MAN IN INDIA

VOL. 36
NO. 4 OCT.-DEC., 1956

A Quarterly Anthropological Journal
Founded in 1921 by Sarat Chandra Roy

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Edited by

BHABES CHANDRA ROY
NIRMAL KUMAR BOSE

MAN IN INDIA

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N. C. Sarkar
Manager, Man in India Office,
18 Church Road, Ranchi, S. E. Ry.
Bihar, India.

Printed by Ajit Kumar Bose at the Sakti Press, 27/3 B, Hari Ghose Street, Calcutta 6, and published by Nirmal Chandra Sarkar from 18 Church Road, Ranchi.

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MAN IN INDIA

VOL. 36 { OCT.-DEC. 1956 { NO. 4

A NEW PALAEOLITHIC SITE IN MAYURBHANJ

By D. SEN

G. S. RAY

ANDRE MARIE BETEILLE

Calcutta University.

PALAEOLITHIC sites in Mayurbhanj District, Orissa, have been explored and excavated systematically since 1939.[1] A detailed study of 14 sites yielding a total of about 700 implements was prepared about 1942 and published in 1948.[2] During March and October 1948, an additional collection* of 327 tools was made from some of the previous sites, thus bringing the total number of tools in Mayurbhanj up to October 1948 to more than 1000. Later on a new site was added to the list, when in October 1948, D. Sen and G. S. Ray recovered a number of artefacts from laterite quarries in Bangriposi. In all, 13 tools were collected in the course of a cursory investigation ; so that we may reasonably hope that excavation will yield more complete evidence of a palaeolithic industry here.

The tools so far found in Mayurbhanj may be grouped under two series with reference to their mode of occurrence.

*This collection which was made by N. K. Bose, D. Sen, and G. S. Ray is at present being studied. All references to the Mayurbhanj culture will be made with regard to the old collection (1939-40) unless otherwise specified.

The first series, with which we shall be mainly concerned in this paper, comprises tools derived exclusively from lateritic deposits. All the 15 sites referred to above fall under this head. A second group of tools has been recovered from gravel sections on the river Burhabalang, as at Kamarpal.[3]

The main lateritic site is at Kuliana, which alone has yielded about 40% of the tools excavated from sites of this type. Two other important sites are at Kalabaria (207 tools) and Nuaberi (66 tools), which lie at approximate distances of 1 mile N. and 1½ miles W. S. W. of Kuliana. Other sites include Brahmangaon (7 tools), Buramara (6 tools), Kamata (6 tools), Kendudiha (31 tools), Koilisuta (14 tools), Pratappur (12 tools), and Sandim (7 tools), all of which lie within a radius of 3 miles from Kuliana. All these sites are situated along the left bank of the river Burhabalang. Baripada, the district headquarters of Mayurbhanj, itself stands on a palaeolithic site from where about a dozen tools were collected previously by Worman and Acharya.

With the exception of those collected from river gravels, most of the implements recovered from this part of India are derived from detrital laterite. The village of Kuliana stands virtually in the centre of a lateritic plain. To the north and east, the laterite is overlain by a thick deposit of alluvium. Further east the country gains in elevation and small hillocks of gneissose rock are frequently met with.

Bangriposi itself lies within easy distance of Kuliana and the other sites and it is quite obviously an outpost of the culture which is represented in these sites.

A brief description of the nature and position of the site and the mode of occurrence of the implements is given in the following pages. Bangriposi (22°9′ N., 86°32′30″ E.) appears on the Survey of India Map No. 73 J/12, and has a railway station as well as a police station. It lies on the Baripada—Tatanagar road at approximate distances of 10 miles and 9 miles respectively from Kuliana and Kalabaria, the two main palaeolithic sites of Mayurbhanj. Like most of the sites mentioned above, it lies on the left bank of the river Burhabalang. The Bangriposi railway station lies at a distance of about 6 furlongs from the river.

The elevation above mean sea level at Bangriposi is about 350′, it being thus at a higher level than Kuliana and Kalabaria, both of which are at a height of about 250′. The greater elevation of Bangriposi is no doubt due to its proximity to the hills which commence at about 2 miles away to the N. W. and attain heights of over 1000 feet.

Kuliana, as we have previously mentioned, lies in the centre of a lateritic plain which is only thinly covered by soil. As we proceed north-westward along the road, the implement-bearing detrital laterite disappears a few hundred yards after Kalabaria under deposits of alluvium, which have been turned into paddy fields. The paddy fields continue up to the railway crossing near Bangriposi, when again stray outcrops of laterite reappear. The tool-bearing laterites here, as at Kuliana and Kalabaria, are detrital. They are soft towards the top and fairly hard below. There is a thin over-burden of about 1′6″ which lies on the laterite. Below the laterite, the country rock here is schist.

Of the 13 implements collected in Bangriposi, 4 were found in a weathered condition in a small laterite quarry beside the police station, the pits being no more than 4′ to 4′6″ deep from the ground level. The other 9 specimens were gathered from a laterite quarry about 6′ deep beside the railway station, to its west. Two of the implements, one a chopper (fig. 1) and the other a cleaver (fig. 10) were found in situ. These were discovered at depths of 2′11″ (fig. 1) and 2′7″ (fig. 10) from the ground level. The distance between the police station and the railway station is just under half a mile.

We may now turn our attention to a brief typological description of the material excavated. The collection comprises 13 specimens, all of which are worked on light-coloured, fine-grained quartzite, except one which is on quartz. All the implements carry, in varying degrees, a red ferruginous stain. One of them must have been rather heavily rolled, while the others seem to have remained fairly fresh.

The collection is a mixed one including hand-axes, flakes, a pebble chopper and a cleaver. The workmanship, in general, is crude, and quite often the tools are massive in size.

Secondary working is conspicuous by its almost complete absence and the tools do not seem to have been produced with much attempt at symmetry of form. Quite often fairly large parts of the original cortex are retained. All these are very much in conformity with the finds in the rest of Mayurbhanj, which are also generally characterized by crudeness of technique.

The industry is dominated by the biface. Out of a total of 13, hand-axes number 8, or in other words, they form over 60% of the collection. Though crude in general, they form by no means a homogeneous group. There is, as we shall notice, a considerable range in form and technique.

It is of interest that even within this small collection of 8 hand-axes, the hand-axe on flake is represented by one specimen. The typically bifacial hand-axes, though only 7 in number, show a considerable variation in shape, size and workmanship. When compared with their European counterparts, they show a range from crude Abbevillian forms to types that closely resemble Early Acheulean.

Two of the hand-axes are more than usually massive. One of them is of irregular peariform appearance and the other is spindle-shaped, with a keel running from end to end along one of the faces. They are highly convex on both faces and show large, deep and crude primary flake scars only. The peariform specimen retains a large part of the original cortex on the posterior upper face, though it has a sharp line of butt. An important feature to which we shall make further reference in connection with the chopper is that the flaking is along three or four directions only.

In contrast to these, there are two bifaces, definitely reminiscent of the Acheulean. One is an ovate and the other may be called a thick amygdaloid. The amygdaloid has a neatly convex line of butt and sharp lateral margins that converge nicely to a point at the anterior end. In fact, it has a very symmetrical form, only it is not quite as flattened as the typical amygdaloids of Europe. The primary flaking is small, neat, fairly shallow and multi-directional and there are evidences of stepped flaking along the sides. The lateral

margins show a certain amount of retouch, scars due to secondary working being easily identified. Incidentally this is the only tool in the collection which shows unmistakable signs of secondary flaking. The ovate, unlike the other implements in the collection, is worked on quartz. It is flat and symmetrical, having a sharp line of butt and sharp lateral margins. Due to the peculiarly crystalline nature of the rock, it is impossible to trace any secondary working, if this was at all present.

Of the other bifacial hand-axes, one is a peariform, another is small and sub-triangular in shape, being quite possibly the broken end of a larger tool, while the remaining one is discoidal. This last specimen is small, shows multi-directional flaking and a few stepped flake scars. Its prototype seems to be fairly common throughout Mayurbhanj. It seems to be some sort of a transitional type between the chopper and the hand-axe. Its use must have been very similar to that of the chopper, though it would be better to describe it as a discoidal hand-axe.

Finally, we come to the hand-axe on flake. It is neat, symmetrical and amygdaloidal in form. The striking platform has been lost in the process of manufacture, but like the other flake hand-axes in Mayurbhanj, this too was in all probability produced by the Clactonian technique. It should be noted here that hand-axes on flake are rare in Mayurbhanj. There are only 7 other specimens in the old collection of 1939-40 and only one of these is amygdaloidal, the others being ovate.

At this point, it might be pertinent to enquire into the exact relationship between these tools and the typically bifacial hand-axes. In India, as is well known, there are two main areas of palaeolithic culture, one in the north dominated by the pebble and flake technique, and the other in the south, with the core as its main element. At places, as in the Narbada and Sabarmati valleys, it is also known that there have been contacts between the two, resulting in a mixed industry. In Mayurbhanj, however, the proportion of these hand-axes, as indeed of flakes in general, is so insignificant that it has been thought better to attribute these to the same technique, worked by the same people who produced the bifaces. A considerable number of flakes of suitable shape and size must have accumulated as

a debitage of the biface industry. It is only natural that even to the people of a purely bifacial culture, some of these must have seemed suggestive of being worked into tool types.

At Kuliana, Kalabaria etc., quite a large number of pebble tools have been found. These, in fact, form over 12% of the entire collection. They include such types as choppers, hand-axes, knives and cleavers, with the chopper (46%) and the hand-axe (30%) predominating. The collection from Bangriposi includes one pebble chopper. It has been made on a naturally flat pebble base which is left unworked. Only, the anterior portion of the upper face is flaked in three or four directions, forming a somewhat jagged, convex cutting edge. The butt-end remains heavy and pebbly. The workmanship seems to be very similar to that used in the case of the hand-axes ; and there is no alternate flaking on both faces producing a zig-zag cutting edge, so typical of the chopper. It may be that the chopper-like form of the implement is only due to the presence of the naturally flat pebbly surface, and that the technique of production was almost identical with that of the hand-axes.

Leakey[5] has shown in East Africa that the bifacial hand-axe has evolved from pebble tools of the Oldowan age through certain transitional forms. With the improvement of technique, he argues, the pebble butt gradually disappears ; the two-directional flaking giving place to three or four-directional flaking, while the cutting edge becomes more pointed. It would be interesting to see how far this is bourne out by the finds from Mayurbhanj. The large, irregularly peariform hand-axe already referred to might very well have been one such transitional type. The flaking is along three or four directions only, a large part of the cortex is retained, and the lateral margins do not quite converge to a point as in the typical hand-axes. An examination of the material from Kuliana, Kalabaria etc. shows that along with typical choppers and crude hand-axes, this type forms quite a conspicuous element in the industry. The general sequence of tools in Mayurbhanj appears to be from crude choppers and hand-axes on pebbles to finer bifaces and cleavers.[6]

Only one cleaver has been found at Bangriposi ; it is on

core, it has a V-shaped butt-end and a straight cutting edge. It has a cross-section like a parallelogram, recalling the Vaal technique. The cleaver forms a fairly large element in the Mayurbhanj industry, as many as about a hundred having been recovered from the older sites in 1939-40, 1948. They are in a few cases on flake and sometimes even on pebble. But the majority are on core. The cleaver seems to be a somewhat more advanced type that probably developed out of the biface technique. The specimen under consideration does indeed show in flaking and other features, a very striking resemblance to the hand-axe.

The flakes in the collection are only three in number, not including the hand-axe on flake. Of these, one is a waste flake. Of the remaining two, one is a large flake of Clactonian type while the other seems to be a point, showing proto-Levalloisean workmanship. In Mayurbhanj as a whole, flakes are decidedly in a minority. They comprise only 6% of the total finds and include such types as knives, side-choppers and a few cleavers. With one or two exceptions, all of them have high-angled unfacetted or unifacetted striking platforms. They are uniformly large, thick and crude, of primitive workmanship, showing very little secondary retouch. Quite often they weigh over a pound and a half. The specimen in the collection referred to as a flake of Clactonian type is large and crude with a high-angled (118°) unifacetted striking platform. It has no regular shape, nor any secondary working.

In the report entitled *Excavations in Mayurbhanj* we find that the Levalloisean technique proper is completely absent in this area. There are 2 or 3 specimens that are alleged to have been worked by a proto-Levalloisean technique. One of these is described as being fairly large, devoid of secondary working and having a very high-angled (135°) striking platform which is unifacetted (bifacetted ?). Among the 13 specimens from Bangriposi, there is one that shows a technique which seems to be a fairly close approach to the Levalloisean type. The implement referred to is a point, there being, incidentally, only one other flake point in the entire Mayurbhanj collection of 1939-40, 1948. It is fairly small and neatly shaped, though

there is no secondary working. The striking platform is low-angled (96°) suggesting that the implement was detached by a vertical blow as in the case of the Levalloisean. It is difficult to say exactly whether the implement is bifacetted, or whether what appears to be the second facet is due merely to natural fracture.

Having given so far a description of the tools from Bangriposi, an attempt might now be made to give a brief review of the typological position of the site described. We notice that the tools exhibit certain similarities in their crudeness, for instance, in their absence of secondary working and in their absence, in general, of very much symmetry of form. On the other hand, they show considerable diversity and specialization in so far as all the major types, choppers, cleavers, hand-axes and flakes, are represented.

It is hardly possible to form an adequate idea of an industry from a small collection. Our task, however, is simplified by reason of the close relationship these tools have with those of the much larger sites nearby. Indeed, it is only against the background of the total industry of Mayurbhanj that we can hope to arrive at a fair estimate of the industry represented here. The site affords on a small scale the picture present throughout Mayurbhanj. The same tools are represented and almost in the same proportion. Cores dominate, flakes are in a minority; the chopper and the cleaver are both included. Cruder workmanship is, in general, more conspicuous and neatly turned out forms are comparatively rare.

Very little can be said with certainty on the relative chronology of the tools described. In Mayurbhanj, the laterite deposits have been so laid down that tools recovered at equal depths, even 50 yards from one another, may not be of exactly equal age. The tools in the present collection are derived from two sources separated by a distance of about half a mile, and only two of them have been found in situ, so that it is really difficult to say exactly how far they belong together in time.

Our knowledge of the Mayurbhanj palaeoliths has been steadily increasing over the last sixteen years. The initial work of 1939-40 was carried out in sites that had all been fairly closely

grouped round Kuliana. The finds from Bangriposi seem to extend the range to cover a considerably wider area. The new site appears at first sight to be a fairly promising one. It can only be hoped that the preliminary, cursory investigation described in the paper will be followed up by detailed and carefully planned excavation in the not too distant future.

REFERENCES

1 Bose, N. K. & D. Sen, *Excavations in Mayurbhanj*, 1948.

2 *ibid.*

3 Bose, N. K., D. Sen & G. S. Ray, 'Climatic Changes during the Stone Age in Mayurbhanj', *Geographical Review of India*, Vol. XIII, No. 1.

4 *ibid.*

5 Leakey L. S. B., *Olduvai Gorge : Evolution of the Hand-axe Culture*, 1951.

6 Sen D. *Proceedings of the 41st. Indian Science Congress*, Part II. 1954.

APPENDIX

DESCRIPTION OF THE TOOLS

(Material used throughout is a light-coloured quartzite, unless otherwise specified.)

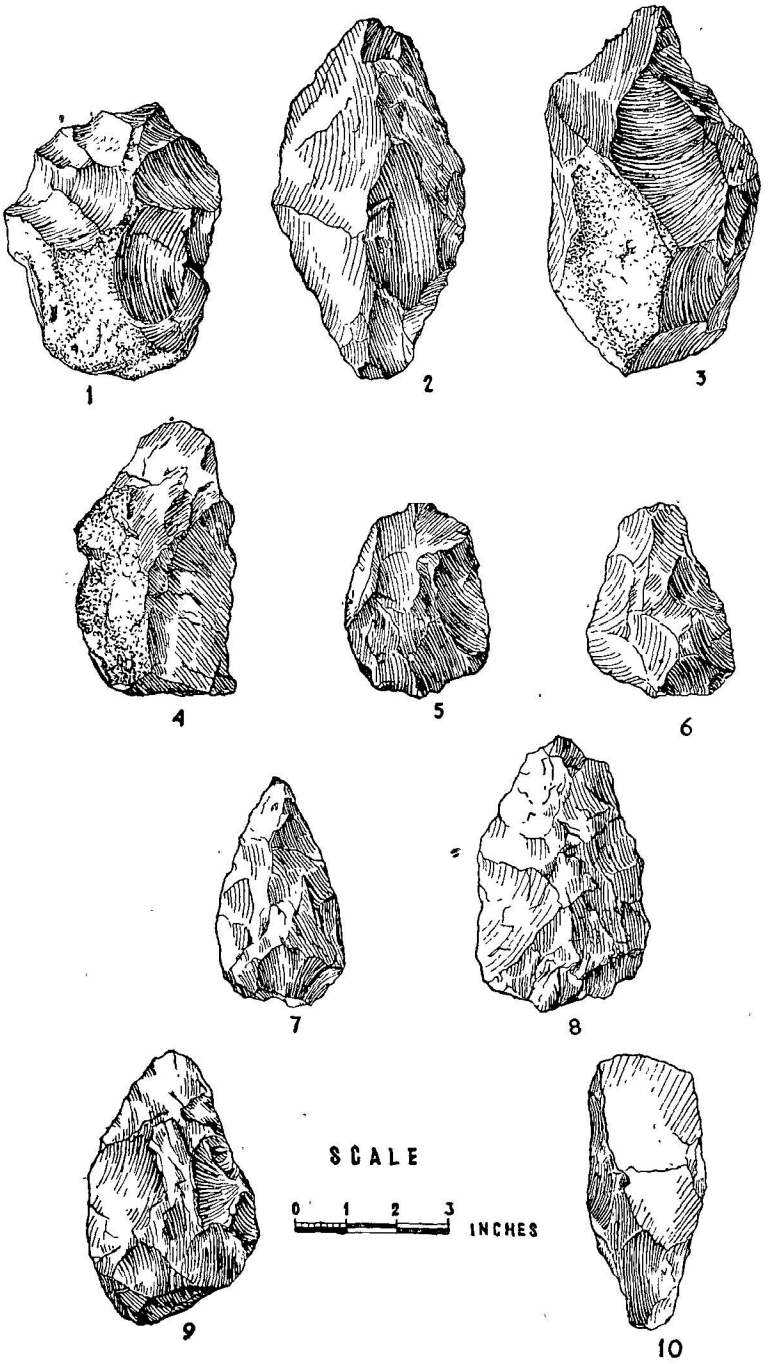
Fig. 1

Colour—Reddish brown. Preservation—Fairly fresh.

Primary flaking : Pebble tool. Upper face convex, showing a number of flake scars on anterior portion, posterior portion retaining large part of original pebbly cortex. Flaking, large crude, and in 3 to 4 directions only. Lower face almost flat and entirely unworked. Butt-end heavy, convex and pebbly ; no line of butt. Working end convex and sharp, being formed by intersection of primary flake scars of upper face with flat pebbly under-surface.

Secondary working : Absent.

Type : Chopper,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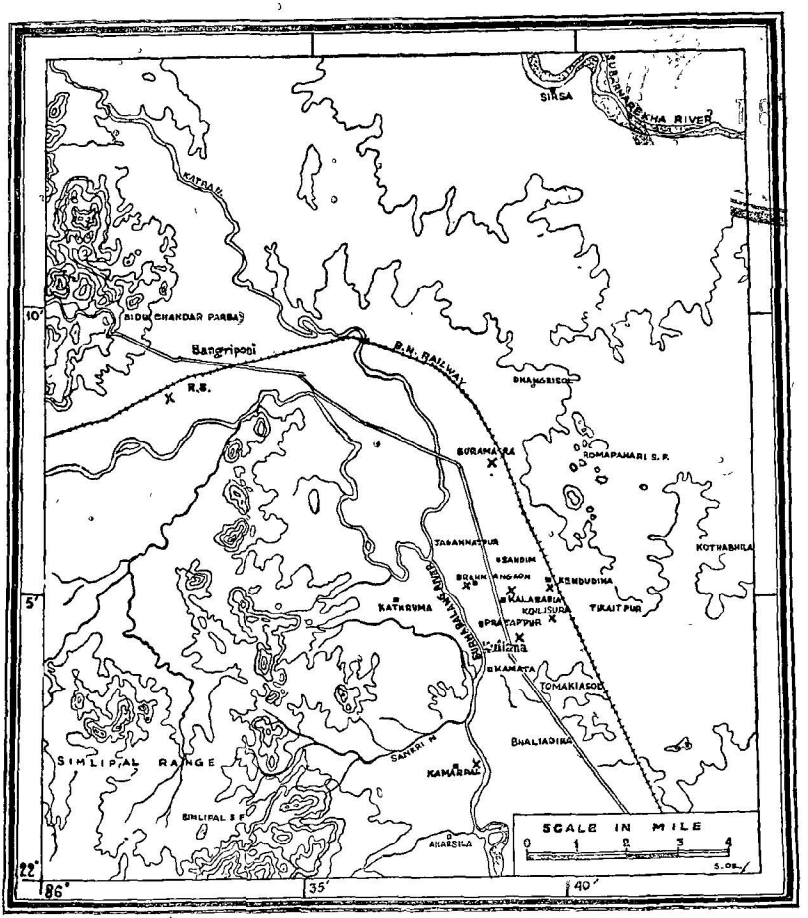
SIMSA
SUBARNAREKHA RIVER
KHARSUAN
BIDUCHANDAR PARBAT
Bangriposi
B.N. RAILWAY
R.S.
DHANGRISOL
SURAMARA
ROMAPAHARI S.P.
KOTHABHILA
JAGANNATHPUR
SANDIM
BRAHMANGAON
KENDUDIHA
KALABANIA
KOHLISURA
PRATAPPUR
KATHRUMA
TIRAITPUR
Jalna
KHAMATA
TOMAKIASOL
BHALIADIHA
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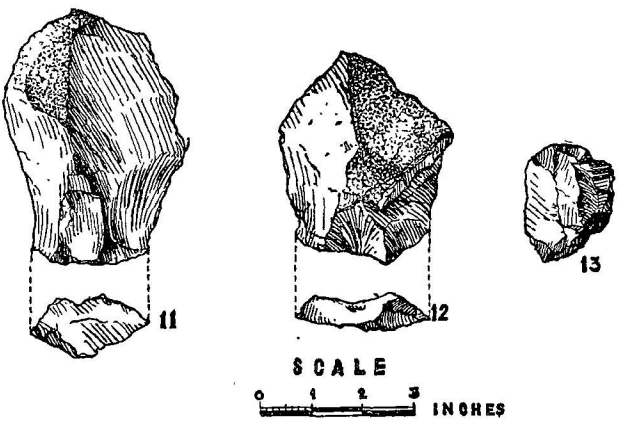
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Fig. 2

Colour—Reddish brown. Preservation—Fairly fresh.

Primary flaking : Biface, massive and spindle-shaped. Both faces highly convex and covered throughout with large, deep and crude primary flake scars. Upper face shows a ridge running along the middle from end to end. Lateral margins are sharp, being widest apart at the middle and tending to converge towards the ends. Anterior or working end sharp and pointed, posterior end also pointed.

Secondary working : Absent.

Type : Hand axe on core (Abbevillian type).

Fig. 3

Colour. Reddish brown. Preservation—Fairly fresh.

Primary flaking : Biface, massive and roughly pearifrom. Upper face highly convex and covered almost throughout with a number of large, deep and crude primary flake scars ; large part of posterior half retaining pebbly cortex. Lower face also convex and showing similar workmanship, the flaking throughout being large, crude and in 3 to 4 directions only. Lateral margins sharp ; posterior end heavy, but having a sharp and convex line of butt ; anterior end sharp and jagged.

Secondary working : Absent.

Type : Hand axe on core (Abbevillian type).

Fig. 4

Colour—Reddish brown. Preservation—Fairly fresh.

Primary flaking : Biface. Both faces convex, showing almost throughout a number of large, crude flake scars, fairly large portion of upper face retains original pebbly cortex. Lateral margins sharp, tending to converge towards anterior end which is sharp and pointed. Butt end flat and partly cortexed.

Secondary working : Absent.

Type : Hand axe on core (Abbevillian type).

Fig. 5

Colour—Reddish Brown ; Preservation—Fairy fresh.

Primary flaking : Discoidal biface, comparatively small. Both faces convex, showing a number of crude primary flake scars throughout. One or two stepped flakings on the sides. Lateral margins sharp and convex. Anterior and posterior ends both sharp and convex.

Secondary working : Absent.

Type : Hand axe on core. (Abbevillian type).

Fig. 6

Colour—Reddish brown. Preservation—Heavily rolled.

Primary flaking : Biface, comparatively small, sub-triangular form. Both faces convex, showing a number of primary flake scars throughout. Lateral margins more or less sharp, tending to converge towards anterior end which is short and straight. Posterior end more or less straight.

Secondary working : Absent.

Type : Hand axe on core (Abbevillian type).

Fig. 7

Colour—Reddish brown. Preservation—Fairly fresh.

Primary flaking : Biface, amygdaloidial form. Both faces convex and covered throughout with a number of primary flakings. Flaking finer, smaller, less deep and multi-directional, giving the implement a symmetrical form. Lateral margins sharp, converging to the anterior end which is pointed. Posterior end somewhat heavy, but having a distinct line of butt.

Secondary working : A few, along the margins.

Type : Hand-axe on core (Early Acheulean type).

Fig. 8

Material—Quartz.

Colour—Light reddish brown. Preservation—Fairly fresh.

Primary flaking : Ovate biface, fairly flat and symmetrical. Both faces covered with a number of primary flake scars. Lateral margins sharp, tending to converge towards anterior end which is also sharp and convex. Posterior end shows sharp, convex line of butt.

Secondary working : Not traceable.

Type : Hand axe on core (Early Acheulean type).

Fig. 9

Colour—Reddish brown. Preservation—Fairly fresh.

Primary flaking : Unifacial implement, amygdaloidal form. Upper face shows throughout a number of primary flake scars. Lower face is unworked, being a main flake surface. Striking platform not present. Lateral margins sharp, tending to converge to the anterior end which is pointed. Posterior end shows convex line of butt.

Secondary working : Absent.

Type : Hand-axe on flake (Early Acheulean type).

Fig. 10

Colour—Reddish brown. Preservation—Fairly fresh.

Primary flaking : Bifacial implement. Both faces show throughout a number of large primary flake scars. Two large bevelled flake scars, on the anterior portion, one on each face, meet to form a sharp, transverse cutting edge. Posterior portion V-shaped, the butt end being almost pointed. Cross section parallelogramoid.

Secondary working : Absent.

Type : Cleaver on core.

Fig. 11

Colour—Reddish brown. Preservation—Fairly fresh.

Primary flaking : Unifacial specimen, rather large. Upper face shows a few large primary flake scars, a portion of the anterior left hand side being cortexed. Lower face is a main flake surface. In the posterior, there is a high angle (114°) unfacetted striking platform, below which is a bulbar scar.

Secondary working : Absent.

Type : Large flake (Clactonian type).

Fig. 12

Colour—Reddish brown. Preservation—Fairly fresh.

Primary flaking : Unifacial specimen. Upper face shows a few large flake scars, only a small portion round the centre being cortexed. Lower face is unworked, being a main flake surface. Posterior portion shows a low-angled (98°), unifacetted (bifacetted ?) striking platform. Lateral margins meet sharply at a point at anterior end.

Secondary working : Absent.

Type : Point on flake (Proto-Levalloisean type).

Fig. 13.

Colour—Reddish brown. Preservation—Fairly fresh.

Primary Flaking : Unifacial specimen. Upper face irregular showing a number of primary flake scars, part of the anterior left hand side is cortexed. Lower face unworked, being a main flake surface ; the posterior left hand corner shows a high angled (128°) unfacetted striking platform.

Secondary working : Absent.

Type : Flake (Clactonian type).

A DEMOGRAPHIC STUDY OF SOUTHEAST ASIA

By TULIKA SEN

Lucknow.

Introduction

THE increase in population in Asia for the last few hundred years has thrown a challenge to social scientists of all categories. Economists and eugenists have been trying to help government in order to check further increase of population, but the difficulties they face are many. The first and foremost problem is the poverty of the people. Poverty makes them unable to buy the articles necessary for preventing the birth of unwanted children. Ignorance of the biological aspects of reproduction presents another problem, but this is far less severe than the former.

To have a good knowledge of the factors involving the growth of population in this part of the world, thorough investigation is essential. Unfortunately, the hospital data available so far are mostly incomplete. Census reports are good sources of information. But unfortunately Indo-China does not have any census adequate enough, and no census has been taken in Burma since 1931. The report of the 1947 census of Malaya does not give the kind of information in which a student of population is interested. A few small articles on the reproductive life of Siam and Indo-China have however been published which offer some help.

India and Pakistan

Of all Asiatic countries, the growth in the population of India and Pakistan is the most alarming. This growth, studied by Kingsley Davis, shows the following trend for the last few decades.[1]

	Percentage of increase
1881	0·9%
1891	9·4%

[1] David, Kingsley, 1951, *The Population of India and Pakistan*, p. 28.

	Percentage of increase
1901	1·0%
1911	6·1%
1921	0·9%
1931	10.6%
1941	15·0%

Smaller figures for 1881, 1901 and 1921 are due to famines and an influenza epidemic respectively. During the other decades the population shows normal growth. Although the rate of growth in 1931 and 1941 seems fast enough, other countries in the world had also comparable growths in their population during these decades.

The factors influencing this rapid growth have been determined by Kingsley Davis as high fertility, low mortality and migration.[2] However, according to him, 'Migration has not been numerically important as a factor affecting growth in India.....' After the last great epidemic of 1918, the mortality rate in India has been declining since 1920. The number of deaths per 1,000 in 1921-30 was 31, 1931-40, 23, and 1941-48, 22·5.[3] These figures were obtained from registered deaths, but many deaths pass unnoticed by the registration office. Still, the figures show a perceptible decline in death rate. The infant mortality rate also shows this trend ; but the rate is less than the general mortality. The general mortality shows a decrease of 27·6% from 1936 to 1940, while the infant mortality shows only a decrease of 19·6%.[4] This fall in the general and infant mortality is due to better medical aid in recent years. As the years go by, more care is taken of expectant mothers and new-born babies. Day by day the general public in towns are also getting more hospital-minded.

[2] *ibid.*, p. 29.
[3] *ibid.*, p. 34.
[4] *ibid.*, p. 35.

The birth rate of India from 1891 to 1941 shows the following figures :[5]

1891-1901—34
1901-1911—37
1911-1921—37
1921-1931—33
1931-1941—34

From the above figures one can see that the fertility does not seem to have changed at all in the last few decades. The main cause underlying this is under-enumeration of children below 10 in recent years.[6] Other studies in this field also throw some light on the problem of fertility. These studies are in an abstract form rather than in a comparative account, such as we find in Kingsley Davis's book. Nevertheless, these studies are worth taking into account when one considers fertility.

The census report of India for 1931, gives some figures from which one finds that the average number of children born alive to a mother is 4, out of whom 70% survive.[7] The size of the family in different occupational groups does not vary significantly. There is a considerable amount of difference in the number of children per family when the different age groups of women at marriage are taken into account. Figures show that the group of women married within twelve years of age has the highest proportion of average number of surviving children to the average number of children born alive.[8] Women married at 15-19 years of age show maximum number of children born alive. This number goes down in both younger and older age groups. A study of the reproductive life of Indian women by the writer gives a much higher figure for the average number of children per mother in the upper castes.[9] For 94 mothers the total number of children is 733, giving an average of 7·8 children per mother. This is an extremely

[5] *ibid.*, p. 69.

[6] *ibid.*, p. 69.

[7] *Census of India*, vol. 1, part 1, p. 210.

[8] *ibid.*, p. 206.

[9] Sen, Tulika, 'Reproductive Life of Indian Women,' *Man in India*, 33, 1, 1953, p. 46.

high figure. These mothers were married before puberty and were living with their husbands until the end of their reproductive life, that is, 45 years of age. Thus they had almost the full advantage of the reproductive years and also, being of an older generation, they were not familiar with the modern methods of birth control. This figure of 7·8 really proves the high fertility rate of the Indian woman. The net reproductive index for these mothers was 3·32.[10] For any steady population, the net reproductive index is near 1 ; so the figure here apparently indicates a high possible rise of population in the succeeding generation.

Apart from the three major factors for population growth with which Kingsley Davis is concerned, there are some other factors which indirectly influence the population of a country. Sex ratio can be taken as one of them. A preponderance of males over females in any society brings a decline in its population. India shows a steady fall in the proportion of females to males since 1901.[11] Every province shows the figures of fewer number of females born than males. Neglect of female babies and abortion, if the fetus is foretold to be a female, are two reasons given by Hutton for this fall in female population.[12] According to Heape,[13] inbreeding increases masculinity. But not only Hindu but also other religious groups of India like the Jain, Christian, Sikh, Parsi and Muslim, show a greater number of males than females. This preponderance of males is not related to any change in the population of India, since the proportion of male to female in the reproductive ages (20-50 years of age for males and 15-40 years females) shows a larger number of females than males in all the provinces.[14] The number of females of ages between 15 and 30 is adequate for the number of males. This sex ratio goes down in later age groups of 30 to 60 years ; the reason is probably that more females die in giving birth to babies at this

[10] *ibid.*

[11] *Census*, op. cit., p. 195.

[12] *ibid.*, p. 95.

[13] *ibid.*, p. 196.

[14] *ibid.*, p. 200.

age. The census reports of 1921 and 1931 show a higher death rate in this age age group than in others.[15]

The span of the reproductive life of women is another factor which affects the change in a population. Very little published material in this field for the Asian countries is available. The reproductive life of women is supposed to start with the onset of the first menstruation (technically termed menarche) and ends with or before menopause. From the study of the reproductive life of Indian women, mentioned above, the average menarcheal age of 781 Indian girls studied is 12·78 years,[16] and the age at menopause of 131 women is 47·50 years.[17] These two means give the span of the reproductive life of those women as (47·50—12·78 years) 34·72 years. But the sterile intervals at the beginning and within this period make the span shorter. The average adolescent sterility or the menarche-conception interval of those women who were married before their menarche is 29·30 months[18] or 2·44 years and the average sterile interval of the women before their menopause is 12·41 years.[19] These two sterile periods, 12·41 years and 2·44 years, add up to 14·85 years and when deducted from 34·72 years, it gives the average potential productive years for these women as 19·87 years. This span of productive life of Indian women is almost in accordance with that of women in Western countries. The difference lies in the fact that Indian women make full use of this time by giving birth to an average of 7·8 children.

Ceylon

Antonio Scarpa's article on Ceylonese women[20] gives a precise idea of their reproductive life. His study is, as the name of article indicates, on Indian (Tamil) women who have migrated to Ceylon and Ceylonese women. This study will be helpful

[15] *ibid.*, p. 202.

[16] Sen, op. cit., p. 36.

[17] *ibid.*, p. 50.

[18] *ibid.*, p. 38.

[19] *ibid.*, p. 49.

[20] Scarpa, Antonio, 'Observation of the Sexual Cycle of the Sinhalese and Tamil Women of the Island of Ceylon,' *Medical Digest*, 22, 3, 1954,

for the comparative analysis of Indian women with women who have migrated from India to the other country.

The average menarcheal age of the 451 Sinhalese women as observed by Scarpa is 13 years 4 months,[21] with individual variations from 10 to 20 years, and highest percentage of 30% lying in the 13 year age group. Another set of data was obtained from the towns of Colombo and Candy, to see whether there was any influence of climate and mode of life in towns on the menarcheal age. The average menarcheal age of a Colombo group of 149 individuals is 13 years 6 months,[22] that is, two months later than that of rural women. A group of 149 Candy women showed the average menarcheal age of 13 years 4 months, which is the same as for the general Sinhalese women. It may be recalled that the difference between the menarcheal ages of rural and urban women of Bengal is much more than is found in Ceylon. The Bagdi population of rural Bengal[23] shows an average menarcheal age of 13·25 years, whereas the urban (upper caste) women give the mean age of 12·80 years, and the difference has been found to be highly significant statistically.[24]

The Tamil women of Ceylon show the average menarcheal age as 13 years ; the highest percentage lying in the 12 year age group. Tamil women from Colombo and Candy show the figures as 13 years and 13 years 2 months respectively. Colombo women show later maturity than rural Sinhalese women, whereas Tamil women in Ceylon show the trend of having earlier maturity for urban than for rural women. The latter trend is in accordance with studies in the Western world. The menarcheal age of these Tamil women is not much different from that of Indian women.

The age of 107 Sinhalese women when they entered menopause is 47 years on the average,[25] and the average for 48 Tamil women is 44 years 6 months. The calculated span of

[21] *ibid.*, p. 121.
[22] *ibid.*, p. 122.
[23] Sen. op. cit., p. 35.
[24] *ibid.*, p. 37.
[25] Scarpa, op. cit, p. 123.

reproductive life of the Sinhalese women thus comes to 33 years 8 months. As the sterile intervals at adolescence, in between the births and prior to menopause are not dealt with in this article, the potential productive years of these women cannot be found out. The Tamil women have a span of reproductive life of 31 years 6 months, that is about 2 years 2 months less than in the case of Sinhalese women.

The author[26] mentions that the duration of the period of sexual activity (that is, reproductive life) of the Italian women is 35 to 76 years. Even the minimum value (35 years) is higher than that of Sinhalese and Tamil women. Therefore the author concludes that these women 'cannot have a great influence on the high birth rate of the country.'

Burma

The population of Burma consists of a considerable number of immigrants as well as indigenous people. The change in the general population will include the changes in birth rate and in the number of immigrants. Bennison, author of the census report of Burma, suggests that the data on Buddhists will be true for the real Burmese, because it is not much affected by migration.[27]

The census report of 1931 shows the following variations in the population of Burma.[28]

	Percentage of increase in population
1901	16·0%
1911	12·8%
1921	8 6%
1931	11·0%
1891-1931	57·8%

When Shan States, Chin Hill districts and portions of Upper Burma districts are included in the general population, the increase in population from 1901 to 1931 is 33·7%. The increase in Hindu and Muslim population is not a normal one,

[26] *ibid.*, p. 123.

[27] Bennison, J. J., *Census of India 1931, Burma.* Part 1, p. 12.

[28] *ibid.*, p. 11.

because it is influenced by both migration and general increase in birth rate.

The increase in Buddhist population of Burma, as shown in the above figures, may be due to two major factors : decrease in death rate and increase in birth rate. The following table shows the comparison between average annual birth and death rates :[29]

	Birth rate		Difference	Death rate		Difference
	1911-20	1921-30		1911-20	1921-30	
Natural division	33·66	27·57	6·09	27·6	20·95	6·74

The above figure for birth rate in 1921-30 is not a reliable one ; it is supposed to be much smaller than the true birth rate, because the birth registration was more unsatisfactory in this decade than in the former one.[30] The death rate shows a decrease of 6·74 in the later decade, but unless there is considerable amount of increase in birth rate, this decrease in the death rate alone would not have been sufficient to account for the observed increase of 33·7% of the population.

The urban population (Buddhist) shows a remarkable change. From 1901 onwards, more people are going over to the villages from the towns. From 1901 to 1911 the decrease in urban population is 6% ; 1911 to 1921, 1·9% ; 1921-1931, 1%.[31] This movement from town to village is due to availablility of more cultivable land and immigration of alien races who are replacing them in the jobs in towns.

The Burmese show a larger number of females than males in their population, which is just the opposite of what is found in India and China. The latter two peoples show a preponderance of males over females in both their own countries as well as in Burma.[32] There are 1,046 women per thousand men amongst the Burmese in the 1931 census ; 1921 census also shows the same figure. This high ratio of women is a special quality of the Burmese. Kuki-Chins, Kachins, Saks and Karens

[29] *ibid.*, p. 17.
[30] *ibid.*, p. 17.
[31] *ibid.*, p. 46.
[32] *Ibid.*, p. 90.

show higher numbers for females ; Tais, Mons, Malaung-Was show lower ratios for females.

Two-thirds of Burmese women marry before they are 20 ; 90% of them are married before 25.[33] The average number of children per family is 3·74.[34] Of the average number of living children born alive, when correlated with the mothers' age, married under 13 years of age, show the maximum number of 4·00. The figure seems to be an absurd one ; it is more than the average for the whole population ! This figure goes down when the average number of surviving children is taken into account ; the figure for this item of below 13 year old mothers shows 1·75 which is much less than in any other group. The maximum number of surviving children per mother on the average is found for the mothers married between 15 and 19 years of age.[35] The same is true of Indian women.

Siam

The first attempt to take regular census in the whole country of Siam was from 1909 to 1910. This was revised in 1910 to 1911. The total population of Siam in 1910 was 8,149,487 of whom 4,101,637 were male and 4,047,850 female. In the 1911 census the figures increased to 8,266,408 for the total population, of whom 4,122,168 were male and 4,144,240 female. The rate of increase from 1910 to 1911 was 11 per thousand.[36] Later census reports show further increase of 21·90 per thousand per annum between 1919 and 1929. Both 1918 19 and 1929-30 census reports give a larger number of females than males ; increase in the male population in the later census from the former one was 28·25% and in females the increase was 25·86%, giving a total increase of 27·03%.[37]

The year book does not provide any other information about birth and death rate[38] or fertility, etc. Zimmerman's study

[33] *ibid.*, p, 94.

[34] *ibid.*, p. 93.

[35] *ibid.*, p. 94.

[36] *Statistical Year Book of the Kingdom of Siam (1931-33)*, No. 17, p. 58.

[37] *ibid.*, p. 5.

[38] Zimmerman, Carle C. and Vaidhyakare, Phra Chedt, *A Demographic Study of Eight Oriental Villages yet largely untouched by Western Culture*, 1932.

of eight Siamese villages gives some idea of the reproductive life of the people. This study can be taken as a representative sample of the whole population. Zimmerman's study is based on 800 families in the villages of eastern Siam. The data were collected from present and past generations. He finds that there 'is a greater net fertility (net living descendants) for these heads of households when compared with their parents at the same age in life'.[39] On the average, there is an increase from 3·52 children per family in older generation to 3·96 in the later generation. Out of eight, three villages showed greater number of children for the past generation than the present one; this is due to the epidemic diseases within the last ten or twelve years.

The average size of households in different economic classes shows the figures of 6·73 for wealthy, 5·96 for middle class and 4·96 for the poor.[40] Average gross fertility for the above three classes is 6·16, 5·54 and 5·77 respectively. Net fertility is calculated from the number of children living in 1931 and the figures 4·95, 4·25 and 4·07 for the wealthy, middle class and the poorer class respectively.[41] From the above figures it is apparent that the fertility is reduced as one proceeds from richer to poorer class. The infant mortality is higher in the poorer classes than among the rich. The death rate has gone down according to the author, but the figures are not provided. It is mentioned that there is no major improvement in checking epidemic diseases like tuberculosis, cholera, malaria, etc., but the small-scale attempt to treat the people through the headman might have resulted in lowering the death rates.[42]

Zelisky's study shows the birth rate in Siam in 1937-38 to be 34·9; in the city of Saigon it was 58·08 for 1931, while the death rate in the same city was 45·03. From these figures it is apparent that though the death rate is high, the birth

[39] *ibid.*, p. 14.
[40] *ibid.*, p. 19.
[41] *ibid.*, p. 20.
[42] *ibid.*, p. 15.

rate is still higher ; so one could expect an increase in population in the future.

Indo-China

Indo China is one of the most fertile populations of the world, according to Zelisky.[44] The annual increase in population in 1930's was 1·42.[45] Zelisky says that unless the birth rate of Indo-China declines, there will be 'cessation of the export of rice and other foodstuffs, a prospect of more concern to the rest of the Monsoon Asia than the likely erection of immigration barriers'[46] Indo-China had 9·2% of the population of Monsoon Asia in 1939-40. There is no significant change in birth rate except in the areas where there is European influence. A study on the physiology of the Indo-Chinese women by Huard gives some valuable data.[47] His study includes both Indo-Chinese women and women of French and Indo-Chinese origin. The average menarcheal age of the Tonkinese girls is 13 years 6 months and for mestisses (of French father and Indo-Chinese mother) 13 years 3 months. For the rural girls the age is 16 years 3 months and for the girls of both towns and villages combined, the mean menarcheal age is 14 years 10 months.

Annamite girls are married between 18 and 28 years of age. They have their first baby at the age of 20 years 8 months. Women of 44 years of age (passed menopause) have 5 77 children on the average. 4% of the families have more than 10 children, 25% more than 6 children. Over 65% have their first child 4 years after menarche.[48] On the average there are 3·66 children per mother. Birth rate in Saigon-Cholon is 41-42 per thousand and in Hanoi it is 35-37 per thousand.

Infant mortality is very high. Out of 3·9 pregnancies, 2 children survive. Infant mortality in Hanoi is 37%, out of

[44] Zelisky. Wilbur, 'The Indo-Chinese Peninsula : A Demographic Anomaly,' *Far Eastern Quarterly*, vol. 9, 1948-50, p. 134.

[45] *ibid.*, p. 136.

[46] *ibid.*, p. 124.

[47] *ibid.*, p. 124.

[48] *ibid.*, pp. 206-207.

[49] *ibid.*, p. 221.

which 6% die within 181 months; for Saigon the figure is 23·5% of which 5·2% die within the 181 months of birth.[49]

Sex ratio at birth is 118 male : 100 female. Menopause is late for Annamite women, 65% of them have it between 43 to 50 years of age, the maximum number having it at 44 and 45 years of age.[50] Thus the reproductive life of these women (44 years 6 months—14 years 10 months) is 29 years 8 months. The author has mentioned that they get their first child 4 years after menarche, which proves that they have about 4 years 10 months to 3 years 2 months as their sterile interval at adolescence.

Malaya

The census report of Malaya for 1947 shows the increase in population for the last few decades in the following manner: 1911-21, 25·8%; 1921-31, 30·6%; and 1931-41, 34·5%. This irregular increase for the successive years is partly due to assimilated immigrants. It has not been indicated how much of the increase in population was due to immigrants and how much due to increase in birth rate. Even when the fertility of mothers is dealt with, it does not show whether there is any change from the older to younger women. However, the figure for the average number of children per mother (Malayan) shows that they are more fertile than Chinese or Indian mothers. The average number of children born alive to Malayan mothers of 45 years of age or over is 4·30, to Chinese mothers (living in Malaya) 3·10, to Indian mothers living in Malaya 3·85 and to Eurasians 4·13. For the age group (mothers) of 15 years and over, Malayan 2·89; Chinese 2·40; Indian 2·61 and Eurasian 2·18.[51] The Eurasian mothers show a smaller number of children in the early age group and a greater number in the higher age group; the reason behind this is most probably that they are married later than other oriental woman. The low rate in Chinese women, as shown by these figures, is due to greater proportion of un-

[49] *ibid.*, p. 222.
[50] *ibid.*, p. 225.
[51] *ibid.*, p. 64.

married girls among them, as suggested by the author.[52] The proportion of Malayan mothers who have borne one to nine children shows an overall higher frequency than Chinese, Indian or Eurasian mothers.[53] Malayan mothers fall short in frequency for the group who have produced 3 children and the group who have produced 10 children or more. In both these groups, Eurasians show amazingly high frequencies. Indian mothers also show higher porportion than Malayan mothers.

In sex ratio the Malayans show a larger number of women than men,[54] while the Chinese, Indian and Eurasian have a preponderence of males over females.

Conclusion

The paucity of data stands in the way of any comparative analysis of the population position in the countries of Monsoon Asia. All of these countries show one common feature, namely, that the population is increasing rapidly.

The preponderance of females over males is noteworthy in all of these countries except India, Pakistan and Ceylon. In a population where the number of females is higher than that of males, there is always a possibility of an increase in the future, even if the birth rate does not increase or the death rate does not decrease.

The number of children per mother over 44 years of age appears to be highest in Bengal, 7·8. Next in order comes the Annamite with 5·77, the Siamese with 4·43 (average of 4·95, 4·25 and 4·07), the Malayans with 4·30, and the last position in this series is taken by the Burmese with 3·74. The very high figure for the Bengalis most probably is due to the fact that they were married very young (before menarche) and had the full advantage of their reproductive years.* The situation for the mothers of other countries is not clear. The net reproductive index of Indian women could not be compared to that of

*The smallness of the sample may also be an accidental reason. —Editor.

[52] *ibid.*, p. 68.

[53] *ibid.*, p. 69.

[54] *ibid.*, p. 58.

others, because for most of them it is not known. It is only for Siamese women that we get a figure for the net fertility index

The span of reproductive life of the Indian women also shows the maximum number of years (34·72 years) followed by the Sinhalese (33 years 8 months). From the rest of the countries, only the figures for the Annamite women is available (26 years 6 months). Indian and Sinhalese women do not show much difference in this respect. Hutton, in his concluding remarks on the fertility of the Indian women, says[55] that to the average Indian women 4 children are born alive of whom 2·8 or 70% survive ; so that according to him, 'raising the age of marriage for women will not reduce the number of children but will increase the proportion of those that survive.' This statement can be argued on the fact that the women who were married before menarche of both upper and lower castes of Bengal[56] had their first child at the age of about sixteen and a half years, while women who were married later (after menarche), the Bengali upper castes (B) and the Nayars of Travancore show the age of about 19 years and 21 years respectively. Therefore the latter mothers are falling short of at least one child which could have been born in these three or four years (19 – 16 = 3 yrs.) if they were married earlier. Under the Hindu Code Bill which the Government of India are trying to pass, the marriageable age for girls would be raised to 18 years. From the above study it can be expected that the girls will have fewer children than their mothers, if they have to marry later when the Bill is enforced, even if they do not use methods of birth control.

For the other countries, the studies are not sufficient to give us any idea of the future change in the population growth. Burma and Siam are not overpopulated as are India or Indo-China. Any further increase in the population of the former countries does not seem to be very harmful for them for some decades to come. Writing about Indo-China, Zelisky says, 'There is no sign that Indochina is approching a condition of demographic stability and it is altogether possible that within a few generations the problem of population pressure in Indochina will be as vexing as it is today in Japan, China, Tonkin, India, and Java.'[57]

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[55] Hutton, *Census of India*, op. cit., p. 210.

[56] Sen, op. cit., pp. 42, 43.

[57] Zelisky, op. cit., p. 145.

FEMALE INFANTICIDE AMONG THE BEDEES AND THE CHOUHANS: MOTIVES AND MODES

By M. N. Das

University of London.

THE following report on female infanticide, its motives and methods, is based upon the observations of British administrators in the middle of the 19th century in north-western India. Female infanticide is said to have prevailed throughout the Punjab among a branch of the Sikhs known as the Bedees, and they were 'known as the *Koree mar* or daughter slayers' for the practice of the crime.[1] According to tradition the custom began at the time of the grandson of Guru Nanak, and 'the race of Bedees continued for three hundred years to murder their infant daughters'[2] till its extinction was resolved upon. Guru Govind strongly condemned the Bedees as the 'slaves of a perverse custom, who impiously take the lives of of their infant daughters', and had even gone to the extent of forbidding all intercourse with them.[3] But the custom still continued. Among the Rajputs, and more especially the Chouhans who were notorious for it, the custom was said to have been 'one of immemorial antiquity.'[4]

The motives behind the crime were varied. Among the Chouhans of Mynpoory, the district magistrate of that place, Charles Raikes, discovered three principal causes. The Chouhans were afraid of the large sums which they considered necessary to spend on the marriage of a daughter; their 'ignorant pride' which made a Chouhan rebel 'against the notion of being father-in-law or brother-in-law to any one'; and the superstition which led them to consider it 'unlucky

[1] Board's Collections, 1853-4, Vol. 2564, Coll. no. 151171; Melvill to Grant, 8 July 1853.

[2] *ibid.* Letter from Edwardes, 30 June 1852.

[3] Vide *Lahore Chronicle*, 15 November 1854.

[4] *Friend of India*, 27 October, 1853.

to keep any daughter alive.'[5] The last of the three causes was the most deep-rooted. As late as in the forties of the 19th century, the Rajah of Mynpoory, 'himself a Chouhan of illustrious birth, tracing his descent from Pirthee Raj', preserved his infant granddaughter, 'probably the only female child which has been born and continued to live within the Chouhan fortress since its erection.' But prior to the Rajah's death the child's father died, and soon after the old Rajah himself. This led the Chouhan community to believe that the death of both was due to the preservation of the daughter.[6]

Among the Rajputs of the Punjab and Kangra, the crime was discovered to have arisen 'from combined motives of pride and poverty'. They believed that their daughters should marry only their equals or their superiors. Major Edwardes who carried out enquiries in the subject in the Punjab reported to Mr. Montgomery, the Judicial Commissioner, upon which the latter said, 'It follows then that as we ascend the scale of society ..we must eventually reach those who stand on the highest round of the ladder and admit no superior ; these classes find themselves in an awkward dilemma,—either they must bring up their daughters unmarried, or they must provide husbands for them and thereby confess that they are not the high and exclusive race to which they lay claim ; either alternative is attended with disgrace, and there is but one remedy, viz., to destroy their female infants: and hence we see the farce of conventional rules.'[7] Mr. E. C. Bayley discovered among the Rajputs of Kangra that 'the crime of female infanticide has been largely practised by this tribe owing to the difficulty of providing for their daughters... '.[8] It was said that Rajput fathers were required to 'give a dower

[5] *ibid* ; Letter from Raikes, 31 May 1848.

[6] Vide 'Moffussilite' quoted in Allen's *Indian Mail*, 18 October 1851,

[7] Board's Collections, 1853-4, Vol. 2564, Coll. no. 151171 ; Report of Montgomery, 16 June 1853.

[8] Board's Collections, 1853-4, Vol. 2549, Coll. no. 148980 ; vide letter from MacLeod, 2 May 1853.

more than proportioned to their means' and their 'insane pride' forbade them 'to diminish its amount.'[9]

In Rajputana, to add to the above causes, there was yet another. There 'the primary cause of the prevalence of the crime' was supposed to be 'the determination of the chiefs not to allow their daughters to remain unmarried beyond the age of ten', and 'the knowledge of this feeling' induced the fathers of the boys to demand heavy bribes for their consent.'[10]

On the highlands of the Jumna in Etawah, the motive was observed to be the same. The curse of caste rendered it indispensable for one of high descent to betroth his daughter to an inferior, while the poverty of the race denied the power of making ceremonial gifts, 'indispensable in their opinion, when the daughter was proposed to one of equal rank.'[11] Thus the pecuniary motive supported by vague pride led the Rajput fathers to destroy their daughters. A comment of Major Edwardes may be appropriately applied to all cases among the Rajputs that 'either the fathers' fortunes or daughters' lives must too often be sacrificed. The choice lying with the fathers they chose infanticide in preference to beggary or wounded vanity.'[12]

Added to all this, 'the principle of consanguinity' was 'pushed to the wildest extreme'. It was said that almost every Rajput was the relative of every other ; all who were descended from one common ancestor considered themselves blood relations after the lapse of centuries and down to the last degree, marriage was forbidden.[13]

Among the Bedees, the crime was motivated not by poverty. Their class as a whole was wealthy. The 'practice was first enjoined upon their tribe by Dhurm Chand Bedee, grandson of Baba Nanak.' It arose out of a momentary wrath of that spiritual leader, and consequently took a religious colour and

[9] *Friend of India*, 27 October 1853.

[10] Vide Benares Recorder quoted in Allen's *Indian Mail*, 16 April 1853.

[11] Vide 'Moffussilite' quoted in Allen's *Indian Mail*, 18 October 1851.

[12] Board's Collections, 1853-4, Vol. 2564, Coll. no. 151171 ; Report of Edwardes, 30 June 1852.

[13] *Friend of India*, 27 October 1853.

continued into posterity as a social custom mixed with religious pride. About its origin the story runs thus. Dhurm Chand 'had two sons named Mihr Chand and Nanuk Chand, and one girl, who, at the proper age, was espoused to the son of a Khuttree, as was then the custom of the Bedees. When the Bridegroom's procession reached the house of Dhurm Chand, the door was found too narrow to admit the litter on which the boy was carried ; and the riotous attendants, with more than the usual license of the occasion, proceeded to widen it by force. The incensed Bedee prayed, "that the threshold of the Khuttree tribe might, in like manner, come to ruin" ; and the nuptial rites were celebrated amidst mutual ill-feeling. When the Bridegroom and his party were departing, the two sons of Dhurm Chand, as in duty bound, accompanied them to give them "Rooksut". The weather was hot ; the party out of temper, and they took a malicious pleasure in taking the young Bedees further than etiquette required. When the lads returned home footsore, Dhurm Chand asked, "If the Khuttrees had not bid them turn back sooner ?" The boys said "No" ; and it was then that the old man, indignant at all the insults which the bridal of his daughter had drawn down upon him from an inferior class, laid the inhuman injunction on his descendants, that "in future no Bedee should let a daughter live". The boys were horror-stricken at so unnatural a law, and with clasped hands represented to their father, that to take the life of a child was one of the greatest sins in the Shastras. But Dhurm Chand replied, "that if the Bedees remained true to their faith, and abstained from lies and strong drink, providence would reward them with none but male children. But at any rate, let the burden of the crime be upon his neck, and no one else's", and from that time forth Dhurm Chand's head fell forward upon his chest, and he evermore walked like one who bore an awful weight upon his shoulders.'[14]

It was in 1846, shortly after the acquisition of the Trans-Sutlej territory by the British that the attention of John

[14] Board's Collection, 1853-4, Vol. 2564, Coll. no. 151171 : Letter from Edwardes, 30 June 1852.

Lawrence, then the administrator of the annexed province, was attracted towards the subject. He tried 'to enlist the powerful influence of Bedee Bikram Sing, the recognised head of the race, in the movement against female infanticide.' But Bikram Sing 'did not consent to use his influence to put it down.'[15] It was only one Bedee of note and eminence', Baba Sumpoorun Sing, who was 'a lineal descendant of the founder of the sect, Baba Nanak', and cousin to the above Bedee Bikram Sing, came under the new influence and allowed a female child to live in his family. It was said that 'he preserved the child at the representation of Lord Hardinge' when the latter was in the Punjab in 1846.[16]

The Bedees practised the crime with so much zeal that anybody among them keeping a daughter was excommunicated. One of them, Punjab Sing of Mukundpore, declared that 'the Grunth contained no authority for the custom', and preserved two of his own daughters. 'For this he was excommunicated by Baba Bikram Sing, the head of the Bedees, and all but his own family treated him as a sweeper throwing to him from a distance money or anything else they had occasion to give him.'[17]

The modes of destroying infant lives were many. At many places 'the child was destroyed immediately after birth by filling the mouth with cowdung or by immersing the head in cow's milk or by drawing the umbilical cord over the face.' All these means were 'calculated to prevent respiration and cause immediate death.' In the Gujerat district the practice was to bury the infant alive. The body was placed 'in an earthen pot the top of which is covered with a thick paste of dough.' Frequently a small pill of opium was administered, which caused death within a few hours. In the Kangra district, 'the juice of the Madar plant (Asclepias gigantea)' was administered or death was brought about 'by causing injury to the navel.'[18]

[15] *ibid.* ; Vide Melvill to Grant, 8 July 1853.

[16] *ibid.* ; Minute of Montgomery, 16 June 1853.

[17] *ibid.* ; Letter from Edwardes, 30 June 1852.

[18] *ibid.* ; Vide Report of R, Montgomery, 16 June 1853.

Among the Bedees, the mode was no less cruel. Major Edwardes who tried to ascertain from the Bedees personally about it, gives an instance of what happened to Bedee daughters in the following terms. When 'a Bedee mother was delivered of a child, the nurse communicated to the family outside the "Purdah" whether it was a boy or girl. If a son, great were the congratulations, but if daughter, the mother turned her face to wall well knowing the sentence that awaited her offspring, and silence of disappointment was soon broken by the elder matrons of the family commanding the nurse to put the child to death. Various were the ways in which this order was executed. Sometimes the nurse stopped the infant's breath with her hand but oftener the object was effected by neglect; by exposing the babe in winter on the cold floor, and in summer by aggravating heat...'[19] One of his informants told Edwardes, 'You see sir, they are but poor little things and a puff of wind puts them out.'[20]

It is a remarkable to note that the custom, though prevalent for many centuries among the Rajputs and at least for three centuries among the Bedees, came almost to a sudden end once the unnatural motives behind it were exposed. When meetings were arranged throughout the Punjab and in many parts of the then North-West Provinces[21] during the fifties of the 19th century to adopt measures for its extinction, people everywhere cooperated with the Government, and 'entered upon the work of self-legislation' to abolish the crime.

[19] *ibid* ; Letter from Edwardes, 30 June 1852.

[20] *ibid.*

[21] Present-day Uttar Pradesh.

THE ATTITUDE TOWARDS CONTRACEPTION

By DR. S. N. SANYAL, B. Sc., M. B.

Calcutta Bacteriological Institute.

IT should be difficult to find a responsible person who does not agree with the view that perfection of womanhood lies in motherhood. Every married woman craves for children and one who fails to have one, considers her life to be empty. Children not only brighten up the home but also support their parents in old age. This is true of every country, whether advanced or underdeveloped. On the other hand, no country and few parents want an unlimited number of babies to be born. The desire for limitation is universal. But the attitude towards contraception, favourable or unfavourable, in a particular place and in a particular time, depends largely upon the prevalent social and economic conditions. Infanticide has been prevalent in most backward countries and even in India due to economic and social reasons. That this method of population check was formerly widespread in India, can be surmised from the report of Professor Radha Kamal Mukherjee in his book, *Food for 400 Millions*. The increase in population growth was rather slow even in the beginning of the twentieth century. From the years 1914-15 to 1930-31, the mean population level was far below the level of food production. The death of infants at birth and also within five years of life, was appallingly high, especially in the villages of India. This might be one of the reasons why the mean population level was formerly low. The recently published sample survey report of Gopalswami also corroborates the fact that infant mortality is very high in India, especially in the villages.

During the last two decades it has been noticed that village people are migrating towards urban areas for their livelihood by abandoning their happy village homes for fear of starvation. They are crowding into cities in the hope of better opportunities of earning and for basic medical help in

such areas. In the villages, they do not get medical facilities even of the most rudimentary type. The result is that the population in the urban areas is swelling up rapidly. This has been emphasized in the census report of 1951. Again, with the progress of research, the accumulated experience of years, the advent of wonder drugs like sulpha drugs and antibiotics, and also with improved hospital facilities and arrangements of ante-natal and post-natal care, conditions are changing rapidly. The death rate is coming down step by step and the birth rate is soaring up.

Along with the change in social conditions, the attitude towards contraception is also changing. Only twenty years ago, the very idea of contraception was disgusting to the village woman with one or two surviving children out of ten pregnancies. The certainty of even these children was at best insecure. The hostile attitude on their part is understandable and even justified. Even today in the remote villages, which may be 20 to 40 miles away from the nearest railway station or any town, this state of affairs persists to a large extent. Women give birth to babies in cowsheds and shanties which, in the light of modern science, cannot be considered as anything but slaughter houses. Eclampsia is taken to be some unearthly manifestion of ghosts or demons or the like. The light of modern scientific knowledge has not penetrated into such distant dark areas. The population of these areas are quite deaf to any advice regarding contraception. But with the growth of rural projects and village development measures, and also in villages situated near urban centres and district towns, the attitude towards contraception is sure to change and is actually changing. With better medical and hospital facilities, with arrangements for ante-natal and post-natal advice and care, nowadays more children are surviving, infant mortality is on the decrease and consequently mothers are increasingly burdened with a number of children beyond their economic means to support.

That the attitude has already changed in villages near urban centres, has been our personal experience also. During a campaign of medical relief in some villages in the districts of

Howrah and Hooghly in West Bengal, it was noticed that village women, burdened with several children, voluntarily sought advice on how to prevent pregnancies. The actual mode of contraception has always been of prime importance in such cases.

During recent trials[5] with the oral contraceptive m-xylohydroquinone (the synthetic active principle of the common field pea), in the Baldeodas Maternity Hospital in Calcutta, we have gathered considerable knowledge about the attitude and motivation towards contraception. The trial was initiated by Dr. Clarence J. Gamble of Boston, U. S. A., in June 1953, among lower middle class citizens. The drug was at that time almost unknown ; still patients were not lacking. In the first month there were six patients only, but in nine months time when Dr. Gamble visited India again and calculated the results, the number of cases undergoing trial exceeded 200. When two years were completed in June 1955, the number rose to 750, and at the end of December 1955, when the trial was closed down, the registered number of patients was 950. The the attitude towards contraception and acceptability can be well understood from the above growth of figures. Most of the patients were so uneducated that they could not count, neither had the majority of them any previous knowledge about even the existence of contraceptive measures. Still they submitted to this trial with the new drug, just to keep down their pregnancies.

Another attitude was noticed in the initial stage. Patients were apprehensive of one particular ill effect, namely permanent sterility. They were suspicious in the beginning and asked numerous questions. They were also afraid of any disturbance in the menstrual cycle. The majority of patients, especially younger ones, were apprehensive of permanent sterility Only very few elderly patients, burdened with 12 to 16 children, sought advice for permanent sterility. Here, it will not be out of place to narrate one incident. One young patient, on her first visit, was made to swallow a capsule. As soon as she took it, she fainted on the floor to the great dismay of the health visitor. She was immediatley attended to, but a row was created

by the health visitor and others concerned about the toxicity of the new drug. This was however the first and last case of its nature. On enquiry it was discovered that the young patient was ignorant of its action and had been compelled by her husband to come to the hospital and take the medicine. She was afraid that she was being made permanently sterile. This brought about a psychological shock on account of which she fainted. But the very next month she reappeared and took the capsule. From that time onwards, she became a most regular user. She was young, only about 24, and already the mother of three children.

The patients were at first doubtful about the effectiveness of the drug, but after some time their doubts were dispelled when they realized that a large number of other patients had been using it with desired results. These patients, however poor and illiterate, did not lack basic good sense and judgment. They discussed matters amongst themselves and decided on the course of action. They were satisfied with the average measure of success and saw the small number of failures in its true perspective. The failure cases, after confinement, again enlisted themselves and started taking the medicine in the hope of better luck next time. In house to house visits, it was found that old mothers-in-law were rather hostile to its use through fear of loss of health. It was no more than a dread and suspicion of new ideas. The young wives made no secret of their eagerness that the health visitor should reach them in due time. They were no doubt afraid of any publicity or public demonstration, but went to great lengths to see that the health visitor had easy access to them. In some other cases, it was noticed that the desire for contraception was there but the motivation was not so acute. These patients often showed lack of cooperation and absence of a sense of discipline. They were very irregular in attendance.

Indian women, especially in urban areas, are quite conscious of the necessity, even the pressing necessity of contraception. They are conscious of the economic factors which make it impossibe for them to maintain their children properly. They feel acutely when they cannot feed

their babies properly, or clothe them decently, and especially when they cannot afford a doctor or even medicine in case of sickness or accident. They naturally desire to keep down pregnancies, not so much for their own health as in the interest of the children already born. This rational attitude is at the root of the irrational use of herbs and amulets and other magical means. One can call these unsophisticated people credulous or superstitious, but if one goes deep into the basic reason, one is sure to be convinced that it is the material means and not the psychological attitude that is at fault. If any easy acceptable method is available to them, it is almost certain that they will easily accept and utilize any reasonable scientific method in order to avoid unwanted conceptions. Here comes the crucial question of acceptability. However successful a method may be, unless and until it is acceptable to the people, it cannot yield the desired results. Again, what is acceptable to the enlightened and intelligent, may not be acceptable to the illiterate and unintelligent. What is acceptable to the rich may not be acceptable to the poor. The experiences of Dr. Gamble, who did not have any encouraging results with his simple salt jelly method tried in different parts of India, should be enlightening. The method was simple and scientific and looked promising from a purely medical point of view. But Dr. Gamble was convinced that its lack of success was due to the reason that it was not acceptable to the masses.

In conclusion, it may be remarked that in this study of the attitude towards contraception, before passing any final verdict, it is essential to study the social and economic conditions of the place and also the trend of changes actually taking place. Like any other scientific study, the present one also demands a proper scientific attitude, when we observe the conditions prevailing, in the most objective manner possible. Any preconceived notion about Indian women, whether educated or uneducated, whether urban or rural, is as much out of place here as in any other branch of sociological science.

IS ENFORCED WIDOWHOOD THE *ONLY* CAUSE OF THE SLOWER GROWTH OF THE BENGALEE HINDUS ?*

By JATINDRA MOHAN DATTA, M.Sc., B.L.

(The question dealt with here is of vital importance to the Bengalee Hindus as a community. Possibly in my argument there are some hidden fallacies, but I have not been able to find them. If anyone would kindly point them out, the writer would remain grateful to him, —J. M. D.)

THE Swedish statistician Sundbarg, in an address before the International Statistical Institute in 1899, pointed out that in all Western countries the number of persons aged '15—50' is uniformly about half the total population, and that any variations which occur in the age constitution take place in the other two main groups—'0-15' and '50 *and over*'. Where the population is growing, the number in the former group is much greater than in the latter ; but where it is stationary the numbers in the two groups approach equality. The mortality in these two groups, he says, is far greater than in the intermediate one, but it is about the same in both cases. Consequently, variations in their relative size do not affect the total mortality, which is thus independent of the age-distribution.

Sundbarg divided populations into *three* types : Progressive, Stationary, and Regressive, if they conformed to the following age-categories :

Type	Proportion per 1,000 of the Population of Different Types in certain Age-Periods		
	0-15	15-50	50 and Over
Progressive...	400	500	100
Stationary	330	500	170
Regressive	200	500	300

*Reprinted with the author's permission from *Population*, Vol. II, No. 1, November 1935, pp. 149-53.

Sundbarg's observation that the age-group '15-50' contains about half the total population holds good in the case of India taken as a whole, as the following figures taken from the Census Reports will show :

INDIA

Proportion per 10,000 in each category

Year	Males			Females		
	0-15	15-50	50 and over	0-15	15-50	50 and over
1881	3,964	4,964	1,072	3,808	4,980	1,212
1891	3,976	4,972	1,052	3,869	4,962	1,169
1901	3,912	5,008	1,080	3,803	5,021	1,176
1911	3,875	5,031	1,094	3,813	5,025	1,162
1921	3,918	4,956	1,126	3,891	4,946	1,163
1931	3,984	5,071	945	3,999	5,050	951

Having regard to the fact that the widows among the Hindus, who form about 68 per cent. of the total Indian population, do not re-marry and are thus biologically dead to the community, the Indian population as a whole may be said to be just 'Progressive' of Sundbarg's three categories.

Let us now deal more particularly with Bengal, and see whether Sundbarg's observations hold good in the case of Bengal too. As the figures earlier than 1911 are often combined with those of Bihar and Orissa, and as it is not an easy task to disentangle the relevant figures, we shall confine ourselves to figures since 1911. The relevant figures are shown below.

BENGAL

Proportion per 10,000 in each category

Year	Males			Females		
	0-15	15-50	50 and over	0-15	15-50	50 and over
1911	4,061	4,987	952	4,057	4,946	997
1921	4,000	5,081	919	4,006	5,069	925
1931	4,042	5,125	833	4,108	5,104	788

Proportion of Females to 1,000 Males

1911	1921	1931
945	932	924

It will be realized that Sundbarg's observations hold good in the case of Bengal too. The population of Bengal, if anything, is progressive and not stationary. If we analyse the Bengal figures by religions for the two major communities, viz., the Muhammadans, who form 54·44 per cent. of the total population and the Hindus, who form 43·48 per cent., we get :

BENGAL, MUHAMMADANS

Proportion per 10,000 in each category

Year	Males			Females		
	0-15	15-50	50 and over	0-15	15-50	50 and over
1911	4,407	4,716	877	4,336	4,790	854
1921	4,322	4,820	858	4,290	4,913	797
1931	4,333	4,900	767	4,380	4,956	664

Proportion of Females to 1,000 Males

1911	1921	1931
949	945	936

BENGAL HINDUS

Proportion per 10,000 in each category

Year	Males			Females		
	0-15	15-50	50 and over	0-15	15-50	50 and over
1911	3,662	5,299	1,039	3,692	5,134	1,174
1921	3,609	5,396	995	3,643	5,267	1,090
1931	3,682	5,406	912	3,764	5,289	947

Proportion of Females to 1,000 Males

1911	1921	1931
931	916	908

From the above figure it will appear that the Hindus of Bengal fall in the Stationary category of Sundbarg, while the Muhammadans may be said to fall in the Progressive category.

Ordinarily the proportion of children shows whether the community is progressive or not, while that of old persons is some guide to its longevity ; and where the proportion of persons in the prime of life is relatively high, a comparatively rapid growth of population in the immediate future may confidently be anticipated. The proportion of persons in the prime of life, i.e., in the age-category '15-50,' is higher amongst the Hindus than amongst the Muhammadans ; but the growth of the Bengal Hindus has always been slower than that of the Bengal Muhammadans during the last 60 years. The following table showing the respective variations of the Hindus and the Muhammadans during each inter-censal period will be most instructive.

PERCENTAGE VARIATION DURING EACH INTER-CENSAL PERIOD

(+ *Increase*, − *Decrease*)

Year	Muhammadans	Hindus
1881-1891	+ 9·7	+ 5·0
1891-1901	+ 8·8	+ 6·2
1901-1911	+ 10·4	+ 3·9
1911-1921	+ 5·2	− 0·7
1921-1931	+ 9·1	+ 6·7
Average variation during a decade	+ 8·6	+ 4·2

The relative excess in decennial increase over the Hindus is in favour of the Muhammadans ; and it is (8·6—4·2) = 4·4 per cent.

It will be seen that the Hindus have increased, excepting for one decade ; but their growth has been twice as slow as that of the Muhammandans, in spite of the proportion of prime men, i.e., those who are between 15 and 50 being greater in the proportion of 5,367 : 4,812 amongst males, and of 5,230 : 4,886 amongst females than amongst the Muhammadans. In fact the proportion of prime men and women amongst the Hindus is 8 per cent. greater than that amongst the Muhammadans.

For this apparent anomaly in the relative growth of the two communities, two causes suggest themselves : (1) restriction of widow re-marriage amongst the Hindus, and (2) greater prevalence of malaria in those regions where the Hindus predominate.

The respective numbers of married females aged '15 to 40,' i.e., of the productive age period per 100 females of all marital conditions, whether unmarried, married or widowed, and of all ages amongst the Hindus and the Muhammadans are shown below :

	1911	1921	1931
Muslim	35	36	37
Hindu	32	33	34
Excess of married females amongst Muslims over Hindus	3	3	3

The relative excess of married females, amounting to some 3 per cent., thus mainly accounts for the relative excess in the decennial increase amongst the Muhammadans. If we add to it the effect of the greater proportion of females amongst the Muhammadans, we believe the two together fully and wholly account for the greater increase of the Muhammadans.

The proportions of females per 1,000 males among the two communities have been :

	1881	1891	1901	1911	1921	1931
Muslim	988	977	968	949	945	936
Hindu	999	969	951	931	916	908
Excess (+) or defect (−) of females amongst Muslim	−11	+8	+17	+18	+29	+18

The average excess of females amongst the Muhammadans over the Hindus works out to 1·5 per cent. Thus the excess of married females, and the excess of females proportional to males account for 3 per cent. + 1·5 per cent. = 4·5 per cent. of the greater increase, while the average greater increase is only 4·4 per cent. Any possible effect due to malaria thus seems to to be of very little importance.

USE OF WATER-SEAL LATRINE IN BARPALI THANA

By NITYANANDA PATNAIK
Rural Life Analyst, Barpali Village Service, Barpali, Sambalpur, Orissa.

Introduction

THE following is the report of a survey made by the Rural Life Analyst of the Barpali Village Service during March, 1956, on the adoption and resistances to adoption of a water-seal type of latrine by villagers in Barpali thana.

In an effort of improving rural environmental sanitary conditions, the Barpali Village Service, during the last three years, has helped to introduce a water-seal type of latrine in the villages of Barpali thana.

The particular latrine introduced was the type developed by Dr. Edwin Abbott, and described in his report 'A latrine for village use' (available from Barpali Village Service, or American Friends Service Committee, Social and Technical Assistance Desk, Philadelphia, Pennsylvania, U. S. A.). This latrine required an area of about 20 squarefeet for installation, including the fence around it. It is also necessary to place near it a large earthenware vessel or empty kerosene tin containing water to use for flushing and personal cleaning after use. A small pot or tin containing about one liter is also necessary for washing after easing (defecation), according to the custom prevalent here. A broom is needed to sweep the surroundings and sometimes the inner part of the latrine. After using the latrine it requires flushing to push the excreta out into the pit over which the latrine has been installed. The average amount of water required to properly flush the latrine is about two liters. Pit diameter is 30 inches. A pit of 3 feet depth will last about one and a half years for a family of 5 members ; a period of three years requires a pit 5 feet deep.

Purpose of study ; sample studied

During the past three years many latrines were sold to individuals, schools, governmental offices, and private agencies, not only in Barpali area, but throughout the State of Orissa. The purpose of this study is to attempt to determine whether latrines sold to private individuals, families and schools in Barpali thana were actually installed and used, and if not used to advantage, to determine what were the resistances to the use of this latrine. In the past three years, 138 water-seal latrines have been sold in 23 villages in Barpali thana. A random sample of 90 families, individuals or groups using 88 latrines in these 23 villages was observed and interviewed. In two cases, two families were sharing one latrine. The population of Barpali thana is about 55,000.

Method of research

There is no hard or fast technique which can be applied in all cases for finding out whether latrines are used by the owners. In some cases, only common sense was applied, and in others appropriate questions were asked.

A list of the techniques which were used is given below :

1. Asking children while they are alone, not with their parents.
2. Asking old women of the family.
3. Visiting families when adults were absent.
4. Knowing what types and colours of cloth were worn while going to ease.
5. Observing the surroundings of the latrine slab to find whether any used 'biri' (local cigarette), traces of spitting tobacco or footprints were present.
6. Finding out the distance of water available to be used for flushing the latrine.
7. Observing whether there was water in the bowl of the latrine, incrustation marks around the slope of the bowl, a large earthenware vessel, a small pot, and a fence about the latrine.

TABLE 1

OWNERSHIP

USAGE	Village Families	Village level and village health workers (10 families, 4 individuals)	Schools	Outsiders	Total families, individuals, or groups
	A	B	C	D	E
1. Used regularly	3 3·3%	10 11·1%	×	3 3·3%	16 17·8%
2. Used regularly by some members	18 20%	4 4·5%	6 6·7%	×	28 31·2%
3. Used irregularly by some members	11 at night and in emergencies 12·2%	×	2 2·2%	×	14 15·5%
4. Used formerly, now abandoned	6 (2 families moved, leaving latrine, 4 latrines structurally defective) 6·7%	×	2 2·2%	×	8 8·9%
5. Installed but never used	10 11·1%	×	1 1·1%	×	12 13·3%
6. Never installed	11 (1 sold) 12·2%	×	1 1·1%	×	12 13·3%
7. Total (families, individuals or groups)	59 65·5%	14 15·6%	13 14·5%	4 4·5%	90 100%

Results : Usage and ownership of water-seal latrine

Table 1 presents a summary of data concerning ownership and degree of usage of 88 water-seal latrines by 90 families, individuals or groups.

Table 1A presents the degree of usage of latrines by *village families* expressed as percentage of the total number of *village families* studied (i.e. 59 village families),

TABLE 1A

Used regularly by all members	5·1%
Used regularly by some members	30·5%
Used irregularly by some members	18·7%
Used formerly, but now abandoned	10·1%
Installed, but never used	16·9%
Never installed	18·7%
TOTAL	100·0%

Among 18 village families in which the latrine was used regularly by at least some of the family members, the following numbers of men, women and children were found to be using the latrine regularly :

TABLE 1B

Men	15
Women	12
Children	26

Results : Resistance to the use of water-seal latrine

A study of resistance to the use of water-seal type of latrine was made among 48 families, groups or individuals, whose usage of the latrine was irregular or where the latrine had never been installed etc., i. e., lines 3, 4, 5, 6 of Table I. Eleven reasons for resistance were found :

TABLE 2

1.	Lack of knowledge as to how to use and flush the latrine	8
2.	Problem of water; adequate water not available, people averse to using water for this purpose, people unwilling to carry extra water ...	15
3.	Feeling ceremonially unclean, or not habituated	12
4.	Traditional way of going out in groups ...	12
5.	Lack of proper place for installation ..	6
6.	Fear of interruption by other people while using the latrine	1
7.	Lack of interest by villagers, and lack of follow-up by village worker	15
8.	Structural defects of latrine, or defect in installation	6
9.	Lack of fencing	4
10.	Field work requiring persons to remain in the field most of the time	4
11.	Temporary settlement	2
	TOTAL	85

Comments on reasons for resistance

Lack of knowledge concerning use of latrine. Lack of water.

Many people complain that the latrine does not flush properly with a small amount of water (2-3 liters). They say it needs a bucket of about twenty liters. From our inquiry it is found that they do the pouring of water right on the hole instead of flushing with a little strength. The water should be poured with force from the point of the narrow end of the bowl of the latrine. The process of easy pouring always requires a lot of water, whereas the flush technique definitely requires much less water.

Where water is not available within easy reach of the latrine, the people find it a great problem to haul buckets of water for a job which they are not accustomed to. The villagers generally use a brass pot containing about 1·5 to 3 liters of water when they go out to the fields for easing, and no extra water is needed except an additional two to three liters for washing

hands, feet, etc. For those who use tank water there is no problem at all. Therefore the questions which always strike them is, why should they haul water when there is a field to ease comfortably, and a tank full of water for washing.

Feeling ceremonially unclean or not habituated.

The whole idea of using a water-seal latrine is new to many people and they hesitate to do the flushing. They apprehend that some drops of water might sometimes rebound upon the face or legs or other part of the body while flushing. Sometimes small drops of water from the bowl of the latrine splash up and wet the body when excreta fall into the water in the water seal. This causes some discomfort which of course is not serious.

It is proper to mention here that there is a class of people who do not hesitate to handle excreta with their own hands. They clean and sweep the various kinds of unhygienic latrines, such as the local floor-type mobile latrines which are used in many houses. For Ghasis, who do this unclean job to earn their living, the water-seal latrine may not be so repellant as it may be to other castes. Can the Ghasis use the latrine more readily and earlier than other people ? Also, as the latrine gains in popularity and becomes common in the villages more and more, the Ghasis may not be wanted any longer to clean people's excreta. Will there be any difficulty for them to find decent jobs in future ?

Traditional way of going out in groups.

It is noticed that women hardly use the latrines. They go out to the fields to ease in groups. They go out, not only for the easing, but for various purposes such as taking some time off from busy domestic hours, meeting their friends outside in the fields, talking together on various topics, and finally taking a bath. The women, especially the daughters-in-law and the young women, do most of the work in the house and remain confined indoors for most of the day. Therefore one hour in the morning and one in the evening are pleasant leisure hours for them to meet together in the fields in the open air, exchanging their ideas and news topics. A

woman feels very awkward to go out alone to the fields, lest people might suspect her and wonder why she goes out on her own. While the women are out, they usually talk about their mothers-in-law or husbands or some other family members; the older members give advice to the younger women on domestic problems. In this way, discussion is continued every morning and afternoon ; questions are raised, some of which might await an answer until the following day. The chain of talk binds the women together, and calls them out into the fields every day. Except for the tanks, there is no other place where they can bathe after a day's toil at home. The water-seal latrine does not provide them with these opportunities.

The most elderly women, who have none to help them in their domestic work and have children to guard and take care of, find it most difficult to find any time to relax in this manner. Most of the time, they avoid such social contacts, not because they do not want to have the contacts, but because they have much work to do at home by themselves. Therefore, it is found that such women, in families who have installed latrines which are being used by male members, are also using them for their own convenience.

Lack of proper place to install latrine. Fear of interruption.

The latrines which are installed in the courtyard of houses, due to lack of a backyard are not used. The members of a family do not feel the place as secluded as it should be for easing. They feel it is shameful to ease in the courtyard while other members of the family are there and can easily hear the sound of defecation.

Some people do not feel secure inside the fence, for fear that someone else might enter by mistake. In some cases, it is found that members who hesitate to use the latrine when it is installed in the courtyard, use it after the latrine has been moved either to the backyard or to the nearby garden, where it is sufficiently isolated.

Lack of follow-up by the village worker.

The follow-up of the village-level workers and health workers after the latrines have been installed is inadequate.

Not much further contact has been made with most of the people who installed latrines, for explaining the method and purpose of using the latrines. In a few cases, sincere attempts have been made by the village workers to persuade people to adopt the habit of using the latrine. This technique of further close contact has proved successful in bringing about a change of practice in these cases. Too many village workers, however, think that once a latrine is bought by a man and installed, their work is done. But the willingness to change is completely separate from the permanence of change. The work of installing a latrine forms half the battle, while the work of teaching the villager how and why he should use a latrine, and of insuring that this changed practice remains a permanent habit, is an equally important half of the battle. The village workers lack proper knowledge and educational techniques to win the second half. The first weapon which would help them is to know more about the man who buys a latrine, and what motivates him to do so. It is found that not all men take a latrine with a genuine desire of using it for sanitary purposes. Some buy them because they are repeatedly asked by members of the Project who have helped them in case of illness. Under such circumstances, they buy a latrine not to use it, but in order to please those persons and take advantage of them. Others take a latrine so that they will not be embarrassed when they come to see the Project personnel who ask whether they are using a latrine. Some people install a latrine, not for themselves, but for some members of their family who are old and are suffering from some disability which does not enable them to go out into the fields. They see that to divert the old ones to the latrine is easier than cleaning their excreta which is passed on the floor every day. For village workers, the medical department, and the educational department, all these motivations of why villagers take latrines are worth while knowing in order to plan their own programmes of bringing about permanent change in the health habits of the villagers.

Some people say, they are not using the latrine because, in some cases, the very persons who advocate its use (e.g.

the wives of village-level workers), actually do not use the latrine themselves. Often the wives of village-level workers hold a key position among the village women, and can secure many an opportunity of bringing about a change of practice and of introducing new habits among village women.

Summary

This report presents an analysis of the usage, and the resistance to usage of a water-seal type of latrine by 90 families, using 88 latrines, in Barpali thana. In the past three years, a total of 138 water-seal latrines have been sold in Barpali thana.

49% of all families studied (35·6% of village families studied) were using these latrines regularly; 15·5% of all families were using the latrine irregularly; the remainder of the latrines were not in use at the time of the study. Men and children were using the latrines more frequently, while the smaller number of women using the latrine is attributed particularly to their custom of going out to the fields in groups, for bathing and toilet activities, combined with social gatherings. Lack of understanding of the proper method of flushing the latrine (requiring an excessive amount of water), and lack of readily available sources of water, were important causes of resistance to the use of the latrine. A number of villagers thought the latrines were unhygienic or were unaccustomed to using this type of latrine. Inadequate follow-up by the village workers was responsible for many latrines being used inadequately or lying unused.

It is obvious that more emphasis needs to be placed on the education of villagers, using all available methods and principles of health education, for bringing about a change of attitude toward the use of the latrine. Important in this respect is an understanding of the villagers : resistances to buying a latrine, and the motivations of the persons who do purchase them. It is also necessary for village workers to make more follow-up visits to the villagers to insure proper and continued use of the latrines. Contact of female leaders with village women needs to be increased, for at present women offer more

resistance to the use of latrines, and yet they are potentially the best medium for introducing change of health habits in the family. The women's habit of going to the fields for combined social gatherings and bathing and toilet activities, at present fills a definite need for community living and some leisure from daily toil. In some countries, this need is filled by a gathering over a cup of coffee or a cup to tea. While this may not necessarily be appropriate here, if the present 'gathering pattern' is broken up by the introduction of latrines, some alternate type of social gathering, which will fill the same social needs, will have to be available for these women.

It is not easy to bring about changed attitudes towards habits ingrained from childhood relating to elimination. At present, the use of a water-seal type of latrine is a felt need for very few villagers. The above report points out directions for further efforts to bring about this change in cultural practice, and provides a measurement against which progress in the future may be compared.

HISTOLOGICAL DIFFERENCES BETWEEN NEGRITO AND ORAON HAIR

By S. S. SARKAR

AMULYA RATAN BANERJI

Department of Anthropology, University of Calcutta

Introduction

HUMAN head hair has been mostly studied in cross sections ; though, of late, interest has also been shifted to the longitudinal structure and other aspects, such as weight, chemical composition, etc. The validity of the study of cross sections, particularly when they are from a single strand of hair, is now open to question ; since hairs from the same head show various types of sections, as will be evident from Steggerda's (1940) studies, where a bunch of hair was sectioned simultaneously and showed more than one type of cross section. The same has been found in the case of the medullary structure, as will be described hereafter, where no uniformity has been found in respect of the medullary structure in the hairs from a single head.

On the basis of the medulla, human head hair can be grouped into four categories : (1) Absent, where no medulla is present at all ; (2) Scanty, where it occurs in small patches along the whole length of the hair shaft ; (3) Broken, where medulla is present but discontinuously ; and (4) Continuous, where medulla is present continuously along the whole length of the hair shaft.

Hausman (1925), Wynkoop (1929), Trotter and Duggins (1950) and others have long ago recognized the above four medullary types, and attempts have been made to find out whether they have any racial significance. The frequency of the different medullary types is however not known for any population. The range of individual variation is also not fully known, although hair plays a great part in forensic medicine. Kneberg (1936) estimated the average number of hairs on a

single head to be about 100,000 and recommended at least 0·1% of hair samples for examination in order to avoid the large individual variation in single hair. She found not only 45% variation in respect of size of the hairs from a single head, but also as much as 15% variation in the different parts of the same hair shaft excluding the tapering tip. All these show the invalidity of earlier researches based upon the single strand of hair.

Method of Study

The method of study followed in the present paper is almost the same as employed by Hausman (1920, 1925). The Oraon hair samples were obtained from Ranchi and Lohardaga. They were collected from the occipital region of the head, from as close to the scalp as possible. The Negrito hair samples belong to the Onges of the island of Little Andaman in the Indian Ocean and were obtained by shaving.

One hundred hairs from an individuals of each group were first of all studied to find out the nature of individual variation. Then 10 hairs from each of the individuals were examined to find out the racial or the collective variability. We have by now a large collection of hair samples from various peoples and one of us (Banerji) is actively engaged in the study of this character. All the hair samples of the present study belong to males.

The Data

TABLE 1

Frequency of the different types of medulla (percentages)

	Number	Medulla Types			
		Absent	Scanty	Broken	Continuous
Onge	$6^1 \times 10^2$	70·0	30·0	—	—
Onge	$1^1 \times 100^2$	91·0	9·0	—	—
Oraon	$25^1 \times 10^2$	24·0	29·2	30·0	16·8
Oraon	$1^1 \times 100^2$	31·0	21·0	21·0	27·0

[1] Number of individuals. [2] Number of hairs studied. Of the 25 Oraon hair samples, 3 were straight, 8 smooth, 5 flat wavy, 7 broad wavy and 2 narrow wavy, while the one whose 100 hairs were studied belongs to the straight-hair group.

Table 1 shows the different medullary types for the individual and the collective group of the Onges and the Oraons.

It will be seen from the above table that the Onges show a wide divergence in medullary structure from the Oraons in not having the two types of medulla (Fig. 1), broken and continuous. This is also borne out by the individual data. The Onge hair is peppercorn in form with small spiral coils about 1·6 mm in diameter. The average length of the samples, measured after straightening the spiral coils, is 7·8 mm. The total number of Oraon hairs in our collection is 99, which were found to be of the following forms : straight—13 (13·13%) ; smooth—36 (36·36%) ; flat wavy—28 (28·28%) ; broad wavy—18 (18·18%) ; narrow wavy—3 (3·03%) and curly—1(1·01%). The length of the Oraon hair averages between 8·5 – 9·5 cm.

Basu (1933-34)[2] in his study of the racial affinities of the Oraons states that the Oraon hair form is 'generally wavy'.

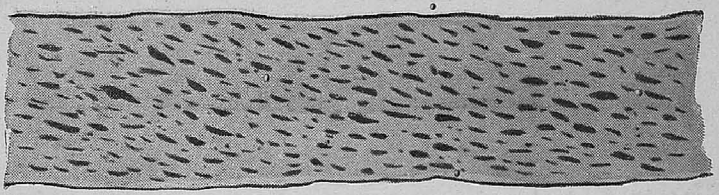
The Onge hair is finer in texture than the Oraon. Its average diameter is 87 microns while hairs having 'absent' medulla average 84 microns in comparison to 90 microns of the 'scanty' medulla group. The figures for the Oraons are given in Table 2.

TABLE 2

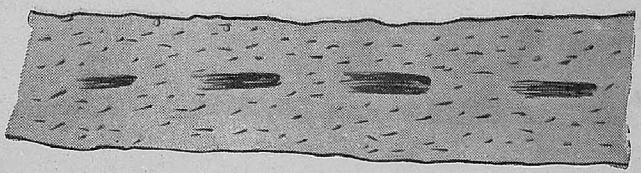
Diameter of hair shaft in microns and medulla types

	Absent	Scanty	Broken	Continuous
Onge	51 – 102	69 – 108	—	—
Average	84	90	—	—
Oraon	81 – 127	93 – 147	106 – 144	122 – 169
Average	96	113	128	144

It will be seen from the above table that the diameter of the hair shaft appears to be correlated with the medulla types. Among the Oraons the absent medulla shows the least diameter (96 microns) which gradually increases in the case of scanty (113 microns) and broken (128 microns) and finally to the continuous type showing the highest diameter of 144 microns (Fig. 2). Whether all the other hair samples in our collection



(a)



(b)

Fig. 1. Camera Lucida drawing of Onge hair (× 330), showing (a) absent, (b) scanty medulla.

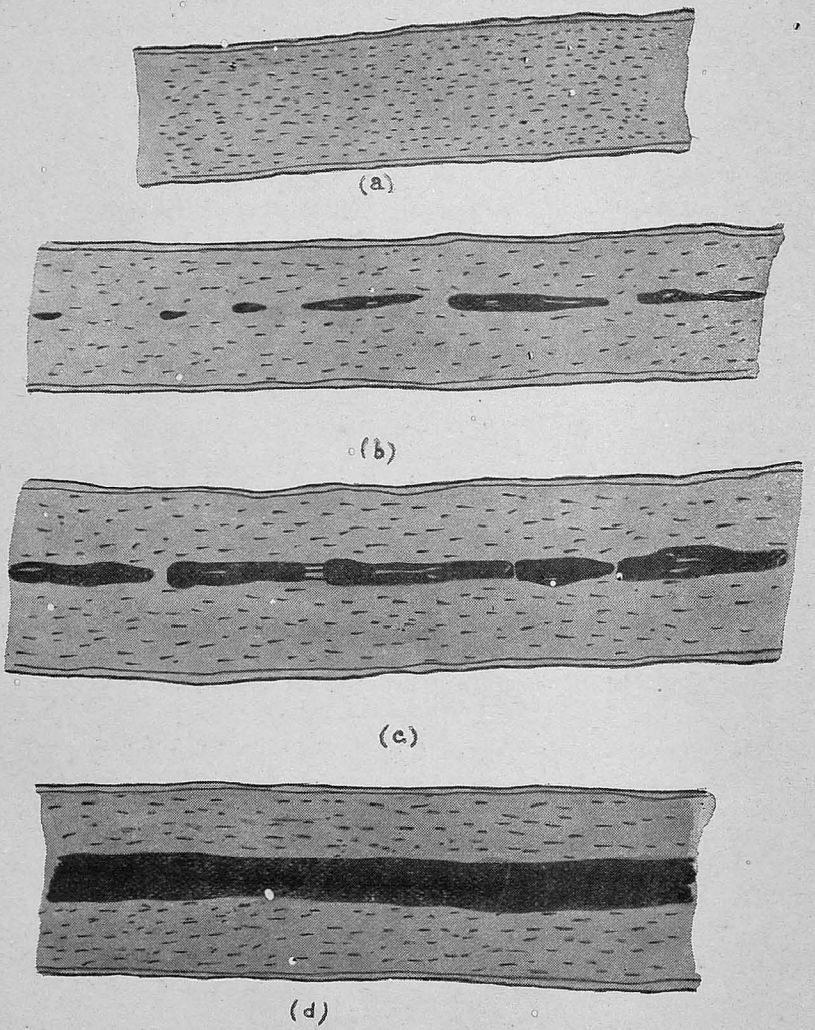


Fig. 2. Camera Lucida drawing of Oraon hair (× 380) showing (a) absent, (b) scanty, (c) broken, (d) continuous medulla.

will follow this rule, forms the subject of our further enquiry. American investigators have also found a direct correlation between medullas and the diameter of the hair shaft.

Among the other histological differences the most striking was seen in the large number of pigment cells in the Onge hair in contrast to those in the Oraon hair.

It may, however, be said that the tendency of the Onge hair to curl spirally is probably due to the combined effect of the fineness of the hair, and the absence of medulla. This may be typical of the Negrito hair, though studies on other Negrito groups are required to confirm our findings.

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BOOK REVIEWS

Sinhalese Social Organization. *By Ralph Pieris. The Ceylon University Press Board. 1956. Price Rupees Ten only. Pp. xiv + 311.*

Professor Ralph Pieris, Head of the Sociology Department, University of Ceylon, presents here a detailed description of the social structure prevalent in the Kandyan kingdom in Ceylon ; the period covered being from 1591 A.D., when Vimala Dharma Surya I ascended the throne to 1815 A.D., when the British finally ousted the dynasty from power. All available material has been marshalled ; and in presenting his analysis, the author divides the book into the following parts : Government, The Village, Revenue and Service, The Legal System, Social Stratification, Kinship and Marriage, and lastly, An Isolated Province, in which the social structure has been correlated with the ecological background.

We are presented in the book with a detailed anthropological account of the functioning of social strata, some of the guiding ideas of which were evidently derived from the caste system of India. There have been some studies of caste from the functional point of view, as for instance, those of Blunt or Hocart. But in the present study, the social structure has been presented in its relationship with political and legal organization, as well as the ecological background. The theoretical leaning of the author lies in the directions set by Radcliffe Brown and Evans Pritchard.

Special attention should be drawn to the chapters on kinship and marriage or social stratification, in which the analysis has been carried out with considerable success. While we are in general agreement with the observations of the author, it is perhaps necessary to point out one or two, rather minor points which do not quite carry conviction. Thus, while discussing the question of sexual behaviour among Sinhalese women during the period covered by the book, the author makes use of a rather grim report by Robert Knox (1681), relating how the persons in question were very loose in the matter of morals (pp. 195-196). In trying to substantiate this view further, the author cites the evidence of a witness in a lawsuit (1817 A.D.) in which we find a father making provision for his daughter in the following terms : 'I am not certain that you

will all marry out, and it also may happen that some of you will return from your husbands. Should that be the case I have reserved one pala of Kohovilla-deniya to be possessed by such daughters' (p. 196), There are other passages in the book where we find fathers making provision for their daughters, in case they are stranded. This concern of the parents cannot, *by itself*, be taken as proof of condonation or encouragement of sexual laxity. Dowers given to a daughter in marriage may have nothing to do with sexual behaviour at all. Under any circumstances, more convincing proof of sexual laxity is needed ; and these should not be capable of any alternative explanation.

The correlation of the Mahayana form of Buddhism with extrovert and Hinayana with introvert mentality (p. 259) seems to us to be unjustified. Could we say the same thing about the Christian churches before and after the puritanic reform ? Our belief is that such sweeping intellectual shortcuts are not only not helpful, but often misleading in their influence.

The discussion on polyandry (pp. 204-7) is a particularly satisfactory chapter of the book. Although correlations have been attempted in the past between disproportionate sex-ratios and marital customs, Professer Pieris finds them, on the whole, to be unsatisfactory in the case of Ceylon. One possible explanation suggested by him in the latter case is that the custom may have resulted from absenteeism of husbands. According to the service regulations prevalent in the Kandyan kingdom, a man had to be away from home a long time. It was therefore natural for several brothers to share a wife in common, so that she could be attended to when one or other of the brothers was away. Naturally, one would ask for proof as to whether similar conditions of service elsewhere have also led to the custom of polyandry. No proof of this nature has however been furnished. The reviewer has often felt while reading the book, that a quantitative approach, *if possible*, would have been an additional help. If we knew, for instance, how many families were actually polyandrous, and how far absenteeism was tied up with it, it would give us a means of assessing the validity of the suggested hypothesis. One might similarly call for the number of cases of absenteeism in which it was *not* accompanied by polyandry.

Although such observations can be legitimately made on behalf of more convincing proof of the correlation between life-conditions,

moral codes and social customs and usages, yet one is glad that, in spite of a few minor points of weakness, the book presents us with one of the best accounts of social structure that we have on this side of Asia.

N. K. Bose

The Story of Our Civilisation. *By Philip Lee Ralph. Victor Gollancz Ltd., London, 1955. Pp. 319. Price not mentioned.*

In this slim volume Mr. Lee Ralph has given us a short survey of the development of Western civilization from the earliest times to the present age. 'The book presents', says the author in his preface, 'a survey of the characteristics and the course of Western civilization in an endeavor to estimate its achievements, assess its strength and weakness, discover its persistent or recurrent objectives and suggest areas where a more resolute application of its resources would be profitable.' It is divided altogether into twelve chapters, the first two entitled 'Man' and 'Towards Civilization' being intended to serve as a general background to the subsequent story. The third chapter is devoted to an analysis of the principal trends of the civilizations of the ancient Near East, the Israelite, Assyrian, Babylonian and the Egyptian cultures, and the extent of their influence in the moulding of later European civilization. Greece forms the subject-matter of the next chapter and receives a deserved tribute for setting the 'classical pattern' in the texture of the civilization of the West. The important trends of Greek thought and outlook have been handled with remarkable ability. The author contrasts the richness and subtlety of Greek philosophical thought with the corresponding primitivism that prevailed in the field of Greek religion. He duly emphasizes the great importance of Plato and Aristotle, particularly the former, in the history of Greek thought ; but he does not satisfactorily explain the problem of the appearance of Plato, whom he describes as 'quite out of character with the culture of which he was a product.' Is it the natural outcome of the increasing emphasis that was being gradually laid on enquiry into the sources of knowledge in pre-Platonic Greek thought, or is it due to the intrusion of an alien thought-tradition into the sphere of Greek philosophy ? The features of Roman civilization are next discussed in a chapter which is marked by clarity and insight. While the author

does not minimize Rome's contribution towards the growth of the outer framework of European civilization, particularly in the spheres of imperial ideal, law and church organization, he does not hesitate to brand the period of Roman domination as one of 'classical failure'. Chapters six and seven devote themselves to a survey of the early and late medieval phases of Western civilization. The 'Dark Ages' are discussed with a commanding sweep in all their ethnic, political, intellectual and spiritual aspects and the point is duly emphasized that 'the patristic age occupying the twilight zone between the classical and the medieval culture was within the limits of its interests a period of creative thought'. The later Middle Ages also receive a thorough and balanced treatment and one is glad to note that he refrains from using the word 'medieval' as a 'title of disparagement'. The period in question is recognized as a formative stage in the development of European culture. The modern period is divided into four separate chapters entitled 'Liberation through Dissolution', 'The Era of the Renaissance and the Reformation', 'The Rediscovery of Man', 'The Discovery of the Machine' and 'Expansion and Rigidity'. The treatment of these topics is generally much fuller and factual. The social background of the Renaissance and the Reformation is painted very clearly and the very close interconnection between the two movements is never lost sight of. It is repeatedly emphasized how with regard to the ultimate effects they produced, the pleasure-loving self-confident intellectuals and artists of the Renaissance as well as the high-strung fanatical leaders of the Reformation stood on a common ground, although their mental make-up might have been widely different. Geographical discoveries and colonial endeavours created in Europe a new world-outlook and the resultant commercial revolution marked the transition from the feudal to a capitalist economy. The increasing socio-economic power wielded by the bourgeoisie was not in harmony with its political subjugation under the ancient regime, and this contradiction was mainly at the root of the middle-class revolution of the 17th and 18th centuries. Philosophers of the Enlightenment created a suitable atmosphere. The discovery of the machine and the rise of modern industrial technology have produced the profoundest possible effects on the middle-class dominated civilization of modern Europe. Politically it has led to the dominance of the surface of the earth by the powers of western

Europe. In the social and economic spheres, it has resulted in increasing urbanization of community life and opened up the dangerous possibility of exploitation of the poor working class by rich capitalists in a future society. 'Suffering on the door-step of comfort ; festering disease overturning medical progress and the science of sanitation ; waste amid want ; bulging store-houses barred to the penniless folk who had filled them—these were among the hallmarks of the Industrial Revolution.' The saving grace of the times however consisted of the vigorous intellectual and spiritual efforts that were persistently being made by a large number of philosophers, thinkers and philanthropists to cope with the situation. Radicalism, Romanticism, Hegelianism with its various trends, were all important thought-movements that suggested remedies to the existing evil. The world of science however was steadily growing more and more mechanical and indirectly this process gave birth to two most powerful intellectual influences of the nineteenth century, namely, Darwinism and Marxism. The intellectual and collectivist movements however could not save the West from the impending catastrophy of the two World Wars which have laid Western civilization apparently bankrupt. The author reviews the post-war situation in the chapter entitled 'Expansion and Rigidity', which includes a descriptive survey of the intellectual ideals and political experiments of the present century as well as a masterly exposition of their shortcomings and inadequacy. The last chapter deals with some of the basic problems which the West to-day has to face and try to solve. The author also offers his own suggestions as to the future line of development it should adopt. Consequently the chapter is of a more subjective and personal nature than the preceding ones. However, a well-balanced treatment and a strong note of optimism that runs through it, make the chapter eminently readable. Although the author cannot expect all his readers to agree with each one of his conclusions in the final chapter, we have no doubt that all will assent to his basic assumption, expressed clearly in the following lines : 'The real task ahead is not to create an industrial civilization but to create an ethical one. The ultimate rationale of civilization is the formation of fuller richer and more abundant life. If, instead of being devoted to this end, its resources are subverted to the gratification of meaner impulses or to the constriction of life, then civilization becomes a predatory organism,

a monstrous usurpation on man's part. And nature has a way of dealing with usurpers.'

We strongly recommend the book to the serious-minded reading public.

Dilip Kumar Biswas

Indigenous Peoples. *Published by the I. L. O., Geneva, Switzerland. Pp. 628+xxxviii. Price 4 dollars or 24 s.*

This massive publication deals with the problem and position of the indigenous peoples of Asia, Australia and the Americas, in relation to their numbers, types, geographical distribution, living conditions and economic position, and also describes in detail the national and international measures taken for ameliorating their living conditions. In compiling this volume, the editors have not confined themselves to governmental reports alone, but have also made use of information obtained from 'national institutes for indigenous affairs and members of the committee of experts on indigenous labour and on information obtained from various official and private publications'. The result is an extremely informative and well-documented volume which maintains a spirit of scientific enquiry throughout, but never loses sight of the positive human aspect of the study in the name of pure science, nor gives way to emotive appeals in the name of humanism. This tone and temper of the book under review are as much an asset of it, as are its 628 pages with 61 tables, 10 maps, 24 illustrations and one diagram. The book is exhaustive in scope and character as each problem of the indigenous peoples in each continent and in each country in which they live, has been treated separately. It will thus be of immense help as a book of ready reference to all serious students and practical statesmen.

The book itself is divided into four distinct sections, one each dealing with, (i) preliminary definition and data, (ii) living conditions, (iii) the place of indigenous workers in the economy of their mother countries and (iv) national and international action in regard to indigenous peoples in the countries concerned.

The second section dealing with the actual living conditions of the aborigines contains a wealth of statistics that would be indispensable for any correct assessment of the situation as it stands.

Problems of deficient dieting, insanitary and inadequate housing, and those of insufficient medical facilities in the face of shocking rates of mortality are all brought out with rare clarity, with pages and pages of ostensibly dry statistics and impersonal reports.

Of particular importance to students of social economy would be the third section which deals in detail with the exact economic position of the indigenous workers in their respective national economies. The general occupational pattern of the aborigines is first analyzed and then the indigenous agrarian systems in the various countries are described in detail with clarity and precision. The problems of agricultural technique and credit get a special mention, and in this connection, the recent measures in Mexico adopted to revive corporate farming in the form of Ejidos are discussed at length. The present reviewer believes that we in India may have much to learn from the Mexican experiment. Problems of vocational training and those of the protection of indigenous handicrafts, as discussed in the book, may also be of particular importance to us in India. The various actions proposed for maintaining and promoting such handicrafts require careful study and consideration by persons who frame our policies here, in this country.

The last section not only gives valuable and detailed information on the activities of such well-known international agencies as the W. H. O., F. A. O., U. N. E. S. C. O. and the I. L. O. but also provides necessary information on the activities of such specialized bodies as the Organization of American States or the Joint Field Mission of Technical Assistance to indigenous populations of the Andean high plateaus. As it also sets down in minute detail the social and economic policies towards the indigenous populations of the governments concerned, as these are manifested in substantive legislations adopted by them, this section will be of immense value to all practical statesmen and administrators.

As we have stated earlier, this volume is of great value, and should be so recognized by all concerned. We would especially advise our authorities in India to seek the services of the I. L. O. experts in evolving a solution of the many problems that beset our populations, indigenous or otherwise.

Asit Kumar

Society in India. *Edited by A. Aiyappan and L. K. Bala Ratnam. The Social Sciences Association, Museum House, Madras 8. 1956. Price Rs. 15, 30 s., 5 dollars.*

The Social Sciences Association, established in 1954, sponsored an all-India conference of anthropologists and sociologists in Madras in November 1955. The University of Madras and the M. S. University of Baroda also lent their support. Besides the members of the Association, about thirty delegates from India and abroad participated in the conference.

The present book is an account of the proceedings of the conference. The chief topics discussed were, 'Peasant and Primitive : Simple and Compound Society', 'Sanskritisation and Westernisation', 'Problems of Teaching Anthropology and Sociology' and 'Interrelations of Social Sciences'. The report presented here contains papers submitted by participants like Robert Redfield, Irawati Karve, M. N. Srinivas, P. N. Prabhu, Narbadeshwar Prasad and others. There are altogether twentythree chapters in the book, containing besides the papers, a detailed account of the discussions which followed at the end of each reading.

The topics raised at the conference were of vital interest in relation to Indian society, the discussions were fruitful, and the reporting, as presented here, has been very successful. The editors deserve congratulation for the excellent printing and get-up of the report.

We only hope that inter-university symposia of this kind will become more frequent between the universities and organizations interested in sociology and social work in India.

N. K. Bose

Somatic Variability and Human Ecology in Bougainville, Solomon Islands. *By Douglas L. Oliver. Harvard University.*

This lithographed publication contains a somatological study of 13 tribes from Bougainville. During 1938-39, Dr. Oliver measured 1374 individuals from the 13 tribes of which four number above 100, namely, Sinai—570, Nagovisi—202, Rugara and Nasioi—126, while the rest vary between 17 and 69 individuals. The total population of the above tribes in 1938 was 27,500 approximately. There are at least 16 language areas in Bougainville. The speakers of the Papuan languages live in the interior while the Melanesian

speakers inhabit the coast of the adjacent areas. All the four larger samples mentioned above are speakers of the southern Papuan languages.

The treatment of the somatological data shows the author's deep insight into the problem of the variation of physical characteristics. He has attempted to find out how far environmental and cultural factors have been responsible for the inter-tribal differences. In the majority of cases he has found the genetic factor to have been more responsible than the other.

According to Dr. Oliver, the Bougainville population represents the following four distinct genetic strains :

(a) Coastal, as seen in the Torau, who speak the Southeastern Melanesian language.

(b) Central Mountain, as represented by the Rotokas, speaking the Northern Papuan language.

(c) Northwestern Mountain, as seen among the Konua of the same linguistic group as (b), and

(d) Southern Mountain, as represented by the Nagovisi, isolated in the extremely mountainous region and closely approaching the Negrito type.

The Rotokas and the Nagovisi are two radically different mountain types.

S. S. Sarkar

Archaeology from the Earth. *By Sir Mortimer Wheeler. The Oxford University Press. 1954. Pp. xii + 221, 23 plates and 21 figures.*

Throughout the book the author has tried to search out from the history of archaeological excavations, a basis on which an absolute chronology may be drawn. An attempt has also been made to explain the technique of digging or recording in the field, of laboratory work and of staff. In his notable work on Harappa culture in India, Dr. Wheeler has shown the advantages of planning in archaeological excavation. He has shown that 'what a local stratigraphic evidence can tell, could hardly be told by remote comparisons', as was done in stratifying the Indus Valley civilization.

Two things about Dr. Wheeler are very obvious. Firstly, he believes that all excavations should be both 'horizontal' and 'vertical', because they are complementary, not contrary. Secondly, he thinks that archaeology is as much a science as a branch of the

humanities. For Dr. Mortimer, archaeology is a fact-finding discipline which seeks and incorporates the methods of natural science. But that does not make it science alone. Archaeologists' facts are material records of human achievements and they not only collect, process and analyze facts but also attempt to know the 'humane' behind facts. In this sense an archaeologist may be said to be a humanist as well.

We are surprised and pained by one thing. Dr. Wheeler often speaks of Western, especially Britain's, supremacy over the East in the field of archaeology. It appears crude when he says, 'There is no sort of doubt that we in the United Kingdom can supply an initial field training of a quality unsurpassed in the world' (p. 212). One comes across many such examples floating throughout the book, which considerably hurt and reduce its scientific worth.

The book will prove to be of special interest to Indian archaeologists because the materials have been primarily drawn from India.

D. P. Sinha

The Neolithic Cultures of the British Isles. *By Stuart Piggot. The Cambridge University Press, 1954. Pp. 420, 12 plates and 64 figures.*

The book has been divided into twelve chapters. The first gives the background of the neolithic cultures of the British Isles. The material of the primary neoliths—of the first impact of agricultural economies upon Britain—is dealt with in chapters 2 to 9. Chapters 10 and 11 are devoted to the secondary neoliths. The last chapter is an epilogue. It tells the reader about the results of the two cultures and their interrelationship within the islands and in their continental setting.

The author has divided neolithic Britain into six different regions, namely, Ireland, Northwestern Britain, Southwestern Britain, Wessex-Sussex, Midlands and East Anglia and Northeast Britain.

The primary culture in the 4th, 5th and 6th regions is Windmill Hill culture, represented by long barrows, flint mines and causewayed camps ; in the 3rd it is Severn Cotswold culture differentiated by chambered tombs, while in most parts of the 1st and 2nd it is Clyde-Carling Ford culture distinguished by chambered tombs along with plain wares. Dr. Piggot shows through the book that each geographical region has its own specific history. Each grows up in its own way, except for some parts where they continue

uninterrupted till the close of this culture era when the people begin to follow cremation burials. Ireland however is an exception. Single grave burial is continued till the end of the lithic era.

There is one tale emerging from the whole neolithic culture history of Britain, namely, that the neolithic is an import. It first spreads over the existing mesolithic, continues for some time and then interacts with it, which gives rise to the true neolithic culture of the land. The regional variation and developments finally conclude and converge into one, when the non-lithic culture begins to become predominant.

D. P. Sinha

Chinese Spirit Medium Cults in Singapore. *By Alan J. A. Elliot. No. 14 of the London School of Economics Monographs on Social Anthropology. 1955.*

This is a study of shamanism in Singapore. Shamanism is a world-wide phenomenon, its basic postulate being that a person is possessed by certain spirits and in this state the medium does not feel pain even if he inflicts injury on himself. He is believed to speak the voice of the spirits and even cure the worshippers on the latter's behalf. The Chinese in Singapore want to keep such practices a guarded secret. Elliot thinks that spirit medium cults may serve as a potential guide to the nature of overseas Chinese society.

The Chinese in Singapore are petty shopkeepers and businessmen. Chance is believed to play an extremely important part in the shaping of man's fortunes. They are also addicted to gambling. Under such conditions, religious practices based on divination find fertile ground for flourishing.

Elliot begins with a description of the religious beliefs and practices of the Chinese in Singapore and assesses the position of the spirit medium cult there. We find that the cult is highly elaborate and efficiently organized. The medium called *Dang ki* is prepared for his role by rigorous training. There are four stages of development through which he must pass before he reaches full maturity. In the first he must show signs of possession by the spirit, in the second he must be able to carry out feats of self-mortification without showing pain or fear. In the third he should be able to dispense medicine and advise the worshippers coming to the temple,

and in the fourth he is initiated into the brotherhood of experts for the study of the occult. The equipments used by the *Dang ki*, the temple, the assistants and the worshippers have all been dealt with at length in this book.

The spirit which possesses the *Dang ki* is called *shen*. Of these there are many, some being more important than others. The most popular is the 'Great Saint' with whom is associated the legend of the monkey who became king and later on gained immortality. The 'Third Prince' is a celebrated hero in stories and on the stage. 'Kuan Kin' is a female *shen* who holds an exalted position and often appears as a Bodhisattva. The fourth important *shen* is 'Kuan Ti', the patron of war, wealth and literature.

In the popularization of the spirit medium, cult festivals play an important part. The *shen* has got to be propitiated through a festival. The three main elements of a Chinese festival are the theatrical performance, the hawker's market and the worship in the temple. In *shen* festivals performance by the *Dang ki* is one of the main sources of attraction. The festivals constitute seasonal accentuations in the cult's normal activities. They provide the greatest chance for cults to attract and consolidate authority among their followers.

The *shen* is consulted for trouble arising from physical suffering and derangement, trouble attributed to bad luck, family trouble, the desire for communication with the dead, need of business advice, the need for protection in court cases and the choice of auspicious dates. In cases of minor illness, a high proportion of inevitable recoveries have been attributed to the *Dang ki*.

The value of the book has been enhanced by a number of photographs depicting the various phases of activity of the *Dang ki*.

Sachchidanada

From the Tablets of Sumer. *By Samuel Noah Kramer. Falcon's Wing Press, Indian Hills, Colorado. 1956. Price 5 dollars.*

In this book, for the first time, we find an attempt made to depict the life and activities of the people of Sumer in a lucid and staightforward manner. Sumerological research has claimed the labours of scores of scholars, and their patient labour has made it possible for us to gain a glimpse of the ancient Sumerians almost in flesh and blood. But most of such books are laden with

footnotes, terse in style and rather too detailed to interest the common reader. It is the merit of the present book that it caters to the needs of the layman generally interested in culture.

The book consists of twentyfive short essays. Each deals with one 'first' in man's recorded history. It is therefore of value in the history of ideas and institutions and in a study of cultural origins. The people of Sumer had developed a highly complex and advanced civilization as early as 3000 B. C. All aspects of their life have been touched upon, namely, government and politics, education and literature, philosophy and ethics, law and justice, agriculture and medicine, etc. We are amazed to find in Sumer discussion about cosmology and cosmogony, schools, love songs, libraries, proverbs, sayings, etc. All this is not mere conjecture but deduced from deciphering the numerous clay tablets inscribed in cuneiform script. The story of the decipherment of the tablet whose subject matter is subsequently discussed is given in the beginning of the chapter. The book is illustrated with a number of plates of the inscribed tablets and their associated finds.

Sachchidananda

Adibasi. *Edited by Sri Gananath Das and Nityananda Das. Vol. I, Nos. 2 and 3, 1956. Tribal and Rural Welfare Department, Government of Orissa.*

This publication of the Tribal and Rural Welfare Department of the Government of Orissa deserves special congratulation. It seeks to present to the Oriya-speaking public, not only a story of what is being done for the tribal people of Orissa, but also tries to educate the people in general with regard to the culture and problems of the Adibasis.

Some of the papers are of special interest and also illustrate the wide scope of the present journal. Thus, Sri Paramananda Acharya has contributed a paper on village gods and goddesses, Sri Gananath Das on the contribution of the Adibasis to Orissan culture, Miss A. C. Munro on Saora mothers, and so on. The reports of welfare activities presented by Shri Jagabandhu Mahapatra or the annual report of the activities of the Tarinipashi Seva Kendra by Manimala Devi and Jambubati Devi are also valuable.

We hope the journal will succeed in popularizing the cause of the Adivasis among the educated people of Orissa.

N. K. Bose

Without the Chrysanthemum and the Sword. *By Jean Stoetzel, Paris : UNESCO, 1955. Pp. 334, figs. 16.*

The author aims at presenting the attitudes of the Japanese youth in post-war Japan. The National Public Opinion Research Institute conducted the enquiry with a questionnaire, constructed with a great deal of thought and effort ; a specimen of which is presented in Appendix I of the book. The enquiry was conducted among 2,671 subjects, 61% of whom were rural and 39% urban. Census percentages of urban and rural populations in Japan are 75% rural and 25% urban (p. 34).

As a check on the answers to the questionnaires, some tests were given to a sample of 63 persons, 31 men and 32 women, selected from four or five geographically and socially contrasted groups. These persons first underwent projective tests. The second test consisted of a guided conversation with an opinion questionnaire which gave the subjects a chance of expounding their views freely.

It is apparent that the questions were framed in accordance with certain stereotypes concerning Japanese society. Several questions are meant to judge feelings of youth toward authority in the family as well as in the community. Others are on the inequalities between sexes. Still other questions are on international relations and war.

It is difficult to interpret the results of this study. Although the author wishes to orient us on the psychology of the Japanese people, one finishes the book with discontent, and a feeling of not having gained as much knowledge as was expected. One understands that a large percentage of the Japanese do not want another war. 'There is not the slightest room for doubt that Japanese youth is against military service' (p. 131). Also one comes to realize that equality between sexes is desired, or that the feeling of subjection towards parents is decreasing. But the lack of a concluding chapter with an integrated presentation of the results is greatly felt. The reviewer is of opinion that a great deal more could be learned of the Japanese people by reading any of the ethnographic studies

on Japanese communities available today, than from this book which makes a statistical excursion into the minds of the Japanese youth.

Jyotirmoyee Sarma

Ancient India (History and Culture). *By B. G. Gokhale, M. A., Ph. D. Asia Publishing House, 17 Gunbow Street, Bombay 1. Pp. 247. Price Rs. 10.*

The book came to me long ago for review, but a few students preparing for their M. A. examination in Ancient Indian History and Culture took the book for their study and it will suffice to say that they came out successful in their examination. This fact sufficiently bears testimony to the importance of the book for all Post-Graduate students of Ancient Indian History and Culture in universities in India and abroad. The treatment and the get-up of the book are good. The author has well divided the history of ancient India into two parts : (i) Political History, and (ii) Culture. Political history has been further subdivided into eight parts and culture into seven parts, followed by an epilogue and an index.

All interested in the history of ancient India will welcome a new edition of the book incorporating the results of the new discoveries, archaeological and otherwise, made in India since the publication of the present edition. The book will remain an indispensable companion to all students and scholars of Indian history and will be an interesting study for the general reader as well.

B. C. Roy

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Notice

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Editors : Bhabes Chandra Roy, M. A., LL. B.
Nirmal Kumar Bose, M. Sc., F. N. I.

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