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The Study of Ethnology in India

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- From the AUTHOR.—The Gentile System of the Navajo Indians.  
By Washington Matthews, M.D., LL.D.
- Notes upon the Gentile Organization of the Apaches of Arizona. By John G. Bourke.
- Classification Naturelle des Sciences. Position et Programme de L'Anthropologie. By M. le Dr. Manouvrier.
- From the ACADEMY.—Bulletin International de l'Académie des Sciences de Cracovie. Mai, 1890.
- From the SOCIETY.—Proceedings of the Royal Society. Vol. xlvii. No. 289.
- Journal of the Ceylon Branch of the Royal Asiatic Society. Vol. x. No. 36. 1888.
- Journal of the Society of Arts. Nos. 1960–61.
- Bulletin de la Société Imperiale des Naturalistes de Moscou. No. 3. 1890, Mémoires. No. 6.
- From the EDITOR.—Nature, Nos. 1076–1077.
- Science. Nos. 382–384.
- Revue Scientifique. Tom. xlv. Nos. 24, 25.
- Bullettino di Paletnologia Italiana. Tomo vi. Nos. 3, 4.

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Mr. J. E. Price, F.S.A., exhibited two skulls recently exhumed in the City of London, and described a skeleton found near West Thurrock, in Essex.

The following Paper was read by the Author :—

#### *The STUDY of ETHNOLOGY in INDIA.*

By H. H. RISLEY, Esq., B.A., Bengal Civil Service.

ABOUT four years ago, in an article published in the *Asiatic Quarterly Review*, I ventured to complain of "the comparatively scanty use that has been made of the great storehouse of ethnographical data which British rule in India has thrown open to European enquirers." The complaint is one that cannot be too often repeated. In most works on Indian ethnology, evidence of the most unequal value, derived from the most various sources, is treated as if it were of uniform character. Brahmanical legends are placed on the same footing as facts ascertained by the best modern researches; and one writer after another is content to repeat isolated statements lightly made by some of the earlier observers without seeking to examine the source from which they were originally derived, or to test their probability by the application of the comparative method. Thus it happens that some piece of popular hearsay picked up by Buchanan in the course of his admirable survey of parts of

Bengal, and set down by him for what it is worth, gets separated from its context, and transformed by repeated quotation into an incontestable fact, which forms in its turn the basis of half a dozen wide-reaching theories. A single instance will show what is meant. In the latest Continental works on general ethnography, one of the most interesting of the East Himalayan tribes is credited with monotheistic notions wholly incompatible with their existing stage of theological or mythopoëic development, and resting solely on a linguistic mistake of the original observers, which transformed the *general name* of the mostly malevolent powers (I can hardly call them spirits) which the tribe diligently propitiate, into the *personal name* of an imaginary Supreme Being. The paper containing this mistake, which has served for the last fifty years as the *locus classicus* for the tribe in question, contains also other data which, if critically handled, ought to have led to the detection of the error.

For these and similar shortcomings the writers of ethnographic treatises are not alone to blame. Indian ethnographic literature has grave defects of its own, which can only be corrected by systematic original research. In the first place it is extremely unattractive in form, bristles with technical expressions, strange names and unexplained allusions, and assumes on the part of the reader an acquaintance with Oriental conditions and surroundings which can only be acquired by actual residence in the East. These, perhaps, are minor obstacles which scientific students might reasonably be expected to overcome. More serious blemishes are to be found in the fragmentary character of the literature itself, in the writers' disregard of the lines of investigation pursued by European ethnologists, and in the consequent want of system in their method of conducting their inquiries. It seriously detracts from the value of monographs on particular tribes when we find that the researches on which they are based were made more or less at random, and directed towards a variety of different points, while the inquirers themselves had no idea of the relative scientific value of the facts which they recorded.

We have not forgotten that nearly twenty years ago so high an authority as the late Sir Henry Maine<sup>1</sup> drew attention to the great value which the records of settlement and revenue operations in India possess for students of comparative jurisprudence. For ethnographic purposes, on the other hand, this literature can hardly be deemed so instructive. Its range is not wide enough, and the information which it conveys is too meagre. The

<sup>1</sup> "Village Communities," pp. 34 and 61, edition of 1872.

officer in charge of a settlement is very fully occupied with the practical objects of making an equitable assessment of the Government revenue, and of adjusting the relations of landlords to their tenants on a peaceful and permanent footing. With the customs of the people he is concerned only in so far as these throw light upon their status in relation to the land, and unless the connection between the two sets of facts is tolerably obvious, it is no business of his to travel outside the record for the gratification of scientific curiosity. The usages, moreover, by which science sets most store are generally those which lie rather below the surface of Oriental life, and do not force themselves on the notice of European or native officials. In illustration of this difficulty, we may point to the phenomena of totemism, the wide prevalence of which in Bengal was only imperfectly realised by Colonel Dalton, while it entirely escaped the notice of earlier observers. Facts of this order can only be elicited by inquiries embracing a far wider area than is covered by any particular series of land revenue operations, and conducted on a system devised so as to give full play to the comparative method of research. They cannot be picked up *ἐκ παρέπειαν* in the course of ordinary official business.

For these reasons the ethnographical data to be found in Indian official reports are, as a rule, neither full enough nor precise enough to appeal very strongly to European ethnologists. Such reports, moreover, are not readily accessible to students; their titles give a very slight clue to the nature of their contents; and any information regarding custom which they contain is generally buried under a mass of highly technical and uninteresting matter. Clearly it is not to be expected that writers on general ethnology should toil through this mountain of chaff in the hope of picking out the scattered grains of knowledge which it might contain. Even were the labour accomplished, it might fairly be doubted whether anyone lacking Indian experience would find himself much the wiser at the end. More probably he would be filled with the regret that he had wandered to no purpose in a wilderness of uncouth names. Indian official reports are addressed to a small circle of experts who have gradually and insensibly acquired the elementary knowledge of the people and the country which forms the key to the sealed volumes of this peculiar form of literature. This knowledge can only be acquired in India, and has, for the most part, never been reduced to writing at all. The result is that writers on ethnology, when compelled to treat of Indian subjects, are thrown back on mere literary accounts which give an ideal and misleading picture of caste and its social surroundings. They show us, not things as they are, but things as they ought to be,

in the view of a particular school or in the light of a particular tradition.

This defect is by no means peculiar to Indian literature. It appears in a less prominent form in the works of European ethnologists, and has probably given rise to the reproach of neglecting critical methods which is commonly laid upon them. We are not so unreasonable as to urge that all ethnographical evidence should be gathered at first hand, and that no one should write about the customs of people with whom he has no personal acquaintance. But in studying some modern books on these subjects, it is difficult to get rid of the impression that the writers were a long way removed from the subjects they were dealing with, and had never quite got into touch with their facts. *Surgit amari aliquid*—we feel that something is wrong, and we are tempted to think that the savage man has hardly had justice done him. It is not for us to lay down a course of preliminary training for distinguished ethnologists, and to demand that Mr. Herbert Spencer should get himself enrolled, like Mr. Frank Cushing, in the sacred societies of the Zunis, or that Sir John Lubbock should follow the example of Mr. Lewis Morgan in joining himself to the Iroquois. The prospect of such an ordeal would perhaps thin the ranks of the votaries of a new science. But in these matters a little knowledge at first hand is a very good thing, and some slight personal acquaintance with even a single tribe of savage men could hardly fail to be of infinite service to the philosopher who undertakes to trace the process by which civilization has been gradually evolved out of barbarism. Such experience would assuredly leave upon his mind a vivid impression of the extreme difficulty of entering into savage modes of thought, of the imperfection and untrustworthiness of testimony, and of the extraordinary fluidity and mutability of custom itself. It would also inspire him with a profound distrust of the statements made in books of travel.

We may indeed claim for ethnographic research in India a comparative immunity from some causes of error which have hampered the development of ethnology and retarded its recognition as a science. Most of the barbarous and semi-barbarous tribes which come under observation in India are at the present day fairly accessible, and the inquirer can as a rule get together as many specimens of them as he wants without undergoing excessive trouble or hardship himself. Observations can thus be multiplied and repeated, and sounder general conclusions arrived at than could be derived from the study of a few specimens of a declining race. At the same time the great improvement in communications, which has brought the wilder-

tribes within reach of the scientific observer, has not exposed them to that contact with colonists of European blood which has proved so destructive to the aborigines of Australia and America. Those races of India, which, for want of a better name, we may for the present call non-Aryan, show no tendency to disappear, and in some parts of the continent their numbers appear to be on the increase. Without, therefore, omitting to record the characteristics of tribes which are dying out, like the Lepchas, or losing their identity, like the Mech and Dhimal, by absorption into larger groups, the ethnographer is by no means confined to the study of moribund types. Nor is he greatly troubled by the difficulties connected with language, which have proved so serious an obstacle to inquirers in other parts of the world. Interpreters are readily available, and a fair knowledge of the common Indian vernaculars will be found sufficient for the elucidation of the customs of all but the wildest tribes.

In these ways India offers special facilities for the systematic collection of ethnographical data on a large scale, and for testing these data by repetition and comparison to any extent that is considered desirable. But this is not all. Not only do the administrative conditions of the country lend themselves readily to the collection of evidence, but the social system is so constituted as to render that evidence peculiarly valuable and telling. In Europe, and in most parts of the world, where anthropological enquiries have been pursued, the prevalence of *métissage*, or the crossing of races, constantly tends to complicate the investigations and to obscure and confuse the results. There is nothing to prevent the union "of the blond Kymri with the dark-haired dweller on the Mediterranean, of the brachy-cephalic Celt with the dolicho-cephalic Scandinavian, of the tiny Laplander with the tall Swede."<sup>1</sup> In fact, all the recognised nations of Europe are the result of a process of unrestricted crossing which has fused a number of distinct tribal types into a more or less definable national type. In India, whatever may have been the case centuries ago, nothing of this sort is now possible. The institution of caste breaks up the population of the continent into a countless number of mutually exclusive aggregates of homogeneous composition, and forbids a member of one group to marry within any group but his own. The result of this application to marriage of the primitive principle of *Taboo* is to make differentiation rather than integration the dominant tendency in society; and while the existing groups maintain their exclusiveness, any deviation from the prescribed standard of social or ceremonial propriety is apt to become the occasion for the form-

<sup>1</sup> Topinard, "Éléments d'Anthropologie Générale," Paris, 1885, p. 203.

ation of a new aggregate. Illustrations drawn from other societies are not easy to devise, as nothing exactly resembling caste appears to have been developed anywhere but in India. The instances commonly cited as parallel fall far short of exact resemblance. The Egyptian occupational divisions were not endogamous : the mediæval restrictions on intermarriage between members of different ranks in society were, as the story of Philippine Welzer shows, not absolute. But leaving history on one side, let us suppose that the numerous German tribes mentioned by Tacitus had been organized on the principle of caste, and had adhered to it all along, and endeavour to see what some of the consequences would be at the present day. In the first place, the tribal names and grouping would have been stereotyped and perpetuated, and each tribe would be endogamous—that is to say, a man of the Chatti would only be able to marry a woman of his own tribe, and could on no terms marry a Cheruscan or a Semnonian woman. Liaisons with members of other groups would of course occur, for no system can wholly eliminate natural instincts ; but if the working principle of caste were consistently maintained, their offspring would be relegated to a separate subdivision, which would probably bear a name more or less suggestive of mixed descent. So far it will be said the bond is one of race, and the prohibition on intermarriage merely seeks to maintain the purity of the original stock ; for primitive people cannot be expected to appreciate the virtues of crossing, and regard all strangers as natural enemies. But the principle of caste once set working does not stop here, but catches at any pretext to subdivide the original stock. If a few families of Chatti left the tribal settlements between the Rhine and the Weser, and found for themselves new homes in Bavaria or Bohemia, the change of domicile would probably debar them from the privilege of taking wives from the parent tribe, and would compel them to form a fresh matrimonial group for themselves. Again, if the original occupation of a tribe were hunting, and some took to agriculture ; or if the original occupation were agriculture, and some became weavers or potters, the difference of profession (being held by a sort of unconscious fiction to be equivalent to the difference of race, which is the true basis of the system), would lead to the marking out of a new matrimonial aggregate. Last of all, religion may step in to create a further set of complications by ordaining that members of particular sects may or may not intermarry, or by giving rise to fresh groups which set up matrimonial arrangements of their own. This cause, however, has not operated in India on so large a scale as might perhaps have been expected. Differences of religious practice within the limits of Hinduism do not necessarily affect

the *jus connubii*, and some castes, among whom we may instance the Agarwals and Oswals, allow intermarriage between Hindus and Jains.

A society thus organized, whatever may be its social and political peculiarities, clearly offers in some respects a peculiarly favourable field for anthropological research, especially for that branch of the science which is known as anthropometry. An institution like caste, which seeks to eliminate crossing, and works with tolerable success towards that end, may be expected to preserve with the minimum of alteration whatever distinct types were in existence when restrictions on marriage first began to take effect ; and methods of observation which profess to ascertain and record types of physical development may for this reason be supposed likely to yield peculiarly clear and instructive results. When, moreover, those methods themselves are still in some respects in the experimental stage, and are admitted to stand in need of testing by application to large numbers of subjects, the argument for selecting an area where the chief source of confusion is virtually eliminated, gains considerable strength. Professor Topinard, in his work on the Elements of Anthropology,<sup>1</sup> lays stress on the difficulties which he experienced in Algeria in his attempt to obtain representative specimens of the two fundamental types—the Arab and the Berber. He describes how the crossing between Berbers, Arabs, blonds of the epoch of the Dolmens, Negroes, and Jews, had at the time of his visit to the country obscured the original types to such a degree that he found it difficult to reconstruct them. Had M. Topinard conducted similar experiments in Bengal, he would have had no reason to complain of the indistinctness of the types presented to him, or of the difficulty of obtaining subjects ; and it is for these reasons that India may be commended to the notice of those European ethnologists who prefer to collect their facts at first hand, and do not rely solely upon information gathered from books.

An attempt has recently been made to approach the study of Indian ethnology through the methods which have been employed by European observers in other parts of the world. In August, 1882, while the statistics of the census of 1881 were still under compilation, the Census Commissioner for India suggested that lists should be drawn up for each district showing separately the castes and occupations found there, and that inquiries should be instituted locally regarding any special caste and occupation about which further information might seem desirable. The Census Commissioner's proposals were generally approved by

<sup>1</sup> "Eléments d'Anthropologie Générale," p. 205.

the Government of India, and commended by them to the various provincial Governments with whom the initiative in such matters necessarily rests; but in no province except Bengal was it found possible to set on foot any large scheme of original research. Early in 1884 the Government of Bengal took the matter up, and in February, 1885, I was appointed for a period of two years, afterwards extended to three, to conduct an inquiry into castes and occupations throughout Bengal. No specific instructions were given to me, and it was understood that I was at liberty to adopt any line of investigation that I thought likely to yield interesting results. After making some experimental enquiries in Behar and North-Eastern Bengal and preparing a provisional scheme, I visited Lahore for the purpose of conferring with Mr. Denzil Ibbetson, of the Bengal Civil Service, and Mr. John Nesfield, Inspector of Schools in Oudh, from whom I obtained most valuable advice and assistance. One chief object of our deliberations was to secure, so far as might be possible, that ethnographical researches carried on in different provinces of the Bengal Presidency should proceed on the same general lines, in order that their results might be of some service to students of comparative ethnology in Europe. We considered the question of the best means to be adopted to collect original data in addition to the facts already on record in books, official reports, and publications of learned societies. For this purpose two sets of questions were drawn up—a general and a special series. The général series was framed with the object of bringing out, by as few and as simple questions as possible, the leading characteristics of any particular caste. The special series went into more detail, and attempted to cover the main heads of ethnographical inquiry in India. Our endeavour throughout was not so much to strike out new lines of research, as to adapt the methods already sanctioned by the approval of European men of science to the special conditions which have to be taken account of in India. Considerable use was made of the series of questions or heads of inquiry prepared by a Committee of the Anthropological Institute of Great Britain and Ireland in 1874, and to this doubtless is owing the fact that when the proceedings of the Conference were submitted by me for criticism to a number of scientific experts and learned societies in Europe, I received comparatively few complaints that subjects had been omitted or inadequately dealt with.

The scheme of inquiry sketched by the Conference covered a far wider range than can have been contemplated by the Census Commissioner or the Government of India. But this extension was found to be unavoidable directly the attempt was made to give effect to the general idea thrown out by Mr. Plowden. In

dealing with the intricate fabric of social usage it is difficult to define the component parts of the main subject closely enough to distinguish minutely the point where administrative utility fades away into scientific interest. Most of all in the East, where religion, law, custom, and morality, are all inextricably mixed and jumbled up together, would the attempt to attain any such precision be futile and misleading. It was understood, therefore, from the first, that the objects to be aimed at in the inquiry were partly scientific and partly administrative, and the Government of Bengal determined to publish and circulate the questions framed by the members of the Lahore Conference, and to enlist the aid of the district officers and others who were in a position to help in obtaining answers to them. Experience has shown that a single person can do very little towards collecting the requisite information within a given time. To elicit facts by oral inquiry is necessarily a lengthy process, and accuracy can only be secured by testing the statements of individuals or groups of individuals by numerous independent observations. On the other hand, it was essential that no more labour than was absolutely necessary should be thrown upon the regular administrative staff, and particularly upon the district officers, who always have their hands full of urgent executive work. Their influence, however, was from the first brought to bear, and through their agency, supplemented by a good deal of personal inquiry and correspondence, were secured the services of nearly 200 official and non-official correspondents scattered over every district of Bengal, and communicating in their turn with an indefinite number of representatives of the tribes and castes which formed the subjects of investigation.

In organizing the inquiry the object kept in view throughout was to multiply independent observations and to give as much play as possible to the working of the comparative method. The local correspondents were instructed to extend their inquiries over a wide field, to mistrust accounts published in books, to deal with the people direct, and to go for their information to the persons most likely to be well informed on questions of custom, such as priests, marriage brokers, genealogists, and headmen of castes, tribes and smaller groups. Correspondents were invited to clear up discrepancies thus brought to notice, and frequently an entire report was sent back, with marginal annotations, for further inquiry upon points which appeared to be doubtful. As the inquiry proceeded, several special subjects were taken up and examined in circular letters addressed to all correspondents with the object of summarizing the general results ascertained up to a certain stage, and

thus indicating lines of inquiry which might lead to fuller results. Among the subjects thus dealt with may be mentioned the working of the rule of exogamy, which proved to be considerably more intricate than had at first been supposed ; the order of social precedence and the considerations by which it is determined ; the status of different castes in relation to the land and to the curious tenures held on terms of police service in certain districts, and their comparative aptitude for emigration to the tea districts of Assam and the various Colonies which employ coolie labour.

During several years of district work in Chota Nagpore, a region peculiarly rich in survivals of archaic usage, and again, while organizing the Ethnographic Survey, some special opportunities have come in my way of observing the progress of the great religious and social movement described by Sir Alfred Lyall as "the gradual Brahmanising of the aboriginal, non-Aryan, or casteless tribes."<sup>1</sup> That this movement is progressing on a large scale is beyond doubt ; but it by no means maintains a uniform character throughout its sphere of action, and it includes in Bengal at least four distinct processes, which may be analysed as follows :—

1. The leading men of an aboriginal tribe, having somehow got on in the world and become independent landed proprietors, manage to enrol themselves in one of the leading castes. They usually set up as Rajputs ; their first step being to start a Brahman priest, who invents for them a mythical ancestor, supplies them with a family miracle connected with the locality where their tribe are settled, and discovers that they belong to some hitherto unheard-of clan of the great Rajput community. In the earlier stages of their advancement they generally find great difficulty in getting their daughters married, as they will not marry within their own tribe, and Rajputs of their adopted caste will of course not intermarry with them. But after a generation or two their persistency obtains its reward, and they intermarry, if not with pure Rajputs, at least with a superior order of manufactured Rajputs, whose promotion into the Brahmanical system dates far enough back for the steps by which it was gained to have been forgotten. Thus a real change of blood may take place ; while in any case the tribal name is completely lost, and with it all possibility of accurately separating this class of people from the Hindus of purer blood, and of assigning them to any particular non-Aryan tribe. They have been absorbed in the fullest sense of the word, and henceforth pose, and are locally accepted, as high-caste Hindus. All

"Asiatic Studies," p. 102.

stages of the process, family miracle and all, can be illustrated by actual instances taken from the leading families in Chota Nagpore; but such details would be irrelevant to my present purpose.

2. A number of aborigines embrace the tenets of a Hindu religious sect, losing thereby their tribal name and becoming Vaishnabs, Ramayats, and the like. Whether there is any mixture of blood or not will depend upon local circumstances and the rules of the sect regarding intermarriage. Anyhow the identity of the converts as aborigines is usually, though not invariably, lost, and this also may therefore be regarded as a case of true absorption.

3. A whole tribe of aborigines, or a large section of a tribe, enrol themselves in the ranks of Hinduism under the style of a new caste, which, though claiming an origin of remote antiquity, is readily distinguishable by its name from any of the standard and recognized castes. Thus the great majority of the Kochh inhabitants of Rungpore now invariably describe themselves as Rajbansi or Bhanga-Kshatriyas, a designation which enables them to represent themselves as an outlying branch of the Kshatriyas who fled to North-Eastern Bengal in order to escape from the wrath of Parasu-Ráma. They claim descent from Raja Dazarath, father of Rama; they keep Brahmans, imitate the Brahmanical ritual in their marriage ceremony, and have begun to adopt the Brahmanical system of *gotras* or exogamous groups. In respect of this last point they are now in a curious state of transition, as they have all hit upon the same *gotra* (Kasyapa), and thus habitually transgress the primary rule of the Brahmanical system, which absolutely prohibits marriage within the *gotra*. But for this defect in their connubial arrangements—a defect which will probably be corrected in a generation or two, as they and their *purohits* rise in intelligence—there would be nothing in their customs to distinguish them from Aryan Hindus, although there has been no mixture of blood, and they remain thoroughly Kochh under the name of Rajbansi.

4. A whole tribe of aborigines, or a section of a tribe, become gradually converted to Hinduism without, like the Rájbansi, abandoning their tribal designation. This is what is happening among the Bhumij of Western Bengal (Manbhumi, Singbhum, Midnapore, and Bankura). Here a pure Kolarian race have lost their original language (Mundári), and now speak only Bengali: they worship Hindu gods in addition to their own (the tendency being to relegate the tribal gods to the women), and the more advanced among them employ Brahmans as family priests. They still retain a set of totemistic exogamous subdivisions closely resembling those of the Mundas and the Sonthals, but they

are beginning to forget the totems which the names of the subdivisions denote, and the names themselves will probably soon be abandoned in favour of more aristocratic designations. The tribe will then have become a caste, and will go on stripping itself of all customs likely to betray its true descent. The physical characteristics of its members will alone survive. After their transformation into a caste, the Bhumij will be more strictly endogamous than they were as a tribe, and even less likely to modify their physical type by intermarriage with other races.

There is every reason to suppose that the movement of which certain phases are roughly sketched above, has been going on for many centuries, and that, although at the present day its working can probably be most readily observed in Chota Nagpore, the Orissa hills, and parts of Eastern and Northern Bengal, it must formerly have operated on a similar scale in Bengal Proper and Behar. The well-known tenth chapter of Manu, which endeavours to account for the existence of the non-Aryan castes by representing them as the offspring of marriages between the four original castes, gives clear indications that in Manu's time, fixed by Burnell at 500 A.D., some of the non-Aryan races had already begun to intrude upon the Brahmanical caste system, while others were still in the tribal stage. Arguing from facts now observable, it seems likely that some of the castes alleged by Manu to be the result of more or less complicated crosses between members of the four original castes or their descendants, are really tribes which had lost their identity like the Rajbansi; for at the present day, if we look merely to customs, ceremonies, and the like, we find in the majority of cases that the admission of a tribe into the charmed circle of Hinduism results after a generation or two in the practical disappearance of the tribe as such. Its identity can no longer be traced by direct inquiry from its members, or inferred from observation of their usages. The Rajbansi and the Bhumij are instances of tribes in an early stage of transition, whose antecedents can be accurately determined. Later on not only do distinctive customs fall into disuse, but the tribe itself, after its promotion to the rank of a caste, breaks up into a number of endogamous groups, each of which practically forms a separate caste. But even in this extreme case the physical characteristics which distinguished the tribe tend on the whole to be preserved: and it is this persistence of the type which accounts for the differences of feature, which, though only definable by scientific methods, are marked enough to render it possible within certain limits to make a fair guess at a man's caste from his personal appearance.

These general impressions regarding the differences of physical

type observable within the range of the recognized caste organisation, coupled with the difficulty of throwing much light upon the true origin of the lower and intermediate castes by collating customs and ceremonies which they have borrowed in the most liberal fashion from the higher castes, suggested to me the possibility of applying to the leading tribes and castes of Bengal the methods of recording and comparing typical physical characteristics which have yielded valuable results in other parts of the world. Those methods might, it seemed, enable us to detach considerable masses of non-Aryans from the general body of Hindus, and to refer them, if not to the individual tribes to which they originally belonged, at least to the general category of non-Aryans, and perhaps to such specific stocks as Kolarian, Dravidian, Lohitic, Thibetan, and the like. If, for example, in Europe, where the crossing of races constantly obscures their true affinities, the examination of statistics drawn from physical measurements has been found to throw light upon the distribution of different race stocks in the population, a similar analysis of the leading tribes and castes in Bengal, where crossing operates only on a comparatively small scale, would *prima facie* appear likely to enable us to determine the divergence of each of these aggregates from known Aryan or non-Aryan types. Such an analysis would, it was thought, be regarded with approval by the leaders of the Hindu community in all parts of Bengal, among whom both the orthodox and the advanced lay considerable stress upon the purity of their Aryan descent: it would appeal in some measure to scientific men in Europe, and the results would command whatever political value may attach to the demonstration that a given population either is or is not composed of homogeneous ethnic elements.

Starting with this general idea, I wrote to Professor Flower explaining the nature of the inquiry on which I was engaged, and the particular difficulty which I desired to overcome, and asked for his advice as to the character and number of the measurements to be taken, the apparatus which should be used, and the forms in which the results should be recorded. In a long letter discussing the subject very thoroughly, Professor Flower was good enough to give me most valuable general advice as to the most profitable line of inquiry to adopt, while for fuller instructions concerning the mode of operations to be followed in detail he referred me to the exhaustive work, "Les Éléments d'Anthropologie Générale," by Dr. Paul Topinard, Professor of the School of Anthropology, and Secretary to the Anthropological Society of Paris. Having satisfied myself that Professor Topinard's instructions for dealing with living subjects, and the instruments prescribed by him were applicable

to Indian conditions, I proceeded after making some experimental measurements in Rangpur, to frame a complete scheme for giving effect to his system. This scheme was submitted to Professors Flowers and Topinard for criticism, and after having received their approval, was sanctioned by the Government of Bengal, the services of Civil Hospital Assistant Babu Kumud Behari Samanta, then attached to the Tibet Mission, being placed at my disposal for the purpose of taking measurements. After some experience had been gained in the working of the system in Bengal, proposals were drawn up for extending it to other parts of India. In the North-West Provinces and Oudh, Sir Alfred Lyall sanctioned a special grant of Rs. 1,000 for instruments, measuring agency, &c., and a fine series of measurements were taken by Chandi Singh, an ex-pupil of the Barampur Medical School, under the supervision of Mr. J. C. Nesfield, Inspector of Schools for Oudh, himself a high authority upon the castes of that part of India. A small, but very interesting set of measurements was also taken in the Panjab by Civil Hospital-Assistant Aláuddin, under the supervision of Deputy Surgeon-General Stephen. In every case the measurers were taught the use of the instruments by me, and were supplied with printed instructions, defining the procedure with extreme minuteness of detail, and discussing at length a variety of difficulties which experience had suggested to me.

It will be seen that out of the proposal merely indicated by the Census Commissioner in 1882, two distinct lines of research have been developed, namely : (1), an ethnographic inquiry into the customs of all tribes and castes in Bengal, which either form a substantial proportion of the population of any district, or though numerically insignificant, are specially interesting from the scientific point of view; and (2) an anthropometric inquiry according to Professor Topinard's system, into certain of the physical characteristics of selected tribes and castes in Bengal, the North-West Provinces, Oudh, and the Panjab. The materials collected under these heads, although falling lamentably short of what a scientific standard of completeness would demand, have nevertheless reached a stage at which it becomes clear that it would be unwise to defer publication any longer in the hope of more fully working out the numerous problems which press for solution. Meanwhile, pending the final publication of the four unavoidably bulky volumes in which the results of the ethnographic survey are embodied, I may be permitted to say that the present opportunity of laying before the Anthropological Institute a brief statement of some of the chief

conclusions which the inquiry seems to indicate is especially welcome. The criticism thus elicited will, I am confident, be of the utmost service to me in completing the work which still remains to be done.

I have already stated that the anthropometric branch of the survey was conducted on the system prescribed by Professor Topinard in his "Éléments d'Anthropologie Générale." From the numerous measurements suggested by him twelve were selected, and to these were added, under Professor Flower's advice, the bimolar and nasomalar dimensions recommended by Mr. Oldfield Thomas in his paper on the Torres Straits Islanders published in the "Journal of the Anthropological Institute" for May, 1885. These fourteen measurements were taken for fifteen castes and tribes in Bengal Proper, five in the Chittagong Hills, ten in the Darjeeling Hills, ten in Behar, seventeen in Chota Nagpore, twenty-three in the North-West Provinces and Oudh, and nine in the Panjab, in all eighty-nine distinct groups, comprising nearly 6,000 persons. The results have been tabulated in the usual form, and with certain introductory and explanatory matter fill two large octavo volumes.

The standard theory of the making of the Indian people is well known, and need not be elaborated at length. It is believed that a tall, fair-complexioned dolicho-cephalic and presumably leptorhine race, whom we have now Professor Sayce's authority for calling Aryans, entered India from the north-west and slowly fought their way, conquering and colonizing down the valleys of the great rivers. At an early stage of their advance they came into collision with a black snub-nosed race, who were partly driven away into Central and Southern India, where we find their descendants at the present day, and partly absorbed by the conquerors. Some writers, notably Colonel Dalton and Mr. J. F. Hewitt, discover among the remnants of the black race two distinct types or groups of tribes, known as the Dravidian and the Kolarian. The Dravidians are supposed to have entered India from the north-west, and the Kolarians from the north-east, and Mr. Hewitt, in a paper published in the Journal of the Royal Asiatic Society, goes so far as to speak of the latter as Mongoloid.

No one can have glanced at the literature of the subject and in particular at the Vedic accounts of the Aryan advance, without being struck by the frequent references to the noses of the people whom the Aryans found in possession of the plains of India. So impressed were the Aryans with the shortcomings of their enemies' noses that they often spoke of

them as "the noseless ones," and their keen perception of the importance of this feature seems almost to anticipate the opinion of Dr. Collignon that the nasal index ranks higher as a distinctive character than the stature or even than the cephalic index itself. In taking their nose then as the starting point of our present analysis, we may claim to be following at once the most ancient and the most modern authorities on the subject of racial physiognomy.

As measured on the living subject, the nasal index consists of the relation of the maximum breadth of the nose at its base outside the nostrils to its total height from the nasal spine to the root. It is expressed in the form of a percentage, the height of the nose being taken at 100. In a paper published in the "Revue d'Anthropologie" in January, 1887, Dr. Collignon proposes the following classification and nomenclature of the index :—

Ultra leptorhine .. ..	40 and under.
Hyper leptorhine .. ..	40 to 54·9.
Leptorhine .. ..	55 to 69·9.
Mesorhine .. ..	70 to 84·9.
Platyrhine .. ..	85 to 99·9.
Hyper platyrhine .. ..	100 to 114·9.
Ultra platyrhine .. ..	115 and over.

In the first place it will be convenient to distinguish the extreme types which are to be found within each of the three main groups. Under the head of platyrhine the following are the highest tribal averages :—

100 Malè or Male Paháriá, also called Sauria or Sámíl Paharia of the northern hills of the Santál Parganas, a very peculiar tribe usually classed as Dravidian ... ... ... ...	94·5
100 Mál Paháriás (distinct from the tribe last mentioned) inhabiting the southern hills of the same district ... ... ... ...	92·9
21 Korwas, a wild and shy tribe of Chota Nagpore	92·5
100 Mundas, one of the most characteristic Kolarian tribes of Chota Nagpore ... ... ...	89·9
100 Kharwár of Chota Nagpore ... ... ...	89·7
100 Bhuiyas of Chota Nagpore, Dravidian... ...	88·7

Turning now to the opposite extreme there are among the leptorhine group :—

13 Gujars, a pastoral tribe of the Panjab ... ...	66·9
57 Lepchas of the Darjeeling Hills, a Mongolian tribe claiming to be the aborigines of Sikkim...	67·2

80 Patháns of the Panjab	...	...	...	...	68·4
80 Sikhs of the Panjab	...	...	...	...	68·8
33 Awans, a trading caste of the Panjab	...	...	...	...	68·8
60 Biloches of Bilocharistan	...	...	...	...	69·4
Under the head mesorhine we have:—					
19 Machhis, a fishing caste of the Panjab	...	...	...	...	70·0
100 Kayasths, the writer caste of Lower Bengal	...	...	...	...	70·3
100 Bengal Brahmans	...	...	...	...	70·4
27 Arora, a trading caste of the Panjab claiming equality with the Khatris	...	...	...	...	71·2
36 Tibetans of Sikkim	...	...	...	...	71·4
26 Bábhans of the North-West Provinces	...	...	...	...	73·0

Returning to the platyrhine group, I wish to lay special stress upon the fact that all the tribes included in it are perfectly compact and vigorous aggregates. All are strictly endogamous, three have a strong communal organisation of their own, and none show any signs of dying out or of becoming absorbed into other groups. Although a trained observer may sometimes be able to distinguish members of particular tribes, all the six tribes which I have mentioned conform in the main to a single physical type which is absolutely different from that of the average Hindu of the plains of Northern India. Putting aside for the moment the minor tribal characteristics which skilled observers profess to be able to detect, it may safely be said that the people I have mentioned are all of very dark complexion, the colour of the skin ranging from dark brown to a peculiar charcoal-like black, which is very striking. Their stature is low and their build is sturdy. Their appearance, in fact, is precisely that of the black, noseless, squat Dasyus described in the Vedas. It may be added that they appear to have great powers of resisting jungle fever, that most of them emigrate readily to the Indian tea districts of Assam and to the West Indies, and that the work of opening up the remotest and most unhealthy tea plantations of Assam has been done by them and by cognate tribes.

In respect of certain characteristic customs the platyrhine group are equally distinct from the higher and intermediate strata of the population. Their system of exogamy is based upon totems, not on the eponymous or local groups which we find a few stages higher up. As a rule their daughters are married as adults; a bride-price is paid; and there are no signs of the bridegroom-price so common among the higher castes in India. Widows are allowed to marry again, and are usually expected to marry their late husband's younger brother. Divorce is readily allowed; divorced women may marry again, virginity

is little prized, and the relations of the sexes are characterised by considerable laxity. Their religion is of the type which, for want of a better name, we may call animistic, its leading idea being that man is compassed about by a multitude of powers (I prefer not to call them spirits) mostly destructive and malevolent, which require constant propitiation in some material form. This is the real working belief of the six tribes which I have named, though two of them—the Bhuiyas and Kharwars—have added to it a slight and partial veneer of Hinduism.

The leptorhine and mesorhine groups include, with two exceptions, the social aggregates among which we should *prima facie* expect to find the largest revival of Aryan characteristics. The exceptions are the Lepchas and Tibetans of Sikkim, the former of whom are leptorhine at 67·2, while the latter are mesorhine at 71·4. For both groups, however, the naso-malar index prescribed by Mr. Oldfield Thomas denotes their Mongolian origin, and places them outside the Indian series of groups. For the rest the only point deserving special notice appears to be the high place in the mesorhine group taken by the Brahmans and Kayasths of Bengal. This seems to bear out the traditional account of the north-western origin of these castes and to refute the not uncommon opinion that they are mainly of non-Aryan descent. The latter conjecture indeed appears to rest upon no more solid basis than the general impression that the Bengal Brahmans are as a class darker than the Brahmans of the North-West Provinces. The impression may be correct; but colour is hard to judge, and no satisfactory means of recording its gradations has so far as I know yet been devised. Summing up the entire body of evidence furnished by the nasal index we may say that it establishes the existence in India of two widely distinct types, the one platyrhine to a degree closely approaching to the negro, and the other leptorhine in much the same measure as the population of Southern Europe. Between these extremes we find a number of intermediate types, the physical characteristics of which suggest the inference that they must have arisen from the intermixture of members of the extreme types and their descendants. It is true that the rigid enforcement of the caste principle at the present day renders any such intermixture impossible, but it may be gathered from the account of the caste system given in the so-called Institutes of Manu that the rule of endogamy was less stringent in earlier times.

The most notable feature of these statistics of the nasal index is, however, their correspondence with—I should perhaps say their concomitant variation in relation to—two other sets of facts independently ascertained. I mean first the order of social

precedence and secondly the character of the exogamous subdivisions by which the matrimonial arrangements of every caste are regulated. Take the fifteen castes of Bengal Proper, the two castes of Behar, the seventeen castes of Chota Nagpore, and the twenty-three castes of the North-West Provinces for which this index has been measured, arrange them in the order of the nasal index, putting the lowest or most leptorhine index at the top, and it will be found that the order thus arrived at corresponds substantially with the order of social precedence. Everywhere the Brahman Kayasth and Rajput stand at the top of the list; everywhere the Chamar and Musahar are at the bottom. Within certain geographical boundaries it may be laid down at least as a working hypothesis, if not as an absolute law, that the social position of a caste varies inversely as its nasal index. I say within certain boundaries, because the figures for the nine castes measured in the Panjab do not appear to conform to the rule. But with regard to the Panjab it is possible that fuller inquiry may show either that the same law holds good, or that its disappearance marks the limit beyond which there has been little or no intermixture with the platyrhine type. The existing statistics are clearly inadequate. I may explain that the Panjab government were in such extreme financial difficulties when my inquiries were going on that they were unable to give any assistance or even to pay for the necessary instruments, and I owe the few figures we have to the exertions of Dr. Stephen, Sanitary Commissioner of the Panjab and the voluntary labour of Alauddin, a Civil Hospital-Assistant in Lahore.

The correspondence between the nasal index and the character of the exogamous subdivisions of various castes is equally striking. In the course of the ethnographic survey, special pains were taken to ascertain these groupings, and long lists of them have been arranged and classified for publication. These, as I shall afterwards have occasion to explain, are probably the most valuable social data that can now be collected. For the present I have only to point out that in Bengal Proper castes with a platyrhine index have totemistic exogamous divisions; that castes with indices between 85 and 80 have a mixture of totemistic eponymous and local groups; the tendency being as Mr. Andrew Lang has excellently expressed it, for the totem to "slough off," as the caste goes up in the world; that castes with indices between 80 and 75 have a mixture of local and eponymous sept-names, and that castes below 75 have eponymous septs. In Behar and the North-West Provinces, the totem is not so prominent, the influence of the higher castes has been stronger, and eponymous groups are found associated with higher indices than is the case in Bengal. Conversely in Chota

Nagpore, the totem-groups hold their own undisputed down to an index of 79, and possibly lower. These variations admit of being readily accounted for by reverence to local conditions, but I will not attempt to analyse them further here. Enough has been said to prove that a high average nasal index is usually, I may even say invariably, found along with low social position and totemistic subdivisions, while conversely a low index denotes high social rank and a system of eponymous subdivisions.

Reference has already been made to the naso-malar index devised by Mr. Oldfield Thomas, as a substitute for Professor Flower's naso-malar angle, and described in Mr. Thomas's paper on a collection of human skulls from Torres Straits, published in the "Journal of the Anthropological Institute" for May, 1885. In September, 1886, Professor Flower kindly drew my attention to this index as the only method by which the relative preponderance of a Mongolian or Caucasian element can be detected. He added, "If you can apply it to your border tribes—Lepchas, &c.—and then see if the character crops out in any of the hill tribes of Central India, I shall be greatly interested; in fact, for this special point, the supposed affinity of the latter with the Mongolian races, I would prefer this to any other measurement, as platyopy is certainly far more characteristic than brachycephaly of these races."

This index has been taken for 54 castes and tribes, viz., 8 in Bengal Proper, 5 in the Chittagong Hills, 10 in the Darjeeling Hills, 5 in Behar and the North West-Provinces, 17 in Chota Nagpore, and 9 in the Panjab. The average for the Panjab groups is 116, ranging from 113·1 in the Khatri, a trading caste of Aryan type, to 117·9 in the Biloc, 117·1 in the Pathan, and 116·6 in the Sikh. In the Chittagong Hills on the other hand, the Kuki have an index of 106·2, and the Chakmas of 106·4, while the index of the Maghs is 107·7. Of the Darjeeling tribes the Limbu average 106·9, the Khambus 107·1, the Lepchas 108·1. Forty-nine Tibetans of Tibet yield an average index of 108·8, 36 Tibetans of Sikkim give 108·9, 19 Tibetans of Bhutan 109·1. The Newars, who claim to be the aborigines of Nepal, show an index of 101·2. In Bengal the Mál Pahári have an index of 109·8, and the Malé of 110, while the Rajbansi or Kochh, a very large tribe recently promoted to the status of a caste, show an index of 110·8. Seventeen tribes of Chota Nagpore yield an average of 110·4, ranging from 107·6 in the Birhor to 114·2 in the Dom.

Among the large tribes we get the following results in ascending order—

Kharwar	...	...	...	109·4
Bhuiya	...	...	...	109·6

Santal	...	...	...	110·6
Munda	...	...	...	111·3
Oraon	...	...	...	113·6
Bhumij	...	...	...	113·8

As regards the known Mongolian tribes of the northern and north-eastern frontier, and the apparently Aryan races of the Panjab, the naso-malar index gives very clear and satisfactory results. Unlike most measurements taken on the living subject it appears to admit of comparison with cranial indices such as those given by Mr. Oldfield Thomas in the paper already referred to. I may venture, however, to suggest that the classification proposed by Mr. Thomas into—

Platyopic = races having indices below 107·5,  
 Mesopic = " " " 107·5 to 110·0,  
 Pro-opic = " " " above 110·0,

may require reconsideration, in view of the fact that the superior limit of the index appears from the Panjab figures to run in individual cases as high as 125 and over. In order to include such unquestionably Mongolian types as the Gurung tribe of Nepal, I should be inclined to extend platyopia to 109·9 or 110, to reckon mesopy from 110 to 112·9, and to count only indices of 113 and over as pro-opic. But it is perhaps premature to make any proposals of this sort until further data have been collected.

The bearing of the naso-malar index on the problem of the racial affinities of the black races of Chota Nagpore and Central and Southern India needs to be considered in the light of its relations to the cephalic and nasal indices. Judging from the naso-malar index alone, one would be inclined to say that the hypothesis of their Mongolian origin might be tenable. But when it is observed that a low naso-malar index, which in the Darjeeling and Chittagong tribes is always associated with a brachycephalic cranium, occurs among the so-called Dravidians and Kolarians in connexion with dolichocephaly and mesaticephaly tending towards dolichocephaly, and that the most dolichocephalic types are also those which have the lowest naso-malar index, it is clear that some other explanation of their tendency to platyopism must be sought for. This conclusion is strengthened by the difficulty of reconciling their extremely dark colour and their nasal index approaching to that of the Negro with the theory of their Mongolian descent.

With the cephalic index I will deal very briefly, and will endeavour to abstain from reciting figures. Taking Bengal Proper as our starting point, we find on the eastern and

northern frontiers a fringe of brachycephalic races, intercourse with whom is more or less frequent according to the means of communication available at different seasons, the occasions for trade, and the varying political relations between the hill tribes and the dwellers in the plains. We observe also, among certain of the Bengal castes, a distinct tendency towards brachycephaly, which shows itself in the Mahomedans and Chaudals of Eastern Bengal (indices 78·0 and 78·1), is more distinctly marked in the Kayasths (78·3), and reaches its maximum in the Bengal Brahmins (78·7). Bengal, then, taken as a whole, exhibits a high range of mesaticephaly verging on brachycephaly. On the north-west and west of Bengal Proper lie Behar and Chota Nagpore, both mesaticephalic with a tendency towards dolichocephaly; but in the case of Behar, the Brahmins, unlike those of Bengal, belong to the latter or dolichocephalic type, while in Chota Nagpore the wilder non-Aryan races are the most dolichocephalic. Further up the Ganges valley the people of the North-West Provinces are wholly dolichocephalic, and the same may be said of the Panjab, with the exception of trans-Indus people, like the Páthan and Biloc.

These facts seem to afford some ground for the conjecture that the peculiar and characteristic type of feature which distinguishes the higher castes of Bengal Proper from the corresponding ranks of society in Northern and Western India may be due to an infusion of non-Aryan blood, derived, not from the black races of Central and Southern India, but from the brachycephalic Indo-Burmese stocks further east.

Another point to be noticed is that the dolichocephaly so conspicuous in the North-West Provinces, may be a mark of Aryan or non-Aryan descent according to the social standing of the caste in which it occurs. The Brahman of the North-West Provinces is dolichocephalic at 73·1, the Kol of the same area at 72·4; but it is impossible to suppose that the two groups have derived this characteristic from the same source, and the prevalence of dolichocephaly among the unquestionable non-Aryans of Chota Nagpore seems to afford a clue to the difficulty. The Kol gets his long head from the non-Aryan races to whom his colour and the proportions of his nose affiliate him, while the Brahman's dolichocephaly comes to him from the Caucasian stock.

Two more points out of the fourteen which have been observed demand a brief notice here. Cuvier's facial angle, as measured by Professor Topinard's goniometer, has recently been made the subject of an elaborate study by Dr. Collignon, who concludes that, notwithstanding the limited range of variation in the averages deduced from it, this angle is a measurement

of the first rank, because it expresses exclusively an ethnic characteristic, and the data which it furnishes are not correlated to any other character. I may add that Professor Topinard's goniometer, several of which have been made for me by Collin, of Paris, is an instrument of great accuracy, easy to work, and not at all liable to get out of order.

I select from the mass of data available the following cases of low and high averages:—

LOW.			HIGH.		
Magh of Chittagong Hills ..	63·5	Gujar of Panjab ..	..	..	70·7
Mahomedan of Eastern Bengal ..	63·7	Sikh ..	..	..	70·4
Lepcha of Darjeeling Hills ..	64·1	Biloch ..	..	..	70·3
Kayasth of Bengal ..	64·2	Rajput of N.W.P. ..	..	..	69·6
Bhumij of Chota Nagpore ..	64·3	Brahman of Behar and N.W.P. ..	..	..	68·7
Tibetan of Tibet ..	64·4	Brahman of Bengal ..	..	..	67·1

It will be seen that the half-dozen highest average indices include three tribes of the Panjab and north-west frontier, and the Rajputs and Brahmans of the Ganges valley. The other group is a curious medley of races among which it is difficult to account for the presence of the Bengal Kayasths, a caste of fairly high social position and considerable intellectual attainments.

The figures of stature are very interesting, but I have not space to devote to them more than a few passing remarks. The lowest average stature, 156·2 centimetres, is found among the servile weaving caste of Chota Nagpore; the highest, 171·6, among the Sikhs. The nine Panjab castes give an average of 168·4; twenty-three castes of the North-West Provinces show 163·5; ten of Behar, 163·0; fifteen of Bengal, 162·0; ten of the Darjeeling Hills, 161·2; eighteen of Chota Nagpore, 160·2; five of the Chittagong Hills, 159·2. In connection with the statistics of height, I venture to draw attention to the height and weight index, which shows the number of grammes per centimetre of height, and thus serves to distinguish certain types of figure. Again selecting extreme cases, I find that the Munda tribe of Chota Nagpore have an average index of 372·6, and the Tibetans of Sikkim, 370·7, while the trading Khatri caste of the North-West Provinces show 290·7. The Sikh index is 320·2, the Lepcha, 350·5, the Gurung, 331·6.

The foregoing analysis enables us to distinguish three main types in the population of India at the present day, viz:—

I. A leptorrhine, pro-opic, dolichocephalic type, of tall stature, light build, long and narrow face, comparatively fair complexion, and high facial angle. This type is most marked in the Panjab. Their exogamous groups are eponymous, names of Vedic saints or heroes.

- II. A platyrhine, mesopic or nearly platyopic, dolichocephalic type, of low stature, thick-set made, very dark complexion, relatively broad face, usually low facial angle. This type is most distinct in Chota Nagpore and the Central Provinces. Its sections are totemistic, like those of North American Indians—that is, they are names of animals, plants, or artificial objects, to all of which some form of taboo applies.
- III. A mesorhine, platyopic, brachycephalic type of low or medium stature, sturdy build, yellowish complexion, broad face and low facial angle. This type is found along the northern and eastern frontiers of Bengal. Their exogamous groups are very curious, being mostly nick-names of the supposed founder of the sept, such as "the fat man who broke the stool," and others less fit for publication.

Assuming that these three types may be taken to represent so many distinct races or stocks, the question then arises, can we in any way account for them or affiliate them to other known families of mankind? In the case of the brachycephalic and platyopic type no difficulty presents itself. All of the groups which come within this category are demonstrably of more or less pronounced Mongolian descent; and we may conveniently call them Mongoloid. The type, as I have already remarked, is essentially a frontier type, and its influence can in no case be traced far into the interior of India. The Kochh or Rajbansi, a large tribe of Bengal, who now pose as an outlying branch of the Rajputs, are indeed commonly supposed to have some strain of Mongolian blood among them, but I doubt whether this opinion is well founded. A slight degree of platyopy is, it is true, met with among them, but this may equally well be accounted for on the supposition of their affinity to the platyrhine type.

Special interest attaches to the leptorrhine dolichocephalic type in view of Herr Karl Penka's recent advocacy, in "Origines Ariacae" and "Die Herkunft der Arier," of the possible Scandinavian origin of the Aryans. If it be accepted that Herr Penka has proved the typical Aryan to be dolichocephalic, there would seem to be some grounds for believing that in the dolichocephalic leptorrhine type of the Panjab and north-western frontier at the present day we may recognise the descendants of the invading Aryans of 3,000 years ago, changed no doubt in hair, eyes, and complexion, but retaining the more enduring characteristics of their race in the shape of their head, their stature, and the finely cut proportions of their nose. Survivals of fair or rather reddish hair, grey eyes, and reddish blonde

complexion are moreover still to be found, as Penka has pointed out, and as I myself have seen, among the Kafirs from beyond the Panjab frontier. Any way the striking preponderance of dolichocephaly in the Panjab and the North-West Provinces and its gradual increase as we travel up the Ganges valley towards the traditional Aryan tract, tend both to strengthen Penka's hypothesis and to enhance the credibility of early Indian legends. These facts go also to show that Penka is mistaken in supposing that the Indian branch of the Aryans became brachycephalic on their way to India. Had this been so, the dolichocephaly which now distinguishes them could only have been derived from crosses with the black race, and the Aryans could hardly have become dolichocephalic in this way without also becoming platyrhine.

Turning now to the platyrhine type we may observe that the figures show the current distinction between Dravidians and Kolarians, on which stress has been laid by Dalton and others, to be a purely linguistic character not corresponding to any appreciable differences of physical type. We may claim therefore for these data that they have accomplished the task set before himself by Mantegazza in his "Studii sull' Etnologia dell' India," and "erased the Dravidian colour from the ethnic chart of India," though not precisely in the manner contemplated by the Italian anthropologist. The hypothesis of the north-eastern origin of the so-called Kolarians urged by Colonel Dalton and recently advocated by Mr. J. F. Hewitt, must also be abandoned as inconsistent with the dolichocephalic skull of the typical representatives of the group. Whatever the Kolhs may be, they certainly are not a Mongoloid race.

The remarkable correspondence between the gradations of type as brought out by certain indices and the gradations of social precedence further enables us to conclude that *community of race*, and not, as has frequently been argued, *community of function*, is the real determining principle, the true *causa causans*, of the caste system. Everywhere we find high social position associated with a certain physical type and conversely low social position with a markedly different type. The conclusion thus suggested is confirmed by evidence derived from the character of the exogamous divisions. Divisions of a totemistic and therefore more primitive character occur among tribes of a lower social position and of lower physical type, while divisions taking their names from saints or heroes, which indicate a more advanced stage of social development, are met with in endogamous aggregates of higher physical type and higher social position. It is difficult to see how this state of things could have resulted from the operation of the principle

laid down by Mr. Nesfield in his sketch of the Caste System of the North-Western Provinces and Oudh, that function and function alone has determined the formation of the endogamous groups which in India are called castes. Moreover, had the latter principle been the true motive power of the system, it is hard to understand why within a limited area subject apparently to similar social influences, we should find a large number of castes all following the occupation of agriculture in precisely the same way, but nevertheless insisting vigorously upon the essential differences of blood which in their view render inter-marriage a thing impossible and inconceivable. The subject is too large and too intricate for me to attempt any detailed exposition of it here, and I must content myself with merely stating in general terms the conclusion which the recent measurements appear to indicate, viz., that the Indian caste system is a highly developed expression of the primitive principle of *taboo* which came into play when the Aryans first came into peaceful contact with the platyrhine race which we may provisionally call Dravidian. This principle derived its initial force from the sense of difference of race as indicated by difference of colour, and its great subsequent development has been due to a series of fictions by which differences of occupation, differences of religion, changes of *habitat*, trifling divergencies from the established standard of custom, have been assumed to denote corresponding differences of blood and have thus given rise to the formation of an endless variety of endogamous groups. As an illustration of some of the processes to which I refer, I may be permitted to analyse very briefly the internal structure of the Bagdi caste of Western Bengal.

The Bagdi have a nasal index of 80·5, and a cephalic index of 76·3. Their facial angle is 64·9. They stand at the bottom of the Hindu social system, and no member of the upper or middle classes can take water from their hands. Their exogamous subdivisions are partly totemistic, and partly eponymous, the latter groups having been borrowed from the low Brahmins who minister to their spiritual necessities as an outward and visible sign of their enrolment in the Hindu system. In the district of Bankura, where the original structure of the caste seems to have been singularly well-preserved, we find the Bagdis divided into the following endogamous sub-castes : (1) Tentulia, called after the tamarind tree ; (2) Kasaikulià, named from the Kasai river. These two groups work as masons, and also prepare the lime which is mixed with the betel leaves and areca nut chewed by all classes of natives of India. (3) Duliá Bagdis carry palanquins or *dulis*, and in common with the other sub-castes,

earn their livelihood by fishing, making gunny bags, weaving cotton, and preparing the red powder (*abir*) used in the Holi festival. The Bagdi fisherman uses the ordinary circular cast-net, but swings the net round his head before casting it, a practice which is supposed by the regular fishing castes of Bengal—Tiyar, Mál and Kaibarita—to be peculiarly dishonourable. Of the other sub-castes—there are nine in all—the Máchhuá and Mallametiá derive their name from fishing; the Kusmetia are called after the *Kusa* grass; the Ojha are, or are supposed to have been, the priests of the tribe. Among the Bagdis of Orissa the grotesque tale is told how, once upon a time, the gods being assembled in council, a goddess suddenly gave birth to three sons, and feeling embarrassed by the situation, hid the first under a heap of tamarind (*tentul*) pods, the second in an iron pan, and the third under a hermit's staff. From these vicissitudes of their infancy the children got the names which the sub-castes descended from them still bear. To us this apparently foolish story is of interest as marking the transition from the tribe to the caste. It can only have arisen when the Bagdis had in some measure cast in their lot with Hinduism, and had begun to feel the want of a mythical pedigree of the orthodox type. The mention of the tamarind pods in particular furnishes an excellent example of a myth devised for the purpose of giving a respectable explanation of the totemistic name Tentulia.

Within the sub-castes again are a number of exogamous sections, among which may be mentioned *Kásbak*, the heron; *Ponkrishi*, the jungle cock; *Salrishi*, or *Sálmáchh*, the *sál* fish; *Pátrishi*, the bean; and *Kachéhap*, the tortoise. The totem is taboo to the members of the section—that is to say, a *Kásbak* Bagdi may not kill or eat a heron; a *Pátrishi*, like the Pythagoreans according to Lucian, may not touch a bean.

It is difficult for the average European to realise the gulf which separates the Bágdis and the platyrhine group below them from the higher castes of the Hindu system. In some districts these outcast races are even excluded from the village schools, and everywhere they are looked upon as belonging to a different family of mankind.

In conclusion, I will state briefly what appear to be the most important results which the recent inquiries tend to bring out:—

I. They show that India is a peculiarly favourable field for anthropometric researches. The caste system, by prohibiting marriage outside the caste group, practically eliminates the element of *métissage* or crossing, which Topinard, Collignon, and other observers notice as confusing and impeding anthropometric observations in Europe. In other respects also India has great

advantages. The number of subjects available is virtually unlimited, and observations can be repeated and tested *ad libitum*.

The wilder races, such for instance as the Kols, are strong and numerous, and have not been affected by contact with European civilization. They are readily accessible, interpreters can be easily obtained, and the scientific inquirer, even if he know no Oriental language, would have little difficulty in pursuing inquiries on any line he might wish to follow up. I say this in the hope that members of this Society may be led to follow the prevailing fashion of making a winter tour in India. To any such enterprising ethnologist I can promise an abundant supply of fresh and interesting material.

II. Secondly, I think we may claim that the anthropometric method, and in particular the combination of that method with observations of social usage in the manner I have attempted to illustrate, promises to give us a scientific basis for Indian ethnology, and to enable us at the close of the next census to classify our results on a more or less rational system. It will be something if we can establish that the distinction between Dravidian and Kolarian races has reference solely to differences of language, and that the two groups belong to the same main stock.

III. Thirdly, the inquiry has drawn attention to the wide prevalence of totemism in India, and to the existence of several very singular modes of giving effect to the custom of exogamy.<sup>1</sup>

IV. It also throws much light upon the practice of infant marriage and the rule that a widow may not take a second husband. It shows that these ordinances—the positive one that a man must get his daughter married before puberty on pain of losing caste himself, and the negative one that a widow, even if a virgin, may not marry again—are regarded almost universally as badges of social distinction. A caste which observes them is in the way of salvation and may hope to rise in the social scale; while a caste which disregards them is ranked with the platyrhine Dravidians. Unhappily the form of infant marriage which is gaining ground is the Bengal form, which favours consummation even before puberty, and which tends to produce pregnancy at an abnormally early age. It would seem that such a custom must in the long run lead to physical degeneration, and must enhance the prevalence of those special diseases which Lady Dufferin's Fund endeavours to alleviate. So also with widows. As long as the prohibition of widow re-mar-

<sup>1</sup> See "Primitive Marriage in Bengal." "Asiatic Quarterly Review," July, 1886.

<sup>2</sup> See "Widow and Infant Marriage in Bengal." "Asiatic Quarterly Review," July, 1887.

riage remains a monopoly of the higher castes, the number of widows—large though it may be—does not amount to a serious social evil. But an indefinite extension of the prohibition by means of the imitative process now so rapidly going is not a prospect that can be regarded with indifference.

V. Finally, I have a practical suggestion to make which I would ask the Council of this Society to take into consideration. The British Association has already urged upon the Government of India the desirability of extending anthropometric observations to Bombay, Madras, and other parts of India, and has suggested that the exogamous and endogamous groupings of all tribes and castes should be recorded in the Census of 1891. This is good, so far as it goes ; but I should like to go still further, and attempt to initiate a permanent system of inquiry into custom throughout India. The system of circulating a set of questions and getting persons interested in ethnology to collect replies worked very well in Bengal, and I see no reason why it should not be extended to other parts of India. It would cost the Government next to nothing, and it offers the only prospect of ascertaining and recording a mass of interesting and instructive usage, which the spread of Brahmanism, favoured as it is by the extension of railways, is tending to obliterate. I propose then that the questions used in Bengal, which were based on those drawn up by a committee of the Anthropological Institute in 1874, should be revised by the Council with reference to Mr. Frazer's excellent series of questions and the various continental *questionnaires*, and that we should then approach the Government of India with a scheme for circulating them in India and collecting replies for the entire continent. In almost every district I believe we should find men ready to take up the work, and the data thus collected would be of the utmost value.

#### DISCUSSION.

Dr. G. B. LONGSTAFF enquired whether, in the case of the exogamous subdivisions described as existing in the Bagdi caste, the name of the subdivision went by the male or by the female side ; whether, for example, the children of a father belonging to the heron group and a mother belonging to the tortoise group would be herons or tortoises.

Dr. LEITNER and Dr. GARSON also joined in the discussion.

Mr. RISLEY explained that in all the exogamous groups which had come to his notice in Bengal the designation of the group, whether totem, eponym, or local name, descended in the male line, so that the children of a heron man by a tortoise woman would be herons and not tortoises. Traces of female kinship exist farther east in the Cossya hills, and some survivals may perhaps be found in Bengal itself.