DESCRIPTION AND MEASUREMENTS OF SOME MALLICOLO CRANIA.

By Arthur H. Clarke, M.R.C.S., etc.

Note A. Of the eight crania which I have been able to measure, one was in the Tasmanian Museum, five were kindly lent to me by Dr. Beatty, and two by Mr. Gunn, of H.M.S. Royalist.

The measurements were taken, and indices calculated on the system explained in a paper by Mr. W. R. Harper and myself, giving the measurements of the Tasmanian crania in our Museum.

Note B. Of these eight skulls, four (3 male and 1 female) are of quite a different type from the others, the first class (No. 1-4) has a very much more receding forehead than the second; the first four skulls are also more dolicho-cephalic than the others.

Note C. These skulls show the general characteristics given by Dr. Busk as typical of the Mallicola.

"(1) The small size of the calvaria or cerebral part as compared with the facial portion of the skull.

(2) The great development of the mastoid region (this is very marked in our series of skulls).

(3) The great prominence of the zygomatic arches, and the comparative narrowness of the frontal region.

(4) The intervention of the temporal between the parietal and alisphenoid, which, as is well known, is so common a condition in the Tasmanian and Papuan branches of the Melanesian race."

Note A. Dr. Beatty subsequently presented one skull, and Mr. Gunn two skulls, to our Museum.

Note B. Papers and proceedings of the Royal Society of Tasmania for 1897.

Note C. Measurements of Mallicolo Crania by Dr. Busk, "Journal" of Anthropological Society, Vol. VI., page 200.

This feature is also very marked in our specimens.

The most interesting feature displayed by these skulls, however, is the peculiar deformity of the calvarium, which may be described as follows:—A well-marked furrow about $3\frac{1}{2}$ c.m. in width is seen to rise from the parieto-squamosal suture on one side, pass upwards over the bregma parallel to and usually behind the coronal suture, and to lose itself at the opposite parieto-squamosal suture. The bregma, as a rule, lies at the bottom of this furrow, and so is depressed; but, in some cases (e.g., No. 4), it lies behind the furrow, and in others (e.g., No. 3) it lies in front.

In No. 3, the furrow is shallower, and much broader, than in the other skulls. This peculiar furrow is shown in each of the eight skulls which I examined. It is especially marked in Nos. 1, 2, and 3. A peculiar deformity of the frontal bone is shown in No. 3. This consists of a keel-shaped elevation, continuous with the Sagittal suture, which runs down the frontal bone, till it is lost just above the ophryon. On either side of this keel there is a well-marked groove. Apparently this is a suture which has been absorbed late in life.

In two skulls the obelion is depressed. Nos. 1, 3, and 4 show a peculiar flattening at the Lambda, so that, in 3 and 4, the occipital bone rides over the two parietals.

The parietal eminences are not very prominent in any of the skulls except in No. 4, where they are well marked.

The temporal ridges are very prominent in Nos. 1, 3, and 4, but are faintly marked in the remainder of the crania.

The glabella is not very prominent in any skull, but is more fully developed in Nos. 1, 2, and 3.

The orbits are rectangular in form. The nasal bones are well-formed, but have been broken in nearly all the skulls.

The nasal aperture is fairly wide, and narrows very gradually. The nasal spine is, as a rule, well marked, and is double.

In the skulls Nos. 1, 2, and 3, the malar bones are prominent and massive; they are less so in the remainder of the skulls.

In Nos. 5, 6, 7, and 8, the hollow under the malar-maxillary suture is deep; but, in Nos. 1, 2, 3, and 4, it is more shallow.

The palate is parabolic in every case.

SUTURES.—The Sagittal suture is simple in all the skulls, with the exception of No. 1, where there is a wormian bone. It is completely absorbed in No. 2 externally, but a trace of the suture can be seen on the internal table. The coronal suture is simple except at the pterion, where epipteric bones are present in several of the skulls. This suture is absorbed in No. 2 below the temporal ridge on both sides, and is very faint.

In No. 3, it is absorbed on both sides below the temporal ridge. The pterion is K-shaped in several of these skulls; in the remainder, it is H-shaped, or there is an epipteric bone interposed. Wormian bones are present in the lambdoidal suture in several of the skulls, and in some in the parieto squamosal suture.

Two of the crania have an interpanetal bone.

One of the skulls (No. 1) is metopic. This condition is more common among the Mallicolo than in other races, as in the Museum of the Royal College of Surgeons in London. One skull out of eight is metopic, and another shows traces of a frontal suture. Only one of these crania has a lower jaw complete This is small in all its measurements. The condylar height exceeds the coronoid by 2m.m.

In no skull is there a complete set of teeth. Most of the teeth, however, seem to have been lost after death, except in No. 4 (which appears to be the skull of an old woman), 6 and 8.

The molars have all been erupted in every case, except in No. 8, where the third molars are not developed.

In 1 and 2, these teeth are ground smooth, but in the remaining skulls, where present, they do not show the same signs of grinding. The bicuspids, where present, show the same grinding.

The incisors have been lost in every case.

No. 6 has a canine which is slightly worn.

There is no sign of caries in any of the teeth.

CRANIAL CAPACITY.

Sex.	No.	Average.	Minimum.	Maximum.	Class.
Male	4	1,325	1,220	1,410	Micro-cephalic
Female	4	1,143	1,020	1,260	"
Total	8	1,234	1,020	1,410	"

These crania are therefore micro-cephalic.

The average capacity of seven crania in the Museum of the Royal College of Surgeons in London is 1,294, as compared with this average of 1,234.

CEPHALIC INDEX.

Sex.	No.	Average.	Minimum.	Maximum.	Class.
Male	4	69·4	64·9	73·3	Dolicho-cephalic
Female	4	70·7	65·9	74·1	"
Total	8	70·0	64·9	74·1	"

NOTE A. These skulls are, therefore, dolicho-cephalic, with an average cephalic index of 70.0.

Dr. Busk, in eight skulls, gives an average index of 70.8, and Flower in the collection of the Royal College of Surgeons one of 71.5 in eight skulls.

VERTICAL INDEX.

SEX.	NO.	AVERAGE.	MINIMUM.	MAXIMUM.	CLASS.
Male	4	71·2	66·0	75·0	Tapeino-cephalic
Female	4	72·5	70·8	77·3	Metrio-cephalic
Total	8	71·9	66·0	77·3	Tapeino-cephalic

These skulls are, therefore, tapeino-cephalic, having an average index of 71.9.

Dr. Busk, in eight skulls, finds a higher index, viz., 75.5, and Flower, in eight skulls, one of 72.6, so that both these observers find a higher index than is present in the specimens which I have been able to measure.

FRONTAL INDEX.

SEX.	NO.	AVERAGE.	MINIMUM.	MAXIMUM.
Male	4	70·9	64·5	74·2
Female	4	73·5	67·2	76·7
Total	8	72·2	64·5	76·7

The average frontal index is 72.2.

STEPHANIC INDEX.

SEX.	NO.	AVERAGE.	MINIMUM.	MAXIMUM.
Male	4	95·9	89·4	98·9
Female	4	94·6	93·9	95·6
Total	8	95·3	89·4	98·9

This average Stephanic Index is 95.3.

NOTE A. Flower takes this index from the Ophryo-occipital, and not the greatest length, thus making the index higher.

INDEX OF FORAMEN MAGNUM.

Sex.	No.	Average.	Minimum.	Maximum.
Male	4	80·3	78·4	81·6
Female	4	83·8	78·4	90·0
Total	8	82·1	78·4	90·0

The average index is, therefore, 82.1.

ORBITAL INDEX.

Sex.	No.	Average.	Minimum.	Maximum.	Class.
Male	4	95·0	91·7	97·3	Megaseme
Female	4	94·9	89·2	94·3	"
Total	8	94·95	89·2	97·3	"

This average 94.95 classes this series of skulls as megaseme.

In eight skulls Flower finds an average of 89.8, placing his specimens in the same class.

NASAL INDEX.

Sex.	No.	Average.	Minimum.	Maximum.	Class.
Male	4	52·7	47·1	58·1	Mesorhine
Female	4	51·7	51·1	52·3	"
Total	8	52·2	47·1	58·1	"

This average of 52.2 classes these skulls as meso-rhine.

Flower, in eight crania, finds a higher average of 53.9, classing his specimens as platyrhine.

GNATHIC.

Sex.	No.	Average.	Minimum.	Maximum.	Class.
Male	4	105·6	102·0	109·6	Prognathous
Female	2	101·1	101·0	101·1	Mesognathous
Total	6	104·1	101·0	109·6	Prognathous

The Females are mesognathous, but the males prognathous. The average index in our specimens, 104.1, is lower than that in six specimens measured by Flower, in which it is 105.0.

PALATO-MAXILLARY INDEX.

Sex.	No.	Average.	Minimum.	Maximum.	Class.
Male	4	106·5	103·2	109·0	Dolich-uranic
Female	2	105·6	103·6	107 5	"
Total	6	106·2	103·2	109·0	"

This average of 106.2 classes these crania as dolich-uranic.

FACIAL INDEX.

The zygomata were so imperfect that this measurement could only be taken in crania Nos. 1 and 2, in which it amounted to 75·6 and 63·4 respectively.

DIAMETERS OF BRAIN CASE.

		1	2	3	4	5	6	7	8
Sex		M	M	M	F	F	M	F	F
Age		Adlt	Adlt	Adlt	Adlt	Adlt	Adlt	Adlt	Adlt
Capacity		1410	1350	1320	1170	1260	1220	1120	1020
Longitudinal	Ophryo-occipital	171	186	183	171	170	168	165	161
	Glabello-occipital	176	191	187	176	172	170	168	162
	Nasio-occipital	173	190	186	176	167	169	168	162
	Glabello-iniac	155	167	158	160	156	159	149	151
Basi-bregmatic Height		132	126	129	125	133	127	119	115
Transverse	Maximum	129T	124P	124T	116T	121P	124T	122P	120P
	Asterionic	106	116	104	105	100	106	98	102
	Stephanic	95	91	104	91	96	82	87	98
	Minimum Frontal	94	89	92	87	91	80	82	92
	Supra-Auricular	115	118	116	110	112	119	108	108
	Temporal	129	123	124	116	120	124	120	119

CIRCUMFERENCES OF BRAIN CASE.

Horizontal	Total	495	506	498	472	486	476	469	459
	Post-auricular	285	299	294	267	262	267	265	249
	Pre-auricular	210	207	204	205	224	209	204	219
Median	Total	507	518	509	486	496	488	472	459
	Frontal	125	128	130	126	124	120	125	113
	Parietal	137	146	135	126	126	118	120	123
	Occipital	112	109	118	107	107	119	105	99
	Lambdo-iniac	83	80	79	63	77	80	67	65
	Inio-opisthic	29	29	39	44	30	39	32	34
	Length of Foramen Magnum.	38	35	32	30	37	37	32	34
	Basion to Nasion	95	100	94	97	100	94	90	90
Transverse	Total	425	413	427	415	420	421	390	385
	Supra-Auricular	295	280	295	282	290	286	274	272
	Infra-Auricular	130	133	132	133	130	135	116	113
Length of Foramen Magnum		38	35	32	30	37	37	32	34
Width of Foramen Magnum		31	28	26	27	29	29	28	27
Basi-alveolar Length		97	102	102		101	103	91	

FACE MEASUREMENTS.

Transverse	Biorbital External	103	101	103	99	97	98	90	99
	Biorbital Internal	95	95	95	93	90	92	85	93
	Bijugal	101	110		103	100	110		
	Bizygomatic	123	123		121				
Vertical	Ophryo-alveolar	93	88	82		79	79	86	
	Nasio-alveolar	69	69	63		58	55	64	
	Spino-alveolar	18	19	18		13	12	19	
Nasal Region	Nasio-spinal height	51	51	46	47	45	43	44	44
	Width anterior nares	24	25	26	24	23	25	23	23
	Length nasal bones	23							24
	Width nasal bones	17							18
Orbits	Width	34	37	36	37	35	33	34	37
	Height	32	36	33	33	33	32	32	34
	Orbital interval	27	25	23	24	23	25	22	24

FACE MEASUREMENT (Continued).

	1	2	3	4	5	6	7	8
Palate ... Length	55	63	56		55	59	53	
Palate ... Width	60	65	59		57	64	57	57
Auriculo-orbital distance Right	66	66	64	62	66	65	68	66
Auriculo-orbital distance Left	62	66		62	65	63	64	64
Mastoid Height	42	35	43	40	35	44	29	28
Zygomatic Projection	P.	P.	P.	P.	P.	P.		

INDICES.

Cephalic	733	649	663	659	703	729	726	741
Vertical	750	660	690	710	773	747	708	710
Frontal	729	718	742	750	752	645	672	767
Stephanic	989	978	894	956	948	976	942	939
Foramen magnum	816	800	812	900	784	784	875	794
Orbital	941	973	917	892	943	970	941	919
Nasal	471	490	565	511	511	581	523	523
Gnathic	1021	1020	1085		1010	1096	1011	
Palato-maxillary	1090	1032	1054		1036	1085	1075	
Facial								

MEASUREMENTS OF LOWER JAW.

Height ... Symphysial					23			
Height ... Molar					22			
Height ... Coronoid					59			
Height ... Condyloid					61			
Width... ... Bigonial					82			
Width... ... Bicondylar					100			
Width... ... Bimental					40			
Width... ... Ramus...					32			
Gonio-symphysial Length					76			