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## EARLOBE TYPES IN VARIOUS POPULATION OF ASSAM, INDIA

**ABSTRACT** — Data on the earlobe attachment of 1471 Assamese (both caste and tribe) individuals have been collected. It has been found that free earlobe occurred more frequently than attached earlobe. No sexual differences are observed in respect of the character. The present finding is in agreement with earlier studies which indicate that Mongoloid population shows a higher frequency of attached earlobe than that of the Caucasoids of India.

**KEY WORDS:** Earlobe — Tribe — Caste — Assam — India.

### INTRODUCTION

According to the degree of earlobe attachment, individuals can be classified into different categories. Since Hilden's (1922) work on earlobe attachment, some works on this trait have been done in different parts of the world. Though the genetic background of this trait is not yet firmly established, it is confirmed by different workers that the attachment of earlobe is hereditary and that there is ethnic variability of this trait.

Hilden (1922) was the first to opine that the inheritance of free earlobe is determined by an autosomal dominant gene. Weiners (1937) reports that multiple factor/factors with modifiers are the cause of attached earlobe being recessive. Since then, complexes have been added to the genetics of earlobe attachment by the researches conducted by various investigators.

Different authors have categorised the earlobe attachment types in different ways. Some of them classified the degree of attachment into four types (attached, free and two intermediaries), while some of them classified them into two types (free and attached).

Reports on earlobe attachment of various north east Indian populations have been published by various workers (Das and Deka, 1960; Sharmah, 1961; Das 1964; Das and Sharmah, 1968; Das and Ghosh, 1970; Deka and Das, 1973; Das, 1975; Phukan and Begum, 1976; Das et al., 1978; Dutta, 1979). The

present paper aims at reporting the earlobe attachment of some Assamese populations (both caste and tribe) and finally comparing it with the available data from different populations of north east India. In the present study the earlobes have been classified into free and attached types following the twofold classification of Powell and Whitney (1937). Chi-square values were calculated to find out the bisexual and inter-group variability.

### RESULTS AND DISCUSSION

Analysis of the data reveals that (*Table 1*) barring the case of Mishng, all the population shows high incidence of free earlobe over attached earlobe. All the caste groups show high incidence of free earlobe but the Mongoloid group exhibits high incidence of attached earlobe. The Brahmins show smaller frequency of attached earlobe than the Kaibarta. This is in agreement with the study of Mohanraju and Mukherjee (1973). They observed that population with higher position in the caste hierarchy has relatively smaller frequency of attached earlobe. Again attached earlobe is more common in males as against females of Kaibarta, Ahom and Deaori but in Brahmins and Mishng, attached earlobe is more common in females as against males. No sexual variation is observed (*Table 2*) in respect of the character. This is in agreement with the study of Dutta and Ganguly (1965), Rao (1972), Deak and Das (1973) and Mohanraju and Mukerjee (1973). They

TABLE 1. *Percentage frequency of the Ear lobe Attachment types*

Population	Sex	No.	Free	Attached
Brahmin	Male	129	79.06	20.93
	Female	104	76.92	23.07
	M + F	233	78.11	21.88
Kaibarta	Male	148	71.62	28.37
	Female	117	77.77	22.22
	M + F	265	74.33	25.66
Pooled caste population	M + F	498	76.10	23.89
Ahom	Male	205	60.97	39.02
	Female	175	68.57	31.42
	M + F	380	64.47	35.52
Deori	Male	143	65.73	34.26
	Female	148	72.97	27.02
	M + F	291	69.41	30.58
Mishing	Male	152	49.34	50.65
	Female	150	42.66	57.33
	M + F	302	46.02	53.97
Pooled Mongoloid population	M + F	973	60.22	39.77

also observed non-significant sex difference in their sample in respect of the trait. However, the Muslim sample of Deka and Das (1973) shows statistically significant sex difference.

Chi-square values for inter-group variation (Table 3) show that the Brahmin and Kaibarta show

a remarkable homogeneity ( $X^2 = 0.95$ ). The Deori population is also close to Kaibarta and Ahom, while among the Mongoloid groups both Ahom and Deori differ from Mishing. It will be worthwhile to mention that Das et al. (1978) also observed that the Mishing (Miri) differ from the Monpa and Kachari, two Mongoloid populations, among whom no such significant difference is observed.

It appears from the Table 4 that the frequency of attached earlobe increases from Kalita (Das et al. 1978), Brahmin (present study), Kalita (Deka and Das 1973), Kalita (Das, 1964), Rabha, Baishya, Kaibarta, Rajbanshi, Nepalee, Ahom (Das, 1975), Deori, Kachari (Das, 1967), Ahom (present study), Garo, Mishing, Lalung, Sema and Ahom (Dutta, 1979). When all the data included in the Table 4 are taken into account, the overall picture is not in agreement with the observation made by Mohanraju and Mukherjee (1973). As already mentioned earlier they observed that castes with high position have less frequency of attached earlobe. But in the present study, Keot Kumar and Suri (all belong to low caste) show lower frequency of attached earlobe. Of course the Brahmin and Kalita sample of Das et al. (1978) shows less frequency of attached earlobe than all other studies made in the same community. However, increasing tendency of the frequency of attached earlobe from high to low caste (i.e. from Brahmin to Kaibarta through Baishya, Kalita and Rajbanshi) is also observed.

A clear separation of Mongoloid population from non-Mongoloid groups reveals also from the table.

TABLE 2. *Chi-square values for sex Variation*

Population	Chi-square values (d f = 1)	p lies	Remark
Brahmin male × female	0.13	0.80 > p > 0.70	non-significant
Kaibarta male × female	1.27	0.30 > p > 0.20	non-significant
Ahom male × female	2.36	0.20 > p > 0.10	non-significant
Deori male × female	1.77	0.20 > p > 0.10	non-significant
Mishing male × female	1.33	0.30 > p > 0.20	non-significant

TABLE 3. *Chi-square values for inter group Variation*

Population	Chi-square values (d.f. = 1)	p lies	Remark
Brahmin × Kaibarta	0.95	0.50 > p > 0.30	non-significant
× Ahom	12.69	0.001 > p	significant
× Deori	4.98	0.05 > p > 0.02	significant
× Mishing	56.39	0.001 > p	significant
Kaibarta × Ahom	7.03	0.01 > p > 0.001	significant
× Deori	1.64	0.20 > p > 0.10	non-significant
× Mishing	46.86	0.001 > p	significant
Ahom × Deori	1.80	0.20 > p > 0.10	non-significant
× Mishing	23.26	0.001 > p	significant
Deori × Mishing	33.16	0.001 > p	significant
Pooled caste × pooled Mongoloid	36.79	0.001 > p	significant

TABLE 4. Percentage frequency of Attached Ear lobe among different populations of North east India

Populations	No. tested	Attached ear lobe	Author
<b>CAUCASOID</b> (mostly caste)			
Brahmin	233	21.88	Present study
Kaibarta	265	25.66	Present study
Brahmin	189	20.60	Deka and Das 1973
Brahmin	121	15.70	Das et al. 1978
Kalita	310	22.22	Deka and Das 1973
Kalita	120	23.30	Das 1964
Kalita	196	14.28	Das et al. 1978
Baishya	313	24.20	Deka and Das 1973
Suri	100	21.00	Das and Deka 1960
Kumar	237	18.90	Das and Ghosh 1970
Keot	220	18.10	Deka and Das 1973
Muslim	275	18.50	Deka and Das 1973
Rajbanshi	100	26.00	Das 1967
Kaibarta	146	33.56	Das et al. 1978
Nepalee	100	28.00	Phukan and Begum 1976
<b>MONGOLOID</b> (mostly tribe)			
Deori	291	30.58	Present study
Mishing	302	53.97	Present study
Ahom	380	35.52	Present study
Ahom	330	29.40	Das 1975
Ahom	100	62.00	Dutta 1979
Lalung	100	60.00	Das and Sharmah 1968
Miri	100	53.00	Sharmah 1961
Garos	200	46.50	Das 1967
Kachari	100	24.00	Das 1967
Sonowal Kachari	166	43.97	Das et al. 1978
Rabha	300	23.70	Das 1967
Sema	100	63.00	Phukan and Begum 1976

This is in agreement with the studies of Das (1967), Chattopadhyaya (1968) and Das, Sharmah (1970). They observed that the frequency of attached earlobe is more common in Mongoloid populations of India. Mongoloid populations like Ahom, Deori and Kachari, who have close social relation with the caste populations, stand far apart from the rest of the Mongoloid populations in respect of the trait.

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