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Cephalo-facial Variation Among Onges

Ashok K. Pandey

Anthropology and History Department, Jawaharlal Nehru Rajkeeya Mahavidylaya, Port Blair, Andaman & Nicobar Islands, India
E-mail: akpandey54@yahoo.co.uk

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ABSTRACT Onges of Little Andaman has belong to one of the scheduled tribe of Andaman and Nicobar Islands. In the present paper 27 male and 26 female been studied for cephalo-facial variation. Thirteen measurements including height vertex were taken and three indices are calculated along with usual statistical constants like mean, SD, CV and SE. The study shows that they have brachycephalic head, platyrrhine nose and hypereuryproscopic face in both the sexes. Height vertex is very short to short followed by lower medium.

INTRODUCTION

Variation is one of the most important phenomenon occurring in human populations on this globe. Attributed to interaction of many factors such as mutation, natural selection; hybridization etc. Ordinarily environment only restricts or modifies the expression of characters derived from heredity. Thus it is quite certain that heredity and interlocking environmental factors are the only determinants of physical make up of organism. Hardlika (1939), Montague (1960) and Comas (1960) have emphasized importance of anthropometric measurements as a means for studying variation in human populations.

In the light of the above studies in the present paper an attempt has been made to study the head and face (cephalo-facial) variations based on anthropometric measurements among the Onges of Little Andaman, Andaman and Nicobar Islands. Union Territory of Andaman and Nicobar Islands comprise of about 390 big and small islands, out of which about 20 are inhibited by tribal as well as mainland populations.

There are six tribal groups classified as scheduled tribes, out of these six, five are Primitive Tribes they are Onges, Jarawa, Shompen, Sentenalese and Great Andamanese whereas Nicobarese are classified as developing one.

THE PEOPLE

The Andaman and Nicobar Islands of India are situated in Bay of Bengal have unique composition of tribal population. One hand there is mongoloids represented by Shompens and Nicobarese residing only in Nicobar Islands and on the other hand Jarawa, Onge, Sentinalese and Great Andamanese belonging to Negrito stalk inhabiting Andaman group of islands.

Little Andaman is situated about 95 km. Away from Port Blair the capital of the Andaman and Nicobar Islands. Little Andaman remained the homeland of the Onges from the time immemorial. Onges are hunter and gatherer; their main games are pig, turtle, crab, dugong and fish etc. apart from these they collect tubers, roots, fruits and honey from the forest of Little Andaman. Onges are residing at various places in Little Andaman during the past time but in 1976 they were settled at two places namely South Bay and Dugong Creek by the Andaman & Nicobar Administration to facilitate their development work under Tribal Sub-Plan. Onges call themselves "En-iregale" meaning 'Perfect man' evidently considering every body inferior to them (Cipriani, 1959: 43-55).

Very little work has been done among the Onges on Anthropometry considerably many works are available on their social life, kinship, material culture and vocabulary, those includes Agarwal (1967), Ayyar (1957), Basu (1984,1990), Bose (1964), Chaudhary (1976), Cipriani (1953, 1954, 1966), Ganguly (1966), Gupta and Basu (1960), Nigam (1962, 1964), Pandey (1998a, b, c, 2004), Raypa (1978), among others.

MATERIAL AND METHODS

The data for the present paper was collected from Onge settlement Dugong Creek and South Bay during 1987 when author was posted as Senior Social Executive Onge Settlement Dugong Creek, a total of 53 Onges (male-27 and female-26), out of 98 souls presently surviving were subjected for measurements of head length, head

breadth, head height, head circumference, minimum frontal breadth, bizygomatic breadth, bigonial breadth, nasal length, nasal breadth, nasal height, physiognomic facial height, morphological facial height and height vertex. The age of the subjects ranges from18 years to 55 years, further it is stated that among Onges there is no any age records it was ascertained by the author himself on the basis of teeth, puberty signs etc. On the basis of measurement Mean, S.D., C.V. and their S.E. were calculated. All the measurements have been taken following the techniques of Martin and Saller (1957) and Singh and Bhasin (1989), classification of the subjects was also done according to Martin and Saller (1957). Further it is stated that in the present study population size is very small so is data also due to which "t" test is not calculated.

OBSERVATIONS AND DISCUSSIONS

On the basis of 13 measurements the usual constants for various cephalo-facial measurements like Mean, SD, CV and their SE of the Onge male and female under study are presented in Table 1 and Table 2 along with the three indices namely cephalic, nasal and morphological facial Index. Distributions of various cephalic characters have been presented in Table 3 and distributions of indices are presented in Table 4. From the observation of tables (1-4) it is reveled that Onges both males and females have short and narrow head, so far bi-zygomatic breadth is concerned it is again narrow in both the sexes, nasal length is short and breadth is above medium. A perusal of table-4 revels that both the sexes of Onges fall under brachycephalic category and nose is platyrrhine, so far as face is concerned it is hypereuryproscopic in both the sexes. On the basis of the measurements following points may be deduced from the present study (Table 4)

1. Head length varies from short to very short in both the sexes, the short head length occurs in highest frequency (70.37% in males and 69.00% in females) followed by very short (22.22% males and 26.92% females) where as medium head length is in very low frequency (7.40% males and 15.38% females), Cephalic index shows that most of the Onges males and females are brachycephalic (70.37% males and 65.38% females) followed by hyperbrachycephalic, in males 25.92% and lastly mesocephalic 3.70%, whereas in females brachycephalic is followed by mesocephalic 19.23% and hyperbrachycephalic, is in lowest frequency 15.38%.
2. The Onge males and females have highest incidence of narrow bizygomatic arches (males 74.07%, females 57.69%) followed by very narrow (males 18.51%, females 23.07%) and very low frequency of medium bizygomatic arch has been observed (males 7.40%, females 19.23%).

Table 1: Mean, SD, CV and other statistical constants of various Cephalo-facial measurements among male Onges.

Variables	*Range*	*Mean ± S.E.*	*S.D. ± S.E.*	*C.V. ± S.E.*
Measurements				
Height vertex (Stature)	143.2 - 162.03	151.36 ± 1.13	6.03 ± 0.80	3.98 ± 0.53
Head length	16.3 - 18.1	17.16 ± 0.08	0.42 ± 0.05	2.45 ± 0.33
Head breadth	13.6 - 15.6	14.49 ± 0.07	0.41 ± 0.05	2.84 ± 0.38
Head height	11.0 - 13.5	12.30 ± 0.12	0.64 ± 0.08	5.22 ± 0.71
Head circumference	49.2 - 54.0	52.24 ± 0.25	1.30 ± 0.17	2.49 ± 0.33
Minimum frontal breadth	10.1 - 12.3	11.36 ± 0.09	0.50 ± 0.06	4.45 ± 0.60
Bizygomatic breadth	11.8 - 14.1	13.00 ± 0.07	0.40 ± 0.05	3.10 ± 0.42
Bigonial breadth	8.8 - 10.9	10.00 ± 0.11	0.61 ± 0.08	6.13 ± 0.83
Nasal length	3.9 - 4.6	4.28 ± 0.04	0.24 ± 0.33	5.71 ± 0.77
Nasal breadth	3.3 - 4.5	3.78 ± 0.06	0.33 ± 0.04	8.83 ± 1.20
Nasal height	1.1 - 1.9	1.50 ± 0.03	0.17 ± 0.02	11.32 ± 1.54
Physiognomic facial height	15.1 - 18.0	16.17 ± 0.14	0.73 ± 0.09	4.53 ± 0.61
Morphological facial height	9.0 - 11.3	10.18 ± 0.10	0.55 ± 0.07	5.39 ± 0.73
Index				
Cephalic index	81.4 - 90.8	84.56 ± 0.41	2.16 ± 0.29	2.55 ± 0.34
Nasal index	72.3 - 97.7	87.43 ± 1.27	6.63 ± 0.90	7.58 ± 1.03
Morphological facial index	70.8 - 83.1	77.98 ± 0.63	3.30 ± 0.44	4.23 ± 0.57

Table 2: Mean, SD, CV and other statistical constants of various Cephalo-facial measurements among female Onge.

Variables	*Range*	*Mean ± S.E.*	*S.D. ± S.E.*	*C.V. ± S.E.*
Measurements				
Height vertex (Stature)	132.2 - 149.5	141.11 ± 0.07	3.67 ± 0.05	2.60 ± 0.35
Head length	16.0 - 17.2	16.49 ± 0.08	0.41 ± 0.05	2.52 ± 0.34
Head breadth	13.2 - 14.8	14.34 ± 0.12	0.61 ± 0.08	4.26 ± 0.59
Head height	10.7 - 13.1	12.21 ± 0.14	0.76 ± 0.10	6.25 ± 0.86
Head circumference	47.4 - 53.4	50.01 ± 0.24	1.26 ± 0.17	2.52 ± 0.35
Minimum frontal breadth	10.2 - 12.2	11.03 ± 0.07	0.40 ± 0.05	3.69 ± 0.51
Bizygomatic breadth	11.7 - 13.2	12.36 ± 0.07	0.40 ± 0.05	3.26 ± 0.45
Bigonial breadth	8.5 - 10.2	9.28 ± 0.08	0.43 ± 0.05	4.64 ± 0.64
Nasal length	3.4 - 4.5	3.90 ± 0.05	0.30 ± 0.04	7.70 ± 1.06
Nasal breadth	3.1 - 3.8	3.50 ± 0.04	0.21 ± 0.02	5.87 ± 0.81
Nasal height	1.1 - 2.2	1.30 ± 0.04	0.24 ± 0.03	18.66 ± 2.58
Physiognomic facial height	13.9 - 18.4	15.06 ± 0.18	0.92 ± 0.12	6.16 ± 0.85
Morphological facial height	8.3 - 10.9	9.31 ± 0.11	0.56 ± 0.07	5.15 ± 0.71
Index				
Cephalic index	80.2 - 88.1	82.97 ± 0.50	2.59 ± 0.35	3.31 ± 0.43
Nasal index	70.5 - 97.4	90.07 ± 1.39	7.10 ± 0.98	7.88 ± 1.09
Morphological facial index	65.8 - 82.9	75.29 ± 0.83	4.25 ± 0.68	5.64 ± 0.78

Table 3: Distribution of head length, head breadth, bi-zygomatic breadth, nasal length, nasal breadth and height vertex among Onges.

	Male (27)		*Female (26)*	
Class	*Range*	*Number observed*	*Range*	*Number observed*
Head Length				
Very Short	X - 16.9	6 (22.22)	X - 16.1	7 (26.92)
Short	17.0 - 17.7	19 (70.37)	16.2 - 16.9	15 (57.69)
Medium	17.8 - 18.5	2 (7.40)	17.0 - 17.6	4 (15.38)
Long	18.6 - 19.3	-	17.7 - 18.4	-
Head Breadth				
Very Narrow	X - 13.9	2 (7.40)	X - 13.4	4 (15.38)
Narrow	14.0 - 14.7	20 (74.07)	13.5 - 14.1	17 (65.38)
Medium	14.8 - 15.5	4 (14.81)	14.2 - 14.9	5 (19.23)
Broad	15.6 - 16.3	1 (3.70)	15.0 - 15.7	-
Bi-zygomatic Breadth				
Very Narrow	X - 12.7	5 (18.51)	X - 12.0	6 (23.07)
Narrow	12.8 - 13.5	20 (74.07)	12.1 - 12.7	15 (57.69)
Medium	13.6 - 14.3	2 (7.40)	12.8 - 13.5	5 (19.23)
Nasal Length				
Very Short	X - 3.9	2 (7.40)	X - 3.9	11 (42.30)
Short	4.0 - 4.4	18 (66.66)	4.0 - 4.4	14 (53.84)
Below Medium	4.5 - 4.9	7 (25.92)	4.5 - 4.9	1 (3.84)
Above Medium	5.0 - 5.4	-	5.0 - 5.4	-
Large	5.5 - X	-	5.5 - X	-
Nasal Breadth				
Below Medium	2.2 - 2.9	-	2.2 - 2.9	-
Medium	3.0 - 3.4	3 (11.11)	3.0 - 3.4	8 (30.76)
Above Medium	3.5 - 3.9	15 (55.55)	3.5 - 3.9	18 (69.23)
Large	4.0 - X	9 (33.33)	4.0 - X	-
Stature				
Pygmy	Under 129.0	-	Under 120.9	-
Very Short	130.0-149.9	9 (33.34)	121.0-139.9	11 (42.30)
Short	150.0-159.9	16 (59.25)	140.0-148.9	14 (53.84)
Lower Medium	160.0-163.9	2 (7.40)	149.0-152.9	1 (3.84)
Medium	164.0-166.9	-	153.0-155.9	-

All the classification and ranges are as per Martin and Saller (1957)
Figures in parentheses are percentages.

Table 4: Classification of cephalic, nasal and morphological facial index among Onges.

	Male (27)		*Female (26)*	
Class	*Range*	*Number observed*	*Range*	*Number observed*
Cephalic Index				
Hyperdolicocephalic	X - 70.9	-	X - 71.9	-
Dolicocephalic	71.0 - 75.9	-	72.0 - 76.9	-
Mesocephalic	76.0 - 80.9	1 (3.70)	77.0 - 81.9	5 (19.23)
Brachycephalic	81.0 - 85.4	19 (70.37)	82.0 - 86.4	17 (65.38)
Hyperbrachycephalic	85.5 - 90.9	7 (25.92)	86.5 - 91.9	4 (15.38)
Nasal Index				
Leptorrhine	55.0 - 69.9	-	55.0 - 69.9	-
Mesorrhine	70.0 - 84.9	9 (33.33)	70.0 - 84.9	9 (34.61)
Platyrrhine	85.0 - X	18 (66.66)	85.0 - X	17 (65.38)
Morphological Facial Index				
Hypereuryproscopic	X - 78.9	16 (59.25)	X - 76.9	20 (76.92)
Euryproscopic	79.0 - 83.9	11 (40.74)	77.0 - 80.9	2 (7.69)
Mesoproscopic	84.0 - 87.9	-	81.0 - 84.9	4 (15.38)
Leptoproscopic	88.0 - 92.9	-	85.0 - 89.9	-
Hyperleptoproscopic	93.0 - X	-	90.0 - X	-

3. Observation of nasal length and nasal breadth revels that the highest frequency in both the sexes is of short nasal length (66.66% males, 53.84% females) and above medium nasal breadth frequency occurs in highest percentage in both the sexes (55.55% males, 69.23% females). Nasal Index revels platyrrhine; type of nose is preponderant (66.66% males and 65.38% female) followed by mesorrhine nose (33.33% males and34.61% females).
4. Morphological facial Index shows that 59.25% males and 76.92% females are hypereuryproscopic, 40.74% males and 7.69% females are euryproscopic whereas only 15.38% females are Mesoproscopic.
5. Data on height vertex (stature) shows that 59.25% male and 53.84% females have short stature frequency of very short is 33.34% in males and 42.30% in females followed by lower medium stature which is 7.40% in males and only 3.84% in females.

CONCLUSION

On the basis of anthropometric measurements it can be concluded that Onges head length varies from short to very short followed by medium in both the sexes and head breadth is narrow to medium followed by very narrow for both the sexes. Short nasal length occurs in highest frequency and nasal breadth is above medium in both the sexes, whereas bizygomatic breadth is narrow to very narrow followed by medium type between both the sexes. Stature varies from short to very short followed by lower medium.

Both the sexes of Onges have brachycephalic head; platyrrhine nose and hypereuryproscopic type of face in highest frequency. Further it is stated that due to lack of data for other Negrito tribes a comparison with other tribes could not be made in the present study.

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