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RESEARCH IN BIOLOGICAL ANTHROPOLOGY OF THE ANDAMAN NEGRITOS: A CRITICAL REVIEW

ABSTRACT. — *In view of the rapid decay of the Negrito populations of the Andaman Islands in the Bay of Bengal, there is an immediate need to launch an appropriate programme of urgent anthropology for documenting biological information on them. But before any preparation is envisaged it is a priori to know about the kind and quality of research investigations that have already been undertaken among these primitive and fast vanishing groups of the world.*

In this paper, an attempt has thus been made to review and take a stock of account of researches done in the field of biological anthropology among the indigeneous inhabitants of the Andaman Islands.

KEY WORDS: *Negritos — Great Andamanese — Jarawa — Sentinelese — Onge — Andamans.*

INTRODUCTION

The Andaman Islands (10°–14° N, 92°–94° E), situated in the Bay of Bengal, are divided into two main groups of islands — Great Andaman and Little Andaman. The topography of the Andamans is hilly, enclosing narrow valleys. The main Andaman ridge mostly comprises early tertiary sedimentations overlying the basic rocks. The climate is tropical, characterised by two well-marked seasons, wet and dry. Out of about 6,500 sq.km. land area, more than 2,500 sq.km. are covered by exceedingly dense tropical growths of evergreen and deciduous types.

The knowledge about the existence of the Andaman Islands dates back to the second century when Claudius Ptolemy first published an annotated atlas describing places as far east as Borneo. But information on the islanders was largely lacking until 1788 when attempts were made to establish a penal settlement there by the Britishers.

The islands are the homeland of a few inbred, black-skinned and pygmoid population groups — the Great Andamanese, Jarawa, Sentinelese, and the Onge. They all live of the resources of hunting and gathering, excepting the Great Andamanese now. While the first-three groups live in Great Andaman, the Onge inhabit Little Andaman. They are one of the most primitive population groups now living in the world and considered the purest representatives of the Asiatic Pygmies.

The Great Andamanese, originally composed of some ten tribes, and once vigorously thrived in the whole of Great Andaman Island, now comprise only 28 survivors (in June 1982) of a hybrid generation. They have been settled in Strait Island off the east coast of Middle Andaman since 1970. They do not now maintain their original way of life, obviously due to their population decay. The Jarawa, who are still hostile and estimated at 300 souls in 1971 Census, live in the western coast of Middle and South Andaman. Some rapport could be estab-

lished with a section of the Jarawa in 1974. And since then continued efforts are being regularly made to develop friendly relations with them. The Sentinelese, estimated at 100 individuals in 1971 Census, inhabit North Sentinel Island off the west coast of South Andaman. They have never come in contact with outsiders. But of late, recently in February 1982, a small batch of the group responded to friendly gestures for the first time. The Onge live in Little Andaman Island. The group comprised 105 individuals in 1977. The people are quite friendly with us.

The palaeoanthropological aspect and the question regarding the peopling of the Andamans have already been discussed in detail earlier in Dutta (1978).

The Negrito islanders, whose total strength was roughly estimated at about 10,000 strong in 1779, dwindled to some 500 and odd souls during the past two centuries. The trend of rapid decline is well identifiable from the population figures available for the period 1858–1971 (*Table 1*). This fact itself reflects major biological implications of consequence. The state of rapid decrease in numbers of the Negritos clearly suggests that adaptive values, once beneficial for survival, are fast losing their evolutionary significance. As a consequence,

RESEARCH IN BIOLOGICAL ANTHROPOLOGY

The history of research in the Andaman Islands tells us that investigations in the field of biological anthropology of the Negritos were initiated during the fag end of fifties of the last century. These were initiated just after the establishment of the penal settlement at Port Blair, the headquarters of the administration, in 1858. During the span of a quarter-and-a-century's time, many studies in this field, scoring well beyond half-a-century, have been undertaken and reported upon.

It may be pointed out that all these studies together, excepting those which were attempted to define the Negritos on the basis of classical morphological anthropology, do not really provide us with much insight for understanding the exact biological constitution of the Negrito islanders. And whatever studies have since been made are all mostly relate to two groups only out of four inhabiting the islands. These two groups are the Great Andamanese and the Onge. The other two groups, the Jarawa and the Sentinelese, which still are implacably hostile, have remained outside the pale of any investigation. As a matter of fact, no information is available on them.

TABLE 1. *Population figures of the Andaman Negritos during 1858–1971*

Tribes	1858	1888	1901	1911	1921	1931	1951	1961	1971
Great Andamanese	3500	2000	625	455	209	90	23	19	24
Jarawa	600		468	114	114	70	50	500	300
Sentinelese		1250	117	117	117	50	—	50	100
Onge	700		672	631	343	250	150	129	112

- Note:
- (1) The Great Andamanese could only be enumerated from 1961 to 1971 Census years; the figures for others, excepting 1961 and 1971 count for the Onge are merely rough estimates.
 - (2) Enumeration made by the Anthropological Survey of India in January 1977 gives a figure of 23 Great Andamanese and 105 Onge.
 - (3) Figures for 1981 Census are not yet available; a census source records that the Great Andamanese are represented by 27 souls in 1981; in May 1982 a female child was born, raising the total to 28 Great Andamanese.

the Negritos are steadily becoming biologically more unfit in the newly-developing milieu of the changing Andamanian eco-niche. The change, earlier gradual, was boosted by the process of colonisation in the Andaman Islands.

The fact that the Negritos are fast dwindling, and on the verge of extinction, calls for a serious attention. It demands launching an immediate, appropriate programme of urgent anthropology. But before such is envisaged, it is the first and foremost to have on account the investigations that have already been undertaken on the primitive islanders. A clear knowledge of this is a pre-requisite for formulation of further inquiries. With this view, this paper records the research conducted and results obtained there of in the field of biological anthropology of the Andaman Negritos.

The Great Andamanese community, now composed of an amalgam of five tribes out of original ten, is represented by only 28 surviving hybrides. The composition of the population does not encourage any fruitful survey on these few surviving hybrid Andamanese. The situation of the Onge is somewhat better in this respect. Their population strength is now 105 (in January 1977); and, moreover there is no evidence of any admixture either with allied groups or with any outsiders.

OSTEOLOGY

The claim of priority of being the first scientific investigator possibly lies with R. Owen. He made the first purposeful attempt to describe the

morphological features of the Andamanese, then living, as well as dead concerning skeletons and dentition (Owen, 1861, 1863). Immediately after this, George Busk (1865) also studied morphological characters of two Andamanese skulls.

TABLE 2. *Mean values of some essential characters of the Andamanese skulls*

Character	Male	Female
Absolute measurements (mm)		
Max. cranial length	167.2 (54)	161.4 (40)
Max. cranial breadth	135.6 (55)	132.1 (40)
Basion-bregmatic height	128.9 (54)	128.9 (40)
Min. frontal breadth	92.2 (55)	90.1 (41)
Nasion prosthion length	62.7 (54)	59.2 (39)
Bizygomatic breadth	123.3 (54)	118.0 (40)
Nasal height	45.6 (50)	42.5 (40)
Nasal breadth	23.8 (55)	22.7 (40)
Orbital height	32.8 (55)	32.2 (38)
Palatal length	44.1 (44)	42.8 (32)
Palatal breadth	36.9 (45)	35.6 (31)
Indices		
Length-breadth index	81.1 (54)	81.6 (40)
Length-height index	77.1 (53)	77.1 (39)
Breadth-height index	95.2 (53)	94.6 (40)
Nasal index	51.1 (48)	52.5 (38)
Superior facial index	50.7 (53)	49.9 (39)

Note: Sample sizes are given in parenthesis.

Subsequently, A. de Quatrefages (1872, 1895), and Quatrefages and Hamy (1882), dealing with the problem of the Negrito race in general, documented some information together with biometric data on crania of the Andamanese. Bernard Davis (1876) published a few tracings of some skulls of these people. But notable indeed in this series of study are those made by W. H. Flower (1880, 1881, 1885), W. L. H. Duckworth (1902), and L. R. Sullivan (1921). Flower in his studies described metrical features of skulls and post-cranial bones of the Andamanese and also recorded measurements on stature of these people. He further attempted to evaluate the racial affinities of the islanders. Duckworth recorded the morpho-metric findings of a skull of the Andamanese. And Sullivan studied the physical affinities of the Negrito islanders by comparing them with the living Negrito populations of the Philippine Islands. Meanwhile, William Turner (1886, 1906, 1913) contributed another lot of descriptions on crania and other long bones of the Andamanese, collected during the voyage of H. M. S. Challenger. On the basis of the already gathered cranial material that are there with various European collections, Mario Cappieri (1953, 1964) made detailed studies on some essential aspects of cranial morphology of the Andamanese. The sample of this study comprised 96 crania, 55 males and 41 females. In order to portray the morphology of the Andamanese crania, some of the metric traits available from Cappieri may be studied (Table 2).

The study of the mean estimates supply us with the information that the Andamanese crania are brachycranial, hypsicranial (i.e. high-vaulted in relation to length of skull), and metriocranial (medium-vaulted in relation to breadth measurement of skull). The facial shape is moderately mesen (i.e. medium-broad).

In the aspect of skeletal biology, another work undertaken by P. Gupta, A. Basu and A. Gupta (1960) merits mention. The study is important because of the fact that the skeletons of the Onge were investigated for the first time. The skeletons (3 adult males, 5 adult females, and one child) were recovered from burials beneath the beds of an old, deserted communal hut of the Onge. The study reveals that the Onge skulls are brachycranial, hypsicranial, metriocranial and macrocephalic. In face form, they are mostly low-faced with high orbits and broad nose, having the alveolar and facial prognathism. The texture of the skulls is smooth, and the morpho-architecture suggests prominent cheek bones, rudimentary mastoids and broad, flat nasal root. The living stature, calculated from extremity bones of the sample, varies from 'very short' to 'below medium' class. With a view to providing basic idea about the Onge phenotype, some of the important cranio-facial measurements, taken from the afore-noted study, are gathered here (Table 3).

So much is now on the credit of the osteological study. It is important to note that the studies that were undertaken by various investigators, beginning Owen (1861) and ending in Turner (1913), had all resorted to the methods and techniques that were then current. Obviously, therefore, some of these, although containing much technical information and data, have become strictly unsuitable for use as comparative material in the context of the present standardised methodology. The studies undertaken since Sullivan (1921) have all adopted the standard methods and techniques now current. And, therefore, the latter corpus of material is more useful than the former for the purpose of further analysis and comparative studies. But, at any rate considering the shortcomings of the former group of studies, owing to methodological lag, it may be appreciated that the studies so far carried out on skeletons cannot perhaps be considered inadequate. These are becoming more important for any kind of evaluation in the face of the crisis of rapid depopulation of the Andaman Negritos.

SOMATOMETRY

The performance of somatometric studies is relatively in a better footing. In this line of investigation, mention must be made of the earliest attempt of E. H. Man (1885). Man measured body height of the Great Andamanese, and his sample comprised 40 adult males and 37 adult females. The next important survey, carried out by W. Molesworth (Portman and Molesworth, 1893-1894), re-

TABLE 3. Showing the range of some of the important metric traits of the Onge skull.

Character	Male	Female
Absolute measurements (in mm):		
Maximum cranial length	159.0—166.0 (2)	160.0—162.0 (4)
Maximum cranial breadth	131.0—134.0 (2)	127.5—138.0 (4)
Basion-bregmatic height	128.0—128.0 (2)	121.0—122.5 (4)
Auricular height	108.0—108.5 (2)	102.0—105.0 (4)
Least frontal breadth	91.5—92.0 (2)	86.0—91.0 (4)
Horizontal circumference	471.0—481.0 (2)	454.0—469.0 (4)
Biauricular breadth	106.5—109.0 (2)	100.5—107.0 (5)
Nasion prosthion length	59.5—62.9 (2)	56.0—61.0 (3)
Bizygomatic breadth	119.0—125.0 (2)	114.0—122.0 (3)
Nasal height	45.0—448.0 (3)	41.5—45.0 (4)
Nasal breadth	21.0—24.5 (3)	23.0—24.0 (3)
Orbital breadth (left)	36.0—39.0 (3)	33.5—40.0 (4)
Orbital height (left)	34.0—35.0 (3)	32.5—33.0 (3)
Palatal length	36.5—39.0 (2)	35.0—43.0 (2)
Palatal breadth	31.5—36.5 (2)	29.5—33.5 (3)
Indices:		
Length-breadth index	78.92—84.28 (2)	79.69—85.19 (4)
Length-height index	77.11—80.50 (2)	75.53—78.09 (4)
Breadth-height index	95.52—97.71 (2)	91.67—94.90 (4)
Nasal index	46.67—51.04 (2)	54.55—57.83 (3)

Note: Sample sizes are shown in parenthesis. Since the sizes are very small, character mean values are not given.

TABLE 4. Showing three essential somatometric features of the Andaman Negritos

Sample Size	Stature	Cephalic index	Nasal index	Investigator
Andamanese male				
40	1458.50*	—	—	E. H. Man
10	1468.00	81.40	71.60	E. v. Eickstedt
8	1515.00	81.18	75.79	S. S. Sarkar
50 (N)	1485.60	82.00	93.01	W. Molesworth
50 (S)	1481.70	83.07	88.60	W. Molesworth
Andamanese female				
37	1331.25*	—	—	E. H. Man
22	1385.00	81.60	72.00	E. v. Eickstedt
8	1393.90	80.35	73.88	S. S. Sarkar
50 (N)	1385.40	81.95	94.76	W. Molesworth
50 (S)	1402.50	82.79	90.21	W. Molesworth
Onge male				
42	1481.00	83.50	73.40	E. v. Eickstedt
14	1482.80	82.09	83.64	B. S. Guha
2	1518.00	84.80	77.05	A. K. Mitra
27	1477.85	—	—	B. K. Chatterjee
Onge female				
38	1383.04	83.10	75.00	E. v. Eickstedt
15	1378.60	83.01	82.07	B. S. Guha
6	1407.00	83.22	77.20	A. K. Mitra
23	1389.47	—	—	B. K. Chatterjee

Note: Stature in mm
* Converted to mm from inch

(N) = North Andamanese
(S) = South Andamanese

mains yet invaluable for any understanding of the characters of these people. A total of 200 individuals, divided into South and North Andamanese groups, was measured. Another survey carried out by von Eickstedt (1928) among the Onge remains still notable. Eighty Onge individuals were measured, comprising 42 males and 38 females. Further research in this line was persuaded by B. S. Guha (1954), S. S. Sarkar (1954), B. K. Chatterjee (1955), and A. K. Mitra (1962). All of them took care of measuring different head and body dimensions and recording anthroposcopic observations in order to reveal the phenotype of the Negritos. Exception is the work of Chatterjee who attempted to estimate solely the different body proportions of the Onge. Furthermore, on the basis of already accumulated data, Paul Schebesta (1938, 1952) and Walter Kaudern (1939) attempted to define the anthropological status as well as the affinity of the Andaman Pygmies. Contextually, it may be noted that P. Gupta and A. Pal measured 69 Onge (36 males and 33 females) in 1969; the results of this investigation remain yet to be published. For a ready reference, it appears worth reproducing here at least three essential somatometric traits relating to head shape, nose shape and body height of the two tribes (Table 4).

From all these studies it evinces that the Negritos, who are intensely black-skinned, are dwarfish in stature on the average well-built and proportionate in body structure. They are brachycephalic with moderately broad nose. Their face shape is mostly round or square with slight alveolar prognathism.

OTHER MORPHOLOGICAL TRAITS

A few morphological aspects of the Onge tribe have been studied. These include the studies of the Onge foot with the help of absolute measurements (Ganguly and Pal, 1961) and by contour tracing method (Pal, 1971). The latter study comprises the data on 39 adult males and 32 adult females. It shows that in absolute length and breadth measurements, in the index of foot and in hallux divergent angle (8.9°) as well, the males possess longer and broader feet with a greater degree of hallux divergent angle than the females.

Another study was made on the occurrence of different types of ear lobe attachments in an Onge sample, comprising 80 individuals of both sex (Pal, 1970). It reveals that the attached type of ear lobe (50 %) predominates over the free type (17.5 %) of ear lobe.

ODONTOLOGY

Pal (1972) also examined the dentition of the Negritos. He studied 322 permanent maxillary incisor teeth belonging to both the living (comprising 77 individuals) and the dead (47 skulls) with a view to detect the occurrence of shovelling. It shows that 34.3 per cent of the incisors were affected

with shovelling of different degrees. When this finding is compared with those of other different population groups, a definite pattern of ethnic distribution is noticed. The incidence of shovelling is found to occur in decreasing gradients beginning with the Mongoloids — being the highest — through the Negroes, the Oceanic Negroids, the Andaman Negritos, the Whites and least in the Australoids. In another occasion, molar tooth attrition was examined to assess the effect of age and food habits (Pal, 1977). The patterns of attrition in molars suggest a positive correlation with age, but not with the food habits.

DERMATOGLYPHICS

Two studies on dermatoglyphics are so far reported: one dealing with the Great Andamanese (Sarkar, 1954) and the other with the Onge (Gupta and Basu, 1960). In these, finger prints of 15 Great Andamanese (of both sex) and finger and palm prints of 43 Onge (24 males and 19 females) were analysed. The analysis of digital patterns of the Onge shows a very high frequency of loops, inter-

TABLE 5. *Percent occurrence of papillary patterns and the pattern intensity index (PII)*

Tribe	Sex	No.	Whorl	Loop	Arch	PII
Great Andamanese	Male + Female	15	23.33	76.00	0.67	12.27
Onge	Male	24	35.71	62.18	2.10	13.37
Onge	Female	19	31.55	67.91	0.53	13.10

mediate whorls and remarkably low arches. The occurrence of a similar pattern is also noticed with the Andamanese. While whorls and ulnar loops occur in all the digits of both sex of the Onge, incidence of radial loops and arches is found to be extremely low. Whorls are more numerous on digit II and IV and ulnar loops on digit III and V, and in a lesser degree also in digit I. The index of pattern intensity varies between 12.27 (in the Great Andamanese) and 13.37 (in the Onge). The mean total ridge count values are estimated at 135.4 and 125.7 for the male and female Onge respectively (Table 5).

HAIR STUDY

Histological analysis of a sample of head hair of the Onge was also made. According to the studies made by Sarkar and Banerjee (1956) and Banerjee (1957), it appears that their head hair is characterised by the highest frequency of absent type of medulla in both the sex. The scanty and broken types of medulla occur almost in equal proportions.

In respect of the occurrence of different types of medulla, the Onge hair shows a clear difference from the Oraon tribe of the mainland of India (viz. Chotanagpur) with whom a comparative study was made.

SERO-ANTHROPOLOGY

Several investigators have conducted surveys on various blood group systems. Due to very limited number of sample size of different Negrito populations and also for the language difficulty involved, it is quite possible that there might be some cases of overlapping of subjects representing different samples tested by various investigators.

Five Jarawa, who had been captured, were tested for the classical ABO blood group system in September 1939 (Gates, 1940). A sample of 11 Onge then available in South Andaman was also tested for the ABO system. Subsequently, a more systematic investigation was made by Sarkar (1952). He tested one sample of 21 Great Andamanese from Havelock and Neil Islands and another sample of 34 Onge from Little Andaman. The results of these two surveys are gathered here (Table 6).

TABLE 6. *Distribution of ABO blood grouping*

Tribes	No.		O	A	B	AB
Andamanese	21	f %	2 9.52	12 57.14	5 23.81	2 9.52
Jarawa	5	f %	5 100.00	—	—	—
Onge	11	f %	3 27.27	3 27.27	4 36.36	1 9.09
Onge	34	f %	5 14.71	23 67.65	2 5.88	4 11.76

The high frequency of B gene in the Great Andamanese must have resulted from miscegenation with outsiders. But, at the same time, it is difficult to explain the high proportion of B gene, nearly 6 and 36 per cent, in two different samples of the Onge. There is no evidence that any admixture had taken place in the tribe. The percentage of AB is also high enough to warrant the presence of more B. The Jarawa, who are even today completely isolated and are subsisting on hunting and gathering, show that all the five members of the group tested belonged to group O. Besides, another two Jarawa infants, tested by Dr. Sneath some years ago (Mourant, Kopec and Domaniewska-Sobczak, 1976), were also found to be of group O. However, when the Great Andamanese, who are definitely known to be mixed-bred, and the five Jarawa are excluded from consideration, the blood group picture of the Onge shows the following distribution.

	O	A	B	AB
f	8	26	6	5
%	17.17	57.77	13.33	11.11

The distribution itself demonstrates the presence of more than 50 per cent A genes in the sample. Notable in this context is that the Andaman Negritos are perhaps the only known people in the world, excepting a few North American Indians, who possess in more than 50 per cent A gene.

On blood groups, the most comprehensive study is available due to Hermann Lehmann and Elizabeth Ikin (1954). They carried out tests for the ABO, MNS and Rh among 16 Great Andamanese and 52 Onge. For a ready comprehension, the results of this investigation have been collected here (Tables 7, 8, and 9).

TABLE 7. *Distribution of A₁BO blood group among the Negritos*

Tribes	No.		O	A ₁	B	A ₁ B
Great Andamanese	16	f %	5 31.25	5 31.25	4 25.00	2 12.50
Onge	52	f %	7 13.46	37 71.15	4 7.69	4 7.69

The evidence available from the ABO blood group clearly attests that the Onge are characterised by possessing a very high preponderance of A₁ gene (about 71 %) with subsidiary O and B. The situation shows some resemblance with that of the Paniyan a Veddoid tribe of South India. The MNS frequencies do not show much difference from those of the Indians, except that NS is absolutely lacking in the Onge. In this however, they are close to the Veddoids of India. The Rh system also shows little diversity with 92 per cent of the CDe complex and 8 per cent of cDE.

The ABO and MNS blood groups of the Andamanese are less extreme, suggesting possible miscegenation with outsiders. But notably the Rh system of the Andamanese shows similarity with that of the Onge. The two Jarawa infants tested were both CCDee, but one belonged to MMS and the other MsNs.

OTHER GENETIC TRAITS

It may be noted that no case of abnormal haemoglobin, including sickling, was found by Lehmann (1953). He collected blood samples from 52 Onge. The analysis shows that A₂ gene, NS, R₀ and R_z chromosome were absent. The A₁ gene and R₁ chromosome appeared in markedly high frequencies, however.

TABLE 8. *Distribution of MV blood types among the Negritos*

Tribe	No.	Phenotype						Gene frequency			
		MMs	MsMs	MNS	MsNs	NNS	NsNs	Ms	Ms	NS	Ns
Great Andamanese	16	3	3	4	2	4	—				
Onge	52	5	12	5	24	—	6	10.11	50.54	—	39.35

$$\chi^2 \text{ for Onge} = 1.48$$

TABLE 9. *Distribution of Rh blood group among the Negritos*

Tribe	No.	Phenotype							Gene frequency			
		CCDEE	CCDEe	CCDee	CcDee	CcDee	c̄cDEE	c̄cDEe	CDE	CDe	c̄DE	c̄De
Great Andamanese	16	0	0	15	1	0	0	0				
Onge	52	0	0	45	6	0	1	0	—	92.31	7.69	—

$$\chi^2 = 1.83$$

E. C. Buchi (1953) tested the secretor phenomenon among the Onge. His study shows an incidence of 56 per cent of the ABH non-secretor gene. Investigations on some other genetic traits, such as the ability to taste phenylthiocarbamide solution, occurrence of middle phalangeal pilosity and colour vision deficiency, were carried out among 66 Onge (35 males and 31 females) by Buchi and Roy (1955). The PTC test reveals a relatively high frequency of non-tasters to the tune of 31.82 per cent, about 34 per cent in males and 29 per cent in females. The average thresholds are 5.97 and 6.6 for the males and females respectively. Middle phalangeal hair was found to be totally absent among them. And there was none who had the inherited defective colour vision in that Onge sample.

DEMOGRAPHY

The treatise of Portman and Molesworth (1893 to 1894) contains most valuable information which depicts the demographic situation of a section of the Great Andamanese during 1890s. Mario Capriani (1967), utilising Portman and Molesworth's data, analysed the structure of the population as existed then. The composition of the Onge population as existed in 1955–1956, 1963 and 1969 has been studied by Nigam (1962), Agrawal (1967) and De (1970) respectively. It is, however, unfortunate that no purposeful investigation has yet been undertaken to find out the exact causal factors responsible for the much-concerned and miserable state of decay of the Andaman Negrito populations. A recent attempt in this line made by P. Ganguly (1975) deserves mention. It is viewed that decline in the Onge population is primarily due to their extremely low fertility, the net reproductive index being negative.

DISCUSSION

An account of research on biological anthropology of the indigenous inhabitants of the Andaman Islands in the Bay of Bengal has been presented here. From the material gathered, it clearly evinces that whatever investigations had been undertaken were not really accomplished in great details. Furthermore, the researches that were carried out among them covered only the two Negrito groups, the Great Andamanese and the Onge. Of them, the Great Andamanese community consists of an amalgam of half-bred individuals. The remaining other two groups, the Jarawa and the Sentinelese, still lie outside the pale of any research activities because they continue to remain incapably hostile and inaccessible to any outsiders. These two latter groups remain yet on the stage of true hunters and food-gatherers, the stage in which the whole of the mankind had remained for the greater part of its evolutionary history. Yet, a comprehension of the varied information available at hand would seem to be of immense value in building up general conclusions on the biological make up of the Negritos who happen to be one of the most truly primitive of all the people now living in our planet.

The amalgam of the population what is now known as the Great Andamanese community is on the way of extinction. The community had already incorporated extraneous genetic material through admixture with outsiders. And that they have undergone a change in their genetic constitution could be realised from the picture available from their ABO and MNS blood group frequency estimates. From the point of view of evolutionary biology, a study of this amalgam population could have been of much value if it would have been a growing population trying to reach to a new genetic equilibrium.



FIGURE 1. *Jirake, the oldest Great Andamanese woman, with the author in Andamanese settlement at Strait Island in April 1978.*

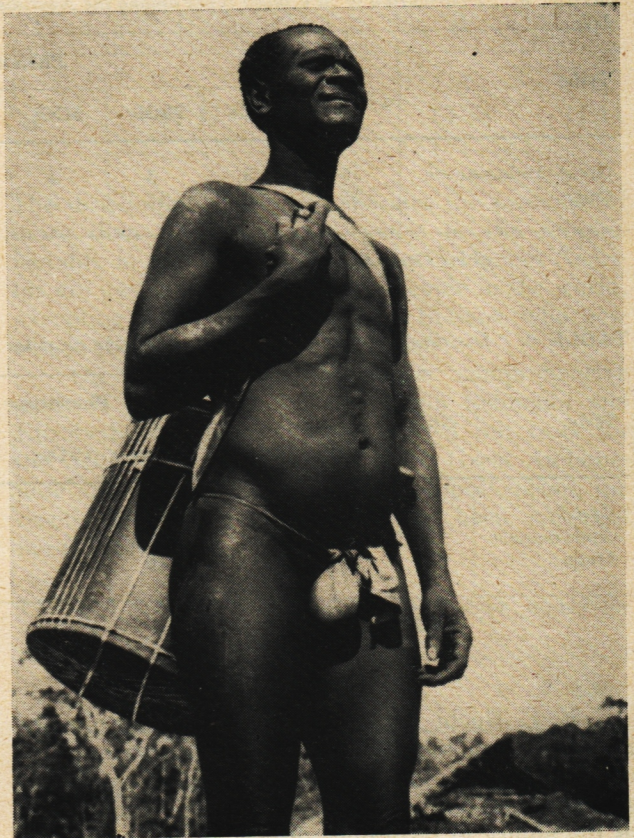


FIGURE 3. *An Onge set off to collect honey at Hut Bay in Little Andaman. (Courtesy — Anthropological Survey of India.)*

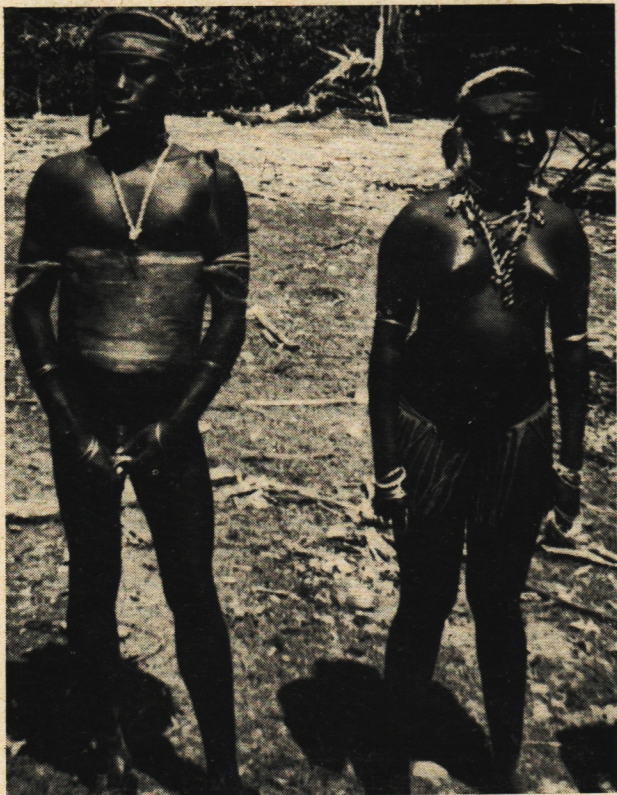


FIGURE 2. *A Jarawa couple in the west coast of Great Andaman. (Courtesy — Anthropological Survey of India.)*



FIGURE 4. *Onge women — notable for steatopygia, Hut Bay in Little Andaman. (Courtesy — Anthropological Survey of India.)*



FIGURE 5. A group of Onge on the move for the collection of food at Hut Bay in Little Andaman. (Courtesy — Anthropological Survey of India.)

The Onge tribe constitutes a genome, and thus it affords scope for a further careful study. But, unfortunately, due to interception with a zeal to develop them, their prospect of survivability instead of being bright is perhaps becoming bleak.

A careful review of the parameters of investigations so far studied bears out sharply the fact that the main and major thrust has been in defining the make up of the Negritos and that too is on the basis of classical morphological anthropology. Only a few inquiries have been undertaken to evaluate the genetical make up of the Negritos. This aspect of work was, as noted already, initiated with testing the classical ABO system among the Jarawa and the Onge by Gates in 1938 (Gates, 1940). The first systematic endeavour in this line was approached by the Anthropological Survey of India in 1948 (Guha, 1952, Sarkar, 1954) by setting up a regional research station of the Survey at Port Blair.

During the past 30 and odd years, there has been some progress but, at any rate, that cannot certainly be considered enough fruitful. The general picture that emerges from the studies so far made attests that the Andaman Negritos have no affiliation with the Pygmies of Central Africa. Instead, it evinces greater similarities or affinities with the Oceanic Negroids.

From the discourse, it becomes obviously clear that there is an immediate need for programming a more purposeful investigation to document bio-

anthropological information concerning these primitive and vanishing people, the Andaman Negritos.

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