a moderate amount. The colour is black.

*Skin*: The colour is brown or yellow.

*Stature*: Two men are tall, 6 medium and the rest short, 6 being below 1.5 m., of whom 2 are under 18 years old; the median is 1.572 (5 ft. 2 in.). The women over 23 average 14 cm. shorter than the men; this is a large difference, as it is usually 10-12 cm., as in our Sarawak figures.]

#### VI. IBAN (OR SEA DAYAKS) GROUP

Fifty-six IBAN men were measured by us.

*Head-form*: The cephalic index forms a gradual series, the median being 83, and therefore shows brachycephaly. The head is usually hypsicephalic, but 1 is platycephalic as regards breadth-height, 2 are mesocephalic both in length-height and breadth-height, 5 are mesocephalic in length-height and 3 in breadth-height. Thirteen are noted as round, 7 as ovoid, 4 as oval, several had broad parietal and narrow frontal regions producing a pyriform norma verticalis.

*Face*: The form is noted as pentagonal in 10, oval in 5, broad oval in 4, the narrowness of the jaw producing the pentagonal shape. The majority are chamæprosopic, but 1 is leptoprosopic in total facial and upper facial indices, and 7 are leptoprosopic in upper facial index. The forehead is generally full or slightly bulging, but may be straight and vertical; 3 are noted as being sloped. The cheek-bones are prominent in 20, and moderately so in 24. The lips are moderately full. The chin is small and moderately prominent. *Nose*: Sixteen are mesorhine, 21 platyrhine, and 19 hyper-platyrhine. The profile is concave in 23, straight in 18 and nearly so in 4; the root is more or less high in 19, more or less depressed in 20, in most cases it is broad or moderately so; the base is straight in 24, reflected in 25, deflected in 3; the alæ are wide in 8, moderate in 6, small in 9; the nostrils are oval in 10, transversely oval in 8, round in 13, wide in 9. *Eyes*: The aperture is narrow in 13, medium in 18, wide in 3; it is straight with no fold in 10 and with a slight fold in 11, slightly oblique with no fold in 10 and with a moderate fold in 21. The majority are normal as regards the eyelashes, but 3 have a distinct Mongolian character and 5 have it slightly. The colour is intermediate in 25, dark in 22, light in 5, 4 cases were noted with a bluish margin to the iris. *Ears*: Type European in 31, European to Negroid in 2, Negroid in 2, orang flattened above in 1; angle slightly prominent in 22, rather more so in 1, prominent in 8, more so in 1, very prominent in 1; lobule distended in 10 and perforated in 5, very small in 1, small in 13, being adherent in 4, rather small in 1, medium in 10, 1 being adherent, 2 perforated, and 1 doubtful; descending helix absent in 2, infolded less than 2 mm. in 23, 2-4 mm. in 13; Darwin's point an infolded tip in 1, an inrolled knob in 2, absent in the rest; tragus under 3 mm. in 11, being double in 1, slightly larger in 1, 3-5 mm. in 25, being double in 3, 5-7 mm. in 1; anti-tragus absent in 4, under 3 mm. in 24, 3-5 mm. in 8, 5-7 mm. in 1; anti-helix below level of helix in 23, about at the same level in 15.

*Hair*: It is straight in 16, wavy in 26, curly in 2, 1 being described as crisp. The colour is rusty black in 26, black in 17, and dark brown in 1. Eight men had a slight amount of hair on the face; the body hair is absent or very scanty, but one had a quantity on his legs.

*Skin*: Five are dark warm cinamon, 27 cinamon (6), 5 light cinamon (14), 11 dull fawn (17), 11 light brown (near 17), 5 various shades of a light greenish sepia (light 31), 3 a still lighter greenish sepia.

*Stature*: One man is tall, 11 are of medium stature, and the remainder short, 2 being under 1.5 m.; the median is 1.585 m. (5 ft. 2½ in.).

Thirteen SIBUYAU men were measured by Mr. Shelford and 1 by us.

*Head-form*: All but two are brachycephalic, the median being 83. Mr. Shelford did not measure the radii and so the height indices cannot be given.

*Face*: All are chamæprosopic with regard to the total facial index and all except 3 in the upper facial index.

*Nose*: Two are leptorhine, 7 mesorhine, and 5 platyrhine.

*Stature*: All the men are short, 3 being under 1.5 m.; the median is 1.535 m. (5 ft. ½ in.).







TABLE B  
I. MURUT GROUP

Auricular Radii.			FACE.					NOSE.				Height Standing.	Height Sitting.	Span.	CEPHALIC INDICES.			FACIAL INDICES.			NASAL INDICES.		Locality of Subject.
Vertex.	Nasion.	Alveolus.	Total Length.	Upper Length.	Bi-zygomatic Breadth.	Inter-ocular Width.	Bigonial Breadth.	Length.	Breadth.	Bi-malar Breadth.	Naso-malar Line.				Length-breadth.	Length-height.	Breadth-height.	Total Facial.	Upper Facial.	Alveolar.	Nasal.	Naso-malar.	
...	...	...	108	61	135	38	115	47	46	99	110	1575	...	1689	78.5	...	...	80	45.2	...	97.9	111.1	Trusan.
...	...	...	118?	69	125?	30	118	52	35	93	110	1558	...	1601	76.5	...	...	94.4?	55.2?	...	67.3	118.3	„
...	...	...	121	68	135	34	110	45	45	100	119	1605	...	1731	79	...	...	89.6	50.4	...	100	119	„
...	...	...	110	61	128	31	109	45	45	96	120	1669	...	1775	72	...	...	85.9	47.7	...	100	125	„
134	91	94	110	63	136	36	110	43	37	94	103	1485	780	1515	78.5	72	91.8	80.9	46.3	103.3	86	109.6	Long Panah, Tinjar Dist.
133	93	103	123	73	136	35	112	47	43	95	109	1565	770	1635	72.7	67.2	92.4	90.4	53.7	110.8	91.5	114.7	„
135	98	98	108	61	144	30	104	42	32	97	109	1550	762	1595?	82.4	74.2	90	75	42.4	100	76.2	112.4	„
137	94	100	115	64	136	31	107	41	40	94	103	1600	800	1615	83.3	76.1	91.3	84.6	47.1	106.4	97.6	109.6	„
129	101	113	113	66	146	38	123	47	47	95	110	1616	850	1735	74.9	62.2	88.4	77.4	45.2	111.9	100	115.8	„
141	95	105	108	63	137	37	110	37	37	95	105	1530	795	1535	75.4	70.9	94	78.8	46	110.5	100	110.5	„
141	95	100	106	61	140	31	109	43	36	95	100	1575	795	1650	79.8	77	96.6	75.7	43.6	105.3	83.7	105.3	„
146	92	93	103	56	119	33	100	37	34	95	102	1410	730	1450	72.7	78.1	107.4	86.6	47.1	101.1	91.9	107.4	„
140	95	102	106	65	131	34	107	37	33	97	101	1480	760	1490	77.7	74.5	95.9	80.9	49.6	107.4	89.2	104.1	„
143	84	89	99	53	134	33	114	36	37	95	102	1460	745	1515	80.8	80.8	100	73.9	39.6	106	102.8	107.4	„

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TABLE B  
I. MURUT GROUP

Tribe, Sex, Number of Card.	Name.	Age.	HEAD.								FACE.					NOSE.			
			Length.	Breadth.	Bi-auric Breadth.	Circumference.	Auricular Vertical Arc.	Auricular Radii.			Total Length.	Upper Length.	Bi-zygomatic Breadth.	Inter-ocular Width.	Bigonial Breadth.	Length.	Breadth.	Bi-m Brea	
								Vertex.	Nasion.	Alveolus.									
MURUT	♂ 43	Orang Kaya Sutan .	45	191	150	134	560	320	...	...	...	108	61	135	38	115	47	46	9
	,, 44	Piri . . . . .	30	187	143	126	533	330	...	...	...	118?	69	125?	30	118	52	35	9
	,, 45	Upai . . . . .	45	186	147	138	545	339	...	...	...	121	68	135	34	110	45	45	10
	,, 46	Rugu . . . . .	35	189	136	132	543	325	...	...	...	110	61	128	31	109	45	45	9
KALABIT	♂ 47	Jangin . . . . .	20	186	146	122	546	358	134	91	94	110	63	136	36	110	43	37	9
	,, 48	Tama Jangin . . . . .	45	198	144	130	567	355	133	93	103	123	73	136	35	112	47	43	9
	,, 49	Aban Jok . . . . .	40	182	150	123	539	365	135	98	98	108	61	144	30	104	42	32	9
	,, 50	Aban Apoi . . . . .	45	180	156	129	541	364	137	94	100	115	64	136	31	107	41	40	9
	,, 51	Aban Liwai . . . . .	65	195	146	128	555	370	129	101	113	113	66	146	38	123	47	47	9
	,, 52	Ami . . . . .	22	199	150	125	555	354	141	95	105	108	63	137	37	110	37	37	9
	,, 53	Siting . . . . .	26	183	146	121	539	355	141	95	100	106	61	140	31	109	43	36	9
	♀ 54	Obong . . . . .	28	187	136	110	533	366	146	92	93	103	56	119	33	100	37	34	9
	,, 55	Awing . . . . .	30	188	146	121	545	365	140	95	102	106	65	131	34	107	37	33	9
	,, 56	Sina Moh Anan . . . . .	40	177	143	124	525	363	143	84	89	99	53	134	33	114	36	37	9











TABLE B (continued)

## III. PUNAN GROUP

Ear Radii.		FACE.					NOSE.				Height standing.	Height sitting.	Span.	CEPHALIC INDICES.			FACIAL INDICES.			NASAL INDICES.		Locality of Subject.	
Vertical.	Alveolus.	Total length.	Upper length.	Bi-zygomatic breadth.	Interocular width.	Bi-gonial breadth.	Length.	Breadth.	Bi-malar width.	Naso-malar line.				Length-breadth.	Length-height.	Breadth-height.	Total facial.	Upper facial.	Alveolar.	Nasal.	Naso-malar.		
91	96	100	51	136	32	102	37	41	92	103	...	...	...	78.4	75.6	96.4	73.5	37.5	105.5	110.8	112	Tutau River, Baram Dist.	
90	98	105	60	138	34	109	41	35	97	105	...	...	...	80.3	73.2	91.2	76.1	43.5	108.9	85.4	108.2	" " "	
92	93	107	60	142	35	113	42	40	97	102	1610	815	1680	84.7	88.6	104.7	75.4	42.3	101.1	95.2	105.2	Tinjar "	
97	106	118	66	144	36	110	46	38	96	102	1585	810	1640	78.3	69.3	88.5	81.9	45.8	109.3	82.6	106.3	Nibong " Tinjar Dist.	
98	c. 97	118	61	136	32	105	48	35	96	104	1550	805	1625	82.3	74.2	90.2	86.8	44.9	99	72.9	108.3	" " " "	
95	95	114	66	135	29	111	48	34	96	106	1565	785	1570	82.9	74.9	90.3	84.4	48.9	100	70.8	110.4	" " " "	
97	94	118	65	130	29	103	41	37	91	102	1460	770	1470	76.5	74.9	97.9	90.8	50	96.9	90.2	112.1	" " " "	
97	101	114	60	154	34	116	45	41	104	116	1600	810	1635	86.3	74.7	86.6	74	39	104.1	91.1	111.5	" " " "	
93	c. 93	110	62	138	34	103	45	37	99	105	1475	735	1565	77.3	66.5	86	79.7	44.9	104.3	82.2	106.1	" " " "	
92	93	107	57	144	35	113	37	37	96	102	1450	775	1460	77.6	75.4	97.2	74.3	39.6	101.1	100	106.3	" " " "	
95	99	117	66	141	31	107	47	36	100	107	1515	775	1535	80.1	72	89.9	83	46.8	104.2	76.6	107	Puah " " "	
98	96	123	73	144	37	107	54	39	104	109	1635	...	1715	82.4	67.4	81.8	85.4	50.7	98	72.2	104.8	Bok " " "	
90	100	112	65	143	31	110	49	41	101	106	1522	...	1620	79.3	63.8	80.5	78.3	45.5	111.1	83.7	105	" " " "	
89	99	102	59	142	37	104	39	36	100	107	1455	...	1522	84.7	65.9	77.9	71.8	41.5	111.2	92.3	107	" " " "	
99	107	107	66	144	34	102	45	38	103	114	1560	...	1705	78.8	66.7	84.6	74.3	45.8	108.1	84.4	110.7	" " " "	
99	105	121	67	150	42	120	47	43	112	122	1662	...	1760	81.5	68.8	84.4	80.7	44.7	106.1	91.5	108.9	" " " "	
95	101	113	61	149	34	111	43	44	103	105	1612	...	c. 1665	81.4	71	87.2	75.8	40.9	106.3	102.3	101.9	" " " "	
95	96	106	63	152	39	111	40	40	104	112	1530	800	1610	93	86	92.5	69.7	41.4	101.1	100	107.7	Baloi " Rejang "	
		103	57	135	37	114	42	37	101	111	1518	...	1590	90.1	...	...	76.3	42.2	...	88.1	109.9	103.3	Rejang Dist. (Kenyah ♀)
76	82	88	48	134	29	97	29	30	90	93	...	...	...	88.6	72.3	81.6	65.7	35.8	107.9	103.5	103.3	Tutau River, Baram Dist.	
86	91	93	56	121	35	87	39	34	93	103	...	...	...	79.3	69.5	87.7	76.9	46.3	105.8	87.2	110.8	" " " "	
75	83	88	49	122	36	91	34	29	91	97	...	...	...	82.6	76.6	92.8	72.1	40.2	110.6	85.3	106.6	" " " "	
88	103	115	64	142	32	110	41	38	100	108	1542	...	1585	79.8	67	84	81	45.1	117	92.7	108	Bok " Tinjar "	
...	...	...	...	...	...	...	...	...	...	...	1585	...	1620	83.3	...	...	83.8	50	...	80.4	115.4	Near Kapit, Rejang Dist.	
...	...	114	68	136	32	110	46	37	91	105	1735	...	1682	82.4	...	...	74.7	51.4	...	74.1	112.2	" " " "	
...	...	186	73	142	37	113	54	40	98	110	1585	...	1590	86.3	...	...	79	48.5	...	80	110	" " " "	
...	...	109	67	138	32	111	50	40	100	110	1585	...	1590	86.3	...	...	79	48.5	...	80	110	" " " "	
103	102	106	62	142	39	107	40	41	102	109	1550	810	1630	78.9	80.9	102.5	74.6	43.7	99	102.5	106.9	Baloi, Rejang Dist. (Kenyah ♀)	
100	111	109	62	148	37	108	41	43	106	113	1590	855	1670	84	78.1	93	73.6	41.9	111	104.9	106.6	" " " (Kenyah ♀)	
95	98	110	62	141	35	109	44	37	100	105	1530	820	1600	81.4	75.4	92.6	78	44	103.2	84	105	" " " (Klemantan ♀)	
95	101	113	68	143	36	107	44	38	104	110	1501	...	1578	84.5	70.7	83.7	79	47.6	106.3	86.4	105.8	Bok R., Tinjar Dist. (Lelak ♂)	
91	95	111	65	146	37	116	43	34	101	104	1508	...	...	83	75	90.4	76	44.5	104.4	79.1	103	" " " (Lelak ♂)	
99	103	124	69	154	37	118	48	37	107	118	1615	...	1663	81.8	67.4	82.4	80.5	44.8	104	77.1	110.3	" " " (Lelak ♂) (chief)	
97	101	117	65	157	36	116	41	39	106	115	1571	...	1643	81.6	68.4	83.9	74.5	41.4	104.1	95.1	108.5	" " " (½ Lelak ♂)	
97	99	119	67	144	37	117	45	43	104	111	1570	...	1675?	75	64	85.3	82.6	46.5	102.1	95.5	106.7	Ukit ♂	
90	101	113	66	147	37	111	46	40	103	108	1612	...	1717	82.1	64.2	78.2	76.9	44.9	112.2	87	104.9	Balaga Punan × Milanau ♀	
90	93	109	64	132	39	107	43	34	101	108	1480	715	1490	97.5	95.5	98	82.6	48.5	103.3	79.1	106.9	Bok R., Tinjar Dist. (½ Milanau ♂)	
																							Long Dallo (Kenyah ♂)

TABLE B (continued)

## III. PUNAN GROUP

Sex, Number of Card.	Name.	Age.	HEAD.								FACE.					NOSE.				Height standing.	Height sitting.	Span.	CEPHALIC INDICES		
			Length.	Breadth.	Bi-auric breadth.	Circumference.	Auricular vertical arc.	Auricular Radii.			Total length.	Upper length.	Bi-zygomatic breadth.	Inter-ocular width.	Bi-gonial breadth.	Length.	Breadth.	Bi-malar width.	Naso-malar line.				Length-breadth.	Length-height.	
								Vertex.	Nasion.	Alveolus.															Length-breadth.
PUNAN	♂ 2	Tama Sutit . . .	40	176	138	123	512	347	133	91	96	100	51	136	32	102	37	41	92	103	...	...	...	78.4	75.6
	" 5	Benian . . .	22	183	147	127	538	353	134	90	98	105	60	138	34	109	41	35	97	105	...	...	...	80.3	73.2
	" 6	Tama Wan . . .	25	176	149	129	536	305	156	92	93	107	60	142	35	113	42	40	97	102	1610	815	1680	84.7	88.6
	" 7	Taman Kutan . . .	32	189	148	133	555	366	131	97	106	118	66	144	36	110	46	38	96	102	1585	810	1640	78.3	69.3
	" 8	Tama Lutong . . .	40	186	153	125	541	363	138	98	c. 97	118	61	136	32	105	48	35	96	104	1550	805	1625	82.3	74.2
	" 9	Taman Ilei . . .	30	175	145	124	517	344	131	95	95	114	66	135	29	111	48	34	96	106	1565	785	1570	82.9	74.9
	" 10	Tingang . . .	30	187	143	118	534	358	140	97	94	118	65	130	29	103	41	37	91	102	1460	770	1470	76.5	74.9
	" 11	Tama Tijat . . .	35	182	157	134	545	365	136	97	101	114	60	154	34	116	45	41	104	116	1600	810	1635	86.3	74.7
	" 12	Talang . . .	40	185	143	124	535	334	123	93	c. 97	110	62	138	34	103	45	37	99	105	1475	735	1565	77.3	66.5
	" 13	Tama Tari . . .	40	183	142	132	533	353	138	92	93	107	57	144	35	113	37	37	96	102	1450	775	1460	77.6	75.4
	" 14	Tama Lango . . .	35	186	149	123	545	352	134	95	99	117	66	141	31	107	47	36	100	107	1515	775	1535	80.1	72
	" 16	Demina . . .	50	193	159	133	570	375	130	98	96	123	73	144	37	107	54	39	104	109	1635	...	1715	82.4	67.4
	" 17	Tama Tungan . . .	35	188	149	135	537	348	120	90	100	112	65	143	31	110	49	41	101	106	1522	...	1620	79.3	63.8
	" 18	Iniau . . .	17	176	149	125	523	340	116	89	99	102	59	142	37	104	39	36	100	107	1455	...	1522	84.7	65.9
	" 19	Tama Pajiring . . .	28	189	149	127	548	362	126	99	107	107	66	144	34	102	45	38	103	114	1560	...	1705	78.8	66.7
	" 20	Entiwai . . .	38	189	154	134	552	370	130	99	105	121	67	150	42	120	47	43	112	122	1662	...	1760	81.5	68.8
	" 21	Oiau (Tabanau) . . .	45	183	149	130	540	358	130	95	101	113	61	149	34	111	43	44	103	105	1612	...	c. 1665	81.4	71
(*deformed)	" 22	Saran . . .	40	172*	160*	142	538	370	148	95	96	106	63	152	39	111	40	40	104	112	1530	800	1610	93	86
	" 50	Apoh . . .	17	172	155	135	525	335	...	...	...	103	57	135	37	114	42	37	101	111	1518	...	1590	90.1	...
	♀ 1	Bena . . .	35	166	147	124	503	348	120	76	82	88	48	134	29	97	29	30	90	93	...	...	...	88.6	72.3
	" 3	Bungan Urai . . .	25	174	138	117	512	342	121	86	91	93	56	121	35	87	39	34	93	103	...	...	...	79.3	69.5
	" 4	Mujan . . .	18	167	138	110	490	329	128	75	83	88	49	122	36	91	34	29	91	97	...	...	...	82.6	76.6
	" 15	Lijan . . .	30	188	150	125	543	370	max. 131	88	103	115	64	142	32	110	41	38	100	108	1542	...	1585	79.8	67
PUNAN	♂ 47	Nonyeng . . .	35	174	145	130	524	327	...	...	...	114	68	136	32	110	46	37	91	105	1585	...	1620	83.3	...
	" 48	Berahang . . .	23	182	150	131	530	340	...	...	...	186	73	142	37	113	54	40	98	110	1735	...	1682	82.4	...
	" 49	Ujan . . .	35	175	151	130	540	340	...	...	...	109	67	138	32	111	50	40	100	110	1585	...	1590	86.3	...
PUNAN Half-breeds)	♂ 23	Tama Ngipa Jau . . .	50	199	157	132	572	391	161	103	102	106	62	142	39	107	40	41	102	109	1550	810	1630	78.9	80.9
	" 24	Matu . . .	35	187	157	142	548	380	146	100	111	109	62	148	37	108	41	43	106	113	1590	855	1670	84	78.1
	" 26	Bugong . . .	22	183	149	127	543	360	138	95	98	110	62	141	35	109	44	37	100	105	1530	820	1600	81.4	75.4
	" 27	Pengawi . . .	18	181	153	128	534	367	128	95	101	113	68	143	36	107	44	38	104	110	1501	...	1578	84.5	70.7
	" 28	Samadi . . .	22	176	146	124	525	370	132	91	95	111	65	140	37	116	43	34	101	104	1508	...	...	83	75
	" 29	Tama Dimong . . .	50	187	153	130	545	370	126	99	103	124	69	154	37	118	48	37	107	118	1615	...	1663	81.8	67.4
	" 30	Dimong . . .	27	190	155	138	553	382	130	97	101	117	65	157	36	116	41	39	106	115	1571	...	1643	81.6	68.4
	" 31	Tama Anjang . . .	25	200	150	127	563	365	128	97	99	119	67	144	37	117	45	43	104	111	1570	...	1675 ?	75	64
	" 32	Giyong . . .	25	190	156	128	563	370	122	90	101	113	66	147	37	111	46	40	103	108	1612	...	1717	82.1	64.2
	♀ 25	Laan . . .	17	157	153	127	524	372	150	90	93	109	64	132	39	107	43	34	101	108	1480	715	1490	97.5	95.5

TABLE B (continued)

IV. KENYAH GROUP

Serial Number	HEAD.				FACE.					NOSE.				Height Standing.	Height Sitting.	Span.	CEPHALIC INDICES.			FACIAL INDICES.			NASAL INDICES.		Locality of Subject.	
	Circum- ference.	Auricular Vertical Arc.	Auricular Radii.			Total Length.	Upper Length.	Bi-zygo- matic Breadth.	Inter- ocular Width.	Bi-gonial Breadth.	Length.	Breadth.	Bi-malar Breadth.				Naso- malar Line.	Length- breadth.	Length- height.	Breadth- height.	Total Facial.	Upper Facial.	Alveolar.	Nasal.		Naso- malar.
			Vertex.	Nasion.	Alveolus.																					
504	380	138	97	100	115	67	147	37	110	43	39	100	110	1630	805	1770	82.2	74.6	90.8	78.2	45.6	103.1	90.7	110	Long Puro, Baram.	
507	363	138	96	101	105	61	146	37	118	40	42	103	113	1520	790	1660	76.9	69.3	90.2	71.9	41.8	105.2	105	109.7	Dapoi R., Tinjar Dist.	
550	363	134	96	100	110	62	143	35	113	42	41	98	106	1520	795	1595	80.1	70.2	87.6	76.9	43.4	104.2	97.6	108.2	" " "	
550	358	135	94	100	109	62	139	37	113	42	40	98	106	1605	820	1655	74.7	69.6	93.1	78.4	44.6	106.4	95.2	108.2	" " "	
578	366	140	103	110	122	74	145	34	127	45	38	105	113	1655	880	1730	74.9	69	92.1	84.1	51	106.8	84.4	107.6	" " "	
552	356	135	99	104	116	66	146	38	110	45	40	105	115	1625	845	1675	79.3	71.8	90.6	79.5	45.2	105.1	88.9	109.5	" (Lanan Kenyah ♀)	
564	362	147	104	115	108	64	148	36	118	46	43	105	111	1600	800	1635	79.8	76.2	95.5	73	43.2	110.6	93.5	105.7	Long Dallo, Baram Dist.	
558	367	137	98	92	117	68	151	39	117	49	39	106	112	1630	850	1655	86.8	75.3	86.7	77.5	45	93.9	79.6	105.7	" " "	
605	375	...	...	...	119	71	152	40	115	51	41	107	134?	1640	870	...	80.5	...	...	78.3	46.7	...	80.4	...	" " "	
577	384	154	99	111	125	74	150	29	113	50	43	102	118	1650	845	1635	81.8	80.2	98.1	83.3	49.3	112.1	86	115.7	" " "	
530	362	140	93	98	103	58	140	32	101	38	39	95	105	...	...	...	76.9	76.9	100	73.6	41.4	105.4	102.6	110.5	" " (upper class).	
568	383	144	105	107	125	79	153	36	122	56	37	107	120	1610	840	1630	87.2	77	88.3	81.7	51.6	101.9	66.1	112.1	" " "	
570	375	159?	111	103	109	58	147	38	121	43	44	109	118	1592	860	1590	79.9	82	102.6	74.2	39.5	92.8	102.3	108.3	" " "	
555	357	136	100	103	120	57	151	37	120	45	39	108	119	1550	810	1615	83.1	74.3	89.5	79.5	37.7	103	86.7	110.2	" " "	
542	373	153	98	97	102	58	139	34	114	42	37	99	106	1560	810	1615	74.5	81.4	109.3	73.4	41.7	99	88.1	107.1	" " "	
552	386	162	93	89	107	66	134	37	107	44	34	95	103	1495	800	1475	77.2	85.7	111	79.9	49.3	95.7	77.3	108.4	" " "	
525	370	152	101	93	107	56	133	33	105	46	33	98	117	1570	810	1570	81.5	85.4	104.8	80.5	42.1	92.1	71.7	119.4	" " "	
560	362	137	98	97	115	67	148	35	117	46	37	98	107	...	...	...	78.2	71	90.7	77.7	45.3	99	80.4	109.2	Apo.	
553	337	137	98	98	105	56	145	33	108	43	40	90	106	...	...	...	84	73.3	87.3	72.4	38.6	100	93	117.8	" (upper class).	
544	368	135	97	101	98	55	150	34	104	38	41	100	104	...	...	...	88	77.1	87.7	65.3	36.7	104.1	107.9	104	" (lower class).	
535	362	138	90	102	100	57	142	38	105	38	32	100	105	...	...	...	79.9	75	93.9	70.4	40.1	113.3	84.2	105	" (upper class).	
534	365	127	90	92	105	56	140	36	108	39	38	102	110	...	...	...	88.4	73.4	83	75	40	102.2	97.4	107.8	" (upper class).	
548	362	142	97	113	100	60	144	32	112	38	41	97	107	...	...	...	76.9	72.8	94.7	69.4	41.7	116.5	107.9	110.3	" (upper class).	
538	371	143	96	94	115	66	140	32	104	40	40	100	110	...	...	...	85	79.4	93.5	82.1	47.1	97.9	100	110	" (middle class).	
558	358	130	91	102	107	61	148	33	111	39	36	96	107	...	...	...	84.2	68.4	81.3	72.3	41.2	112.1	92.3	111.5	" (upper class).	
547	370	143	103	103	106	66	141	37	110	42	40	102	107	...	...	...	75.6	74.1	97.9	75.2	46.8	100	95.2	104.9	" (upper class).	
54	382	144	96	95	121	64	143	37	111	45	38	106	120	1634	885	1633	79.9	72.4	90.6	84.6	44.8	99	84.4	113.2	Long Dallo.	
42	358	134	102	105	113	62	142	36	113	43	41	101	112	1535	770	1590	82.5?	75.7?	91.8	79.6	43.7	102.9	95.3	110.9	Lépu Tèpu, Batang Kayan (upper class).	
58	363	144	94	96	99	57	144	36	114	34	34	100	103	1420	735	1430	80.2	77	96	68.8	39.6	102.1	100	103	Long Sinong.	
22	372	142	95	93	102	55	138	30	94	34	34	97	102	1525	800	1520	93.8	88.2	94	73.9	39.9	97.9	100	105.2	" " "	
25	372	154	102	99	96	58	134	37	104	41	39	98	107	1450	754	1450	82.8	85.6	103.4	71.6	43.3	97.1	95.1	109.2	" " "	
25	374	140	93	89	98	55	132	34	99	36	32	95	103	1500	745	1530	83.5	79.5	95.2	74.2	41.7	95.7	88.9	108.4	" " "	
70	364	143	95	101	105	61	143	40	108	38	39	102	108	1640	800	1705	75.1	69.8	92.9	73.4	42.7	106.3	102.6	105.9	Dapoi R., Tinjar Dist.	
44	364	137	103	105	127	73	150	36	118	51	42	104	114	1580	825	1635	82.7	74.1	89.5	84.7	48.7	101.9	82.4	109.6	" " "	
38	367	...	...	...	105	56	133	35	94	43	35	100	108	1480	750	1530	77.8	...	...	78.9	42.1	...	81.4	108	Long Sinong.	
45	385	...	...	...	111	68	141	33	118	49	39	68?	113	1690	860	...	79.7	...	...	78.7	48.2	...	79.6	...	Long Dallo (Murut ♂).	
57	365	150	97	101	118	70	144	39	118	49	42	105	112	1565	850	1590	79.5	78.9?	99.3	81.9	48.6	104.1	85.7	106.7	Long Silin (Kayan ♀).	

TABLE B (continued)

## IV. KENYAH GROUP

Card.	Name.	Age.	HEAD.								FACE.					NOSE.				Height Standing.	Height Sitting.	Span.	CEPHALIC INDICES.				Total Facial.
			Length.	Breadth.	Bi-auric Breadth.	Circumference.	Auricular Vertical Arc.	Auricular Radii.			Total Length.	Upper Length.	Bi-zygomatic Breadth.	Inter-ocular Width.	Bi-gonial Breadth.	Length.	Breadth.	Bi-malar Breadth.	Naso-malar Line.				Length-breadth.	Length-height.	Breadth-height.		
								Vertex.	Nasion.	Alveolus.																	
♂ 4	Udau	26	185	152	133	564	380	138	97	100	115	67	147	37	110	43	39	100	110	1630	805	1770	82.2	74.6	90.8	78.2	
♂ 5	Balan Sigo	20	199	153	134	567	363	138	96	101	105	61	146	37	118	40	42	103	113	1520	790	1660	76.9	69.3	90.2	71.9	
♂ 6	Aban Tamat	26	191	153	130	550	363	134	96	100	110	62	143	35	113	42	41	98	106	1520	795	1595	80.1	70.2	87.6	76.9	
♂ 7	Tama Sigo Odoh	28	194	145	127	550	358	135	94	100	109	62	139	37	113	42	40	98	106	1605	820	1655	74.7	69.6	93.1	78.4	
♂ 8	Boi Sigo	40	203	152	134	578	366	140	103	110	122	74	145	34	127	45	38	105	113	1655	880	1730	74.9	69	92.1	84.1	
♂ 9	Tama Kajan Odoh	38	188	149	130	552	356	135	99	104	116	66	140	38	110	45	40	105	115	1625	845	1675	79.3	71.8	90.6	79.5	
♂ 68	Imoh	30	193	154	141	564	362	147	104	115	108	64	148	36	118	46	43	105	111	1600	800	1635	79.8	76.2	95.5	73	
♂ 67	Tama Sinan Matan	62	182	158	147	558	367	137	98	92	117	68	151	39	117	49	39	106	112	1630	850	1655	86.8	75.3	86.7	77.5	
♂ 66	Wan	17	195	157	148	605	375	...	...	...	119	71	152	40	115	51	41	107	134?	1640	870	...	80.5	...	...	78.3	
♂ 60	Aban Lawai	35	192	157	141	577	384	154	99	111	125	74	150	29	113	50	43	102	118	1650	845	1635	81.8	80.2	98.1	83.3	
♂ 59	Tam Aping Lalan	28	182	140	125	530	362	140	93	98	103	58	140	32	101	38	39	95	105	...	...	...	76.9	76.9	100	73.6	
♂ 65	Tama Bulan Wang	52	187	163	150	568	383	144	105	107	125	79	153	36	122	56	37	107	120	1610	840	1630	87.2	77	88.3	81.7	
♂ 64	Aban Tingan	50	194	155	137	570	375	159?	111	103	109	58	147	38	121	43	44	109	118	1592	860	1590	79.9	82	102.6	74.2	
♂ 63	Balari	28	183	152	143	555	357	136	100	103	120	57	151	37	120	45	39	108	119	1550	800	1600	83.1	74.3	89.5	79.5	
♂ 62	Ilun Jaya	...	188	140	133	542	373	153	98	97	102	58	139	34	114	42	37	99	106	1560	810	1615	74.5	81.4	109.3	73.4	
♀ 69	Mujan	...	189	146	117	552	386	162	93	89	107	66	134	37	107	44	34	95	103	1495	800	1475	77.2	85.7	111	79.9	
♀ 70	Sara	28	178	145	124	525	370	152	101	93	107	56	133	33	105	46	33	98	117	1570	810	1570	81.5	85.4	104.8	80.5	
♂ 76	Oyong Kajan	35	193	151	133	560	362	137	98	97	115	67	148	35	117	46	37	98	107	...	...	...	78.2	71	90.7	77.7	
♂ 73	Jauh	21	187	157	134	553	337	137	98	98	105	56	145	33	108	43	40	90	106	...	...	...	84	73.3	87.3	72.4	
♂ 72	Aban Jing	50	175	154	136	544	368	135	97	101	98	55	150	34	104	38	41	100	104	...	...	...	88	77.1	87.7	65.3	
♂ 79	Linjon	13	184	147	125	535	362	138	90	102	100	57	142	38	105	38	32	100	105	...	...	...	79.9	75	93.9	70.4	
♂ 71	Silong	20	173	153	125	534	365	127	90	92	105	56	140	36	108	39	38	102	110	...	...	...	88.4	73.4	83	75	
♂ 74	Mawa Obat	50	195	150	132	548	362	142	97	113	100	60	144	32	112	38	41	97	107	...	...	...	76.9	72.8	94.7	69.4	
♂ 77	Tam Usan Long	55	180	153	125	538	371	143	96	94	115	66	140	32	104	40	40	100	110	...	...	...	85	79.4	93.5	82.1	
♂ 78	Lasa	30	190	160	137	558	358	130	91	102	107	61	148	33	111	39	36	96	107	...	...	...	84.2	68.4	81.3	72.3	
♂ 75	Balan	22	193	146	134	547	370	143	103	103	106	66	141	37	110	42	40	102	107	...	...	...	75.6	74.1	97.9	75.2	
♂ 10	Tama Kuleh Jau	25	199	159	134	554	382	144	96	95	121	64	143	37	111	45	38	106	120	1634	885	1633	79.9	72.4	90.6	84.6	
♂ 11	Tama Awing Kiri	40	177?	146	125	542	358	134	102	105	113	62	142	36	113	43	41	101	112	1535	770	1590	82.5?	75.7?	91.8	79.6	
♀ 81	Luai	21	187	150	134	558	363	144	94	96	99	57	144	36	114	34	34	100	103	1420	735	1430	80.2	77	96	68.8	
♀ 82	Madun	25	161	151	121	522	372	142	95	93	102	55	138	30	94	34	34	97	102	1525	800	1520	93.8	88.2	94	73.9	
♀ 83	Bingan	50	180	149	116	525	372	154	102	99	96	58	134	37	104	41	39	98	107	1450	754	1450	82.8	85.6	103.4	71.6	
♀ 84	Sinan	20	176	147	121	525	374	140	93	89	98	55	132	34	99	36	32	95	103	1500	745	1530	83.5	79.5	95.2	74.2	
H KL	EMANTAN																										
♂ 16	Ilei	22	205	154	136	570	364	143	95	101	105	61	143	40	108	38	39	102	108	1640	800	1705	75.1	69.8	92.9	73.4	
♂ 15	Tingang	40	185	153	141	544	364	137	103	105	127	73	150	36	118	51	42	104	114	1580	825	1635	82.7	74.1	89.5	84.7	
♂ 80	Tina Usun Abu	30	185	144	123	538	367	...	...	...	105	56	133	35	94	43	35	100	108	1480	750	1530	77.8	...	...	78.9	
♂ 61	Oyong Jau	...	187	149	142	545	385	...	...	...	111	68	141	33	118	49	39	68?	113	1690	860	...	79.7	...	...	78.7	
H KAYAN																											
♂ 17	Aban Mato	49	190	151	139	557	365	150	97	101	118	70	144	39	118	49	42	105	112	1565	850	1590	79.5	78.9	99.3	81.9	

TABLE B (continued)

## V. KAYAN GROUP

HEAD.						FACE.					NOSE.				Height Standing.	Height Sitting.	Span.	CEPHALIC INDICES.			FACIAL INDICES.			NASAL INDICES.		Locality of Subject.
Tric. dth.	Circumference.	Auricular Vertical Arc.	Auricular Radii.			Total Length.	Upper Length.	Bi-zygomatic Breadth.	Inter-ocular Width.	Bi-gonial Breadth.	Length.	Breadth.	Bi-malar Breadth.	Naso-malar Line.				Length-breadth.	Length-height.	Breadth-height.	Total Facial.	Upper Facial.	Alveolar.	Nasal.	Naso-malar.	
			Vertex.	Nasion.	Alveolus.																					
2	535	346	133	99	101	116	c. 65	145	34	110	46	38	101	123	1495	795	1595	77.7	70.7	91.2	80	44.8	102	82.6	121.7	Long Lama.
0	558	374	138	99	104	108	64	143	40	109	44	41	104	110	1540	790	1575	80.1	72.3	90.2	75.5	44.8	105.1	93.1	105.8	"
1	572	368	132	96	101	122	74	139	32	107	48	38	98	110	1605	800	1685	79.4	69.8	88	87.8	53.2	105.2	79.2	112.2	"
0	547	378	147	101	98	122	c. 70	142	32	111	49	39	96	106	1550	810	1600	81.3	78.6	96.7	85.9	49.3	97	79.6	110.4	"
5	527	360	137	92	93	103	58	135	34	103	42	40	95	102	1625	795	1740	84.7	77.8	91.9	76.3	43	101.1	95.2	107.4	"
9	532	353	129	85	94	104	60	132	28	106	42	33	89	94	1515	750	1595	75.3	69.4	92.1	78.8	45.5	110.6	78.6	105.6	"
5	562	381	148	92	88	112	61	146	33	111	46	37	103	107	1630	830	1700	87.2	78.7	90.2	76.7	41.8	95.7	80.4	103.9	"
5	534	371	133	98	101	107	59	139	32	104	40	40	101	108	1500	775	1660	75	67.9	90.5	77	42.4	103.1	100	106.9	"
0	545	368	136	99	99	127	c. 69	138	36	106	48	44	97	105	c. 1480	c. 745	c. 1670	83.2	71.6	86.1	92	50	100	91.6	108.2	Long Lapan.
0	549	351	132	97	103	99	56	138	29	108	42	42	93	106	1580	795	1700	76.7	68.4	89.2	71.7	40.6	106.2	100	114	Tutau River.
6	550	355	130	94	98	115	65	141	33	104	49	39	97	111	1570	879	1585	75.6	67.4	89	81.6	46.1	104.2	79.6	114.4	" (upper class)
2	554	360	138	91	98	111	59	150	31	110	38	41	99	107	1550	800	1590	82.4	73.8	89.6	74	39.3	107.7	107.9	108.1	"
0	516	340	126	86	91	90	56	133	38	105	35	36	95	101	1525	750	1550	78.9	70	88.7	67.7	42.1	105.8	102.9	106.3	"
7	534	358	137	88	93	95	55	132	32	108	35	35	93	97	1420 <sup>1</sup>	750	1425	79.1	73.3	92.6	72	41.7	105.7	100	104.3	Long Apoh.
7	534	347	137	89	98	102	58	143	32	117	41	37	100	104	1500	820	1530	79.5	74.1	93.2	71.3	40.6	110.1	90.2	104	Bawang Takun (low class)
8	550	382	135	98	101	107	67	147	34	106	47	45	98	112	1540	800	1585	83.4	72.2	86.5	72.8	45.6	103.1	95.7	114.3	Long Sinong (middle class)
2	542	352	136	91	98	107	62	135	35	100	42	39	93	...	1580	780	1620	78.5	73.1	93.2	79.3	45.9	107.7	92.9	...	Long Lutin.
3	557	370	142	100	92	111	64	141	38	110	45	34	104	113	1630	840	1680	79.8	75.5	94.7	78.7	45.4	92	75.6	108.7	"
9	558	360	137	100	106	113	69	148	38	105	47	38?	103	112	1600	800	1675	82.8	73.7	89	76.4	46.6	100	80.8	108.7	Long Tejin.
4	555	368	138	95	...	116	63	143	35	108	45	38	102	113	1620	830	1670	80.4	73	90.8	81.1	44.1	...	84.4	110.8	Long Sinia.
3	543	355	141	94	104	110	62	143	35	111	43	41	102	110	1500	750	1590	80	76.2	95.3	76.9	43.4	110.6	95.4	107.8	Bawang Takun (middle class)
9	535	365	150	107	94	116	70	137	41	112	51	39	108	111	1465	737	...	83.3	83.3	100	84.7	51.1	87.9	76.5	102.8	Long Tejin.

<sup>1</sup> Omitted in Table A being a boy.

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TABLE B (continued)

## V. KAYAN GROUP

Tribe, Sex, Number of Card.	Name.	Age.	HEAD.								FACE.					NOSE.				Height Standing.	Height Sitting.	Span.	CEPHALIC	
			Length.	Breadth.	Bi-auric Breadth.	Circumference.	Auricular Vertical Arc.	Auricular Radii.			Total Length.	Upper Length.	Bi-zygomatic Breadth.	Interocular Width.	Bi-gonial Breadth.	Length.	Breadth.	Bi-malar Breadth.	Naso-malar Line.				Length-breadth.	Length-height
								Vertex.	Nasion.	Alveolus.														
KAYANS ♂ 1	Bui Mong . . .	45	188	146	132	535	346	133	99	101	116	c. 65	145	34	110	46	38	101	123	1495	795	1595	77.7	70
(Uma Pliau) ,, 2	Imang Ivun. . .	33	191	153	130	558	374	138	99	104	108	64	143	40	109	44	41	104	110	1540	790	1575	80.1	72
,, 3	Oyong Anyé . . .	54	189	150	131	572	368	132	96	101	122	74	139	32	107	48	38	98	110	1605	800	1685	79.4	69
,, 4	Akam Waan . . .	50	187	152	130	547	378	147	101	98	122	c. 70	142	32	111	49	39	96	106	1550	810	1600	81.3	78
,, 5	Semaring . . .	20	176	149	125	527	360	137	92	93	103	58	135	34	103	42	40	95	102	1625	795	1740	84.7	77
,, 6	Ingau . . .	29	186	140	129	532	353	129	85	94	104	60	132	28	106	42	33	89	94	1515	750	1595	75.3	69
,, 7	Bato . . .	21	188	164	135	562	381	148	92	88	112	61	146	33	111	46	37	103	107	1630	830	1700	87.2	78
,, 8	Ala . . .	35	196	147	125	534	371	133	98	101	107	59	139	32	104	40	40	101	108	1500	775	1660	75	67
,, 9	Oyong Bring Ajan	60	190	158	130	545	368	136	99	99	127	c. 69	138	36	106	48	44	97	105	c. 1480	c. 745	c. 1670	83.2	71
,, 10	Kawit . . .	44	193	148	130	549	351	132	97	103	99	56	138	29	108	42	42	93	106	1580	795	1700	76.7	68
,, 11	Akam Deng . . .	48	193	146	126	550	355	130	94	98	115	65	141	33	104	49	39	97	111	1570	879	1585	75.6	67
,, 12	Boi Ngau . . .	43	187	154	142	554	360	138	91	98	111	59	150	31	110	38	41	99	107	1550	800	1590	82.4	73
,, 13	Nipa . . .	15	180	142	130	516	340	126	86	91	90	56	133	38	105	35	36	95	101	1525	750	1550	78.9	70
,, 14	Mering . . .	15	187	148	127	534	358	137	88	93	95	55	132	32	108	35	35	93	97	1420 <sup>1</sup>	750	1425	79.1	73
,, 15	Ngau Aran . . .	30	185	147	137	534	347	137	89	98	102	58	143	32	117	41	37	100	104	1500	820	1530	79.5	74
,, 16	Akan Ngau . . .	40	187	156	138	550	382	135	98	101	107	67	147	34	106	47	45	98	112	1540	800	1585	83.4	72
,, 17	Anie Jok . . .	22	186	146	122	542	352	136	91	98	107	62	135	35	100	42	39	93	...	1580	780	1620	78.5	73
,, 18	Anie Lah . . .	42	188	150	133	557	370	142	100	92	111	64	141	38	110	45	34	104	113	1630	840	1680	79.8	75
,, 19	Oyong Luhut . . .	28	186	154	139	558	360	137	100	106	113	69	148	38	105	47	38?	103	112	1600	800	1675	82.8	73
,, 20	Aban Batu . . .	55	189	152	134	555	368	138	95	...	116	63	143	35	108	45	38	102	113	1620	830	1670	80.4	73
,, 21	Akam Anie . . .	55	185	148	133	543	355	141	94	104	110	62	143	35	111	43	41	102	110	1500	750	1590	80	76
♀ 22	Wan Deng . . .	45	180	150	119	535	365	150	107	94	116	70	137	41	112	51	39	108	111	1465	737	...	83.3	83

<sup>1</sup> Omitted in Table A being a boy.





TABLE C  
TABLE OF INDICES OF 83 CRANIA FROM SARAWAK

	♂ ♀	Length-breadth.			Length-height.			Breadth-height.		
		No.	Min.	Med.	Max.	Min.	Med.	Max.	Min.	Med.
Murut . . .	27	68.9	73	78.9	69.7	74.7	78.9	92.7	100.8	108.4
Pandaruan . .	1	...	75	...	...	77.8	...	...	103.7	...
Tagal . . .	1	...	82.1	...	...	73.2	...	...	89.1	...
Dusun . . .	3	74	76.5	78.9	77.1	77.3	77.5	97.8	101.3	104.7
Kalabit . . .	3	72.8	75.8	78.8	73.5	75.7	77.8	97.8	101.6	105.3
Lepu Potong.	9	71	74.4	78	74.2	75.1	79.4	95.4	104	105.5
Tring . . .	4	72.8	73.9	81.2	72.4	76.7	78.9	96.5	102.5	108.4
Land Dayak .	1	...	71.3	...	...	75.9	...	...	106.5	...
Maloh . . .	4	75.7	79.3	83.4	75.1	78.7	80.5	90.1	102.1	102.1
Bisaya . . .	4	75.5	78	78.8	77.9	79	80	99.3	101.5	103.7
Tabun . . .	1	...	76.1	...	...	77.8	...	...	102.2	...
Orang Bukit .	4	73.5	75.9	77.9	72	74.4	77.3	98.9	101.5	105.3
Kadayan . . .	2	75.3	76.4	88.5	76.4	77	77.5	89.4	96.2	103
Kanauit . . .	1	...	74.6	...	...	77.4	...	...	100	...
Punan . . .	2	75.7	76.3	76.8	78.6	79.4	82.1	103.8	105.4	107
Ukit . . .	1	...	78	...	...	78.6	...	...	100.7	...
Madang . . .	2	74.3	77.8	81.3	72.9	77.3	81.7	89.6	99.8	110
Kenyah . . .	3	80.8	84	87.1	74.1	78.6	83	85.2	94	102.8
Kayan . . .	6	74.6	77	94.3	71.9	75.1	84.7	89	95.7	100.7
Iban . . .	4	79.5	82	84.7	73.9	77.6	81.8	90.1	94.7	98.5

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