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MAN IN INDIA

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BRACHYCEPHALY IN INDIA

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Introduction

BRACHYCEPHALY in India, especially of Bengal and Assam, has been the subject of large controversies. Many a racial element has been held to be responsible for this trait. Inspite of many speculations, our knowledge yet remains vague and no detailed survey of this character has been made so far. Guha (1935) in the census survey of 1931 prepared a coloured map of the distribution of head-form in India, to which Keith (1936) has referred in the following terms :

'Dr. Guha's map shows brachycephaly (red) sweeping southwards round both ends of the Himalayas. From the Pamirs it descends through Afghanistan, Baluchistan and Sind, and then extends continuously along the west, broadening out from Bombay so as to include almost the whole Deccan. The red band sweeps across the peninsula so as to include southern Madras. Only a small area in the south is left as blue (dolichocephalic), it lies along the Malabar coast. From the eastern end of the Himalayas the brachycephalic (red)

area passes from Bhutan and Tibet southwards through Assam to spread over Bengal and to end in Orissa'.

The actual data on which Guha based his map are however unknown, because the former have never been published. We are, therefore, unaware of the frequency of the different head-forms in any of the racial samples studied by him. Guha's distribution map cannot therefore be examined or checked by other scholars.

In the present paper, we have tried to gather all available data on brachycephaly in India, and an attempt has been made to find out whether brachycephaly is restricted to certain zones or it has a 'sweeping' distribution as shown in Guha's map.

The Data

All samples of 50 and above have been utilized. Different sets of measurements on the same population, which did not show any significant[1] difference, have been combined together. The following series have been combined as a result of the insignificant values of 't' :—

1. Khasi (Roychaudhuri, 100 & Waddel, 70)
2. Koch (Risley, 100 & Waddel, 88)
3. Santal (Risley, 100 ; Sarkar, 168, & Chatterjee and Kumar, 100)
4. Oraon (Risley, 100 & Basu, 250)
5. Māle (Risley, 100 & Sarkar, 189)
6. Rajbansi (Risley, 100 & Ray, 100)
7. Radhi Brahman (Roychaudhuri, 100 & Chakladar, 100)
8. Pascatya Vaidik Brahman (Chanda, 50 & Roychaudhuri, 114)
9. Pod (Roychaudhuri, 100 & Risley, 100)

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[1] Standard error has been calculated according to the formula :— S.E.$= \sqrt{\frac{p\,(100-p)}{n}}$, where p=percentage and n=total number of the sample. 't' test of significance was employed by using the formula $\frac{D}{\sqrt{\sigma_1^2+\sigma_2^2}}$ where D=difference of the two percentages and σ_1 and σ_2 the standard error of the two groups.

10. Chamar (Risley, 62 & Risley, 100)
11. Bagdi (Risley, 99 & Roychaudhuri, 100)
12. Goala (Risley, 89 & Roychaudhuri, 100)

Dr. G. M. Kurulkar was good enough to send us his unpublished data from Maharashtra. Sanghvi (1953), who has also utilized Kurulkar's data for his paper, has used the following abbreviations for the different groups of the above peoples, and we have retained them in the present study.

People	Abbreviations
1. Vadnagar Nagar Brahman	V.N.B.
2. Desastha Rgvedi „	D.R.B.
3. Koknostha Brahman or Chitpavan Brahman	K.B.
4. Desastha Shukla Yajurvedi Brahman ...	D.Y.B.
5. Chandraseniya Kayastha Prabhu ...	C.K.P.

Distribution

It will be seen from Tables 1—4 that there are three centres of highest concentration of brachycephaly in India. In each of these areas, brachycephaly has been found to occur in the very high percentages of $76{\cdot}8 \pm 3{\cdot}97$ (Kakar of N.W.F.P.), $82{\cdot}0 \pm 5{\cdot}43$ (Limbu of Nepal) and $77{\cdot}0 \pm 4{\cdot}21$ (Chakma of Chittagong Hill Tracts). There are also a few groups who show nearly 50% of brachycephaly and they live adjacent to the above territories. In the N.W.F.P. region, the Med of Rajputana shows $74{\cdot}6 \pm 4{\cdot}89\%$ of brachycephaly, while the Deohar and the Baloch possess $70{\cdot}0 \pm 3{\cdot}2\%$ and $57{\cdot}19 \pm 3{\cdot}5\%$ of the same respectively. The Jat from the Punjab also belongs to the same contiguous area and shows $58{\cdot}0 \pm 4{\cdot}9\%$ of brachycephaly. The only other group which shows more than 50% of brachycephaly is the Prabhu of Maharashtra, the actual frequency being $52{\cdot}0 \pm 4{\cdot}99\%$.

The Tibetans show $49{\cdot}99 \pm 4{\cdot}81\%$ of brachycephaly.

In the eastern region, the Maghs with their $59{\cdot}0 \pm 4{\cdot}92\%$ of brachycephaly also hail from the same region as the Chakmas, while the Koms with $56{\cdot}0 \pm 7{\cdot}01\%$ of this head-form come from Manipur. It will not, therefore, be out of place to group our

data into the following three zones, where three-fourths of the population show brachycephaly.

(1) ZONE A—N.W.F.P. and its southward extension : this comprises N.W.F.P., Punjab and Rajputana mainly. Although brachycephaly has been reported to be high in the western coast of India, the present data do not show any frequency as high as that of the above regions so as to warrant an independent centre. It appears that the brachycephaly of western India is an extension from N.W.F.P. which can be traced upto the Maharashtra country through Sind, Kathiawar, Gujarat, etc.

(2) ZONE B—Comprising the tracts along the foothills of the Himalayas.

(3) ZONE C—Comprising the Chittagong Hill Tracts, Bengal and Assam.

(4) OTHERS—Comprising regions other than those mentioned above. For the sake of brevity, the above three areas will be hereafter designated as Zones A, B, C.

Zone A

The data for this zone are presented in Table 1.

It will be seen that in this zone the highest frequency of brachycephaly of $76{\cdot}8 \pm 3{\cdot}97\%$ is represented by the Kakar of N.W.F.P., while the Kanjar of the same province shows the negligible frequency of $0{\cdot}97 \pm 0{\cdot}96\%$. There is no statistically significant difference among the Kakar, Med, Deohar, Jat and Baloch groups. They form, so to say, the nucleus of this zone. It is difficult to explain the gradual decrease of brachycephaly in the above table, but it shows one striking feature, namely, it gradually thins out as one moves away from the centre. The southward extension of this zone is poorly represented in the present data. The Prabhus show $52{\cdot}0 \pm 4{\cdot}99\%$ of brachycephaly while the D.R.B. of Bombay show only $18{\cdot}0 \pm 3{\cdot}84\%$ of the same. This is already apparent in the main centre where both the minimum and the maximum frequencies of the southward extension have been found. The absence of a very high frequency of brachycephaly probably justifies our labelling the present group as an offshoot from the main centre in N.W.F.P.

TABLE 1

Zone A—N. W. F. P., Punjab, Rajputana and Southern Extension. Arranged in the descending order of brachycephaly.

Sr. No.	People.	Locality.	Total No.	Mean.	Brachycephaly No.	Brachycephaly P. C.	Hyperbrachycephaly. No.	Hyperbrachycephaly. P. C.	Total Brachycephaly. ±S. E.	Author.
1	Kakar	N.W,F.P.	112	81·6	62	55·4	24	21·4	76·8±3·97	Risley
2	Med	Rajputana	79	82·0	43	54·4	16	20·2	74·6±4·89	do.
3	Deohar	N.W.F.P.	200	81·7	104	52·0	36	18·0	70·0±3·20	do.
4	Jat	Punjab	100	79·8	50	50·0	8	8·0	58·0±4·90	do.
5	Baloch	N.W.F.P.	271	80·4	129	47·6	26	9·6	57·2±3·50	do.
6	Biloch	Punjab	60	80·0	15	25·0	6	10·0	35·0±6·16	do.
7	Bhil	Rajputana	200	76·5	36	18·0	0	0	18·0±2·71	do.
8	Goala	N.W.P.&O.	100	73·0	16	16·0	0	0	16·0±3·66	do.
9	Pathan	Punjab	80	76·5	8	10·0	0	0	10·0±3·35	do.
10	Jat	N.W.P.&O.	53	74·3	4	7·54	0	0	7·54±3·62	Crooke
11	Dom	do	100	74·8	4	4·0	0	0	4·0±1·96	do.
12	Chauhan Rajput	do	50	73·4	1	2·0	1	2·0	4·0±2·76	do.
13	Khatri	Punjab	60	74·0	1	1·67	0	0	1·67±1·65	do.
14	Chuhra	Rajputana	60	73·4	1	1·67	0	0	1·67±1·65	Risley
15	Rajput	do	420	72·4	6	1·4	0	0	1·4±0·57	do,
16	Chuhra	Punjab	80	73·4	1	1·25	0	0	1·25±1·24	Crooke
17	Banya	N.W.P.&O.	80	73·1	1	1·25	0	0	1·25±1·24	Risley
18	Sikh	Punjab	80	72·9	1	1·25	0	0	1·25±1·24	do.
19	Bhar	N.W.P.&O.	100	73·5	1	1·0	0	0	1·0±0·99	do.
20	Chattri	do	100	73·0	1	1·0	0	0	1·0±0·99	do.
21	Kurmi	do	100	73·1	1	1·0	0	0	1·0±0·99	do.
22	Kanjar	do	103	74·7	1	0·97	0	0	0·97±0·96	do.
				Southern Extension						
1	Prabhu	Maharashtra	100	79·9	42	42·0	10	10·0	52·0±4·99	Risleyr
2	Nagar Br.	do	100	79·9	32	32·0	14	14·0	46·0±4·9	do.
3	V. N. B.	Bombay	100	80·9	36	36·0	4	4·0	40·0±4·88	Kurulkar
4	C. K. P.	do	100	78·0	20	20·0	6	6·0	26·0±4·38	do.
5	Madhyandina Br.	Maharashtra	624	77·9	129	20·6	32	5·2	25·8±1·74	Karve
6	D. Y. B,	Bombay	100	77·7	17	17·0	3	3·0	20·0±4·0	Kurulka
7	D, R. B.	do	100	77·0	15	15·0	3	3·0	18·0±3·84	do.
8	K. B.	do	100	76·8	14	14·0	3	3·0,	17·0±3·75	do.
9	Bhils	Gujarat	186	76·6	6	3·23	0	0	3·23±1·27	Mahalanobis, Rao & Majumdar

Zone B

This zone, of which the data are presented in Table 2, is represented by five groups only, of whom the Limbus of Nepal ($82{\cdot}0 \pm 5{\cdot}43\%$) show the highest percentage of brachycephaly in India. The Tibetans show about 50% of the same, while the Lepchas and the Murmis possess $40.92 \pm 6{\cdot}45\%$ and $30{\cdot}94 \pm 5{\cdot}73\%$ respectively. The Tharus show $0{\cdot}52 \pm 0{\cdot}27\%$ of brachycephaly.

It is difficult to state on account of the paucity of data whether this group thins out to low percentages of brachycephaly as in the case of Zone A. That, however, appears unlikely, because the neighbouring peoples do not show any appreciable quantity of brachycephaly. It is almost negligible among the Tharus, who appear to be the nearest representative of this stock.

TABLE 2

Zone B—Himalayan Foot Hills.

Arranged in the descending order of brachycephaly.

Sr. No.	People.	Locality.	Total No.	Mean.	Brachycephaly No.	Brachycephaly P. C.	Hyperbrachycephaly. No.	Hyperbrachycephaly. P. C.	Brachycephaly ± S.E.	Author.
1	Limbu	Nepal	50	84·3	20	40·0	21	42·0	$82{\cdot}0 \pm 5{\cdot}43$	Risley
2	Tibetans	Nepal, Bhutan Sikkim & Tibet	108	81·0	40	37·03	13	12·03	$49{\cdot}06 \pm 4{\cdot}81$	do
3	Lepcha	Sikkim & Darjeeling	57	79·9	18	31·58	5	8·77	$40{\cdot}35 \pm 6{\cdot}49$	do
4	Murmi	Nepal	65	79·5	18	27·38	3	3·56	$30{\cdot}94 \pm 5{\cdot}73$	do
5	Tharu	N.W.F.P.	65	73·9	1	1·54	0	0	$1{\cdot}54 \pm 1{\cdot}52$	do
6	Tharu	U. P.	192	72·3	1	0·52	0	0	$0{\cdot}52 \pm 0{\cdot}51$	Mahalanobis, Rao & Majumdar.

Zone C

Data from this zone are comparatively larger than the previous two zones. They are presented in Table 3.

In this zone, the highest frequency of brachycephaly has been found among the Chakmas of Rangamati (77·0 ± 4.21%), while the lowest percentage of 2·38 ± 1·66% occurs among the Abors of the Abor Hills, Assam. The gradual thinning out from a very high percentage of 77% to 2% is also obvious in this region as in the case of Zone A. This area has been the seat of a bitter controversy since the time Risley advanced his Mongolo-Dravidian hypothesis.

TABLE 3

Zone C—Chittagong Hill Tracts, Bengal and Assam. Arranged in the descending order of brachycephaly.

Sr. No.	People.	Locality	Total No.	Mean.	Brachycephaly		Hyperbrachycephaly		Total Brachycephaly ± S. E.	Author.
					No.	P. C.	No.	P. C.		
1	Chakma	Rangamati	100	84·3	38	38·0	39	39·0	77·0 ± 4·41	Risley
2	Magh	do	100	81·8	40	40·0	19	19·0	59·0 ± 4·92	do
3	Koms	Manipur	50	—	28	56·0	0	0	56·0 ± 7·01	Basu
4	Tipra	Rangamati	58	80·5	20	34·48	6	10·34	44·82 ± 6·45	Risley
5	Radhi Br.	Bengal	267	—	105	39·32	13	4·87	44·19 ± 3·03	Chakladar & Roychaudhuri
6	Varendra Br.	do	179	80·1	60	33·5	17	9·5	43·0 ± 4·82	Roychaudhuri
7	D. V. Br.	Bengal	100	79·9	35	35·0	5	5·0	40 0 ± 4·8	Roychaudhuri
8	D. R. K.	do	62	80·24	—	30·6	—	6·4	37·0 ± 6·13	do
9	Brahman	E. Bengal	68	79·0	24	35·29	0	0	35·29 ± 5·74	Risley
10	P. V. Br.	Bengal	164	—	49	29·88	6	3·66	33·54 ± 3·68	Chanda & Roychaudhuri
11	Vaidya	do	100	79·84	31	31·0	2	2·0	33·0 ± 4·70	Roychaudhuri
12	Nolvas	do	200	76·32	64	32·0	0	0	32·0 ± 3·31	Basu
13	Muchi	Birbhum	100	—	—	—	—	—	30·0 ± 4·58	Chakladar
14	Brahman	Bengal	100	78·7	22	22·0	5	5·0	27·0 ± 4·43	Risley
15	Chandal	do	67	78·1	14	20·93	4	5·97	26·9 ± 5·4	do

Sr. No.	People.	Locality.	Total No.	Mean.	Brachycephaly No.	Brachycephaly P. C.	Hyperbrachycephaly No.	Hyperbrachycephaly P. C.	Total Brachycephaly ± S. E.	Author.
16	Pods	do	200	—	45	22·5	4	2·0	24·5±3·04	Risley & Roychaudhuri
17	Kayastha	do	100	78·2	19	19·0	5	5·0	24·0±4·27	Risley
18	Namasudra	do	100	78·41	22	22·0	2	2·0	24·0±4·27	Roychaudhuri
19	Kaibarta	do	100	77·3	20	20·0	1	1·0	21·0±4·07	Risley
20	Goala	do	189	—	30	15·87	3	1·58	17·45±2·74	Risley & Roychaudhuri
21	Khasi	Khasi Hills	202	—	32	15·84	2	0·99	16·83±2·59	Waddel & Roychaudhuri
22	Purum Kuki	Manipur	60	77·25	7	11·6	0	0	11·6±4·09	Das
23	Thado Kuki	do	60	76·64	6	10·0	0	0	10·0±3·6	Shaw
24	U. R. K.	Bengal	50	—	5	10·0	0	0	10·0±4·24	Roychaudhuri
25	Bansphor	Jessore (Bengal)	50	—	5	10·0	0	0	10·0±4·24	Basu
26	Bagdi	Bengal	199	—	18	9·04	0	0	9·04±2·03	Risley & Roychaudhuri
27	Koch	N. E, Bengal	188	—	15	7·97	0	0	7·97±1·97	Risley & Waddel
28	Parois	Jessore	400	—	20	5·0	0	0	5·0±1·09	Basu
29	Bunas	Bengal	200	—	10	5·0	0	0	5·0±1·54	do
30	Rajbansi	do	200	—	6	3·0	1	·05	3·05±1·29	Ray & Risley
31	Abor	Abor Hills	84	—	2	2·38	0	0	2·38±1·66	Kemp & Brown

D. V. Br.—Daksinatya Vaidika Brahman.
D. R. K.—Daksin Radhi Kayastha.
P. V. Br.—Pascatya Vaidika Brahman.
U. R. K.—Uttar Radhi Kayasthas.

Others

This group comprises the rest of the Indian data which are presented in Table 4. The percentages of brachycephaly are very small, ranging from the maximum of 14·29% to the minimum of 0·4%.

TABLE 4

"Others," excluding Zones A, B and C. Arranged according to States.

Sr. No.	People.	Locality.	Total No.	Mean.	Brachycephaly No.	Brachycephaly P. C.	Hyper brachycephaly No.	Hyper brachycephaly P. C.	Total Brachycephaly ± S. E.	Author.
UTTAR PRADESH										
1	Khatwar	Mirzapur	197	73·60	8	4·11	1	0·51	4·62±1·49	Mahalanobis Rao & Majumdar
2	Rajwar	do	105	73·46	3	2·85	0	0	2·85±1·62	do.
3	Majhi	do	156	72·67	1	0·64	0	0	0·64±0·64	do.
4	Panika	do	158	72·54	1	0·63	0	0	0·63±0·63	do.
5	Chamar	do	159	72·92	0	0	1	0·62	0·62±0·62	do.
6	Kahar	U. P.	57	72·17	1	1·75	0	0	1·75±1·74	do.
7	Bhatu	Moradabad	150	74·46	4	2·67	1	0·67	3·34±1·46	do.
8	Agharia	Agra	107	73·71	3	2·80	0	0	2·80±1·59	do.
9	Brahmin	Basti	86	72·92	2	2·32	0	0	2·32±1·55	do.
10	Dom	Gorakhpur	112	73·69	2	1·79	0	0	1·79±1·25	do.
11	Ahir	E. & Western	68	73·76	1	1·47	0	0	1·47±1·46	do.
12	Oraon	do	100	72·30	1	1·0	0	0	1·0±0·99	do.
13	Habru	Kanpur	124	73·52	0	0	1	0·81	0·81±0·79	do.
BIHAR										
1	Kahar	Bihar	56	76·1	8	14·29	0	0	14·29±4·67	Risley
2	Goala	do	100	76·2	11	11·0	3	3·0	14·0±3·47	do.
3	Bhaban	do	59	76·7	5	8·5	2	3·3	11·8±4·2	do.
4	Kanaujiya Br.	do	160	—	16	10·0	2	1·25	11·25±2·49	Chatterjee
5	Maghya Dom.	do	100	76·2	8	8·0	2	2·0	10·0±3·0	Risley
6	Dosadh	do	100	76·8	9	9·0	0	0	9·0±2·86	do.

Sr. No.	People.	Locality.	Total No.	Mean.	Brachy-cephaly No.	Brachy-cephaly P. C.	Hyper brachy-cephaly No.	Hyper brachy-cephaly P, C.	Total Brachy-cephaly ±S. E.	Author.
BIHAR (CONTD.)										
7	Maithil Br.	do	190	—	10	5·26	7	3·69	8·95±2·07	Chatterjee
8	Kurmi	do	171	—	13	7·26	0	0	7·26±1·97	Risley
9	Brahman	do	67	74·9	4	5·97	0	0	5·97±2·89	do.
10	Bhuiya	Choto Nagpur	100	76·0	8	8·0	0	0	8·0±2·71	do.
11	Lohar	do	73	75·3	4	5·48	0	0	5·48±2·66	do.
12	Kharowar	do	100	75·5	4	4·0	1	1·0	5·0±2·17	do.
13	Oraon	do	350	—	12	3·42	1	0·03	3·45±0·90	Risley & Basu
14	Kharia	do	78	74·5	1	1·28	1	1·28	2·56±1·79	Risley
15	Munda	do	250	74·3	1	0·4	0	0	0·4±0·39	Basu
16	Santal	Santal Prgs.	344	—	14	4·07	1	0·29	4·36±1·1	Risley, Sarkar - Chatterjee & Kumar
17	Malpaharia	do	100	75·8	3	3·0	0	0	3·0±1·71	Risley
18	Mâle	do	289	—	4	1·38	0	0	1·38±0·67	Risley & Sarkar
19	Bhumij	Manbhum	100	75·0	2	2·0	0	0	2·0±1·4	Risley
OTHER STATES										
1	Korku	Melghat (C. P.)	50	76·36	3	6·0	0	0	6·0±3·35	Chattopadhaya
2	Kondhs	Orissa	100	—	1	1·0	0	0	1·0±0·99	Ray
3	Toda	Nilgiri Hills	75	77·5	1	1·33	0	0	1.33±1·37	Thurston
4	Kanikkar	Travancore	140	74·3	6	4·28	1	0·71	4·99±1·81	Chatterjee & Kumar
5	Chamar	U. P. & Bihar	162	—	8	4·94	3	1·85	6·79±1·95	Risley
6	Parawar	Tinnevelly	50	79·39	12	24·0	5	10·0	34·0±6·7	Hornell
7	Shanar	do	100	80·72	41	41·0	10	10·0	51·0±4·99	do.

Discussion

It will be seen from our previous observations that brachycephaly appears to be more or less confined to certain zones. The paucity of data stands in the way of any kind of generalization and whatever suggestions are made here, are tentative in nature. More data are required. The present data, however, show that the three zones are not interrelated and this view is also in harmony with the gradual thinning out of the high frequencies in two of the three areas.

In Zone A, the highest value of 76·8% of N.W.F.P. decreases to about 60% in the Punjab and Baluchistan and then it falls to 18% in Rajputana. In N.W.F.P. itself, it falls to the small percentage of 1—2 in certain groups and these small percentages are probably due to the indices falling on the border line of mesocephaly and brachycephaly. The southward extension of this zone in Maharashtra, Gujarat* and other contiguous areas is probably justified due to the absence of any high percentage of brachycephaly similar to that of N. W. F. P. The available data show that the Prabhus possess $52{\cdot}0 \pm 4{\cdot}99\%$ of brachycephaly while it falls to $46{\cdot}0 \pm 4{\cdot}9\%$ and $40{\cdot}0 \pm 4{\cdot}88\%$ in the case of the Nagar Brahman and the V.N.B. respectively. The differences between the above three groups are, however, not statistically significant. The other groups show a much too low percentage of brachycephaly and they show a statistically significant difference. The Pamirs have always been recognized as a centre of high brachycephaly, and the same is true of the Hindu Kush region. It would therefore not be out of place to assume that the brachycephaly of N.W.F.P. has its source in the above region.

In Zone B, the high brachycephaly of the Limbus of Nepal has been accepted for the purpose of this survey to be the main source. This appears to be Mongoloid in origin.

* Majumdar and Sen (1949) have shown that Gujarat is a mesocephalic region. They however say that this mesocephaly is derived from the crossing between a dolichocephalic race and a brachycephalic race. This view seems to be based upon certain misconceptions. Mesocephaly is dominant over dolichocephaly, The authors have not, however, given the proportions of brachycephaly or of any other head-form in their study.

A characteristic feature of this zone is the absence of the gradual thinning out of the high percentage as is met with in the case of the other two zones. We have very little data from this zone, but the contiguous areas nearby do not show any high incidence of brachycephaly.

Zone C has been discussed very often in Indian anthropology and all were directed against the Mongolian hypothesis of Risley. It will be evident from Table 3 that the territory covered by those having at least 25% of brachycephaly is not very far from the Chakma nucleus of high brachycephaly. It therefore appears that whatever brachycephaly is found in this area, has its origin in the east and this is all the more evident in the absence of any influx of brachycephaly from Zone B.

The latter argument is also borne out by the fact that brachycephaly appears to decrease appreciably and significantly statistically in the regions farther from the nucleus. The Uttar Radhi Kayasthas of Bengal have only $10{\cdot}0 \pm 4{\cdot}24\%$ of brachycephaly. It has been found to be very low in the western regions of Bengal and the same is true of Bihar. The only exception in this region is formed by the Muchis of Birbhum, who show $30{\cdot}0 \pm 4{\cdot}58\%$ of brachycephaly. The northern region, as represented by the Rajbansi, Koch, etc., do not also appear to have high amounts of brachycephaly. It is $3{\cdot}5 \pm 1{\cdot}29\%$ and $7{\cdot}97 \pm 1{\cdot}97\%$ in the Rajbansi and Koch respectively.

What is the source of this brachycephaly? It is not probably Mongolian, since Zone B appears to be, on the basis of the data at hand, restricted to a very limited area. The north-eastern frontier also has no high frequency of the same and the probable direction of this character appears to be S. E. Asia. The Malayan strain is not only characterized by a very high frequency of brachycephaly but by high cephalic indices as well, as will be evident from the following data of de Zwaan (1908). He found among the Menangkabau Malays the following distribution of cephalic index.

		No.	%
× — 69·9	Hyperdolichocephal.....	1	0·2
70— 74.9	Dolichocephal.....	12	2·1
75— 79.9	Mesocephal...	131	23·0
80— 84.9	Brachycephal.....	294	51·7
85— 89.9	Hyperbrachycephal.....	111	19·5
90— 94.9	Ultrabrachycephal.....	19	3·3
		568	99·8

The above data, when classified according to Martin's specification, followed all through this paper, stand as follows :—

		No.	%	
× —75.9	Dolichocephal.....	27	4·75	
76—80.9	Mesocephal...	178	31·34	
81·0—85.4	Brachycephal.....	252	44·37	63·91
85.5— ×	Hyperbrachycephal...	111	19·54	
		568	100·00	

Undoubtedly, here we find a very strong centre of brachycephaly and geographically the area is closer to Eastern India than any other region. The Malayans are well known as sea-gypsies in S. E. Asia and their adventures on the coastal regions of India are well known.

According to Martin's classification, the Menangkabau Malays possess 63·91% of brachycephaly with a standard error of 2·94 and this appears to be closer to the brachycephaly of the Chakmas (77·0 ± 4·41%). The 't'-test also shows a value of 0·27, thereby showing no significant difference between the two percentages.

In India, there are certain groups of peoples at the southern tip of the peninsula in the district of Tinnevelly whom we have not been able to group within any of the above zones, because of their fairly high brachycephaly and their peculiar geographical location. They are the Parawars and the Shanars, who show 34·0 ± 6·7% and 51·0 ± 4·99% of brachycephaly respectively. They were measured by Hornell (1920) in course of his study on the *Origins and Ethnological Significance of Indian*

Boat Designs[1]. Hornell, from his study of boat designs, inferred that there have been separate waves of migration from Malayasia, which are responsible not only for the variations in boat designs but also for the importation of coconut into India. He is of opinion that the first wave was Polynesian and the second Malayasian. He also emphasizes a similarity between the Shanars and the Malayasian people of Java. The high amount of brachycephaly among the Shanars ($51{\cdot}0 \pm 4{\cdot}99$) also points to such an origin. It may be of the same nature as the brachycephaly of the Chittagong Hill Tracts, though they show a statistically significant difference from the Chakmas. Detailed studies are however necessary for a correct appraisal of the ethnic affinities.

It is therefore not improbable that the Malayan element has been responsible for the brachycephaly of eastern India to a certain extent. Hornell has also mentioned a tradition among the Izhuvans which says that the latter are the descendants of the Shanars, who brought the coconut palm with them into India.

Is the brachycephaly of Bengal due to this Malayan influence? At present we have too inadequate data to prove this conclusively; and we have also not examined this point of view critically. In the present paper, our purpose has been mainly to examine whether brachycephaly can be grouped into certain well-defined zones. That it is possible to do so will be evident from our previous discussion. Brachycephaly in India has well-defined centres of distribution and it does not appear as a sweeping, continued and evenly distributed strain.

Summary

1. All available data on the cephalic indices of samples of 50 or more individuals, have been utilized for finding the different centres of brachycephaly in India.

2. Three populations, each having about 75—80% of brachycephaly, appeared to be the three primary centres of

1 Thanks are due to Prof. K. P. Chattopadhyay for drawing our attention to this work.

brachycephaly. They are : (a) Kakar of N. W. F. P. (76·8 ± 3·97%) ; (b) Limbu of Nepal (82·0 ± 5·43%) ; (c) Chakma of the Chittagong Hill Tracts (77.0 ± 4 41%). These three zones can be differentiated, and they have been called A, B and C respectively for the sake of brevity.

Zone A comprises N. W. F. P., Punjab, Rajputana and its southern extensions. The brachycephaly of Gujarat, Maharashtra, etc., appears to be a southward extension of Zone A.

Zone B comprises the Himalayan foot-hills.

Zone C comprises the Chittagong Hill Tracts, Bengal and Assam.

The rest of the data have been grouped in the group 'Others.' Data from Tinnevelly district show high percentages of brachycephaly and have been separately discussed.

3. In Zones A and C the frequencies of brachycephaly have been found to thin out from the centre gradually. Zone B appears to be rather confined in nature and behaves differently from the other two zones.

4. The brachycephaly of Zone A probably has its origin in the Pamirs, whereas that of Zone B is probably Mongoloid. The brachycephaly of Zone C does not appear to be related to that of B and since the northern and the western regions of this zone are areas of high dolichocephaly, it appears that brachycephaly of Zone C has its origin in S. E. Asia. Among the Menangkabau Malays it has been found to occur not only in the high percentage of 63·91 but also in the very high cephalic indices above 91. Hornell, also from a study of boat designs and physical measurements of some caste groups from Tinnevelly, has shown that there have been migrations from Polynesia and Malayasia and the importation of coconut into India has also been due to such movements. The authors suggest tentatively that the Malayan brachycephaly may have had some influence in the make-up of the brachycephaly of eastern India.

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CEREMONIAL FRIENDSHIP AMONG THE BHUMIJ OF MANBHUM

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Introduction

THE Bhumij of Manbhum, a hinduized tribe, like other castes and tribes of that area, are in the habit of establishing ceremonial friendship with people of other than their own community. These ceremonial friendships are mainly of two types. One is known as *phul* and the other is known as *soya*. The former is established between two men or two women belonging to different castes or tribes and more or less of the same age. *Phul* can be formally initiated at any age, either before or after marriage and with any number of persons. The ceremony for *phul* friendship can be performed at any time of the year, though festive occasions are especially preferred. In contrast to this, the *soya* type of friendship can only be formed between two married women or widows of different castes or tribes, both being either without children or having the same number of male and female issues. *Soya* cannot be ceremonially established at any time of the year ; it can only take place within a certain time following specific events.

The following is an account of the different aspects of *soya* friendship based upon the author's field-work in a large Bhumij settlement named Bhangat, within the jurisdiction of the village of Madhupur in the district of Manbhum. Bhangat is three miles and a half east of Nimdih railway station.

The Selection

The main reason for entering into *soya* friendship is the fear of the consequence which are likely to befall the family of a woman who refuses an advance from some other woman. There are certain conditions which have however to be satisfied before

a friendship of the *soya* type can be formally established. These are : (1) *Soya* friendships are not made unless a general movement for making such a friendship arises ; such a movement is locally known as the *hulus*. The period when a movement of this kind lasts is sometimes referred to as *hulus-thulus*. The beginning of a *hulus* depends upon certain happenings ; these have been dealt with in detail below. The *hulus* spreads from one village to another in the direction opposite to that from which it entered into that village. Generally it moves from south to north or from west to east. It means that the women of a particular village will have to go to another village to eastablish *soya* friendship in linear continuation of the direction from which the *hulus* came into the village. They are not free to approach a village situated in any other direction. *Soya* friendship can also be formed between women of the same village, if their houses are situated in the right direction, provided, of course, if the other conditions are fulfilled. The dire consequences which are likely to overtake a woman's family if she refuses to form such a friendship either of her own accord or when asked to do so by another woman, are carried from mouth to mouth, from one village to another ; and this gives an added impetus to the movement.

(2) *Soya* friendship is established only between women of the same *mel* or category. That means, the women concerned must both be either married or widowed, and should have the same number of male and female children. A curious rule is that women must not belong to the same caste or tribe. Thus, a married or widowed Bhumij woman can establish *soya* friendship only with a non-Bhumij married or widowed woman of any other caste or tribe when both of them have an equal number of issues, including an equality with respect to the sexes of the children, and provided their houses or their villages are in the right direction in relation to the *hulus*. Women or widows without any issue can also form *soya* friendship, provided the other conditions are fulfilled. As women search earnestly for a *mel* (or 'similar') either in their own or in neighbouring villages, the *hulus* naturally spreads from one village to another.

(3) If a woman is not able to secure a *mel* in the first village

where she goes in accordance with the rule, she proceeds to the next village in the same direction. In this way, she must go on moving, without taking any food, from one village to another until she is able to come across a *mel*. But if she fails to get a *mel* in course of three consecutive days, she returns home after establishing *soya* friendship either with a tree, or a river, or with a pig, having an equal number of offsprings as herself, or with a termite hill surrounded by lesser hills, which are of the same number as her own children. There are many stories connected with such a form of friendship. Two of these have been narrated below under a separate heading.

(4) *Soya* friendships between two women of the approved degree of similarity or *mel* has to solemnized by means of a proper ceremony. The first thing done in a *soya* friendship is to invite each other's family members to a feast and give them presents of clothing, this being known as *soya ughal*. This leads to certain changes in the mutual behaviour of members of the two families.

Ceremony

Though the ceremony varies a little from one case to another, yet there are some features common to all of them. The two women concerned stand facing one another in an east-west direction outside the house of the woman to whom an advance has been made by the other. Before performing the ceremony they must take their bath and wear washed clothes. Before standing face to face, each of them brings with her a bell-metal pot containing water, a twig of mango tree with leaves in it, immersed in the pot and a leaf plate containing a small quantity of sun-dried rice, a few blades of sacred grass, betelnuts and a myrobalan. These things can and do vary from case to case. When they take their stand, other women present hold a piece of cloth hanging between them. Then each of them sprinkles water three times on the other's body with the help of the mango twigs. The water is taken from their respective pots. Then they exchange the leaf plate containing the articles mentioned above three times, as a result of which each finally gets the plate of the other. After this they exchange

the water pots with the mango twig three times. Then each of them takes back her own water pot, only keeping the mango twig of the other. After that they embrace each other three times and bow down to one another thrice. The above-mentioned procedure can also vary in different cases (see case histories given below). In this way the ceremony ends, and after inviting each other to come to their respective homes, they go back to their own homes. The leaf cup with the articles are generally kept inserted in the thatch of their respective huts or somewhere else. Sometimes, after a few days are over, these are thrown into a pond. The water of the pot is sprinkled on the roof of their huts.

Pattern of behaviour between the friends

After the ceremony is over it is customary for each friend to invite the family members of the other and give them a good feast and present new clothes to the husband and children of the *sòya*, though caste restrictions are maintained in taking cooked food from each other's hand. The *soya* friends think that they become sisters by performing the ceremony and they treat each other's family members as their own family members. They address each other with the term *soya-he*. Each addresses the other's father, mother, brother etc. by simply adding the prefix *soya* before the respective terms of address. The children of the *soya* friends look upon one another as brothers and sisters. The family members of the *soya* look upon themselves as related of one another and expect mutual help in time of distress. They do not however observe the period of pollution after death in each other's family.

How a movement for soya *friendship starts*

There is no rule regarding the beginning of a *hulus*. It starts all of a sudden, based on some happenings, and the news is carried by mouth from one village to another, when both married and widowed women become anxious to establish *sòya* friendship in order to avoid the mishaps which may befall their families if they do not fall in line with the *hulus*.

The last *hulus* reached the neighbourhood of Bhangat nearly three years ago in the month of January-February, 1952. No

one of Bhangat can recall the year in which the *hulus* prior to the last one came. According to the old men of the village it came perhaps 60 years ago.

The story connected with the beginning of the last *hulus* told by one old, reliable and honest man of Bhangat, is as follows.

One day an old woman accompanied by an old man came to the house of a villager in a village (name not known) west of Bhangat and asked the mistress of that house to establish friendship with her. But she refused, and as a result the old *soya* woman went away without saying anything. Later on the mistress of the house found that worms came swarming into her cooked food and at night her house was burnt down by fire. As a consequence the people were frightened, but no one could find out the old woman. Then after a few days the woman appeared again at a house in another village (name not known), east of the former one and asked the mistress of that house to establish *soya* friendship with some suitable person having the requisite *mel* qualifications. On this occasion, she did not ask for the establishment of *soya* with herself. She went away after simply reminding the mistress of the consequences which would fall upon her if she failed to establish *soya* with a suitable *mel*. Within a few days the mistress of the latter village heard about what had happened to the woman of the former. Naturally, she and all the married women of that village became very much anxious to establish *soya* friendship and began to search for *mels* in villages east of their own. In this way the last *hulus* started and began to move eastwards.

How a movement ends

As time passes, and when it is seen that nothing happens to the woman who refuses to enter into *soya* friendship, the *hulus* gradually dwindles down and at last comes to an end. During the last *hulus*, the wife of Gobinda Singh of Bhangat was very much eager to establish *soya* friendship, but she failed to get a woman of her *mel* in the villages east of Bhangat. She used to gather information about those villages from various

persons. Naturally, she became very much worried. Gobinda Singh began to find out cases where nothing had happened on refusal to establish *soya*, inspite of an advance from another woman of her *mel*. It was found that the wife of Baneshwar Mahato of Ghuntiadi village had refused to establish *soya* with a woman of the same *mel* of Jamtanr village belonging to the barber caste, although the advance had been made to her. The reason for this refusal was that as Baneshwar was a well-to-do man, his wife did not like the idea of entering into *soya* with a poor woman of the barber caste. Everybody who heard about the refusal became terribly frightened, but nothing happened to the family within a week. On this, Gobinda Singh's wife gave up the idea of entering into such a friendship. Later on, another such case was reported from Maraidih where nothing had similarly happened to a woman of the barber caste after refusal. When the news about these two incidents gained currency the movement for establishing *soya* friendship gradually died down and at last the *hulus* of that year came to an end.

Stories regarding the failure to select a soya

There are stories connected with the failure of a woman to get a *mel* in villages lying in the direction of the *hulus* after searching for three consecutive days. The following are two such stories. The first one was related by Bahadur Singh, a young married Bhumij man of Bhangat, while the other was narrated by Saimoni, an elderly Bhumij widow of the same village.

A woman with six sons and six daughters wanted to establish *soya* friendship during a *hulus*, but after searching from village to village in the direction of the *hulus*, she was unable to find a suitable *mel*. As a result, she was returning home in despair, when she met a female pig with twelve offsprings and asked the pig to establish *soya* friendship with her. She sprinkled water on the pig's body and bowed down to her. After that she invited the pig for *soya ughal*. Later on she was rewarded by the pig with a gold necklace.

In another case a woman with twelve sons was returning after the failure to get a proper *mel* when she established *soya* with a pig having twelve offsprings. As a part of *soya ughal*, the pig gave her a large number of gold coins.

Case histories

At present there are fourteen women in Bhangat who formed *soya* friendship during the *hulus* of 1952. Of these, five cases were studied in detail. The first case has been described here in detail, while only the variations in the other three cases have been noted.

Case 1: One day during the *hulus* of 1952, the wife of Khepa Gorai, who is a Kolu or oil-presser by caste living in Bamni village, came to Bhangat accompanied by some other woman of that village in order to establish *soya* friendship with their respective *mels*. Before coming, all of them took their bath and wore clean, newly washed *saris* (unsewn wearing cloth of women). Each of them brought some articles in her hand, the party being accompanied by a number of drummers. The wife of Khepa Gorai brought a bell-metal pot containing water, a twig of mango tree with leaves in it, a cup made of *sal* leaves containing a small quantity of sun-dried rice, one betel nut, one myrobalan and a few blades of the sacred *dub* grass. After reaching Bhangat, the woman came to know that Mongola, wife of Kisto Singh had got four sons and a daughter like herself. And further as Mongola was a Bhumij by caste, she was considered to be a suitable *mel*. So Khepa's wife came to Kisto Singh's house and asked Mongola to become her *soya*. As it is customary not to refuse such an offer, Mongola accepted the advance readily. As she had already taken her bath, she only changed her cloth for a washed one and came out of her house with the same articles as had been brought by Khepa's wife. Then they stood in front of each other outside the main entrance of the hut. Mongola faced west while Khepa's wife stood facing east. According to Mongola, it is customary to perform the ceremony at the entrance of a hut and the intending friends should stand facing

east and west. Any one of them can face east. When they stood in this manner, a few women from the neighbourhood gathered at the place to see the ceremony. Menfolk do not come near such a ceremony when it is being performed. After Mongola and Khepa's wife had taken their stand with the articles mentioned above, two married women from among the onlookers held a *sari* transversely like a screen between them at about waist high. Then they sprinkled water from the pots three times on each other's body with the help of the mango twigs. After that, they exchanged their leaf cups three times. As a result, the leaf cups of the one came into the hand of the other. Then they exchanged three times the pots containing water and mango-twigs. After this they returned each other's pot, keeping only the mango twig of the other and pouring a little water into the other's pot from her own. When these operations were over, they embraced each other three times and bowed down to one another three times from the two sides of the screen. The ceremony thus came to an end, when the *soyas* invited one another to their houses for meals. Mongola asked Khepa's wife to dine at her house that day. But Khepa's wife after thanking Mongola went back to her village. Then Mongola sprinkled the water of her pot on the roof of her hut and kept the leaf cup along with the articles and the mango twig tucked under the wooden frame of the roof inside her room. Last year she threw them away into the water of a tank near by.

A few months later, Khepa Gorai came to the house of Kisto Singh and presented Kisto Singh, Mongola and their children with one piece of men's cloth named *dhuti*, one *sari* and garments respectively. When Khepa reached the house of Kisto Singh early in the morning, he was given a breakfast of chapped rice and molasses. He fetched his own drinking water from the pond, because the Kolu caste does not take drinking water from the hand of the Bhumij. Later on, in the noon, he cooked his own meal in the courtyard, when the raw articles of food were presented to him by Kisto Singh. Cooking was done by Khepa himself because the caste taboos

prevented him from taking cooked rice from the hand of the Bhumij even though the family was of a *soya*. After meals, he took rest for a while and went back to his village in the afternoon. While returning home, he invited Kisto Singh and his family members to come to his house. But uptil now they have not been able to go to Khepa's house, nor have they been able to make a present of cloths because they are very poor. But they wish to do so in the near future.

Case 2: *Soya friendship between Pabitra, wife of Bahadur Singh, Bhumij by caste of Bhangat and Khadu, wife of Nilkamal Mahato, Kurmi by caste, of Anta village.*

Khadu came to Bhangat from Ketunga, a village west of Bhangat, where her father lives. The points of difference are :

(1) Khadu came to Bhangat after securing information beforehand that Pabitra could serve as her suitable *mel*.

(2) Beside the same kinds of article mentioned in the first case, Khadu placed a copper coin in her leaf cup. That was also done by Pabitra.

(3) No screen was held between Pabitra and Khadu during the ceremony.

(4) The articles with the leaf cup was kept tucked in the frame of the roof inside the room and it was not later thrown into a tank. It was possibly destroyed by rats.

(5) After the ceremony was over Khadu gave some sweetmeats to Pabitra which she carried home.

(6) *Soya ughal* was performed by Bahadur Singh about a year later, when nearly ten to fifteen persons from Nilkamal's house came to Bahadur's house and were feasted. For cooking meals, one man of the Moira or confectioner caste was employed, for both a Bhumij and a Mahato can take cooked food from his hands. They gave the members of Bahadur's family new clothings and sweetmeats. But uptil now Bahadur's family has not returned the visit.

Case 3: *Soya between Phulmoni, a Bhumij woman with one son and three daughters, of Bhangat, and a Mahato woman of Ketunga village having the same number of sons and daughters.*

(1) The Mahato woman came alone from Ketunga one day during the last *hulus* and discovered that Phulmoni was her *mel*.

(2) The articles brought by her were a brass pot with water and mango twigs, a leaf cup containing a small amount of sun-dried rice and a small bell-metal pot containing a little mustard oil and turmeric paste. The same things were brought by Phulmoni at the time of the ceremony.

(3) When they stood facing each other, two women from the neighbourhood held a towel as a screen between them.

(4) After standing face to face in this manner, Phulmoni first poured the oil mixed with turmeric paste on the feet of the Mahato woman as anointment and a sign of respect, when she reciprocated in the same manner. This was done once. Then the leaf-cups with sun-dried rice were exchanged between them three times.

(5) The water from the pot was not sprinkled on each other's body. Only, they alternately poured a little water from her own pot into the other's three times. And their respective mango twigs were also exchanged three times. Thus the ceremony came to end.

(6) No embracing or saluation to each other took place.

(7) The leaf cup containing rice and the mango twig of Phulmoni was kept in the same manner as in the earlier cases. Those things are still there.

(8) No *soya ughal* has been performed uptil now by any of the families. At present Phulmoni does not know anything about her *soya* friend.

Case 4 : *Soya friendship of Saimoni, a Bhumij widow with one son of Bhangat and a widow of Kurmi caste with one son of Majhidih village.*

(1) During the last *hulus,* one day Saimoni met the Kurmi woman in the weekly market at Bamni where the latter asked her for information about a widow with one son of non-Kurmi caste living in Bhangat. Then finding that Saimoni herself was exactly of the required qualification, they decided to perform the ceremony in the morning after three

days. The articles to be taken at the time of the ceremony were decided upon on that day.

(2) The ceremony was pefformed in a place of worship lying midway between the two villages, where both of them came on the appointed day. They were accompanied by a few women from their respective villages.

(3) The articles carried by each was a bell-metal pot containing water, a twig of a mango tree with leaves, a leaf cup containing a small amount of sun-dried rice, one copper coin, one myrobalan and a few flowers, locally known as *gulanch*. They went there after taking their bath and wearing washed clothes.

(4) They did not sprinkle water on each other's body, but the Kurmi woman washed the feet of Saimoni with a little water. Saimoni repeated the operation. This was done once. Then the leaf cups and the water pots with the mango twigs were exchanged three times as in the first case. But after this, each of them placed a flower in the notch of the ear and the head of the other. The flowers were taken from the leaf cups. This was done three times by exchanging the same flowers taken from each other's ear. Then they embraced and saluted one another as in the first case.

(5) After the ceremony was over, Saimoni sprinkled the water of the pot on the roof of her hut but kept the leaf cup containing the articles and the mango twig in her box. They are still there.

(6) *Soya ughal* has been performed by both the families concerned in the usual manner. After ten or twelve days, Saimoni paid a visit to her *soya* for *soya ughal* with two other women of her village. Saimoni's *soya* did not however come to Saimoni's house for *soya ughal*, but her son, her husband's younger brother and his son returned the visit after five days. They could not take midday meals there as they had to leave Saimoni's house on account of an urgent engagement. But all other things, such as the presentation of cloth etc., were performed as usual.

(7) Though it was not possible for the *soyas* to visit each

other's house any more, yet the son of Saimoni's *soya* often calls at Saimoni's house in order to enquire about the health and welfare of the family.

Analysis

An analysis of the census and the case histories of *soya* friendship in Bhangat reveals the following salient facts :

(1) During the period of present study (January-February, 1955) there were 65 married women and 31 widows in Bhangat, of whom only 11 married women and 3 widows had entered into *soya* friendship during the last *hulus* three years ago.

As the study was carried out after three years of the *hulus*, during which period no calamity took place, we can assume that the number of married women and widows has not decreased to a great extent recently. We can further say that the number of married women and widows has not considerably increased on account of new marriages or due to the return of some of the married girls of this village as widows. Even if we assume that a few cases of death or migration have taken place among the women of this village who entered into *soya* friendship, still we find that the proportion of the women who entered into *soya* friendship during the last *hulus* is very low in comparison with the total number of women who were eligible.

(2) Of the present fourteen women of the village who entered into *soya* friendship, it was found that excepting two women, about whom exact information is not available, none went outside their own village to establish friendship of their own accord.

(3) The villages from which women came to Bhangat in order to establish *soya* are not exactly west of Bhangat but they are on the whole west of the line which can be drawn between these villages and Bhangat.

(4) Though it is customary to move in the direction of a *hulus* while looking for a proper *mel*, yet we find that generally the information about *mels* is gathered beforehand, and it is after that that a woman tries to establish *soya* in accordance with the direction of the *hulus*.

(5) The details of the ceremony concerning *soya* varies from case to case, but the general pattern is formed by the exchange of some kinds of presents between the intending friends, including some form of salutation between them of one kind or another.

(6) Caste retrictions between the member of the families of a pair of *soya* friends are strictly observed, although they consider themselves as very close friends.

(7) A careful scrutiny of the cases reveals that though *soya ughal* is an important part of *soya* friendship, yet few Bhumij families are very particular about its performance.

(8) The pattern of behaviour prescribed between *soya* friends according to custom is not always actually maintained.*

*This report is based upon a part of the field-work undertaken in Manbhum to study some aspects of culture change due to contact among the Bhumij, according to a scheme drawn up by Sri Surajit Sinha, who is now a Research Fellow in U. S. A.

TREATMENT OF DISEASES AMONG THE LODHAS OF WEST BENGAL

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Introduction

LODHAS believe in the mysterious power possessed by certain objects and persons. These powers are either maleficent or benificent. They also believe in the existence of spirits influencing certain actions in their personal lives. As a result of this bigoted faith in the existence of spirits, they perform certain rites during some of the critical periods of life to appease them. In their economic life also they observe some magico-religious ceremonies to drive away the evil spirits or exorcise *bhuts* which are supposed to cause harm in their life. They believe that the earth around them is full of all sorts of spiritual powers or energies, some of which are intensely active while others are less potent. There are some mischievous spirits or evil powers which are associated with the spirits of persons who die in an unnatural manner. The powers or energies are also cultured by the spirit-doctors, called *ojhas* or *gunnis*, to find out a witch or a ghost who caused harm. Some restrictions, taboos, talismans or amulets are used to avert the evil powers which are generally thought to be maleficent. Divination is performed to detect causes of ill luck. Sometimes *Byakras* are employed to foretell the future. If necessary, magical blowings, or *mantras* or incantations are uttered to drive away the evil spirits or to counteract the evil attempts of the other. Except the belief in different spirits or disembodied souls they have the conception of deities of different grades with helpful destructive powers and influences. Certain rites in the form of prayers, invocations, offerings and sacrifices etc., are performed and they believe that the spiteful tendencies of the spirits or powers concerned can thus be averted or

mitigated and their good will secured. This conviction enables a man to enjoy good luck in respect of health, crops, cattle, and social privileges. For the propitiation of the deities of higher grade, worship or sacrifices are done by the *Deheris*, or the village priests sometimes assisted by the *Talias* or *Chharidars*.

A few Deities, Spirits and Powers

1. **Sitala :** Sitala is the goddess not only worshipped by the Lodhas but also by other Hindus of the locality. Among the Lodhas she is looked upon and worshipped with awe as she is the presiding deity of epidemic diseases like cholera, small pox, measles etc. She has got six sisters named after the six common epidemic diseases :

(i) *Kada Rasanta* (a type of small pox) ; (ii) *Lohagaria* (a fatal type turning the body black) ; (iii) *Baincha* or chicken pox (which resembles *bainch* fruits—*Flacourtra sepiaria*). (iv) *Chaltaphulia*—a type of fatal small pox resembling *chalta* fruits or (*Dillenia indica*)—the patient becomes swollen and dies soon ; (v) *Milmila* or measles ; (vi) *Olautha* or asiatic cholera.

During the invocation of the goddess Sitala her sisters are also invoked and prayers offered to them. The popular belief is that Sitala also looks after the health and wealth of the village and controls the epidemic diseases. She becomes pleased only if sacrifices, prayers and offerings are made to her. In care of serious illness she is also invoked and sometimes the person attacked with an epidemic disease takes a vow to offer a sacrifice in the hope of recovery.

Ram Digar of Kukai, P. S. Kesiari, offered two goats to the goddess Sitala in fulfilment of such a pledge in April 1954. It is also a practice to worship Sitala in case women are found barren. In village Hajipur, P. S. Kesiari, one Girish Dandapath was without any child for a long time. He promised to offer one he-goat to the goddess Sitala of village Kukai.

She is generally installed in a shrine locally called *maro*. Regarding her appearance, different Lodha informants hold different opinions. According to Srimanta of Mamansa, she is

a middle-aged woman with innumerable eyes on her head. According to Bhaja Paramanik of Kukai, she comes to the shrine riding on an elephant every Tuesday and Saturday. Sometimes bags are used by her to carry seeds of disease.

2. **Baram or Garam :** Baram is the tutelary deity of the Lodhas. He is looked upon as a powerful deity residing in the sacred grove. He is the deity of the woods. Sometimes he appears in human form but is taller than the average man. His body is covered with long hair all over, with a large moustache and wide open eyes. He rides on a tiger or an elephant. At dead of night the cracking and grating sounds from the woods is supposed to be produced by the trees falling under his axe. If he becomes infuriated or feels disturbed in course of his nightly walk, tigers may visit the village. Some diseases are also attributed to him. Baram can be appeased by necessary prayers and sacrifices. Sometimes votive terracotta elephants and horses are offered to him.

3. **Chandi :** Chandi is also considered to be a mighty deity by the Lodhas. In different places of the Lodha jurisdiction she is called by different names, such as Joychandi of Pitalkanthi in P. S. Sankrail, Bhairabchandi of Daijuri in P. S. Binpur, Joychandi of Kadamdiha in P. S. Nayagram, Duasinichandi of Bhalukapukur (Kukai) in P. S. Kesiari, and Baramchandi of Mamansa in P. S. Narayangarh.

Regarding the manifestations of Chandi different statements are made by different informants. According to some, she controls the wild animals, snakes etc. If she gets annoyed, these wild animals may do harm to people. According to Lakhindra Mallik of Kukai, she is in control of serious diseases. When a man suffers from chronic disease, her blessings are invoked through prayer and promise of sacrifice. A large number of goats are sacrificed every year at Pitalkanthi and Mamansa. One Kungar of Saldanga, P. S. Kesiari, redeemed his pledge by offering to Duasinichandi one bell and dish-shaped musical instrument after recovery from serious illness.

4. **Yugini :** Yugini is the most dreaded of all the spirits. She is one of the maids of Sitala. When Sitala becomes angry

or dissatisfied, visitations of epidemic diseases like cholera, small pox etc. occur, taking a huge toll of lives. These dead persons are kept at the place of Yugini. Regarding her appearance it is said she has no head but her eyes are fixed on the breast. She resides in the cremation ground. Black fowl are generally sacrificed to appease her anger.

Minor ghosts or mischieveous spirits : These spirits are credited with inherent proneness to mischief-making. They generally represent the departed souls of men who had accidental or abnormal deaths, like those caused by snakebites, wild animals, suicide, death during pregnancy, or death caused by some mischievous spirits. These spirits have got ever-changing shapes and generally reside in unholy and fearsome places like cremation grounds etc.

(a) **Kundras :** These are extremely mischievous in nature ; there are several such. One is Kalipat Kundra who is a gigantic figure of jet black colour having a pair of axe-like moustaches. This spirit is set upon a person by a magician to terrorize the former. One Dhuma Bhakta of Kadamdiha, P. S. Nayagram, has harboured this spirit. It is very fond of calves and babies. Another, Desai Chandi Kundra, is very fond of eating up a man's heart. Some sudden deaths are attributed to him.

(b) **Daini bhuts :** These are the spirits of witches having ever-changing shapes. If they cast a look upon a child the poor victim begins to wither from that day and at last dies.

(c) **Chirguni :** Souls of women dying at childbirth or during pregnancy are believed to undergo a lower birth and come back to a region inhabited by evil spirits. They are supposed to take possession of young men and women and make them senseless. Sometimes victims show the signs of spirit possession with high fever and blood-shot eyes.

Classification of the Magicians

To deal with deities, there are Deheris, whereas to counteract the powers of spirits, different magicians or Gunnis are called in for service by the Lodhas.

Magicians are grouped in Lodha society according to their nature of practice.

(i) *Gunnis* or *Ojhas* or sorcerors, sometimes act as witch-doctors or spirit-finders. (ii) *Dains* or witches, generally practice harmful activities. They are associated with magical power since birth. (iii) *Byakras* or spirit-possessed men who foretell the future. (iv) The snake-charmers.

Gunni : The main function is to cure diseases by diagnosis with the help of medicinal roots or herbs administered to sick persons. When required, they apply magical spells to drive away the evil spirit supposed to cause disease. They give amulets and charms to cure the patient or prevent attack of evil spirits. Occasionally they find out the evil spirit and play the part of a sorcerer. They utter long-winded incantations to drive away spirits, which, according to the above classification, is the function of a soothsayer. When a pregnant woman suffers from labour pain they are also called in. Sometimes, they direct persons affected to promise the offering of a fowl.

In the village of Kukai, Hari Bhakta and Jiten know the art of sorcery. In village Sankaridanga, Panchu Paramanik is reputed for his magical powers performed through *kanphuk* or blowing wind with charms by his mouth into the ears of the diseased person. Dharani Digar of Parulda, P. S. Narayangarh, is a Gunni. He knows the art of driving away spirits. In Daharpur, P. S. Narayangarh, Umesh Kotal is reputed to practise this. He can counteract the activites of witches. In the village of Darkhuli, P. S. Jhargram, one Panchu is well known for his magical powers. He makes the oil divination, locally called *telpanja,* to detect the activities of witches. Once he performed the bow-divination to cure Nadiya Lodha of Jaralata who suffered from sudden swelling of the leg in the year 1953. Sital Ahari of Kadamdiha is a well-known magician and can control the Chirguni spirits.

Dains or witches : The belief in witches is widely prevalent in Lodha society. They are believed to cause harm to men and women. Witches are condemned when they are detected by the Gunnis. Sometimes they are seriously assaulted

or excommunicated from society. One Radha Mallik of Sankaridanga is supposed to know this art. He was believed to have killed some boys by his witchcraft when they died as a consequence of blood vomiting. Due to hostility and suspicion of the local people, Radha Mallik had to shift to Narayangarh. As he led a single life, it was easy for him to bid a hasty retreat. According to Lakhindra Mallik of Kukai the witches have evil mouths and evil eyes. They are born with an evil potency in their eyes. If the witch stares at a fine calf, the calf is sure to die shortly. If the witch gazes at a particular vegetable field or fruits, they dry up soon.

In the village of Birkar in P. S. Narayangarh, one Kandru Kotal aged 45 was suspected of practising witchcraft, as according to some of the villagers he had 'eaten up' a few children of the same village in the year 1954. The particulars of the children are given below: (i) Suren Kotal's two year old son, (ii) Makra's one year old daughter, (iii) Tahasil Ahari's one year old granddaughter. The children died all of a sudden and the villagers began to suspect Kandru Kotal of witchcraft. One day Kandru was seriously beaten by Yudhisthir Kotal of the same village and threatened with death. Later he was taken to an Acharya Brahmin (astrologer) near Dantan railway station for verification of their suspicion. Fortunately this astrologer gave a different opinion and Kandru's life was saved. Yet the villagers did not give up their opinion. It was then that the present writer went to the spot and made a hasty compromise between Kandru and the villagers.

As a safeguard against witchcraft, the placenta of a child is buried inside the room to avoid evil eye. In a good vegetable garden, the skull of a cow is placed for the same reason. Witches are hated as well as feared by the Lodhas. Occasionally some amulets or charms are worn to avert the evil eye of the witches.

Byakra or spirit-possessed man : Byakras are supposed to be able to foretell the future. They have to undergo a systematic course of training from a preceptor or *Guru*. In each Lodha village there are a few Byakras, as in the village of

Kukai, there are Gobinda, Gopal, Mahendra working under the guidance of Hari Bhakta. Similarly, Kanta, Banka and others of Kadamdiha are under the guidance of Sital Ahari.

The Snake-charmer : Snake-charming is the subsidiary occupation of the Lodhas and some of them are reputed to be able to counteract snake poison by magical incantations. They worship the goddess Manasa by sacrificing a nestling pigeon. Sital Ahari of Kadamdiha, Pitambar Bhakta, Kumud Bhakta of Dihipur are famous for their art. They have to attain mastery in this art by personal aptitude.

The present position

Some of the fundamental magico-religious ideas and practices of the Lodhas have been presented above. Due to contact with the neighbouring caste groups, or due to some other reason, many of the above practices are being abandoned by them, though belief in them is still retained. Though precautions are taken against epidemic diseases, yet belief in the magical powers of Gunnis or in charms is firmly rooted in their minds. Some of the villages are very close to the police station or railway station where there are trained physicians. The Lodhas now-a-days take frequent help from physicians, while the use of local herbs or country remedies is also widespread.

A detailed statement of the incidence of disease in a few villages for one whole year and the modes of treatment are tabulated below in order to indicate how religious and magical beliefs or practices stand in relation to other ways of treatment.

TABLE

Vill. Daharpur , P. O. Narayangarh (1954-1955).

Sr. No.	Name.	Age.	Sex.	Details of the disease.	Methods of treatment.	Period of suffering.
1	Murali Kotal	32	Male	Pneumonia	Medicinal herbs etc.	20 days
2	Rebati Kotal	8	Female	Dysentery	do.	1 month
3	Indra Bhakta	70	Male	Pneumonia acute	Doctor called	15 days
4	Draupadi	17	Female	Labour pain	1 goat to Sitala	do.
5	Satis Bhakta	32	Male	Pneumonia	Doctors consulted	do.
6	Kamala Kotal	18	Female	Acute labour pain	1 goat promised to Sitala	5 days
7	Gunadhar Kotal	40	Male	Pneumonia	Doctor consulted	10 days
8	Badal Bhakta	5	Male	General anasarca	Doctor and medicine	2 months
9	Ratinath Kotal	32	Male	Venereal disease	Medicinal herbs	1 year
10	Nani Kotal	17	Female	Chronic headache	Gunni called : sickle heated and touched to forehead during pain	1 month
11	Gurai Kotal	7	Male	Sudden high fever with congested eye. Supposed case of spirit-possession	1 goat and plantains offered to Baram	2 days
12	Ashu Kotal	33	Male	Pneumonia	Doctor consulted	15 days
13	Parbati Kotal	45	Female	Swollen feet with fever	Medicinal herbs	5 days
14	Netri Nayek	16	Female	Labour pain	Promised to offer sweets and a garland to Sitala	1 day
15	Basanti Kotal	18	Female	High fever with delirium, supposed case of spirit-possession	Byakra consulted. Gunni treated by magical blowing	2 days

Sr. No.	Name.	Age.	Sex.	Details of the disease.	Method of treatment.	Period of suffering.
16	Sani Nayek	7	Female	as in No. 15	Byakra consulted. Promised to offer 1 goat to Sitala	2 days
17	Ganesh Digar	40	Male	Pneumonia	Doctor consulted. 1 garland to Sitala and 1 fowl to Baram	10 days
18	Gostha Digar	15	Male	do,	do.	15 days
19	Brojo Digar	6	Female	High fever with delirium	Byakra consulted. 1 garland to Sitala 1 fowl to Baram	3 days
20	Bankim Mallik	33	Male	Pneumonia	Doctor consulted.	10 days
21	Chaitanya	6	Female	do.	do.	15 days
22	Prava	2	Female	High fever, supposed case of spirit-possession	Gunni and Byakra consulted	2 days
23	Sara Bhakta	15	Female	Acute labour pain	1 garland and 1 goat promised to Sitala	2 days
24	Reba Kotal	40	Female	Pneumonia	Vermilion and fowl promised to Baram	7 days
25	Lakkhi Mallik	16	Female	Pain in the chest	Medicinal herbs from Gunni	7 days
26	Baidya Mallik	6	Male	Measles	1 garland, sweets, 1 goat promised to Sitala	5 days
27	Sami Kotal	17	Male	Pneumonia	Doctor consulted. 1 piece of cloth and goat promised to Sitala	15 days
28	Bipin Bhakta	16	Male	Pain in one side	Doctor consulted	2 days
29	Behula Bhakta	2	Female	Sudden fever	Doctor consulted. 1 goat and sweets to Sitala	10 days
				Village—Kukai, P. S. Kesiari (1953-54).		
1	Ram Kotal	60	Male	Swelling of right foot	Medicinal herb given by Gunni	9 days
2	Bibhuti Kotal	1	Male	Fever	1 talisman and magical aid given by Gunni	14 days

Sr. No.	Name.	Age.	Sex.	Details of the disease.	Method of treatment.	Period of suffering.
3	Gagan Kotal	40	Male	Fever	1 talisman and magical herbs used. Doctor consulted later. Sweets promised to Sitala	18 days
4	Pulin Kotal	2	Male	Sudden high fever with congested eyes	Byakra consulted 1 fowl promised to Baram	1½ days
5	Balaram Digar	6	Male	Pneumonia	Medicinal herbs by Gunni. Sweets promised to Mahaprabhu	15 days
6	Sabani Digar	3	Female	do.	Medicinal herb by Gunni. Sweets promised to Sitala	15 days
7	Nishi	32	Female	Diarrhœa	Doctor consulted. Promised to offer sweets to Sitala	4 days
8	Brajendra Mallik	32	Male	Asthma	Doctor consulted	Chronic
9	Pitambar Mallik	42	do.	Malaria	Medicinal herbs by Gunni	8 days
10	Bipin Mallik	55	do.	Chronic acidity	Doctor consulted	Chronic
11	Lakh-indra	45	do.	Venereal disease	Medicinal herbs	do.
12	Budhi Nayek	6 months	Female	Fever	No treatment	1 day
13	Ashu Nayek	25	Male	Pneumonia	Doctor consulted. Promised to offer sweets to Sitala	15 days
14	Santi Nayek	4	Female	do.	Medicinal herbs and talisman	10 days
15	Draupadi Digar	72	Female	Venereal disease	Medicinal herbs applied. Doctor consulted. Promised to offer sweets to Sitala	Chronic
16	Usha Digar	1	Female	Asthma	Promised to sacrifice a pigeon to Baram	15 days
17	Ila Digar	3	Female	Stomach trouble with Helmin-thic infection	Medicinal herbs used. Lastly doctor consulted. Promised to offer a garland to Sitala and one fowl to Baram	2 months

Sr. No.	Name.	Age.	Sex.	Details of the disease.	Methods of treatment.	Period of suffering.
18	Kamini Kotal	32	Female	Venereal disease	Doctor consulted. Promised to offer 1 silver medal to Sitala	6 months
19	Rakhal Kotal	86	Male	Rheumatism	Doctor consulted	Chronic
20	Gobinda Nayek	37	do.	Pneumonia	Medicinal herbs by Gunni. Doctor consulted later. Promised one goat to Sitala	20 days
21	Lakshmi Kotal	10	Female	High fever, congested eye	Byakra and Gunni consulted	1 day
22	Chunu Nayek	2	Female	Gastric trouble	Doctor consulted. Promised to offer sweets to Sitala	2 days
23	Nalini Nayek	11	Male	Cholera	Doctor consulted. Promised to offer sweets to Sitala	4 days
24	Malati Nayek	7	Female	Malaria	Medicinal herbs used	4 days
25	Kini Mallik	32	Female	Swollen ear	do.	4 days
26	Satish Nayek	1	Male	Gastric trouble	Promised to offer sweets to God Hari	
27	Jamini Bhakta	35	Female	Malaria	Doctor consulted	15 days

Village—Kasipur and Mamansa, P. S. Narayangarh (1953-54)

1	Kedar Nayek	70	Male	Fever	Medicinal herbs taken from Gunni	7 days
2	Kadambini Nayek	50	Female	Chronic headache	Doctor consulted, 2 goats promised to Sitala	10 days
3	Kulabala Bhakta	80	Female	Weakness due to old age	No treatment	2 years
4	Jaleswar Nayek	36	Male	Fever, gastric trouble	Doctor consulted	10 days
5	Bhanu Nayek	29	Male	Gastric trouble	do.	15 days
6	Nakphuri Nayek	10	do.	Malaria	Medicinal herbs	15 days

Sr. No.	Name.	Age.	Sex.	Details of the disease.	Methods of treatmeut.	Period of sufferings.
7	Bhaku Nayek	40	Male	Fever	do.	10 days
8	Satya Nayek	20	Male	do,	Doctor consulted. Promised to offer 1 fowl to Baram	8 days
9	Khandi Bhakta	9	Female	Pain in the chest	Doctor consulted	9 days
10	Mangli Bhakta	32	Female	Rheumatism	Medicinal herbs used and later Doctor consulted	3 years
11	Nishi Nayek	50	Female	Malaria	Doctor consulted. Promised to offer sweets to Sitala	15 days
12	Maheswar Kotal	55	Male	Heart-burn	Medicinal herbs used. Doctor consulted	1 year
13	Bimal Kotal	10	Male	General anasarca	Doctor consulted	3 months
14	Bindu Bhakta	3	Female	do,	do.	2 months
15	Lakshindra Kotal	22	Male	Dysentery	do.	1 month
16	Bentu Kotal	30	Male	Asthma	do.	11 months
17	Pramila Bhakta	20	Female	Typhoid fever	do.	20 days
18	Banku Kotal	28	Male	Pneumonia	do.	1 month
19	Sambhu Kotal	23	Female	do.	do.	do.
20	Kusumi Nayek	72	Female	Brain complaints, defective eye-sight	Medicinal herbs used	do.
21	Khudiram Nayek	22	Male	High fever	do.	20 days
22	Surendra Bhakta	42	Male	Typhoid	do.	15 days

MOTHER-IN-LAW MARRIAGE AMONG THE GAROS

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THE author visited the Garo Hills in 1953. The custom of marrying the widowed mother-in-law among the Garos is connected with *nokrom*-ship. The son-in-law who marries the heiress (*noknadona*) of the house is known as nokrom. As the mother-in-law is the de jure owner of the household property, the nokrom has to marry her after the death of his father-in-law to assume the full responsibility of the house. In case he refuses, he will have to move out of the house. It is only on this basis that marriage is performed with the widowed mother-in-law among the Garos. The other sons-in-law, who are known as *chawari*, do not enjoy this privilege.

Investigation into 42 Garo families reveals that there are 22 nokroms. Out of these 22 nokroms, 14 married their widowed mothers-in-law and of the remaining, 7 could not do so on account of the death of the widowed mothers-in-law prior to their marriage with the heiress, and one did not marry formally because of the senility of the mother-in-law.

Of 14 cases of widowed mother-in-law marriage, children were subsequently born in 7 cases, while in 2 cases the noknadonas died after the marriage of the widowed mothers-in-law with the nokroms. In the latter case, another wife, whether spinster, widow or divorcee, belonging to the same *machong* as the noknadona had to be found for the nokrom by the machong. The subsequent wives assumed the status of noknadona but lived as *jikgiti* (slave wife) under the full control of their husband's first wives' mothers.

It is obligatory among the Garos for the nokrom to belong to the machong of his father-in-law. The machong is however responsible for supplying spouses to the surviving partner of the deceased.

Typical cases of polygyny are also recorded along with the practice of mother-in-law marriage. As for instance, a nokrom married his widowed mother-in-law and her two daughters one after another, while another married his widowed mother-in-law, her daughter and his wife's sister's daughter.

Case studies

1. Riksang Sangma (*Manda*)[1] married Songi Marak (*Chambugong*) and his widowed mother-in-law Nochin. When Nochin died she was replaced by Nesang Marak (*Chambugong*) and when Songi died she was replaced by Mikma Marak (*Chambugong*). Songi was the mother's elder sister of Mikma. As a result of this marriage, the widowed mother-in-law has 3 daughters and Songi 1 son and 1 daughter.

2. Jongram Sangma (*Mangsang*) married Sarmi Marak (*Chambugong*). As Sarmi's mother died, her father, who is dead now, married Senil Marak (*Chambugong*), but had no issue thereby. Jongram, the nokrom, on the death of his father-in-law, married his step mother-in-law Senil and 1 son and 1 daughter have been born to her. Sarmi also has 1 son.

3. Mongsing Marak (*Chambugong*) first married his mother's brother's daughter, Khenji Sangma (*Mangsang*), and on the death of his father-in-law, married his widowed mother-in-law Sinjari who has 1 son. When his wife Kenji died, he married Jonsi Sangma (*Mangsang*) and 1 son has been born to her also.

4. Nangsing Sangma (*Mangsang*) married Jinmi Marak (*Chambugong*) and his widowed mother-in-law Jhingri. 1 daughter has been born to Jhingri after her marriage with Nangsing.

Cases of departure

1. Sungan Marak (*Chambugong*), who was not a nokrom, married Chongmi and her widowed mother Dingji Sagma (*Chisik*). No child has been born to the latter.

2. Jalmingson Sangma (*Agitok*) and his wife Thangai

[1] The name of the *machong* is given within brackets.

Marak (*Chambugong*) had no issue. So Thangai adopted her sister Nokchal's daughter Nonak Marak (*Chambugong*) who was married to Wilfan Sangma (*Agitok*) who, on the death of Jalmingsong, did not marry his widowed mother-in-law on account of her senility.

Descent, among the Garos, is traced through the mother ; residence is also matrilocal. In the nuclear family the nokrom and noknadona will continue to live to the exclusion of other daughters who move out after their marriage with the chawari. In such families, the noknadona or heiress has to be selected in course of time and the nokrom will also marry the widowed mother-in-law, who was originally not a noknadona in her mother's house.

In case of marriage with the noknadona and her widowed mother, or in the case of plural wives, residence is always common and no separate establishment is made, this being due to the consideration that the plural wives and their children belong to the same machong.

In the village of Thebronggiri, Thangjing Marak (*Maji*) married his widowed mother-in-law and her two daughters who are living together and each of them, including the mother-in-law, has children by Thangjing. The mother-in-law has 5 children, her eldest daughter 4 and the youngest 3. The family of this particular Garo consists of 16 persons, and in such cases the mother-in-law is always *jikmamung* (or *mongma*), the principal wife, and one of her daughers will always be selected as noknadona for the house to the exclusion of the daughters of other wives known as *jikgiti*. Damda Marak of Allagiri village married Didik Sangma (*Agitok*) who lives with her husband and her husband's first wife's mother.

The selection of the nokna is a continuous process and even in the event of the barrenness of the couple or the death of noknadona, a girl from the machong of the wife has to be adopted in order to fulfil the social obligation that obtains in the marriage of widowed mother-in-law with the nokrom.

Bose's (1936) reference to this practice points out that mother-in-law should necessarily be the mother's brother's

wife, but from my investigation in 42 Garo families, it appears that out of 14 marriages, in 4 cases only mothers-in-law were the mother's brother's widow and in 1 father's widowed sister. Correspondingly the present data reveal that out of 22 marriages between nokrom and noknadona, in 4 cases only the father's sister's son happens to be nokrom and in 1 the mother's brother's son.

Mother-in-law marriage naturally involves polygynous relationship. Primary marriage with the daughter is marked by the performance of *do-sia* ceremony and in the subsequent marriage with the widowed mother-in-law this ceremony is not performed, provided the father had witnessed the marriage of his daughter. If he was not alive when his daughter was married, his widow is formally married at the same time as the daughter. Marriage with the widowed mother-in-law involves complication in kinship relationship. This is illustrated by one example.

Charan married Nega. They had three daughters, the eldest of whom is Nuni. When Charan died, Nega married Thangring and on the death of Nega, Thangring married Nuni who has a daughter named Merat. This is a clear case of step-daughter marriage. Furthermore, Benjing married Merat, and after the death of Thangring, Benjing married Nuni, his mother-in-law.

The principle underlying the marriage with widowed mother-in-law is primarlly based on the Garo system of inheritance and control over the family property by the two machongs of the spouses. The right acquired by the nokrom by marrying the noknadona is further strengthened by marriage with the widowed mother-in-law.

REFERENCE

Bose, J. K. (1936). 'The Nokrom system of the Garos of Assam', *Man*, Vol. XXXVI, March, pp. 45-46.

I am indebted to Dr. N. Datta-Majumder, Director, Department of Anthropology for help in writing this paper.

FURTHER FINDS OF STONE AXES IN SINGHBHUM

By DHARANI SEN and
UMA CHATURVEDI

THE discovery of a rich celt-site in the Sanjai valley near Chakradharpur in Singhbhum was first reported in the *Proceedings of the 28th Indian Science Congress* (*1941*), and an account of the surface geology and typology was published by the first author in *Man in India* (Vol. 30, No. 1, 1950). A large number of artefacts, including axes, chisels, cores, microliths and potsherds was found on the surface and a few inches below it in the clayey surface soil. Of these artefacts, the axe which occurs in great variety and in all stages of manufacture, constitutes the predominant tool family. The site may indeed be described as a celt factory.

The site is unstratified and is located on an ancient land-surface about fifty feet above the alluvial flood-plain of the Sanjai, which is again 12-15 ft. above the bed of the stream. It is covered with a deposit of dark clayey soil interspersed with rubbles of shale and phyllite and a mixture of pebbles and gravels of quartzite and other rocks. Not far from the site, there are outcrops of schist, quartzite and epidiorite, the last providing the bulk of the raw material for the manufacture of the axes. The artefacts occur on this surface mixed with rubbles and gravels. Being open and unprotected, the land surface is now being cultivated, and a large number of artefacts have been broken in the process. During a recent reconnaissance in Singhbhum, the first author revisited the site and adjoining stretch of land, and was able to recover a number of artefacts, dug up during recent cultivation, including axes, pounders, polishers, ringstones, cores, flakes, microliths and potsherds.

The present paper mainly deals with the technique and typology of the stone axes. The other artefacts, including micro-

liths and pottery, will be dealt with in the future when the problem of age of the culture will also be discussed. The precise dating of the site is difficult in view of the unstratified nature of the deposits in which the artefacts occur. Typologically, however, the stone axes of Singhbhum generally resemble those of Indo-China and Malaya found in a clearer and datable neolithic context.

The techniques involved in the manufacture of the axes have been previously described (Sen, 1950). In the main the axes were made by three processes : (i) chipping and pecking, (ii) grinding and (iii) polishing. There are specimens which were made by chipping only. In our series, the largest number of specimens was made by chipping and polishing, polishing being mostly confined to the cutting edge. Yet another group reveals the application of three techniques of chipping, grinding and polishing : chipping at the margin, grinding on the surfaces and polishing at the working edge. Polishing is either smooth or glossy. Completely ground but unpolished or completely polished axes are very few in our series. On the basis of the techniques employed, the axes may be classified into five groups as follows :

(i) Completely chipped axes.
(ii) Partially chipped and ground axes.
(iii) Partially chipped and polished axes.
(iv) Partially chipped, ground and polished axes.
(v) Completely polished axes.

It is interesting to observe that certain specimens reveal a polished surface superimposed upon a ground surface. Naturally, the surface must be prepared by grinding before it is polished. In many specimens, traces of chipping remain, mostly on the margin, even after the tools have been generally smoothened (Fig. 7).

Among the axes in our series, three characteristic shapes are mainly observed, viz., (i) trapezoidal, (ii) oval or ovaloid and (iii) sub-triangular or triangular.

The axes reveal characteristic medial cross-sections. A typological classification of the axes may be usefully attempted

on the basis of medial cross-section and external form. On this basis, the axes in our series fall into six groups, namely, axes having the following types of cross-section : (i) ellipsoidal, (ii) ovoid or lenticular, (iii) flat lenticular, (iv) triangular, (v) plano-convex, (vi) rectangular.

(i) *Ellipsoidal cross-section :* This group includes axes which are either triangular or trapezoidal in shape. The specimens are chipped and partially polished, or completely polished. Cutting edge is generally convex, though there is a difference in the degree of convexity ranging from slight to deep. This group is not very common (Fig. 7).

(ii) *Ovoid or lenticular cross-section :* This group includes axes which are either triangular or trapezoidal in shape. The specimens are completely chipped, or chipped, ground and polished, or chipped and polished. Polishing is generally confined to the cutting edge and chipping to the margins. Margins are blunted by chipping. Cutting edge is either straight or convex. Axes of this group are very common in our series (Figs. 10, 11).

(iii) *Flat or flattened lenticular cross-section :* This group includes axes which are either elongated trapezoidal or roughly triangular in shape. The specimens are either completely chipped or completely polished. The cutting edge ranges from straight to deeply convex or almost semi-circular forms. Polar cross-section is roughly rectangular or lenticular. Examples of this group are not very common (Fig. 9).

(iv) *Triangular cross-section :* This group includes axes which are triangular in shape. The sizes vary a great deal. The specimens are partially chipped and polished, and show bold parallel longitudinal flaking on the dorsal surface, resulting in a medial ridge. Polishing is usually towards the cutting edge. Cutting edge is convex. Polar cross-section is triangular. Tools of this group are rare (Figs. 1 and 4).

(v) *Plano-convex cross-section :* This group includes axes which are roughly oval, triangular, and elongated trapezoidal in shape. Specimens are either completely chipped or chipped, ground and partially polished, or chipped and partially polished,

or completely polished. The cutting edge ranges from straight to deep convex or almost semi-circular forms. Polar cross-section is either plano-convex or lenticular. This group includes the most common axe-types in the collection (Figs. 2, 5, 8).

(vi) *Rectangular cross-section* : The axes in this group are generally trapezoidal in shape and are chipped, ground and polished. Polish is mainly towards the pole and lateral margins. The lateral margins are blunted by grinding. Cutting edge is symmetrically convex. Polar cross-section is roughly rectangular. Tools of this group are rare (Figs. 3 and 6).

All the above groups generally reveal chipping and polishing techniques. In Group I, a comparatively large area of the specimens is covered by polishing, whereas in Groups III and V, it is covered by chipping. In Groups II and IV, chipping and polishing are almost equally distributed. Where specimens are partially polished, polishing is generally confined to the cutting end. The elongated trapezoidal form having lenticular cross-section is the most common in our series including the old collections.

It may be mentioned here that the axe-types of Groups II, III and V having trapezoidal and triangular forms show general typologic resemblance with the stone-axes of Hoabinian, Bacsonian and Somrongsen culture-complexes of Indo-China, where a sequence has been worked out as a result of excavation. Here in Singhbhum and adjacent areas of Manbhum and Mayurbhanj, no stratigraphic sequence has yet been found. At the present stage, no chronogical relationship can be envisaged between Indian and Indo-Chinese neolithic culture-complexes.

A detailed typology of the artefacts follows.

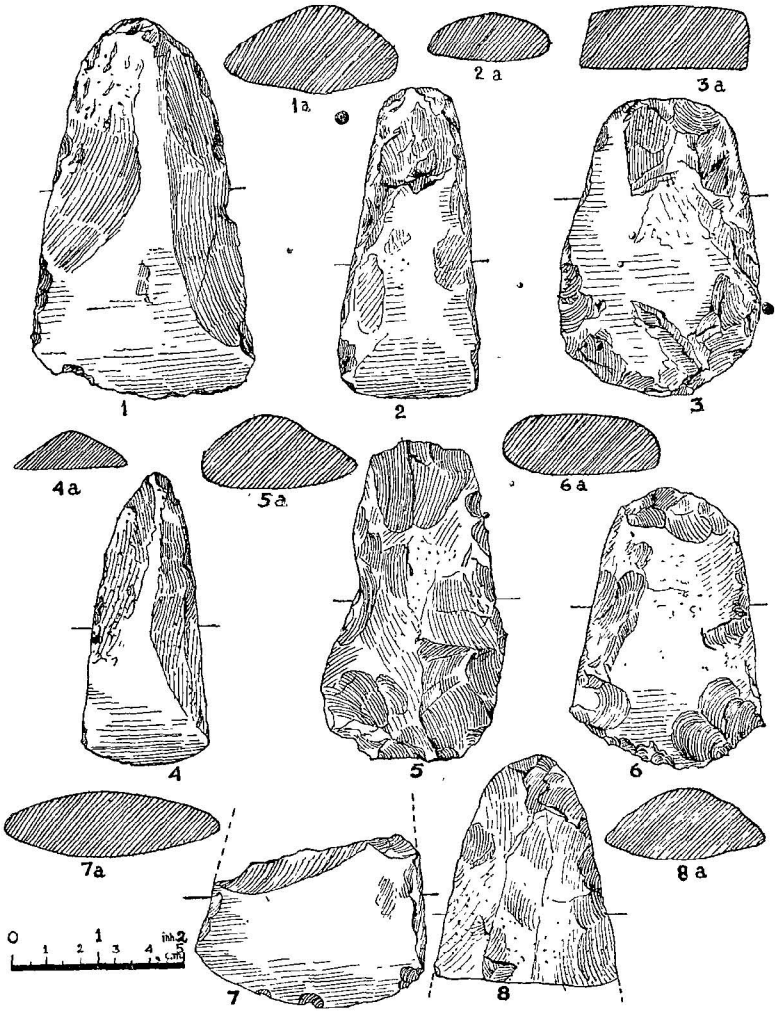
Unless otherwise mentioned, the rock is light greenish to greenish black epidiorite.

A. Axes :

1. *Chp. 1.* (Fig. 1) Patinated.

Shape—Triangular. Specimen is partially chipped, ground and polished. The dorsal surface has two longitudinal

flake-scars giving rise to a medial ridge. Rest of the surface is polished. Ventral surface is mostly ground, polishing confined towards the cutting edge. Margins are chipped.



Pl. I. Stone axes from Singhbhum

Dorsal surface is convex and the ventral surface flat.

Cutting edge—Convex, showing signs of utilization.

Pole—V-shaped.
Lateral margins—Converge towards the pole.
Cross-section—Roughly triangular.

2. *Chp. 2* (Fig. 2).

Shape—Elongated trapezoidal. Specimen mainly ground, polishing confined to the cutting edge. Chipping covers the lateral margins and the pole end of the surface. A deep depression on the upper surface towards the pole suggests that it was made for hafting.

Cutting edge—Straight, bevelled on the ventral surface.

Pole—Broad and slightly blunted.
Lateral margins—straight.
Cross-section—Roughly plano-convex.

3. *Chp. 3* (Fig. 3). Reddish patination.

Shape—Specimen is chipped, ground and polished. Polish seems to have lost its shine perhaps due to patination. Traces of step-flaking on the margins are also discernible.

Cutting edge—Asymmetrically convex, almost round, showing signs of use.

Pole—Blunted U-shaped.
Lateral margins—Straight and blunted by grinding.
Cross-section—Rectangular.

4. *Chp. 5* (Fig. 6). Brownish patination.

Shape—Flattish trapezoidal. Specimen partly chipped, ground and polished. Dorsal surface mostly polished except the margins, where traces of chipping are present. The ventral surface is ground and merges into the polished surface.

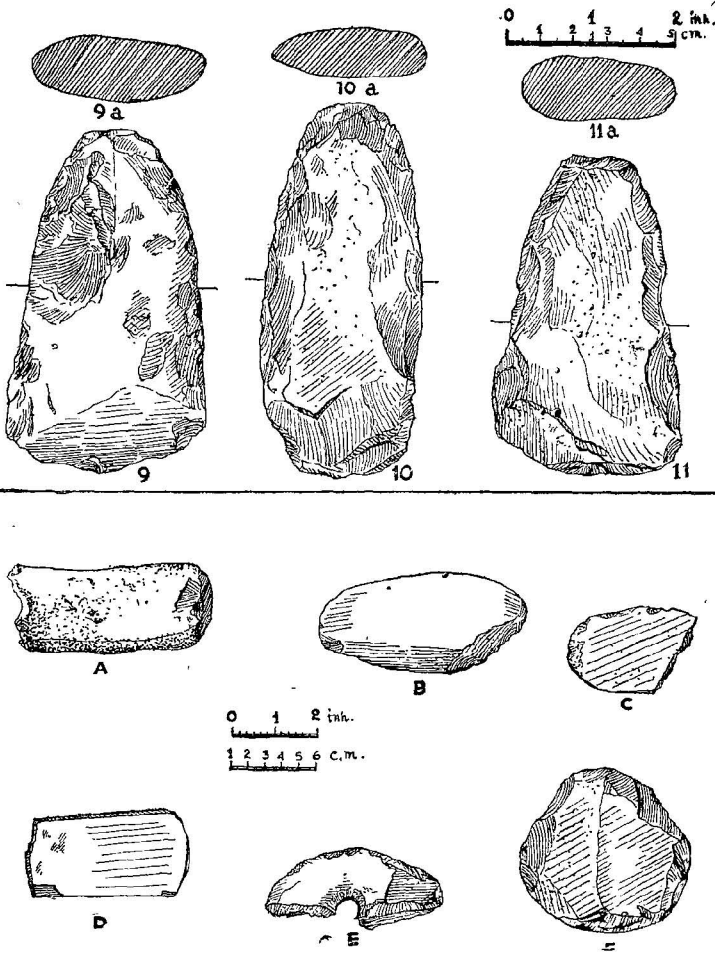
Cutting edge—Asymmetrically convex; asymmetry seems to have been possibly due to use.

Pole—Broad and blunted.

Lateral margins—Straight and rounded by polishing and grinding.

Cross-section—Roughly rectangular.

5. *Chp. 6* (Fig. 7). (Pole-end broken.) Light brownish patination.



Pl. II. Stone axes and other artefacts from Singhbhum.

Shape—Triangular (after suggested reconstruction). Specimen is completely polished.

Cutting edge—Symmetrically convex.

Lateral margins—Slightly rounded and tapering.

Cross-section—Toward the cutting edge is ellipsoidal.

6. *Chp. 7.* Weathered.

Shape - Elongated oval. Specimen completely chipped with big primary flake-scars on both dorsal and ventral surfaces. Margins show secondary chipping. The dorsal and ventral surfaces are flat.

Cutting edge—More or less straight.

Pole—U-shaped.

Lateral margins—Blunted by chipping.

Cross-section—Flat lenticular.

7. *Chp. 8* (Fig. 5). Slightly weathered.

Shape—Trapezoidal and oblong. Specimen chipped all over, except for traces of polishing towards the narrow cutting edge. Step-flaking towards the margins. The specimen has a deep convex dorsal surface and an almost flat ventral surface.

Cutting edge—Specimen double-edged : one edge is broad, convex and slighty blunted, the other being narrower, straight and sharp.

Lateral margins—Right margin slightly concave while the left is straight, perhaps for hafting.

Cross-section—Plano-convex.

8. *Chp. 9* (Fig. 8). (Working end missing.) Slight greyish patination.

Shape—Triangular or sub-triangular (after suggested reconstruction). Specimen is mostly chipped, only the ventral surface is ground in places.

Pole—V-shaped and blunted.

Lateral margins—Rounded by chipping and convergent towards the pole. Dorsal surface deeply convex and ventral surface flat.

Cross-section—Plano-convex.

9. *Chp. 10* (Cutting-end is missing). Weathered.

Shape—Oblong trapezoidal (after suggested reconstruction). The specimen is completely chipped.

Cutting edge—More or less straight (after suggested reconstruction).

Pole—Flattish U-shaped.

Lateral margins—Straight and rounded by chipping. The dorsal surface due to weathering has acquired a cruder look than the ventral. Ventral surface shows big flake-scars and traces of chipping on the margins.

Cross-section—Ovoid.

10. *Chp. 11.* (Pole-end is missing.) Slightly weathered.

Shape—Rectangular or trapezoidal (after suggested reconstruction). Specimen mainly polished, chipping is discernible on the margins.

Cutting edge—Asymmetrically convex, and polished.

Lateral margins—Almost straight and rounded by chipping, left margin has a slight concavity.

Cross-section—Ovoid.

11. *Chp. 12.* (Pole-end is missing.) Weathered.

Shape—Roughly triangular (after suggested reconstruction). Specimen completely chipped, secondary chipping is also observed. Both the dorsal and ventral surfaces are flat.

Cutting edge—Deeply convex, showing signs of utilization.

Cross-section—Flat lenticular.

12. *Chp. 13.* Weathered.

Shape—Trapezoidal. Specimen mainly ground, polishing confined to the working edge and chipping on the lateral margins.

Cutting edge—Straight and blunted perhaps due to use.

Pole—Narrow, straight and blunted.

Lateral margins—Rounded by chipping ; slope gently towards the pole. A slight concavity suggests that the specimen was hafted.

Cross-section—Flat oval.

13. *Chp. 14.* Slightly weathered.

Shape—Sub-triangular. The specimen is partially chipped and polished, the dorsal surface is mainly polished with

traces of chipping on the margins and towards the pole. The ventral surface has polish confined to the cutting edge.

Cutting edge—Convex, showing signs of utilization.

Pole—V-shaped, blunted at the end.

Lateral margins—Round and tapering towards the pole.

Cross-section—Ovoid.

14. *Chp. 15* (Fig. 4). Slightly weathered.

Shape—Triangular and oblong. Specimen is chipped and polished. The dorsal surface has longitudinal parallel flake-scars covering almost the whole surface and resulting in a medial ridge which, along with the cutting edge, is polished. Ventral surface polished towards the cutting edge only.

The dorsal surface is convex with a slight medial ridge, ventral surface flattish.

Cutting edge—Slighty convex and bevelled.

Pole—V-shaped.

Lateral margins—Converge towards the pole.

Cross-section—Roughly triangular.

15. *Chp. 16.* (Specimen is broken towards the pole.) Slight greenish white patination.

Shape—Oval (after suggested reconstruction). Specimen is fully polished.

Cutting edge—Symmetrically convex, almost semicircular.

Pole—Narrow and straight (after suggested reconstruction).

Lateral margins—Sharpened due to polish and tapering towards the pole.

Cross-section—Roughly plano-convex towards the cutting edge.

16. *Chp. 17.* (Specimen broken towards the pole.) Slightly weathered.

Shape—Roughly trapezoidal (after suggested reconstruction). Specimen mainly polished, chipping confined to lateral margins.

Cutting edge—Convex, almost semi-ciruclar.
Lateral margins—Straight and rounded by chipping.
Cross-section—Ellipsoidal.

17. *Chp. 18.* (Specimen broken towards the pole.) Traces of a whitish patination.

Shape—Elongated trapezoidal (after reconstruction). Specimen partially chipped and polished. The dorsal surface has longitudinal flake-scars. Medial portion is polished. Polishing towards the cutting edge, rest chipped.

The dorsal surface is convex with a medial ridge ; ventral flattish.

Cutting edge—More or less straight with rounded sides and showing signs of use.

Lateral margins—Blunted by chipping and sloping towards the pole.

Cross-section—Plano-convex.

18. *Chp. 19.* (Specimen broken towards the pole.)

Shape—Trapezoidal (after reconstruction). Specimen is mainly polished, chipping is confined to the margins.

Cutting edge—More or less straight and showing signs of use. Fractured ; has acquired a concavity in the middle.

Lateral margins—Almost straight and blunted by chipping.

Cross-section—Plano-convex.

19. *Chp. 22.* (Specimen broken towards the cutting edge and reconstruction is not possible.) Patinated.

Polished, but due to patination has lost the shine.

Pole—Straight and broad.

Cross-section—Flat lenticular at the pole.

B. Others Artefacts :

I. *Hammer-stone or Grinder* (Pl. II F).—The specimen is of dark epidiorite and is slightly weathered. Discoidal in shape, it is mostly ground, margins are flaked and the working edge rounded, perhaps by grinding. The upper edge is constricted by flaking and suggests hafting. The flat undersurface

has acquired smoothness, perhaps by constant rubbing ; which goes to show that it may have served both the purposes, that of a polisher by being held in the hand on the convex upper surface and then rubbed on the object or that of a hammer-stone by being hafted.

II. *Hone or polishing stone* (Pl. II A).—The specimen is of reddish sandstone and slightly weathered. Oblong saddle-shaped with one end broken, the other being flat. It is ground and has shallow grooves. It has acquired a glaze on the more concave side, which is possibly due to prolonged friction with some other agent. On the other surface, which is less concave, it has more grooves but not so much of shine.

III. *Pounder* (Pl. II B).—A fresh specimen of greenish epidiorite and is oblong and cylindrical in shape. The specimen is well polished except for two fractures which seem to have been acquired later on. Sides are rounded by polishing. Both the upper and lower working edges show signs of use.

IV. *Ringstones* (Pl. II E).—A slightly weathered specimen of dark epidiorite has been found, one half of which is broken. The available portion is mainly polished, with traces of chipping on the margins. Outer margins are blunted by chipping. There is splaying round the circular hole which is polished. This splaying, as suggested by Anderson,[1] may be the result of the technique of boring the hole.

V. *Hones and Palettes* (Pl. II C and D).—This group includes specimens of schistose rock and haematite. Except for one of red sandstone, the others look like natural cleavage surfaces of the schists, but the squared and deliberately cut sides suggest human workmanship. There are signs of use on the upper surface also.

[1] Anderson, C. W. in *Journal of the Bihar & Orissa Research Society*. 1917. No. 3.

MISCELLANEOUS NOTES

A Note on Māle Dermatoglyphics

The finger and palm prints of seven individuals described here belong to the Māle[1] of Rajmahal Hills. They were collected some years ago by Dr. S. S. Sarkar. The frequency of the different patterns are given in Table 1.

TABLE 1

Finger-prints of Male from Rajmahal Hills

	LEFT						RIGHT					
Pattern	I	II	III	IV	V	Total	I	II	III	IV	V	Total
Whorl	3	2	1	3	1	10	3	2	1	3	1	10
Loop radial	0	0	0	1	1	2	0	1	0	0	0	1
Loop ulnar	4	4	5	3	5	21	4	3	5	4	6	22
Arch	0	1	1	0	0	2	0	1	1	0	0	2
Total	7	7	7	7	7	35	7	7	7	7	7	35

The total number of patterns on the two hands are given in Table 2.

TABLE 2 (Right and Left combined.)

Finger-prints of Male from Rajmahal Hills

Whorl	Loop radial	Loop ulnar	Arch	Total
20·5	3	43	4	70
%28·5	4·3	61·4	5·7	

The Arch and Whorl Index calculated from the above is 20·0 while the Pattern Intensity Index is 12·3 per individual. The A/W Index and the Pattern Intensity Index of the Oraons (Verma, 1952) have been found to be 16·8 and 13·0 respectively, as calculated from his original data.

Palm prints

The palm prints of the seven individuals show following main line formula :

1 Sarkar, S. S.—1938 : *Malers of Rajmahal Hills*, Calcutta.
—1954 : *The Aboriginal Races of India*, Calcutta.

TABLE 3

Main line formula	Right Palm	Left Palm	Total with %
11.9.7	5	5	10 (71.4)
9.7.5	1	1	2 (14.3)
7.5.5	1	0	1 (7.15)
7.9.5	0	1	1 (7.15)

On all the fourteen palms, only one axial triradius has been found to occur very near the proximal border (t).

Axial Triradii	Right	Left	Total with %
t	7	7	14 (100.0)

Hypothenar configurations of the 14 palms belong to the following types :

Pattern	Right	Left	Total %
Lr	1	1	2 (14.3)
Lu	1	1	2 (14.3)
Ar	0	1	1 (7.15)
Au	0	1	1 (7.15)
Ac	1	0	1 (7.15)

In general, the patterns on the thenar area are fewer. In the present data also we find a similar picture. There is only one pattern, Loop, which has been recorded in the thenar and the first interdigital area. No other pattern has been observed. In the second interdigital area of the right palm also one loop can be seen. A few loop patterns are also met with in the third and fourth interdigital areas.

Pattern	II Interdigital	III Interdigital	IV Interdigital
Loop	1 (7.15)	4 (28.6)	4 (28.6)

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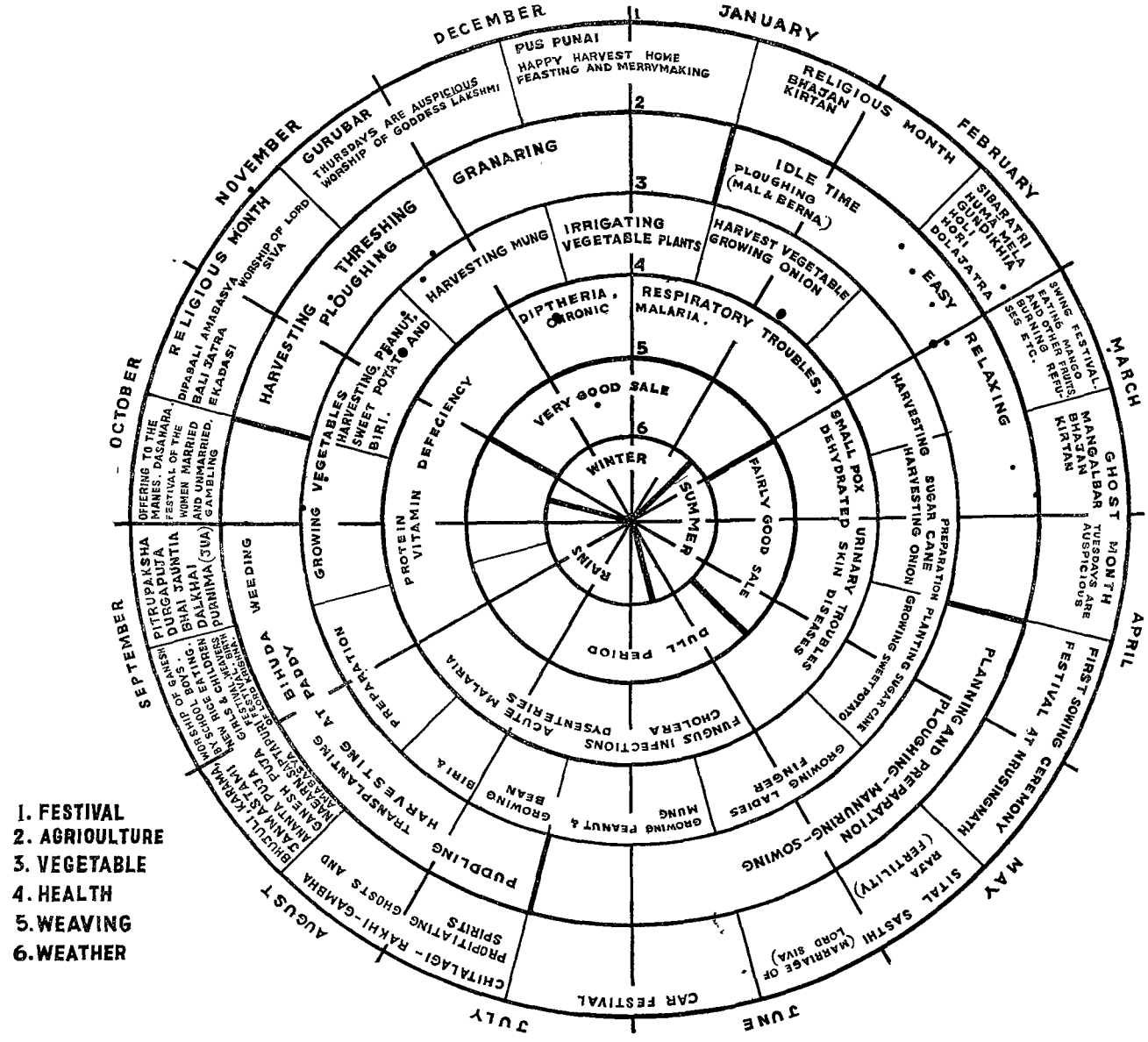
What goes on the Year round in Barpali Thana

About Barpali Village Service

In August 1952, the American Friends Service Committee, a Quaker organization, started a small project of rural reconstruction with its centre in the village of Barpali (22°11″ N, 83°35″ E) in the district of Sambalpur in Orissa. The project



What goes on the year round in Barpali

is known as Barpali Village Service. The project is staffed by American and Indian Technicians and Village and Health workers. The village workers are known as Gram Sathis. The technicians are specialized in the fields of agriculture, engineering and mechanics, public health and hygiene, education, anthropology, etc. The purpose of the project is to stimulate and help the people of Barpali thana to attain a new spirit of self-confidence that will enable them to raise their standard of living and achieve new dignity as persons. Towards this end, the Technicians, Gram Sathis, Health Workers and people together work in friendship and understanding for the improvement of the economic, physical and social condition of the villages of the thana.

The study of the annual cycle of activities

As an aid to the teaching and work programme of Barpali Village Service, the anthropologist made a study of the annual cycle of activities etc., of the different castes inhabiting Barpali thana. The study covered the following main subjects :

1. Annual cycle of events, etc.
2. Routine of monthly engagements of major groups.
3. Daily routine of the village workers, project staff, weavers and cultivators.

We are concerned here primarily with the annual cycle. The annual cycle included not only the seasonal occupation of different castes, but also the health conditions and seasonal diseases prevalent in the area. The cycle also included cattle and poultry diseases. After the data were collected, two charts were prepared, one diagrammatic (Fig. 1) showing in concentric circles the respective yearly cycles of different groups, etc., the other a detailed listing of crops, diseases, etc.

There are seven subject matters represented in the diagrammatic chart : annual festivals and ceremonies, monthly agricultural activities, vegetable seasons, cattle and poultry diseases, human diseases, weaving economics, and weather or seasons. Each circle is of a different colour, shaded to indicate intensive activity or seasonal changes. Only the main activities, diseases, festivals, etc., are printed in the

diagrammatic chart. Full details are given in the printed chart.

These cycles and charts are valid only for the Barpali area. In other parts of India, climate, caste, tradition, economic factors, etc., are of course different and would materially change the cycles. But the broad outline of this study can have a wider application.

Purpose of the charts

There are three purposes of this study :

1. To have a correlated picture of what kinds of activity go on round the year.
2. To enable village workers and others to relate their weekly activities to the seasonal or monthly activities of the people of the area.
3. To assist technicians in preparing well in advance their teaching programme for village workers so that necessary information and instruction may be given prior to the seasonal need or activity.

Barpali. Nityananda Patnaik

A Note on Patination

Patina is a word meaning bowl, saucer or cup ; and this word is used in chemical science when the metal copper, due to double oxidation[1], throws off little *saucer-shaped*[2] scale particles in two layers. It is thicker than tarnish, with a pleasing green, or various shades of green, colour. The surface in this case is not obviously porous but smooth and solid. Patina is a protective layer over the metal, which limits further corrosion of the underlying surface[3]. No metal, except copper or an alloy rich in copper, can produce patina. In his laboratory, Prof Vernon[4] has found that an artifical form of patina can be

1, 2, 4—Evans, U. R. '*Metallic corrosion, Passivity and Protection*' pp. 106 ; and Partington, J. R., *Inorganic Chemistry*, (Edward Arnold & Co., London) pp. 799.

3—Plenderleith, H. J.—*The Preservation of Antiquities*, Museum Association London, pp. 43.

produced on copper as a thin film[5] of basic carbonate, but the molecular mechanism of the change has not yet been explored. Due to oxidation minerals may tarnish, but tarnishing should not be called patination. Oxidation is a slow process of corrosion. As for example, the rust of iron is ferrous oxide, and it turns to ferric oxide by the oxidation in atmosphere (when exposed) leading to the decay of the metal.

Archaeologists[6] have reserved the term patination in its strict sense for use with copper only. But in prehistory, the term 'patina' is frequently used in connection with the excavated stone implements manufactured by early man. Tools having a blanketed surface, with a different colour than that of the underlying surface of the material of the tool, are described as having a patinated surface. In geology, mineralogy and petrology, we do not come across any term like 'patination of stone'. Moreover, we find that the early men fabricated tools and weapons mostly from flints and quartzites, which are composed of silicion minerals. The mineral silica is immune to atmospheric action. It does not dissolve in any acid except a mixture of phosphoric and hydrofiouric acids, or turns into a clear solution, 'flint liquor', if boiled in strong caustic potash solution. It does not tarnish or oxidize in atmosphere. However, when we consider the so-called patination of stone tools of early man, it is frequently found that the upper surface of some of them show a different colour from the underlying surfaces. The colours are generally brown, shades

5.—The production of artificial patina can be observed by treating any copper specimen in the following solution :

Sodium Chloride—37 parts
Ammoniacal water—75 parts
Ammonium Carbonate—57 parts
Acetic Acid (30%)—500 parts

This was experimented with in the Museum Method Laboratory, Dept. of Anthropology, Calcutta University, on a copper coin which gave rise to a pleasing green tarnished surface as a coating. The layer gradually became thicker on exposure to air. After scraping the surface, the small particles were reduced to metallic copper as a precipitate, But zinc and lead, when treated in such manner, did not produce patina ; rather the surface showed corrosion due such treatment.

6. *Technique of Excavation and Preservation of Finds.* 144, 145.

of brown, grey etc. ; but none of them are found with the green colour as of patina. Also these colours are not a product of change of the original surface, but are due to the deposition of coating of some minerals on the rocks forming the tools. It is an incrustation. In some cases, these layers are uniformly spread over the entire outer surface of a piece of stone or rock as a thin coat of paint. But this is not patination, because the change in colour depends on various physical changes. Unless there is a definite chemical change we should not describe it as patination.

Prof Leakey in his book *Adam's Ancestors* has partly supported the view and has said that the question of patina and patination had been little understood in prehistory. 'We know almost nothing about the causes of this phenomenon. The problem is really a chemical one, and any one who has found on experimenting, and who has some knowledge of chemistry might be able to find the ways in which the flints became patinated under *natural condition*' [Italic] is mine). This remark of Prof. Leakey shows that the term 'patination of stone' is not favoured by him.

Now, to sum up briefly, we find that patination of stone is not a very perfect term in the scientific sense :

	COPPER	SILICON
In presence of air and atmosphere.	1. Tarnishes	1. Does not tarnish
	2. Oxidizes	2. Does not oxidize
	3. Formation of basic-sulphate of copper —patina—of green colour.	3. No such formation unless blanketed with layers due to flux formation—never is green colour found.
Acid (HCl : H_2SO_4 HNO_3 at N. T. P.)	Reacts	No reaction
Alkali (NAOH at N. T. P.)	Reacts	No reaction

Calcutta University. T. C. Bagchi

All India Conference of Anthropologists and Sociologists

A conference of anthropologists and sociologists was held in Madras from the 5th to the 7th of November, 1955, under the auspices of the University of Madras, the M. S. University of Baroda and the Social Sciences Association of Madras. Part of the expenses, we understand, were also borne by the Ford Foundation.

Professor Irawati Karve of the Deccan College, Poona, was in the chair. Prof. Humayun Kabir was to inaugurate the meeting ; but as he was unable to attend, his address was duly read at the opening function. The following universities and institutions were represented : Agra, Delhi, Lucknow, Bombay, Baroda, Poona, Patna, Bihar, Calcutta, Madras, Annamalai, Chicago, Cornell, the Department of Anthropology of the Government of India, T. C. M., the Tata Institute of Social Sciences, etc.

In her presidential address, Prof. Karve dealt with certain fundamental concepts of Hinduism, and showed how these ideas were reflected in the social organization of our country. Professor Robert Redfield of the University of Chicago read a paper entitled, 'Primitive and Peasant : simple and compound societies'. In it, he described how the scope of social anthropology had gradually expanded from the time of Tylor to the present day. He also indicated how there was every likelihood of enlarging the scope until it could cover fields which were generally supposed to lie outside the orthodox circle.

Prof. M. N. Srinivas of Baroda read a paper entitled, 'Sanskritization and Westernization', which evoked considerable interest and discussion. He dealt with the trends of social movement in contemporary Hindu society in Mysore. Prof. D. N. Majumdar's valuable paper on 'Rural Analysis : Problems and Prospects' could only be circulated on account of his absence. Other papers read and discussed with considerable interest were the following : Dr. Pandarinath Prabhu, 'Social effects of urbanization on industrial workers', Dr. Y. B. Damle, 'Divorce in Poona district', Mr. A. M. Shah,

'Social change in a multi-caste village', Dr. U. R. Ehrenfels, 'Matrilineal civilizations and the changing position of women in India', Mr. M. S. Gopalakrishnan, 'The Nambudiri Brahmins', Mr. C. J. Jayadev, 'A preliminary survey of suicide in South India', Mr. L. P. Vidyarthi, 'The changing culture of the Gayawal priests'.

A subcommittee was set up to report on and make suggestions with regard to the courses of study offered by different universities in the social sciences. This is presided over by Dr. R. N. Saksena of the Agra University, who will present his findings at the next session of the conference which is to be held in Patna during Christmas, 1956.

The Conference was held in the auditorium of the Dasaprakash Hotel in Madras, where most of the delegates were also accommodated.

Vth Congress of Anthropological and Ethnological Sciences, Philadelphia

At the invitation of the American Anthropological Association and the University Museum, University of Pennsylvania, the Vth Congress of Anthropological and Ethnological Sciences will be held at Philadelphia, from Setember 1 to September 9, 1956. One paper will in principle be accepted from each participant without prejudice to additional contributions requested for presentation at General Sessions. Abstracts should be in hand by March 1, 1956. No papers with a lengthier oral reading time than 20 minutes will be accepted for publication, and publication cannot be guaranteed. Rooms in University buildings will be available to members at $ 2. 50 per night. The registration fee is $ 10.00 ; relatives of members may become Associate members, the fee being $ 3.00.

Inquiries should be addressed to the Secretary, American Organiziug Committee, International Congress of Anthropology, National Academy of Sciences—National Research Council, 2101 Constitution Avenue, Washington 25, D.C., U.S.A. Cable Address NARECO.

BOOK REVIEWS

The Little Community : Viewpoints for the Study of a Human Whole. *By Robert Redfield. Chicago : The University of Chicago Press, 1955. Price Four dollars. Pp. 182.*

Professor Redfield was invited to deliver the Gottesman Lectures at the University of Uppsala in 1953, in course of which he described the different points of view from which a culture or a community is generally studied. According to him, the 'Little Community' can be viewed in one of these several ways : as a whole, an ecological system, a social structure, a typical biography, a kind of life, a history, a community within communites, or a combination of opposites.

These viewpoints are examined by him separately, and it is shown how each is capable of yielding satisfactory results only up to a limited extent. In the final chapter of the book entitled 'Whole and Parts', he then proposes that it is not merely by critical analysis of parts, or by a mechanical combination of the results thus obtained, that we can arrive at a comprehension of the whole. The totality has to be built up on the basis of the former, more or less, in the manner of an artistic creation. And such a construction will bear on its face the stamp of uniqueness.

It is permissible to admit that every civilization, or a particular aspect belonging to it, has an originality of character which distinguishes it from every other thing of the same kind. It has been right and proper for Professor Redfield to lay stress upon this quality of distinctness. The mechanical successes of Western civilization have so influenced even the mind of social scientists that they tend to look upon the search of uniformities as the principal, or perhaps the only legitimate, aim of research. The desire to be able to predict, to be able to control human behaviour, which lies at the root of this quest, eventually stems from the successes which man has achieved in the West in his relations with nature. This has led him to believe

that human nature can also be treated in the same manner. It is good therefore that Professor Redfield has registered his protest against the corruption of the scientist's soul by the shades of industrial civilization by stressing the unique quality of every product of man's collective experience.

It may perhaps be necessary to caution the reader against any wrong impression which might be conveyed by what has been said above. In an earlier book entitled *The Primitive World and its Transformations* (Cornell University Press, 1953), Professor Redfield devoted himself to a consideration of some of the generalities which underlie the uniquenesses of different civilizations. While examining the proposition of Professor Gordon Childe with regard to the influence exercised by inventions or material conditions on the course of human history, Professor Redfield was led to the opinion that the natural emphasis placed upon the tangible elements of a civilization by an archaeologist tended to blur the over-all picture, in which several imponderables were also crucially involved. Thus, in place of the uniqueness emphasized in the present book, he argued on the basis of certain generalities to which many of the operations of human history could be referred.

Pursuing this line of thinking a little further, one may reasonably ask oneself if there may not be a still smaller number of deeper forces operating behind the varied manifestations of human civilization. In a neighbouring field, Freud found, or perhaps imagined he found, that it is ultimately the primary biological impulses which lie at the base of the varied manifestations of the unconscious mind. If such reduction is scientifically valid—as we presume it ought to be to a large extent—it does not automatically make human behaviour any more predictable than before, nor does it amount to a denial of the unique quality of every single manifestation. On the other hand, such reduction gives us the intellectual satisfaction of having been able to realize an underlying unity behind apparently dissimilar or unrelated phenomena.

There was a time when evolutionists, in a new enthusiasm created by the discovery of correspondences between human and animal anatomy, rode rough-shod over the distinctnesses of

human experience in order to reduce all into a satisfying, parallel framework of generalities. From that, a natural reaction has led us fairly far in an opposite direction. Perhaps the time has come when social science has to look for new uniformities at a higher level than before. Science, the handmaid of Art, has succeeded in producing by refinement of technique, a more valid view of the unique character of different facets of man's collective experience. It is more possible now than ever before, to engage in a search for new uniformities in the sphere of the wholes. And these, we believe, will be logically more tenable than the ready generalizations of old.

In the history of anthropological thought, we seem to have arrived at a stage when we exercise more discrimination and demand more precision than before. But we are also prone to tarry a while and ask ourselves the simple and very vital question, What are we doing after all ? The present study by Professor Redfield will undoubtedly occupy a high place among such contemporary studies, not only because of the delightful freshness of his presentation, but also on account of the stimulating character of many of the questions raised.

N. K. BOSE

Animals, Men and Myths. *By Richard Lewinsohn. Victor Gollancz Ltd., London, 1953. Pp. 374. Price 21s.*

This book is a translation of *Eine Geschichte der Tiere,* first published by Rowolilt Verlag, Hamburg. The book traces the influence exercised by animals on human civilization and culture from the days of prehistory up to the modern age. It is divided into six parts corresponding to the six ages into which the author has divided human culture, namely, prehistory, antiquity and the middle ages, the age of discovery, the age of ideas, the machine age and the age of chemistry.

In the prehistoric age, we are introduced to the fossil records of animals beginning from simpler infusorians, rotifers, starfish etc. up to the highly evolved tool-making man ; the latter originating some time during the Great Ice Age. Men probably had first encountered wild animals as enemies, and

this relationship provided the impetus to man to create weapons in the form of wedge-shaped stones, axes etc. to fight against nature's claws and teeth. The nature of our association with animals in the middle ages is shown to be through hunting, breeding of live-stock, totemism and fables. It is remarkable to find that the beginning of apiculture is to be traced back to the days of cave painting. A beautiful cave picture from Alpera in Spain shows a woman gathering wild honey. In discussing the origin of domestication of wild animals by early men, the author falls back unnecessarily upon the now discarded theory of the inheritance of acquired characters to account for the fact that a host of wild species was domesticated in a relatively short period, that is, during the few thousand years of the Late Stone Age.

A greater use of animals for varied purposes is seen in the succeeding ages. In the age of discovery, we find a large scale use of animals not only for the purpose of obtaining food but also for providing us with silk, wool etc.

The beginning of the use of animals in scientific experiments can be seen in the age of ideas, and this was the time when Linnaeus put forward his system of scientific classification of animals. In the eighteenth century, the human population of many countries had increased by half. This fact brought in the question of the adjustment of food supply to the new population pressure. Ignoring the malthusian doctrine of sexual continence just enunciated, people tried to solve the food problem by improved farming methods and by migration of populations to less densely populated parts of the world. Robert Blackwell, during this time, became the founder of modern animal breeding and created improved breeds of sheep, dairy cattle and draught horse. The new mechanical devices for faster transport were not unmixed blessings. It narrowed the spaces of the world. People and animals could be transported through larger distances in comparatively shorter time. This helped the spread of diseases. As a result, the microscopic organisms, the lowly animals, such as, mosquitoes, flies and fleas etc., became subjects of thorough enquiry, and their importance in the origin and spread of diseases was established. In

this process of scientific enquiry, larger animals, specially mammals, had to bear the brunt of experiments and large numbers of them were sacrificed in the interest of science.

Animals have provided mankind with three most important items of life, namely, food, clothing and shelter for thousands of years. In the modern era, or the age of chemistry, as the author of the book has preferred to call it, the importance of animals has diminished a great deal, not so much as a source of food and clothing as in providing transport. The future of meat-producing animals is certainly secure as far as food production is concerned, but it does not seem to be so with the animals which provide us with clothing, because synthetic substitutes have already become strong competitors in the field. The author concludes by saying, 'Everything that man has done leads to the conclusion that in the future the continued existence or the extermination of animals is going to depend even more on the human will than it has in the past.'

The translator is to be praised for making this highly interesting account available for the English reader. The most noteworthy feature of the book is the reproduction of many beautiful and rare and highly interesting pictures from the early cave paintings, wood-cuts, copper-engravings and ancient drawings.

S. P. Ray Chaudhuri

The Australian Aborigenes. *By A. P. Elkin. 3rd. edition. London & Sydney, Angus and Robertson. 1954. 30 Shillings. Pp. 349.*

This is the third edition of Prof. Elkin's well-known book, which has been revised with the addition of up-to-date materials from the field.

The author has succeeded in describing in a very convincing manner, how the social structure and the economic pursuits of the aborigines fit into one another, and work in a harmonious manner. His analysis of the kinship system, on which so much has already been written, is particularly illuminating. Though the book is mainly devoted to culture, yet there is a valuable account of the ethnic

position of the tribes according to the latest findings of physical anthropology. Two new chapters on art and ritual, and on music and dancing, amply testify to the creative talents of the aboriginal people.

In the last chapter of the book, Professor Elkin has dealt with the problem and history of contact ; and the part played by anthropologists in meeting the situation. He has rightly said that 'aboriginal reserves' should serve as 'preparation centres for life in the larger world' rather than function as museums for antiquated ways of life. And in this matter, again, any programme of improvement should be based upon the cultural heritage of a people. 'For, in the process of change, they will need this heritage as a source of moral strength and courage, and as firm ground for further advance'.

The book will prove useful for students of anthropology as well as for social workers.

G. S. Ray

Hair-Embroidery in Siberia and North America. *By G. Turner. Occasional Papers on Technology, Pitt Rivers Museum. Oxford University, 1955. Pp. 83, 2 maps, 26 text-illustrations and 16 plates.*

The book presents an exhaustive survey of the art of hair-embroidery as found among various tribes in Siberia and North America, where it forms an important item of material culture. The author has described the macroscopic and microscopic characters of the hair of the moose, the caribou or reindeer, the horse and of porcupine quill, so that one can distinguish easily various embroideries made with the help of these. The various techniques have also been illustrated by means of neat diagrams. The distribution of designs, whether on skin or on bark, has also been described, and finally presented in the form of a table. The question of origin and diffusion has been given adequate attention.

With its wealth of illustrations, it ought to prove very helpful to students of technology, as well as to those interested in museums.

B. Bandopadhyay

The African Mind in Health and Disease. *By J. Carothers. Geneva : World Health Organization, 1955. Pp. 172.*

This book on the mental health of the preliterate population of Africa presents us with a very useful study in ethno-psychiatry. A chapter on the psychology of the Negro in the U.S.A. is a useful addition. The author has raised several interesting questions with regard to the relationship between nutrition and culture. In the last chapter, he examines how far the African mode of thinking can be explained in terms of culture, while he also tries to find out how far culture affects genetics. He does not, however, subscribe to the theory of cultural determinism, and finally comes to the conclusion that 'climatic, nutritional, infective and cultural factors are all likely to have played their part in forming the constitution of humanity in Africa'.

L. P. Vidyarthi

Science and Social Action. *By W. J. H. Sprott. London ; Watts & Co., 1954. Pp. 162.*

The book is a collection of lectures delivered under the auspices of the Josuah Mason Trust in the University of Birmingham. They include : The Nature of Social Action, Personality, Society and Culture, The Scientific Approach, The Small Group, Assimilation, Deviance, The Grand Manner, and The Sociology of Knowledge.

A careful perusal however leaves the impression that most of what has been said here had already been said by previous workers in the field. Chapters like those on scientific approach or assimilation, will prove instructive ; while the final chapter on the sociology of knowledge is likely to prove of more worth in stimulating thought.

L. P. Vidyarthi

The Shi'a of India. *By John Norman Hollister. Luzac & Company, Ltd., 46 Great Russell Street, London, W. C. 1, 1953. Price £ 3-3-0.*

This is a welcome addition to Luzac's Oriental Religious Series and will serve as a companion volume to Dr. Donaldson's

The Shi'ite Religion, Volume VI of the same series, which deals with Shiism in Persia and 'Irāq. These two works together give us a complete picture of an important aspect of Islam. From the Indian point of view, the book under review would be a very useful supplement to *Indian Islam* by Dr. Murray T. Titus who suggested the study of the subject. After the researches of Wellhausen and Goldziher it is no longer possible to regard Shiism, as Von Kremer did, as the reaction of the Aryan mind against Semitic Islam. Yet it has to be confessed that though Shiism was Arabian in its origin, its development was deeply moulded by Manichaean and old Iranian ideas. In India it has not been free from the influence of Hindu ideas and beliefs. As Gibb has remarked : 'The Shi'ite name served as a cloak for the introduction into Islam of all sorts of oriental beliefs, Babylonian, Persian and even Indian.'

Of the Muslim population in India the Shiites form of course a small portion, but they constitute the largest community of the sect outside of Persia. It is difficult to arrive at a correct estimate of the Shī'ah population because of the practice of *taqīyah* or *kitmān* (concealment), a relic of mediaeval persecution. Shiism has played a very significant part in the introduction and spread of Islam in the Indian sub-continent. A considerable number of the early Muslim missionaries, who preached Islam in India, were Shī'ahs. The majority of Indian Shī'ahs belong to the group known as the Isnā 'Asharīyah (Twelvers). The rest are the Sab'īyah (Seveners) or Ismā'īlīs, divided into two groups : the Musta'līs and the Nizārīs, the Bohrahs of western India representing the former and the Khojahs of Bombay and the Punjab representing latter. As early as the ninth century A. D., Ismā'īlī propaganda was started in Sind and Multān and systematically continued during the rule of the Fātimids in Egypt (909-1171 A. D.). The Qarmatians, who were the first Ismā'īlīs to reach India, held Multān in the eleventh century A. D. and were still dominant in Delhi in the thirteenth. Gujarāt received Musta'lī missionaries from Yaman and in the fourteenth century Nizārī missionaries from Persia visited North Punjab,

Sind and Kashmīr. The Isnā 'Asharīyah appeared in the Bahmanī kingdom in the fifteenth, and in the next century the successor states of Bijāpur, Ahmadnagar and Golconda became the centres of their influence. The Great Mughuls except Aurangzīb were tolerant towards them, and in the eighteenth century they found their new centres in Faizābād and Lucknow under the rulers of Oudh. Even now Lucknow is the capital of Indian Shiism.

Dr. Hollister has made a comprehensive treatment of the subject both from the religious as well as the historical point of view. By way of introduction he has given a brief account of the growth of Shiism and its split into two main groups, and then dwelt on the religion of the Isnā 'Asharīyah, their Imāms and the gradual stages of their arrival and spread in India—in the Bahmanī and successor kingdoms, in the Mughul empire, Kashmīr and in Oudh. In Chapter XI, he gives an interesting account of the Muharram. He then proceeds to describe the rise of Ismā'īlism, its development under the Fātimid Imāms and division into two groups, the arrival of Musta'lis in India and their division into Dā'ūdī and Sulaimānī Bohrahs and their religion. After a short account of the Nizārī Imāms of Alamūt and their creed as well as of the Nizārī Imāms of the 'Persian' period, he describes the coming of the Nizārī Ismā'īlīs to India, the Āghā Khāns and the religion, customs as well as administrative organization of the Khojahs.

The author therefore gives us all that we need know about Shiism and the Shiites in India. The blood of Husain was the seed of the Shiite Church (if we are permitted to use the term) and the Muharram is the crown of Shiite life in India where it attracts the attention of all classes of people, Muslim as well as non-Muslim. Dr. Hollister points out how it has influenced Sunnīs as well as Hindus so much that the form of the Muharram celebrations 'has been altered and the meaning corrupted', *e.g.*, the ceremony of Na'l Sāhib in Haidarābād. Not only many Sunnīs observe the Muharram ceremonies with regularity but some even go to the extent of cursing the first three Caliphs (*tabarrā*). Sunnī participation in the *ta'ziyah*

procession has transformed it so much that the element of mourning has been almost completely eliminated.' As the author says: 'Now and again, in front of a *ta'zia* one hears a dirge, or *marthiya*, but it is in no way the prevailing note, nor the spirit of the march, which is entirely that of a *tamāsha* or show'. G. E. Brown describes the Muharram in the Deccan as 'the carnival of the year; observed more by Sunnis than Shi'as'. In Bihār, some low caste Hindus are said to worship Hasan and Husain as gods. Even men and women belonging to higher castes (Kāyasthas, Āgarwala, Rājputs) vow that if they get a son, he will serve as a *paik* in the Muharram. In the Deccan also the custom of making vows to be fulfilled at Muharram obtains.

Dr. Hollister's observations on the future of Indian Shiism deserve notice and consideration. 'Not as a community apart, but as a leavening lump within the Muslim whole, Shiism can make its contribution and attain its destiny. It is a tribute to the community in India that it has inspired an unusual number of men who have risen to leadership; it is a warning that these same leaders do not find their place as Shias' (pp. 193-194).

On Ismā'ilism the author has largely to draw on the works of Ivanow who has made the subject his own. Modern scientific research has given a new orientation to our conception about Ismā'ilism which is not only the most catholic form of Shiism but is essentially 'Shiism on the march'. The author justly emphasizes on the social significance of Ismā'ilism. Of the Indian Ismā'ilis the Bohrahs live chiefly in Bombay and Baroda. Most of them are Hindu converts, and cling to their Hindu customs in many matters. They observe the *Diwālī* festival with more zeal than Hindus, but they do not take food touched by them and purify clothes washed by Hindu washermen by sprinkling holy water on them. The author criticizes that 'Bohra leadership has fallen far below its true heritage', and advises the community 'to tread the path of learning, tolerance and progress'.

It was the Persian monarch Fath 'Alī Shāh who gave the title Āghā Khān to Āghā Hasan 'Alī Shāh and recognized him

as the spiritual head of the Nizārī Ismā'īlīs. After Fath 'Alī Shāh's death, he found Persia hostile and migrated to India in 1840. The present Āghā Khān, Sir Sultān Muhammad Shāh, one of the arresting personalities of modern times, is his grandson. He claims descent through the last Grand Master of Alamūt from Fātima, daughter of the Prophet. The Āghā Khān is the spiritual head of the Nizārīs of India, Central Asia, Afghānistan, Persia, Syria and Africa. The Khojahs, who belong to the Nizārī Ismā'īlīs, are divided two groups : the Punjab Khojahs and the Āghā Khānī Khojahs living in Sind, Cutch, Gujarat and Bombay. The Khojahs, like the Bohrahs do not pray in mosques but in jamā'āt-khānahs. They are mostly Hindu converts and stick to Hindu ideas. Their *dā'īs* (missionaries) skilfully adapted their *bāṭinī* (esoteric) teachings to Hindu beliefs and rites. Of the *Ginaus* (religious books) of the Khojahs, by far the most important is the *Das Avatār*, written by Sadr-ud-Dīn in the fifteenth century A. D., which describes the ten incarnations of Vishnū, 'Alī being the last. It 'is read in the homes, at festivals, at meetings in the jamā'at-khāna, and at the death-bed of a Khoja'. The Khojahs are far more advanced than their sister community, the Bohrahs and their spirit is 'forward-looking'. They claim that they are now 90 per cent literate.

The literature on Indian Shiism lies scattered in numerous unpublished Mss., books as well periodicals in several languages. Dr. Hollister has done a great service by the publication of his work, based on all available sources, primary as well as secondary. In the treatment of his subject he has been highly methodical and admirably lucid. In his judgement he has been sober and cautious ; he shows neither bias nor zeal. We do not find the Christian missionary in the book as we do in the works of Canon Sell relating to Islam. It is a work of great industry and patience and a very useful contribution to Indo-Islamic studies. A glossary of Islamic terms, a fairly long bibliography and chronological charts in several chapters add to the value of the book. One feels, however, that the work is rather descrip-

tive than critical. The author's assessment of authorities has not always been sound. On Mughul history, it is not quite proper to mention Havell and Marshman as authorities (pp. 128-29). In a work like this it has not been fair as well to rely solely on translation of original sources. To give one example, so frequently the author quotes Firishta and that always through Briggs. The author's remark that Humāyūn's acceptance of the Shiite faith 'was not merely a form' (p. 129) is denied by Firishta whom he immediately refers to (Lucknow text, vol. 1, p. 243). Before 1526, Bābur did not make 'an earlier invasion of India' (p. 127) but several. The statement that at the opening of Abu Bakr's Caliphate 'dissensions arose among the people called Muslims' (p. 7) requires modification. Dissensions referred to were rather between Muslims and non-Muslim Arabs who refused to acknowledge the authority of Madīnāh (see Becker in the *Cambridge Medieval History*, vol. II, pp. 334-36). Similarly when the author says that 'Umar 'established the rule that the Arab was to be a warrior, without ownership in conquered lands', he is not quite correct (see Wellhausen, *The Arab Kingdom and its Fall*, pp. 274-75). Diacritical marks used have not been always uniform nor have they been used in all places, e.g., Imam as well as Imām at pp. 78, 90, 91, 93 and many other pages ; Aghā Khān at p. 338 and Agha Khan at p. 364 ; Agā Hasan 'Ali Shāh (p. 338) and Agha Hasan 'Alī Shāh (p. 364) ; Fath 'Ali (p. 337) and Fath 'Alī (p. 364) ; Nizāmshāhi and Nizāmshāhī (p. 111) ; 'Adil Shāhī (p. 110) and 'Adil Shāhī (p. 111) ; Shi'ite (p. 15) and Shite (p. 105). *Shahjahan* (p. 116) and *Bahmani* everywhere are without diacritical marks. Geographical names are generally without diacritical marks but we have 'Iraq (p. 348) and Iraq (p. 347) ; Kūfa (p. 62), Kishtwār, Ladākh and Baltistān (p. 141). We have Shahjahan (p. 116), Shāhjahān (p. 126) and Shah Jahan (p. 136) ; the obsolete Altamsh (p. 349) for Iltūtmish. Also Gujerat (pp. 114, 118) and Gujarat at other pages of the book. Many other examples might he given. *Tabarru'* at pp. 170, 188, 189, 416 (Glossary of Islamic terms) ahd 440 (Index) should be *tabarrā*.

All these minor shortcomings, however, do not affect the value of the work and the author deserves our hearty congratulation.

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