SUMMARY AND CONCLUSION
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Biological anthropologists unlike human physiologist do not study man in isolation but concerned with man as a member of society. By employing anthropological tools and techniques, such a researcher endeavors to portray the anthropo-genetic composition of a Mendelian population or of any community. Of the many specialized fields of biological anthropology, anthropo-genetics study on anthropometric, anthroposcopic and genetic composition of a population. The observation of any variation and its underlying explanation are the objectives of such a study.

Anthropologists had devised a number of measurements for describing the morphology of man for studying various populations. The term anthropometry was invented by J.S. Elsholtz, a German physician in 17th century refers to measurement of human body and its various proportion (S Nath, 1993) Rudimentary knowledge and method of anthropometry an anthroposcopy was used by many earlier thinkers. Blumenbach was perhaps the first anthropologist who attempted to classify mankind of the world on the basis of skin colour in 1775. In 1791, Petèr Camper attempted a scientific method of measurement. His attempt was much improved as compared to the earlier works. Alphonse Bertillon in 1879 used anthropometric measurements like head length, head breadth, length of right foot, sitting height, breadth of face etc. and
somatoscopic observation like eye colour, for distinguishing one individual from another (ibid.). Later in the early part of the century many old anthropologists with new outlook started almost a matured approach. Arthur Thomson's articles on Some of the More Important Factors concerned in the production of Man's Cranial Form (1903) and Facial Development (1924), deserve mention. In 1905 he with Ramdou Maclver, wrote The Ancient Races of the Thebaid. It was really highly appreciated anthropometric study on about 1500 ancient Egyptian crania. In 1914, Martin, in his monumental Lehrbuch de Anthropologie, had described all the important methods of taking measurements with illustrations. A. Hrdlicka, in his book Anthropometry (1920), has given detail description of measurements. In 1933, Buxton and Moran gave the definitions of the landmarks for measurements, in their joint work, The Essential Cranio logical Technique. Since then as time goes on many standardized method and techniques of somatometry and somatoscopy has been employing.

In this present thesis, an attempt has been made to discern the anthropo-genetics of the Chothe (Purum) tribe of Manipur by employing anthropological tools and techniques. The present work also attempted to assess if there be any change with reference to some of the findings of the past study.

Manipur, the birth place of Polo is perhaps one of the most beautiful states of India. Pandit Jawaharlal Nehru referred to it as "Jewel of India", by Lord Irwin as "Switzerland of India", by Allied Force (during the 2nd World War), as "The Little Paradise" and by the Japanese of the Axis Force as, Takane no-hana (A Flower on Lofty Heights). Its scenic

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beauties, its salubrious mountain and valley surroundings, the rare orchids, the largest fresh water lake "Loktak" in N.E. India, the romantic world of internationally famous brow antler deer, rich cultural heritage, outstanding sports performance etc make her "a land of exotica and variety".

Manipur lies in the north of Tropic of Cancer, extending between 23°51' and 25° 41' North latitude, and 93°2' and 94°47' East longitudes. She is bounded on the north by Nagaland, on the east by Myanmar (Burma), on the South by Mizoram and on the west by Assam.

Manipur was a princely state. It got merged into the Indian Union on 15th Oct. 1949 and became a territory in 1956 and attained Statehood in 1972. It now has nine districts (five hilly districts, four valley districts), 31 community Development Blocks and 2182 villages. Imphal (24.80°N, 93.95°E longitude) is the capital of Manipur. Geographically and culturally, the state of Manipur may be divided into valley and hill regions. The Hindu Meiteis and the Sanamahi worshipping Meitei community dominate the valley regions. The hills are dominated by various tribal groups who at one time believed in traditional animism but by now most of them are Christians. Of these tribal groups, 33 of them are scheduled under the Indian Constitution. They along with the majority Meiteis and some other minority communities are collectively known as Manipuri. Almost all the Manipuris are Tibeto-mongoloid stock. According to the census of 2001 the population of Manipur is 23,88,634 (males-12,07,338; females-11,81,296).
As Manipur is very near to the Tropic of Cancer (231/2° North latitude), it is under the influence of sub-tropical monsoon. However, the state has tropical to temperate climate depending on elevation. Rainfall varies from 110 cm to 350 cm and the average annual rainfall is about 207.77 cm (Laiba, 1992). Rainfall starts by mid-April and continues upto October. Temperature varies from 0° C to 40° C. The hottest place of Manipur is at Jiribam and the highest rainfall areas are at Ukhrul and Tamenglong districts. Generally, January and July experience the coldest and the hottest months respectively.

Of the many variegated ethnic groups of the geo-ethnic area of North East India, Manipur is certainly one with its multi-ethnic population. Manipur has 33 recognised scheduled tribes. Of these, the Chothe which is more popularly known as Purum is one such tribe. The people denied to call themselves Purum as they were called by Das (1945) in his monograph. Most of them are of the view that the name Purum is associated with the toponym rather than ethonym. The Chothe Lim Abom (CLAM), one apex committee of the people, resolved not to use the word "Purum" in their village names. There are many versions explaining the genesis of this tribe. Despite many versions regarding their origin, all of them adhere to the belief of issuing out of the earth. As regards their affiliation to either Naga or Kuki (two fold classification of Tribes of Manipur) most of the British administrators of 19th and 20th century like McCulock (1859), R. Brown (1873) T. C. Hodson (1911) J. Shakespear (1912) kept the tribe under the Old Kuki group. T. C. Das (1945) also kept Chothes under Old Kuki tribe. Linguistically too, the dialect that the people speak falls under the central unit of Old Kuki branch of Kukish section of Sino-Tibetan language (Singh, S. J. 1995).
At present context, the people are under the strong pressure of Nagaisation. For political gain or for other privileges, or by compulsion, a good number of them responded that they are in Naga tribe. However, presumably all of them told that in their heart of hearts their Chothe identity is permanently imprinted. Though a lot them are very skeptical about their inclusion either to Kuki or Naga folds, yet some others indirectly told that the cultural similarities are nearer to the Kukis than to the Nagas. It may be said that the sandwich of the Chothe under the stress of the Kuki and the Naga, shrinks the intensity of tranquility. The artificially created strong storm of vested interest should not sway the peace loving souls in the doldrums.

At present, the Chothes are agglomerated in three distinct groups. The central cluster comprises ten villages—Purum Tampak (Tampakkhal), Lainingkhul, Purum Khullen, Chandropoto, Chothe Khunou, Purum Chumbang, Chandonpokpi, Ziontlang, Old Wangpral and New Wangpral. Recently a few households were migrated to Salemthar and Leirungtabi about a distance of about three km and five km respectively towards the south of Purum Chumbang and had been co-existing with Nepali migrants. Khongkhang is a settlement located near the Burma border in the South Eastern side and Lamlanghupi village in the North-Western extremity near Bishenpur bazaar (market) in Bishenpur district. Except Lamlanghupi, the other Chothe villages are in Chandel district.

The Chothes settle either on or foot of hillock. Purum Tampak and Lamlanghupi villages are on the flat plain near the foot hills. Majority of the households at Chumbang and Ziontlang villages are settled on flat valley while the other remaining households of the two villages are on
the ridge. The other remaining villages are on the hillock and the houses are on the gentle hill slopes arranging in three tiers one above another. No doubt, the houses are arranged on either side of the inter-village roads. Most of the houses stand facing east. The traditional houses are constructed with bamboo or wood, walled with mud and thatched roof with thatch.

Because of their unique mode of mate selection, the marriage system of the Chothes has been the center of attraction of anthropologists. Traditionally marriage by service was very much practised. But now-a-days engagement through the elders of the either party or elopement through mutual love, are the two ways of mate selection.

Formerly, the Chothe economy was hovering between hoe culture (Jhuming) and plough culture. However, at present, Jhuming cultivation is almost extinct. Though a few of them are now employed in various institutions—both private and public sectors, many of them engaged in agricultural activities, government services, basketry, weaving etc.

The demographic analysis of the twelve Chothe villages show unevenly distribution pattern. The population of the villages ranges from sixtyeight villagers at Chothe Khunou to 395 villagers at Purum Tampak. Of the twelve villages, nine villages show higher female sex ratio of which the Old Wangpral village shows the least sex ratio (771.92). Considering the age and sex composition of the Chothes, the total population of the Chothes as recorded in the present study is 2440 of which 1193 (48.89%) are males and 1247 (51.11%) are females. Thus reflecting a sex ratio of 956.70. Majority of the Chothes have nuclear type of family distribution (66.36%) followed by joint type (30.51%) and incomplete type of family (3.11%). On average, a Chothe family has 5.36 members.
For the purpose of discerning the anthropogenetic study of the tribe, data on different sets of parameter which includes twentytwo anthropometric measurements, eight anthropometric indices, eighteen anthroposcopic characters, nine genetic markers excluding dermatoglyphic traits, four behavioural traits have been examined from 200 adult males. Besides 5 dermatoglyphic traits have been examined from 150 males. Some selected anthropometric and anthroposcopic characters of the present study are compared with that of the past study carried out by Das (1945). For ABO blood group, A. Devi's (1985-1986) finding is considered as past record. And for dermatoglyphic traits, works conducted by Chakravartti and Mukherjee (1962) is being compared with the present study.

The mean values, standard deviations and their respective standard errors for ten anthropometric variable (Table 84), three indices in conventional categories, and five anthroposcopic characters are discussed for comparison. The comparison of one palmar dermatoglyphic and two finger dermatoglyphic traits are also discussed. Chi Square goodness of fit and t-test have been employed for finding out the degree of variations for the qualitative and quantitative traits respectively.

The present study highlights the following facts.

From anthropological point of view, the tribe has stature ranging from 145 to 170 cm with a mean value of 157.90±0.34 cm. Within the range, short stature (66.5%) is found to be dominant over lower medium stature (18%) The average body weight ranges from 38 kg to 76 kg with an average of 53.78 kg.

In general the Chothe tribe has medium head length (47%) and narrow head breadth (43%) preponderant over medium head breadth.
(41%). The index of head shows the preponderance order of Mesocephal (46.5%) > Brachycephal (27.0%) > Dolichocephal (17%) > Ultrabrachycephal (1.5%). The breadth Height Index of Head shows that most of them are Acrocephalic (83.5%).

The Nasal Index shows preponderance of Mesorrhine nose (64%) over Chamaorrhine (23.5%). The Morphological Facial Index shows that the Chothes are mostly Euryprosopic (35%) followed by Mesoprosopic (28.5%). The Relative Upper Extremity Index shows that the Chothes have medium arm (53.5%) which is followed by short arm (26%).

Anthroposopic observation reveals that the Chothe people mostly have fine black coloured and medium quantity hair. They have scanty body and facial hair, Palpebral opening of the eyes shows horizontal (74%) dominant over oblique type (26%). Eye fold is present in most of them (85.5%). Majority of them have deep-rooted (51%) nasal root and concave type of nasal bridge (48%). Most of them lack malar prominence (76.5%).

As regard to genetic markers, free earlobe (54.5%) is found dominant over attached earlobe (45.5%). Darwin’s Tubercle is found to be present in 8.5% of them while 91.5% of them show the absence of the trait. Hypertrichosis is present in 10% of them. Absence and presence of dimpled cheek show the frequency of 89.5% and 10.5% respectively.

Regarding the distribution of ABO blood group genetic marker, the people show the preponderance order of O > A > B > AB (45% > 26% > 20.5% > 8.5%) and having allele frequency of p=0.19, q=0.15, r=0.67. The highest occurrence of O phenotype which is recessive to A and B may be due to the practice of preferential type of marriage based on salai (sibs).
The behavioural trait, hand clasp ing shows 'L' type (49%) dominant over 'R' type. Similarly, 'L' type of arm folding is observed to occur higher as compared to 'R' type. The distribution of tongue rolling shows that the frequency per cent of ability to roll tongue is found comparatively higher (64.5%).

As regard to dermatoglyphical findings, for overall finger ball patterns, the preponderance order of loop>whorl>arches (<53.53>AS>OE>127) is observed. Wildor's (1922) Three Main Line Formula shows the preponderance order of 755>975>1197.

An attempt is also made to compare the data of present Chothe population with the already available data of the same population from secondary sources. While comparing the anthropometric data from Das's work (1945) with the present data, it is evident that out of the ten somatometric measurements available for statistical treatment of 't' test of significance, nine characters (MHL, BBA, BGB, HCH, NH, NB, EBB, HH and HV) show statistically significant difference. It is interesting to note that nine out of the ten characters show increase in mean value in the present data.

It has been observed that the mean MHL measurement have not shown any marked difference. However, the two populations show a significant difference in MHB. This is in conformation with the suggestion that the breadth of the head is subject to rapid environmental adjustment and variation (Oliver and Howells, 1957).

In a similar line the metric value, BBA, BGB, NB, which show significant difference from the earlier Chothe are all breadth
measurements and is in conformity with the suggestions of Oliver and Howels.

Of the three anthropometric indices, Cephalic index and Nasal index display a significant difference from the Das’ sample. It is because of significant difference observed in relevant breadth measurements.

A secular trend towards an increasing body size is clearly discernible among the present Chothes. In the present findings, the secular trend that has taken place can be attributed to a number of probable factors like improvement in nutrition, health and hygienic conditions, accessible to medical amenities etc.

A large number of anthroposcopic observations have significant difference between the two studies. Most of these traits are prone to temperature and exposure to radiation. Hence, increase in temperature might have caused these differences. However, the question of sampling error and difference in observational method cannot be ruled out.

In the context of dermatoglyphical study, the finding reveals: the stable nature of the trait which is almost unaffected by environmental factors and less by natural selection. The same is in conformity with the present findings.

The present work is a simple and earnest attempt to study the anthropogenetics of this tribe. Further in depth study on the same tribe in the near future will definitely add more and more to the understanding of the anthropogenetics and microevolution of this tribe.