



---

Skulls from New Caledonia

Author(s): David Waterston

Source: *The Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. 38 (Jan. - Jun., 1908), pp. 36-46

Published by: [Royal Anthropological Institute of Great Britain and Ireland](#)

Stable URL: <http://www.jstor.org/stable/2843128>

Accessed: 25/06/2014 04:09

---

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



Royal Anthropological Institute of Great Britain and Ireland is collaborating with JSTOR to digitize, preserve and extend access to *The Journal of the Royal Anthropological Institute of Great Britain and Ireland*.

<http://www.jstor.org>

## SKULLS FROM NEW CALEDONIA.

BY DAVID WATERSTON, M.A., M.D.

[WITH PLATES VI-VII.]

THE collection of skulls which forms the subject of this communication is contained in the Anatomical Museum of Edinburgh University. I am indebted to the kindness of the Conservator, Professor D. J. Cunningham, for the opportunity of examining and measuring them, and to him I wish to express my warm thanks for this permission, and also for the kind assistance he has given me during the course of my investigations.

The series of skulls was presented to the museum by Dr. Ramsay Smith, who obtained all the specimens in the island of New Caledonia, a locality which is not well represented in craniological collections in this country. Dr. Barnard Davies<sup>1</sup> gives the measurements of six specimens, in his *Thesaurus Craniorum*, and thirteen specimens<sup>2</sup> are contained in the Museum of the Royal College of Surgeons. The skulls were all labelled as "Kanaka" by Dr. Ramsay Smith. This term, however, has no true racial significance. Barnard Davies states that it is the name applied by foreigners to the natives of the Polynesian Islands generally. "In the native language of the Sandwich Isles, Kanāka means a man, and Kanakā men generally. Kanaka is at times applied to Marquesan Islanders, and even to New Caledonians, a race that there cannot be any pretence to confound with Polynesians, even using this term in a very indiscriminate and comprehensive manner."

Now-a-days, this term is merely a general name for the coloured labourers who are imported in large numbers from many of the islands of the Pacific to work in the sugar plantations in Western Australia, and among these labourers are found representatives of many different races. The value of a small collection of such crania would not therefore be great.

We have, however, been able to ascertain that the skulls were all obtained in the island of New Caledonia, which is the principal French possession in the Pacific, and which is used as a convict settlement, and presumably were the crania of inhabitants of that island.

The inhabitants of the Pacific islands in this region, so far as is already known, belong mainly to two great divisions, the Melanesians or Papuans, and the Polynesians or Mahoris, possessing characteristics in colour, in hair and in shape of head by which they can be clearly distinguished one from another,

<sup>1</sup> *Thesaurus Craniorum*, p. 308.

*Catalogue of Osteological Specimens*, part 1,

Papuan crania, however, exhibit considerable variety in form and in proportion, and, in addition, the practice of artificially flattening the back of the head prevails to a considerable extent among individuals and, it may be, also among tribes of the natives of New Guinea, who are Papuans, and the same custom is found in other localities. The island of New Caledonia lies to the south of the Solomon Islands, about 800 miles to the east of the coast of Australia, and the people are said to be strongly Papuan in feature, *i.e.*, the skin is sooty-brown or black in colour, the hair is black and frizzly, and the beard is well developed.

The inhabitants are rapidly diminishing in number from disease and from warfare.

From the specimens which he examined, Barnard Davies found that the crania from this island exhibited on an average an extraordinary degree of length, height, and narrowness, from which he applied the name of *hypsi-stenocephali* to the crania of this series.

The skulls which I have examined were obtained from different parts of the island, some from Noumea, which is the capital, and one from Bouloupari, and all with two exceptions, were the crania of adults, the two exceptions being, one, the skull of a youth of about sixteen, and the other that of a young girl, which had been presented to Sir Wm. Turner, and was labelled "Tribe de Kanala."

#### I. CRANIOSCOPIC EXAMINATION.

The following is an account of the general characters exhibited by the individual crania.

The catalogue numbers of the crania are "Group 28, sub-group L," and the numbers in this sub-group are 1 to 8.

*No. 1.*—This was the cranium of an adult male, in which the left parietal bone presented two openings, in the region of the parietal eminence. These were probably the result of an injury, which had been inflicted some time before death, and were situated in a somewhat circular depressed area, which measured 16 cms. in its maximum diameter.

The hinder of the apertures was roughly circular, and was 10 mm. in diameter, while the anterior was rather irregular in shape, and measured 30 mm. by 15 mm. in its widest part. The edges of each were bevelled and smoothed off, indicating that the holes had been present some time before death.

The coronal suture was partially obliterated at the sides below the level of the temporal ridges, but otherwise the sutures showed no unusual arrangement.

The cranium was long and narrow, exhibiting a high cranial vault. The curvature of the vault was rather low in the frontal region, and the highest point lay between the parietal eminences.

The skull was rather ill-filled and was very narrow in the frontal region. The right parietal eminence was very prominent, but the interparietal suture was depressed and sunken in its hinder part. The occipital region was narrow, and

projected backwards as a rounded elevation above the level of the superior curved line.

The glabella was large and prominent.

There were no teeth in the upper jaw, but the sockets were normal, and five teeth which remained in the lower jaw were of average size and were normal.

The nasal bones were highly curved, and arched forwards in their lower part, and the zygomata were wide and prominent.

The nasal spine was short and blunt, and the lower margin of the anterior nasal orifice was rather rounded. The lateral margin on each side passed downwards at its lower end on to the facial aspect of the maxilla, and blended with the elevation of the socket of the central incisor tooth. There was a small "prenasal fossa" on either side, lying between this continuation of the lateral margin and a "paraseptal line" which ran outwards on the floor of the nose, from the root of the anterior nasal spine to the lateral wall.

No. 2.—This was the skull of a young individual, probably male.

From the dentition, the age appeared to be about 16 years. The characters of the sutures corresponded, and otherwise the cranium showed no unusual features.

The most important feature of this skull was the character of the anterior nasal orifice, which was very striking, being remarkably wide and short, while its lower margin was indistinct, so that the floor of the nasal fossae was continuous directly with the facial aspect of the maxilla, without any intervening ridge.

The vault of the skull was smooth and rounded, but the specimen was too immature to show any distinct ethnic characters, beyond that already referred to.

No. 3.—This was the skull of an adult female.

The vault of the skull was high and narrow, and the slope of the frontal bone was moderately vertical, the highest part of the vault lying between the parietal eminences, which were moderately well developed. The occipital region was narrow, and resembled that of the first skull. The molar teeth which were present were large and massive.

The right central incisor had been absent for some time, and the socket had been absorbed, and the condition suggested that it had been removed at an early date, as is done at puberty by the natives of Australia.

The anterior nasal orifice was again of a low type, having no distinct lower margin, and the lateral borders passed downwards on to the facial aspect of the maxilla. On the left side it passed to the socket of the lateral incisor tooth, but was very indistinct, while on the right side it was obscured by some alteration in the texture of the bone at the lower margin of the nose.

The nasal spine was not present, nor was there any paraseptal line on the floor of the nose, so that there was no distinct prenasal fossa.

No. 4.—This was also the skull of an adult male.

The sutures showed the remains of the metopic suture above the nasion, and an epipteric bone was present on the right side. The left nasal bone was larger

than the right. The latter failed to reach the fronto-nasal suture, and the internasal suture was, therefore, deflected to the right at the upper end.

The cranium in this specimen was narrow also, and the vault of moderate height, the highest point being between the bregma and the parietal eminences. The occipital region showed a formation similar to that in the first specimen, and there was a slight degree of flattening of the right parieto-occipital region. The parietal eminences were large and prominent, but the skull was rather ill-filled.

The facial region was somewhat different from that of any of the other crania. The face was short and very broad on account of a great development and outward thrust of the zygomatic arches, and the orbits appeared to be much wider than in the others.

The anterior nasal orifice was short and broad, and the root of the nose wide and heavy, of a low type. The lower margin of the nasal orifice was indistinct, and the nasal spine was short, and there was no paraseptal line. The lateral margin of the orifice passed in a faint line to the socket of the central incisor tooth on the right side and to that of the lateral incisor on the left.

A slight prenasal fossa with indistinct boundaries was present. The molar teeth were present in the upper jaw and were large and massive. The lower jaw showed only a slight mental prominence, and the horizontal ramus was rounded rather than flat, and narrow in its vertical diameter.

*No. 5.*—This cranium differed in several respects very markedly from any of the former specimens. It was very long and narrow, and the parietal eminences were indistinct. The muscular ridges were feeble, although the skull was undoubtedly that of a male. The vault was high and the parietal regions were well-filled. The face was highly prognathous from the projection forwards of the alveolar margin. The anterior nasal orifice was narrow, and presented a sharp lower margin and a prominent nasal spine. The five teeth which were present, and the sockets of the others, showed no abnormality. The palate was long and narrow.

*No. 6.*—In general contour this skull resembled fairly closely the former specimen, but it was not quite so long nor so high. There was a large epipteric bone on the right side. The anterior nasal orifice was of much the same type as in the last specimen, and presented a sharp lower margin, and a distinct nasal spine.

*No. 7.*—This skull presented features which distinguished it clearly from all the others. In many respects it was obviously of a higher type, the sutures were tortuous, and the whole cranium large and well-filled. It was also brachycephalic. The face was orthognathous, and the lower margin of the nasal orifice was sharp and distinct, and there was a well-formed nasal spine. Another of the distinctive features of the skull was a marked asymmetry, due to a distinct flattening of the right parieto-occipital region. This flattening extended well down to the base of the skull and was of the same character as the distortion found among the crania of several races of New Guinea, which is generally ascribed to an artificial pressure applied to the head during youth.

A deformity of the same kind is described by Barnard Davies<sup>1</sup> in a skull from New Caledonia, but the deformity, he states, is most likely accidental, from laying the head to sleep in early life upon the ground. M. Bourgarel is satisfied that the natives do not use any apparatus to produce distortion of the skull.

Turner however<sup>2</sup> states that there is a widespread custom of distortion of the skull among the different tribes of New Guinea, *i.e.*, Papuans, and the same custom is prevalent in other localities also.

No. 8.—The last cranium of the series examined was that of a young female of New Caledonia, which was presented by Dr. Ramsay Smith in 1903, and was labelled "Tribe de Kanala." It was rather small, and in general contour was long and narrow, but had distinct parietal eminences, while the occipital region was narrow and pointed resembling No. 1, and some of the other specimens. The face was small and obviously not fully developed, and hence it is not of much value for racial characters.

#### CRANIOMETRIC OBSERVATIONS.

The crania were measured and the various indices were determined according to the scheme laid down by Sir Wm. Turner, and the cubic capacities were taken by filling the cranial cavity with shot, also according to Turner's method, with the following results. (Table A.)

#### ANALYSIS AND COMPARISON OF THE INDICES AND MEASUREMENTS.

*Cubic capacities.*—Five of the eight crania were microcephalic in character, the cubic capacities ranging from 1,180 c.cs. to 1,290 c.cs., but as this group includes two young specimens, only three of the eight adults were microcephalic. Two of the crania were mesocephalic with capacities of 1,380 c.cs. to 1,425 c.cs. while one only was of a relatively large capacity, and came into the group known as megacephalic, having a capacity of 1,500 c.cs.

The skull of lowest capacity, No. 1, is that of an adult, and the next lowest, No. 4, is also adult, and both possess male characters, and they do not appear to be merely small specimens of crania of the same race as those with higher capacities but are distinct from them in capacity and also in other characters.

The cranial capacity showed no relationship to the cephalic or to the altitudinal index, for the cranial index of the most capacious skull was 67, while that of the one next to it was 77, and the index of the skull of least capacity was 71.

Nor was there any other single feature which could be closely correlated to the cranial capacity, except the character of the anterior nasal aperture. Without exception, among the adult crania, those which had a well marked lower margin for the nose were of higher capacity than those in which there was no sharp margin.

<sup>1</sup> *Thesaurus Craniorum*, p. 308.

<sup>2</sup> *Challenger Reports. Zoolog.* vol. 10. part 29.



TABLE A.

*Group XXVIII. L. 1*

Collection number ...	1	2	3	4	5	6	7	8
Age ...	Adult.	About 16.	Adult.	Adult.	Adult.	Adult.	Adult.	Young.
Sex ...	Male.	Male.	Female.	Male.	Male.	Female.	Female.	Female.
Cubic capacity ...	1180	1380	1260	1190	1500	1290	1425	1185
Glabello-occipital length ...	183	179	180	175	193	184	176	171
Basi-bregmatic height ...	133	128	132	132·5	143	135	135	124
<i>Vertical Index</i> ...	<b>72</b>	<b>71</b>	<b>73</b>	<b>75</b>	<b>74</b>	<b>73</b>	<b>76</b>	<b>72</b>
Minimum frontal diameter ...	91	92	90	90	90	89	92	82
Stephanic diameter ...	96	105	103	105	104	102	108	98
Asterionic diameter ...	103·5	103	108	101	107	106	106	96
Greatest parieto-squamous breadth	130	130·5	122	126	130	129	136	121
<i>Cephalic Index</i> ...	<b>71</b>	<b>73</b>	<b>67</b>	<b>72</b>	<b>67</b>	<b>70</b>	<b>77</b>	<b>70</b>
Horizontal circumference ...	498	489	497	480	525	500	484	467
Frontal longitudinal arc ...	125	121	126	118	131	120	122	120
Parietal " "	135	122	127	130	147	136	128	130
Occipital " "	114	129	116	110	128	127	112	105
Total " "	374	372	369	358	406	383	362	355
Vertical transverse arc ...	302	292	301	305	325	302	303	286
Basal transverse diameter ...	112	109	107·5	115	112	113	120	95
Vertical transverse circumference.	414	401	408·5	420	437	415	423	381
Length of foramen magnum	31·5	35	33	33	37	32	32	33
Basi-nasal length ...	96	88·5	95	99	99	98	100	88
Basi-alveolar length ...	99	93	100+	108·5	111	112	98	91
<i>Gnathic Index</i> ...	<b>103+</b>	<b>105</b>	<b>105</b>	<b>109</b>	<b>112</b>	<b>114</b>	<b>98</b>	<b>103</b>
Total longitudinal circumference.	501·5	495·5	497	480	542	513	494	476
Interzygomatic breadth ...	126	114	122·5	134·5	—	124	130	103
Intermalar " "	102	96	107	118	108	108	117	80
Nasio-mental length ...	96·5	91	105	99	—	—	—	—
<i>Nasio-mental complete facial Index.</i>	<b>76</b>	<b>80</b>	<b>86</b>	<b>73</b>	—	—	—	—
Nasio-alveolar length ...	61·5	54	57+	58	70	68	64	56
<i>Maxillo-facial Index</i> ...	<b>48</b>	<b>47</b>	<b>46</b>	<b>43</b>	—	<b>54</b>	<b>49</b>	<b>54</b>
Nasal height ...	41	40	45	40·5	48	47	52	40
Nasal width ...	25	24·5	22·5	28	24	24	25	22
<i>Nasal Index</i> ...	<b>61</b>	<b>61</b>	<b>50</b>	<b>69</b>	<b>50</b>	<b>51</b>	<b>48</b>	<b>55</b>
Orbital width...	35	36	37·5	37	40	38	41	36
Orbital height...	29	29	33	29	37	34	34	31
<i>Orbital Index</i> ...	<b>82</b>	<b>80</b>	<b>88</b>	<b>78</b>	<b>92</b>	<b>89</b>	<b>82</b>	<b>86</b>
Palato-maxillary length ...	53	48	53+	58	62	61	50	48
Palato-maxillary breadth ...	61	61	62·5	65	60	65	63	55
<i>Palato-maxillary Index</i>	<b>115</b>	<b>126</b>	<b>118</b>	<b>112</b>	<b>97</b>	<b>106</b>	<b>125</b>	<b>114</b>
Lower jaw. { Symphysial height ...	30·5	24	29	30	—	—	—	—
{ Coronoid " ...	61	51	61	58	—	—	—	—
{ Condylod " ...	58	50	64	65	—	—	—	—
{ Gonio-symphysial length ...	93	78	91	97	—	—	—	—
{ Inter-gonial width ...	83	78	91	93	—	—	—	—
{ Breadth of ascending ramus.	35	35	36	45	—	—	—	—

*Cephalic Index.*—With the exception of one specimen, all the crania were dolichocephalic in character, the index varying from 67, which is the index in two specimens, to 73 which is the index in one, a young specimen. The one exception had an index of 77, and is therefore mesaticephalic, and this cranium differs in many other respects from all the others.

No distinction could be drawn as regards cephalic index between the crania from the eastern and those from the western part of the island; and in this respect the specimens do not confirm the statement of MM. de Quatrefages and Hamy,<sup>1</sup> that the tribes in the west are more dolichocephalic than those in the eastern portion.

*Vertical Index.*—The vertical indices ranged from 71 to 76.

The highest index was found in the specimen which was mesaticephalic, and which showed the parieto-occipital flattening to a marked degree. It is of course possible that this deformity has reduced the maximum length and produced an alteration in other directions and thus diminished the value of these indices.

The relationship of the basi-bregmatic height to the maximum width is a character of some value in dealing with crania from this region. In four specimens from New Caledonia, Barnard Davies<sup>2</sup> found that the average height exceeded the width by over half an inch, while in a large series of "Kanakas" which he examined the width exceeded the height, in many cases by as much as an inch.

Turner's researches on crania from the Pacific islands show that in the Melanesians the height of the skull exceeds the width, while in Polynesians the width is greater than the height. In twelve specimens in the Royal College of Surgeons' Museum from New Caledonia, or from the adjacent Isles of Pines, in no case does the width exceed the height; in one instance these two diameters are equal, but in all the other specimens the height exceeds the width very considerably.

In the present series, omitting the immature specimens, in all the specimens except one the same result is found, the one exceptional case being the brachycephalic specimen.

This fact lends additional evidence to the belief that it is a cranium racially different from the others.

*Anterior Nasal Orifice.*—The characters of the apertura pyriformis are of considerable interest in this series, since it is known to present special features among Polynesian crania.

The anterior aperture may be studied in two ways, first by measurement of its greatest vertical and transverse diameters, and comparing these, and again by an inspection of the character of the lower margin of the orifice.

The first method shows that the crania vary considerably in the shape of the nasal aperture. The index ranged from 48 to 69, the lowest index being found in the brachycephalic skull, which therefore, in this respect also, is different from the other specimens.

<sup>1</sup> *Crania Ethnica.*

<sup>2</sup> *Thesaurus Craniorum*, p. 308.



Three other specimens, Nos. 3, 5, and 6 resemble it to some extent with a slightly higher nasal index. These four specimens therefore belong to the group of mesorhine skulls, while the others have nasal indices varying from 55 to 69, and are in the platyrhine group.

*Form of the Anterior Nasal Orifice.*—Hovorka,<sup>1</sup> who has studied the form of the nasal aperture in great detail, points out that the lower margin of the nose, formed by the maxilla, is variable in its characters. It is often sharp and distinct, as is usual in European crania, but in other forms shallow fossae may appear on this margin, known as the prenasal fossae.

These fossae were first described by Zuckerkandl, in his description of the skulls from the Novara expedition, and their formation depends upon the fact that the lower border of the nasal orifice may be laid down in the form of two ridges, the posterior of which is a ridge running outwards and backwards on the floor of the nose, to lose itself in the nasal process of the maxilla, while the anterior passes to the facial aspect of that bone. Zuckerkandl found the prenasal fossae to be present in flatnosed people, and found them to be usually associated with prognathism, while Hamy found the lower margin sharp in orthognathous crania, but rounded in the gorilla and the chimpanzee.

Hovorka recognises four forms.—(1) The lower margin is sharp, known as the “forma anthropina.” (2) The lower margin is in two lines which meet at the nasal spine and enclose between them on each side a distinct fossa, the “forma prenasalis.” (3) The posterior line from the nasal spine passes to the side wall of the nose, while the lateral margin of the nose passes on to the facial aspect of the maxilla, the “forma infantilis.” (4) The lower margin is rounded and indistinct, the “affenrinne.” All these four varieties are present in the present collection, but the general tendency is towards the formation of the fossae. The various forms have also been described by Macalister,<sup>2</sup> who applies the term “oxycraspedote” to the European type, with a sharp lower margin, and that of “bothrocraspedote” to the form where there are distinct fossae, as is usually the case in the Polynesians. The third form met with frequently among Australian skulls is termed by him the “orygmocraspedote,” and in it the lower edge of the lateral lip is prolonged on to the facial aspect of the maxilla and is lost in the elevation over the socket of the lateral incisor tooth.

*Orbital Indices.*—The relation of the height to the width of the orbits varied considerably among the specimens. Two were megaseme, three mesoseme, and the remainder were microseme.

The two presenting the high orbital openings were also distinguished by other characters, especially by their prognathism, from the others.

*Gnathic Indices.*—One cranium only, the brachycephalic one, was mesognathous in character, the rest being prognathous. This single specimen was almost orthognathous, with an index of 98, while the indices in the others ranged from 103 to 114. The prognathism was of the alveolar form.

<sup>1</sup> Hovorka, *Die aussere Nase.*

<sup>2</sup> *Journal of Anat. and Phys.*, vol. 32,

CLASSIFICATION OF THE CRANIA.

From the foregoing detailed account of the characters and the measurements of the crania, it is evident that they do not all belong to one homogeneous racial group, in fact the individual crania differ from one another in practically every feature of importance. This fact, however, is not unexpected, since the population of the Pacific Islands consists of different races exhibiting different cranial characters, and with the improved means of communication now available, intermingling of these races may occur.

It is, however, clear that one of the specimens possesses characters differing in nearly every detail from all the others, and it appears to be an almost typical specimen of the Polynesian form of skull.

It is mesocephalic in capacity, and it is also mesaticephalic in its length-breadth index. The vertical index makes it almost metriocephalic, and the width exceeds the height. It is almost orthognathous and leptorhine. Comparison of its dimensions with the figures of other observers for Polynesian crania bring out its affinities. I have for this purpose selected some figures given by Duckworth<sup>1</sup> and the comparison is given below.

TABLE B.

	Skull No. 7.	Average of Polynesian Crania, Flower & Topinard.	Duckworth's Polynesian.
Breadth index ... ..	77	79·7	80
Height „ ... ..	76	75·5	77·5
Alveolar „ ... ..	98	98·6	98·1
Orbital „ ... ..	82	91·6	84·5
Nasal „ ... ..	48	47·9	46·7 ?
Palato-maxillary index ...	125	?	109·8
Cubic capacity ... ..	1425	1525	1552

From the close resemblance of the two sets of figures it is clear that the cranium is that of a Polynesian.

Omitting the immature specimens, the other crania approximate generally to the type described by Barnard Davies, and also by Flower and Topinard, as being characteristic of the inhabitants of New Caledonia. In them the skulls are

<sup>1</sup> *Studies in Anthropology.*

dolichocephalic, the height exceeds the width, and the general contour of the cranium is that of a high narrow arch.

Three of the specimens 1, 3 and 4, are fairly typical Melanesian crania, as is shown by the table below.

TABLE C.

	No. 1.	No. 3.	No. 4.	Average of Melanesian Crania, Flower & Topinard.	Average of Barnard Davies, New Caledonia.
Breadth index...	71	67	72	71.4	72
Height „ ...	72	73	75	74.9	77
Alveolar „ ...	103	105	109	103.4	
Orbital „ ...	82	88	78	80.6	
Nasal „ ...	61	50	69	55.6	
Palato-maxillary index.	115	118	112	?	
Cubic capacity...	1180	1260	1190	1460	

Two of the specimens, 5 and 6, are distinguished from the remainder by the high degree of prognathism which they present, and which is an unusual feature among the Melanesians.

Another of this group, No. 4, possesses very wide zygomata, and this feature lowers its facial indices, and suggests the possibility of the presence of a Mongolian strain.

It is evident, therefore, that among the crania which come from New Caledonia specimens can be recognised which conform closely to the type described by Flower and by Barnard Davies as characteristic of the Islanders, the principal feature of this type being the long, narrow, and highly vaulted cranium.

But crania are also found which evidently have belonged to persons of different races, especially Polynesian, and the population of the island also contains individuals with mixed characters.

The examination of those crania supports the following views :—

1. There is a distinct New Caledonia type of skull.
2. Polynesian, and possibly Mongolian, intermixture is present among the population.
3. A high degree of prognathism is present in some cases, which cannot be readily explained.

The two crania in which it is present resemble one another very closely in almost every respect, and they can be distinguished at a glance from the other specimens. This suggests the introduction of a foreign element.

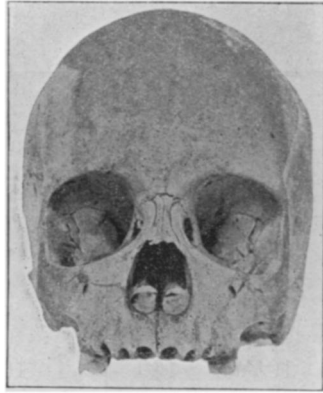


FIG. 9.—SKULL NO. 8. YOUNG ♀, MELANESIAN  
IN GENERAL CHARACTER.

#### FIGURES.

##### PLATE VI.

- Fig. 1.—Adult male, No. 1, of Melanesian type.  
 Fig. 2.—Adult male, No. 1, of Melanesian type, lateral view.  
 Fig. 3.—Immature specimen, No. 2, showing mixed features ; notice especially the short wide nasal aperture.  
 Fig. 4.—Adult female, No. 3, Melanesian type.

##### PLATE VII.

- Fig. 5.—Adult female, No. 4, Melanesian type of cranium, with mixed (Mongolian ?) facial characters.  
 Fig. 6.—Adult male, No. 5, with mixed characters ; notice sharp lower margin of nose.  
 Fig. 7.—Adult female, No. 6, similar to above.  
 Fig. 8.—Adult male, No. 7, Polynesian type.

#### TEXT.

- Fig. 9.—Young female skull, "tribe de Kanala," No. 8, Melanesian in general character.

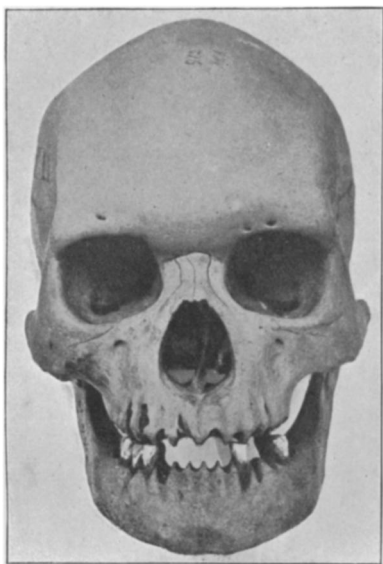


FIG. 1.—SKULL NO. 1. ♂.  
MELANESIAN TYPE.

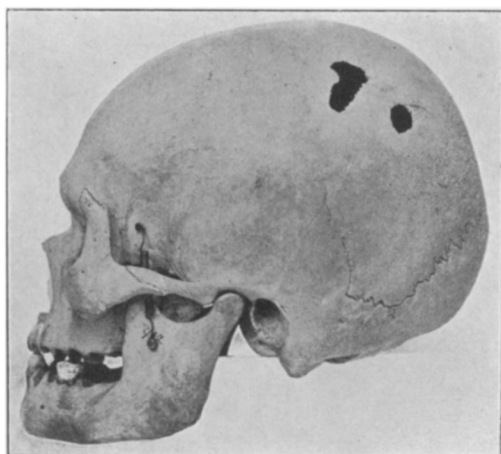


FIG. 2.—SKULL NO. 1. ♂. NORMA LATERALIS.

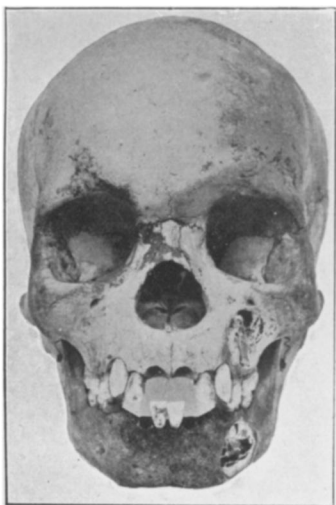


FIG. 3.—SKULL NO. 2. ♂.  
IMMATURE, SHOWING MIXED CHARACTERS.

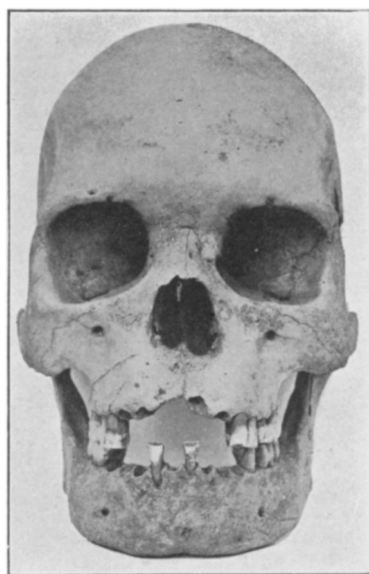


FIG. 4.—SKULL NO. 3. ♀.  
MELANESIAN TYPE.

SKULLS FROM NEW CALEDONIA.

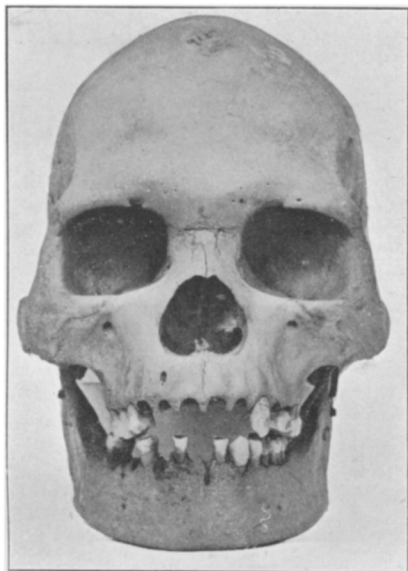


FIG. 5.—SKULL NO. 4. ♂.  
MELANESIAN TYPE, WITH MIXED  
(MONGOLIAN ?) FACIAL CHARACTERS.

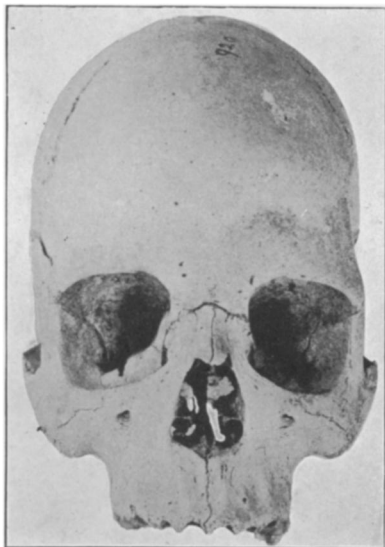


FIG. 6.—SKULL NO. 5. ♂.  
SHOWING MIXED RACIAL CHARACTERS.

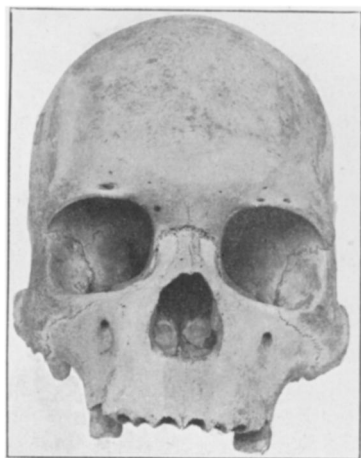


FIG. 7.—SKULL NO. 6. ♀.  
RESEMBLES FIG. 6 IN MANY RESPECTS.

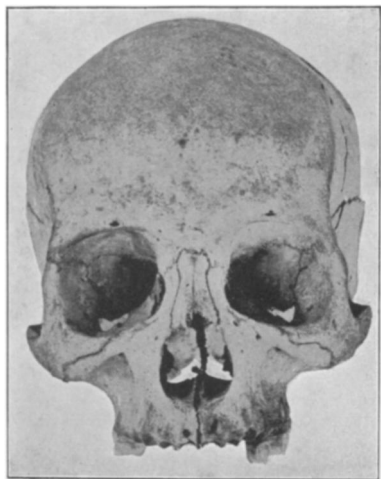


FIG. 8.—SKULL NO. 7. ♂.  
POLYNESIAN TYPE.

SKULLS FROM NEW CALEDONIA.