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ANTHROPOMETRICAL OBSERVATIONS *on some* NATIVES *of the*
PAPUAN GULF. By the Rev. Dr. JAMES CHALMERS.

SOME few years ago the Rev. James Chalmers, the well-known pioneer missionary of British New Guinea, made some measurements on several tribes of the Papuan Gulf. These passed through the hands of Dr. Garson, who reduced the measurements from the original English system to the metric system. Later they were handed over to Dr. A. C. Haddon who has determined the indices and forwarded them for publication in their present form.

The tables are arranged in geographical order, proceeding from the west to the east. Samari and Saguané are villages in Ipihia. This is the native name for the southern portion of the large island of Kiwai, which is situated at the mouth of the Fly river. Maipua is a coast village on the Papuan Gulf (long. $145^{\circ} 10' E.$), Orokolo another (long. $145^{\circ} 20' E.$), and Toaripi (or Motumotu) a third (long. $146^{\circ} 10' E.$). The latter is a well-known village on the eastern side of the Gulf. Jokea (long. $146^{\circ} 16' E.$) lies about 15 miles S.S.E. from Toaripi. Chalmers says, "The natives are one with the Toaripians."

For the sake of convenient comparison, the arithmetical means of the measurements and indices taken at each locality are placed together at the end of the tables, and a seriation of the cephalic indices is also given.

The data are not sufficiently numerous to justify any general conclusions being drawn, but the following tentative results may be pointed out:—

The span is, with but a single exception, greater than the height, the mean difference being 64 mm., or $2\frac{1}{2}$ inches, the maximum difference being 144 mm., or nearly $5\frac{3}{4}$ inches.

There is an unexpected prevalence of brachycephaly, especially at Kiwai, where fourteen out of the nineteen measured have an index of 82 or over, the greatest index being 92. At Maipua the people are extremely dolichocephalic and at the same time of short stature (1636 mm., 5 feet $4\frac{1}{2}$ inches). The Orokolo and Toaripi people are evidently allied.

The following is a possible explanation of the facts: the short dolichocephalic Western Papuans extend all along the coast of the Papuan Gulf, and, according to the measurements,

occur in their purity at Maipua. They have been crossed at Orokolo and Toaripi with a brachycephalic people, and apparently the two peoples have amalgamated fairly thoroughly, but this has not yet occurred at Kiwai, so that there is a preponderance of brachycephals.

No correction has been made to reduce the breadth-length index of the heads of living men to that of the skulls.

KIWAI.

	Age.	Height.				Head.				Nose.		
		Stand.	Sitting.	Span.	Cubit.	Length.	Breadth.	Index.	Cheek-bones.	Length.	Breadth.	Index.
SAMARI—	23	1721	813	1829	482	174	149	85·6	133	51	25	49
	22	1645	816	1756	466	174	149	85·6	136	51	25	49
	30	1654	797	1797	463	174	149	85·6	129	51	28	54·9
	34	1601	800	1711	444	165	152	92·1	136	51	28	54·9
SAGUANE—	45	1721	854	1804	491	171	143	83·6	130	51	22	43·1
	55	1648	800	1772	463	180	149	82·7	140	47	25	53·1
	24	1660	794	1791	457	178	140	78·6	136	51	27	52·9
	57	1651	826	1734	463	180	140	77·7	132	44	27	61·3
Narene	27	1629	844	1734	444	181	136	75·1	133	44	22	50
	45	1724	829	1824	495	178	146	82	140	54	27	50
	23	1613	810	1680	457	171	143	83·6	130	51	19	37·2
	32	1677	851	1680	454	174	152	87·8	135	57	25	43·8
Eabi.	36	1677	822	1747	463	181	143	79	130	47	22	46·8
	40	1699	844	1817	491	178	149	83·7	140	64	28	43·8
IPIAIA—	45	1731	829	1861	498	181	149	82·3	135	54	22	40·7
	30	1604	813	1753	470	176	146	82·9	133	51	22	43·1
	30	1581	844	1690	451	174	143	82·2	130	51	25	49
	30	1654	819	1781	485	184	143	77·7	133	51	25	49
Manso	20	1581	804	1690	457	165	140	84·8	127	47	25	53·2
		1656 = 5' 5½"	821	1761	468	176	145	83	133	51	25	48·7

MAIPUA.

	Age.	Height.				Head.				Nose.		
		Stand.	Sitting.	Span.	Cubit.	Length.	Breadth.	Index.	Cheek-bones.	Length.	Breadth	Index.
Ipai ..	40	—	—	—	—	197	136	69	132	54	28	51·8
Ivaha ..	36	—	—	—	—	200	138	69	138	60	31	51·6
Evava ..	55	—	—	—	—	190	133	70	129	57	25	43·8
Keaia ..	40	1601	804	—	432	190	136	71·5	136	51	25	49
Kaiva ..	48	1680	804	—	438	190	133	70	133	57	28	49·1
Amuru ..	40	1626	813	—	457	190	136	71·5	140	51	28	54·9
		1636 = 5' 4½"	807	—	442	193	135	70	135	55	27·5	50

OROKOLO.

Age.	Height.				Head.			Nose.			
	Stand.	Sitting.	Span.	Cubit.	Length.	Breadth.	Index.	Cheek-bones.	Length.	Breadth.	Index.
25	1651	838	1728	444	181	136	75.1	136	57	28	49.1
35	1613	819	1677	448	181	140	77.3	140	57	28	49.1
40	1708	867	1784	435	196	140	71.4	133	57	28	49.1
40	1584	835	1728	419	184	146	79.3	140	51	25	49
35	1728	864	1823	482	193	143	74.1	133	54	25	46.3
20	1575	750	1613	419	178	140	78.6	130	51	22	43.1
55	1766	870	1880	476	181	140	77.3	135	51	28	54.9
40	1670	813	1807	482	184	143	77.7	130	51	25	49
25	1715	810	1820	479	187	140	74.8	127	44	25	56.8
55	1690	867	1823	482	187	143	76.5	130	47	19	40.4
30	1693	873	1680	457	180	140	77.7	137	44	25	56.8
26	1728	867	1594	473	181	140	77.3	133	47	28	59.5
35	1725	886	1778	479	190	143	75.2	130	51	25	49
26	1772	873	1845	491	184	140	76.1	132	54	25	46.3
28	1670	714	1687	473	178	133	74.7	127	51	19	37.2
60	1588	810	1660	438	181	140	77.3	127	51	22	43.1
65	1636	851	1677	454	190	146	76.8	130	54	28	51.8
	1677 = 5' 6"	836	1741	461	184.5	141	76.3	132	51	25	49

TOARIPI (MOTUMOTU).

Age.	Height.				Head.			Nose.			
	Stand.	Sitting.	Span.	Cubit.	Length.	Breadth.	Index.	Cheek-bones.	Length.	Breadth.	Index.
70	1774	877	1912	501	200	146	73	135	64	9	14
60	1683	877	1708	482	190	149	78.4	140	64	13	20.1
65	1740	870	1855	—	193	152	78.5	146	64	28	43.8
32	1657	857	1664	444	193	151	78.2	143	61	31	50.8
42	1700	877	1740	470	181	146	80.6	143	57	31	54.4
16	1524	781	1581	432	180	146	81.1	132	64	13	20.1
24	1721	877	1651	463	190	146	76.8	138	70	19	27.1
18	1645	800	1756	476	187	146	78	133	54	13	24.3
20	1677	832	1831	488	184	146	79.3	130	57	25	43.8
36	1831	978	1931	521	200	149	74.5	140	76	38	50
50	1794	918	1918	527	200	143	71.5	144	57	28	49.1
36	1744	851	1880	495	194	149	81	133	57	28	49.1
34	1744	886	1817	488	190	152	80	143	57	27	47.4
30	1721	838	1804	441	180	143	79.4	133	51	25	49
18	1610	819	1702	460	184	146	79.3	133	54	25	46.3
18	1664	857	1759	457	178	140	78.6	127	51	28	54.9
1702 = 5' 7"				476	186	147	77.7	137	60	24	44

	Height.					Head.				Nose.		
	' "	Stand.	Sitting.	Span.	Cubit.	Length.	Breadth.	Index.	Cheek-bones.	Length.	Breadth.	Index.
Kiwai ..	5 5 $\frac{1}{4}$	1656	821	1761	468	176	145	83	133	51	25	49
Maipua ..	5 4 $\frac{1}{2}$	1636	807	—	442	193	135	70	135	55	27.5	50
Oroko'o ..	5 6	1677	836	1741	461	184	141	76.5	132	51	25	49
Toaripi ..	5 7	1702	843	1782	476	186	147	77.7	137	60	24	44

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SERIATION OF CEPHALIC INDICES OF FIFTY-EIGHT
NATIVES OF THE PAPUAN GULF.

	Kiwai.	Maipua.	Orokolo.	Toaripi.
69	—	2	—	—
70	—	2	—	—
71	—	1	1	1
72	—	1	—	—
73	—	—	—	1
74	—	—	1	1
75	1	—	4	—
76	—	—	2	—
77	—	—	5	1
78	2	—	2	4
79	2	—	2	4
80	—	—	—	1
81	—	—	—	3
82	3	—	—	—
83	3	—	—	—
84	2	—	—	—
85	1	—	—	—
86	3	—	—	—
87	—	—	—	—
88	1	—	—	—
89	—	—	—	—
90	—	—	—	—
91	—	—	—	—
92	1	—	—	—
Arithmetical Mean }	83	70	76.5	77.7

QUINARY SERIATION OF CEPHALIC INDICES OF FIFTY-
EIGHT NATIVES OF THE PAPUAN GULF.

Cephalic Index.	Maipua.	Orokolo.	Toaripi.	Kiwai.	
65-69	2	—	—	—	2
70-74	4	2	3	—	9
75-79	—	15	9	5	29
80-84	—	—	4	8	12
85-89	—	—	—	5	5
90-94	—	—	—	1	1
Total	6	17	16	19	53