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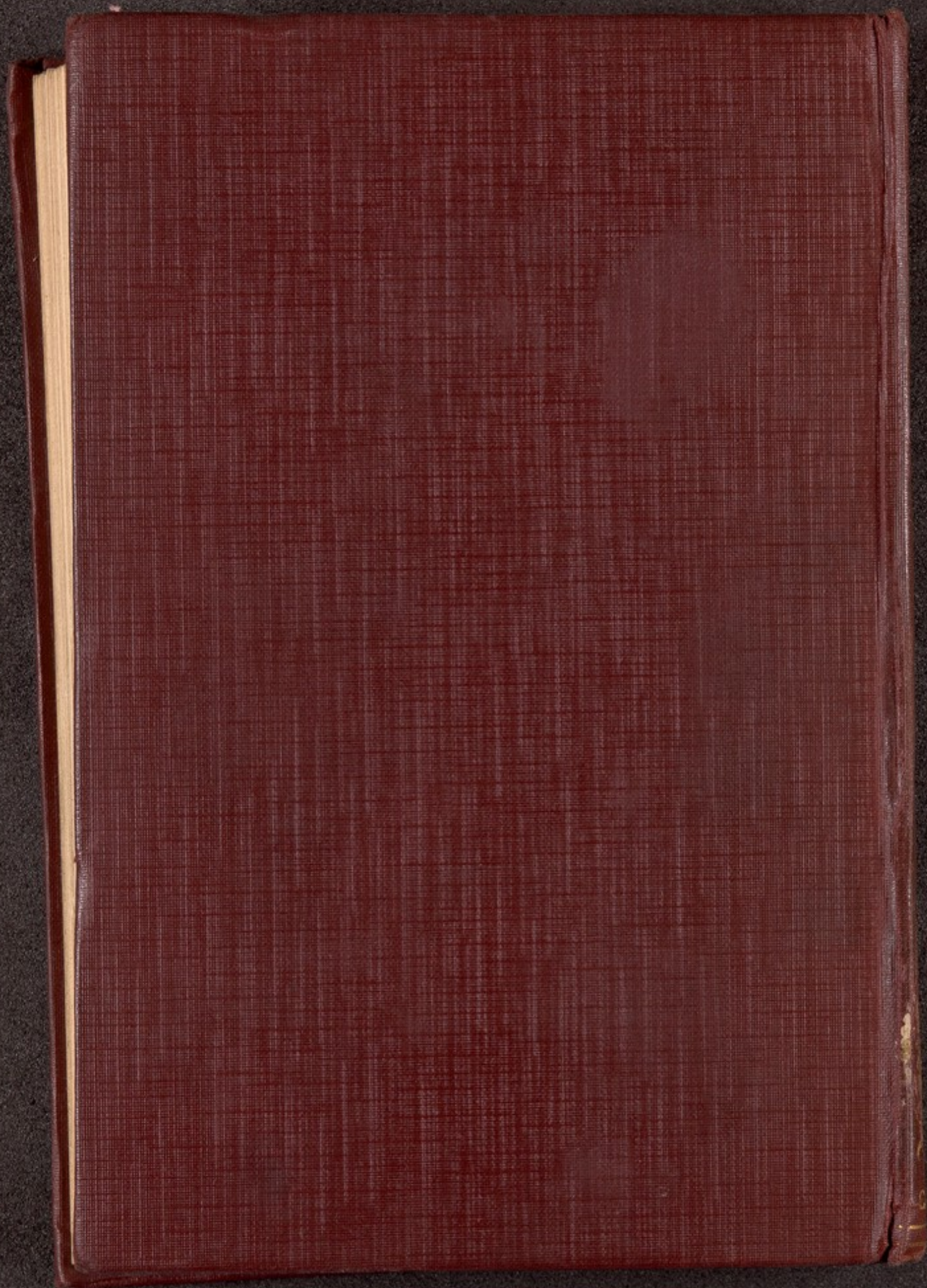
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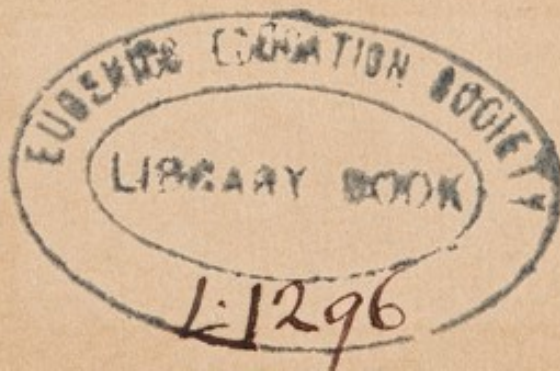
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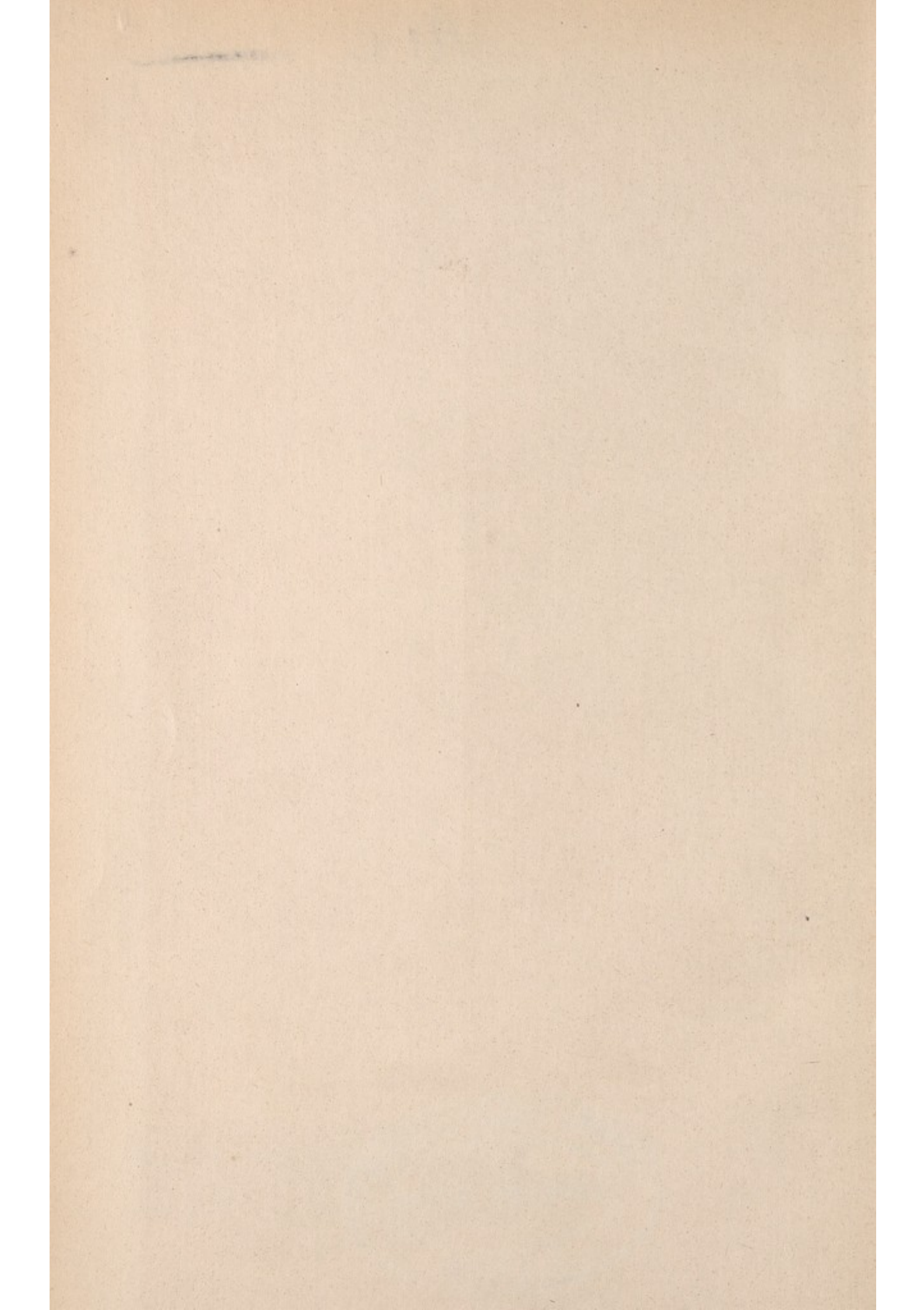




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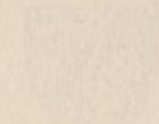
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THE RACES OF MAN

By HENRI DE SAUVAGNY



PARIS

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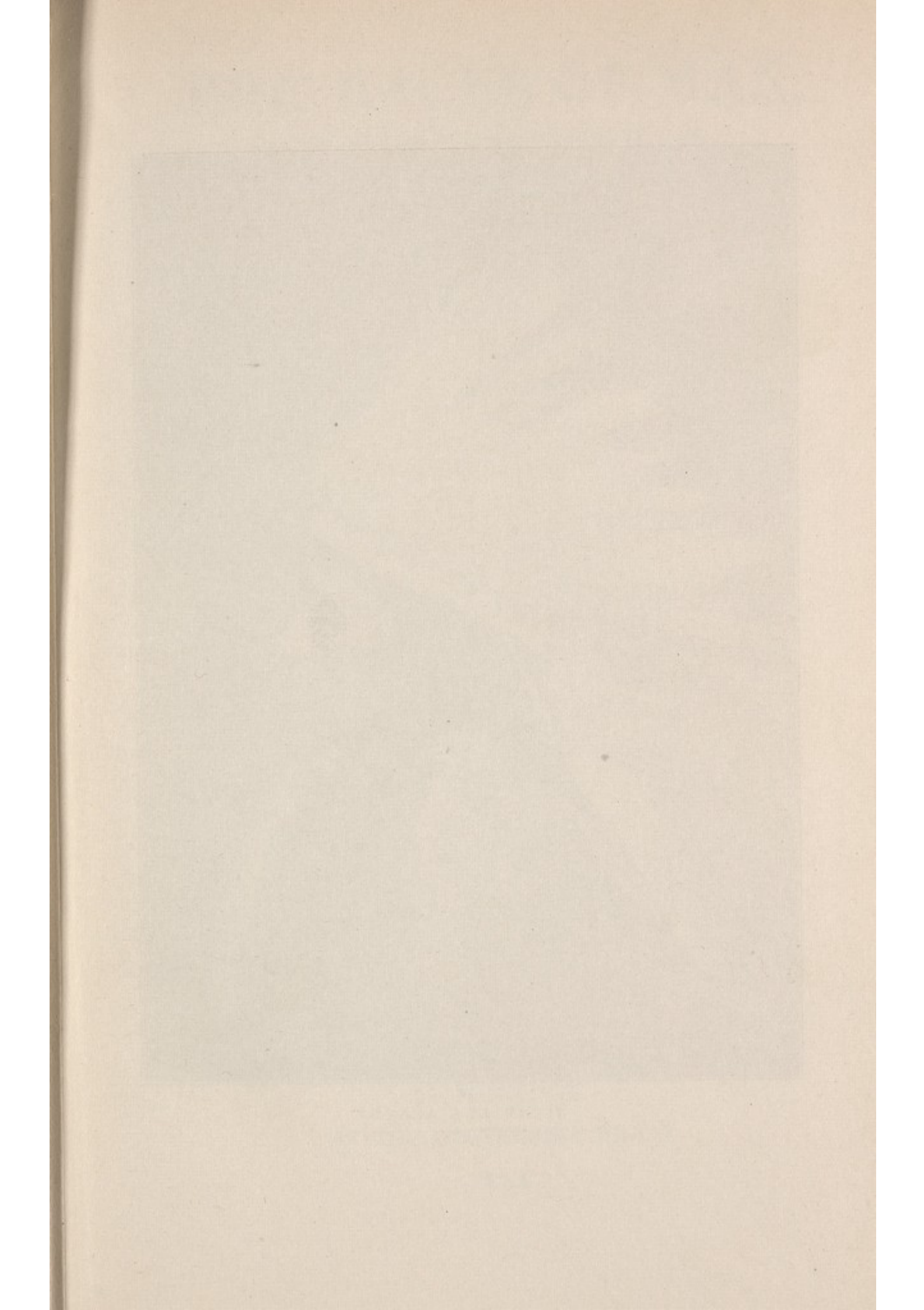


PLATE I



JICARILLA APACHE

THE RACES OF MAN

AND THEIR DISTRIBUTION

BY

A. C. HADDON, Sc.D., F.R.S.

READER IN ETHNOLOGY IN THE
UNIVERSITY OF CAMBRIDGE

NEW EDITION

CAMBRIDGE

AT THE UNIVERSITY PRESS

1924

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CORRIGENDA

p. 56, line 1, for 'tall' read 'short.'
line 2, delete "but not the stature."

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PREFACE

IT is extremely difficult to give in a very short space a well-balanced account of the races and peoples of mankind. The present effort must necessarily be open to grave criticism from several points of view. For various reasons I have not attempted to give proportional representation to the several areas and continents. Thus it will be noticed that Europe is dealt with in greater detail than other continents, and for obvious reasons I have given disproportionate space to the British Isles and Dominions. The effects of European colonisation are entirely omitted.

If the beginner makes himself acquainted with the terms and definitions given in the Basis of Classification he should find no difficulty in understanding the somewhat condensed accounts of the various peoples which limitation of space has necessitated.

This little book is to some extent a summary of a larger work upon which I am at present engaged. As it is intended to be of use to students of geography and history, as well as to the general reader, who presumably require synthetic conclusions rather than detailed information, I have not hesitated to make generalisations, often perhaps on but slender grounds. These, however, should be regarded as being held only in a tentative manner. I have omitted most of the data upon which such generalisations are founded and also, to secure brevity of treatment, I have refrained from quoting in the text the names of my authorities and the sources for various statements. By consulting the works given in the short Bibliography, the student will be able, for the most part, to check what I have written. References are sometimes given to minor papers of recent date, while other more important memoirs of earlier date are omitted, but references to these will be found in the papers cited. Thus in one way or another the

more advanced student should be able to obtain a sufficient knowledge of the literature of any people or area.

The book consists of four parts: The first portion deals mainly with some of the physical characters employed in racial discrimination and classification. A grouping is next given of various stocks according to these characters, together with their distribution. The different varieties here recorded have a very unequal value, numerical and otherwise. Some are well-defined, relatively pure groups, others are much mixed and therefore ill-defined; in some cases an element in a population has been described although it has no special location, as it appears to represent an old racial stock which has become submerged in the existing population. I frankly admit that the selection of these groups has been determined mainly from a practical point of view and it is probable that other groups would have been added, if a logical scheme had been adopted. This is followed by an attempt to indicate a probable racial history of the various areas. Finally in the General Summary I deal briefly with the problem of heredity and the effects of environment on the formation of races, and also give a sketch of what I assume to have been the main lines of the progressive evolution and the early migrations of *Homo sapiens*.

My thanks are due to Dr Davidson Black, Mr L. H. Dudley Buxton, Prof. H. J. Fleure, Mr H. J. E. Peake, Dr R. N. Salaman, Prof. C. G. Seligman and Dr F. C. Shrubbsall for personal advice and assistance, in addition to the authors of the books and papers I have consulted and from whom I have frequently quoted. I gratefully acknowledge the invaluable help I have received in various ways from Miss E. S. Fegan of Girton College in the preparation of the book.

A. C. H.

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PLATES I, V, VII, IX and X are from photographs taken at the St Louis Exposition, 1904, by the Staff of the Field Museum of Natural History, Chicago, and given to me by my friend, Dr G. A. Dorsey, with full permission to reproduce them.

PLATE II is from a photograph taken on the Cambridge Expedition to Torres Straits, etc., 1898.

PLATES III, IV and VIII are from purchased photographs.

PLATE VI is from a photograph taken by my friend, Mr J. Thomson.

THE RACES OF MAN

THE BASIS OF CLASSIFICATION

VARIOUS methods are employed in the attempt to group together different human communities, but in the endeavour to classify mankind it is essential to keep the consideration of physical characters, culture, and language quite apart from one another, much confusion having arisen in the past from the non-observance of this elementary rule.

The problems of racial affinity are purely zoological, thus in considering race, only external and internal physical characters, or even to some extent physiological characteristics, can be taken into account. This is the method upon which is based the classification adopted in this book. Unfortunately there is still a lack of uniformity in the employment of certain terms, as for example in the use of the word "race."

The term "race" is employed in various senses, but usually to connote a group of people who have certain well-marked characters in common. What these characters are, or how many characters are to be taken into account, is usually a matter of individual opinion. If all fair-skinned peoples are grouped under the term of the White Race, this will include long-headed and broad-headed groups. Or the term "race" may be applied to one of these groups. Race names, such as Nordic or Alpine, are merely convenient abstractions helping us to appreciate broad facts. A race type exists mainly in our own minds. Assuming that by isolation and consequent inbreeding a group of people can acquire a number of similar traits, when such a group mixes with another group that has acquired different traits a population will result of which a certain number will, in the main, possess most of the characters of one parent group, a certain number will possess most of those of the other group, while the greater number of persons will on the whole seem to be intermediate in appearance, not necessarily because the characters themselves are intermediate but because there may be a mingling of characters from both parental groups. Processes of this type, between closely allied

varieties or between different types of humanity, have taken place from time immemorial. Further, it is possible that there may be groups apparently intermediate between two others, which do not owe their intermediateness to racial mixture but to their being less modified descendants of an ancestral stock from which the other two stocks have diverged. Thus with more complete knowledge it becomes increasingly difficult to define a "race."

Generalisations concerning such characters as head-form, pigmentation, stature and the like of large areas tend to mask the real ethnic diversity that exists in these areas and to produce a fictitious appearance of uniformity. A certain amount of generalisation is necessary in so vast and intricate a subject as racial ethnology and I have not hesitated to give average measurements or indices, since in no other way could broad results be arrived at. But it must always be understood that they are merely averages of peoples within an area and that hidden away in these averages may be found the component types of the group in question.

It is very doubtful whether there are at the present time any races that can be termed "pure," though a few peoples, such as the Andamanese, the Bushmen, or the jungle Vedda, appear to be practically unmixed. The Jews, being of mixed origin, certainly cannot be spoken of as a pure race, again there is no such thing as an English or an Irish race; they can only be termed a people or a nation. A people is a community inhabiting any given area; thus the Andaman Islanders are a people, so far as we know, of pure race, while the people of Ceylon belong to various races.

A classification based on culture may be of interest to the sociologist, but it is obviously one which can have no prime importance in regard to genetic relationship, though it may indicate the influence of peoples upon one another. There is no such thing as racial culture. The culture of any given people is primarily dependent upon their mode of life, which is in itself largely an expression of geographical conditions. It would be difficult to assert that the culture of any known people is, strictly speaking, entirely aboriginal. The movements of peoples have resulted in amalgamations of cultures,

and there may be cultural migrations practically independent of recognisable racial admixture. These migrations of cultures afford a fascinating study and their elucidation will form the basis of a true history of mankind.

Language is merely a special branch of culture but, though it often forms a useful indication of the contact of peoples, it cannot by itself be employed in a classification of races. A classification of mankind by language has only the same value that a classification by any other form of culture may possess. A similarity of language merely proves that the peoples in question, at one time or another, have been in contact with each other. When a language is imposed upon a native population by a more powerful or more cultured immigrant people, we may suppose that the immigrants brought their women with them. An example of this may be found in the invasion of the Aryan-speaking people into India. In those cases where the immigrants were few in number and mainly or entirely of the male sex, most or all of them would have to marry local women and their children would naturally speak their mother's language, as, for example, in the case of the Northmen adopting the Anglo-Saxon or French language when they settled in England or France. It is surprising how completely one people will adopt the language of another, but the borrowed language usually betrays the previous existence of the aboriginal language by divergences in grammatical construction, in phonology, and in sound-shiftings; also some aboriginal terms are almost certain to persist.

I shall occasionally refer to language or to artefacts (such as stone implements or pottery) as suggestive of a relationship between two peoples or of a migration. In doing so I do not mean to imply that these have any racial value, but any decided peculiarity of a culture suggests that it has been developed within a definite restricted area, which is one of the conditions for the formation of a race (p. 139). A language or artefacts when found in another area are good evidence for a movement of population—or in some cases merely of a spread of culture. The original population may have been a relatively pure one, that is a race, or may have been a mixed people; it is only by careful analysis that a language or a

culture can give an indication as regards these two alternatives.

No one physical character can by itself be employed in the discrimination of peoples, but in order to classify mankind several characters must be taken into account. In a small book of this kind it would be impossible, even were it desirable, fully to discuss the relative value of such characters; also various physical characters that have been utilised by students cannot even be referred to here.

The physical characters which can be employed in the grouping or discrimination of peoples are mainly of two kinds; those which are readily apparent, and those which require more minute observation, usually with the assistance of instruments, as in measurements of the living and of the skull and skeleton. The most obvious of the superficial characters, such as skin-colour, character of the hair, shape of the nose, stature and the like, have been recognised from time immemorial. Practically all peoples look upon their own physical characters as constituting the normal type, and consequently regard those that differ from them as being strange and even repulsive. This is proved by the frequency with which a people will class itself by a name which signifies "men," thereby implying that they only are the important men, while other peoples are designated by nicknames, names of localities, or of some peculiar habit.

We have an interesting example of the employment of certain of the above-mentioned characters as a means of racial discrimination in the Vedas, which were composed by the poets of the Aryan-speaking invaders into Northern India about 1500 B.C. The word *varna*, which is now employed to signify caste, is used in the dual number, "two colours," *i.e.* the light skin of the "Aryans" and the dark skin of the Dasyus, that is, of the Pre-Dravidian aborigines, who are elsewhere called "noseless," "black-skinned," "unholy," "excommunicated"; other texts dwell on their low stature, coarse features, and their voracious appetite. It is hardly an exaggeration to say that from these sources there might be compiled a fairly accurate anthropological definition of certain Pre-Dravidian tribes of to-day.

The physical characters which I shall mainly employ are the character of the hair, skin-colour, stature, form of the head, the characters of the face, nose, and eyes.

HAIR

The most convenient character to employ for a preliminary grouping of mankind is the nature of the hair. The following series occurs: Straight, the lank hair that usually falls straight down, it is stiff, coarse and long. Smooth, the hairs are thinner, soft and slightly curved, or with a tendency to become wavy. Wavy, hair with low, medium, or deep waves. Frizzly, hair with a very short deep wave, which does not form a curve or spiral. Curly, each hair forms a more or less complete circle, or a large spiral a centimetre or more in diameter. Woolly, typically characterised by numerous, close, often interlocking spirals from 1 mm. to 9 mm. (as a maximum) in diameter; this term has become established, though strictly speaking it is a misnomer. For practical purposes these varieties of hair-form may be grouped as follows: (1) *Leiotrichy* (or *Lissotrichy*), or straight hair (Pls. VI, IX). This is typical of the Asiatic Xanthoderms and of those peoples descended from them. (2) *Cymotrichy*, or smooth, wavy and curly hair (Pls. III, V). This series is characteristic of Western Asia, Europe, North and North-eastern Africa, India, Australia, and other regions where such peoples have spread. (3) *Ulotrichy*, or woolly hair (Pls. II, VII). The hair of the head is long in Papuans and Melanesians, shorter in Negroes, and short in Negrillos, Negritos, and Bushmen; among the Bushmen the hair is remarkable for fineness and groups itself into little knots (the so-called pepper-corn hair) which appear to be separated by bare spots, but as a matter of fact the hair follicles are distributed as in other races. All intermediate conditions may occur between the extreme types, even in the same locality. I have collected practically every variety from ulotrichy to leiotrichy in the village of Hula, on the south coast of South-east British New Guinea, but there is abundant evidence to show that there has been a mixture of races in that area, and thus the apparent anomaly merely reaffirms the importance of the classificatory value of hair.

Climatic conditions probably account indirectly for the character of the hair. The ulotrichous form is due to two main factors, the great curvature of the hair follicle and its compressed lumen, so that the emerging hair is started in a spiral, and is a narrow oval in section. These conditions and the slack skin muscles may be due to life in a warm moist climate. In leiotrichous individuals the hair follicles are straight, have a more vertical position and a round lumen, and the hair is consequently straight and more or less round in section. This may be correlated with a contraction of the skin due to a dry habitat. In cymotrichous hair the conditions are intermediate. The length of the head hair is usually in inverse ratio to the abundance of hair on the body. Some cymotrichous peoples have very hairy bodies, *e.g.* Ainu, Toda, some Australians, some Europeans. The Xanthoderms and Amerinds usually have an almost hairless body.

Practically everywhere outside Europe and parts of Northern Asia the hair is black in colour, but it often has a brownish or reddish tinge. In Europe we have the greatest diversity of colour, but even here the bulk of the population has brown or black hair, especially in the centre and south. Red hair is widely distributed in Europe and Western Asia, but it can only be said to be even moderately common among the Welsh, Scottish Highlanders and Jews; it is very prevalent among the Finns.

SKIN-COLOUR

The colour of the skin is the external character which at once arrests attention, and by some authorities is placed first in the rank of racial characters, but a consistent use of this feature tends to some confusion, although in a general way it accords with certain other criteria. The pigmentation of the skin is due to various brownish granules in the deeper layer of the epidermis; the differences in the colour of the skin of various peoples are usually regarded as being merely a question of the frequency of the granules. We may, for the sake of convenience, speak of White-skinned peoples, *Leucodermi*, but these vary from pinkish-white in the north to tawny-white or light brown in the south: Europeans, most of the Western

Asiatics and North Africans, Polynesians. Brown-skinned peoples, varying from light brown to red-brown and dark brown: Hamites, Dravidians, most Amerinds. Yellow-skinned peoples, *Xanthodermi*, of varying tints from quite light to brown, but always with a yellowish tinge: Mongoloid Asiatics, some Amerinds, Bushmen, Hottentots. Black-skinned peoples, *Melanodermi*; these are usually a dark chocolate-brown, but in Africa there are many variations in colour; very few are really black: Negroes and Negroids, Papuans, Melanesians, Pre-Dravidians, Australians.

The ancient Egyptian artists who decorated the royal tombs at Thebes in the XVIIIth Dynasty distinguished between four races: (1) the Egyptians, whom they painted red; (2) the Asiatics or Semites, who were coloured yellow; (3) the Southerners or Negroes, who naturally were painted black; and (4) the Westerners or Northerners, white. We ourselves speak loosely of white men, yellow men, black men or "niggers," red men, and brown men.

It is a commonplace that the skin of mankind, so far as the Old World is concerned, tends to be darker towards the equator, and fairer away from it, at least in the northern hemisphere; but this general rule does not hold good for the New World. It is also admitted that these gradations in colour have a protective value; in the case of the melanoderms against the actinic rays of the sun and in that of the leucoderms against cold, since white is the best colour for keeping in the heat of the body. Various attempts have been made to correlate the different hues of the skin with geographical and climatic conditions, but the subject is a very complicated one and generalisations are occasionally found to break down when particular areas are considered. For example, we find peoples of very different physical characters living under analogous conditions and with a similar climate; thus the environment of the very dark Negro of the Congo basin is not very dissimilar from that of the pale yellow Punan of the interior of Borneo, or that of the cinnamon-coloured jungle people of the Amazon valley; but the skin-colour and other characters of these groups are extremely different. Or again, the conditions of existence are not dissimilar for the dark

Fijian and the relatively fair Samoan. If negro characters are due to environment why has not the latter been operative to produce similar characters elsewhere? A plausible explanation might be found in the time factor, on the supposition that the Punan and tropical Neo-Amerinds have not been in their present habitat long enough for the climatic conditions to have taken effect. Conversely, there is no apparent climatic reason why the natives of Australia should be so dark-coloured and broad-nosed, and the same applies with yet more force to the same characters in the Tasmanians. It rather seems that the various physical features (however and wherever they have been attained) may have taken a definite direction for so long a time that modification in an opposite direction has become impossible. We may conclude that variations in pigmentation arose spontaneously independently of the action of the environment, at a period perhaps when variability and mutations were more prone to occur, and that the deeply pigmented individuals being more fitted to sustain tropical conditions at length outlived the rest; the colouration may have been intensified and its progress accelerated by a process of sexual selection. The converse would occur in cooler latitudes.

STATURE

Another variable character is stature. According to Topinard, the average human stature is about 1.65 m. (65 in.); those people who are 1.70 m. (67 in.) and over in height have high statures; those between 1.70 m. and 1.65 m. are above the average; those between 1.65 m. and 1.60 m. (63 in.) are under the average; those below 1.60 m. are short. Those who fall below 1.50 m. (59 in.) are now usually termed pygmies.

The following scale is employed in this book:

Pygmy	...	...	-1.48 m. (-58½ in.)
Short	...	...	1.48 m.-1.58 m. (58½-62½ in.)
Medium	...	...	1.58 m.-1.68 m. (62½-66 in.)
Tall	...	...	1.68 m.-1.72 m. (66 -67¾ in.)
Very tall	...	...	1.72 m.+ (67¾ in.+)

It is universally admitted that some races are predominantly tall, others short, or even of pygmy stature, but there is often a considerable range of variation within certain limits

among the same people, though a tall people will not contain very short individuals, except pathologically (dwarfs), and a pygmy people will not include members of tall stature. Torday found that certain Congo BaTwa pygmies, near the Kasai river, left the forest two generations ago and took to agriculture and a settled life. They have attained a stature far superior to that of the average pygmy, though not equal to that of their BuShongo neighbours, with whom intermarriage is out of the question. Torday suggests that sunshine, air and regular life have been the main factors in this change, but another explanation may be found more in accordance with the teaching of genetics. A people may be temporarily dwarfed by unfavourable conditions of life, but they increase in stature when the conditions are improved, as is shown in the case of the Limousin district in France (p. 75 and cf. p. 51).

High stature is partly dependent upon the retardation of maturity, thus allowing of long-continued growth. An open wandering life seems to be favourable to increased stature if the conditions are not severe. Speaking broadly, peoples with stunted stature are frequently found in heavy forest country, and also in excessively cold and notably infertile areas where life is hard. But every case must be taken by itself, as there is always a possibility that a given short people may have been driven by a taller, stronger people into the region where it is now found.

FORM OF THE HEAD

A very valuable character is the general form of the head. When looked at from above some heads are seen to be long and others short, the former are also generally narrow and the latter broad. This distinction is illustrated by the *Cephalic Index* (C.I.), which is the ratio of the breadth of the skull or of the head to its length, the latter being taken as 100. When the ratio falls below 75 the skull is termed *dolichocephalic*, or narrow-headed, when it is between 75 and 80, it is *mesocephalic*, or medium-headed, when it exceeds 80 it is *brachycephalic*, or broad-headed. Sometimes only two groups are recognised, the dolichocephalic, — 78, and the brachycephalic, 78 +. When only dealing with the skull it is better to speak

of the *Cranial Index* and to reserve the term cephalic index for the head of the living; roughly speaking the cephalic index is two units higher than the cranial index, but some anthropologists add only one unit. In this book I give the cephalic index, usually of males only, except in those cases where it is specially mentioned that the cranial index is intended.

The height of the head is a character of some importance; some heads are high and well arched when looked at from the side (*hypsicephalic*), while others are low and flattened (*platycephalic* or *chamaecephalic*).

LENGTH-BREADTH INDEX

Cranial		Cephalic	
-65	Ultradolicho- ...	...	—
65-70	Hyperdolicho-	...	—
70-75	Dolicho- ...	...	-77
75-80	Meso- ...	...	77-82
80-85	Brachy- ...	...	82 +
85-90	Hyperbrachy-	...	—
90 +	Ultrabrachy- ...	...	—

LENGTH-HEIGHT INDEX, OR ALTITUDINAL INDEX

Cranial				Cephalic (auricular height)	
-70	Chamae-	...	...	-58	(=Platycephalic)
70-75	Ortho-	...	...	58-63	
75 +	Hypsi-	...	...	63 +	(=Hypsicephalic)

The cephalic or cranial index is merely a ratio expression; it does not inform us where the greatest breadth of the head occurs, nor does it give any indication of the real form of the head, which certainly is more important than the index. As the various types of head-form can only be accurately noted on the skull, they scarcely affect our present purpose, and, furthermore, a continual reference to diagrams is necessary.

FACE

A correlation, which is termed harmonic, usually occurs between the form of the head and that of the face, thus dolichocephals have narrow faces, *Leptoprosopy*, and brachycephals have broad faces, *Chamaeprosopy* (or *Euryprosopy*). To this general rule there are notable exceptions termed

disharmonic: thus a long head and broad face occur in the Cro-Magnon type and among the Eskimo, while a broad head and narrow face are characteristic of the French Basques. Keith is convinced that the modern British face is becoming longer and narrower as compared with prehistoric English skulls. The appearance of the face is largely influenced by the lateral expansion or the prominence of the cheek-bones.

The lower part of the face may project considerably, *prognathous*; this is what is termed a "low" feature; or there may be little or no projection of the face, *orthognathous*. These characters are dependent on the size of the jaws.

A flat and retreating forehead is also a "low" feature, but a somewhat bulbous forehead, such as is characteristic of Negroes, does not necessarily imply high intellectual ability. A straight nose, and one in which the root is only slightly marked, so that the line of the forehead passes gently into that of the nose, constitutes the classical nose of Greek statues. As a matter of fact, this feature was seized upon and exaggerated by certain Greek sculptors, the contours of the nose and forehead being alike falsified, so as to give increased nobility to the expression. The majesty of the brow of Zeus, the wielder of the destinies of men, was due to an overstepping of human contours, as these in their turn, in the dim ages of the past, had passed beyond the low outline of the brute.

N O S E

A feature that has always attracted attention is the nose. The root may be pinched or broad. The bridge may be *platyopic*, *mesopic*, or *prosopic*, that is, low, medium or high, a character which is of considerable value in the discrimination of races. As seen in profile the nose may be long or short; concave, straight, uniformly convex, aquiline (*i.e.* strongly convex at the bridge), or sinuous. There may be a more or less distinct tip, or the end may be rounded off or even flattened. The base may be reflected, horizontal, or depressed. The wings (alae) vary considerably and the nostrils may be narrow, medium, broad, or round.

Relatively to the length of the nose (from the root to the angle with the lip) the wings may be broad, *platyrrhine* (or

chamaerrhine), over 85 (Pls. III, VII); moderate, *mesorrhine*, 85–70 (Pls. VI, VIII); or narrow, *leptorrhine*, less than 70 (Pls. IV, IX). This ratio is known as the *Nasal Index* of the living (N.I.).

NASAL INDEX

(On skull)		(Of living)	
	Hyperleptorrhine ...		–55
–47	Leptorrhine ...	...	55–70
47–51	Mesorrhine ...	...	70–85
51–58	Chamaerrhine ...		85–100 (=Platyrrhine)
58 +	Hyperchamaerrhine ...		100 +

The nasal index of the skull is the ratio of the breadth of the nasal aperture to the height which is taken from the nasion (the point where the suture between the two nasal bones meets the frontal bone) to the central point of the lower border of the aperture. The two nasal indices are only relatively comparable. Speaking generally, the leucoderms are leptorrhine, the xanthoderms mesorrhine and the melano-derms platyrrhine. The nasal index has proved of great value in the disentangling of the elements in mixed populations, as for example in India and East Africa.

The so-called “Jewish nose” is of interest; it cannot be termed “Semitic,” as the true Bedawin, who must be regarded as typical Semites, do not possess it. It was, however, typical of the ancient Hittites, and is so of the present Armenians, their modern representatives. It is therefore obvious that there must have been a cross between the Jews and the Hittites, and we know from history that they were early in contact with one another.

Wide nostrils and a broad nose are frequently associated with hot moist conditions, whereas in regions of cold dry climate the nasal apertures are narrowed so as to warm the inhaled air.

EYE

Amongst most peoples the palpebral fissure, slit or opening of the eye, is horizontal and more or less full; it is normally widely open in Europeans and most other peoples, and quite narrow in many North Asiatics. In South Europe, North

Africa and generally in the Nearer East the opening is often almond-shaped.

A second type of eye is characteristic of the xanthodermous Asiatics and of the mixed peoples partly derived therefrom, hence it is frequently termed the "Mongolian eye." Typically the fissure is oblique, the outer angle being higher than the inner angle, and the fissure is somewhat in the form of a scalene triangle, and is also much narrower than in the ordinary eye. These conditions are termed "oblique- or slant-eyed" and "slit-eyed."

Occasionally in leucoderms, sometimes in Negroes, and as a rule in Mongoloid peoples, a fold of skin, the *epicanthic fold*, or *Mongolian fold*, covers the inner angle of the eye and may extend on to the cheek (Pls. VI, IX). This is a fold of skin arising three or four millimetres above the free edge of the upper lid which bears the eye-lashes. In extreme cases this fold may sag down over the margin of the whole upper lid and conceal it completely, so that the eye-lashes are scarcely seen—the "Mongolian eyelid." The typical Mongolian eye is therefore slit-eyed, oblique-eyed, with an epicanthic fold and Mongolian eyelid; but amongst xanthoderms there is a considerable variation in the development of one or the other of these characters.

The pigmentation of the iris varies greatly in range of colour among the leucoderms, especially in Northern Europe. Among the xanthoderms and melanoderms the irides are almost uniformly dark brown in colour.

There are many other characters which are employed by physical anthropologists, necessitating the observation of certain details of anatomical structure, or careful measurements on the living or on the skeleton; for these the reader is referred to special works dealing with physical anthropology.

Although, as a matter of convenience, the range of the variations of any given feature is divided up into groups, such as dolichocephaly, brachycephaly, and the like, to which definite names are applied, it must be clearly understood that these demarcations are purely arbitrary and are employed merely to facilitate comparison and classification.

AN ARRANGEMENT OF THE MAIN GROUPS OF MANKIND

ULOTRICHI.

ULOTRICHI ORIENTALES.

Very short, dark-skinned, meso- to low brachycephalic.

Negrito (Andamanese, Semang, Aeta, Tapiro).

Short or tall, dark-skinned, dolichocephalic.

Papuan, Melanesian.

ULOTRICHI AFRICANI.

Very short, yellowish-skinned, mesocephalic.

Negrillo (Akka, BaTwa, BaMbute, etc.).

Short, yellowish-skinned, mesocephalic.

Bushman, Hottentot.

Short or tall, dark-skinned, dolichocephalic.

Negro, Nilote, Bantu-speaking Negroid or "Bantu."

CYMOTRICHI.

I. DOLICHOCEPHALS.

A. Dark-skinned, of short or medium stature.

(a) Platyrrhine.

Pre-Dravidian (Sakai, Vedda, Jungle tribes of South India, Bhil, Gond, etc., Oraon, Kolarian); Australian.

(b) Mesorrhine or leptorrhine.

Dravidian, Hamite.

B. Intermediate shades, of variable stature, black hair, typically dolichocephalic.

Indo-Afghan, Nēsiōt or Indonesian, Palaeo-Amerind.

C. Tawny-white complexion, black hair, medium stature.

Eurafrican, Semite, Mediterranean, (the Brown Race).

II. MESOCEPHALS.

A. Tawny-white complexion, black hair, medium stature.

Pyrenean, Atlanto-Mediterranean.

B. *Fair skin and hair, tall stature.*

Nordic.

C. *Light brown skin, black hair, medium stature.*

Ainu.

III. BRACHYCEPHALS.

Sallow or tawny skin, colour of hair variable, medium or tall.

Eurasiatic: (1) Alpo-Carpathian (Cevenole; Slav; Pamiri or Iranian); (2) Illyrio-Anatolian (Illyrian or Adriatic or Dinaric; Anatolian or Armenian); Prospectatores; Beaker-folk.

LEIOTRICH.

I. DOLICHOCEPHALS.

Brownish- or reddish-yellow skin, generally tinged with red, medium stature.

Eskimo.

II. MESOCEPHALS.

Yellowish-brown skin, stature short, medium or tall.

Palaearcticus or Ugrian or Palaeo-Asiatic; Sinicus; Northern Amerind.

III. BRACHYCEPHALS.

Skin yellowish-white to coppery-brown, stature short, medium or tall.

Turki; Centralis, Tungus or Mongol; Pareocean or Southern Mongoloid; Polynesian; Neo-Amerind; Tehuelche; North-west coast Amerind.

A linear arrangement, such as is practically unavoidable in a book, can very rarely indicate biological affinities; to illustrate these a two- or three-dimensional arrangement is necessary. Therefore a tabulation, such as the above, must not be regarded as representing all the relations between certain groups.

A DESCRIPTION OF THE MAIN GROUPS OF MANKIND

ULOTRICH

ULOTRICH ORIENTALES OR *EASTERN ULOTRICH*

Very short, dark-skinned, meso- to low brachycephalic
(*"Pygmies"*)

NEGRITO:

ANDAMANESE. Hair short, black or sooty in colour, with a reddish tinge, body hair scanty or absent; skin varies from bronze to dull sooty-black; stature 1.485 m. ($58\frac{1}{2}$ in.), well-proportioned body and small hands; head small, brachycephalic (C.I. 83); face broad at the cheek-bones, lips full but not everted, jaws do not project; nose straight, sunken at the root.

Andaman Islands.

SEMANG. Hair short, black with a reddish tinge, scanty on face and body; skin dark chocolate-brown; stature 1.528 m. ($60\frac{1}{4}$ in. or less), of sturdy build; mesocephalic (C.I. 79); round face, lips usually not thick, jaw often slightly protruding; nose short, flattened and very broad (N.I. 97).

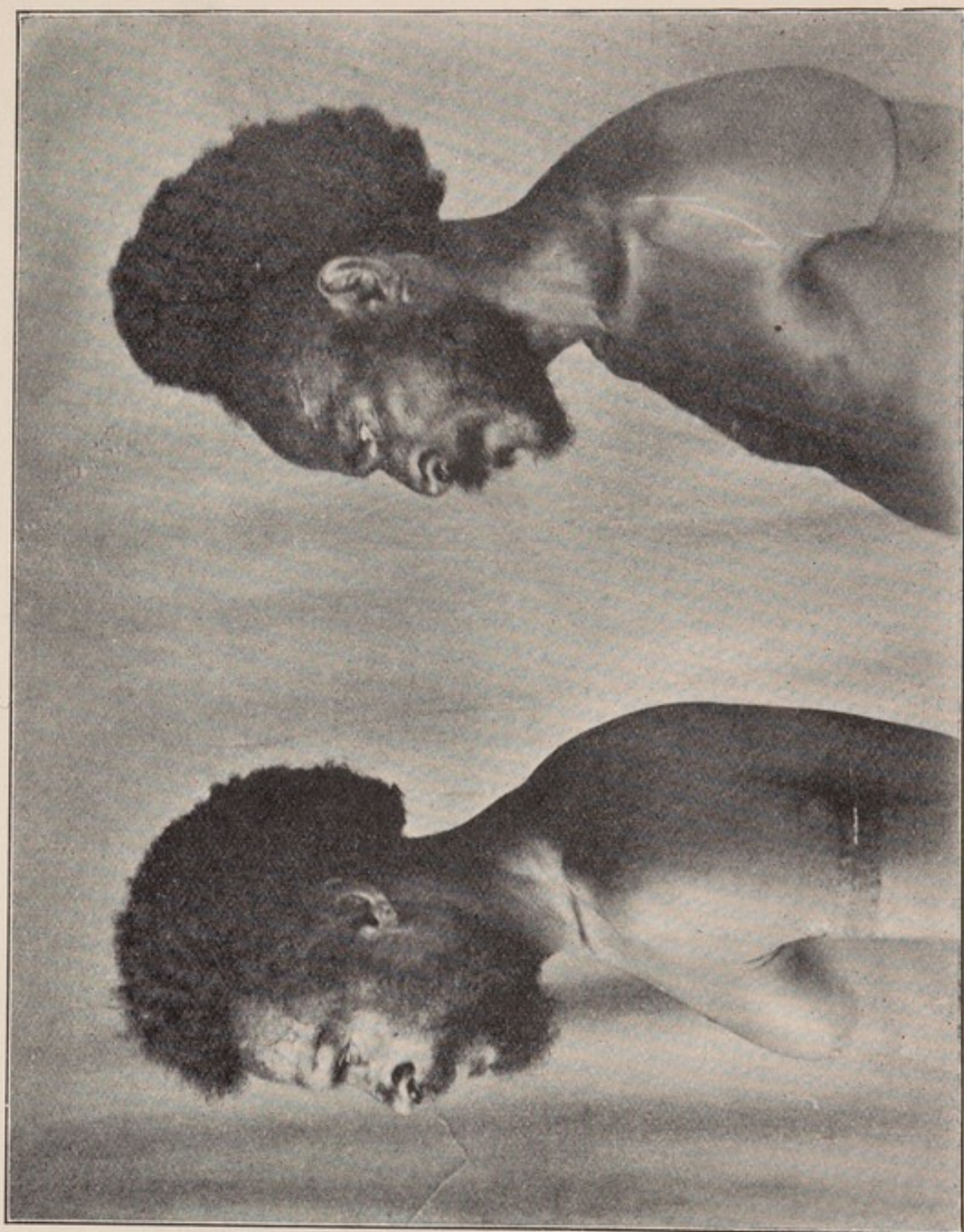
Central region of Malay Peninsula and East Sumatra.

AETA. Hair short, dark seal-brown to black, often abundant on face and body; skin sooty-brown; stature 1.465 m. ($57\frac{3}{4}$ in.); brachycephalic (C.I. 82); lips moderately thick; nose flat and extremely broad (N.I. 102 or more).

Philippine Islands.

TAPIRO. Hair short black, abundant on face and body; skin yellowish-brown; stature 1.449 m. (57 in.), active muscular men; mesocephalic (C.I. 79.5); a character frequent among them, and among other Negritos, is that the upper lip (*i.e.* from the nose to the mouth) is deep and convex; nose straight, medium breadth (N.I. 65.5-94, av. 83).

Western mountains of Netherlands New Guinea; traces of



PAPUANS, KOIARI TRIBE

similar people elsewhere in New Guinea, and probably also in parts of Melanesia.

Short or tall, dark-skinned, dolichocephalic

PAPUAN. Hair black, often of considerable length, abundant on face: skin dark chocolate- or sooty-brown; usually of medium stature, but variable; head typically dolichocephalic and high; retreating forehead, prominent brow ridges, prognathic; nose often prominent and convex, with tip often turned down, platyrrhine (Pl. II).

Most of New Guinea, and originally throughout Melanesia; formerly probably in parts of Australia and certainly as a variety in Tasmania; in the most south-easterly islands of the East Indian Archipelago.

MELANESIAN. Hair usually ulotrichous, but sometimes curly and even wavy, usually slight on face and body; skin dark chocolate, sometimes very dark, but sometimes copper-coloured; stature short or medium, but very variable, the preponderating heights are 1.56–1.6 m. ($61\frac{1}{2}$ –63 in.); dolichocephaly prevails generally, though brachycephaly may predominate locally (c.i. 67–85); forehead commonly rounded, brow ridges usually not prominent; nose platyrrhine, sometimes straight, smaller than in the Papuan.

Mainly of Papuan stock, but more or less mixed by immigrants from and through the East Indian Archipelago; they are thus more variable than the Papuans.

Admiralty Islands to New Caledonia; Fiji; some coastal parts of New Guinea and the neighbouring islands to the east and south-east.

ULOTRICHI AFRICANI OR WESTERN ULOTRICHI

Very short, yellowish-skinned, mesocephalic ("Pygmies")

NEGRILLO:

AKKA, BATWA, BAMBUTE, etc. Hair very short, usually dark rusty-brown, face hair usually slight, body covered with

a yellowish downy hair, longer on back and limbs, ordinary black hair in armpits and on pubes; skin reddish-yellow, yellowish light-brown, sometimes very dark; average stature 1.36–1.42 m. ($53\frac{1}{2}$ – $55\frac{3}{4}$ in.), the most general average is that of the Ituri, 1.375 m. (54 in.); short trunk, long arms, short legs, steatopygia (a peculiar excessive development of fat in the buttocks) only very occasionally among women; mesocephalic (c.i. 77–81); usually prognathic, upper lip deep and convex, lips full but not everted, narrow weak chin; root of nose very flat and broad, alae very broad and high; eyes protuberant. The dark and taller varieties probably have Negro blood (Pl. VII).

Equatorial forests of Africa, more especially in the Congo region.

Short, yellowish-skinned, mesocephalic

BUSHMAN:

KHUI OR SAN. Hair commonly very short, becomes rolled up into small knots leaving apparently bare spaces between them, little hair on body; skin yellow to olive; stature 1.529 m. ($60\frac{1}{4}$ in.); steatopygia is especially marked in women, hands and feet very small; head very small, markedly low in the crown, mesocephalic; face flattish, lozenge-shaped, often orthognathic, prominent cheek-bones, bulging forehead, upper lip convex; nose extremely platyrrhine; eyes often narrow and slightly oblique; frequently no lobe to the ear.

Now mainly confined to the Kalahari desert, but formerly extending over the greater part of South Africa.

HOTTENTOT:

KHOIKHOI. Hair as in Bushman; skin yellowish or brownish-yellow; stature 1.6 m. (63 in.); steatopygia frequent, back concave, small hands and feet; head small, dolichocephalic, somewhat high; face prognathic with very prominent cheek-bones and small chin; nose flat, platyrrhine; ears often lobeless.

A cross between Bushman and Bantu (possibly with some early Hamitic mixture) in which the characters of the first predominate; mongrel peoples, Bastards, have also arisen from Boer-Hottentot parentage.

South-west Africa.

Short or tall, dark-skinned, dolichocephalic

NEGRO (Western Sudanese or Nigritian). Skin dark brown or black; tall stature, 1.73 m. (68 in.); burly, short-legged, long-armed; dolichocephalic (c.i. 73-75); forehead often bulging, frequently prognathic, thick and often everted lips; platyrrhine.

Guinea coast, and, originally, tropical Africa.

NEGROID:

A. NILOTIC NEGRO OR NILOTE (Eastern Sudanese). Skin very dark; very tall, 1.778 m. (70 in.) or more; slim, with long legs; dolichocephalic (c.i. 71-74); retreating forehead, everted lips; very platyrrhine.

Some (possibly all) of the Nilotic Negroes or Nilotes have been modified by Hamitic blood, *e.g.* Shilluk, Dinka, Nilotic Kavirondo (Jaluo, etc.), and others.

Eastern Sudan and Upper Nile Valley.

B. BANTU-SPEAKING NEGROIDS ("BANTU"). Hair uniformly of the ordinary Negro type; skin all shades of yellowish-brown to the black of the Swazi, usually a reddish ground tint, dark chocolate colour being the prevalent hue; stature well above the average, 1.685-1.730 m. (66½-68 in.); typically dolichocephalic, but there are mesocephalic groups, some with lower stature; skin usually less dark, stature lower, head less elongated, forehead flatter, prognathism less marked, nose generally more prominent and narrower than in the true Negro.

The numerous peoples of central and southern Africa who speak Bantu languages present a great variety of types. They are Negro peoples mixed with Hamitic, Negrillo, and other elements.

Africa south of 4° N. lat., but including the Camerúns and excluding the Great Rift Valley plateau and the extreme south-west of the continent.

CYMOTRICHI

I. DOLICHOCEPHALS

A. *Dark-skinned, of short or medium stature*(A) *Platyrrhine.*

PRE-DRAVIDIAN. Dark brown to nearly black skin; short stature; broad nose.

- (a) SAKAI or SENOI. Hair long, wavy or curly, black with a reddish tinge; skin yellowish-brown to dark brown; short stature, 1.504 m. (59½ in.); mesocephalic (c.i. 78); orthognathous; nose mesorrhine bordering on platyrrhine.

Southern portion of the Malay Peninsula.

- (b) VEDDA. Hair long, black, coarse, wavy or slightly curly; skin dark brown; short stature, 1.533 m. (60¼ in.); the smallest of human skulls, very dolichocranial (c.i. 70.5), orthocranial; forehead slightly retreating, brow ridges often prominent, fairly broad face, orthognathous, thin lips, pointed chin; nose depressed at root, almost platyrrhine.

Ceylon.

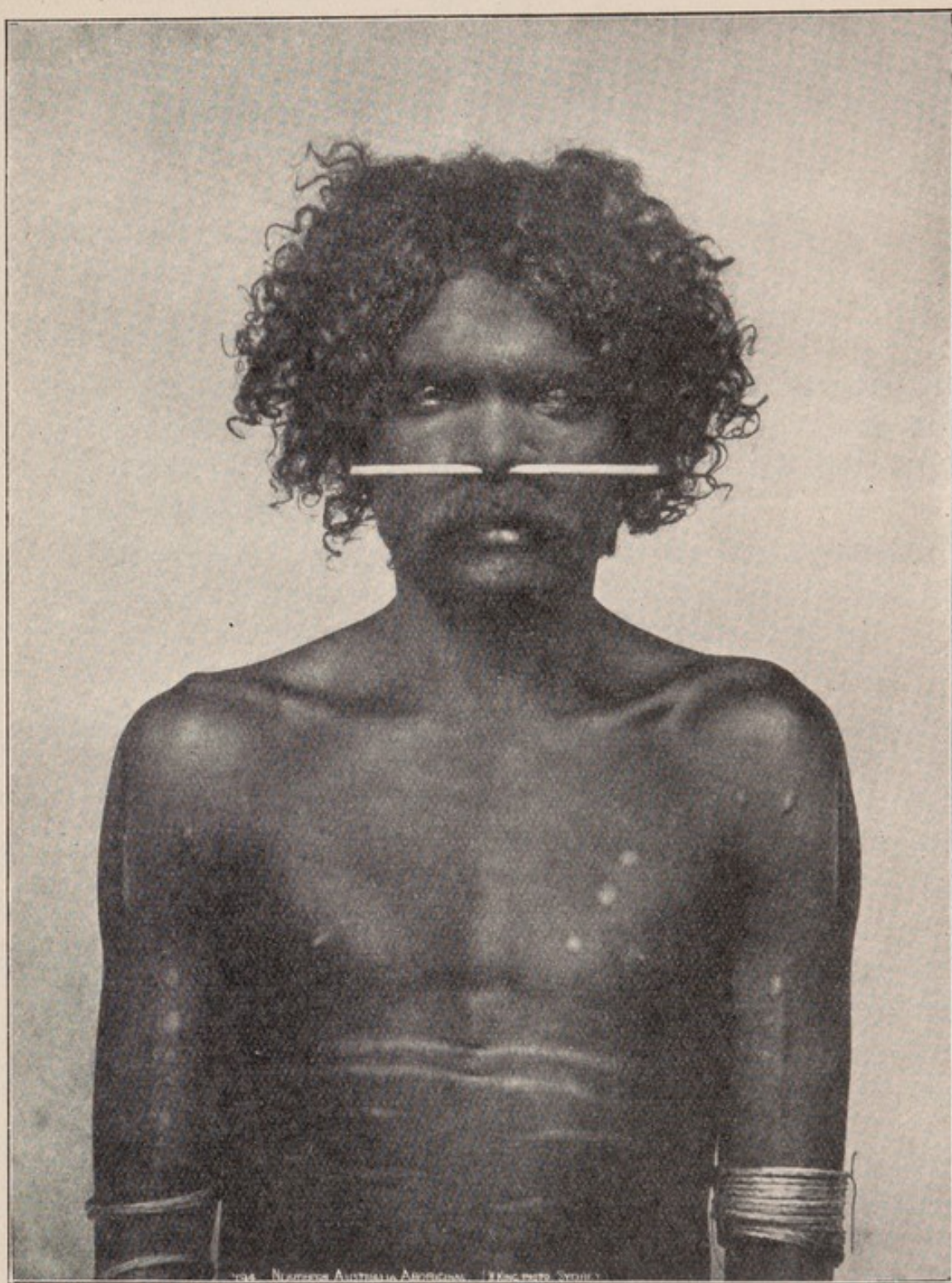
- (c) Jungle tribes of South India (KADIR, KURUMBA, PANIYAN, IRULA, etc.). Very curly black hair among the Kadir and Paniyan, less so among the others; short stature, generally about 1.575 m. (62 in.), or less; dolichocephalic (c.i. 73-75); markedly platyrrhine. The Kadir have especially thick lips and there is a possibility that they may be partly of Negrito stock.

Jungles of South India.

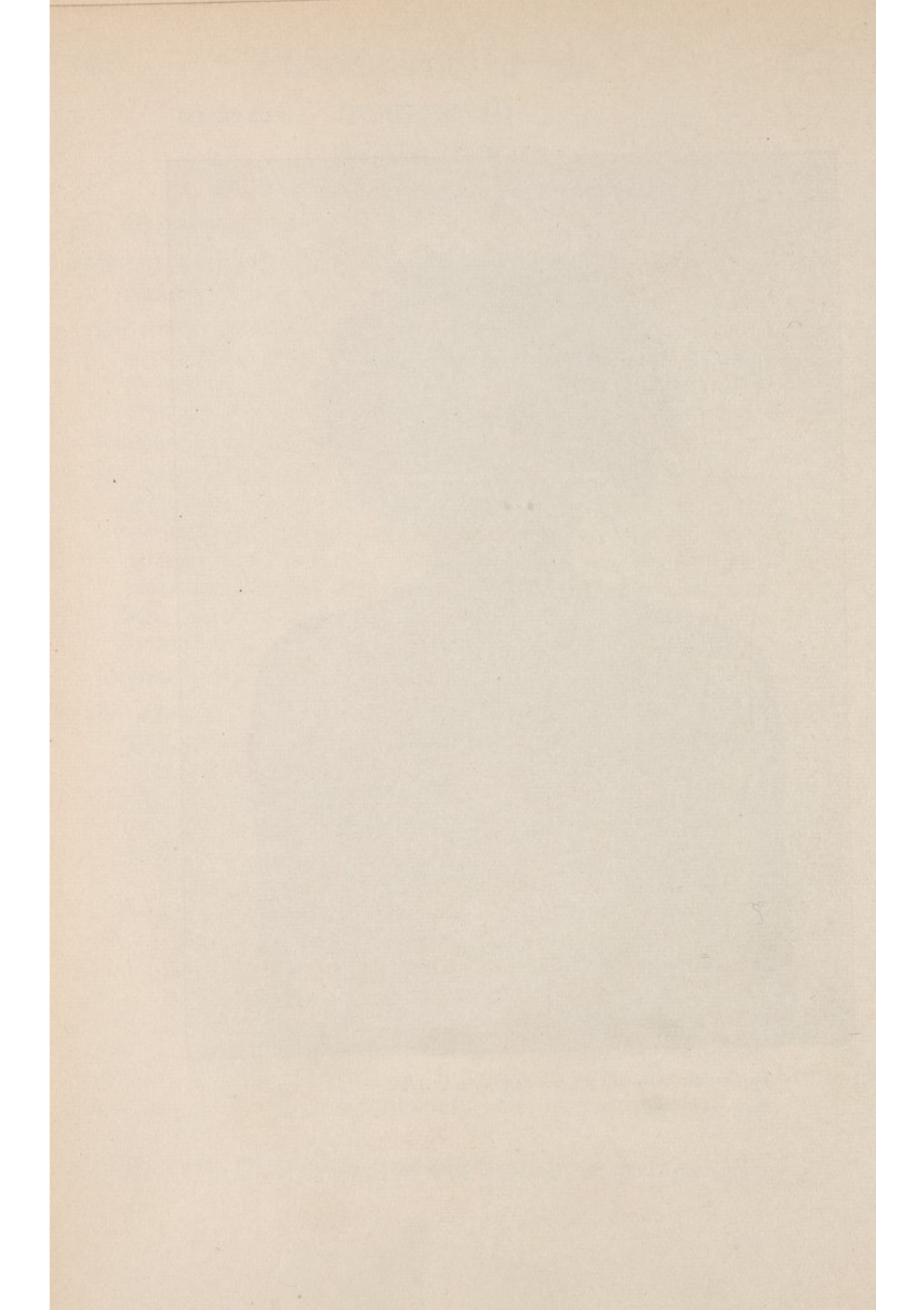
Of medium stature are the Bhil, Gond and Kandh of north central India and the Oraon and Kolarian of Chota Nagpur, but in the Kolarians another element seems to be implicated.

Racially akin to the Pre-Dravidians are peoples in east Sumatra, and the Toala of the south-west peninsula of Celebes, but these are slightly taller, with broader heads, a somewhat short face, thick lips, and strongly platyrrhine, they are not a pure stock.

AUSTRALIAN. Hair curly, sometimes wavy or even straight,



NORTHERN AUSTRALIAN



abundant on face and body, but may be almost absent; skin dark chocolate-brown; medium stature, 1.667 m. ($65\frac{1}{2}$ in. or less); dolichocephalic (c.i. 72); flat retreating forehead, prominent brow ridges, prognathous, nose depressed at root, very platyrrhine.

A fairly uniform people who may be regarded as belonging essentially to the Pre-Dravidian stock (Pl. III).

Australia.

(B) *Mesorrhine or leptorrhine.*

DRAVIDIAN. Hair plentiful, wavy with an occasional tendency to curl; brownish-black skin; medium stature, 1.634 m. ($64\frac{1}{4}$ in.); dolichocephalic (c.i. 73–76); typically mesorrhine (N.I. less than 77).

“Dravidian” is a general term for the main population of the Deccan. They are mixed with other races in certain places, and many exhibit a marked Pre-Dravidian strain.

South India.

HAMITE. Hair dark brown or black, curly, sometimes wavy; skin reddish-brown, sometimes brown-black; medium stature, 1.65 m. (65 in.) or less; of slender build; dolichocephalic (c.i. 75); oval elongated face, not prognathic, lips usually thin, chin pointed; nose well shaped, usually prominent, leptorrhine to mesorrhine.

The purer groups are the Galla or Oromo, the Beja (of these the Beni Amer are the most typical—they are closely related to the earliest predynastic Egyptians and some ancient Nubians), the Hadendoa, the Bisharin (who are slightly mixed); Abyssinians and Somâl in part.

The cephalic index in some Hamites, *e.g.* the Bisharin, may reach 79; this is probably due to the same stock which gave rise to the Southern Semites.

“Half-Hamites,” that is, a mixture of Hamites with Nilotic Negroes, and in some instances with other elements, are the BaHima, Masai, Nandi, Suk, and allied peoples of East Africa and the Fula from Lake Chad to Senegal. The BaHima are extremely tall.

Main centre: North-east Africa.

B. *Intermediate shades, of variable stature, black hair, typically dolichocephalic*

INDO-AFGHAN. Black wavy hair; very light transparent brown complexion; stature variable, 1.610–1.748 m. ($63\frac{1}{2}$ – $68\frac{3}{4}$ in.); dolicho-mesocephalic (c.i. 71.3–77.5); face long, features regular; nose prominent, straight or convex, usually leptorrhine and finely cut; dark eyes.

Baluchistan, Afghanistan, North-west India, and the Panjab (Rajput in part).

NĒSIŌT or INDONESIAN. Undulating black hair, often tinged with red; skin tawny, cinnamon colour, fawn, or rather light brown; short stature, 1.54–1.57 m. ($60\frac{1}{2}$ – $61\frac{3}{4}$ in.); head mesocephalic (c.i. 76–78), probably it was originally dolichocephalic; lozenge-shaped face, cheek-bones sometimes projecting; nose often flattened, sometimes concave.

It is difficult to isolate this type as it has almost everywhere been mixed with a brachycephalic xanthoderm stock. The Murut of Borneo (c.i. 73) may be fairly typical.

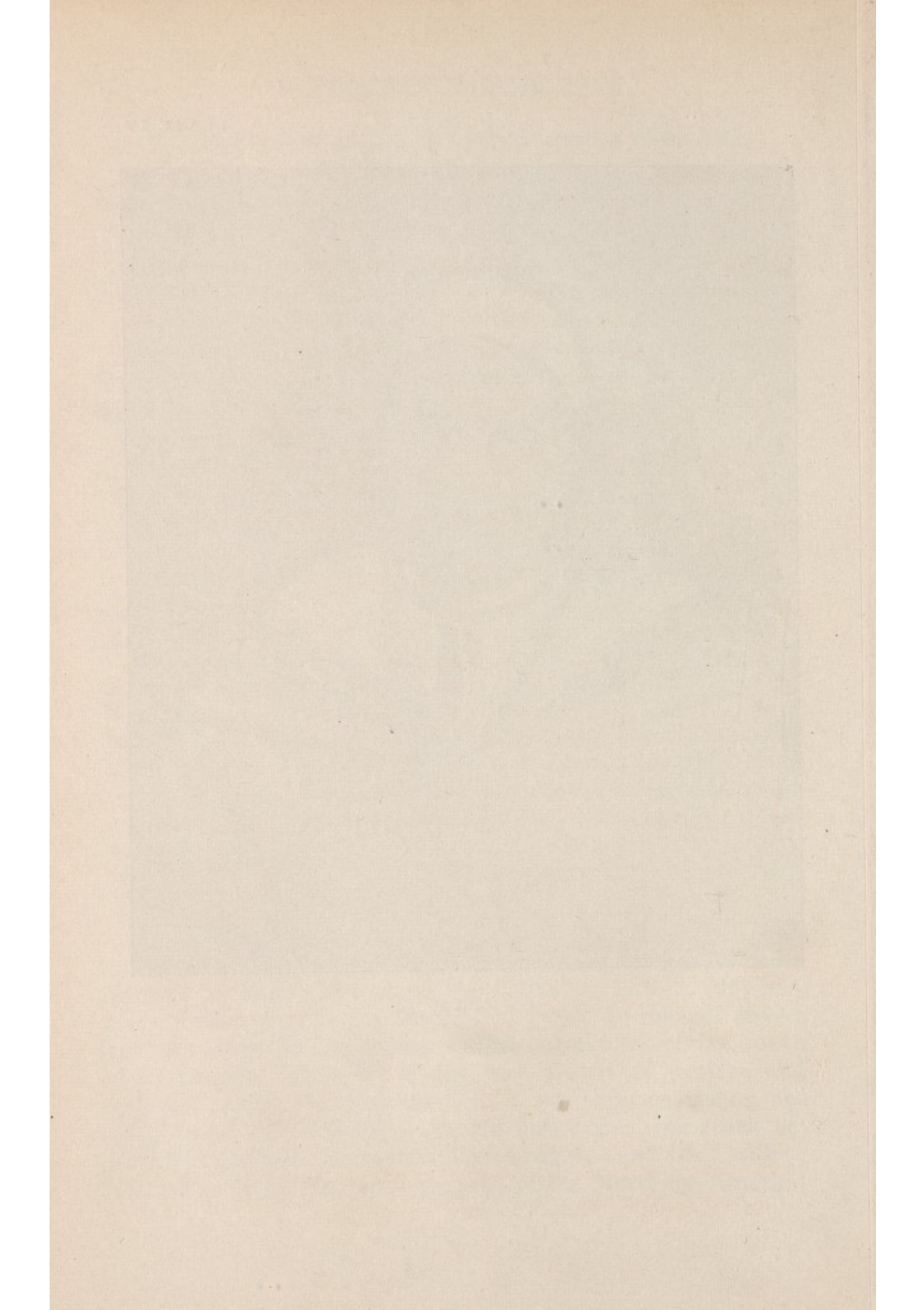
Throughout the East Indian Archipelago, and forming part of the population of Further India and South China.

PALAEO-AMERIND (or Lagoa Santa type, Brazil, Ecuador, Orinoco). An extinct South American race. The rather small skulls are of archaic type, hypsicephalic, with a high vault and very dolichocephalic, but they do not present close affinities with Eskimo skulls, which also have archaic features. Presumably with black wavy or curly hair, yellow skin, and deep-set eyes.

Living modified mesocephalic representatives are met with in eastern Brazil among the Tapuya, such as the Botocudo, Aymoro or Buru, who are of short stature, 1.59 m. ($62\frac{1}{2}$ in.), and dolichocephalic (c.i. 78.2, skull 74.1). In ancient graves and also more or less in the recent population of the south of Patagonia, Tierra del Fuego, the islands of western and southern Chile, the Ecuador coast, and apparently on the south coast of California. An old dolichocephalic stock occurred in Canada, the eastern United States and Ohio valley; this seems to be the basal element of the Northern Amerind



ARAB



(p. 30), but these may belong to another ancient dolichocephalic stock.

C. Tawny-white complexion, black hair, medium stature

EURAFRICAN. Hair dark; rather dark skin, florid complexion; moderately tall stature, average about 1.678 m. (66 in.), very long, dolichocephalic head (c.i. 70–73), hypsicephalic, receding forehead, prominent glabella and supra-orbital ridges; cheek-bones somewhat broad, often slightly prognathous; nose often broad; eyes dark. Two variants may be noted: (1) with wavy hair, large measurements, and strong physique; (2) with rather close curly hair, prognathism, and smaller measurements; this type with almost Negroid characters may be connected with the Grimaldi type (p. 55).

This type has been described by Sergi, Giuffrida-Ruggeri and by Fleure, who has found it in the Plynlymon and other districts of south Wales. It has been noted among the living in Algeria, Somaliland, north Abyssinia, Egypt, north Italy, Sardinia, north Portugal, Traz os Montes, and Spain (west of the Pyrenees), and other scattered places in Europe. It is evidently a very ancient type that has persisted in out-of-the-way spots. Fleure compares it with a group of skulls from the Upper Palaeolithic, which includes Combe Capelle, Brünn I, Galley Hill, the Neolithic Borris skull, etc.

SEMITE. Jet black hair; elliptical face; straight or convex nose, the finest and narrowest nose is met with among the Bedawin.

Two groups may be distinguished:

- A. BEDAWIN. Medium stature, 1.66 m. ($65\frac{1}{4}$ in.), and probably taller; dolichocephalic (c.i. 75 or less) (Pl. IV).

Northern Arabia.

- B. HIMYARITE. Medium stature, 1.62 m. ($63\frac{3}{4}$ in.); mesocephalic (c.i. 79 or more).

Southern Arabia.

The Semites have spread over south-west Asia, North and East Africa, and elsewhere. The Himyaritic variety may be

regarded as a mixed type. The original Jews were a Semitic people (Bedawin), who, even in very early times, mixed with Amorites, Hittites and Philistines; their so-called "Jewish" nose was acquired from the Hittites.

MEDITERRANEAN. Wavy or even curly black hair; tawny white skin; medium stature, about 1.615 m. (63½ in.); of slender build; dolichocephalic (c.i. 72-75); face narrow, oval; nose generally straight, leptorrhine, but rather broad; eyes generally very dark.

Area of characterisation: in the western Mediterranean at the beginning of the Neolithic period, related types spread eastwards to the Aegean Islands; in Neolithic times they spread northwards to western France and the British Islands. Formerly termed Libyans, Iberians, Ligurians, one element in the Pelasgians, etc. Now mainly confined in Europe to the Iberian Peninsula, western Mediterranean islands, south France, south Italy, largely in the Grecian islands, local patches in the British Islands. The coastal population of North Africa grades between Mediterraneans and Semites, often with some Negro admixture.

[**BROWN RACE.** The Brown Race is described by Elliot Smith as consisting of long-headed brunets of small stature (about 65 in. or less for men and almost 60 in. for women); scanty hair on body and face, but with a chin tuft; body of slender build. Skull long, narrow, ill-filled, pentagonoid or ovoid, eyebrow ridges poorly developed or absent; forehead narrow, vertical or slightly bulging; bulged-out occiput; orbits usually horizontal ellipses or ovoids with thin margins; nose moderately developed, small and relatively broad and flattened at its bridge; chin pointed; jaw feeble; face short and narrow, ovoid, usually orthognathous; teeth of moderate size or small; whole skeleton of slight build and suggestive of effeminacy.

Early Neolithic peoples of the British Islands, France, both shores of the Mediterranean, Proto-Libyans, Ancient and Modern Egyptians, Nubians, Beja, Danakil, Hadendoa, Abyssinians, Galla, Somâl, the whole peninsula of Arabia and the

shores of the Persian Gulf (South Persia), Sumer (?), Mesopotamia, Syria, coastal parts of Asia Minor, Anau in Turkestan, the original Nēsiōts or Indonesians (both on the mainland and in the archipelago).

Elliot Smith says, "It is clear that we cannot call this group 'Hamitic,' because it includes such Semites as the Arabs; nor can we call it 'Mediterranean,' for its domain has been extended far beyond the limits of the Middle Sea, and also its distribution is not that assigned by Sergi to his Mediterranean Race" (*The Ancient Egyptians*, 1923, p. 69).]

II. MESOCEPHALS

A. Tawny-white complexion, black hair, medium stature

PYRENEAN. Chestnut hair; dusky pink skin; stature 1.66 m. ($65\frac{1}{4}$ in.), broad shoulders; essentially mesocephalic (C.I. 78-82), inclined to be platycephalic, swollen temples, supra-orbital ridges, but not glabella, usually fairly marked; cheek-bones slightly prominent, long orthognathic, triangular face with narrow chin; nose very prominent and narrow; eyes nut- or chestnut-brown, often greenish.

This may prove to be a mixture of several racial types; Telesforo de Aranzadi equates it with the "Cro-Magnon race."

Extending chiefly across the north of Spain.

ATLANTO-MEDITERRANEAN. Very dark hair and eyes; stature medium, 1.66-1.67 m. ($65\frac{1}{4}$ - $65\frac{3}{4}$ in.); mesocephalic (C.I. 79-80).

According to Deniker, in the east of the Balkan peninsula, from the mouth of the Tiber to Gibraltar, thence to the mouth of the Guadalquivir, north Portugal, and on the shores of the Bay of Biscay to the lower valley of the Loire, etc.

This group is of doubtful validity and has probably been arrived at by a process of averaging a mixed population composed of Mediterraneans and others.

B. Fair skin and hair, tall stature

NORDIC. Yellow, very light brown, or reddish wavy to curly hair; florid or reddish-white skin; tall stature, 1.73 m. (68 in.); head long, mesocephalic (c.i. 76-79), frequently with finely arched skull, supra-orbital ridges moderately strong; the bones of the long face are strongly developed; prominent, narrow, usually straight nose; prominent chin; blue or grey eyes.

Scandinavia, northern parts of Germany, parts of the Netherlands and Belgium; now forms one element in northern France and the British Islands; one branch formed the early stock of the south-eastern Baltic states.

C. Light brown skin, black hair, medium stature

AINU. A great profusion of black wavy hair on head and body; light brown skin like a tanned Central European, skin over cheek-bones frequently rosy; medium stature, about 1.575 m. (62 in.); thick-set; mesocephalic (c.i. 77.3); orthognathous, with a broad face; short, concave, broad leptorrhine nose (n.i. 68); large horizontal eyes, epicanthic fold usually absent, iris dark brown (Pl. v).

The indigenous population of Japan, now confined to Yezo, south Sakhalin, and the three most southern Kurile islands; Riu-Kiu islands.

III. BRACHYCEPHALS

*Sallow or tawny skin, colour of hair variable,
medium or tall*

EURASIATIC. Most of the European brachycephals are usually grouped under the term Alpines or the Alpine Race, and are clearly related to the groups of peoples of the plateaux and mountains that extend from the Himalayas, through Asia Minor, to the Balkans and the mountain axes of Europe. Among them we may distinguish two main stocks:

- A. (1) **ALPO-CARPATIAN.** Chestnut-brown or black hair; sallow skin; medium stature, 1.635 m. (64½ in.); broad and thick-set; very brachycephalic (c.i. 85-87); broad face;



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rather wide leptorrhine, and frequently concave nose; hazel-grey or dark brown eyes.

Central plateau of France, the Cevennes, Ardennes, Vosges, Swabian Jura, Alps, Czecho-Slovakia, the Carpathians, the Balkans, Greece, Russia.

The western members of this group have frequently been termed Cevenoles or Auvergnats. The eastern members are universally termed Slavs.

In the area south and east of the Baltic, Poland, parts of Prussia, and probably traces in Saxony and Silesia, we find a fair-haired variety with lower brachycephaly (c.i. 82-83), broad square face, nose often concave, and blue or grey eyes. This is the Vistulian or Oriental race of Deniker, which he arrived at by a process of averaging; a local bleaching may have taken place, but Nordic mixture is indicated.

- (2) PAMIRI (IRANIAN), *Homo alpinus* of Lapouge. Hair brown, usually dark, sometimes light, always abundant and wavy or curly, full beard, brown, ruddy or even light; white-rosy or bronzed skin; stature above the average, 1.66-1.707 m. ($65\frac{1}{2}$ - $67\frac{1}{4}$ in.); brachycephalic (c.i. 85 and over); long oval face; nose leptorrhine (n.i. 62.6-72), prominent, aquiline to straight; eyes straight, medium in colour, some light and occasionally blue.

Galcha, Tajik, Wakhi, etc., of Persia, the Pamirs and neighbouring areas, and extending in a north-easterly direction to Manchuria.

B. ILLYRIO-ANATOLIAN. Brown or black hair; tawny-white skin; medium or tall stature; high (hypsicephalic) brachycephalic head, with a vertical occiput; nose prominent; dark eyes.

- (1) ANATOLIAN (ARMENIAN). Dark hair, tawny-white skin; medium stature, 1.63-1.69 m. ($64\frac{1}{4}$ - $66\frac{1}{2}$ in.); heavily built body with a tendency to corpulency; very brachycephalic (c.i. 86-87); a prominent aquiline nose with a depressed tip and large wings is very characteristic.

Scattered in Anatolia; Armenia; the ancient Hittites were typical members of this race.

- (2) **ILLYRIAN (ADRIATIC OR DINARIC).** Brown or black hair; rather tawny skin; tall stature, 1.68–1.72 m. ($66\frac{1}{4}$ – $67\frac{3}{4}$ in.); c.i. 81–86; elongated face; narrow, straight or convex nose.

This group is usually regarded as a variety of the preceding one.

The Illyrian mountain system with some extensions into the Carpathians, the north to south mountain system of the western Balkan peninsula and of Greece; probably among the Little Russians.

PROSPECTATOIRES. Hair and eyes very dark; sallow skin; some individuals tall, stalwart, with strong shoulders; brachycephalic (c.i. 82–84); glabella and supra-orbital arches not prominent; practically orthognathous, jaws powerful and rather square.

The “Prospectors” have been so termed by Fleure, since he regards them as being coastal trading folk, presumably originally from the eastern Mediterranean, who were one of the groups concerned in the introduction of some types of megalithic monuments and were themselves largely occupied in prospecting for copper and tin, and perhaps especially for gold. These are the “maritime Armenoids” of Elliot Smith.

This stock appears to be the result of an early cross between Mediterraneans and Anatolians.

Found in small numbers among various coastal peoples. Salerno, Bari and other littoral parts of South Italy; south-eastern and eastern Sicily; Gozo; various coastal parts of Spain; the mouths of the Loire and the Charente, and across the Breton peninsula to the Côtes du Nord; west coast of Britain and east coast of Ireland; and ? south-west Norway.

BEAKER-FOLK. Hair colouring seems to vary, but often fair and reddish; probably a florid skin and inclined to freckle; very tall stature, 1.74–1.752 m. ($68\frac{1}{2}$ –69 in.); robust, very muscular; brachycephalic (c.i. 81), large high head, prominent glabella and supra-orbital ridges, flattened occiput; long narrow face, somewhat prominent cheek-bones, and rugged features, large jaws, square chin; nose prominent, leptorrhine; eyes probably blue or blue-grey.

These are the people who were formerly called "Round-barrow men," "Bronze Age man," etc. They may be regarded as a cross between Alpines and Nordics. The later comers to Britain were more Alpo-Carpathian in character, *i.e.* less massive and rugged.

In Late Neolithic and Early Bronze Age times they had important centres in Silesia, near the Moravian Gate, in Bohemia and near the junction of the Rhine and Main. They spread to Lombardy and to the north of the Seine, and also landed at various spots on the east coast of England and Scotland, where they penetrated into the country up the river valleys; landings were also effected on the south coast of England. Individuals survive in most central and western European countries, and in Denmark (Borreby type).

The Beaker-folk may be taken as one example of the admixtures of Nordics and Alpines which are characteristic of the southern border of the European plain. They usually combine the fair colouring and strong growth of the Nordics with the broad head of the Alpines, but the several groups differ in various respects.

LEIOTRICHI

I. DOLICHOCEPHALS

Brownish- or reddish-yellow skin, generally tinged with red, medium stature

ESKIMO. Straight black hair; short stature, 1.58 m. ($62\frac{1}{4}$ in.); very dolichocephalic head (c.i. 72), very long and very high; face flat, very broad, prominent cheek-bones; nose narrow, somewhat prominent; eyes straight, black, epicanthic fold occasionally occurs; hands and feet remarkably small (Pl. ix). The western Eskimo are taller, 1.68 m. (66 in.), mesocephalic or low brachycephalic (c.i. 80). The Alaskan Eskimo are mesocephalic (c.i. 79); stature 1.658 m. ($65\frac{1}{4}$ in.).

Whole Arctic coast of North America, Greenland, and the extreme north-east of Asia; formerly extended on the Atlantic coast as far south as Massachusetts.

II. MESOCEPHALS

Yellowish-brown skin, stature short, medium or tall

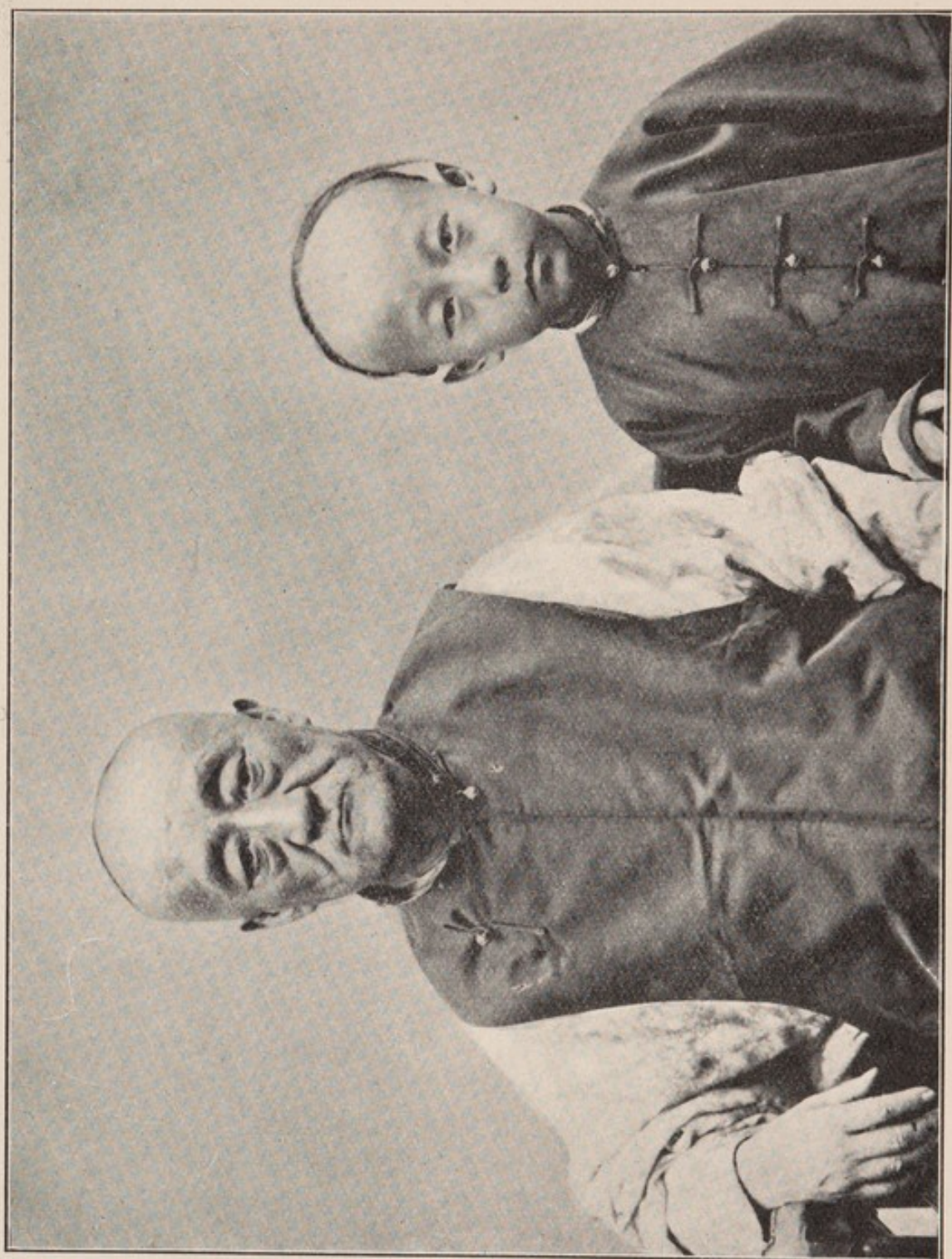
PALAEARCTICUS (UGRIAN, PALAEO-ASIATIC). Hair black, brown, fair, chestnut or reddish, sparse beard; yellowish-white or yellowish-brown skin; short or medium stature; platycephalic; sometimes with a flat face; prominent cheek-bones; oblique eyes; straight or concave nose.

A somewhat indeterminate group of peoples, evidently containing a very ancient stock which probably was originally distinctly dolichocephalic. There is (i) a mesocephalic group (c.i. 78.3–80.8), including the Kamchadale, Karagasi, Koryak, Tungus of Kolyma and Anadyr regions, Yukaghir, Oroch in the east and the Obi Ostyak and Northern Vogul in the west. (ii) The brachycephalic group (c.i. 83–85.6) comprises the Samoyed, Lapp, “western Tungus,” Yenisei Ostyak, Soiate, Uriankhai or Tuba, of central and western Siberia, and perhaps the Chukchi of the extreme north-east and the Gilyak of the Amur estuary and north Sakhalin. The Permiak, Votyak, Mordvin, Cheremis, and Zyrian have penetrated into Russia, and the Lapp into northern Scandinavia. Great modifications by admixture have taken place in some peoples of this stock who have migrated into Europe, such as the Baltic Finns, Esth, Livonian, Finlanders and others.

These people are usually termed *Ugrians* or Ugrian-Finns, Ugro-Finns, Yeniseians, Tuba, etc.

SINICUS. The Chinese as a whole are distinctly mesocephalic (c.i. 76.5–80.2), with a great tendency to hypsicephaly; mesorrhine (n.i. 72.9–79); medium stature, 1.612–1.676 m. ($63\frac{1}{2}$ –66 in.) (Pl. VI). In many respects they may be regarded as an average type of the xanthoderm Asiatic. China.

NORTHERN AMERIND. Long straight black hair; tall stature, 1.68–1.75 m. (66–69 in.); dolicho- or mesocephalic (c.i. 73–78), with a greater tendency to brachycephaly in the west than in the east; large oval face; straight or aquiline nose (Apache, *Frontispiece*, Pl. I).



CHINESE

North American Indians of the Plains and of the Northern and Eastern Woodlands.

III. BRACHYCEPHALS

Skin yellowish-white to coppery-brown, stature short, medium or tall

TURKI. Hair dark, much on face; yellowish-white complexion, with a slight tendency to brownish; stature medium to tall, 1.675 m. (66 in.), with tendency to obesity; a cuboid, very brachycephalic high head (c.i. 85-87); elongated oval face, broad cheek-bones; straight, somewhat prominent nose; dark non-Mongolian eyes, but frequently the outer part of the margin of the eyelid is folded; thick lips.

Original home, western Central Asia. An eastern group comprises the Yakut of the Lena basin and certain so-called Tatars. A central group contains the Kirghiz, Kazak, Uzbek, etc., mainly of Russian Turkestan; the Kirghiz group is said to be a blend of Pareoean with Turki (c.i. 84-88; n.i. 69-78); stature 1.638-1.676 m. (64½-66 in.). A western group is composed mainly of the Turkoman east of the Caspian, and of the Osmanli in Asia Minor and European Turkey. To this group belonged the Ughuz and the dreaded Uigur, who once founded a civilised state in northern Kashgaria (Chinese Turkestan), the Bulgar and the Magyar.

CENTRALIS, TUNGUS OR MONGOL. Hair black, coarse, straight, very little on face and body; skin varies in colour from yellowish to yellowish-brown; medium stature, 1.614-1.684 m. (63½-66¼ in.); brachycephalic (c.i. 84-87), mainly platycephalic, broad flattened face, cheek-bones prominent; usually a low bridge to the generally insignificant mesorrhine nose, broad nostrils; more or less dark brown eyes, usually with typical "Mongolian" characters, but the eyes are frequently straight; outstanding ears.

Manchu (Manchuria), Tungus of Transbaikalia, Buriat (east and west of the southern half of Lake Baikal), Sharra, including the Khalka (Gobi area); west of these are the Kalmuk (Chinese Turkestan, Zungaria, and Mongolia, an outlier also

occurs north-west of the Caspian), Taranchi (East Turkestan), Torgod or Torgut (Zungaria), Telenget (Altai), Hazara (Afghanistan). The Koreans are a modified type of Manchu, of slender build, stature 1.63 m.; c.i. 82-83.6, with a strong tendency to hypsicephaly; long narrow face; narrow aquiline nose; eyes with epicanthic fold. North-eastern Asia, in the Sungari basin and Korea—this type penetrated into Japan.

This is the group usually termed "Mongol"; the origin of this term is said to be from the Mongol clan of the Tatan confederacy of which the Tatar was another clan. Both were in reality Tungus (the Tung'hu of ancient China) of whom the Manchu is one branch. There is now a Mongol nation though strictly speaking not a Mongol race, but the term Mongol has become established by constant usage for this group of peoples; Tungus is a preferable term. At the present time the term Tatar is quite dissociated from the Mongols and is generally applied in a loose way to various Turki peoples.

Central Asia.

PAROEAN (SOUTHERN MONGOLOID). Hair black and lank, little on face and body; skin varies from yellowish in the north to olive- and coppery-brown in the south; stature varies considerably, but is generally short, averaging about 1.6 m. (63 in.); often thick-set; brachycephalic (c.i. 80-85); broad face, frequently slightly prognathous, cheek-bones often laterally enlarged; nose short, flattened, with broadish nostrils; eyes often oblique, with epicanthic fold.

Most of the peoples of this group became considerably mixed with local non-Mongolian races when they came south. The Chinese of the Hoang Ho are said to be the purest examples of this race, but the Tibetans, Himalayans, Southern Chinese, and the bulk of the population of Further India, Indo-China and Japan are mixed peoples. Those members who spread into the East Indian Archipelago have been called "Oceanic Mongols," but a better term for them is "Proto-Malay," and it is from them that the true Malay is derived.

POLYNESIAN. Hair straight or wavy; skin varies from that of a South European to light brown; tall stature, 1.72 m. (67½ in.); the average cephalic index is 82.6, but dolicho-

cephaly and mesocephaly are widely spread in Polynesia; face elliptical, cheek-bones fairly prominent; nose prominent, sometimes convex, most often straight (Maori, Pl. VIII).

The Polynesians are difficult to place, as they are a composite people; on the whole they may be regarded as mainly of Nēsiōt and Proto-Malay origin, but the "Mongoloid" characters are very attenuated and there is probably another non-Mongoloid element which is very brachycephalic; some have a Melanesian strain.

From Hawaii to New Zealand, and from Samoa to Easter Island.

NEO-AMERIND. Long straight black hair; skin warm yellowish-brown or cinnamon colour; stature short to tall, 1.55–1.78 m. (61–70 in.); brachycephalic (c.i. 80–84, 87–89); nose straight or concave, rarely aquiline.

Amerinds of the North American plateaux, Central America, South America.

TEHUELCHÉ. Long straight black hair; brown skin; very tall stature, 1.73–1.83 m. (68–72 in.); brachycephalic (c.i. 85); square face (Pl. x).

The Ona of eastern Tierra del Fuego are probably a branch of the Tehuelche. Closely allied to the latter are the Borroro of Matto Grosso, stature 1.74 m. ($68\frac{1}{2}$ in.), c.i. 81.5.

Patagonia.

NORTH-WEST COAST AMERIND. Lighter skin and hair than other North Amerinds; medium stature, short body, long arms; brachycephalic. Allied to natives of North-east Asia.

A. Northern sub-type: stature above the average, 1.675 m. (66 in.); head very large, c.i. 82.5; face very broad and of moderate height; nose concave or straight, rarely convex, of slight elevation. Tlingit, Haida, Tsimshian.

B. Southern sub-type: stature below the average, 1.645 m. ($64\frac{3}{4}$ in.); brachycephalic, c.i. 84.5; face very broad and of great height; nose very high, rather narrow, frequently convex. Kwakiutl.

North-west coast of America from 60° N. lat. to the northern boundary of Washington State.

AFRICA

ARCHAEOLOGY

THERE are only three main gateways into Africa, (1) the Isthmus of Suez, (2) the Strait of Bab-el-Mandeb and communications across the Red Sea, (3) the Strait of Gibraltar. The first two have been solely areas of ingress, except for military movements from Egypt, the third has been mainly one of egress from the very earliest times; practically the only known movements in a reverse direction being the inroad of the Vandals and Alans in the fifth century A.D., and the return of the "Moors" about the end of the tenth century. There have also been movements across and along the Mediterranean, but these have had only local effects and have not influenced any considerable part of Africa.

Implements of Lower Palaeolithic types have been found in South, North and North-east Africa, including Uganda. We know that they are of great antiquity, but there is at present no evidence to synchronise them with those of Western Europe; probably they are at least as old. Implements of Middle Palaeolithic (Mousterian) types have been found in North Africa, Egypt and Uganda, and have been reported from South Africa.

The Upper Palaeolithic stone industry of North Africa is now termed Capsian (Getulian, etc.); when the lower Capsian migrated to Western Europe it assumed a special character and is called Aurignacian. The Upper Capsian culture seems to have developed into the Tardenoisian and as such spread widely in Europe, to East and South Africa, and elsewhere. The very numerous implements of Upper Palaeolithic type in South Africa belong to the same general culture as that to which the term Capsian is applied in North Africa. Whether it is wise in the present state of our knowledge to extend even this term to the south of the continent is questionable; certainly it is hazardous to apply the terminology of the several Upper Palaeolithic cultures of Western Europe to South African archaeology. Despite the general artistic resemblances of the rock paintings and engravings of the French Aurignacians and Magdalenians to those of Bushmen, their respective

stone implements (especially those of recent Bushmen) are very different, as are other elements of their culture. The European Upper Palaeolithic figurines show slender types, fat types, and one in which there is definite steatopygia comparable with that of the Bushman; the significance of this is obscure, as there is no osteological evidence for a Bushman race in North Africa or Europe. The art of the Upper Capsian culture of the eastern Spanish area may perhaps be more nearly equated with Bushman art.

NORTH AFRICA

The engravings on rocks from Tripoli to Morocco and especially in southern Morocco, and extending across the Sahara to near the Niger, represent animals, some still living there and others extinct, and hunting scenes. These may be part of the story of a dispersal of an artistic race due to the incoming of an alien people; at present these engravings cannot be ascribed to any definite people and their age is uncertain.

It is generally admitted that the Neanthropic men who inaugurated the Upper Palaeolithic culture in Western Europe came through Spain from North Africa (p. 55). The Combe Capelle was one of these types, the "negroid" Grimaldi another; the Cro-Magnon and Chancelade types do not concern us here, as they have not as yet been met with in Africa. The Combe Capelle type is distinct from the later Mediterranean race and has been termed Eurafrican or Proto-Ethiopian (p. 23); traces of a similar type occur in northern Africa, as for example among the Mogod of north Tunisia, and this type has also been recognised among recent Abyssinians and Somâl.

Taking North Africa as a whole there seems little doubt that the substratum of the population is allied to the Hamite or Ethiopian, with a dark skin, fine face, and soft hair. This is overlaid by a stratum of leucoderm Mediterraneans. A brachycephalic element is not lacking, especially in the island of Gerba and the east coast of Tunis; it may date from Mesolithic times, as do the brachycephals at Mugem (pp. 56, 60), but it may be due to the "maritime Armenoids" (p. 28).

The various peoples who are included under the term of

Berbers are undoubtedly the descendants of the races known to the Greeks and Romans under the generic name of Libyans. The Kabyles of the hills between Algiers and Bougie and the Shawia of the Aures mountains are very similar to one another and may be taken as typical Berbers. They are distinctly white-skinned, even when sun-burned. Usually they have black hair and brown or hazel eyes, about 10 per cent. have fair hair and light eyes, some have yellow hair and blue eyes, C.I. 77, N.I. 69, st. 1.7 m. (67 in.). In the royal necropolis of Thebes of about 1300 B.C., certain Libyans are depicted as having a white skin, blue eyes and fair beards. Blonds are represented on Egyptian monuments from 1700 B.C. and were noted by the Greeks in the fourth century B.C. It has been shown that the light pigmentation of these dolichocephals is not solely due to geographical conditions; it is also significant that no dolmens occur where the blond Kabyles are purest and most abundant. In the east the blond Libyans (Temhu, Tehennu) have quite died out, but there are patches of this race in the west of North Africa. The fair Libyans still remain an unsolved problem. Some students bring them from Spain, other authors from Italy, others again from the east. Perhaps they were a sporadic invasion and formed an aristocratic class. One suggestion is that they were Proto-Nordics who formed a part of the various groups of Asiatics who raided Egypt after 1300 B.C., and moved westwards (p. 98).

It is doubtful how far north the Negro population extended. It has been stated that it remained tolerably pure even to historic times in the hinterland of Tripoli and the south of west Morocco; slavery, however, may account for most of the traces that now occur.

There were settlements on the North African coast from the north-east. Thus possibly at the end of the third millennium B.C. immigrants brought the Asia Minor-Aegean culture and during the troublous times that followed the destruction of Troy in 1250 B.C., North Africa appears to have been colonised in places. In 631 B.C. the Greeks made colonies in Cyrenaica. The Phoenicians established themselves on the coasts of Tunis and northern Morocco about 1100 B.C. and founded Carthage in 822 B.C., but probably they had less effect on the popula-

tion of North Africa than the other foreigners. The Roman occupation, the raids of the Vandals and Alans, the Byzantines, and the expelled "Moors" produced a slight mixing of races, more especially in the towns, but practically none in the country, and except for the Nordics the racial elements were not very dissimilar. All were absorbed by the Berbers. Jews settled in North Africa before our era, and since then numbers have poured in. The Arab invasion did not seriously modify the prevailing ethnic characters, as the Arabs are not uniform in type in their own country. In North Africa they appear to have been strongly Berberised, and hence the difficulty of establishing Arab anthropological types.

NORTH-EAST AFRICA

Egypt and Nubia were inhabited, from the earliest times of which we have artefacts associated with human remains, by a uniform Hamitic people who formed a part of what has been termed the "Brown Race" (p. 24). Between about 4000 and 1500 B.C. Nubia was inhabited by three successive groups of peoples (A, B and C groups); the first were pure Hamites. At the time of the Ancient Kingdom (3400-2625 B.C.) the population of Lower Nubia shows Negro admixture, which presumably took place south of Nubia, and was brought in by an admixture of Hamites and Negroes pressing north. Less than a millennium later (c. 2000 B.C.) another group of Hamites more strongly negroid than their predecessors moved north into Nubia; these were the Middle Nubians (C group). Thus it is not without significance that the ancient Egyptians were accustomed to speak of the Land of Punt as their homeland, and the slate palettes indicate that in Protodynastic, or perhaps even in Predynastic, times there was some sort of intercourse between Egypt and the Somali region. Excluding the negro element, there is a perceptible difference in the cast of the face of the skulls of the earliest and latest of these immigrants.

During the Early Dynastic period, before the beginning of the third millennium B.C., there was a sudden appearance in Lower Egypt of a large infusion of alien traits which can be recognised as Armenoid; numbers of these aliens were buried

in the Gizeh necropolis in the Fifth Dynasty (*c.* 2750–2625 B.C.). The effect of this new element was to produce a sturdier type; the bones are more massive and have strong muscular ridges, the brain-case is of greater capacity and well-filled, the forehead is broader and often with prominent eyebrow ridges, the cranium is broader (broad ovoid or sphenoid) and higher, the nose is longer and relatively much narrower, the orbits are irregularly ovoid, and the lower jaw is more powerful. There is a greater variation in cranial characters among the immigrant Armenoids than among the Proto-Egyptians. It is difficult to believe that this highly-endowed stock did not bring with them new elements of culture. Middle Kingdom (*c.* 2000 B.C.) graves yield ample evidence of the continuance and southern diffusion of the effects of this alien admixture. By the time of the Middle Kingdom, or at most a century or two later, people possessing these alien traits had reached as far south as Nubia. The blending that then took place has persisted with remarkable uniformity to the present day. Despite the percolation of Negroes, Arabs and Armenoids, and the sacking of Thebes by Ethiopians, Assyrians, Greeks and Romans there still remain in the Thebaid large numbers of its people who present features and bodily conformation precisely similar to those of their remote ancestors, the Proto-Egyptians.

The following must be regarded as a purely tentative reconstruction of the racial history of North-east Africa after Middle Palaeolithic times.

In the southern portion were Negroes and to the south of these, Negrillos in the west and Proto-Bushmen in the east. Swarms of Hamites (or Ethiopians) were coming across at various times from Arabia: of these there seem to have been two varieties, a northern and a southern. (1) The northern variety was of lighter complexion, possibly due to mixture with leucoderms, and of a shorter stature; the first movement of this branch (Eurafrican) appears to have brought the Cap-sian culture into North Africa, and the Egyptian representatives subsequently developed the fine stone culture of Pre-dynastic times, perhaps through foreign influence. The Beja, *i.e.* Bisharin, Beni Amer, Hadendoa and allied tribes who inhabit the area between the Nile and the Red Sea are

modern representatives of the northern branch, though they may have arrived at various times. The Libyans (of Mediterranean race) arrived much later in Mesolithic and Neolithic times, and then the population of Lower Egypt assumed regular "Mediterranean" characters. Armenoids, too, later made their appearance, forming an aristocracy, at first very few in number but increasing later. The last two migrations came across the Isthmus of Suez. The historical Egyptians, the pyramid builders, called their predecessors Anu, "the primitives," and this term was also applied to the southern group. (2) The southern variety, sometimes called Cushites, retained their dark colouration and had a taller stature. Probably one of the earliest groups of this branch formed Negro-Ethiopian half-breeds, such as the ancient Neshiu, Yam, Wat, Mati, etc., who may have been the ancestors of the Barea, Wata or Waito, Agau, etc. Remnants of the Mati-Barea stretch from central Eritrea across the Atbara to the Nile at Meroe. South of them are the analogous Hameg, Kunama and other peoples.

A less ancient south Ethiopian branch introduced into Africa the Galla or Oromo (south of Abyssinia and east of the Blue Nile), and the real Danakil (south Eritrea and North French Somaliland). Later came pre-Islamic Arabs (Sabaeans and the later Himyarites) who formed the white Ethiopian half-breeds, such as the Amhara (of eastern Abyssinia) by crossing with the Agau (west Abyssinia). Post-Islamic Semitic Arabs gave rise to the Somâl by crossing with the Galla, who were displaced to the north.

Another important migration of true leucoderms was that which passed under the name of Habashat and in the seventh to the fifth centuries B.C. brought a high civilisation into Abyssinia.

Recently various negroid infiltrations have taken place into Somaliland, and Ethiopic movements are causing the extinction of relics of pre-Ethiopic Negroids.

Eastern Africa north of 15° N. lat. is divided by the Nile into two great ethnological provinces: (1) the eastern is inhabited almost entirely by Hamitic peoples (p. 21), (2) the western is occupied partly by nomad pastoral "Arabs," who, despite

their claim to racial purity, have intermarried with other stocks, mainly Beja, Berberine and Negro, but the Kababish seem to be less contaminated with non-Arab blood than other Sudan-Arab tribes.

(1) East of the Nile and north of Abyssinia are the Beja tribes; from north to south, the Bisharin, Hadendoa and Beni Amer; and in southern Eritrea the Danakil, or Afar. Of the three first the Beni Amer are the most pure representatives of the parent stock, but Armenoid traits are apparent in the north. The population of Abyssinia is mixed, as its name implies; on a Hamitic foundation is superimposed a strong Himyaritic infusion from south Arabia.

(2) West of the Nile in southern Upper Egypt and in Nubia are the Barabra, or Berberines. They are usually of slight build, yellowish to chocolate-brown in colour, commonly with wavy or curly hair, though it may be almost straight or sometimes woolly, but the features are absolutely non-negroid. They are thus Hamitic, and the same type goes back to a great antiquity. The Negroes who came into Nubia before Ptolemaic times were of the short, relatively broad-headed type, and their effect on the population, slight though it may be, has lasted to the present day.

The Nuba are the negroid aborigines of Kordofan, though the northern half is now largely Arabised. They are stoutly built, very dark brown in colour, woolly-haired, mesocephalic, but some are dolichocephalic with a broad face, platyrrhine, some are mesorrhine, others hyperplatyrrhine and with other distinctively Negro characters.

The typical Nilotes are tall, lanky, long-headed, very dark, woolly-haired Negroids, usually with coarse features and very broad noses. The variations betoken racial mixture, but the fusion must have taken place very long ago. There is evidence that they originated from a mixture of Negroes with early Hamites. Those with most Hamitic blood are the Shilluk of the west bank of the Nile from Kaka in the north to Lake No in the south and on the east bank from Kodok to Taufikia, and a short way up the Sobat. The cradle-land of the Shilluk possibly lay between Victoria Nyanza and the Sobat, and they migrated north, south and west. A congeries of tribes who

call themselves Jieng or Jenge, but are known as Dinka, stretch from about 300 miles south of Khartum to within 100 miles of Rejaf and extend throughout the Bahr-el-Ghazal province. To the west of these are the Lwo (Jur or Diur), a branch of the Shilluk now closely allied to the Dinka.

EAST AFRICA

Uganda Protectorate, Kenya Colony, Tanganyika Territory and Nyasaland Protectorate may conveniently be classed together under the general term of East Africa.

It has been supposed that this area was formerly inhabited by the ancestors of the Bushmen, though the existing evidence is of the slightest. It was presumably in the north-easterly portion that an early migration of Hamites mixed with this population and gave cattle and elements of their language to the mixed people who in South Africa are known as Hottentots.

In the east of Uganda Protectorate and in Kenya Colony, and in British and Italian Somaliland, there are various groups of inferior broken peoples who have been termed Pariah peoples. Some of these may be regarded as representing a very early population, while others seem rather to be disrupted portions of higher stocks. All of them have been oppressed by the more dominant groups.

Like all true pastoral peoples the Somâl despise manual labour and thus have reduced to pariah condition various groups of the older inhabitants. Such are the Tomal (smiths), the Midgan (hunters and surgeons), some of whom resemble the Galla, the Jebîr or Jibêr (nomad leather workers and buffoons, the lowest of all), who may have come with the Somâl from south Arabia; the hunting Bôni are inferior Galla.

Scattered among the Masai in Kenya Colony are groups of hunters classed as Dorobo; some are stated to be of pure Hamitic type, others to resemble the Nandi, while others are described as squat and often bestial-looking, or even as suggesting Bushmen. The Konono are also a servile people.

The Bantu-speaking Negroids extended over the whole

area; these are Negroes with variable strains of foreign elements. The widely-spread keeping of cattle and refinement of facial characters betray Hamitic infusion, which is stronger in some tribes than in others. The infiltration of "Arabs" which has been taking place for many centuries must also have had an effect in softening negro characters, but the mass of the people are distinctly negroid.

Another group of negroid peoples, the Nilotes (pp. 19, 40), passed in a south-easterly direction; their track is marked by the Latuka, Acholi (Shuli), Lango, etc. Those that reached furthest south are the peaceful Jaluo or Nilotic Kavirondo, at the north-east of the Victoria Nyanza.

A later mixture of Nilotes with the Hamitic Galla produced the people known as "Half-Hamites," the more important of which are the Lumbwa about Mt Elgon and the highlands east of Victoria Nyanza, and the closely allied Nandi and Kamasia (El Tuken) west of Lake Baringo. The original home of the Masai group seems to have been about midway between the Nile and the upper end of Lake Rudolf; the Latuka shifted slightly to the south-east, but have become somewhat Arabised. Originally the gigantic Turkana and Suk were one people, the former live to the west and the latter to the south of Lake Rudolf; they have woolly hair, a chocolate-brown skin, and their features recall those of the Masai—they may have mixed with the Dinka and Acholi. The energetic pastoral Masai first subjugated the Nilotic Bari and then moved south-east to south of Lake Rudolf; the less powerful tribes lost their cattle and took more or less to tillage and hunting, and they now occupy the tablelands from Lake Baringo to about 6° S. lat. The Masai are tall and slender with regular features and a prominent and often narrow nose, and prominent teeth, but many exhibit modified negro features. The same applies to the half-Hamites as a whole.

The Karamojo, who live between the Acholi and Turkana, are said to be essentially Bantu, though largely influenced by Lumbwa-Nandi culture.

It is generally recognised that the BaHuma or BaHima are of Hamitic, probably Galla, descent; they dominated the in-

digenous Bantu-speaking tribes and intermingled with them to a variable extent. They are herdsmen in Buganda, but the dominant race in Bunyoro, in Toro and in Ankole. They have spread over Karagwe on the south-west of Victoria Nyanza to Urundi on the north-east of Tanganyika where they are called Watusi, and extend to the western edge of Ugogo in the centre of Tanganyika territory.

The aborigines of Madagascar were negroid; some believe that these were Melanesians and not African Negroes, as the natives of the neighbouring coast are not seamen, and there are strong currents in the Moçambique Channel. It is, however, difficult to understand how, if they were Negroes, they could have so fully abandoned their own language in favour of one introduced by a small minority of immigrants; on the other hand the Melanesian language belongs to the same family as that spoken by the Antimerina and the Melanesians are good sailors. From pre-Muslim times various groups of Arabs have arrived and imposed themselves on the population and have brought over from Africa numbers of Bantu slaves. The southern end of the island has been affected by Indian immigration. The Antimerina ("Hova") migrated from the East Indian Archipelago, perhaps from Java, about four centuries ago and soon became the dominant people.

CENTRAL AND WESTERN AFRICA

Negro Africa roughly begins south of the Sahara and extends to the extreme south, but we must distinguish between the Negrillos or African pygmies, the Negroes, Nilotes and the Bantu-speaking Negroids. The Eastern Sudanese or Nilotic Negro has already been dealt with.

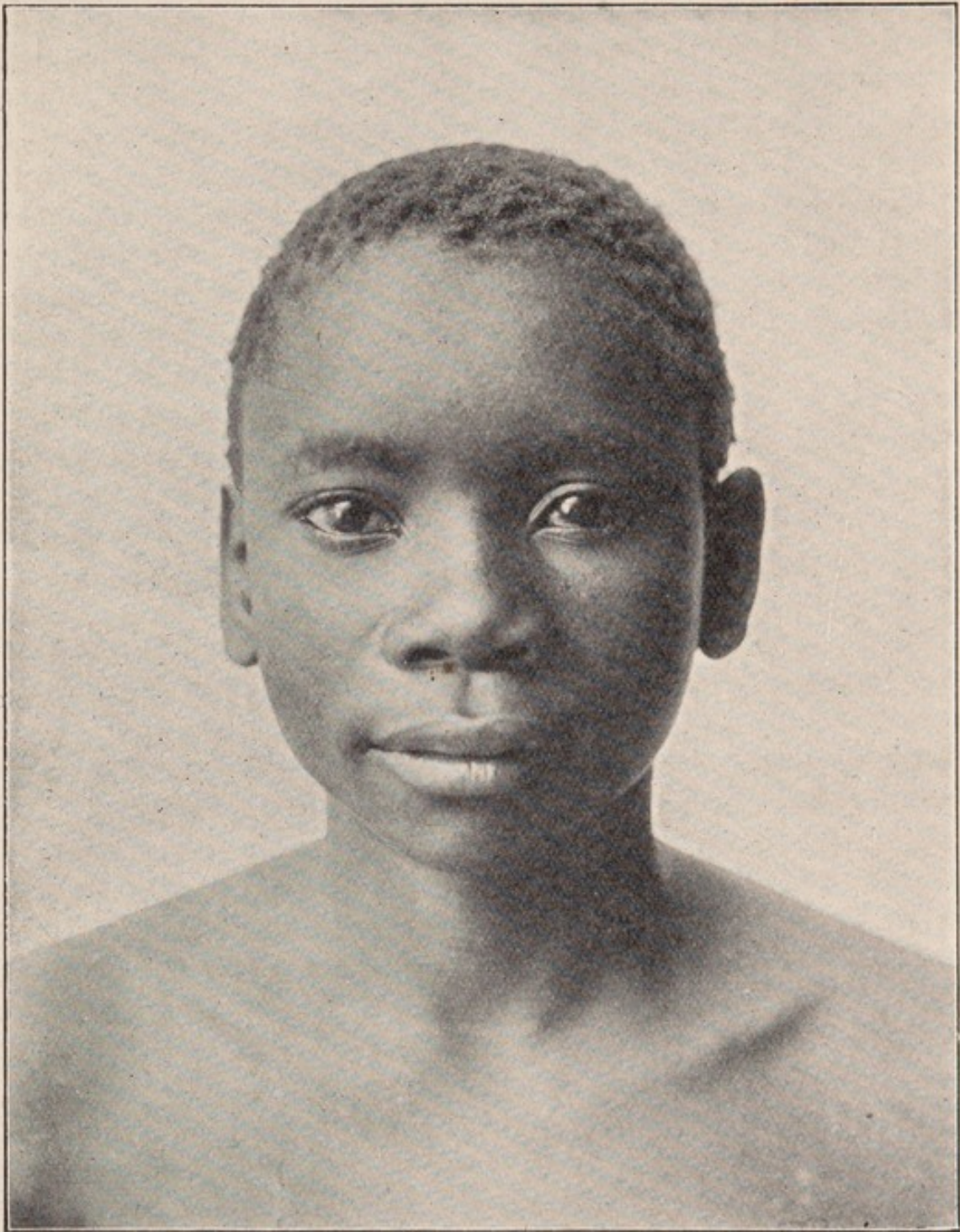
Only a very generalised account can be given of Africa south of the Sahara and north of the Zambezi.

The Negrillos, or African pygmies (p. 17, Pl. VII), who live in scattered groups as independent tribes, or small communities, are everywhere surrounded by taller Negroes with whom all degrees of hybridism occur. We may safely regard them as relics of a primitive type of Negro which at one period

inhabited tropical Africa from the southern borders of the Sahara to the Zambezi-Congo watershed and from the east coast to the Atlantic, for there are still traces of an original pygmy population about Mt Elgon in Uganda, or even in western Galla-land. At present true pygmies are mainly confined to the Congo basin, but extend in the east to the borders of Uganda in the Ituri forest, in the north-east to the vicinity of the Bahr-el-Ghazal, in the west to the French Congo, the Camerúns and Gabún to the verge of Angola.

A widely-spread name for them is the BaTwa, but this is a common designation for small men, some of whom are not necessarily pygmies. In the Monbotto country north of the Congo region they are termed Akka, BaMbute or NaMutti in the Semliki forest, WaTwa in the basin of the Lunglulu, Tikkitikki by the Azande, Balia by the Mabodi, but these and other names are those applied to them by their neighbours. Their general characters are described on p. 17. It is said they can be divided into two groups, but probably there are several: (1) with a reddish or yellowish-brown skin and a tendency to red in the head-hair; the thick hair in the armpits or on the pubic region is like the head-hair, the buttocks are poorly developed; (2) black-skinned with entirely black hair; the black hair is more distributed over the front of the body and limbs, the buttocks are often prominent, and the stature has a tendency to be slightly taller; it is usually believed that these have intermarried with ordinary Negroes. Those that live in more open country are darker than those living within the forests, but there seems to be great variation in the colour of the skin. The head is often stated to be "round," but measurements have not been given. Allusion has been made (p. 9) to their increase in stature under more favourable conditions. They and the Bushmen may be regarded as divergent branches of a small variety of Negro, to which main stock they undoubtedly belong.

A "Pygmy-prognathous" type has been recognised and described. An ugly dwarfish creature of ape-like appearance which crops up in Uganda and in the forests of central and western Africa, it is not necessarily of pygmy proportions, but is short and may be regarded as a very primitive type of



NEGRILLO, KASAI VALLEY, CONGO

Negro which shades off into Negrillos on the one hand and Negroes on the other, but they are not appreciably nearer the fundamental simian stock than is the average Negro. There are no tribes of this group, but we may regard it as a strain that occasionally manifests itself. The type has been described as prognathous, beetling-browed, short-legged and long-armed.

The true Negro (p. 19) must be regarded as having at one time spread over the greater part of Africa, but he is now more or less restricted to the upper waters of the Bahr-el-Ghazal and Welle, the area drained by the rivers that flow into Lake Chad and the region west of this to the Atlantic and south of the Niger to the Gulf of Guinea.

Although dolichocephaly is a characteristic of the Negro, there is undoubtedly a broad-headed strain, the origin of which is obscure. In the third millennium B.C. the majority of the Negroes who came into Nubia were of the short, relatively broad-headed type. The nearest representatives at the present day of this type are found in the region of the affluents of the Bahr-el-Ghazal, Welle, Ubangui and Shari. Meso- to brachycephalism is found among the Azande or NiamNiam and in certain tribes in the south of the Bahr-el-Ghazal Province. Further west the Kumbra, in south-east Bagirmi, are distinctly brachycephalic, c.i. 85, with a much narrower nasal index than their neighbours and a very tall stature, 1.831 m. (over 72 in.); slightly more to the west the Sara of the Shari and Logone have a c.i. of 82.5, and a stature of 1.817 m. (71½ in.). Other neighbouring tribes are tall and mesocephalic. In the Ogowe basin (French Congo) are broad mesocephals of medium stature; Aduma, c.i. 80.8, st. 1.594 m. (62¾ in.). An occasional broadening of the head extends as far west as the Kru and Vei and even among the Ashanti. Among the latter is a distinct proportion of short people, notwithstanding their mean high stature; they are also more downy and there is a tendency to extreme platyrrhiny.

The broad-headed type thus extends from the western end of the eastern Sudan right across the continent, but it rarely appears in a pure condition. Its origin is doubtful; possibly it may represent an old migration from southern Arabia, and southward migrations from the central Sudan zone have

broadened the heads of various peoples in several parts of the great Congo area. It is sometimes stated that this broad-headed tendency is due to Negrillo influence, but the Negrillos are mesocephalic and among the brachycephals there is often a very high stature and sometimes a narrowing of the nasal index, which points to an entirely different racial mixture.

Mesocephaly occurs in the northern part of the Ivory Coast territory, in the Camerúns, and the whole valley of the Congo from Upoto to 25° E. long. and 10° S. lat. There are centres of low brachycephaly (C.I. over 81) south of Lake Chad between the upper waters of the Benue and Shari, and also midway between the Ubangui and the Congo, north of Upoto and eastwards to north of the Aruwimi and west of the Mangbattu country. There are also a few scattered localities in the French Congo and in the south of Congo State on the Lualaba, about 50 miles south of Lualaba, and in the Urua Province about the western affluent of the Congo.

The general impression that one gets is that Hamitic (or Ethiopian) peoples in Upper Palaeolithic times began to spread westwards along the grasslands and open forest country right across Africa. The earliest of them doubtless mixed with Negroes of various sorts and produced ameliorated Negro strains. Movements of this kind probably took place repeatedly over a very long period of time.

About the watershed of the affluents of the Bahr-el-Ghazal and Welle are the group of tribes known as NiamNiam (Azande, Makaraka). They are a moderately tall people, often meso- to brachycephalic and lighter coloured than their neighbours, being red like the local soil and with Negro features; the aristocracy is said to be more Ethiopian than Negro. To the south are the Mangbattu (Mangbattu), a mixed people ranging from a light-coloured Forest Negro type to an aristocracy with a pale olive-brown skin and indications of an Ethiopian strain. In the region of Lake Chad the Kanembu, Bagirmi, Bornu, Kanuri and others show the modifying influence of Hamitic blood, though there may also be a Berber element as well.

The Hausa of Northern Nigeria may be regarded as a Negro-Hamitic blend in which the former predominates, whereas

the Fula (Fulani, Fellata, Filani, Fulbe, their true name being Pulbe), who now overlord the Hausa, are more predominantly non-negroid; they had their centre in Senegal and moved eastward in recent times, having in the meantime received a strong Berber element, indeed some regard them as being originally of Berber stock. They are tall, with a yellow or reddish skin and ringleted hair, not tightly curled, body hair almost absent, not hairy like Forest Negroes or Berbers, long oval face, a prominent nose. Much mixture with negroid peoples has taken place, more particularly with the settled Fula.

The Tibu or Teda of the mountains of Tibesti are the whitest of the mongrel tribes of the Central Sudan, this being due to Berber and Arab influence; the northern members are indistinguishable from the Tuareg, while the southern merge into Sudanese Negroids. The Tuareg (Tuarik or Imoshagh) are usually regarded as Islamised Berbers.

From Gambia to Sherboro the western coastland has constantly received the remnants of peoples ejected from the Sudan. The Mandingo, a mixed people of Fula-Negro extraction but with Tuareg and Arab infusion, at a remote period pushed south from the Upper Niger through north-west Liberia and east Sierra Leone; Mandingo, Kru and Kpwesi now represent the three main types in Liberia. The Kru migrated to the coast some three centuries ago, retreating before the Mandingo and Fula; they first settled about the mouth of the Cavalla river, subsequently advancing westwards. The lowest type of Liberian Negro has been gradually pressed south or enslaved. A steady infiltration of Muhammadan Mandingo from the north continues to influence northern and western Liberia. The Ashanti and Fanti (of the Tshi-speaking group) should be regarded as probably a single people migrating coastward, part of which, the Ashanti, remained beyond the forest belt on the first terraces of the highlands, while the rest, the Fanti, reached the Gold Coast. The Yoruba tribes, who appear to have a non-Negro strain, moved to the Slave Coast from the interior at the beginning of the nineteenth century, driving the Ewe-speaking tribes westwards. The Yoruba movement was caused by the influx of Hausa into the north of their territory, pressed thither by

the Fula. The Niger delta harbours remnants of many peoples driven thither by these later arrivals.

The region of the Bantu-speaking Negroids extends roughly over Africa south of 4° N. lat., but including the Camerúns and excluding the Great Rift Valley plateau and the extreme south-west of the continent.

The Bantu-speaking Negroids (p. 19) are extremely heterogeneous. As a rule they approach the Hamites in those physical characters in which they differ from the true Negroes, but the diversity in their physical characters seems to be largely due to the different proportions of mixture with all the races of Africa.

In equatorial Africa there have been two main lines of movement: certain Congo tribes have come southwards, for example, the BaYanzi and the BuShongo (BaKuba), with whom were associated the BashiLele and the BaKongo, also the WaRegga and BaKuma further east between the Congo and the Great Lakes. The BuShongo now living between the Kasai and Sankuru almost certainly came from a northern home on the Shari river near Lake Chad. On the other hand, there has been a northward movement on the part of such tribes as the BaPende, BaJok, BaLuba, BaBunda and others. The BaLuba went north-west towards the middle Kasai, where they are known as BashiLange. A part of the BaLuba went south from their home on the Lualaba and then east to Kazembe on the Luapula. The BaTetela of the Lomani are pressing on the tribes to the west.

Tradition points to successive waves of people advancing from North-east Africa to Angola by various routes: they would collect about various centres, which became the starting-points of fresh movements. For example, the Jagga (Imbangala), a warlike people who appear to be akin to the MaSimba, started about 1490 A.D. from the region of the head waters of the Congo whence they streamed westwards; they were temporarily checked with the help of the Portuguese but caused an upheaval in the heart of Africa, in which the Lunda kingdom was involved, and subdued part of Angola. About the middle of the sixteenth century they were defeated and the remainder eventually settled near the Upper Kwango.

They were long the terror of the country at the Congo mouth and at the end of the sixteenth century they raided into Benguela. The MaSimba appeared on the Lower Zambezi in 1540, pushed their victorious way north, capturing Quiloa and Mombasa, were then defeated and disappeared from history.

Zulu peoples also went northwards. Thus the MaSitu set out from the Landin country to south of the Zambezi; they became entirely Zuluised, and formed the northernmost outpost of the Kaffirs to north-west of Nyasa, whence they raided southwards between Nyasa and Bangweolo in the sixties. In 1850 one branch, the WaTuta, or ANgoni, moved northward and then north-westward to Ujiji in 1858, then northward again to Urundi and as far as the southern shore of Victoria Nyanza. After a short stay, they moved south to Usukuma about 1860, and were finally conquered by the Zuluised WaNyamwesi under Mirambo, and given land in the north-west of their country. The WaHehe, also known as the MaFiti, are a branch of the MaSitu; they raided through Ugogo and Usagara to the coast until the Germans intervened. There were numerous other migrations in Bantu Africa which have complicated matters, but they have not really modified the racial type, as the several groups all belonged to the same mixed stock, and some brought in a slight preponderance of one or other of the constituent elements. On the whole it seems that the more energetic tribes are those which possess an infusion of Hamitic blood.

SOUTH AFRICA

Only two presumably extremely ancient human skulls have been found in Africa: (1) The Broken Hill, or Rhodesian, skull (*Homo rhodesiensis*) is of archaic type; however, late examples of that race may have persisted. The face has certain resemblances to that of the Gibraltar skull (p. 54), though of a more primitive type, the eyebrow ridges are enormous, the face prognathous, and the nasal orifice extremely wide, the jaws and teeth are of exceptional size. The brain-case exhibits generalised features and differs from that of Neanderthal man on the one hand and from that of *Homo sapiens* on the other (l. 210 mm., br. 145 mm., c.i. 69). The endocranial cast shows

that the brain had characters intermediate between those of Piltown man and those of Neanderthal man. On the whole therefore Rhodesian man must be regarded as having been a distinct species of man, in some respects more simian than Neanderthal man but possessing certain generalised human characters.

(2) The imperfect Boskop skull is evidently ancient, but how old it is impossible to say. It is of enormous size, l. 210 or 205 mm., br. 160 or 154 mm., c.i. 76·2 or 75; the cranial capacity may have been about 1950 c.c., whereas Europeans vary on the average from about 1400 to 1600 c.c.; the vault was distinctly low, or chamaecranial; the supra-orbital ridges were feebly developed. The indices are analogous to those of Bushman skulls, and it has been suggested that Boskop man, or *Homo capensis* as he has been termed, may prove to be the direct but remote ancestor of the more or less degenerate Bushman of recent times.

The Kattea, or Vaalpens, are a problematical folk said to live in the steppe region of North Transvaal as far as the Limpopo. As their complexion is described as almost a pitch black and their stature as about 1·220 m. (48 in.) they would be quite distinct from their tall Bantu neighbours and from the yellowish Bushmen. The "Dogs," or "Vultures," as the Zulus call them, are "the lowest of the low." Possibly allied to them are the pygmies on the Nosop river (west of the Kalahari), who are described as having a stature of 1·321 m. (52 in.) or less, a reddish-brown colour, with a low forehead and a projecting mouth; the Masara Bushmen repudiate any relationship with them, saying they are "monkeys, not men."

The general characters of the Bushman are given on p. 18. At least two groups can be distinguished: the Cape Colony or South-west Bushman is larger in stature than the variety from Griqualand West and the Kalahari, and his head is distinctly broader, being mesocephalic instead of dolichocephalic. In both the head is flattened and the parietal eminences are well marked. Occasionally there is fairly long hair on the scalp, and this suggests that the very short hair often seen is a secondary character. Though the Bushmen are usually of short stature, it is well known that many of the early

Cape Colony Bushmen, who could obtain good supplies of game, were of quite ordinary size, and even to-day if the very young children of dwarfish parents are taken to farms and well fed, they grow to a fair stature.

The Hottentots (p. 18) have often been confused with the Bushmen; they have much the same appearance, with similar flattened noses, but they are usually more hairy and can always be distinguished by their long narrow and relatively high head. Some old skeletons, evidently of pure Hottentots, indicate a tall powerful race with large dolichocephalic very high skulls, forehead low but prominent; the nose must have been fairly well developed and broad, the face is only slightly projecting and there is some sub-nasal prognathism.

The so-called "Strand-loopers" are not a distinct race at all; they are merely frequenters of the sea-shore, who fed mainly on shell-fish, as the kitchen-middens all along the coasts of South Africa testify. Those of the west coast were both Bushmen and Hottentots and those eastward along the coast from False Bay were fairly pure Bushmen, though Hottentots occupied the high ground.

The Korana, or Kora, inhabited the Orange and Vaal river valleys, and are believed to have arrived there from the western provinces of Cape Colony some 200 years or so ago, but they may represent an independent eastern migration from the north. They are usually regarded as a branch of the Hottentots, and doubtless originally belonged to that stock, but differ from them in being of darker complexion and in having a greater development of hair on the head and face, coarser features and broader noses; thus there seems quite definite evidence of Bantu blood which may have been acquired further north before the Bantu came south. They, however, frequently have well-developed supra-orbital ridges, a character that is not met with in any other existing South or Central African race.

A few skulls have been found that show the supra-orbital ridges about as well developed as in the average male Australian, but the forehead is better developed than in the Australian and the parietal region differs from that of both the Bantu and the Australian in being low. There seems, thus,

to be evidence for the previous existence of a "low" type of man either in South Africa, or in some region through which the Hottentots passed on their way south, and where racial mixture took place.

The Bantu-speaking peoples of South Africa are essentially Negroes who early crossed with Hamitic peoples and produced a mixed population which varies almost from one extreme to the other, though certain Negro characters predominate, particularly the nature of the hair; the Hamitic strain often manifests itself among the Zulu and allied tribes in a relatively narrow nose. They have also been modified to varying degrees in different areas by intermarriage with Bushmen and Hottentots.

The migrations of Bantu-speaking peoples from the neighbourhood of the Great Lakes took place at various times and in South Africa three main groups may be distinguished.

(1) The eastern tribes composed of the AmaZulu, AmaXosa, etc. The AmaZulu and AmaXosa are respectively the northern and southern branches of a migration down the east coast that, according to some authorities, took place about the fifteenth century, indeed a chain of peoples allied to the Zulu stretches up to the neighbourhood of the Equator.

(2) The great central region of the South African plateau, Bechuanaland, etc., was very early occupied by the BeChuana or BaChoana who found the Bushmen there before them. Of this group some of the first to arrive were the MaShona and MaKalanga; the BaRotse were a later migration from the Congo region. The racial history of South Africa is very complicated owing to the sudden rise of bands of warriors who conquered territories and often were themselves compelled to flee elsewhere, and considerable bodies of people have in this way shifted continually over large areas.

(3) The western tribes in Damaraland are the physically well-developed OvaHerero and north of these the agricultural OvaMpo. The Haukoin or Mountain Damara now speak the Hottentot language; they are practically a pariah people and may be a degraded offshoot from the OvaMpo; physically they are stunted Bantu.

It is premature to attempt to correlate archaeology and

ethnology in South Africa. The implements confirm the tradition of the Bushmen that they were not the first inhabitants, for the old implements of Lower Palaeolithic forms are quite unlike the implements made and used by Bushmen of recent times; further, they are frequently of great size and must have been used by a powerful race of man. The earliest group of implements are those known as the Stellenbosch type and it has been suggested that the Boskop race was responsible for them. Those from the Orange and Vaal river valleys are presumably more recent though still very ancient.

A clear exposition of the implements of Upper Palaeolithic and subsequent types is at present lacking, and it would be hazardous to suggest by whom the earlier of them were made.

To summarise, the oldest human types known from South Africa are the Rhodesian and Boskop skulls.

The nomad hunting Bushmen doubtless occupied all South Africa, but when the written history of South Africa begins we find them already being encroached upon by the nomadic pastoral Hottentots who seem to have acquired their cattle at the same time that they acquired Hamitic traits in their language, when they were presumably in the region of the Great Lakes. In their migration southwards they appear to have crossed the upper waters of the Zambezi and then passed down the west coast and to the south coast. What is now Cape Colony was inhabited solely by Bushmen and Hottentots at the time of the arrival of the Dutch in 1652. As the latter expanded, they drove the existing peoples before them, but in the meantime mongrel peoples had arisen mainly of Boer-Hottentot parentage, who also were forced to emigrate, and now the nation of the Bastards is established in South Damaraland. The Bantu were cattle-rearers who practised agriculture; the former industry probably was transmitted by the Hamitic element in their composition and the latter aptitude by their negro ancestry; but cattle always form their chief interest in life and it is only exceptionally that they develop into pure agriculturists.

EUROPE

THE RACES OF EUROPE IN PREHISTORIC AND EARLY HISTORIC TIMES

IN order to obtain a background for the existing peoples of Europe it is necessary to gain some idea of the prehistoric and early historic peoples of that area, but only a bare allusion to them can here be made.

The oldest human fossil in Europe is the Mauer jaw (*Homo heidelbergensis*), which though very large and massive is of distinctly human type. Also of great antiquity are the fragments of a skull found at Piltdown in Sussex (*Eoanthropus dawsoni*), the lower jaw of which in many respects strikingly resembles that of a chimpanzee, but the cranium, which is very different from that of Neanderthal man, seems to represent an undifferentiated type of tertiary man, which presumably was the common ancestor that gave rise to *Homo neanderthalensis* on the one hand and to *H. sapiens* on the other.

The Lower Palaeolithic period was characterised by two main cultures, the Chellean and the Acheulean, the latter apparently having evolved out of the former, but we have no knowledge of the appearance of the men of this period.

We have however a very good knowledge of the men of the Middle Palaeolithic period, or Mousterian Age, as represented by the skulls and in some instances by the skeletons of remains found at Gibraltar, Neanderthal, Spy, Krapina, Le Moustier, La Chapelle-aux-Saints, La Quina, etc., descriptions of which can be found in books referred to in the Bibliography. This group is termed *Homo neanderthalensis*; it comprised several varieties, most of which were markedly dolichocranial, but Spy II and Gibraltar were mesocranial and Krapina brachycranial, and there were other differences. From cultural evidence, it seems as if the Mousterians were an immigrant people into Western Europe and not a local development from Lower Palaeolithic man. Since it seems very doubtful whether Palaeanthropic man, as all these old types are some-

times called, has entered into the composition of later man he need not be further considered in this book.

The Upper Palaeolithic period is divided into four main culture stages: Aurignacian, Solutrean, Magdalenian and Azilio-Tardenoisian (the latter is more conveniently termed Mesolithic). The Aurignacian culture was brought into Western Europe from North Africa by new types of men, and these and all subsequent races and their cultures have been termed Neanthropic; usually all these races are grouped under the designation of *Homo sapiens* of Linnaeus. We know that the Aurignacians were superior in every way to the old Neanderthal group of men whom they conquered and probably exterminated. It has been suggested on uncertain evidence that Aurignacian man arrived in Europe about 12,500 B.C.

There were several races inhabiting Southern and Western Europe in Aurignacian times and these extended not only to Magdalenian times (for the Magdalenian culture was a development from the Aurignacian), but traces of some of the races have persisted to the present day. Two divergent groups of these can be distinguished: (1) of low stature, dolichocranial, hypsicranial, platyrrhine, of Eurafrican race (p. 23); (2) of very tall stature, dolichocranial, chamaecranial (platycranial), leptorrhine, the Cro-Magnon race.

Typical of the Eurafrican group is the Combe Capelle skeleton (termed in Germany *Homo aurignacensis*); also Aurignacian were the Grimaldi skeletons of medium stature, with somewhat negroid jaws and a broad nasal index (chamaerrhine or platyrrhine).

The "old man" of Cro-Magnon shows the type of the Cro-Magnon race in a particularly clear and somewhat exaggerated manner, and it is only necessary to glance at this skull and that of Combe Capelle to see that they are racially distinct. The true Cro-Magnon race seems to have been widely spread in Europe and it lasted through Aurignacian, Magdalenian and Neolithic times, and may have entered into the constitution of the old Saxons (p. 71), but by this time the type had become attenuated by mixture with other types.

The Magdalenian Chancelade skull was dolichocranial, very high (hypsicranial), the face was very long but broad, the nose

was very leptorrhine, the man was of tall stature; the skull, but not the stature, presents many analogies with that of the Eskimo.

In Late Aurignacian times there came into a few districts of Western Europe from eastern Central Europe a group of presumably nomadic steppe men who brought with them the Solutrean culture, and when they disappeared in the west the Magdalenian culture supervened. It is generally admitted that the remains found at Brünn, Brück, and Předmost belonged to these peoples. They may have been an early wave of the group of peoples who later appear as Nordics in northern Europe (p. 26). They appear to have been driven back, about 9500 B.C., perhaps mainly by inclement changes in the climatic conditions of west Europe, which materially affected their mode of life and food supply.

Brachycranial people reached as far west as Furfooz in Belgium in Mesolithic times, at all events there were then broad-headed people at Ofnet in North Swabia, Bavaria, as well as an older narrow-headed stock, and there were also found skulls of mixed types. Also broad-headed skulls have been found in middens of this age along the Tagus in Portugal; at Mugem dolichocranial types represent the Mediterranean race (p. 24), but the occurrence of the broad-heads is difficult to explain. The Ofnet broad-heads may be considered as the vanguard of the Eurasiatic east-to-west migration. There is some doubt as to the exact age of the Grenelle skull, but it belongs to the Furfooz type and may be contemporaneous.

The Mesolithic period appears to have been soon cut short by the spread over the whole coastal areas of the Mediterranean of narrow-headed brunet immigrants of medium stature, who introduced one of the cultures which collectively are termed Neolithic. They gradually extended all over France and the British Islands; their descendants are generally known as the Mediterranean race. The so-called Mediterranean race is undoubtedly partly composed of various Upper Palaeolithic Neanthropic peoples and partly of later immigrants. The relative proportion of these various elements is at present obscure, possibly the older types may predominate.

Probably shortly after (*i.e.* before 4000 B.C.) the arrival of

the Mediterraneans, the shorter variety (Alpo-Carpathians) of the broad-headed Eurasiatic stock (p. 26) spread from Asia Minor into the uplands of Central Europe and ultimately reached the shores of the Atlantic; but, as we have seen, it is probable that in Upper Palaeolithic times members of this race were drifting westwards. The Alpo-Carpathians were followed by a taller variety, Illyrian, Adriatic or Dinaric (p. 28). We may reasonably conclude that Alpine man introduced into Europe cultivated grains and fruits, domestic animals, polished stone implements, painted pottery, weaving, and possibly at a later date the art of metal-working. It was to them that the lake-dwelling cultures were due, and mainly also it is to their descendants that we owe the Halstatt and the La Tène cultures, but both these were strongly influenced by the culture brought by tall, fair, long-headed Nordic man from the northern plains of Europe, who appears to have over-lorded the aboriginal population, as has been his wont.

There is some reason to believe that in the region of the Aegean, possibly about 2500 B.C., a cross arose between Anatolians and Mediterraneans which gave rise to the restless mariners who have been named the Prospectors (*Prospectatores*, p. 28) by Fleure and Peake, and Armenoid Mariners by Elliot Smith. These people played a large part in the dissemination of early culture and their descendants can still be found in islands and coastal lands from Gozo to Wales, and probably will be recognised yet further afield. The distribution of this brachycephalic type around the coasts of South-west Europe is curiously like that of the ancient mines for gold, copper and tin, and these again are largely coincident with that of some types of Megalithic monuments. This suggests that the type belongs to one of the movements during the days of the Early Bronze culture, but it must be borne in mind that a dolichocephalic type is associated with the possibly earlier passage-graves and long barrows (Scandinavian and British).

The view is here adopted that the earliest dolichocephalic Steppe-folk of western Asia and south Russia spread westward at various times and in different stages of culture, the first wave being that of the ancestors of the Solutrean hunters. In

Neolithic times tall dolichocephals of this type invaded Scandinavia, another group may have spread along the coasts of the North Sea to west of the Meuse. It seems preferable to speak of the steppe-folk as Proto-Nordics and to confine the term Nordic to their descendants in northern Europe; the former evidently were a relatively fair people with grey or blue eyes, but there is insufficient evidence to show that they were as fair as the Baltic Nordics ultimately became.

We may regard the distinctive cultures which ranged from Neolithic times to the age of copper at Tripolje (a site on the Dnieper, forty miles below Kiev) as belonging essentially to the broad-headed stock, though there is some evidence to show that this was a mixed people. The earlier culture closed certainly as early as 2400 and perhaps as early as 2600 B.C.; the second culture was suddenly destroyed, presumably by a steppe-folk, about 2300 B.C. This set up a migration westward along the loess belt, and it may be that the tall, broad-headed, strong-browed people who, about 2000 B.C. or immediately before the Bronze Age, brought the beaker and short interment cist to the British Islands from the region between the Upper Rhine and Elbe, were set in motion. The Beaker-makers (*i.e.* the "Round-barrow men," p. 28) may have had their original home in Galicia (south Poland). We may regard them as one of several crosses between Alpines and Nordics.

The period round about 2300 B.C. was one of great unrest among various steppe peoples and it has been suggested that it was drought which compelled these pastoral folk to migrate and thereby set up movements which affected many other peoples.

Owing to intermarriage between the Nordics and Alpines, the heads of the southern members of these tall, fair, northern barbarians were broadened, and what was of more consequence, they acquired the culture of the upland folk. It was probably from this mixed stock that the military caste of the Achaeans sprang, who may have destroyed the Minoan civilisation in Crete, but adopted the Mycenaean on the mainland and became absorbed into it, leavening at the same time the local groups of the aboriginal Alpine mainlanders. A similar intermixture was certainly the origin of the Celtic-speaking

peoples, a group of whom took Rome in 390 B.C. Gradually the Nordic element in this mixture became more and more prominent, so that the Belgae who occupied north-east Gaul and south-east Britain about the first century B.C., were not distinguished by Roman authors from pure Nordics. Thenceforward for a thousand years the great movements in and from North Europe were mainly those of Nordic peoples.

The prehistoric trend of Asiatic peoples from east to west was continued during the first millennium of our era by peoples of nomad pastoral habits from western Central Asia, arriving north of the Caspian.

The Arabs and their followers in the eighth century entered Europe through Spain from North Africa, and the Osmanli in the fourteenth century, arriving south of the Caspian, followed to a certain extent the old route of the Eurasiatics (Alpine peoples) through Asia Minor into the Balkans.

Despite all the movements which have taken place, the distribution of the main racial elements in the population of Europe is on the whole very similar to that of Late Neolithic times, save that the brachycephals of the mountain axes have spread down-hill under economic pressure, since mountain areas can maintain only a limited population. The period from the sixth to the ninth centuries A.D. seems to have witnessed an active phase of this movement, during which time Slavs occupied the territory east of the Elbe; since then up to the present day there has been a constant northward drift of Alpo-Carpathians.

THE IBERIAN PENINSULA

The Iberian peninsula was inhabited by Palaeanthropic man who at the end of the Mousterian period was replaced by various races of Neanthropic man coming from Africa. Of these two groups can be recognised: (1) the Pyrenean (p. 25) which occupied the whole north of Spain, traces of them still persisting, but one branch by isolation and in-breeding has developed directly into the existing Spanish Basques; (2) the Eurafrican (p. 23), this group brought the Capsian culture

of North Africa which developed into the Aurignacian; traces of a type allied to that of Combe Capelle are widely distributed in Spain and Portugal. The earliest brachycephalic skulls have been found in Mesolithic (Tardenoisian) middens at Mugem on the Tagus. In the south the "Capsians" were displaced in Mesolithic times by the first wave of the Ibero-Mediterraneans. The Prospectors seem to have settled on various coastal areas. The "Celtic" invasion of the sixth century B.C. passed the Basque country on one side and occupied the central plateau. New arrivals of Iberians came into the south and gradually spread over the whole peninsula, except in the Basque country; in the third century they took possession of central Spain and formed the mixed Celtiberian population. The Phoenician and Carthaginian settlements probably had little racial influence. The Nordic invasions of Goths and others in the early part of the fifth century A.D. have left slight traces. The Saracen (Arab and Berber) invasions of 710 A.D. have left their mark in the south, but the racial elements introduced were largely akin to those of the indigenous population.

The cephalic index of the Iberian peninsula is as a whole mesocephalic (c.i. about 77 or less), with a distinct tendency towards dolichocephaly in the east combined with hypsi-cephaly, but platycephaly occurs along the north and north-west. The heads are somewhat broader in the extreme north and south (c.i. 78.5). The eastern coastal people have a lighter skin than those of the centre; the Portuguese are predominantly brunet. The prevailing colour of the hair is black and of the eyes dark brown in Spain and throughout Portugal; blue, grey, and hazel eyes and fair hair appear in the half of the peninsula nearer to the Pyrenees and obviously have a Nordic origin, as in certain parts of Galicia. The highest stature (about 1.65 m. or 65 in.) occurs on the east coast, in the Basque country and in most of Portugal; in central Spain the stature is 1.62 m. ($63\frac{3}{4}$ in.) or less.

ITALY

The ethnic history of Italy has been very different in the north from what it has been to the south of the Tiber and the islands where there is a homogeneous population. The southern

population is predominantly "Mediterranean," which may have migrated by sea from Africa in Mesolithic or Neolithic times. In Sardinia there are traces of an old Eurafrican stock. Illyrian and Albanian colonists at various times have broadened the heads in parts of eastern Apulia. The Greek colonists of Magna Graecia were perhaps mainly of the same Mediterranean stock as the aborigines, but they certainly must have brought Eurasiatic blood with them, which might account for the brachycephaly in Salerno, but it is also possible that the Prospectors landed at various places in South Italy, as they did on the island of Gozo. The same type occurs near Palermo in Sicily at the end of the Neolithic period.

It is now believed that the Neolithic inhabitants of North Italy (the Ligures or Ibero-Ligures) came from Spain. In the Early Bronze Age, about 2000 B.C., broad-headed lake-dwellers arrived in Lombardy from Switzerland. In the full Bronze Age, about 1800 B.C., other mixed Alpine invaders, possibly the Beaker-folk, from Galicia *via* Bosnia, constructed the *terremare* in Emilia. The Umbrians, an Alpine people with Nordic leadership, in the early Iron Age migrated south from the Danube basin bringing with them the Halstatt culture which developed in Italy into the Villanova culture, and about 800 B.C. expelled the *Terremare* people who entered Latium and founded Rome in 753 B.C. In the eighth and seventh centuries B.C. a civilisation marked by oriental luxury arose in Etruria; this main element in the Etruscans probably came from Lydia in Asia Minor perhaps about 1000 B.C. The Ostrogoths under Theodoric conquered Italy A.D. 489-493, and their kingdom lasted till about 554. In 568 the Lombards settled in North Italy and gave their name to Lombardy; but there is now little trace of these Nordic invasions, the population of North Italy being of medium stature, 1.642 m. ($64\frac{3}{4}$ in.), and brachycephalic, C.I. 84.4; the old stock having thus reasserted itself. The relative tallness in Venetia is due to intermixture with the contiguous Illyrians, st. 1.663 m. ($65\frac{1}{2}$ in.), C.I. 85. There is a patch of tall, long-headed, very brunet folk about Lucca; they have been identified as Atlanto-Mediterraneans, but may be representatives of an earlier stock than the Mediterraneans.

GREECE

The modern Greek is of very mixed origin. The eastern group of the Mediterranean race in early times seems to have been mainly confined to the islands and coastal valleys of Greece and perhaps to those of the south of the Balkan peninsula, for during the Neolithic period Eurasiatic peoples inhabited the whole of the interior of Greece and the lands to the north, and trickled down to the coasts and probably to the islands. The Bronze Age Minoan culture of Crete was brought in the sixteenth and fifteenth centuries B.C. to the southern valleys of Greece, where it was imposed on peoples still in a primitive stage of culture, and there developed into the Mycenaean civilisation before the destruction of Knossos in Crete about 1400 B.C. The mainland was over-lorded by tall Achaeans who came from the Danube plains; various inland tracts, such as the hill-girt plateau of Arcadia and the land afterwards to be called Boeotia were left alone. The Achaeans, who were blond as compared with the southerners, were mainly of Proto-Nordic (Steppe) race, but doubtless had been influenced by Eurasiatic blood and certainly so by Alpine culture. At the end of the twelfth, and throughout the eleventh, century B.C. a series of rude and probably brachycephalic tribes, perhaps with Nordic leaders, came south from the north and north-west and about 1050 B.C. swept away the Achaean civilisation, bringing geometric pottery and Spartan polity. Afterwards in Sparta, Corinth, and Argos, they were called Dorians; the Sphakiots of Crete and the Tsakonians of Laconia are their descendants. Since the Christian era successive waves of foreigners have invaded Greece. In the sixth century A.D. came the Avars and Slavs and from the end of the seventh century there has been a peaceful penetration of Slavs. Albanians from the thirteenth century overran the land till the advent of the Turks in 1460.

Modern Greeks have an average mesocephalic index; it is somewhat higher in the north, but narrower heads are prevalent in Thessaly, Attica, and the islands. They are strongly brunet; less than 10 per cent. have fair hair and about 25 per cent. are blue- or grey-eyed, due probably to Albanian influence. The stature is about 1.626 m. (64 in.).

The racial history of Crete is evidently complicated. The earliest stratum was probably Mediterranean, perhaps of more than one variety. Eurasiatics from Asia Minor and probably also from Greece assisted in producing the Minoan civilisation, Mycenaeans and Achaeans destroyed the brilliant second Late Minoan period. Later came the Dorians. The racial effects of the Venetian and Turkish and Saracenic invasions appear to be negligible.

RUSSIA

We have evidence from the tumuli (kurgans) of the steppes and parkland region, roughly south of a line from Kiev to Kazan, of a long-headed population in a Neolithic stage of culture, which became less numerous in the Bronze Age and eventually disappeared, but every probability points to the occurrence of this type and culture all over early Russia, and it is now best preserved in Latvia (Livonia in part). Elsewhere it has been overlaid by immigrations of brachycephals from the east and west. These pastoral dolichocephals who smeared their dead with red ochre and buried them in tumuli may have been forced to emigrate towards the latter half of the third millennium B.C. by a period of drought. Some went south-west, others went northward to the Volga basin where they mixed with Ugrians (p. 30) who had already moved from Western Asia into Russia and thus produced the hybrid type known as the Red Finn (Permiak and Votyak), but the main body seems to have passed along the belt of loess and sandhills through Germany and Denmark and eventually to Sweden.

Meanwhile a slow but steady progress north-westward was being made by the Ugrian tribes of the Volga; till about the middle of the Bronze Age some of them were settled on the Finnish lakes and were in touch with the Nordic folk who had already occupied the sea-board, as they still do; but the bulk of those now inhabiting the maritime strip of Finland are not so much the descendants of the Bronze Age settlers, as of Swedes who settled there after the fashion of piracy had ceased—from about 1150 A.D. to the present day.

Existing Ugrian peoples, speaking Finno-Ugrian languages, of medium stature and usually with a low brachycephaly, are

(1) the Zyrian in eastern Archangel and Vologda, who are distinctly fair on the whole; the Volga Finns comprise the Cheremis, Chuvash and Mordvin of east Central Russia. The Cheremis are darker than the Zyrian, the Mordvin are the most mixed; (2) the Permiak in Perm and the Votyak (Vod, Budini, or Vodini of the Greeks) in Viatka, the majority of whom have light or chestnut hair and are probably the reddest of men in hair and beards; they have light or mixed eyes.

Another thrust of Asiatic broad-headed folk of low stature consisted of two ancient arctic Ugrian peoples, the Lapp and the Samoyed; the former went further west and penetrated some distance down the great Scandinavian peninsula.

To the Turki (p. 31) belong the Kirghiz round the north and west of the Caspian Sea, the Volga Tatar in the east of Russia, and the Europeanised Crimean Tatar in the south; but the term "Tatar" is very indefinite, as it now comprises a mixture of several racial stocks.

To the "Mongols" (p. 31) belong the Kalmuk between the Don and the Volga.

The western brachycephalic migration was that of the Slav group of the Alpo-Carpathians (p. 26), coming from the region of the Carpathians. South of the Pripet marshes, especially on the black-mould belt, are the Ukrainians and Little Russians, who are characterised by low brachycephaly, darker colouring and moderately tall stature, about 1.675 m. (66 in.). The Slavs also penetrated the forests to the east and north-east about the ninth century A.D. where we find the Great Russian type with a square face, heavy features, reddish blond hair, orange-brown eyes, and a stature of 1.64 m. (64½ in.). The remarkable uniformity of physical type among the Russians is due to the spread of the Slavs over the whole country; the purest of all are the fair White Russians in the west, who in their original Slav lands have mixed only with their neighbours, the Lithuanians.

LATVIA AND LITHUANIA

The Letto-Lithuanians are of medium height, but taller when remote from Slav influence, preponderately fair, with blond hair and blue eyes; the cephalic index is about the upper

limit of dolichocephaly, the face is long. They speak the most archaic of the Aryan languages and were the last people in Europe to accept Christianity. They may be regarded as being modified descendants of a northerly expansion of the steppe-folk; possibly they represent a passage type from the Proto-Nordic to the Nordic.

ESTHONIA

The Esths have reddish flaxen hair, blue eyes and a cephalic index of 79; there is a tall element amongst them. They are closely related to the Tavastians.

FINLAND

Swedes inhabit Åland and most of the coastal lands and islands. The Finns comprise the Tavastians in the south and centre, the Karelians in the east, and the restless Qvène or Kwaen in the north, who have been influenced by the Lapp. The Lapp formerly had a wide extension but are now few in number and restricted to the extreme north. The Tavastian has a cephalic index of 81, a broad face, concave nose, fair complexion, and frequently light hair, and mostly blue or grey eyes; they are thick-set with a stature of 1.678 m. (66 in.). The Karelians have a broader head and lower stature.

LAPPLAND

The Lapp are distinctly brachycephalic with a low crown; they have a short, broad face; broad, often concave nose; occasionally oblique eyes with epicanthic fold; the skin is yellowish-brown, the hair brown to black; squat figures and short stature. They extend from the north of Norway, Sweden, and Finland to the Kola peninsula in Russia. They speak a Finno-Ugric language and are of Palaeartic race (p. 30).

POLAND

Various types have been identified in Poland which may be briefly noted as follows. During the Neolithic period, the "Pre-Slav" or Vistulian type predominated and indeed it everywhere forms the base of the population, not only in Poland but extending to the eastward, perhaps even south

of the Carpathians; it is low brachycephalic (c.i. 82), of short stature, relatively elongated face, comparatively dark pigmentation. Towards the end of the period an extremely dolichocephalic type appeared in Silesia, but now occurs in Poland in greatly diminishing numbers. These people were of short stature and had very fair hair, and the type is fairly common among the Esthonians and is found scattered to the north of the Vistula. During the Bronze Age broad-headed types prevailed, presumably at the beginning of the period they belonged to the Beaker-folk group. After the Bronze Age we find very few dolichocephalic peoples. Later to arrive than the above were members of the Alpine race with pronounced brachycephaly, medium height, tendency to grey eyes, dark hair and prominent nose; they occur in Little Poland and in Galicia where it links on with Czecho-Slovakia, and tall dark brachycephals of Illyrian stock who are now found in East Galicia. Later still were various Nordic migrations from the Baltic.

CZECHO-SLOVAKIA

The remains of the Solutrean hunters of the horse and mammoth have been found in the loess of Moravia, which was deposited at the climax of a phase of dry continental climate. The Solutreans (p. 56) belong to the period of the last retreat of the ice. One skeleton found at Předmost was very tall, st. 1.77 m. ($69\frac{3}{4}$ in.), the others were of moderate stature; the skulls from Brünn and Brück were hyperdolichocranial (c.i. 66-69) and show some primitive characters; they may be regarded as the first wave of the group of peoples who later appear as Nordics in Northern Europe.

In Neolithic times there were two sharply-defined types in Bohemia: (1) an indigenous people, meso- to low-brachycranial, with a rather low vault, broad face, meso-platyrrhine, prominent cheek-bones and inclined to prognathism, and of short or medium stature, 1.59 m. ($62\frac{1}{2}$ in.); (2) very dolichocranial, with a high vault, long face, leptorrhine, and distinctly orthognathous, of medium stature, 1.65 m. (65 in.). Type 1 evidently came from the east or south-east and may have been an undifferentiated type of the Eurasiatic race;

probably it had a wider distribution in Europe. Type 2, who are regarded as belonging to the Nordic race and may have been descendants from the Solutreans, probably reinforced by westward movements of steppe-folk, conquered Type 1. They made what is known as band-pottery; this period coincides with the northern passage-graves. Later similar warrior people brought in rope-marked pottery and subdued the band-pottery settlers, slew the men and married the women, so that there was a marked preponderance of dolichocephals at this time. It has been stated that there is some evidence to show that the Neolithic dolichocephals had rather dark hair and eyes. If this be established, it points to the presence, at all events in part, of a southern element. At the close of the Neolithic period there were Beaker-folk (p. 28) in Moravia and these persisted into the Bronze Age, despite an influx of Nordics. Celtic-speaking peoples, the Boii, brought mound-burial only into south-western Bohemia about the eighth century B.C. The population then consisted of Nordics, Alpines and mixed peoples, as it did in the subsequent period of the La Tène culture. During the Bronze Age a new brachycephalic element appeared in the north-eastern part of the country, which merged with the older dolicho-mesocephals. About 500–200 B.C. the Slavs suddenly became numerous. The latest influx of Slavic tribes (among whom in all probability was the tribe of Czechs) took place about the fifth century A.D.

The physical characters of the present-day Czecho-Slovaks are generally brachycephalic, pigmentation from blond to brunet with a preponderance of the latter, stature 1.69 m. (66½ in.).

RUMANIA

The Rumanians pride themselves on being descended from the Romanised population of Trajan's Dacia, who settled 240,000 colonists there in A.D. 106. Though there may be a very little Latin blood, the population is and probably has always been mainly of Illyrian or Dinaric Eurasiatic origin, with other racial elements added. The c.i. ranges from 79 on the east coast to 85 in the west, rising in places to 87.8.

The primitive Rumanian type appears to be tall, st. 1.65 m. (65 in.), brachycephalic, hair almost always dark, often black, eyes equally dark, straight nose. The few dolichocephals are probably descendants of Neolithic Steppe man. The tallest people are in the high valleys and Southern Carpathians, and there is a very tall population in the western plains. The Rumanians speak a Neo-Latin language. The nomad Vlach are Rumanians who live in neighbouring countries; they are of medium size, slight build, often with a white skin and high complexion, hair usually dark brown, rarely black.

BULGARIA

The Bulgarians are originally of Ugrian origin. There was a settlement of them on the Volga, about the middle of the seventh century A.D. They crossed the Danube and about twenty-five years later settled in Moesia after subduing the Slavs; since then they have become completely Slavonised. The c.i. is 78 on the coast and 85 in the west. They have a broad flattish face, 63 per cent. have dark hair and eyes, and about 50 per cent. have a brownish skin; the stature of this type is 1.696 m. ($66\frac{3}{4}$ in.) and of the relatively fair type 1.69 m. with a heavy build.

YUGO-SLAVIA

Serbo-Croatians are typical Southern Slavs (mainly of Illyrian race). Serbs of Serbia are the most pure of the Southern Slavs, though there is no one type of Slav. The fundamental type has dark brown chestnut hair and equally dark brown eyes. The darker people are the taller, st. 1.725 m. (68 in.); there is also a type with fair hair, blue eyes, of less robust condition and a stature of 1.715 m. ($67\frac{1}{2}$ in.). They are very brachycephalic, c.i. 86-87. There are also some shorter people who seem to represent the first wave (Alpo-Carpathian) of the Eurasiatic migrations westwards and appear to be more prevalent in the forest clearings as opposed to the taller, more mountain-dwelling pastoral Illyrian variety.

The Herzegovinians have a c.i. of 87 and a stature of 1.75 m. (69 in.); they are even lighter than the Bosnians, st. 1.72 m. ($67\frac{3}{4}$ in.).

The Montenegrins are a people allied to the Albanians, though Serbian by language.

ALBANIA

The Albanians (Shküpëtar) with the Dalmatians have a stature of 1.68 m. (66 in.) with even greater brachycephaly. Some are lighter than the Bosnians. The Albanians are partly the direct descendants of the old Illyrians, whose language was a proto-Aryan dialect.

HUNGARY

The Magyars are brunet but not very dark—the most prevalent combination is that of blue eyes with chestnut hair; c.i. about 84, somewhat lower in the west; stature 1.62–1.646 m. ($63\frac{3}{4}$ – $64\frac{3}{4}$ in.). The Magyar language is Ugrian modified by Turki. The Hunagars coming from West Asia reached the Danube about 886 A.D.; joined by the Magyars and other Turki tribes they dominated the Slavs and founded the kingdom of Hungary in Pannonia, which absorbed all that remained of the successive Hun and Avar empires, the Huns having arrived from Asia early in the fifth century and the Avars in the middle of the sixth. The high flat cheek-bones so characteristic of Eastern Asia are found among early, and occasionally among modern, Hungarians. It is probable that the bulk of the modern Magyars are largely of Alpo-Carpathian stock, but there has been some Nordic infiltration.

AUSTRIA

In Upper and Lower Austria and Salzburg the average population has a medium stature, 1.676 m. (66 in.), seldom short, frequently taller, the skin is mostly white, oftener with dark than with light hair, eyes frequently light. Pure light and dark types are everywhere in the minority compared with the mixed type; the light type increases in numbers from east to west, and the dark decreases from south to north. In Lower Austria light-haired people are taller, in the two other districts they are shorter than the dark-haired. Brachycephaly is everywhere in the majority; the average cephalic index is 82.7 and may go up to 89. Mesocephals are found

sparsely everywhere; the number of them decreases from east to west, but again increases to the west of Salzburg.

A tall brachycephalic type (Illyrian) occurs in South Austria with a stature of 1.68–1.72 m. (66–67 $\frac{3}{4}$ in.), c.i. 81–86, dark hair and a narrow straight nose. In the Austrian Tyrol, the broad-heads are numerous in direct proportion to the increase in geographical altitude, the broad valleys opening north having received some Nordic immigrants, and those to the south immigrants of Mediterranean stock. In many places a disharmonic type is found, a long face being associated with a broad head.

SWITZERLAND

In the oldest Neolithic pile-dwellings there was a preponderance of exceptionally brachycephalic Alpines and but few mesocephals. During the later periods the former decreased in numbers and the mesocephals increased and there was a strong progressive increase in dolichocephals to the end of the Neolithic period. These data are not very conclusive, as they are based on only forty-two skulls. There can be little doubt that the custom of erecting pile-dwellings was introduced into Europe by the Alpine peoples and that in ancient times the brachycephalic element was predominant, as it still is. In the Bronze Age the brachycephals seem to have been fewer than previously, judging from thirty-one skulls. Disharmonic skulls are not uncommon, long heads with broad faces and broad heads with narrow faces; the Neolithic dolichomesocephalic Schweizersbild "pygmies" are now considered to have been a dwarfed group. The Neolithic dolichocephals appear to have belonged to the Mediterranean race, but Nordics began to enter Switzerland from the north, and the Nordic element affects the northern portion of Switzerland at the present time, and there is also a relatively blond central zone.

GERMANY

Germany is roughly divisible into the northern plains and the southern highlands. The lowlands were early occupied mainly by Proto-Nordic Steppe people from South Russia,

who in their northern home are termed Nordics, while the southern mountainous region has always been held in force by Eurasiatics.

The "Cro-Magnon" race (p. 55) is believed by some German anthropologists to enter into the composition of the German people, more particularly of the Saxons. Certainly during the Neolithic period there were throughout the German region a number of peoples all of whom can be regarded as varieties of the race to which the term Nordic is applied (p. 26); some of these had distinctive cultures and slight differences in head-form. Peoples of this stock passed into Scandinavia when the climate became favourable after the last glaciation, and much later, presumably driven out by a deteriorating climate at the end of the Bronze Age (350 B.C.), various groups returned to Germany. Thus the Goths came from Östergötland, the Gepids and Langobards from Scania, and the Burgunds from Bornholm, the last migration of the Burgunds being near the end of the third century A.D. The Nordic peoples, even in the Neolithic period, seem to have been a restless folk who at various times wandered and imposed themselves upon their weaker brethren and especially upon alien peoples.

After the migrations of the sixth to the ninth century A.D. Slavs, of the Vistulian race (p. 27), occupied the territory east of the Elbe, as modern place-names testify, and despite the reconquering of that area and of its having been thoroughly Germanised, a Slav element largely persists in the mixed population, which is most noticeable in East Prussia.

The Alpine peoples, though mainly keeping to the mountain districts, seem even in Neolithic times to have spread across western Germany; at all events for a long period there has been a continuous percolation of this group into the northern half of Germany, so that it appears to be difficult to find any part of Germany that has been unaffected by it or by the Slavish migrations.

On the whole the Nordic type is best preserved in Schleswig-Holstein, Mecklenburg, and the northern countries west of the Elbe.

SCANDINAVIA

Denmark is, in a sense, the north-western terminus of a zone of early settlement and migration along open country from Galicia, skirting the hills, chiefly along the loess. It thus possesses a very mixed population.

In the Mesolithic period the Maglemose culture was brought to Denmark and the western Baltic, according to some investigators, by a pure or mixed broad-headed people arriving from the south-east.

The Mesolithic people (? Campignians) who accumulated the middens along the coast of Denmark appear to have been tall and dolichocephalic. Later the advancing Nordics coalesced with the remnant of this people and subsequently passed into Sweden, as the men of the passage-graves; possibly the art of Megalithic architecture had been learnt from the Prospectors (p. 28), who may have arrived at the Danish islands and may be responsible for a prehistoric brachycephalic element in southern Scandinavia. We know that brachycephals (Borreby type) of the Beaker-folk stock lived in Denmark towards the end of the Neolithic period and we may assume that they too crossed over to southern Scandinavia.

Soon after 500 B.C. a Nordic people settled in the Norwegian fjords and began that phase of piracy for which they became notorious, and which lasted for about 1500 years. Some of the migrations of Nordics from Scandinavia into North Germany are alluded to on p. 71.

Although the Scandinavians, excluding the Lapp (p. 65), are admittedly regarded as typical Nordics, yet there are traces of other stocks, more especially in Denmark. For example, a trace of the Cro-Magnon type has been found in Norway. On the west and south-west coast of Norway there are brachycephalic broad-faced people who on the average are distinctly darker and incline to be shorter in stature than their neighbours. They are recognised as being of Alpine stock and their arrival may date from very early times; it is possible that the Prospectors may be partly responsible for this strain. Thus the pure Nordic type is best represented in the valleys of the interior of Norway and also in the central provinces

of Sweden. In the most northerly provinces of Sweden, owing to the influence of Lapp in the north-west and of Finn along the coastal provinces, brachycephaly prevails, as well as darker pigmentation and shorter stature, though from a different racial influence the same characteristics reappear in the extreme south of Sweden. The average pure Nordic Swede is tall, 1.7 m. (67 in.) or more, dolichocephalic, c.i. 75, with a long head and face, fair and ruddy complexion, fair hair; the nose is usually short and straight.

In Denmark the stature is greatest where the eyes and hair are lightest, and lowest where they are darkest. The average stature is 1.69 m. (66½ in.); during the last fifty years the stature has increased about 4 cm. (1½ in.) and the same has occurred in Sweden and Norway. The tallest people (over 1.693 m.) are found in the north-west, northern half of Funen and the adjoining part of Jutland and Bornholm, and the shortest (under 1.679 m. or 66 in.) on the eastern half of Zealand and on Samsö. In Bornholm the c.i. is 80.3; there is a taller dark, and a shorter light, type. The latter may be akin to the Vistulian race. Traces of the Borreby type (pp. 29, 79) occur in a few places.

NETHERLANDS

Although the Dutch population is generally regarded as of German type, as it is linguistically, it nevertheless exhibits a double origin. Brachycephals with broad faces, brown eyes and shorter stature predominate in the south and west of the Rhine, Zealand, North Brabant and Limburg, which prove Alpine descent, and this is undoubtedly ancient; extreme brachycephaly, c.i. 87, is common in the islands of Zealand. Broad-faced brachycephals with blue or grey eyes in the north-east, of shortish stature, may be ancient derivatives of the Vistulian race. The general average of the c.i. is 79.5, and the people as a whole may be termed Nordics.

BELGIUM

A line running east and west, a little south of Brussels and north of Liège, divides Belgium into a northern low-lying portion and a southern upland region. In the north, Flemish,

a corrupt Dutch, is spoken and as compared with the south the people are largely blond, with longer and narrower heads (c.i. 79), longer noses and taller stature. In the south the Walloons (c.i. 82) speak an archaic French language. Limburg has the narrowest heads (c.i. 78) and Luxemburg the broadest (c.i. 83). Hainault (c.i. 81.4) has most brunets and also the shortest inhabitants.

The markedly brachycephalic population of the Grand Duchy of Luxemburg is very homogeneous and of pure western Alpine type.

FRANCE

The racial history of France is to a large extent an epitome of that of Europe (pp. 54-59). All the prehistoric races coming from Africa have spread over more or less of the country, and also the Solutreans from eastern Central Europe and the earlier and later waves of Alpine man of medium stature. France too has been raided and colonised by Nordics. Most of these racial movements have left their impress upon the present population.

Broadly speaking, a belt of mesocephaly extends along the main axis of fertility from Flanders to Bordeaux, which is due to various invasions by land or sea by Nordic tribes; these also account for a similar patch around Limoges. The relative dolichocephaly (c.i. 76.8-79.8) of south-eastern Charente and the northern two-thirds of Dordogne is due to an Upper Palaeolithic stratum. A strip of Mediterranean mesocephals fringes the Mediterranean coast.

The broadest-headed type is aggregated in areas of isolation, *e.g.* Ardennes, Vosges, Savoy and the central plateau; it is typical Alpo-Carpathian (Cevenole). Intermediate areas are in general inhabited by low brachycephals.

The maximum frequency of blonds lies partly along the English Channel and partly along the north-east frontier, that of the brunets along the Mediterranean coast, the Pyrenees and in Auvergne.

The average stature in France is 1.677 m. (66 in.); roughly speaking, a line from Lyons through Orleans to the Cotentin peninsula separates a north-east area of relatively tall statures

of 1.647 m. (65 in.) and upwards, and a south-west area of 1.646 m. or less. In north Brittany the average stature is below 1.624 m. (64 in.), and in parts of Haute Vienne and Corrèze it sinks to 1.61 m. (63½ in.). The fertile plains of Burgundy are an area of broad-headed relative giants; their stature is derived from the Burgundians of Nordic stock who came thither in the fifth century A.D. They are still relatively fair, but the Alpo-Carpathian stock on nearly every side of them appears to have broadened their heads by intermarriage.

In the Dordogne district there have been identified two types of brachycephals and four types of mesocephals, who for the sake of contrast have been called dolichocephals. (1) The short dark brachycephals occupy mainly the southern portion and are typical Cevenoles. (2) The tall fair brachycephals arose by crossing the former with the fair Nordic race, as occurs also in Lorraine; they have been equated with the Halstatt people; at all events, it is a mixture analogous to that which produced the Beaker-folk. (3) The tall fair mesocephals inhabit the neighbourhood of Limoges whence they spread in various directions; they are the descendants of Nordics from the North German plains. There are three varieties of brown dolichocephals. (4) Platycephalic with very broad face, long but broad nose, prominent chin, straight black hair, very dark eyes and very tall stature; most of these characters have been taken to indicate a resemblance to the "Cro-Magnon" race. (5) Narrow-faced and high-headed; perhaps this is a mixed type. (6) A rare but recognisable type with a very long head, narrow elongated face, low retreating forehead, mandibular prognathism, concave broad nose, retreating chin, black hair and a dark skin. There can be no doubt as to the antiquity of this type, which like the disharmonic one (4) dates from Aurignacian times; it may be regarded as a variety of the Eurafrican race. It is interesting to find that this race has persisted *in situ* for a period of at least 14,000 years. In the centre of this district is the "Limousin black spot" or "les froides terres," famous for the short stature of many of its inhabitants; this is not a racial feature, as several of the racial stocks are implicated, but it is due to *la misère*, though of late years the stature has greatly

increased owing to improvement in the condition of the life of the people.

In the Côtes du Nord in Brittany there is a variable population of brachycephals, in addition to a Nordic element. At Lannion there is a type marked by a narrowing of the head, c.i. 80·6, high face but broad in the zygomatic region, broad nose, relatively dark skin, eyes and hair brown, often black, stature 1·617 m. (63½ in.); the general shape of the skull and face recalls that of the Cro-Magnon race. At St Brieuc there is a brachycephalic type, c.i. 84·8, with short face, brown or black hair, stature 1·631 m. (64¼ in.); it has been suggested that this is a survival of a colony of Prospectors. The Lannion type is the oldest. At a great interval of time came the short dark Alpine brachycephals. Later came the settlements of Prospectors. Then, long before Roman times, came a Nordic element which gave the western brachycephals their blue eyes, and later Nordics have also modified some of the population. The emigration from Cornwall in the fifth century A.D. to the Dinan district is said to have been largely Teutonic in race.

GREAT BRITAIN

There is great uniformity in the average cephalic index throughout our islands, it being about 77–79, the extremes are 66 and 87.

Speaking generally, the shortest average stature, 1·675–1·699 m. (66–67 in.), occurs in Wales and the border counties Gloucester, Somerset, Wilts, along the Thames Valley, Herts, and to some extent in the Fen country. In Caithness, most of the Midlands, Suffolk, and all the southern counties except Cornwall the stature averages 1·7–1·724 m. (67–68 in.). In all the remaining portions of Great Britain the stature reaches 1·725 m. and over.

The peoples with lighter-coloured hair and eyes occur mainly in the eastern half of Britain and those with darker colouration on the western margin. The darker peoples are also usually somewhat shorter; in Inverness and Argyll, however, the people are the darkest in Scotland, but attain an average stature of 1·73–1·75 m. (68–69 in.); the next darkest are in

Perth and Galloway where the people are still taller. In Galloway they are among the tallest in the world. In the Chilterns and the Cotswolds, especially Wychwood Forest, there is a recognisable element in the population with black hair, usually with dark eyes, st. 1.715 m. ($67\frac{1}{2}$ in.) and c.i. 76.8; we have here also a remnant of an old stock. There are brunet, relatively short folk in Herts, Bucks, and south Oxfordshire; in Herts the people are as short as in South Wales, probably explicable from the fact that in Herts the ancient forests afforded a refuge for the older population, as did Romney Marsh and the Fen country of south Lincolnshire and north Cambridgeshire.

The best way of arriving at a knowledge of the physical constitution of the British is briefly to recapitulate their racial history. It will then be evident that as so many stocks have come into the country at various times, a general mingling of peoples must have taken place in this small island, which renders the task of disentangling them a peculiarly difficult one.

There is no evidence that Palaeanthropic man has in any way entered into the composition of the British.

We may accept it as established that a type which occurs in the Plymlym mon moorland and elsewhere in Wales is directly descended from the Aurignacian Eurafrican race (pp. 23, 55); c.i. 71-74, very long head with a moderate vault, prominent occiput, receding forehead, prominent glabella, broad nose and a tendency to prognathism, medium stature, about 1.675 m. (66 in.).

It has been supposed that the extremely dolichocephalic Galley Hill skull is of Chellean age, but this has been strongly disputed; at all events, it is of neanthropic type and is comparable with the Solutrean skulls of Brünn, etc. (p. 56), and also with several remains that have been grouped together as the River-bed type; these have a c.i. from 70-75, and a stature from 1.63-1.645 m. ($64\frac{1}{4}$ - $64\frac{3}{4}$ in.). We may for the present regard this group as dating from the beginning of the Upper Palaeolithic period and as belonging to a somewhat generalised stock that cannot be described as typically Mediterranean or Nordic. The much later Neolithic Long-barrow

men seem to be variants of this stock; c.i. 63-79, average about 72, with moderately high heads, brow ridges sometimes well-marked, face short and wide as compared with Nordic skulls, narrow nose and orbits, stature about 1.677 m. (66 in.). The Late Neolithic dolichocephals of the Megalithic chambered cairns of the Island of Arran (south-west Scotland) also agree in general with this type. It has been suggested that the migrations from France of the builders of the chambered cairns came by two routes: (1) by the English Channel to the east coast, Caithness, and the Orkneys; (2) by St George's Channel to Ireland, the west of England, including the region of the long barrows, the west of Scotland, Arran and the Hebrides.

It is generally acknowledged that the Early Neolithic culture was introduced by western members (often loosely termed "Iberians") of the Mediterranean race (p. 24), who spread all over our islands and still form an essential element in the existing population, but we must now admit that there were older peoples there before them, some of whom came from the south and possibly others from Central Europe, and therefore it is unsafe to regard the Pre-Celtic population of the British Islands as being purely Mediterranean. Perhaps we may recognise representatives of this race in the west of Scotland, the moorlands of Wales, Cornwall, Devon, Dorset, Bucks, Herts, Romney Marsh, the Fen country of eastern England, and largely in Ireland. The very tall dark mesocephals, c.i. 77.5, of south-western Scotland and the Denbighshire moorlands are worthy of a special investigation; they may be examples of the Atlanto-Mediterranean variety, or may have inheritance from an older type.

In Late Neolithic times a new culture appears to have been brought in by the Prospectors (p. 28). The type is said to occur in Cornwall, Devon and Wales. It is also found on the coast of Wicklow (and probably up the Boyne) as well as in Argyll and Inverness; this seems to be the "Old black breed" of the Shetlands, Outer Hebrides, West Caithness and East Sutherland. In the Bronze Age these folk appear to have connected West Britain and East Ireland with the Mediterranean.

Another, but perfectly distinct, group of brachycephals drifted into Britain before the close of the Neolithic Age. They were of short stature, not much over 1.600 m. (63 in.), c.i. about 84 or 85, skull broader than high, brow ridges slightly developed, face short and broad, cheek-bones and jaw not strong. They buried their dead in short cists, which are found in the west and north of Scotland, Glamorganshire and elsewhere. The skulls from the Aberdeen cists are exceptionally broad and the skeletons of short stature; this type seems to be closely related to the Furfooz-Grenelle type (p. 56) and to the Alpo-Carpathians in general. The relation of the arrival of these people with that of the Beaker-folk is obscure; they may have formed a part of the movement of the latter.

A third equally distinct brachycephalic people from the country to the east of the Upper Rhine invaded the east coast, probably at first while still in their Neolithic stage of culture. They were fairly tall, 1.7 m. (67 in.), muscular, the rather broad head (c.i. 80-84, the latter more frequent) had a flattened occiput; they had a fine, but often receding forehead, long face, rugged features, prominent brow ridges, strong nose of moderate width. If we may judge from their survivors, they often had fair hair and light eyes. As these were the people who introduced the beaker, or drinking-cup, into Britain, they are now often termed the Beaker-folk (p. 28). In their slightly later migrations they certainly had bronze implements; hence they were usually termed the "Bronze Age people," and also the "Round-barrow men," as they usually buried their important dead in round tumuli. It has also been termed the "Borreby type," from skeletal remains found in Denmark. They probably arrived about 2000 B.C. and by 1500 B.C. direct evidence of these brachycephalic invaders ceases. They were mainly pastoral, though they were acquainted with wheat; when they first landed they were without metals, but it must not be assumed that they were responsible for the first introduction of metal into this country. Their beakers and short stone funerary cists are found all along the east coast of Scotland and as far west as Argyll, East Bute and Arran. Further south they extend along the Humber to the Peak; they left traces on the chalk uplands

of East Anglia, on the North Downs, and an outlying branch seems to have landed in Hampshire and Dorset and made its way up to the Salisbury Downs and into Somerset. Their descendants can still be recognised in various parts of the country, especially perhaps in Yorkshire, Northumberland and Cumberland, and even in the Bala cleft of Merionethshire. The physical type is also known in the north and east of Ireland; a survival of the type appears to persist in some intellectual British families.

After the invasion of the Beaker-folk there was probably a long period of peaceful development, but towards the close of the Bronze Age the eastern and southern coasts of Britain were invaded by waves of peoples from Central Europe speaking a Celtic language of the Q-group and bringing with them leaf-shaped bronze swords and the elements of a new culture. These peoples may be regarded as mainly Alpines over-lorded by Nordics. About 1150 B.C. they seem to have landed for the most part in the Thames and by the Wash and subsequently in Wessex, but later waves went to Ireland, crossing Wales by the Upper Severn and the Bala cleft. Before 900 B.C. the Swiss lake-dwellings were destroyed and their inhabitants expelled by another group of peoples from further east who spoke the P-group of Celtic languages and were armed with long iron swords. The lake-dwellers, who had a late form of leaf-shaped bronze sword, were driven north and west; a great number landed at the mouth of the Thames and some sailed up as far as Reading. An important settlement was at Old England, where a pile village probably stood at the junction of the Brent and the Thames. Brachycephalic skulls which have been found there are of typical Swiss lake-dwelling type and quite distinct from those of the Beaker-folk. The immigrants advanced across England, where some of their predecessors were living, and settled at All Cannings and doubtless in other places in Wiltshire. They pushed into South Wales, making settlements on the open hills above Cardiff. Some of these, too, reached Ireland. There is no evidence that the men of the iron sword then entered Britain, though they pursued the refugees over a considerable part of France.

The more general use of iron in Britain about 450 B.C. has

been generally supposed, though on inadequate evidence, to have been introduced by tall stalwart mesocephalic invaders with fair or red hair who were Celtic-speaking peoples of the P-group coming from the Rhine area through Northern Gaul and bringing the La Tène culture. Originally in Central Europe, they appear to have been Nordics with a mixture of Alpines, but as time went on the Nordic element markedly preponderated. The last of these movements, perhaps the only one, was that of the Belgae; probably they arrived before 100 B.C. and occupied the north-east of Gaul and the south-east of Britain. Swarms of Celtic-speaking peoples overran the greater part of the British Islands and the Heroic Age of Ireland was characterised by the La Tène culture. The horse-breeding "Ancient Britons," with their war chariots and barbaric civilisation, who under such leaders as Caswallon (Cassivellaunus) and Boudicca (Boadicea) gave so much trouble to the Romans, were mainly of this stock. The Belgae and the other Brythons spread over the greater part of southern Britain and south-west Scotland, including the valley of the Clyde.

The Roman occupation of Britain probably did not materially alter its racial composition, though the colonies of Vandals and Burgundians which they established may have had some local effect.

Even before the Romans left Britain, Nordic and Nordic-Alpine peoples were arriving in small numbers. The Angles (whom strangers called Saxons) swarmed over from about 449 to about 850 A.D. Eventually they spread all over England and up to the base of the Grampians; but the north of Scotland, Strathclyde, parts of Wales, Devon and Cornwall were left unconquered by the Romans and therefore by the Anglo-Saxons. Huntingdonshire, Bedfordshire and Cambridgeshire have exclusively Saxon place-names and terminations. The Jutes colonised east Kent, the Isle of Wight and south Hampshire. The first Danish ships arrived in 787; a few years later they and other Norsemen came in numbers to the east coast of England, and by a hundred years later had established themselves firmly. Their main settlements were in Norfolk, Northamptonshire, Rutland, Yorkshire, and espe-

cially in Lincolnshire. The Norwegians landed about the end of the ninth century mainly on the northern and western coasts and islands of Scotland, Lancashire, the Lake District, Man, Pembrokeshire, and at various spots round Ireland. The Norman invasion resulted more particularly in the imposition of an aristocracy of Norwegian origin, which had mixed with the inhabitants of northern France, themselves largely of Nordic-Alpine origin, but they did not modify the physical type of England and Scotland. The finds of broad-heads in the ossuaries at Hythe, etc., may give us traces of followers of the Norman invaders during the centuries of close intercourse across the Channel.

Various other movements have taken place which have had but local effects, such as the infiltration of the south and east of England by French settlers, especially in towns. Flemings, on the whole Teutonic in blood as well as in speech, came in large numbers under William Rufus and Henry I, and settled *en masse* in the southern half of Pembrokeshire, in Gower and in the low country of Glamorgan. Later a number of Flemings settled in Scotland.

Certainly the most important immigrations into Britain since the thirteenth century have been those from France and the Low Countries. Most of these have been brought about by religious persecutions at home; but even before the Reformation, Flemings and Frisians had settled about Halifax. Subsequent arrivals were from Flanders, the Walloon provinces, Normandy and Languedoc. At Kendal the colony was Walloon, and Walloons were numerous at Norwich and Canterbury. The Huguenots, from the south of France, were an almost new element, important by their character and their knowledge of the arts rather than by their numbers.

Somewhat later a body of Germans, who from their previous location were probably of a mixed, rather broad-headed, type, were driven hither from the Palatinate by the cruel ravages of Louis XIV. Considerable numbers of them settled in villages in Munster, chiefly in the county of Limerick.

During the last two centuries the immigration has been chiefly that of Germans and German Jews who have settled in a few of the largest towns. There is evidence that in the last

hundred or two hundred years the average cephalic index of Londoners has risen from 77 to 79. This may be partly due to an influx of round-headed Slavs in addition to the elements just stated. The migration of Scots, Welsh and Irish into England has been, however, more important.

IRELAND

Owing to lack of systematic observations little can be said about the racial history of Ireland. The frequency of light eyes and of dark hair, the two often combined, is the leading characteristic of the population as a whole. Blonds are most numerous on and near the eastern coast and brunets towards the west. The skull inclines to be long, low and narrow, average C.I. 75, cheek-bones prominent, but the zygomatic arches are not much expanded, average stature tall, 1.703 m. (67 in.). Perhaps it will not be far wrong if one assumes that the composition of the population is analogous to that of western Britain.

ASIA

GENERAL CONSIDERATIONS

ASIA may be considered as the most important continent from the point of view of racial anthropology, if it be accepted that mankind first swarmed thence, but unfortunately no very ancient human remains have yet been found and our knowledge of the early history of existing races is extremely slight; from time immemorial there have been movements in various directions, often on a large scale, which have further seriously complicated the problem. Any attempt at the reconstruction of the racial history of Asia must necessarily be of the most tentative character.

The main features of Asia are great belts of country running east and west, consisting of the arctic shores, the tundra, steppes, and a forest belt on the higher land to the south. In the centre are two great series of plateaux: the western, which includes Iran, Armenia and Anatolia, and the eastern comprising Tibet, East Turkestan, the Gobi desert, North-west Mongolia, etc. In the south-west is the Mesopotamian plain with the desert of Arabia beyond. In the south is India, and east of this Further India, which is mainly a forested mountainous country, the ranges having on the whole a north-south direction; this mountainous region extends up into the southern half of China.

Each of these geographical features is characterised in general terms by groups of peoples living much the same kind of life and often mainly of the same race, and broadly speaking this has been the case for ages past.

The western steppe lands seem to have been the original home of fair (leucoderm) dolichocephals who may be termed Proto-Nordics. The western plateaux were the area of characterisation of leucoderm brachycephals. The lands to the south (Mesopotamia, Syria and Arabia) originally had a varied population of dolichocephals, some light-skinned, Mediterraneans and Semites, others dark-skinned, Hamites, but now the Semites preponderate. The ethnic history of Asia south of the Himalayas has on the whole been very different from

that of the other regions, as will be seen in the account of India. The eastern plateaux may be regarded as the differentiation area of the xanthoderms. The western Asiatic steppes are now the home of Turki peoples who in the east shade off into Tungus or "Mongols."

Both of these colour groups contain mesocephalic and brachycephalic races, but among the yellows the average cephalic index does not fall below 75.9, while in the whites the lowest average is 71.3; the nasal index of the former hardly ever falls below 70, whereas in the latter it never reaches 75; the stature of the leucoderms on the average never goes below 1.610 m. ($63\frac{1}{2}$ in.), while in the xanthoderms it may fall to 1.540 m. ($60\frac{1}{2}$ in.), but there is no difference between the average upper limit of certain races of both groups. The facial skeleton is also very different. In addition there are other characters, such as the hair, colour of the skin, the nose, eyes, etc., which differentiate these two main groups. In other words, the leucoderms in most respects resemble Europeans, of whom indeed their forebears were the ancestors, whereas the xanthoderms are popularly known as "Mongols" or "Mongoloid."

Without doubt both groups had a common ancestry in the most ancient human times, but local differentiation has resulted in certain readily distinguishable races of each group, which in most cases have become more and more specialised as time has gone on, so that now an Afghan, an Armenian and a Kalmuk are as dissimilar as three types could very well be. But it must be remembered that a long period of time probably was requisite for this marked differentiation and that in very early and in later times there were less specialised types, some of whom have found refuge in remote or unattractive localities. Intermediate types of this kind are very difficult to classify and they are frequently supposed to be due to racial mixture, but this need not necessarily be the case. Such types may occur not only within the leucoderms and xanthoderms, but possibly also between these two groups. On the other hand, it is certain that everywhere there has been a mixture of races, and thus it often becomes a very difficult matter how best to classify any given people.

Asiatic leucoderms are: I. Dolicho-mesocephals; II. Brachycephals.

I. (i) The *Indo-Afghanus* group is dolichocephalic, leptorrhine, and of medium to tall stature; their probable area of characterisation was between the Hindu Kush and the Sulaiman mountains, whence they spread into North India and possibly eastwards also. The chief members of this group are the Afghan Balti, Kashmiri, Kafir, Dardi, Rajput, Panjabi, Sikh, etc. The last three have narrower heads and taller statures than the first five.

(ii) A somewhat indefinite group, the *Irano-Mediterraneus*, has been recognised; it is mesocephalic, lepto-mesorrhine and from medium to very tall stature. It includes Persians in general, Azerbaijani of Persia and the Caucasus who are more or less crossed with Turks, Hajemi of Persia, Susians, Yesidi of Mesopotamia, ? Fellahin of Palestine, ? Samaritans, certain Jews, etc. There has been much mixture in this group: thus the Susians have the broadest nose, but this may be due to an alien ancient strain; the Samaritans have the narrowest heads and noses and tallest stature, but here there is generally believed to be a Nordic strain. There is no reason to doubt that there is a substratum of population in this group with a c.i. of about 76, a n.i. of about 61–63, and a stature of about 1.633 m. (64½ in.), which may very well be termed Mediterranean, as other characters conform to that type; these may be regarded as the laggard representatives of a group that mainly wandered westwards.

(iii) The *Indo-Iranus* is comprised of the Baluchi, Achakzai, Pani- and Kakar-Pathans, Tarin, Dehwar and Brahui, who are on the border-line between meso- and brachycephaly, c.i. 80–82.8, and lepto-mesorrhiny, n.i. 67.8–74.3; the stature is from medium to tall, 1.642–1.722 m. In all essentials they belong to the dolicho-mesocephalic series. This may be regarded as an intermediate or a mixed type.

II. (i) *Georgianus*, including the Grussini, Svani, Mingreli and Imeri. This type shows slight brachycephaly, c.i. 82.5–84.2, strong leptorrhiny and medium stature, 1.646–1.658 m.

(ii) *Armeno-Pamiriensis*, comprising (a) the Galcha, Tajik,

Wakhi (Pamirs and Kashgaria); (b) Armenians, brachycephalic Kurds, Lasi (Transcaucasia), Betash (Lycia), Ansariyeh (Antioch), Maronites (Syria), Kyzylbash (northern Mesopotamia), etc.; these are strongly brachycephalic, c.i. 84.1–89.5, leptorrhine, n.i. 62.6–72, with a tall stature, 1.660–1.707 m. [This group falls into two divisions which it seems preferable to keep quite distinct. (1) The Pamiri or Iranian (Galcha, Tajik, Wakhi) (p. 27) are strongly brachycephalic, c.i. 85, leptorrhine, n.i. 66.8–71.3, and medium to tall in stature, 1.669–1.689 m.; (2) the Armenian (Assyrian of some authors) (p. 27) have very high heads and a vertical occiput, c.i. 85–89.5, an extremely prominent and characteristic nose, and seem to be slightly taller.]]

Asiatic xanthoderms are: I. Mesocephals; II. Brachymesocephals; III. Brachycephals.

I. (i) *Protomorphus*: c.i. 75.9–80.8; n.i. 84–95; st. 1.550–1.635 m. Khasi, Bodo, Mande, Mishing, Arleng (Assam); Lissu (Yunnan), Lolo (Szechuan), Miao-tse, Lu-tse (Kwangsi); Formosans. Confined to Assam and South China. [It is probable that this group is more allied to the leucoderms than to the xanthoderms.]

(ii) *Palaearcticus* (in part): c.i. 78.3–80.8; n.i. 76.5–79.1; st. 1.545–1.601 m. Kamchadale, Karagasi (peoples of eastern Siberia and Kamchatka), Koryak, Tungus of Kolyma and Anadyr regions, Yukaghir, and the Obi Ostyak, northern Vogul of western Siberia. This group is distinguished by its platycephaly.

(iii) *Tibetanus* (in part): c.i. 76.8–81.6; n.i. 67.2–78.5; st. 1.570–1.669 m. Ladakhi; Eastern Tibetans; Kambu, Mangor, Gurung, Murmi (Nepal); Lepcha (Darjiling).

(iv) *Sinicus*: c.i. 79.3–80.2; n.i. 72.9–79; st. 1.612–1.676 m. Chinese.

II. (v) *Altaicus*: c.i. 79.5–82.7; n.i. 71.2–78.8; st. 1.598–1.626 m. Beltiri, Cacini, Coibali, Chisili, Melezki, Sagai, Yakut, Altai-Tatars, Lebedin of central Siberia.

(vi) *Nearcticus*: c.i. 80.8–82; n.i. 78.7; st. 1.623–1.625 m. Chukchi, of the extreme north-east of Asia.

III. (vii) *Meridionalis*: c.i. 82.7–85.5; n.i. 83.6–84.5; st.

1.559–1.649 m. Chakma (Rangamati), Burmans, Annamites, Laotians, Siamese. This group is confined to south-east Asia. (Burma to Annam).

(viii) *Palaearcticus* brachymorphus: c.i. 83–85.6; n.i. 76.3–78.1; st. 1.540–1.597 m. Samoyed, Western Tungus, Yenisei Ostyak, Tuba or Uriankhai, of central and western Siberia.

(ix) *Tibetanus* brachymorphus: c.i. 83.3–84.3; n.i. 71.7–74.1; st. 1.603–1.622 m. Changpa (Tibet), Limbu (Nepal).

(x) *Centralis*: c.i. 84.3–87; n.i. 71.7–80.5; st. 1.614–1.684 m. Manchu; Transbaikalia, Chamnegani and Southern Tungus; ? Kirghiz and Kara Kirghiz, Buriat, Torgod, Taranchi, Kal-muk, Telenget; Hazara (Afghanistan).

These data suggest that the less differentiated xanthoderms, so far as the cephalic index is concerned, spread or were pressed to marginal areas. The brachy-mesocephals expanded northwards and broke through the north-eastern border of mesocephals to find a home in the extreme north-east corner of the continent. The centre of Asia in the plateaux north of Tibet is the most brachycephalic area. Naturally the more energetic peoples have swarmed in various directions and thus have masked the more simple earlier distributions.

On turning to the nasal index we find that the only average platyrrhine index (85 +) among the xanthoderms occurs in Protomorphus, but only the Bodo (Assam) and the Miao-tse (Kwang si) have a n.i. of 88, and the Formosans and Mande (Assam) exceed 94. Some will regard this as a direct response to environment, others as evidence of mixture with an earlier population, natural selection having eliminated the narrower noses; as we have seen, this is the narrowest headed group. The distinctly mesorrhine (n.i. 85–70) races in descending order are: Meridionalis, Nearcticus, Palaearcticus (both groups). Those with a large proportion of narrower noses are: Sinicus, Altaicus, Centralis, Tibetanus (both groups), Nearcticus. Certain peoples such as the Manchu, Mongolo-Torgod, Kirghiz-Kazak (Centralis) and the Lepcha of Sikkim are leptorrhine (– 70). Thus there is a tendency to narrower noses in the north central region and north-east corner of Asia.

Palaearcticus (both groups) has the shortest stature, being

followed as might be expected by Protomorphus and Meridionalis. We may conclude that "*H. asiaticus*" is essentially of medium stature (1.58–1.68 m.), having only local tall groups, more particularly among Sinicus (North China, 1.676 and Chih-li, 1.674 m.) and Centralis (Kara Kirghiz, 1.676, Hazara of Afghanistan, 1.684 m.).

The foregoing arrangement is based mainly on the cephalic index, nasal index and stature, and I have borrowed it with modifications from Giuffrida-Ruggeri as it is an interesting attempt to reduce the chaos of Asiatic racial anthropology by adhering closely to anatomical data, but even so there are several unclassified groups. A consideration of other characters doubtless will lead to a modification of this scheme.

MOVEMENTS OF PEOPLES IN CENTRAL ASIA

In order to appreciate the difficulty of unravelling the affinities of the peoples of Central Asia it is necessary to have some conception, however slight, of the great movements of peoples that have taken place.

The first Central Asiatics, of whom we have any record and who formed an extensive political unit, were the Hiung nu of the Chinese, Hûna of Indian epics, and Fuoni or Uoni in Greek accounts; they probably were mixed Turki and Tungus peoples under "Mongol" leadership. These Huns formed a kingdom in Mongolia about 1200 B.C. and for many hundreds of years warred against the Chinese; when defending walls were built which rendered their further progress difficult they turned their attention elsewhere and dispersed the Sien-pi or Tungus to the highlands of Manchuria and Korea. The Huns hurled themselves against the Yueh-chi (Turki) of Kansu; these retreated in 177 B.C. to the basin of the Tarim and elsewhere. Later the bulk of the people, the Great Yueh-chi, migrated across the Tienshan and attacked the fair-haired, blue-eyed Usun or Wu-sun; next they encountered the Saka or Se (p. 112) who dwelt to the west of the Wu-sun and to the north of the river Naryn (Syr-darya) or Upper Jaxartes, and occupied their lands; about 140 B.C. the Hiung nu and the Usun drove them southwards to Sogdiana and Bactria.

The Hun empire broke up in the second century A.D. and

the Sien-pi took possession of the greater part of Mongolia. The Yuan-Yuan (Yen-Yen), a mixed people probably partly Sien-pi, attained to power at the close of the fourth century by the subjugation of the industrious tribes of the Altai and extended their influence over Mongolia as far as Korea. The term "Tatar" is said by some to be derived from the name of the second ruler of their empire. The Turks destroyed this empire about the middle of the sixth century and a great part of the Yuan-Yuan fled west, and the Avars who conquered Eastern Europe appear to have belonged to this stock.

The Uigur (Turki) were grouped into a less civilised northern branch, Toghuz Uigur of North-west Mongolia, whence they spread to the sources of the Yenesei, and a southern branch, On Uigur, in Eastern Turkestan, and were the first Turki nation that founded a relatively civilised state in Central Asia.

The Turks (Tu-kiu) are stated to have been a branch of the Aschin (Asona) Huns, who after their expulsion from Western China were in 439 A.D. allotted settlements by the Yuan-Yuan on the southern slopes of the Altai and by 552 had completely overthrown the Yuan-Yuan. The Turks then assumed the headship of the Central Asiatic nomads and turning westward they conquered Sogdiana from the descendants of the Yueh-chi and about 569 entered into diplomatic relations with Constantinople. Then they occupied East Turkestan. The Chinese subdued the eastern Turks in 630 and again extended their influence to Sogdiana, and by a coalition of Uigur and Chinese in 745 the eastern Turks almost disappeared from history. The western Turks felt strong enough in 620 to overthrow the suzerainty of Persia; shortly afterwards, the Khazars, a fragment of the Turkish nation, advanced into Eastern Europe. Not long afterwards the power of the western Turks was shattered by the combined assaults of the Chinese on the east and the Arabs, who had come through Persia, on the south.

Neighbours of the Toghuz-Uigur and belonging to the same stock were the Oghuz, who began their westward migrations about 780 A.D. and occupied Transoxiana, where

they are now represented by the Uzbeg of Bokhara and surrounding lands. They gradually spread over northern Irania, Asia Minor, Syria, the Caucasian and Russian steppes, and the Balkan Peninsula. In all these places they formed new ethnical combinations with the indigenous inhabitants, or with the Turki and Mongol peoples who also had migrated westward at various times.

In Central Asia the place of the Turks as the dominant people was taken by the nomad Uigur. Their chief opponents were Haka or Chih-li Kissé (presumably a Turki people), precursors of the Kirghiz in south-western Siberia, who with the Chinese shattered the Uigurian supremacy in 830.

Later in the tenth and eleventh centuries the nation of the Kara-Khitai, which was mainly of Tungusian stock, extended its rule from Manchuria over a large part of the steppes of Central Asia until the Mongols founded a new world empire in that region. The Mongols played an insignificant part in the earlier history of Central Asia; their original home lay apparently in the region of Lake Baikal, the former home of the Huns. The Mongol horde began to make a name for itself in Central Asia at the beginning of the twelfth century, and the great Mongolian empire for two centuries or more stretched from Central Russia to the Pacific.

WESTERN SIBERIA

Siberia west of the Yenisei is the home of the Finnic-speaking mesocephalic Palaearctics. South of the Samoyed the Ostyak extend from the northern part of the Tobolsk district to the mouth of the Ob and eastward as far as the Tomsk district and the Yenisei; the Vogul (Maniza or Suomi) live between the middle Ob from Berezov to Tobolsk and the Urals. Both have a preponderance of brown hair, the head is low and the face less long and the cheek-bones much less prominent than in the Samoyed; they are mesorrhine (Ostyak of Ob N.I. 76.5, Northern Vogul N.I. 79.1), and the epicanthic fold is very rare.

In the Upper Yenisei region, between Krasnoyarsk and Minusinsk, but nearer the former, hunters, whose stone implements were analogous to those of the later Mousterians

and Aurignacians of Western Europe, lived on the loess which was then beginning to be formed. The region of the Upper Yenisei north of the Syansk (Sayan) mountains was the region of an ancient culture which had its centre in the modern Minusinsk district. These old Yeniseians were agriculturists and worked gold, silver and bronze; they were ignorant of iron which came later with an influx of newcomers from the south. The condition of the Yenisei valley allowed the rise of the old Tuba peoples; later these same favourable conditions tempted the rude nomads of less hospitable Mongolia to fall on the Yeniseians and seize their land. About the third century B.C. the Turki Uigur (p. 31) arrived from the Chinese border of southern Mongolia and from the fourth to the eighth century A.D. their kingdom extended over the whole of northern Mongolia, and over the Yenisei regions as far north as the Chulim river; where they carried on the old civilisation. The Kirghiz tribe, a branch of the original Uigurs, rose to power in the Upper Yenisei basin and lasted till it was supplanted by the Mongols, and the civilisation disappeared. Some of the Yeniseians conquered by the Uigur fled to the depths of the forests where they now occur as Tuba (Uriankhai); the Russians usually term them Soiete, but they have nothing in common with the Soiete of central Siberia. Others went north and are now the Samoyed and the European Lapp. The Tuba are a mixed people with a range from almost pure Mongolic features to almost typical European; the reindeer-keeping clans are the least mongolised. The majority of the Yenisei Ostyak have brown hair and like other Yeniseians the head is platycephalic; they live on the Lower Yenisei between Lower Tunguska and the Stony Tunguska as far as Turukhansk. The Samoyed stretch some distance inland and along the coast and islands from Cheskaya Bay (Russia) across the Urals and as far east as Khatanga Bay between the Yenisei and the Lena; the northerly group is known as Yurak. The average N.I. of the Samoyed is 77; the epicanthic fold is lacking, though the eye usually has the Mongolian narrowness and obliquity. The stature of most of these Palae-arctics is on the border line of short and medium.

EASTERN SIBERIA

There seems to be no doubt that the Amerinds passed into their continent from north-east Asia. We shall see that in America there are, or have been, various races, some of them doubtless of great antiquity, for example the dolichocephalic Palaeo-Amerind. Thus all these races at one time or another must have occupied Siberia, and traces of them there might be expected to survive, but owing to more recent movements in Asia they are greatly obscured, if not obliterated, and the racial archaeology of Siberia has yet to be investigated.

It is reasonable to suppose that some of the earliest members of the northern group of Neanthropic man wandered afar at a time when they were still dolichocephalic and otherwise of undifferentiated type; we may regard them as being of the stock from which the Proto-Nordics sprang. We may also suppose that they were pushed further afield by dolichomesocephals and these in their turn by the earlier brachycephals. But doubtless in early times the yellow-skinned brachycephals were also drifting northwards as they have continued to do. If this be a correct surmise it is evident that the racial history of Siberia must be complicated, especially since there is only a sparse population over vast open areas—for even approximate racial purity can only be ensured by a relatively dense population or by isolation.

Widely spread throughout Siberia and extending beyond is the somewhat heterogeneous group of Palaearcticus (p. 30) which still exhibit a strong dolicho-mesocephalic strain, and we have no knowledge of an earlier occupation. Such are the Kamchadale, the Karagasi of northern Kamchatka, the Koryak still further north, the Tungus of the Kolyma and Anadyr regions and the Yukaghir from Chaun Bay to Yana Bay, c.i. 80.4, st. 1.56 m.

Somewhat later followed a low brachycephalic stock, who have been termed Nearcticus (p. 87), the Chukchi, who pushed to the extreme north-east of Asia. Tungus peoples extend from the Yenisei to the Pacific and from the Arctic to the Mongolian frontier. The Turki Yakut (p. 31) are recent (thirteenth century) intruders into Tungus territory; they live

between the Indigirka and the Yana, in the Upper Lena basin and eastwards to the Amur and the sea. In the east the Amur separates the Northern from the Southern Tungus; the maritime Tungus or Lamut extend along the shores of the Sea of Okhotsk. Among these eastern Tungus are the Olcha or Mangoon at the mouth of the Amur, the Orotsi between the Lower Amur and the sea, the Orochon, or Reindeer Tungus on the Olekma, a tributary of the Lena, the Gold on the Lower Amur and Ussuri, the Oroch on Eastern Sakhalin and adjacent mainland. The Gilyak of northernmost Sakhalin and the mainland north of the Amur estuary appear to have mixed with Ainu. The Buriat who extend east and west of Lake Baikal in Transbaikalia and Irkutsh are very heterogeneous.

MANCHURIA

The Manchu have now become largely modified by the Chinese, but they were once a dominant group. They are taller and slighter than most of the Tungus, st. 1.630 m. ($64\frac{1}{4}$ in.), brachycephalic, but with a tendency to mesocephaly, and have a narrow relatively high nose. It seems permissible to suspect an ancient dolicho-mesocephalic strain in the population.

KOREA

The modification of the Tungus type exhibited in the Manchu is intensified in the Koreans, who are slender, of medium stature, 1.615 m., c.i. 83.6; they have a long narrow and somewhat prognathous face, narrow nose, eyes with epicanthic fold and a long thin beard. It is stated that the upper classes and many southern Koreans have a tall stature, a fair and even white skin, hair often brown, full beard, light eyes and a large nose.

JAPAN

Japan was inhabited at one time, perhaps solely, by the gentle Ainu (p. 26, Pl. v), expert sea-fishers who claim to have exterminated a people called Koropokguru, "earth-

dwellers" or Koshito, "dwarfs," whose archaeological remains are found in very numerous shell-heaps, and possibly both groups were racially akin. The Ainu appear to have been driven eastward from a long stretch of coast south of the estuary of the Amur and now occupy the chain of islands from the Kurile to the Riu-Kiu islands, though it is possible that at that remote time these islands were connected with the mainland. They undoubtedly are the relics of an eastward movement of an ancient mesocephalic group of white cymotrichi who have not left any other representatives in Asia, though travellers often refer to the resemblance of the Ainu to the Russian mujik; certainly in the eye, skin and hair they approach the European. By immigrant peoples they have been pressed to the north and are now found in Yezo and Sakhalin, though in places the Japanese show undoubted Ainu mixture.

The Japanese in general have: c.i. 78, n.i. 72.9, st. 1.585 m. or less. Two characteristic types can be distinguished: (1) the "coarse type" of Pareoan (p. 32) (? Proto-Malay) immigrants, which is short, thick-set, with a broad face, short concave nose with rounded nostrils, an oblique eye and epicanthic fold very common, and a dark complexion; (2) the "fine type" or "Daimyo type," which is taller, slender, with an elongated face, prominent narrow arched nose, eyes either straight or oblique, and the epicanthic fold rarely wanting, and a lighter complexion. This has been termed the Korean-Manchurian type.

ARABIA

Arabia is the homeland of the Semites (p. 23, Pl. iv) but the evidence seems clear for an ancient Hamitic population, at all events in South Arabia, which still persists along the south and south-west coasts, as for example the Tihama Arabs of the southern Red Sea littoral; the Arabs of the south-west mountains are often nearly white in skin and with almost European features. There is also a brachycephalic element in South Arabia which evidently is due to an unidentified migration of western brachycephals, either Pamiri or Armenoid.

ASIA MINOR AND THE COUNTRIES TO THE SOUTH

It seems reasonable to suppose that the coastal areas at least of Asia Minor and the southern lowlands primitively were occupied by Mediterraneans or a kindred stock; at all events from the dawn of history they have been there.

The plateaux of Anatolia and Armenia, undoubtedly in Neolithic times, were held by western brachycephals; possibly the shorter variety was the older, which gave place to the taller (Armenoid) variety. The latter, as Hittites, were already powerful enough to sack Babylon and overthrow the dynasty of Hammurabi about 1926 B.C.; they also had settlements in southern Syria on the frontiers of Egypt. There is evidence that the Hittites were not a thoroughly homogeneous people and doubtless had been influenced by Proto-Nordics long before this period, or by other brachycephals associated with Proto-Nordics.

Kurdistán is a mountainous territory to the south-east of the Armenian mountains, but the Kurds are scattered in other neighbouring regions. The western Kurds are dolichocephalic, c.i. 75, more than half of them are fair with blue eyes, the heads becoming shorter and larger, and the hair and eyes darker with increasing intermixture of Turki or Armenian blood; the eastern Kurds show a much higher percentage of darker and rounder-headed men and are much uglier. The Kurds may safely be regarded as descendants of Proto-Nordic steppe-folk who have maintained their type in part and their language for more than 3300 years.

Syria and Palestine seem to have been inhabited by various peoples in very early times, for Canaan was said to be the servant of both Shem and Japheth; the latter was favourably recognised as the protégé of Shem. A plausible suggestion has been made that Japheth means "fair."

Probably the first Semitic invasion (the Akkadian) embraced Syria and Palestine towards the beginning of the fourth millennium B.C. A second wave of Semitic migration, which is generally known as the Canaanitic, spread from Arabia northwards and westwards, about the middle of the

third millennium. These Semitic movements may have had some bearing on that element of the Phoenicians which, according to Herodotus, migrated from the Persian Gulf to the Syrian coast, where they had established themselves by about 2000 B.C. A late phase of these movements possibly had some connection with the domination of Lower Egypt about 1675 by the mainly Semitic Hyksos who appear to have been dislodged from Syria or from further east by advancing Kassites and Mitanni; probably a period of drought coincided with this unrest. The third Semitic invasion (the Aramaean) began about 1350 B.C. and brought the Hebrew and related peoples (Edom, Moab, and Ammon) and filled up as far as the Taurus mountains. A millennium later a fourth invasion is supposed to have brought the Nabataeans and others. All theories of this sort, while in accordance with many facts, give too schematic a view of the movements.

A potent ferment was introduced when about 750 B.C. the Kimmerians (Gimirrai) and Scythians came from the east. Sargon repelled them with effort in 720 and they retired westward into Asia Minor where they established a reign of terror; they disappeared at the end of the seventh century. It has been stated that Kimmerians, Mandas, Medes, with their modern Kurd and Bakhtiari representatives, were all one people, who were almost certainly of Aryan speech. At all events they were essentially Proto-Nordics.

The Turkish dominance of the Oxus region in the middle of the sixth century A.D. resulted in a westward migration of Turki tribes across northern Persia into Asia Minor. The Seljuk Turks effected a permanent occupation of that region in the latter part of the eleventh century and this was followed by the dominance of the Osmanli Turks who after Orkhan's death in 1359 spread to the Balkan Peninsula. Hordes of Turkoman nomads followed the Turks and in succeeding centuries other Turkomans, Afshars and Kurds followed. It must be remembered that the term Turk in Asia Minor and in Europe does not now necessarily imply Turki origin, as it is applied to individuals of other races who at various periods have been converted, forcibly or otherwise, to Islam.

Stone implements of Lower and Middle Palaeolithic types

are known from Palestine, but no human remains have been found. The Capsian culture may be regarded as characteristic of Neanthropic men of the same general type as the Ethiopian or Hamite, the microlithic terminal phase being probably more distinctive of the Mediterranean race. It seems probable that the cultural evolution of the Neolithic period was due to a brachycephalic people and we are on more sure ground as regards a knowledge of metals, cattle breeding and plough culture, since the evidence points to a spread of this culture from western Asia to Europe and Egypt, and thence to Africa. The suggestion has been made that in nearer Asia the population was first mainly a Mediterranean hunting folk, then a brachycephalic people (Campignian people of Palestine, etc.) introduced agriculture, and then about 5000 B.C. there pushed in from Elam another brachycephalic people of a higher culture and familiar with metal-working. Towards the end of 5000 B.C. there was a general culture as shown at Elam, Eridu, Anau, Korassam and Seistan (Afghanistan). The beginnings of copper in Elam must have been about this time, the type of the associated pottery can be traced to Anau, South Russia (Tripolje), to Rumania and Thessaly, and may be connected with the Minoan culture.

The Semitic element does not come on the scene till about the end of 5000 B.C. The Semites (p. 23) form one of a group of peoples of which the Hamite (p. 21) is at one extreme and the Mediterranean at the other. From Arabia they pressed in the fifth millennium over Sinai and Palestine to Mesopotamia; these may be the Akkadians and Canaanites. It is generally supposed that the Amorites had a Nordic origin, but opinion is divided whether they came more or less directly from the steppe region or whether they came round by western Europe, the Iberian Peninsula and along North Africa. According to the latter view they, as Tehennu (Temhu, Tuimah) coming from the west, appear to have overthrown the sixth dynasty of Egypt about 2475 B.C. but were expelled at the beginning of the tenth, and further that as Amorites they are found east of the Jordan in the first half of the third millennium. They turned at the Taurus and went southwards to Akkad, which they conquered about 2225 or 2057 B.C.; this

diversion was due to pressure from another folk movement, the Kassite, coming from the east.

The Canaanites are usually regarded as mainly, if not entirely, of Northern Semitic origin, but our knowledge of the racial history of the region is so very imperfect that it is unsafe to make any definite statement concerning their racial constitution. The later Syrians are probably considerably mixed.

The Abrahamic family were a tribe of Mesopotamian Semites, probably identical with the Ibri, whom the Egyptians knew as Habiru, *i.e.* nomadic Semites equivalent to the Bedawin; they entered the land of Goshen during the period of the Hyksos domination and left the country at the time of the expulsion of their patrons (1575 B.C.) or shortly afterwards. On their return to Palestine they met, conquered and amalgamated with the Amorites and Hittites. The monuments, as well as philological evidence, show that the former were Semites, in appearance not to be distinguished from the Habiru. The Hittites were a people whose governing class at least were entirely different from both and are to-day represented by the Armenians. Later the Israelites, now a mixed people of Semitic and Armenoid origin, took into their midst a third stock, the Philistines, a typical Mediterranean race. The rounded Armenoid type of face is dominant to the other two. However, when an Armenoid Jew is mated with a western European the latter type is dominant.

The Jewish people to-day are grouped into two stocks, the Ashkenazic and the Sephardic. The first comprises the Jews of Russia, Central Europe, Western Europe, and England; the latter is made up of the Spanish and Portuguese Jews, and the Jews of Asia Minor, Egypt and Arabia. Both groups derive directly from the common source in Palestine and Mesopotamia, and, taking different paths in the Diaspora, met with different fates, but they both exhibit the peculiar Jewish expression, though the latter resemble more closely the southern European peoples and they are known to have absorbed Moorish and Iberian blood, whereas the Ashkenazim can show a far cleaner bill.

The fair hair and fair skin so frequently seen amongst Jews have been imputed to Nordic intermixture, but this would seem

to be an unnecessary deduction, especially since the Kohanin, who have had pure Jewish descent during the last 2000 years, exhibit every phase of Jewish bodily form.

It has been stated that the Amorites were a fair race; the evidence on which this statement is based, viz. the frescoes in the tombs at Abu-Simbel, certainly suggests that they were lighter-skinned than the Egyptians, whilst some at least are represented as having blue eyes and red beards. It is interesting to note that amongst the Samaritans of to-day, red hair, fair complexion and blue eyes are extremely common, although there is no reason to believe that there has been at any time any massive inclusion of Nordic blood into this jealously isolated group of people. On the other hand, they are more likely to represent the original population of the Kingdom of Northern Israel, so that we may conclude that the source from which they obtained their fair hair and skin, whether Amorite or not, was common with that from which the Jews of to-day received theirs.

MESOPOTAMIA

The area of the great plains extending from the southern slopes of the Armenian plateau to the Persian Gulf and the slopes of the Zagros mountains and Susa in Elam belong to the same cultural area; this has had a very chequered history. In the most southern portion, Sumer, were numerous ancient cities: Kish, Erech, Ur, Eridu, Nippur, etc; to the north in Akkad were Babylon, Sippar, etc.

There is reason to believe that a great prehistoric civilisation spread from Central Asia to the plateau of Iran and to Syria and Egypt long before 4000 B.C., and that the Sumerians, who were a somewhat later branch of this Central Asian people, entered Mesopotamia before 5000. A new civilisation appeared at Susa about 4000.

The Akkadian culture is usually considered as a mixture of a Semitic and an older Sumerian factor, but the latter was itself composite since its bearers consisted of a very dolichocephalic type with a strongly projecting occiput, finely cut face, straight narrow nose, fine lips and bearded—this may be regarded as Mediterranean or Semitic; and a second, pre-

sumably later type, which was brachycephalic, often with prominent cheek-bones and oblique eyes; they shaved the head and face. On these types were superimposed an Armenoid (Hittite) type with a vertical occiput and large prominent hooked nose which gives the face a bird-like appearance, also with a shaved beard; these people made painted pottery and spread the knowledge of metal-working.

The Semitic influence was making itself felt in the fourth millennium and was more strongly felt in Akkad than in Sumer, and it was in the north that the first Semitic empire, that of Sargon, arose about 2872, when Akkad and Sumer were united, but Semitic overlordship was probably dominant in Kish about 3638. The Sumerians later rose to power and their empire included Sumer, Akkad, Elam, Subartu (Northern Mesopotamia) and Amurru (Cappadocia), but the Semites prevailed again and Hammurabi succeeded to the throne of Babylon in 2123. His dynasty was overthrown by the Hittites about 1926.

The derelict kingdom was pounced upon by the Kassites, mountaineers of the Pushti Kuh; their first incursion was about 2072 and Babylon was conquered about 1746 and retained till about 1169. The Kassites, who appear to be identical with the Cossaei of later times, a people settled between Babylon and Media, are of unknown origin. They were the foremost tribe of a great movement of peoples occasioned by the expansion of "Aryans" in Bactria and Eastern Iran between 2300 and 2000 B.C. The Kassites were possibly a mixed multitude with Proto-Nordic leadership; they introduced the horse into Mesopotamia.

The establishment of the Kassite power in Babylonia was contemporary with great movements in the west. The Hyksos invaded Egypt, Hittite influence was felt far south (Jerusalem, etc.), and the Mitanni appeared in the north. The Hyksos, who may have been largely Syrian Semites, were greatly aided in their conquest of Egypt by their war-chariots, and they first brought the horse to Egypt; they were driven out of Egypt about 1575.

The southward movement of the "Aryans," in the twenty-second or twenty-first century B.C., from the plains about the

Oxus, cut off the jade and other trade between Khotan and West Asia, and the conquest of Mitanni separated Babylon from Syria, thus deflecting trade to the Red Sea route. The Mitanni, who were probably Armenoids and certainly not "Aryans," occupied the country about the Belikh and Khabur, tributaries of the Euphrates, but they were dominated by an aristocracy of horse-riding Kharri (? Aryans), who had an "Aryan" theology, the differentiation however between Indian and Iranian Aryans had not yet taken place; they doubtless came by way of Azerbaijan.

The later history of the region consisted mainly in rearrangements of the peoples, or at all events of the racial stocks, already there. The Medes and the Persians repeated more or less the story of the Kassites, but may have brought in Iranian blood as well as Proto-Nordic. At times there were reinforcements of Turki elements, but the great factor always has been the power of absorption shown by the Semitic element.

PERSIA

Apart from intrusive Kurds, Arabs, Armenians and smaller groups there are two large ethnical groups in Persia, the settled Tajik, the old type which is preserved in the Parsi who migrated to India in A.D. 640, and the Persians. The lowland Tajik are more mixed and have a tendency to be fairer than the Hill Tajik or Galcha. These may be regarded as the original inhabitants, but in Susiana there are traces of a dark-skinned population who, from the monuments, indicate a Pre-Dravidian, or possibly a Ulotrichous stock. From the Eurasian steppes came Proto-Nordics, who became known in history as Medes and Persians, but Semitic (Arab) migrations have modified the type of the Persian as did incursions of Turki tribes. Two groups of Persians are recognisable: (1) the slender dolichocephalic Farsi about Persepolis, who are fair in skin, with abundant hair and beard of a dark chestnut colour, real blonds with blue eyes are rare; these appear to be largely Proto-Nordic; (2) the Lori, who are taller, much darker, and often with black hair, are very dolichocephalic, with oval face and regular features, and would seem to belong

to a branch of the Mediterranean race or to a race very similar to it. The Ihlát are Turkoman, but long-continued inter-marriage has produced a great many mixed types, such as the Kajar.

AFGHANISTAN AND BALUCHISTAN

Afghanistan is essentially the homeland of the Indo-Afghan race (p. 22), but in the north, the ancient Paropamisus, are the tall Hazara, C.I. 85, N.I. 80.5; as the Pamiri (p. 27) have a leptorrhine nose, these distinctly mesorrhine people must be regarded as of "Mongol" stock, as indeed their features proclaim; they are said to have been placed there by Genghis Khan in the first quarter of the thirteenth century. Among other tribes may be mentioned the Afridi (Haparytae of Herodotus), who originally occupied the whole of the Sufed Khoh range and adjacent country; at an early period it was encroached on by Turki tribes. The Tajik are widely spread. The term Pathán is wrongly applied to various tribes, it really applies to the Pukhtún.

The Baluchi (Baloch) are generally regarded as akin to the Afghan, but the latter is essentially dolichocephalic, whereas the former are on the border-line of meso- and brachycephaly, and so it may be advisable to call their type Indo-Iranus (p. 86). The puzzling Brahui speak a Dravidian type of language, but from their physical measurements and appearance they are Baluchi: Brahui of Sarawán, C.I. 81.5, N.I. 70.9, st. 1.659 m. The Chuta and Bandiya have even a stronger grade of brachycephaly than the Hazara, but their nasal indices respectively are 58 and 58.9, or markedly leptorrhine; they therefore are of Pamiri stock.

WESTERN TURKESTAN AND THE PAMIRS

The Duab of Turkestan is the country between the Amu-darya (Oxus) and Syr-darya (Jaxartes), and runs up into the Pamirs. The bulk of the population consists of the settled so-called Sarts, a mongrel people with Uzbek, Kirghiz, Tajik and other elements. The nomad Kirghiz are well represented. Pure Uzbek are few in number and form a kind of racial aristocracy. The Turkoman, who occupy the territory between

the Duab and the Caspian, just extend into the Duab. The Tajik are mixed but have preserved themselves more or less from the last (Uzbek) invasion. In the mountains are the Galcha, the purest of the Pamiri; a pure and ancient type of Jew is common in the towns. Representatives of various Central Asiatic tribes and Gipsies are also found.

The population of the Pamirs is mainly Pamiri. The Pathan or Kafir has a distinct Indo-Afghan strain and the Chitrali have a closer relationship with an Indo-Afghan people (though a rather specialised one) than the other Pamir tribes. The closely-allied Dardi differ from the Kafir to a greater degree than do the Chitrali; they are very different from the Kirghiz.

CHINESE TURKESTAN

The northern part of Chinese Turkestan is inhabited by the Taranchi and Torgod who are generally classed as "Mongols" or Kalmuk (Centralis race, pp. 31, 88). In the north-west at Uch-turfan are Kirghiz, and east of them is Ak-su, where the Turki element prevails. The basis of the population of the Takla-makan desert is Pamiri (p. 27), as probably was that of the cities now buried with sand. There seems to be some common bond between the peoples of the desert and those of Northern Tibet; probably the Pamiri element has penetrated into the latter region, though there may be a slight Tibetan (modified Mongolian) influence upon the Desert peoples, as in the oases of Khotan and Keriya. In these two oases there is also an admixture of Turki blood. In the east Chinese influence begins to make itself felt, but only over a very restricted area, as in the oasis of Keriya.

TIBET

The population of Tibet has been grouped into (1) the Bod-pa, the settled and more civilised section of the southern and more fertile provinces; (2) the Dru-pa, peaceful, semi-nomadic pastoral tribes on the northern plateaux; (3) the Tangut predatory tribes of the north-eastern borderland between Koko-nor and Kansu. It has long been recognised that there are two main racial elements in Tibet, one to which the general term Pareocean (p. 32) is applied and to which the

Bod-pa belong, and the other is described as long-headed, with nearly regular features, long, fairly well-shaped nose with a good bridge. Skulls from the eastern province of Kham, which evidently belong to this element, are described as dolicho-mesocephalic, broad-faced, rugged and massive. They differ from the southern dolichocephals of South Asia and evidently represent an ancient stock, affinities to which may be looked for in other marginal areas; they may indeed have been the first inhabitants of Tibet.

CHINA

Palaeolithic implements have not yet been found in China, but Neolithic implements occur in Mongolia, Manchuria and China. A rich Late Neolithic culture has recently been discovered at Yang Shao and at Sha Kuo Tán in Honan province (North-east China), and in Kansu (North-west China); it may be dated at about 2000–1500 B.C. In the latter region copper implements indicate an Aeneolithic (Chalcolithic) Age, and the conventionalised painted pottery bears a close resemblance to that from pre-Sumerian Babylonia (before 3500 B.C.), the eastern borders of Persia, Anau I (at latest about 2000 B.C.), Asia Minor (2500 to 2000 B.C.), Tripolje I and Thessaly. This Yang Shao culture (as it is termed) was that of a civilised agricultural people and we may regard it as the eastern expansion of a great prehistoric civilisation that spread from Central Asia to the plateau of Iran and to Syria and Egypt long before 4000 B.C. (p. 100). No information has as yet been published concerning the bearers of this Proto-Chinese culture.

In South and Western China are the scattered remains of earlier peoples. The Lolo (Nosu) live in the more inaccessible mountains in Western China on both sides of the Yang-tse in the provinces of Szechuan and Yunnan, but formerly in Hunan; they have c.i. about 77, n.i. 85, and a medium stature, but some Lolo, the true Nosu, are very tall (Lissu of Yunnan, c.i. 75.5); apparently allied to these are the Man-tse of Yunnan and Szechuan, as are the very tall Mo-so of the Li-Kiang plain in North Yunnan, but they are now much mixed. All are described as having oval faces, small cheek-bones, a

straight, fairly prominent nose, eyes straight without the epicanthic fold and a fair skin, not yellowish but brownish or swarthy like southern Europeans; hair sometimes decidedly wavy and with a tendency to chestnut in colour; on the whole they are dolichocephalic, sometimes extremely so. Tentatively we may regard them as belonging either to the same stock as the Nēsiōts, or to an allied one. The numerous tribes of Miao-tse (C.I. 80·6, N.I. 88, st. 1·550 m.) of Kwangsi, who live in scattered communities in the southern provinces, are supposed to be related to the Siamese and Burmese, as also may be the Hakka of Kwangtung, although they are said to have migrated from the northern province of Chih-li.

The primitive country of the civilised agricultural Chinese (doubtfully about 2200 B.C.) was the north of the province of Kansu, whence they gradually spread and in the seventh century B.C. they scarcely extended beyond the valley of the Lower Yang-tse on the south and that of the Pei-ho on the north. Eventually they occupied the countries of the original inhabitants. Central Asiatic tribes, Turki, Tungus, Mongols, and Manchu, invaded North China at various times and modified the Chinese type (p. 30, Pl. VI). Thus the northern Chinese are said to be taller, with a tendency to mesocephaly; indeed a Khams Tibetan element has been noted, the face is longer and the skin lighter. In the south a Pareoean element has darkened the skin, broadened the head and shortened the stature. A Shan origin has been attributed to the Cantonese, anyhow an invasion to Kwangtung by the Tai took place some six centuries ago; these Punti now form a very large part of the population of the four southern Chinese provinces (Yunnan, Kuei-chow, Kwangsi and Kwangtung), and they held their own against the Hakka.

INDIA

India consists of three main geographical regions: the Himalayas, the northern plains or Hindustan, and the southern, often jungle-covered, plateau, the Deccan; and roughly this grouping is reflected in the population, but, even yet, the racial history of India is not thoroughly known.

I. DECCAN

A Negroid element has been suspected in the Deccan, as for example among the Kadir (p. 20), but it has not been definitely established. The Andamanese (p. 16) in the Bay of Bengal are, however, true Negrito.

In the jungles of the Deccan are to be found primitive types of very low culture, which may conveniently be grouped as Pre-Dravidians (p. 20), who form the oldest population of whom we have any knowledge. There is very good reason to believe that this group of peoples formerly extended over the greater part of India and some seem to have acquired a certain degree of higher culture. They are all dolichocephalic, of short stature, 1.575 m. (62 in.) or less, and have a very dark skin and black hair that varies from wavy to very curly. Amongst other tribes which might be mentioned the following are ranged according to their nasal index: Paniyan 95.1, Kadir 89.8, Kurumba 88.8, Mala Vedan and Irula 85, Kanihar 84.6. The Vedda of Ceylon are mesorrhine.

The platyrrhiny of this stock is so marked that where this character is exhibited in other peoples we may suspect that they have a more or less Pre-Dravidian origin; thus this character has permeated throughout most of the lower caste Dravidians and even some Brahmans are not free from it. On the other hand, mixture with Dravidians has modified the features of some of the aborigines; for example, the Kuruba of Mysore Province and the adjacent Bellary district appear to have belonged originally to the great Kurumba stock, but their much narrower noses, N.I. 73.2, and their higher stature, 1.639 m. ($64\frac{1}{2}$ in.), prove that the Kuruba of Mysore have mixed with Dravidians. Also to be grouped here are: the Bhil who inhabit parts of Rajputana, Kathiawar, Indore and of the northern Bombay Presidency (Bhil of Mewar, Rajputana, N.I. 84.1, st. 1.629 m., Bhil of Khandesh, N.I. 94.8, st. 1.649 m.), probably also the Gond of the Satpura plateau of the Central Provinces and the closely allied Kandh or Khond of the inaccessible mass of hill ranges of the Bastar and Kanker States and a great part of Chanda, and also the lower castes of the United Provinces and Behar.

The puzzling Kolarians speak Munda languages allied to the Mon Khmer group of the Austric linguistic family, but in the Mundari vocabulary there are numerous undoubted and probable Sanskrit words, and it has been suggested that the civilised Asur of Munda tradition may be the Pre-Aryan Asura who contested the valley of the Five Rivers, of the Ganges and Jumna against the "Aryan" immigrants, as related in the Rig-Veda, and that they spoke an early form of Sanskrit or allied language. According to this view, the Asura were a primitive leucoderm people who absorbed an indigenous melanoderm race (the Nishāda of ancient Sanskrit literature), and developed a civilisation of their own. Being finally worsted by the "Aryans" a section retreated to Chota Nagpur and were finally overpowered and absorbed by intrusive short-statured Pre-Dravidian hordes coming from the south. Another view is that the Austric-speaking ancestors of the Kolarians came from the east and mixed with the aboriginal Pre-Dravidians, and it was with this hybrid group that the "Aryan" invaders came into contact and not with the Dravidians who then were far to the south.

From a racial point of view the Kolarians can only be placed in the Pre-Dravidian group. They have a dark brown, almost black skin, coarse black hair inclined to be curly and scanty beard, low medium stature, usually 1.577–1.614 m. (62–63½ in.) (but the Ho are tall, 1.68 m., and the Juang are short, 1.57 m.), and sturdy limbs. They are dolichocephalic, c.i. 74.5–76, with a low narrow forehead, irregular features, thick lips, eyes often bright and full and not oblique, and the nose broad and flat (N.I. Korwa 92.5, Munda 89.9, Kharwar 89.7, Santal 88.8, Bumij 86.5); thus all are platyrrhine. In spite of the foregoing there is something in the facial appearance of many Kolarians which enables an observer to pick out a typical inhabitant of Chota Nagpur from a crowd of southern Dravidians, and among some (Munda, etc.) there is often a reminiscence of Mongoloid traits. The Oraon, who call themselves Kurukh, of Chota Nagpur are physically Pre-Dravidian; they speak a Dravidian language closely allied to Canarese and according to their traditions they came from the Karnatic (Coromandel coast), c.i. 75.4, N.I. 86.1, st.

1·621 m. The Male and Mal Paharia of the Rajmahal hills (Santal Parganas) are closely allied to the Oraon; Male, N.I. 94·5.

The general characteristics of the Dravidians or Dravida are given on p. 21; as a rule there is little or no hair on the face and limbs. The Dravidians are usually confounded with the Pre-Dravidians. The name Dravidian is the Anglicised form of Drâvida and is employed to include peoples speaking Tamil, Malayalam, Canarese, Telugu and kindred languages; apparently Sanskrit writers used the term Drâvida desa for the country of the Malayalam and Tamil regions as opposed to Andra desa for the Telugu country. Apart from language there is a general culture which is characteristic of these peoples, and after the elimination of the Pre-Dravidians a racial type emerges with finer features than those of the aborigines, and the conclusion seems evident that this was due to an immigrant people who reached India before 2000 B.C. There are two views respecting this hypothetical invasion; the one is that these people came overland, the Brahui (p. 103) marking their route, the other is that they arrived by sea. Apart from the dark colour of the skin there are many points of resemblance between the Dravidian and Mediterranean peoples which point to an ancient connection between the two, perhaps due to a common origin.

Speaking generally, certain groups in, and the higher castes of, South India exhibit what are taken to be the original Dravidian characters; the lowest castes and the out-castes are predominantly Pre-Dravidian, and the intermediate castes show various degrees of mixture. The following may be taken as representative groups. The Tiyan and Izhuvar, the middle class of the west coast (Malabar, Cochin and Travancore), who are stated to have come from Ceylon, C.I. 73, N.I. 74·2, st. 1·642 m. The Nayar form the bulk of the Sudra population of Malabar and are mixed with Nambutiri, C.I. 73·1, N.I. 76·8, st. 1·656 m. The Vellala are the great cultivating caste and take front rank among Tamil Sudra castes, C.I. 74·1, N.I. 73·1, st. 1·624 m. Deshastha Brahman of Bellary, N.I. 75·8, poor Tamil Brahman 76·7. The Badaga of the Nilgiris are essentially agriculturists who are doubtless descended

from Canarese Hindu colonists from Mysore, c.i. 71·7, n.i. 75·6, st. 1·641 m.

On the Nilgiris are the anomalous Toda who have a rich brown colour, lighter than most of the Dravidians of South India; the women are lighter than the men; the men have thick beards and much hair on the body, the nose straight and prominent, c.i. 73·3, n.i. 74·9, tall stature, 1·698 m. (nearly 67 in.). There seems to be some connection between them and the Nambutiri, the hairiest of all the Malabar people, c.i. 76·3, n.i. 75·5, st. 1·623 m., notwithstanding their very different mode of life. The Nambutiri Brahmans are said to have migrated from the north as late as the fourth or fifth century of our era.

Usually classed with Dravidians are the Shanan or Shanar palmyra toddy-drawers of the Tinnevely district, c.i. 80·7, n.i. 74·4, who, like the Tiyan and Izhuvan, are said to have come from Ceylon; they have coarse black straight hair, a wide face and heavy features. The Pariyan occur in the Tamil districts from North Arcot to Tinnevely and were once an important people; those at Tuticorin have c.i. 80 and n.i. 77·9. The Parava, fishermen of the Tinnevely coast, have c.i. 70·8–92·5, av. 79·4, n.i. 61·4–95·1, av. 77·7; according to their traditions they were immigrants. It is a question whether this brachycephalic element is the same as that which will now be considered, or whether it belongs to another stock; provisionally they may be termed the Southern Brachycephals.

A zone of relatively broad-headed people, the Western Brachycephals, extends from Gujarat to Coorg along the western coastal area of India. The following are examples: Nagar Brahman of Ahmadabad (Gujarat), c.i. 71–90, av. 79·7, n.i. 73·1; the Prabhu, c.i. 70–89, av. 79·9, n.i. 75·8—these chiefly reside in the districts around Bombay City and Poona, but originally they came from Oudh and probably the Gupta dynasty belonged to this stock; Maratha or Mah-ratta of the Bombay Deccan, Marathi Gati, c.i. 69–89, av. 78·3, n.i. 80·1; Sukun Sale Maratha, c.i. 73·9–90, av. 82·2, n.i. 74; Canarese and Maratha of Madras Presidency, c.i. 79. The Coorg or Kodaga in the extreme south of the Bombay Presidency, c.i. 74–89, av. 79·9, n.i. 72·1, are of tall stature,

1.687 m. ($66\frac{1}{2}$ in.); they have a light brown skin and straight hair, their almost leptorrhine nasal index is less than that of nearly all South Indian tribes.

In this group of peoples it is evident that there has been a mixture with a strongly brachycephalic stock which must have belonged to the Eurasiatic group, since there is no trace whatever of "Mongolian" characters; the type appears to have been of medium stature, with a narrow mesorrhine nose and not particularly dark in colour. There is no evidence to suggest when this immigration took place, nor do we know whether it arrived by land or by sea. Neither do we know whether the immigrants were a relatively pure or a mixed people. These people have been termed Scytho-Dravidian, on the assumption that "Scythians" found their progress eastward blocked by "Indo-Aryans" and so turned south, but there seems to be no satisfactory evidence for this theory and none of the "Scythians" appear to have belonged to the required type.

CEYLON

Ceylon is merely a dismembered part of South India. The oldest inhabitants are the Vedda, the more pure of which are described on p. 20; the coastal and mixed Vedda average 43-55 mm. ($1\frac{3}{4}$ - $2\frac{1}{4}$ in.) taller and have broader heads. They speak a modified Sinhali. The Tamil occupy the northern half of the island and are the same as those on the mainland, C.I. 76.3 (cranial I. 70.8), st. 1.653 m. The Rhodia, dolichocephalic, N.I. 81.3, st. 1.689 m., form a distinct group. The Sinhalese speak an Aryan language and have some traits in common with the Indo-Afghan, but have been modified by the Vedda, C.I. 78.8 (cranial I. 72.5), N.I. 74.9, st. 1.625 m., nose often convex.

II. HINDUSTAN

It is usually stated that the physical type of the population of the Panjab and Rajputana is very homogeneous and it is assumed that this population is in the main descended from the "Vedic Aryans." It is generally admitted that the Aryan-speaking invaders, who arrived about 1700 B.C., brought their

women with them and thus to a considerable extent were able to keep their type pure, especially among the higher classes; but on the other hand the north-west of India has been invaded in later times by other peoples who have been more or less absorbed.

The prevailing type in the Kashmir valley, Panjab and Rajputana is represented by the Jat and Rajput, who have a light transparent brown skin colour and are usually of tall stature (Jat 1·716 m., Rajput 1·748 m. ($67\frac{1}{2}$ and $68\frac{3}{4}$ in.)); they are very dolichocephalic, c.i. 72–75, with a well-developed forehead, a long narrow face, regular features and a prominent straight finely cut leptorrhine nose (N.I. Jat (Sikh) 68·8, Rajput 71·6). Socially no gulf can be wider than that which divides the Rajput from the Chuhra; physically the one is cast in much the same mould as the other, the difference in height can be accounted for by the better nutrition and habits of life of the former (Chuhra, c.i. 73·4, N.I. 75·2, st. 1·666 m. ($65\frac{1}{2}$ in.); Khatri, c.i. 74, N.I. 73·1, st. 1·662 m.). This type is the Indo-Afghan (pp. 22, 86), or Indo-Aryan of some authors.

Allusion may here be made to the main invasions of India from the north-west. The Saka, Se, or Scythians, owing to pressure by the Yueh-chi, arrived in India about 154–140 B.C. and occupied the plains of Peshawar. One branch seems to have crossed Sind and occupied Kathiawar. Pahlava, or Parthians of Persia, and Yavana, or Asiatic Greeks, settled in North-western India about this time, but the invasions of Demetrios, Eukratides, and Menander, like those of Alexander and Antiochos, were merely military incursions. The Saka are identified with the Sacae, whose modern descendants seem to be the Balti (p. 86), and were a horde of pastoral nomads like the modern Turkoman. The leaders appear to have been mesocephalic, with a rather low head, straight eyes, a well-formed straight nose and projecting chin; they thus belonged essentially to the Proto-Nordic steppe-folk, but doubtless were a mixed people. At the time of the Achaemenian kings they occupied all the region between the Lower Jaxartes and Lake Balkash; "they," says Herodotus, "were in truth Amyrgian Scythians, but the Persians call them Sacae." The Yueh-chi (Kushans) of Turki descent (pp. 31, 89),

coming from Bactria, conquered Kabul A.D. 20, and not long afterwards made themselves masters of North-west India as far as Benares; their empire crumbled in A.D. 178. The Hûna, White Huns, or Ephthalites (p. 89), a mixed Turki and Tungus people, poured into India about 455 A.D., were defeated in 458, but carried devastation over the plains of the Indus and Ganges about 484. They were expelled about 528 by a confederation of Hindu princes. About 565 the Turks annexed the whole of the Hun empire. This led eventually to the Muhammadan conquest of India, which occurred about 1200 in the north and a century later in the south.

It is often stated that the Rajput cannot claim to be pure Indo-Afghan, still less "Aryan," as some clans appear to be Aryanised Sudras, others were developed out of the barbarous hordes which poured into India in the fifth century A.D., or from indigenous tribes such as the Gond, Bhar, Kharwar and the like. With the Rajput problem is closely connected that of the Jat and Gujar (C.I. 72.4, N.I. 66.9, st. 1.703 m.), the latter tribe being believed to be of Hûna descent; the Gurjara probably entered India about the same time as the White Huns and settled in Rajputana, and the Jat is included in the same ethnic group. The main objection to the view that the Rajput and others were of Central Asian origin is the apparent uniformity of the type which bears no trace of Turki or Mongol traits. If the invading Aryan-speaking peoples were originally a steppe-folk (pp. 101, 151), or at all events overlorded by such, only the Saka could have mixed with them without seriously modifying the original "Aryan" type, if such a type existed. More observations are needed to solve this problem, and it would be important to know whether the bulk of the Gurjara were really Hûna or a dolichocephalic steppe people. It may be that the brachycephals who gave their names to groups, such as the Gujar, were merely ruling families and that the great bulk of the population of North-west India was practically unaffected by them. If there was much indigenous blood (Gond, Bhar, etc.) one would expect to find it in the existing population.

Near the Siwalik region in the east of the Panjab two local varieties are met with; the hill-men, Hoshiapur district, are

fairer than the plains-men, shorter, st. 1.68 m., with a broader nose, N.I. 70, lower and broader face, often with pronounced brow ridges and a strong growth of beard; c.I. 72. These evidently belong to some old type. In the plains to the south, in Patiala, the people have a smooth forehead and high narrow face, c.I. 75, N.I. 62, st. 1.73 m., and may be regarded as of Indo-Afghan type. In the chiefly Muhammadan homogeneously mixed race of the North-west Panjab the Indo-Afghan type is modified by Eurasiatic brachycephals.

The Indo-Afghan type appears to be characteristic of the highest castes in the Gangetic plains of Hindustan, but presumably with some mixture of aboriginal blood which becomes more apparent in the intermediate castes and still more so in the lower castes. For example, to take two contrasted types: the Babhan of Behar with "Aryan" features, c.I. 76.7, N.I. 74, st. 1.662 m. ($65\frac{1}{2}$ in.), and the Chamars of the United Provinces and Bengal, c.I. 72.8, N.I. 86, st. 1.63 m. ($64\frac{1}{4}$ in.). In eastern Bengal mongoloid traits become apparent, the population is mesocephalic, c.I. 75.2-79, and mesorrhine, N.I. 70.3-80.5. The Rajbansi Magh of the Chittagong Hills is frankly mongoloid, c.I. 83, N.I. 74.9, but not so the Kochh Rajbansi of north-east Bengal, c.I. 75.2, N.I. 76.6.

III. THE HIMALAYAS

The Balti of Baltistan have been regarded as Indo-Afghans, but they seem to be descendants of the Sacae (p. 112); they are leucoderm leptorrhine dolichocephals and very different in physical appearance from the neighbouring xanthoderm mesorrhine mesocephalic Ladakhi. The original home of the Indo-Afghan stock presumably was close to that whence the Proto-Nordics emerged.

In the east of the Panjab are the Indo-Aryan Kanets of the fertile valley of Kulu who have a trace of Tibetan blood, c.I. 74.3, N.I. 74.1, st. 1.654 m. Up in the mountainous region with its severe climate are the Kanets of Lahoul who exhibit many mongoloid traits, c.I. 77.5, N.I. 66.4, st. 1.618 m. In the former there is a complete fusion of the two racial elements, but this is not complete in the Kanets of Lahoul.

Various peoples occur in Nepal; in the higher mountains

are the Bhutia, in the west the Gurung, etc., c.i. 81·6, n.i. 78·5, in the centre the Murmi, etc., c.i. 79·5, n.i. 75·2, and in the east the distinctly mongoloid Limbu, an old stock, c.i. 84·3, n.i. 74·1, st. 1·603 m., the Lepcha and others. The sturdy broad-chested Gurkha, c.i. 75·9, st. 1·679 m. (66 in.), driven from Rajputana by the Muhammadan invasion, ultimately conquered Nepal, where they have become somewhat mongolised. The Newar claim Indian descent, and Hindus from the plains have penetrated to the lower valleys.

In Sikkim the earliest settlers were the Rong-pa, usually called Lepcha, c.i. 79·9, n.i. 67·2, st. 1·57 m. The Bhutia have mixed with the former, and Paharia or Parbatia, who are Nepalese, and are still pushing their way eastwards.

Various uninvestigated peoples inhabit Bhutan; Bhutia of Pato, c.i. 80·3, n.i. 77, st. 1·672 m.

ASSAM

Assam is essentially the valley of the silt-laden Brahmaputra; to the north are the Himalayas, to the east the Naga Hills, to the south the tableland of the Garo, Khasi, and Jaintia Hills, some plains to the south of these and finally the southerly-trending Lushai Hills.

From very early times inhabitants of India migrated into the rich alluvial plains and many of them mixed with the aboriginal population to form the "semi-Hinduised aborigines." The first Indo-Chinese invasion appears to have been by Tibeto-Burmans. At the end of the eighth century A.D. the South Shan began to conquer Assam and in 1228 the name of Aham was assumed, now softened into Assam. The dynasty was overthrown in 1810 by the Burmese, when various branches of the Tai or Shan stock, such as the Khamti, Phaki, and Kamjang, came into the country. The Khamti, c.i. 79·1, n.i. 88·4, st. 1·641 m., are rather darker and of coarser type than other Shans. The Chingpo, or Singpho, arrived in Assam from the upper waters of the Irawady about A.D. 1793, c.i. 75·7, n.i. 80·8, st. 1·603 m.; they are the same people as the Kachin of Burma and have marked mongoloid features.

The Mande, or Garo, are a robust squat people, c.i. 76, n.i. 95·1, st. 1·588 m. (62½ in.); the Khasi, c.i. 78·6, n.i. 86·3,

st. 1.569 m.; the Kuki, c.i. 76, n.i. 58-91, st. 1.587 m.; the Angami Naga have a brown complexion and high cheek-bones, c.i. 78.6, n.i. 82.2, st. 1.639 m.; Ao Naga, c.i. 80.4, n.i. 81.8, st. 1.566 m.

To the north are the Daffla, c.i. 77, n.i. 84.1, st. 1.606 m., and in the north-east are the Abor, or Padam, who are more allied to the eastern Tibetans, c.i. 77, n.i. 81.6, st. 1.579 m.

An analysis of the anthropological data of the Assam tribes seems to indicate that there are several constituent races which do not coincide with political groups and are lost sight of when one deals with averages. It may be tentatively suggested that there is an ancient dolichocephalic platyrrhine type (Pre-Dravidian), which is strong among the Khasi, Kuki, Manipur, Miki Kachari, etc., but is weaker among the Naga tribes. There is reason to believe that a Nēsiōt element (dolichocephalic mesorrhine) is strong among the Naga and other hill tribes. A mesocephalic platyrrhine type is noticeable among the Khasi and appears to have the same relative importance in Chota Nagpur and in Burma among the Southern Chin, Palaung and Burmese, and a greater among the Kachin. There is in Assam a prevalent mesocephalic mesorrhine type which occurs also in India among the Lepcha and Murmi and in certain castes in Bengal, and especially in the Dosadh and Kurmi castes in Behar, but it is practically absent from Burma. There seems also to be a brachycephalic leptorrhine element which comes from the north and is related to the Eurasiatic group, and a brachycephalic platyrrhine type which has its proximate centre of diffusion in Burma and is a variety of the Pareocean. Finally a dolichocephalic leptorrhine element has been brought in from India.

BURMA

Practically all the Burman peoples belong to the Pareocean race. The c.i. varies from 78.1 (Kachin) to 82.5 (Pwo Karen), the n.i. from 85.2 (Sgau Karen) to 91.8 (Palaung), and the stature from 1.58 m. (Palaung) to 1.627 m. (in Lower Burma); but in all the tribes there are dolichocephalic elements as well as very brachycephalic types. The

Mawken (Selung) of the Mergui archipelago are perhaps the nearest representatives of the submerged Nēsiōt race, but previously other races must have passed through the area of whom the Andamanese (p. 16) have been isolated in the archipelago of that name. Until an analysis has been made of types, it is impossible to disentangle the races concerned and their movements, as the classification hitherto employed has been a linguistic one. Accepting this provisionally it may be granted that the earliest southward wave was that of the Mon Khmer folk of whom the Palaung, Rieng, and Wa, etc., live to the west in the Shan States. Palaung, c.i. 80·5, n.i. 91·8, st. 1·58 m., and the Talaing or Mon east of the delta of the Irawady, are remnants of the Pegu nation, who long strove with the Burman for the ascendancy in the country which is now Burma, c.i. 82, n.i. 89·8, st. 1·625 m. The Siamese-Chinese group, Shan or Tai, occupy the eastern part of the area between the Salwen and Irawady and the north-west, c.i. 80·5, n.i. 87·6, st. 1·594; they are fairer than the Burmese and the Karen of the south. The Tibeto-Burman group who came from Western China include (1) the Chin in the western uplands who were probably the first arrivals; (2) the Burman of the Central Irawady, c.i. 83·1, n.i. 86, st. 1·649 m., Arakanese, Lisaw, etc.; (3) the Kachin tribes mainly in the north, c.i. 78·1, n.i. 89·6, st. 1·587 m.

SIAM, ANNAM, ETC.

The population of extreme South-east Asia may be broadly divided into those who are recognised as belonging to the Pareocean group and those who do not. The former have developed civilisations under favourable environment and have been receptive of foreign influences, mostly from India, but from China in Annam.

Moi (Annam), Peumong (Cambodia), Kha (Lao of North Siam) are generic terms for the "savage tribes" in the mountainous country between the Mekong and the Annamese coast and from the mountains of Yunnan to the district of Baria in Cochin China, c.i. 77·5, st. 1·585 m. (62½ in.), skin tan-like white in colour with a reddish tinge, hair more or less wavy, straight somewhat prominent nose, straight eyes. The Tho or

Thai of this group are broader-headed, c.i. 81.1, n.i. 94.9, st. 1.572 m., but some are taller, st. 1.67 m.; the Nong are more mixed.

Pareocean or Southern Mongoloid group:

The Annamese inhabit the delta in Tonking, the coast of Annam and most of Cochin China; c.i. 82.8 (83.8 Tonking), n.i. 86 (Tonking), 83.3 (Cochin China), st. 1.590 m. (Tonking), 1.571 m. (Cochin China).

The Tziam or Chiam of Southern Annam, Cochin China (province of Baria, etc.), and Cambodia were once a powerful people, c.i. 83.2, nose almost aquiline, no epicanthic fold, wavy or curly hair, dark skin.

Cambodians or Khmer, c.i. 83.6, st. 1.65 m., hair often wavy, eyes rarely oblique, probably a mixture of Kui, "Malays," and Hindu.

Kui of South-east Siam and North-west Cambodia, c.i. 82, st. 1.627 m. In the Siamese, c.i. 85.5, st. 1.607 m., the primitive Tai-Shan type has been most changed by intermixture with Khmer, Kui, Hindu, and "Malay." Lao, of Northern Siam, of the Tai-Shan group, c.i. 83.6, st. 1.590 m.

MALAY PENINSULA

The northern portion of the Malay Peninsula is Siamese; in the dense jungles of the central portion of the southern half live the Negrito Semang (p. 16), who are closely allied to the Andamanese. Neighbours of theirs are the Pre-Dravidian Sakai or Senoi (p. 20). The third and latest main element in this region is that comprised by the "Savage Malays" or Jakun, many of whom have mixed with the earlier peoples. Their skin is dark reddish or coppery-brown, being darker than the true Malays, hair straight, lank, coarse, often of a bluish-black, c.i. 80-83, forehead usually well developed, high cheekbones, face inclined to be flattish, eyes dark with a slight tendency to obliquity, st. 1.527 m. (60 in.). The true Malay, Orang Malayu, whose migrations date about 1160 A.D., were originally an obscure tribe who rose to power in the Menangkabau district of Sumatra, c.i. 80 or 82.3, n.i. 81, st. 1.594 or 1.583 m., light coppery-brown or light olive in skin colour; Menangkabau Malay, c.i. 80, n.i. 81, st. 1.599 m.

EAST INDIAN ARCHIPELAGO OR INDONESIA

The earliest migration through Indonesia of which we have any evidence appears to have been that of the Ulotrichi. We have seen their traces in the Malay Peninsula and the Andamans, but in the island area they entirely disappear, save for the Aeta of the Philippines (p. 16), where they live in Luzon, the mountainous districts of the larger islands and in some of the smaller islands, and very doubtfully Negritos occur in Timor, where there is also a Papuan element.

Pre-Dravidians have also been almost obliterated; traces occur among the Batin in Sumatra and among the strongly platyrrhine Toala in Celebes, c.i. 81.7, st. 1.561 m., and possibly among the Ulu-Ayar, c.i. 75.5, n.i. 90.3, st. 1.517 m., of the Upper Kapuas, Netherlands Borneo.

The Orang Kubu of South Sumatra, c.i. 79, n.i. 87, st. 1.588 m., are undersized, thick-set, head very long and very broad, well-developed forehead, a low, broad, often prognathic face, with a prominent chin, short, broad, low, blunt nose, thick mouth, eyes frequently with epicanthic fold, long body and short legs. They may be regarded as representing a very primitive type of man.

Insufficient work has been done on the other natives of the East Indian Archipelago, but there is evidence to show that there can be distinguished a dolichocephalic type among the brachycephalic elements. The former, according to current usage, is termed Indonesian (Nēsiōt, p. 22); the latter, or at all events certain groups of them, arrived later; they are Pareoceans and probably there were various stocks of these that overran the islands, and as a rule they have dominated the Nēsiōts, although as a matter of fact, even in early times, a large amount of intermixture seems to have taken place, possibly in part even before leaving the mainland. These two main racial stocks are so intermixed that scarcely any tribe or people can be considered as a pure representative of either. A special group, the true Malays or Orang Malayu, crossed over from Sumatra in the twelfth century A.D. into the Malay Peninsula, and at the close of the thirteenth century they had spread over a considerable part of the Archipelago,

but mainly confined themselves to definite spots on the coasts of certain islands. But long previously to this movement other peoples had secured a footing in Java and elsewhere. From the first century of our era there were migrations from India and the great Indo-Javanese culture dates from the beginning of the seventh to the end of the tenth century. The cultural effects of Hindu colonisation are still noticeable in Java and neighbouring islands and can be traced in western Borneo, but the racial effects are not so apparent. Chinese infiltration probably began some time after 200 B.C., when South China was conquered from the aboriginal population and a seaboard acquired. Commercial relations existed with Java and other islands in the fifth century A.D. and have continued more or less constantly ever since. The Dusun of British North Borneo claim to be of Chinese descent, but this is a disputed point. Arabian traders voyaged to the East Indian Archipelago long before the time of Muhammad, but Islam changed the Arab trader into a teacher of the new doctrine; this influence however was cultural and not racial.

Definite Nēsiōt traits have been recognised among the Battak of north Sumatra; the Tenggerese of the mountains of Java (C.I. 79·7), and elsewhere in Java; the Land Dayak (C.I. 78·4, N.I. 86·3, st. 1·577 m.), Murut (C.I. 77·5, N.I. 99, st. 1·590 m.), Malang (C.I. 76·9, N.I. 88·2, st. 1·535 m.), Kalabit and other tribes of Sarawak, and indeed throughout the whole region similar characters are to be found, though these traits may be obscured by mixture with xanthoderms.

The effects of the migrations of Pareoean peoples are too widespread to need further consideration.

OCEANIA

IN the term Oceania is included New Guinea and the neighbouring islands, Australia, Tasmania and all the island groups of the Pacific. Perhaps the best way of describing the races and peoples of this vast area is to deal with it in a chronological manner, but it must be understood that this is largely hypothetical.

There can be little doubt that the first inhabitants of parts of this area were varieties of ulotrichous man arriving, like all subsequent migrations, by way of Indonesia. It seems probable that there were several varieties, some of very short (pygmy), others of short or medium, stature, all of whom exhibit a tendency to vary in head breadth.

The most pronounced pygmy variety, or typical Negrito, are the Tapiro (p. 16) of the source of the Mimika in the Nassau range ("Snow mountains") of Netherlands New Guinea. More to the west in the same range are the "Goliath pygmies," who are slightly taller and are brachycephalic. If it be admitted that the very short Negritos were an ancient extreme variety of the primitive eastern Ulotrichi, we may expect to find less extreme forms still surviving, and this is what we do find more or less throughout the interior of New Guinea. The Timorini of the mountains south of the Mamberamo are mesocephalic and very short, but not on the average of pygmy proportions; other groups in New Guinea show intermediate characters up to the tall mesocephalic Gulf Papuans (Ipi tribes); to the west of these, however, the Maipua, of the Purari Delta, are short and dolichocephalic. Speaking generally, there are peoples on the northern and south-eastern coasts of New Guinea who are short and mesocephalic; in the south-east these people have a lighter skin-colour and the character of the hair often varies considerably (p. 5); their language and general culture prove that we have here to deal with an immigrant folk.

The typical Papuan (p. 17, Pl. II) is uniformly ulotrichous, has usually dark pigmentation, a short stature and dolichocephaly, though from obscure causes there may be local mesocephaly; there is evidence however of broad-headed peoples having migrated overland to the south of British New Guinea.

We are justified in assuming that this variable Papuan stock spread over the whole of Melanesia, hence the occurrence in some islands of people more or less approximating to a pygmy stature and also of the extreme dolichocephaly that is found in the more isolated areas, as in Fiji, New Caledonia, etc. The now extinct Tasmanian with his variable dolicho-mesocephaly and medium stature and other characters falls naturally into this group and may be regarded as a somewhat generalised variety of the Negrito-Papuan stock, which at a very early date crossed Australia and was isolated in Tasmania by the formation of Bass Strait before the Australians reached so far south. They are said to be more uniform in type than the Papuans or Australians.

As a stock the Australian has many primitive characters which are specially noticeable in the skull, though some of the low features may be due to racial senility and thus the resemblances to Neanderthal man may be regarded as secondary or convergent. The Talgai skull, Queensland, has been termed "Proto-Australian," as it exhibits the characters of the race to a marked degree and it also has the largest known human canine tooth. The skull evidently came from a fossiliferous stratum in which remains of extinct marsupials are found together with those of existing species. A somewhat similar skull has been found at Wadjak in Java. Although we may grant great antiquity for the stock, it appears evident that it followed the ancestors of the Tasmanians, who were then presumably in Australia, the latter being driven off, exterminated or even partially assimilated, but the formation of Bass Strait prevented the entry of the Australians into Tasmania. There is a general similarity in type throughout Australia, though subject to considerable variation. There is extremely little, if any, evidence of immigrant racial admixture, and the same may be said of an early ulotrichous strain. We may therefore conclude that since the arrival of the Australians there has been no distinct racial migration into Australia; doubtless outside cultures have penetrated into the country, but these were brought by too few people to have had any appreciable effect in modifying the Australian physical type (Pl. III).

Very much later a series of migrations spread in a south-easterly direction from Indonesia. The first of these migrations brought a higher culture, for the migrants were tillers of the soil, and a new type of language—the Austronesian. They were light-skinned, mesorrhine, wavy- or straight-haired peoples, were seafarers and presumably had outrigger canoes. They voyaged to the Western Pacific and found there before them the dark, platyrrhine woolly-haired Papuans with whom they mixed. Thus were formed the peoples we term Melanesians (p. 17), some of whom are lighter in colour than the Papuans, though most are as dark, or even darker; also we frequently find that the hair may vary from woolly to curly and wavy, often the nose is of medium breadth and brachycephaly is sometimes met with. Subsequent immigrations of the same group of peoples from Indonesia still further diluted the original Papuan type, as have also local sporadic movements from Polynesia into Melanesia. Similarly, migrations from Melanesia into New Guinea have produced variations on the north coast of that island and more especially in its south-eastern prolongation and in the archipelagoes beyond.

We are not yet in a position to discuss the racial anthropology of the Polynesians (pp. 32, 33) who admittedly are of mixed origin.

There is evidence in New Zealand and even in Easter Island of an early population which, to say the least of it, had a strong Melanesian strain; the migration to the latter island must have passed through the Tonga, Hervey, Society, and Paumotu groups and perhaps the Marquesas. This strain may be due not to a migration of pure Papuans, but to one of Melanesians, or possibly of Melanesians with a light-skinned ruling class. A Melanesian element is present to some extent in Tonga.

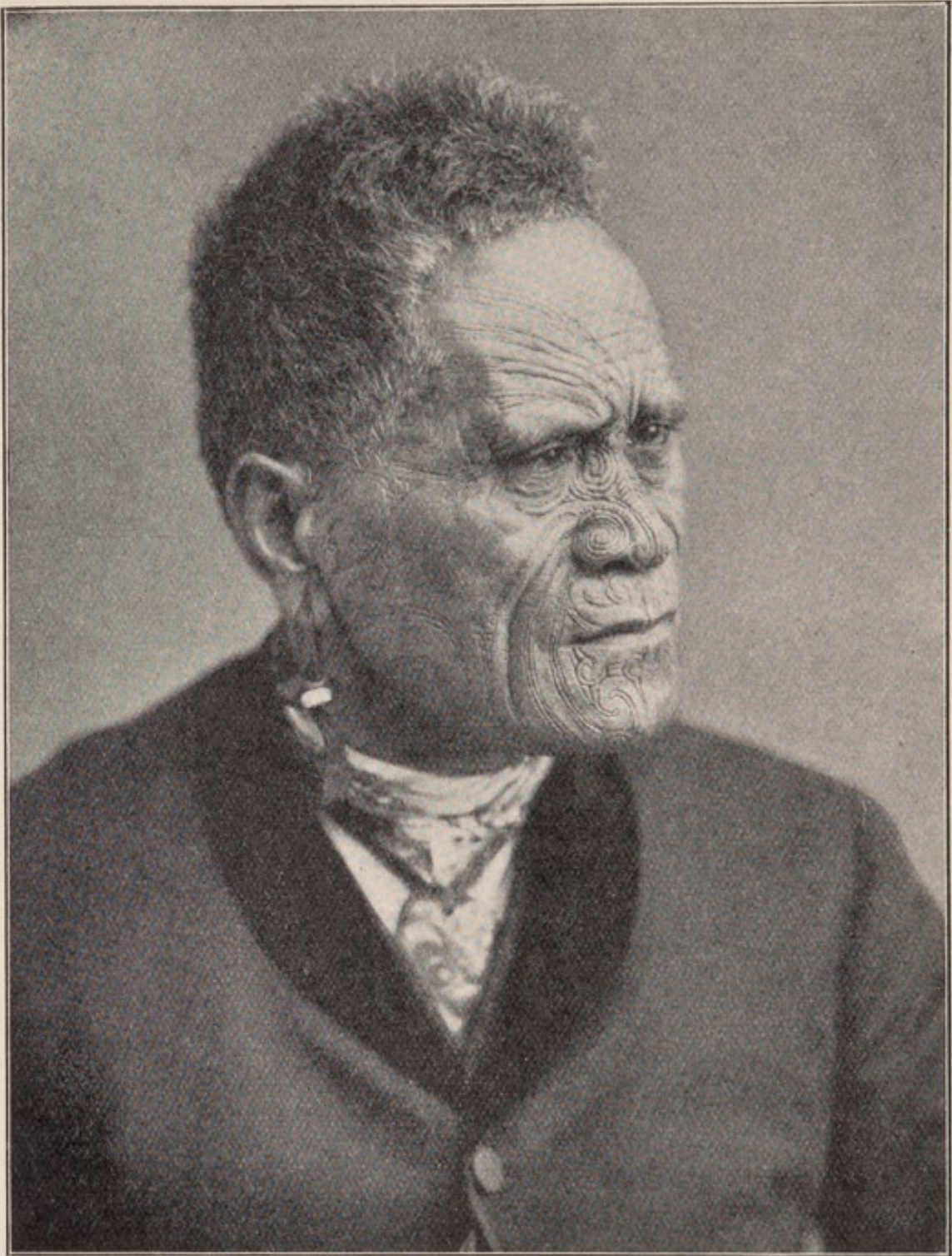
The available data point to the presence of two main stocks among the Polynesians. Type I has a taller stature, more slender build, longer heads, higher faces, more open eyes, narrower and higher noses, thinner lips, straighter hair, more hair on face and body and a lighter skin colour than Type II. Type I is mesocephalic and is more European in appearance;

Type II is slightly brachycephalic and seems to have Mongoloid affinities. Provisionally we may regard Type I as belonging to a primitively dolichocephalic Nēsiōt stock (p. 22), and Type II to the brachycephalic Proto-Malay stock (p. 32); it is possible that these two types are the modern representatives of the early inhabitants of Indonesia, who supplanted the melanoderms. As we have seen, the disentangling of the racial components of the East Indian Archipelago is a problem that has scarcely been attempted.

We may assume that the earliest light-skinned immigrants into Melanesia were composed of one or both of these two types, and the same may be said of the later immigrations into that area. It cannot yet be established whether these two types came as separate migrations into Polynesia or whether they came together; in the latter case there may have been a difference in status between them. It is probable that there was a succession of migrations from Indonesia into various parts of Polynesia, one or more of which may have passed through Melanesia.

Type I is distributed throughout Polynesia, but on the whole is at present strongest in Southern Polynesia. Type II is more prevalent in Northern and Central Polynesia. It occurs in Samoa, but much mixed; in Tonga it is very important and less mixed; it is more concentrated in Haaono of the Hapai group than in the southern islands of this archipelago; in the Marquesas it is a very important element in the population, but is confined for the most part to the north-western islands of Uahuna (Uahuka), Nukuhiva and Huapu; in Hawaii it is important but much mixed with Type I. The Maori of New Zealand mainly belong to this type (Pl. VIII).

None of these types account for the extreme degree of brachycephaly characteristic of certain parts of modern Polynesia, notably Tonga, Samoa, Tahiti and near-by groups, Hawaii and, to a lesser extent, the Marquesas. In these groups cephalic indices of 90 and above are frequent, but the occiput is artificially flattened in most cases; nevertheless there does seem to be a very brachycephalic type, with a narrow face, narrow nose, light skin, and well-developed beard and body



MAORI

hair. Representatives of this element have not been found in Polynesia in sufficient numbers to justify specific description; it has probably contributed some of the "European" traits to the Polynesians. It has yet to be proved whether this element, which has been termed "Armenoid," *i.e.* Anatolian (p. 27), was the carrier of a definite culture to Polynesia and elsewhere.

The data for Micronesia are very slight, but these are sufficient to show that it contains a very mixed population. Speaking generally, the strong tendency to brachycephaly in the west gradually gives way to preponderant dolichocephaly in the east, and at the same time the stature from being medium or short rises to very tall. Here also the skin is as light as in most Polynesians and the hair wavy or straight, whereas in the west some individuals are very dark-skinned with frizzly hair, while others are light-skinned with wavy or straight hair.

AMERICA

NORTH AMERICA

It seems to be fairly well established that the Eskimo were the result of a migration of a special type into America at presumably a very early date. The most representative appear to be those of the Hudson Bay district which would thus be a secondary area of characterisation.

There is good evidence for the spread of other dolichocephalic types into America. A tall branch of these seems to have arrived by a northern route across the Asiatic-American isthmus and by following the valley of the Yukon river they found themselves to the east of the Rocky Mountains, whence they spread over the Mackenzie tundra and ultimately through the northern woodlands to the east coast of the United States. Skulls from ancient burials from South-east Canada to New Jersey range in their average cranial index from 70·7 to 74·6 and 75·5 in Virginia. Although the Iroquois, who belong to part of this area, are regarded as a linguistic stock distinct from the Algonquian, they cannot be separated in physical anthropology from the Algonkin, and the same holds good for the Munsee (who occupied the region of the head waters of the Delaware to the west bank of the Hudson), the Lenápe or Lenni-lenápe, and other Delaware tribes, and apparently for the eastern Sioux. The dolichocephalic area also extended over the Ohio valley and the region north of it to the Great Lakes, but before historic times this population had been replaced by brachycephals.

Another group of the dolichocephals, who were of medium stature, appear to have taken a more southern route across the isthmus and kept mainly to the Pacific coast, since we find that from north to south the oldest stratum of the population was of this type. It has been suggested that there were two migrations, the earlier having broader noses than the later; the former were strongest in Nevada, Utah and north Arizona. As the old crania show, dolichocephaly was very prevalent in the islands of San Clemente and Santa Catalina off the south coast of California, but in the latter island

there was a larger proportion of the broader-nosed dolichocephals, which feature also characterised the extinct short Pericue of the extreme south of Lower California Peninsula. The modern Shoshonean Ute formerly occupied the central and western portions of Colorado, the east of Utah and spread southwards into northern New Mexico; c.i. 79.5, st. 1.66 m. The Yuki, north of San Francisco, have a large proportion of narrow-nosed dolichocephals with a medium stature (64–65 in.). Most of these were chamaecranial (platycephalic), but hypsicephaly and platyrrhiny occur among the crania from the ancient burial caves of Coahuila in north-eastern Mexico.

Presumably at a later date came swarms of brachycephals into America, who gradually spread over the continent and eventually found their way into South America; these are the people who are roughly classified as Neo-Amerinds.

One group spread over the Athapascan area (which extends roughly from Cape Churchill on the west coast of Hudson Bay to the centre of the Cascade range in British Columbia and northwards, excluding the Pacific coast and the area of the Eskimo), and modified the Algonquians to the east (who occupy practically all the rest of Canada and from Illinois and Kentucky to the Atlantic).

Apparently one group occupied the Plateau Area (the greater part of California, Oregon, Nevada, Arizona, New Mexico, Utah, Western Colorado and Wyoming).

It seems that there was a westerly migration from Northern Mexico which affected the southern states of the United States; at all events there was a strong cultural movement in this direction which spread up the Mississippi and its affluents and also affected the Iroquois of the Alleghany Mountain area.

It has been suggested that the earlier brachycephals were broader-nosed than the later comers, and that the narrower-nosed folk were responsible for the development of culture in Mexico and in the Cliff-dwelling and Pueblo area of the south-west United States.

The North-west Coast population on the whole belongs to a later and distinct migration from Asia.

Evidence is accumulating in support of the view that the great Athapascan group was the last racial migration from Asia.

CANADA

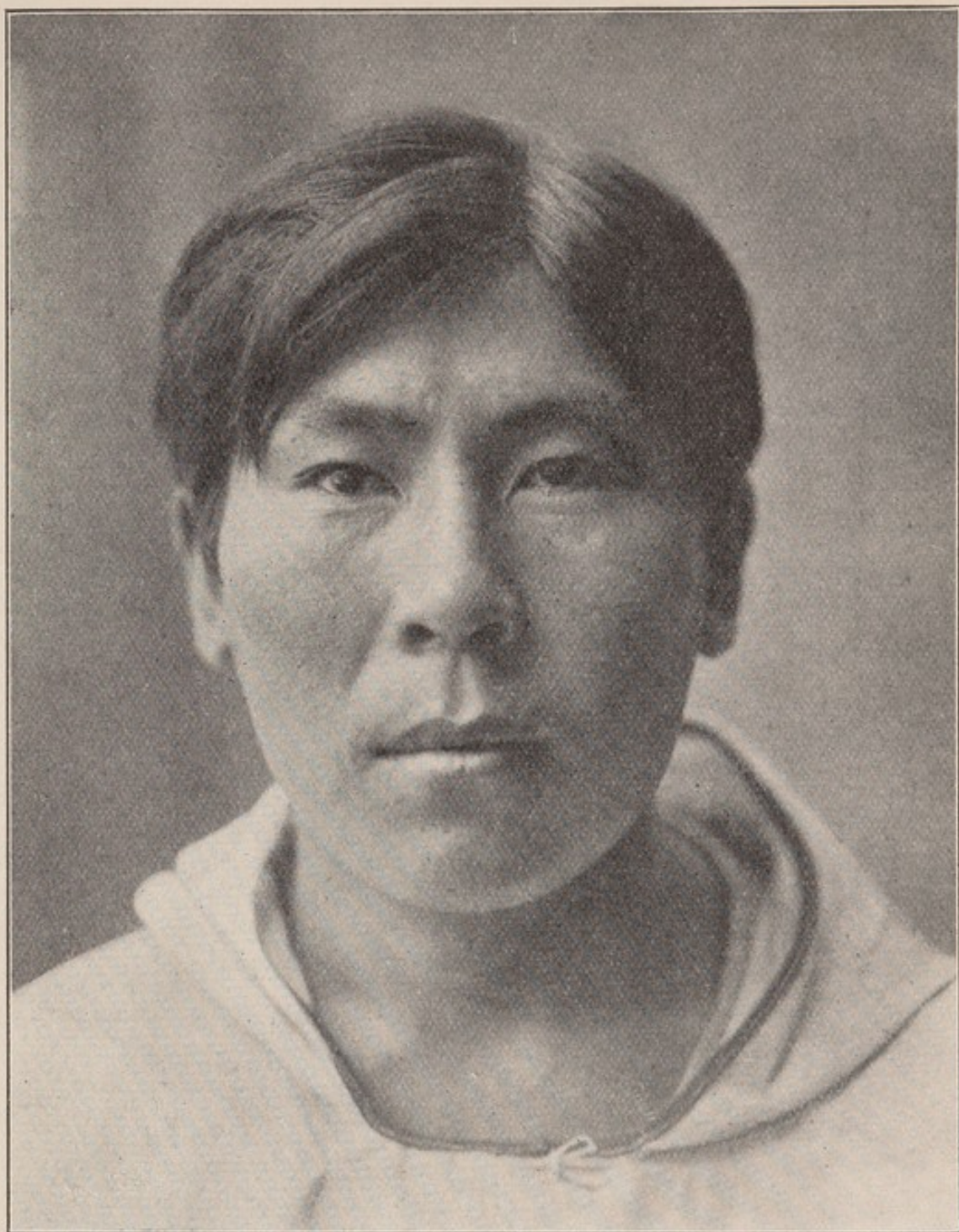
The most typical Eskimo are those of the Hudson Bay region, as described on p. 29 (Pl. IX). West of the Mackenzie the stature is higher, 1.68 m., and head broader, c.i. 80.

South of the Eskimo area is a vast belt of semi-arctic lands which comprise the greater part of Canada. The larger part, that west of Hudson Bay, is occupied by the Déné tribes, the eastern part by the Algonquian tribes, *e.g.* Algonkin, Saulteaux, Cree, Montagnais and Naskapi (Nascapee).

Little is known about the type of the Athapascan Déné or Tinneh peoples (Loucheux, Kutchin, Nahane, Sekanais, Carriers, Chilcotin, Hares, Dog-ribs, Yellow-knives, Slaves, Chipewyan, etc.) of the Mackenzie basin, but there seems to be a fairly close relation with that of the north-west coast of British Columbia; 1.54–1.66 m. ($60\frac{1}{2}$ – $65\frac{1}{2}$ in.), c.i. 79, face wide like that of the Indians of the Mississippi basin but the nose is smaller, cheek-bones not so prominent as those of the Eskimo.

The two north-west coast types are described on p. 33. Taking the anatomical traits of the tribes of North-west Canada as a whole, such as the very light complexion and the hair, which is very frequently slightly wavy and brownish (there are even a few tribes among whom red hair and an almost white complexion occur), there is a resemblance to some of the Siberians, but usually the face of the Indian is much more heavily built and the measurements greater, and his hair is not so coarse as that of the Chinese or Japanese, though young persons have the “mongolian” eye often as strongly developed as the Chinese themselves. There are striking differences in type between the north-west Canadian Indian and the Indians of South California or the central parts of the United States. The colour, formation of the head and face, and shape of the nose are fundamentally different and the North-west Canadian type seems more closely allied to that of the Asiatic than to that of the Californian. Thus the racial affinities of the North-west Coast Amerind point to north-east Asia.

The western plateau type is characterised by a very small



ESKIMO

head, c.i. 83.6, and shorter face than that of the coast Indians, but much the same as that of the Plains Indians; they have a convex heavy nose and st. 1.634 m. ($64\frac{1}{4}$ in.). The Lillooet of the Harrison Lake region are very much shorter, less than 1.6 m. (63 in.), c.i. nearly 89; the northern Lillooet, st. 1.62 m., c.i. 87. The Coast Salish of the Frazer River delta, south Vancouver Island and Puget Sound belong to the last type, face of great breadth, flat often concave nose, thick lips, receding chin, st. 1.64 m. The cephalic index is uncertain owing to the custom of deformation which formerly prevailed all along the coast, c.i. probably 84-87. A sudden change of type takes place further to the south on the Columbia river, where the type, with its narrow high-bridged nose and taller stature, somewhat resembles the Kwakiutl.

The Kutenai or Kitonaka, who live between the Rocky Mountains and the Selkirks in South British Columbia about Lake Kutenay, are said to be comparatively recent intruders from east of the Rockies, possibly around the head waters of the Saskatchewan. They are in type similar to the Indians of the Plains and are amongst the tallest and best physically developed of British Columbian tribes, st. 1.69 m. ($66\frac{1}{2}$ in.), some are very tall; c.i. 80, but there is a strong tendency to dolichocephaly; colour darker, and face slightly heavier than that of the Indians of the interior of British Columbia, nose rather like that of the Plains Indians. East of the Kutenai various Algonquian tribes extend across the continent to the Atlantic, interrupted by a northerly extension of Sioux in Assiniboia and of Iroquois in the southern parts of Ontario and Quebec. The Assiniboin (Stone Sioux) are an offshoot of the Dakota of Siouan stock; formerly they had a greater extension to the north-east; Sioux, cranial i. 78.9, low in the crown.

The most westerly of the Algonquians are the Siksika or Blackfoot, which group includes the Kino or Blood Indians, and the Piegan of Montana (c.i. 79). All were Canadian in origin; those who remained behind now live in South Alberta and Assiniboia, but they had a more northern origin. The Cree hunted over the region between Moose river (south of James Bay) and Churchill river (west of Hudson Bay) and westward to the head of Beaver river and thence south to the

hunting grounds of the Dakota. The Ojibway or Chippewa were formerly the largest tribe of Indians north of Mexico and ranged from Hudson and James Bays to Lakes Superior and Huron. They drove the Sioux before them to the plains and forced the Fox to unite with the Sauk, both of whom were Algonquians. Western Ojibway, c.i. 80, eastern 82, where a very short-headed type seems to survive, st. 1.73 m. The Wabunaki or Abnaki, *i.e.* "East-land," include the Passamaquoddy, Penobscot, Micmac, etc. The Passamaquoddy formerly lived on the western borders of New Brunswick and Maine, the Penobscot live in Maine and the allied Abnaki fled to Quebec where they are known as St-Francis Indians (near Pierreville). The Micmac are the most easterly; remnants are found in Quebec, New Brunswick, Nova Scotia, Prince Edward's Island and Newfoundland, where they exterminated the Beothuck. The Micmac of the eastern provinces are tall, 1.717 m. ($67\frac{1}{2}$ in.), c.i. 79.8. The Naskapi, who are shorter and broader-headed, c.i. 81.5, were driven from their original home west of Hudson Bay to north Labrador; the allied Montagnais or Aguionda of the Labrador Peninsula are a confederacy of several peoples and the most degraded of all Algonquians. Remnants of the Delaware or Lenápe live in Indian territory in western Canada and in Ontario; their ancestors were once dominant in Delaware, Pennsylvania, New Jersey and parts of New York State.

The Iroquoian group in Canada consists of the Huron and Iroquois. Like most of the Indians of the eastern provinces, the Iroquois have c.i. 79, st. 1.72 m. ($67\frac{3}{4}$ in.), but the Huron have narrower heads, c.i. 75; their type is allied to the Plains Indians. In historic times this group occupied the eastern lake region and the country south and east. Perhaps the Huron came first and then the Wyandot, and later other tribes followed. The Huron (Wendat) became absolutely alienated from the parent group and were practically exterminated by the Iroquois in 1650.

The general tenor of the more reliable traditions of the Indians of the Atlantic section of North America points to the north-west as the direction whence they came. Thus the Lenápe migrated from the cold region north of the lakes to

the south of the chain of lakes and east to the coast, offshoots branched to New England and south along the Atlantic coast. From the same region came the Iroquians, sending offshoots to Virginia and the mountains of Tennessee and North Carolina, but certain elements of their culture certainly came from the south; hence a southern origin has been claimed for the Iroquois. From a region north of Lake Superior came the Chippewa of Wisconsin and Michigan, the Miami, Potawotomi and Winnebago. From British Columbia the Athapaskan offshoots made their way into California (Hupa) and into Arizona and New Mexico (Navaho and Apache, *Frontispiece*, Pl. 1); possibly from there the Shoshoni group also drifted southward. It is to Canada that many of the remnants of tribes from New England and other parts of the United States have retreated before the white man.

MEXICO AND CENTRAL AMERICA

The evidence seems to point to the conclusion that the first inhabitants of Mexico and Central America were dolichocephals who later were more or less swamped by brachycephals, hence it is not surprising to find the older type persisting here and there, but it is only in north Mexico that this type occurs to a noticeable degree among the living, more especially among the large group of the Uto-Aztecan tribes. The Pima and Papago of this group may here be referred to, though they live in Arizona and the latter extend into Sonora; they show three types: (1) mesocephalic, with retreating forehead and convex prominent nose, this is characteristic of the Pima, c.i. 78·6, st. 1·71 m., slim in build; (2) brachycephalic, with straight or concave nose and medium stature, characteristic of the Papago; (3) brachycephalic, of tall stature. Skeletal material shows that the Tarahumare and the Aztec belong to the first type. Further south, the Cora and Huichol are predominantly brachycephalic. The last migration from the north into Mexico was that of the Aztec, c.i. 78·9, n.i. 80·5; they found the Toltec in the valley of Mexico who physically and culturally were allied to the Maya of Guatemala. The Otomi, who seem to be very early inhabitants of North-east Mexico, are brachycephalic with a tendency to mesocephaly

(four skulls averaged c.i. 73), dark-coloured and below the average stature. They seem in part to be connected with the extinct people of the Coahuila prehistoric burial caves in north-eastern Mexico, the skulls there being dolichocranial, hypsicranial and platyrrhine.

The Huasteca and Totonac and all the southern tribes are marked by brachycephaly, as are those of Central America: Maya, c.i. 85, n.i. 77.5; but in the Zotzil and Tzendal tribes of Chiapas dolichocephalic elements again crop up.

The so-called "White Indians" of the Chucunaque river, Darien (Panama), are in most respects physically of the local Darien type, but they have a rosy-white skin, very light golden straight hair, and the eyes have a greyish violet colour closely resembling that of a new-born infant. Their "white" characters are due to albinism and have no racial significance, but the special interest of these albinos is that by a process of social segregation they constitute a relatively large group among the normal dark Indians.

SOUTH AMERICA

Material does not yet exist to enable the racial history of South America to be written, so one must fall back on generalities.

Assertions have been made from time to time of ancient human remains having been discovered, but these have not found acceptance by reliable American geologists, archaeologists and anthropologists; even primitive types of Tertiary fossil man have been claimed to occur in Argentina, but these are now thoroughly discredited. At present the various migrations into South America cannot be fitted into any system of chronology; all we can fairly assume is that the migrations came through North and Central America, for, as in the case of Mexico, whatever cultural influences may have been concerned in the Andean civilisations, no trace in the physical characters of the existing population has yet been recognised as belonging to the inferred introducers of a higher culture.

We may also assume with a fair degree of probability that the earliest migrations were those of dolichocephals, since such are found in ancient burials, and also traces of them are

found in existing peoples with a marginal or isolated distribution.

Perhaps the oldest remains of which we have sufficient information are those from the caves of Lagoa Santa on the eastern border of the Brazilian highlands. These skulls are small, dolichocranial, very high, with a short and wide face, medium nose and orbit and a very large palate, giving marked alveolar prognathism. This is certainly an old type of skull which has affinities with various skulls from the western Pacific and elsewhere, but this does not imply that there was any racial connection.

From rock shelters at Paltacalo on Jubones river in the extreme south-west of Ecuador ancient skulls have been obtained which resemble the Lagoa Santa type; these long antedate the Cañari who held this region at the Conquest. Similar skulls have been found in caves in the vicinity of the rapids on the Orinoco.

In ancient cemeteries along the Peruvian coast, at Trujillo and at Pachacamac near Lima, etc., dolichocranial skulls have been found in small numbers. On the coast of Chile near Coquimbo under recent marine deposits on raised beaches are found a preponderance of dolichocranial skulls. At Valdivia on the coast of Chile old skulls have been found which are dolichocranial with a retreating forehead, broad nose, and a considerable prognathism, but the existing population is strongly brachycephalic.

A low dolichocranial type has been found in coastal shell heaps near Santos in Sao Paulo, Brazil, c.i. 77·6. The same type has been found in similar localities in Parana and Santa Catharina, south-east Brazil, with cranial indices of males 67-77·2; the forehead is low, retreating and constricted laterally and the glabella and brow ridges are well developed; the stature is estimated at 1·68 m. The existing Tupi population however is brachycephalic. The ancient population of Patagonia and Tierra del Fuego was predominantly dolichocephalic.

The evidence rather points to there having been two varieties of ancient dolichocephals, the one with broader noses of the Lagoa Santa type which extended over the Brazilian highlands and to scattered areas on the east and west sides

of the Andes; the other, with narrower noses, occurred more or less continuously from the middle Brazilian coast to the southernmost point of the continent (with a possible outlier on the coast of northern Chile). But it must be remembered that old broad skulls have been found in most of these localities as well, which looks as if the brachycephals early pressed upon the dolichocephals.

Turning to the existing population we find peoples which exhibit traces in various degrees of the old dolichocephalic stock. For example: the Tapuyan-Ges Caraya of the Matto Grosso plateau (and possibly the Cherentes), c.i. 73, st. 1.6–1.75 m. (63–69 in.), taller in the south than in the north, smooth black hair, sometimes curly, reddish-brown to dark brown colour, prominent cheek-bones, eyes often slightly oblique, nose straight or convex and large; the Arawakan Mehinaku about the sources of the Xingu, c.i. 77.7, st. 1.641 m., and Paressi, c.i. 77.5, st. 1.605 m.; the latter penetrated somewhat further south, for there is a settlement of them northwest of Cuyaba. The Bakairi of the upper waters of the Xingu and of the Paranatinga, a right tributary of the Tapajoz, are regarded as representing the primitive Carib, c.i. 73.8–82.6, average 78.9, st. 1.608 m. The so-called Tapuya are the aborigines of eastern Brazil, the forest dwellers of the coast area and of the interior highlands as far as the Xingu river. The western group is known as the Gēs people, the eastern comprises primitive forest tribes, notably the Botocudo. They were originally largely, perhaps entirely, of Lagoa Santa type which has in most cases been submerged under the immigrant Neo-Amerind stock.

The Botocudo or Aymoro, who call themselves Buru and live between the Rio Doce and Rio Pardo in eastern Brazil (Minas Geraes province), c.i. 78.2 (74 on the skull), st. 1.59 m., are said to resemble the Fuegians in the size and form of head and face, and in the prominent brow-ridges and the sunk nose narrow at the root.

There is also a strong tendency to dolichocephaly in the central and western islands of Tierra del Fuego. Yaghan and Alakaluf, c.i. 77.9, leptorrhine, low stature, 1.577 m. (62 in.), narrow forehead, longish face, skin brownish or reddish-



PATAGONIANS

yellow, hair black, short and straight. The Ona of the eastern islands are a branch of the Tehuelche; they seem to have mixed with the former which has resulted in a certain amount of dolichocephaly, st. over 1.75 m.

The vast majority of the inhabitants of South America before the Conquest belonged to the Neo-Amerind group (p. 33), but future study will doubtless show that there are several stocks, which may necessitate the breaking-up of the Neo-Amerind group.

In Patagonia south of the Rio Negro are the Tehuelche; they are very tall, 1.73 or 1.83 m. (68-72 in.), according to various accounts, with lank black hair, dark coppery colour, c.i. 85, elongated face, prominent cheek-bones (Pl. x). Allied to these, but now much mixed, are the Pampeans. In Argentina the few surviving Charrua east of the Uruguay have an olive-brown colour, sometimes dark brown, being the darkest of all South Americans, st. 1.677 m. (66 in.), wide face.

The Borroro of Matto Grosso, Brazil, are generally supposed to belong to the same original stock as the Tehuelche, st. 1.74 m. (68½ in.), c.i. 81.5, clay-coloured skin, black, straight or wavy hair.

As a rule the remaining Neo-Amerinds are of medium or even short stature, with varying degrees of brachycephaly, and judging from skull measurements there appear to be groups with broader or with narrower noses, and it has been suggested that the former belong to an older series of movements; a certain amount of platycephaly occurs particularly in the north.

The peoples of higher culture are all brachycephalic and in the main with narrower noses; the only apparent exception being the ancient people of the Tiahuanaco region of Bolivia, who in early stages of culture were dolichocephalic.

Prior to the Discovery the Inca empire had included under its sway Aymara and other Quichua-speaking peoples. The Aymara or Colla inhabit the southern province of Peru; physically there is a close resemblance between them and the Quichua. The Quichua are short to medium in stature, 1.583 m. (62½ in.), with broad shoulders, the skin varies from a light to a dark brown, hair black, straight, very little on the

face; the head is on the average mesocephalic, c.i. 73·1–90·2, average 80 or 82, hypsicephalic, face broad and short, nose prominent, straight or sinuous, mesorrhine, n.i. 81·8. The Quichua are said to be darker in colour than the Aymara, but prognathism is more marked in the latter and also the forehead is lower and more retreating. The Quichua were the ruling race of whom the Inca were the most prominent nation. It is evident that along the coast there lived tribes of contrasted skull forms, perhaps the dividing line was near Pisco, the heads to the south being more elongated and to the north more rounded.

The original home of the Tupi lay about the northern affluents of the La Plata; being essentially a water people their migrations have always followed the rivers or the coast. They passed down the La Plata and on reaching the mouth turned northwards up the coast where they occupied a strip of coast land from which they drove the tribes already in possession, calling them Tapuya "strangers" or "enemies." Arrived at the mouth of the Amazon they followed it upwards along its southern bank, the Arawak occupying the north bank. It is probable that the Tupi tribes of the Xingu and Tapajoz came southwards up these tributaries from the main river; thus the Kamayara and Auetö are found at the head waters of the Xingu. The Tupi migration cannot be followed up the Amazon, but they reappear far to the west as the Omagua between the Putumayo and the Caqueta, and as the Cocama at the confluence of the Marañon and the Ucayali. In the south the Tupi called themselves Guarani ("warriors"). The southern Guarani about the Parana and the Uruguay were gathered by the Jesuits into "missions"; these are the Caingua or Kaiggua who have a bronzed skin, lank or wavy hair, st. 1·6 m. (63 in.), c.i. 80·4, nose straight, cheek-bones prominent.

BRITISH GUIANA

British Guiana consists of a coastal plain and a plateau; the outermost plain alone is at present cultivated and inhabited to any extent; behind this is a forest tract which extends to the lowest cataracts of the various rivers, the high-

lands also bear forests; behind this is the savanna region, a tableland of 300–400 ft., which is continued into the great southern grass plain.

On the sand reefs between the Orinoco and the Essequibo are large kitchen middens containing beautiful polished stone implements and two types of pottery, both differing from and better than the crude recent pottery; these shell-mound people have not yet been identified.

There are four main linguistic stocks: the indigenous Warrau, Arawak, Wapiana, and the immigrant Carib. The physical differences between these groups are small; all belong to the Neo-Amerinds (p. 33). They are of short stature, the predominant skin-colour is a very red cinnamon, the shade varies among different tribes, the forest Indians being as a rule fairer than those of the savannas; they have a sleek body, long, straight and very black hair, and "mongolian" features.

The Warrau, of the swamps about the mouth of the Orinoco, are the shortest of all the tribes, and are thick-set and feeble. The Arawak occupy the coast stretching south-east from the Warrau. The view is generally held that their first home was in eastern Bolivia; it seems probable that they encountered no earlier inhabitants in the basins of the Amazon and Orinoco, as they are uniformly spread over large areas of northern South America. They are the most civilised of all Guiana tribes, they are slightly taller than the Warrau, st. 1.55 or 1.59 m. (61 or 62½ in.), and are lighter in colour, c.i. 83.4. The Wapiana and the allied Atorai and Amaripa live on the savannas; they are the tallest of the Guiana tribes, are well-built and have fine features.

The Carib tribes appear to have come originally from the plateau about the sources of the Xingu and Tapajoz in Matto Grosso. The Carib here are a comparatively harmless fishing people and naturally their migrations would follow the courses of rivers. North of the Amazon the Carib met with but feeble resistance from the Arawak and they therefore spread over the northern part of the continent. The custom of eating their male foes was widespread among the Caraio, or Caraïb, and from their name our term cannibal is derived.

In British Guiana there are four groups of Carib: (1) the

Macusi who passed up the Orinoco were perhaps the first to arrive; they were driven by the (2) Arecuna up the Orinoco, then from that river on to the savanna. The Macusi are somewhat darker than the Carinya and Acawoi, but taller and slighter, and with regular features; the powerful Arecuna have the darkest skin of all the Guiana peoples, their features are like those of the Macusi. (3) The Acawoi (including the Paramona) passed along the sea coast without dislodging the Arawak and wandered into their present forest country behind the Arawak some distance from the sea. (4) The Carinya, or true Carib, came much later, about the end of the sixteenth century, and went down the coast; probably the simultaneous arrival of Europeans alone prevented them from taking possession of a distinct tract of country; thus we find them scattered amongst the other groups, but more numerous between the Orinoco and the Pomeroon; c.i. 80·9.

All these tribes have a darker skin than the Arawak; the Carinya are somewhat taller, st. 1·572 m. (62 in.), are better built, stronger, and with coarser features; they are barely brachycephalic (c.i. 80·9) on an average, and artificially deform the head.

Europeans have introduced large numbers of Hindus and Negroes who have mixed considerably with the aborigines; some of the Negro hybrids have escaped into the forests.

WEST INDIES

The peaceful Arawak, sometimes called Tainan, appear to have been the original inhabitants of the West Indies; the islands were invaded later by Carib, but their further progress was arrested by the arrival of the Spaniards. On the large islands the population was exclusively Arawak. On the Lesser Antilles the Discoverers found Carib men with Arawak wives, each sex speaking its own language, showing how recently the islands had been conquered. St Vincent and Dominica were the principal rendezvous of the Carib, although they occupied all the islands from Puerto Rico to the Orinoco. A few still exist in St Vincent and possibly elsewhere. The "Yellow Caribs" must be distinguished from the "Black Caribs" or "Karifs," who are a Carib-Negro mixture.

GENERAL SUMMARY

THE following is a tentative scheme which I desire to place before anthropologists in the hope that they will favour me publicly or privately with their criticism.

Whatever the physiological mechanism may have been, there seems to be good evidence that climatic conditions have indirectly become impressed on the germ-plasm so that definite responses have become heritable. In any case, natural selection, or rather elimination, has always been at work and, combined with isolation areas, has produced stocks with certain associated characters, and it is to such stocks that the term "races" can be applied.

Man has lived for a very long time on the earth; he originally was a variable animal, whatever he may be now, and being able to travel long distances, he has wandered afar even in ancient times. A considerable mixture between different races, stocks, or whatever they may be called, has doubtless taken place at all periods, hence it is extremely difficult to determine whether the modifications from the supposed average type of any given people are due to inherent variability, to reactions to the conditions under which they are living or have previously lived, or to race mixture.

A racial type is after all but an artificial concept, though long continued geographical isolation in areas of characterisation does tend to produce a general uniformity of physical appearance. There are however groups of mankind that exhibit so many intermediate characters that it is often very difficult to classify them. These may be due to racial mixture through long periods of time, but we must always bear in mind that they may be undifferentiated stocks, relics of early man, who have not acquired distinctive traits in areas of characterisation.

There are various areas where these at present hypothetical undifferentiated stocks may persist, western Central Asia may be one. Fleure makes the following remarks: "It seems very likely that Nordic and Mediterranean groups represent divergences from mixtures of ancient long-heads, and divergences which are related to Baltic and Mediterranean conditions. We

in Britain are betwixt and between, neither fully the one nor fully the other for the most part. The most abundant type in England is that of a long-headed, fairly dark and rather tall man, though stunting is sadly frequent. This is not to say that we have not numerous tall, fair long-heads and, in some districts, short dark long-heads, but the general run is neither the one nor the other, and, it seems almost certain, not a mixture of the two. It is rather a case of differentiation which has reached neither the one goal nor the other" (*Eugenics Rev.* xiv, 1922, p. 97, and cf. *J.R.A.I.* L, pp. 39, 40).

These considerations necessitate caution in forming an opinion concerning the affinities of any people, and at the same time they demonstrate the complexity, one might almost say the impossibility, of the task of framing a consistent classification of mankind.

It would take too much space adequately to discuss the question in what region the evolution of man probably took place. In any case we can definitely rule out the New World, as we do not know of any fossil creatures there from which he could have arisen.

There are several reasons which make it difficult to believe that this evolution took place in Africa. The area which has been suggested is that towards the sources of the Nile, or in the region of the Great Lakes. There does not seem to be any evidence that in late Tertiary times, or subsequently, the climate was very different from what it is at present, except that during the periods of northern glaciation there was a more abundant rainfall and a consequent greater extension of inland waters. There would probably be more cloudy conditions and consequently less direct sunshine. The thermal conditions need not necessarily have been seriously modified. The greater humidity doubtless would induce the growth of forests, but these tend to delay human progress. It is generally admitted that some stimulus is necessary alike for physical and cultural evolution. Change of climate or of geographical conditions are factors of considerable importance for the former, and yet we are asked to believe that this equatorial country, which so far as is known has remained in much the same condition for many thousands of years, was the centre of a continuous

human evolution, from which migrations occurred at intervals. These are the conditions that make for stagnation, and it is the universal belief of anthropologists that the greater amount of variations among the Bantu-speaking Africans, as opposed to, say, the West Coast Negroes, is due to racial influences from outside and not to the effects of environment.

It is true that in *Eoanthropus* we have one of the earliest known human beings, but it has yet to be shown that this creature was in the direct line of the evolution of *Homo sapiens*; at all events England, or rather the north-west corner of Europe, has never been regarded as a birth-place for man, and a European origin has few, if any, serious adherents. I certainly am of opinion that "somewhere in Asia" is indicated.

The view has frequently been propounded that man may have arisen independently in more than one continent, but this raises grave difficulties. At present it seems wiser to assume that man arose from a small group of anthropoids who had a relatively limited distribution. That there were many local races of primeval palaeanthropic and neanthropic men, differing slightly from each other, but each having minor characters in common, is rendered the more probable as we find that Lord Rothschild has distinguished five races of gorilla; more than a dozen races of chimpanzee have been described, and Selenka notes seven races of orang-utan, in all cases each being confined to a definite geographical area (Keith, *J.R.A.I.* XLVI, 1916, p. 18).

Mathew has published an ingenious paper ("Climate and Evolution," *Ann. New York Acad. Sci.* XXIV, 1915, p. 171) to show that all the groups of mammals arose within, and dispersed progressively in process of time from, the centre of Asia. He claims "that the environment in which man primarily evolved was not a moist or tropical climate, but a temperate and more or less arid one, progressively cold and dry during the course of his evolution" (*l.c.* p. 212); this view has received various adherents. While there may be considerable evidence for this evolutionary area so far as mammals are concerned, it is equally probable that there may have been shiftings of the centres of evolution with regard to man,

At all events, it does not seem improbable that while the ancestors of man may have arisen in one definite area, there may have been a migration from that area to another, which in its turn became an area of progressive evolution from which dispersals took place at various times and in various directions.

The working hypothesis here adopted is that after neanthropic man had definitely arisen, a division took place which resulted in one group, or groups, being located in a more or less tropical habitat, while the other group, or groups, were located in a temperate country. The great mountain axis of Asia, consisting of the Himalayas and their western continuations, seems to have formed the boundary between these two main areas of characterization. Personally I am inclined to the opinion that the actual evolution of man took place in Western Asia, possibly rather southerly than northerly, in which case the group, or groups, which remained to the south retained on the whole more primitive characters than the group or groups which migrated northerly. Giuffrida-Ruggeri has adopted a very similar view.

In an interesting memoir on the history of the development of the human race ("Menneskerasernes utviklingshistorie, II: Den eurasiske fjellfolds betydning for rasedannelsen," *Ymer*, 1922, p. 314), H. Bryn discusses the racial history of Asia, and says "our common sense jibs entirely if we try to explain how quite primitive men can have pressed into the most central parts of Asia [as now constituted]. They must have come before any great differences took place. But the only logical conclusion from this is that the Eurasian mountain mass was formed after man had spread over Asia." He also states on the authority of T. Arldt (*Die Entwicklung der Kontinente*, 1907) that the most important of the fold-formations which interest us were at any rate in progress in the beginning of the Miocene period, and were formed during that period. Thus in the Miocene were formed the nine anthropological or isolation areas which according to Bryn laid the foundation of Asiatic racial ethnology. Various students have also arrived at the belief that man existed in the Miocene, and Bryn thinks (but I do not agree with him) that he has "proved that the present distribution of the existing races in Asia is a powerful

argument that men must have existed before the Eurasian mountain-folds were formed, *i.e.* in the Miocene" (*l.c.* pp. 355-6).

If this extreme antiquity for man be granted, and it is clear that Bryn is dealing with *Homo sapiens* and not with *Homo neanderthalensis*, then the human stock might have arisen almost anywhere in Asia, and, if he spread widely, he would have been cut off from his fellows within or by various areas of upheaval which eventually formed isolation areas, provided the inclemency of the glacial periods permitted him to survive.

But even if this great antiquity for man be not granted, it may be presumed that the mountain ranges had not acquired their present proportions at the time when dispersal took place, and we may confidently conclude that the climatic conditions were not closely comparable with those now existing in these areas. Thus even admitting that there have been mountainous regions to cross, the climate may have been favourable to vegetable and animal life, and so these barriers might not have proved too formidable.

On looking at a map of Western Asia one finds that east of the Siyah Koh and west of the Paropamisus mountains there are gaps in the east to west mountain masses which, in the latter especially, afford an easy south to north passage. During the periods of glaciation the belt of cyclones would tend to convert present steppes into more or less forest areas and the present poor steppes would have been grass-lands and the salt deserts and marshes were probably large fresh-water lakes. Under such conditions even eastern and central Persia would have been a very desirable land and well fitted for human habitation.

As a matter of fact we do find that the dark-skinned peoples are confined solely to the south of this axis, and the lighter-skinned peoples are north of this axis or can be proved or assumed to have migrated thence to various parts of the world.

If we consider hair-form, pigmentation and the nasal index and place their several gradations—leiotrichy, cymotrichy and ulotrichy; white skins gradually shading into very dark colours; leptorrhiny, mesorrhiny, and platyrrhiny—respectively from north to south we find narrow-nosed, fair-skinned

people with wavy hair north of the mountain barrier, and those with very broad noses, dark skins, and woolly hair well to the south, while in intermediate areas are found intermediate physical characters.

Although the range of any given feature, such as the character of the hair, or head-form, is divided up into groups to which definite names are given, it must be remembered that these demarcations are purely arbitrary and are employed merely to facilitate comparison and classification.

Before going further it is necessary that the reaction of man to environmental influences should be considered; in this I will be as brief as possible.

Lyde (*Papers on Inter-racial problems*, ed. G. Spiller, 1911, p. 104) has discussed the correlation of skin-colour with geographical and climatic conditions which was referred to on p. 8. The problem is, however, more complicated than this. Tanning, or the darkening effect of prolonged exposure to the sun, is limited and not heritable. Conversely, people living in tropical jungles are sometimes fairer than their neighbours, but we do not know whether this very slight bleaching is hereditary. On the other hand a tropical jungle may have been a refuge for an indigenous melanodermic folk from fairer intruders into the country.

The real point at issue (not only as regards skin-colour, but also for the breadth of nose, character of the hair, and other physical features) is whether it is possible that environmental stimuli acting on the body can indirectly become so impressed on the germ-plasm that definite responses are heritable. Experimental biologists almost unanimously insist that "it is now practically certain that characters acquired by the mortal body are not inherited" (E. G. Conklin, *The Direction of Human Evolution*, 1921, p. 14).

Different explanations have been offered concerning those adaptations to geographical and climatic conditions which everyone admits do occur. Two of these may be stated as follows: (1) one view would be that adaptative pigmentation (to take but a single case) has resulted from the action of the environment extending over many generations and presumably at a time when the tissues were more susceptible or plastic

than at present; the variation so acquired having at length become transmissible. But we do not yet know the mechanism by which germ cells might be influenced by environmental action upon the body cells. (2) The other view (as stated on p. 8) is that pigmentation, or any other character, arose as a spontaneous variation, that is as a sport or mutant, independently of the action of the environment, at a period perhaps when variability and mutation were more prone to occur, and the individuals so pigmented, being more fitted to sustain the solar heat, at length outlived the rest; the colouration may have been intensified and its progress accelerated by a process of sexual selection.

In an analogous manner, climatic conditions probably account indirectly for the character of the hair (cf. p. 6).

Very recently A. Thomson and L. H. Dudley Buxton have given us an important memoir on "Man's nasal index in relation to certain climatic conditions" (*J.R.A.I.* LIII, 1923, p. 92). They find that "a platyrrhine nasal index is associated with a hot moist climate and a leptorrhine nasal index with a cold dry climate, the intermediate conditions being associated with hot dry and cold moist climates." They also state that "we must recognise that this feature is determined by environmental conditions and is not to be considered as something necessarily apart or distinctively characteristic of race, except in so far as it affects equally those who live under like or similar climatic conditions. This being so the nasal index loses much of its significance as a purely ethnic character, and it is to be interpreted largely as evidence of the habitat occupied . . . as it is a feature dependent on climatic conditions it may, and doubtless does, undergo marked modifications when these environmental conditions are altered."

These statements of Thomson and Buxton are at first sight somewhat disconcerting to those who accept the racial value of the nasal index, especially since they lay stress on the case of the Kanets of Kulu and Lahoul (p. 114) as an example of a contrast of habitat between allied peoples appearing to produce an alteration in the nasal index, but we are relieved to find that Holland (*J.A.I.* xxxii, p. 96) states that these people are a mixture of Mongolians with Indians. The Kanets

of Kulu have a trace of Tibetan blood, but the fusion is complete; those of Lahoul exhibit many Mongolian traits, but they are not yet thoroughly annealed. The shorter stature, broader heads, and narrower noses of the latter, as compared with the former, thus cannot be attributed solely, if at all, to geographical conditions. Buxton observed a similar phenomenon in the neighbourhood of the Valley of Mexico. Indians who appeared to belong to the same racial stock met in a market in a neutral zone, those who came up from the steaming lowlands were very noticeably more platyrrhine than those from the colder, drier atmosphere of the highlands. As no investigations are recorded, this instance can scarcely be taken as valid evidence for a contrast of habitat producing an alteration in the nasal index. The map given by Biasutti ("Studi sulla distribuzione dei caratteri e dei tipi antropologici," *Mem. Geogr.* vi, 1912, fig. 8, p. 74) shows that the highland people have less broad heads than the lowlanders and the evidence points to a difference in racial stocks.

These authors note exceptions to their formula in South-eastern Asia. The noses are broad (N.I. 83-86), but it would appear that the relative humidity and temperature are so high as to suggest that we might expect a nasal index of 90. May not the explanation lie in the probability of these peoples being relatively newcomers into that area? The extreme platyrrhiny of the Australian aborigines also forms an exception, as these authors admit, to their rule. There is no apparent climatic reason why these natives should be so dark-coloured and broad-nosed, and the same applies with yet more force to the same characters in the Tasmanians. If the opinion of Edgeworth David be substantiated, the Tasmanians reached that then southerly extension of Australia during its last glacial period. Even now Tasmania has a humid temperate climate; thus it is evident that, say, 20,000 years have been insufficient to modify an ulotrichous, platyrrhine, melano-dermous population into one which *a priori* would be more suited to the local conditions.

Palaeontologists recognise that apparently there have been periodic advances or waves of evolution, periods of mutation alternating with periods of stability. Conklin says (1921, p. 19):

"Palaeontologists have generally attributed these evolutionary waves to changes in environment, and they call attention to the evidence that the periods of most rapid evolution coincided with the great climatic changes during the four successive glacial epochs and the interglacial periods." It is unknown how long plasticity may persist, but it seems possible that the power of marked response to environment may to some degree be lost or weakened. It also is probable that certain races are more static than others, and this may perhaps be granted for what are termed the lower races. On the other hand there are races which remain more or less plastic. Conklin asks the question: "Has progressive evolution come to an end in the case of man also?" (*l.c.* p. 24). The observations of Keith on the face of Northern Europeans indicate that an evolution is still taking place; whether this may be termed "progressive" in the true sense of the term, or whether it is a specialisation which may ultimately become injurious, is another matter. At all events in various ways it does seem that some power of adaptation is still possible. On the other hand, certain physical features may have taken a definite direction for so long a time that modification in an opposite direction may be impossible, and this seems to be the explanation of the persistence of the characters of the Australians and the Tasmanians which have just been noted.

If physical characters be largely due, in one way or another, to environmental conditions, they should be continuously affected by residence in that environment. In this case if the extremes in gradations mentioned above are in some measure due to climatic control, these effects should be cumulative in time, and thus one group all the time would become darker in skin-colour, more broad-nosed, and more curly-haired, while the reverse would be taking place with the other extreme until such time as they had become so suited to the local conditions that further progress would be inhibited and thus stability would be reached.

By combining the three sets of characters noted above we get a triple "spectrum" with widely contrasted conditions at each end. For the sake of convenience I have selected only three sets of characters, but there are others which could be

added to them. A process is employed in chemical laboratories whereby a tube is filled with a complex liquid, which gradually becomes so distributed that the element with the highest specific gravity sinks to the bottom and that with the lowest rises to the top; the contents can then be drawn off at various levels, each having a distinctive specific gravity. By taking the latter metaphor we can, I submit, obtain a working hypothesis for the swarming of neanthropic man.

The Ulotrichi (pp. 16-19) would, so to speak, be at the bottom and they would naturally drain into other equatorial regions. Their distribution suggests that the earliest to migrate in a south-easterly and a south-westerly direction were the shorter varieties. The low brachycephaly of most of the pygmy peoples is a problem by itself; perhaps it may be associated with dwarfing. There is also the possibility that the dwarfing has been a cumulative process, conceivably associated with unfavourable conditions; in this case the early Ulotrichi may have been a short stock with a tendency to become shorter or taller. Thus we find in the central regions of New Guinea (p. 121) a very short population; there are distinctly pygmy peoples in places, and along the coastal regions the peoples are usually taller than in the interior and may be quite tall. The shortness of the interior population may be due to a mixture of pygmy with tall Ulotrichi (Papuans), but it may very well be a persistence of a generalised type. So far as stature is concerned the Bushman of South Africa is usually short, but not pygmy (pp. 50, 51); in various respects he is somewhat divergent from the other African Ulotrichi, *e.g.* colour of skin, facial appearance, etc., but his hair offers the most extreme condition of ulotrichy.

The Ulotrichi were followed by short- or medium-statured, dark-skinned, very platyrrhine Cymotrichi, of whom the Pre-Dravidians (Vedda, certain jungle tribes of South India, Sakai, etc.) and the Australians are living representatives, and so far as the evidence goes they took only a south-easterly direction.

Later came less dark-skinned Cymotrichi with narrower noses ranging from platyrrhiny to leptorrhiny; the colour of the skin varies from a dark brown through transparent brown

to tawny white, and the head from marked dolichocephaly to dolicho-mesocephaly, but dolichocephaly may be regarded as the fundamental condition.

In the region embracing extreme south-west Asia, north-east Africa and south Europe, there was and still largely occurs the following series (pp. 21-25): Hamite (Ethiopian), Semite, Eurafrican (Proto-Ethiopian), Mediterranean, Pyrenean, Atlanto-Mediterranean, with the possibility of other groups or types being recognised in the future. These types naturally have spread to contiguous areas. Although the Eurafrican has been called Proto-Ethiopian this type clearly belongs to the more northerly group of these peoples, whereas the Hamite or Ethiopian has always remained more to the south.

Analogous peoples went eastwards. Giuffrida-Ruggeri recognises three dolicho-mesocephalic groups of Asiatic leucoderms: Indo-Afghanus, Irano-Mediterraneus and Indo-Iranus, the latter ranging to low brachycephaly (pp. 22, 86). He also describes a Protomorphic group of mesocephalic xanthoderms (p. 87). In dealing with South China I have suggested (p. 106) that these latter peoples should be regarded as belonging to the group of the Nēsiōts (Indonesians), or to an allied one; there is a strong element of this type in the population of Assam (p. 115) and that of Indo-China generally (p. 117). If this be accepted the peoples in question must be removed from the xanthoderms.

When one is dealing with one of the conventional groupings of characters there is always a danger of being misled by mere terminology; for example, a mesocephalic group may be composed of true mesocephals, or it may contain such a definite proportion of dolichocephals as to suggest that the group was originally dolichocephalic or, at all events, that it has a distinct dolichocephalic element in its constitution, as, for example, the Protomorphic group of Giuffrida-Ruggeri.

Adopting this point of view we find emerging in Southern Asia a group of peoples with the general characters of dolichocephalic to meso-dolichocephalic Cymotrichi, with gradations in the colour of the skin, in the stature, nasal index and other characters. Seriated according to a decreasing amount of

pigmentation we have Dravidian, Nēsiōt and Indo-Afghan, as well as the Irano-Mediterranean and Indo-Iranian of Giuffrida-Ruggeri, and perhaps also other unidentified groups or types.

Wherever may have been the original home of the Dravidians they are now found as a race solely in India; their ancestors must have been mesorrhine at the widest, but by mixture with Pre-Dravidians the nasal index has frequently become much increased, and there are indications (see p. 109) that they sprang from the same source as the early Mediterraneans, as F. J. Richards has also pointed out ("Some Dravidian affinities, and their sequel," *Quart. Journ. Mythic. Soc.* VII, 1917, p. 243). His argument has been supported (without acknowledgment) as regards their mutual cultural relations by Gilbert Scott, *The Dravidian element in Indian culture*, 1924.

Also at about the same level of evolution may be placed that dolichocephalic stock which gave rise to the Nēsiōts (p. 22). This name was suggested to me by Mr L. H. Dudley Buxton, who is preparing a paper on this group. As some ambiguity has arisen in the employment of the term "Indonesian," we decided that it would make for clarity if we adopted a new word with a precise definition. Nēsiōt is the anglicised form of νησιώτης, an islander. The Nēsiōt may be defined as being dolichocephalic, leucoderm, mesorrhine, with wavy black hair, straight open eyes without an epicanthic fold, and of slender build. Distribution: Upper Yangtse Kiang basin and South Chinese provinces, diffused in the Hills of Assam and Burma, Indo-China, Indonesia, and extending into the Pacific. Some of these peoples have been described as being "European" in physical characters; on the other hand peoples who appear to belong to this group seem to merge into the neighbouring xanthodermous population, as in Borneo (Murut, Malang, etc., p. 120). This group deserves further study and needs re-interpretation. The possibility must not be ignored of a primitive xanthoderm dolichocephalic stock having spread in a south-easterly as well as in a north-easterly direction. If this should be established various anomalies could be explained by admitting a mixture between them and

leucoderm and brownish-skinned dolichocephals with "European" characters.

The Indo-Afghan may be regarded as a special stock developed in an area of characterisation. The Irano-Mediterranean, as has been mentioned (p. 86), seems at base to belong to the same stock as that from which the Mediterranean stock arose and it is doubtful whether it really forms a distinct stock, and the Indo-Iranus (p. 86) should for the present be regarded as an intermediate or a mixed type.

It is difficult to find a name for this congeries of peoples. On the whole they fall into the "Brown Race" of Elliot Smith (p. 24), but this term is not a very good one, as it includes peoples of varied complexion from the Hamite to the Mediterranean, and it may be regarded more as a group of races than as one race.

All the above belong to the southern areas of characterisation; the Ulotrichi, Pre-Dravidians and early Hamites being always in the tropical or sub-tropical regions of the Old World. The Semites, Dravidians, Nēsiōts and others arose in less hot regions and the Mediterraneans and certain Nēsiōts seem to have originated in a more temperate climate. With very few exceptions they all are dolichocephalic; the local meso-brachycephaly of the taller Ulotrichi may perhaps be due to a subsequent mixture and the same holds good for the lighter-skinned Cymotrichi mentioned above, but among these there seems to be a decided tendency to a broadening of the head as occurs among northern Cymotrichi. But we are now dealing with primary migrations, before later movements complicated matters.

To the north of the mountain axis we find lighter-skinned peoples who primevally were presumably dolichocephalic, but most of them acquired a mesocephalic index which has been retained.

It seems probable that the main stock of these dolichomesocephalic leptorrhine leucoderms, who may have had fair hair and light eyes, were occupants of the steppe regions of Eastern Europe and Western Asia north of the plateaux. It may be that the Solutreans (pp. 56, 66) were their first western migrant representatives. (The Aurignacians of Western

Europe (pp. 34, 56) are generally admitted to have arrived there from North Africa and were varieties of a Proto-Ethiopian stock, or at all events of an allied stock.) It is from this Proto-Nordic stock that the Nordics subsequently differentiated.

Corresponding craniologically in some respects to the western mesocephals are the Northern Amerind (pp. 30, 126), that is, the North American Indians of the Plains and Eastern Woodlands. Hrdlička thinks that he has found their cradleland in Central Asia, which was to be expected.

A much discussed people is the Ainu (pp. 26, 94), who appear to be a stock that arose north of the axis and I suggest that they went in a north-easterly direction across Asia and found their way southwards from the Kurile to the Riu-Kiu Islands.

So far I have considered only the narrower-headed peoples, and we must now pay attention to the brachycephals.

At more or less the centre of our "diffusion column" we have in the western plateaux, that is, from the Hindu Kush westwards, brachycephalic leucoderms (pp. 26-28), and in the eastern plateaux mainly brachycephalic xanthoderms (pp. 31, 32). At first sight one would be tempted to regard the brachycephaly as being due to the altitude of these respective areas, but this has not operated in Africa, nor is there any satisfactory evidence that it has done so elsewhere. Nor can climate alone be effective. For the present we may adopt the suggestion that has been made, that diet may have something to do with it. At all events the fact remains that practically the whole of the brachycephaly that obtains in the world to-day can in most cases definitely be shown to have been derived from either of these stocks, or there is a strong presumption in favour of such origins.

There is no valid reason to assume any close connection between these two groups of brachycephals—one is as distinctly "European" as the other is "Asiatic." Both have retained the dark pigmentation of the hair and eyes, but the xanthoderms have acquired typical leiotrichous hair and each has blossomed into several varieties.

The westerly extension of the leucoderm brachycephals has

been referred to on p. 57, and the easterly on p. 104, but Mr Dudley Buxton informs me that among the population of South Mongolia, and possibly extending into Manchuria, there are recognisable elements in the population which in his opinion can only be allocated to this group of people, and therefore presumably to the Pamiri section of it. There is nothing improbable in this suggestion, but no data have yet been published.

The xanthoderm brachycephals require to be more carefully studied; they seem to have originated in the eastern plateaux of Asia, in which case some moved in a south-easterly direction and gave rise to the group which is generally known under the term of "Southern Mongols" or "Indo-Chinese," but as the term "Mongol" is somewhat ambiguous they might be called "Southern Mongoloid" (p. 32). In the first edition of *The Races of Man* (1909) I adopted as an alternative name "Pareocean" (*παρ-ηοῖος*), "from beside the east," which had previously been proposed by T. W. Kingsmill in ms., and I suggest that this term should be used in the future, and for this reason I have employed it in this book.

So far, I have considered the races of the Old World; those of the New World undoubtedly crossed over from Asia at various times and some doubtless in extreme antiquity. At present it is not possible to trace them to their sources and the tentative suggestions here made must be accepted with caution. As stated on p. 133, the oldest stock appears to be the Palaeo-Amerind, which is best exemplified by the Lagoa Santa type (p. 22). There are abundant traces in South America of other ancient dolichocephals, survivals of whom occur among certain existing peoples (pp. 22, 134). According to Roland B. Dixon (*The Racial History of Man*, 1923) there may have been two varieties of these ancient dolichocephals, and these may be traced in old burials through Central America into North America, especially along the Pacific coast. For the present we may regard these types as varieties of the Palaeo-Amerind race and we may assume that the race arose from a more primitive stock in Asia than any of the other Amerinds. Indeed we may place it about the level of the Pre-Dravidian, but presumably it arose north of the axis

and thus belonged to the lighter coloured series of the Cymotrichi. The evidence of the existing derivatives suggests that the type was xanthodermous; if that was the case, we may regard it as representing an ancestral form of xanthoderms who had not acquired brachycephalism nor the more distinctive "Mongoloid" characters.

I am inclined to regard the Northern Amerind (pp. 30, 126) as a separate migration from Central Asia, perhaps allied to the more dolichocephalic element of the Palaearctic group (p. 30).

The Eskimo (pp. 29, 126, 128) may reasonably be regarded as belonging to a definite migration along an arctic route; it has been suggested that the Magdalenian skull from Chancelade, Dordogne, shows a close affinity with that of an average Eskimo (pp. 55, 56). The explanation may be that in Upper Palaeolithic times there was a northward spread of an early type of dolichocephal which had become adapted to a cold environment and thence drifted to the west and to the east; possibly the latter branch subsequently acquired a few "Mongolian" traits.

There appear to have been several drifts of leiotrichous brachycephalic xanthoderms into America, which gave rise to the Neo-Amerind and Tehuelche (p. 33) races, but doubtless, as Dixon suggests, there may have been other races or sub-races. One of the last of these movements was that of the North-west Coast Amerinds (pp. 33, 127, 128).

Evidence is accumulating that the last migration from Asia into North America was that of the Athapascan linguistic stock (pp. 127, 128, 131). It is characterised by the skull being brachycephalic, high and leptorrhine.

When speaking of migrations I do not intend to convey the idea that there were movements of large numbers of persons; it is possible that there was a very prolonged drifting of small groups which might account for the great diversity in America, though certain American ethnologists claim that there is but one American race. Clark Wissler, in his excellent book, *The American Indian*, 1917, says (p. 319): "That the New World native is a direct descendant of the Asiatic Mongolian is not to be inferred, for the differentiation is evidently remote; what

is to be implied, is that somewhere in the distant past the Asiatic wing of the generalised type diverged into strains, one of which we now know as Mongolian, and another as American."

This scheme is not a classification as that word is understood by zoological and botanical systematists, as it includes geographical considerations. All those who have attempted to make a systematic classification of mankind have found themselves in difficulties and have frequently fallen back on geographical groupings. Deniker in 1889 (*Bull. Soc. Anth. Paris*, XII, p. 320) produced a very useful diagram which combined physical characters and spatial distributions; his later grouping (*The Races of Man*, 1900, p. 289) is less suggestive. For many years I have employed a diagram for teaching purposes on which that shown on p. 157 is based.

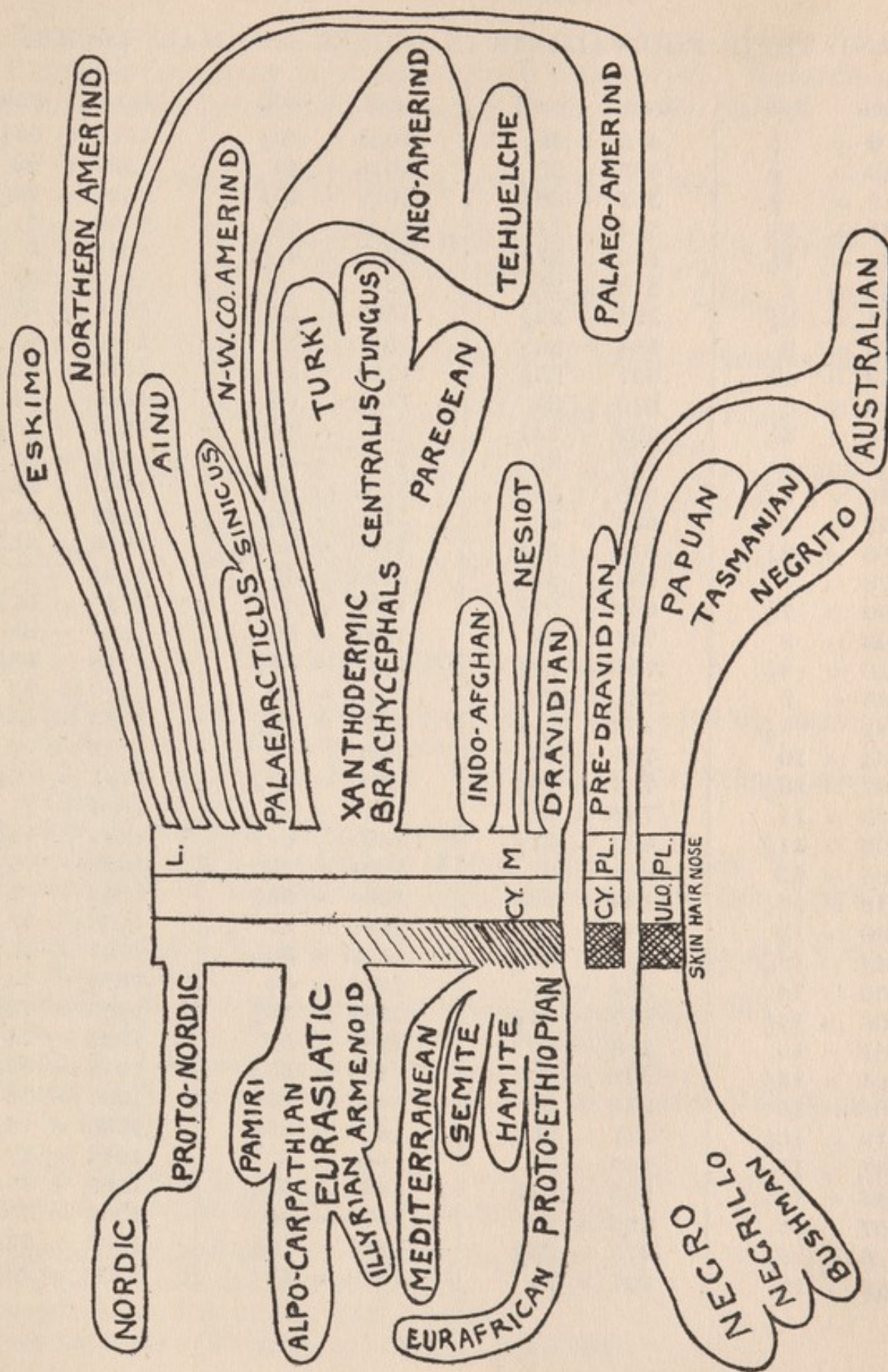
Griffith Taylor has published in *The Geographical Review* (XI, 1921, p. 54) a paper entitled "The Evolution and Distribution of Race, Culture, and Language," which seems to some extent to have been suggested by the paper on "Climate and Evolution," by W. D. Mathew (*Ann. New York Acad. Sci.* XXIV, 1915, p. 171). He suggests a zonal distribution based on the average cephalic index of various peoples, and ranges all the main races strictly in order according to their average cephalic index.

The following is his scheme in brief. Zone I. Negrito type (which he assumes was originally very dolichocephalic): Negrillos, Negritos, all somewhat mixed; Tasmanians are Negrito half-castes with the Dravidian Australians. Zone II. Lower Negro: Sudanese and West Coast races; Papuans and Southern Melanesians. Zone III. Higher Negro or Mousterian races: Bantu; Australians; Botocudo; Dravidians. Zone IV. Hamites and Semites: Ethiopians, Masai, Hottentots; Higher Melanesians; Iberians, Copts, Etruscans, Portuguese, Panjabi, Igorots, Moriori, Micronesians, Eskimo, Hurons, Seri, and Yaghans. Zone V. Nordic races: The higher Aryans; Alpines; Alpines in Asia; Palaeo-Siberians, Tungus, etc., Tibeto-Chinese; Late Aryan and Alpine peoples in America.

In following a definite line based on the cephalic index Griffith Taylor has been led to strange conclusions which are

not always consistent, and I doubt if they will find acceptance. I have alluded to this paper partly because it does not seem to be generally known and partly as a warning against a too restricted basis for a classification of mankind, and the latter remark appears to me to be also applicable to Dixon's *Racial History of Man*.

No suggestion is here made that all the main types necessarily migrated in the order in which they have been mentioned, nor that when they spread they were as well marked racially as they are now. If evolution continually took place in response to external and internal stimuli or by a process of elimination, there is no need to believe that all the highly characterised types arose as such in a central limited area, but that more or less generalised types did so may be conceded. It naturally follows from this point of view that while groups having definitely linked characters (that is, groups which may be termed races) dispersed in various directions, there also may have been a dispersal of less determinate groups, which may be considered as having certain characters in common with the more specialised neighbouring groups and, further, being more or less undifferentiated groups, they would necessarily retain generalised ancestral characters. If this be granted, an explanation may be found for certain intermediate or unclassed peoples which puzzle the systematist and to which allusion has already been made (pp. 2, 85, 140). In other words, the intermediate characters of such peoples may be primitive and not due solely to racial mixture, though without doubt the latter has often occurred at all periods of human history and has given rise to mixed groups. A final conclusion is that the evolution of the existing "higher" groups has not taken place from existing or even ancient "lower" groups, but that these main groups, so far as they are pure stocks, have arisen independently from a common unspecialised stock which I assume in far distant time to have originated in Western Asia.



METRICAL MEASUREMENTS

AND THEIR EQUIVALENTS IN INCHES AND HALF-INCHES

mm.	inch	mm.	inch	mm.	inch	mm.	inch
6	= $\frac{1}{4}$	495	= $19\frac{1}{2}$	1004	= $39\frac{1}{2}$	1512	= $59\frac{1}{2}$
13	= $\frac{1}{2}$	508	= 20	1016	= 40	1524	= 60
19	= $\frac{3}{4}$	521	= $20\frac{1}{2}$	1029	= $40\frac{1}{2}$	1537	= $60\frac{1}{2}$
25	= 1	534	= 21	1042	= 41	1550	= 61
38	= $1\frac{1}{2}$	546	= $21\frac{1}{2}$	1055	= $41\frac{1}{2}$	1562	= $61\frac{1}{2}$
51	= 2	559	= 22	1067	= 42	1575	= 62
64	= $2\frac{1}{2}$	571	= $22\frac{1}{2}$	1080	= $42\frac{1}{2}$	1588	= $62\frac{1}{2}$
76	= 3	584	= 23	1093	= 43	1601	= 63
89	= $3\frac{1}{2}$	597	= $23\frac{1}{2}$	1105	= $43\frac{1}{2}$	1613	= $63\frac{1}{2}$
101	= 4	610	= 24	1118	= 44	1626	= 64
114	= $4\frac{1}{2}$	622	= $24\frac{1}{2}$	1131	= $44\frac{1}{2}$	1639	= $64\frac{1}{2}$
127	= 5	635	= 25	1144	= 45	1651	= 65
140	= $5\frac{1}{2}$	648	= $25\frac{1}{2}$	1156	= $45\frac{1}{2}$	1664	= $65\frac{1}{2}$
152	= 6	661	= 26	1169	= 46	1677	= 66
165	= $6\frac{1}{2}$	673	= $26\frac{1}{2}$	1181	= $46\frac{1}{2}$	1690	= $66\frac{1}{2}$
178	= 7	686	= 27	1194	= 47	1702	= 67
190	= $7\frac{1}{2}$	699	= $27\frac{1}{2}$	1207	= $47\frac{1}{2}$	1715	= $67\frac{1}{2}$
203	= 8	711	= 28	1220	= 48	1728	= 68
216	= $8\frac{1}{2}$	724	= $28\frac{1}{2}$	1232	= $48\frac{1}{2}$	1740	= $68\frac{1}{2}$
228	= 9	737	= 29	1245	= 49	1753	= 69
241	= $9\frac{1}{2}$	750	= $29\frac{1}{2}$	1258	= $49\frac{1}{2}$	1766	= $69\frac{1}{2}$
254	= 10	762	= 30	1270	= 50	1778	= 70
267	= $10\frac{1}{2}$	775	= $30\frac{1}{2}$	1283	= $50\frac{1}{2}$	1791	= $70\frac{1}{2}$
279	= 11	788	= 31	1296	= 51	1804	= 71
292	= $11\frac{1}{2}$	800	= $31\frac{1}{2}$	1309	= $51\frac{1}{2}$	1817	= $71\frac{1}{2}$
305	= 12	813	= 32	1321	= 52	1829	= 72
318	= $12\frac{1}{2}$	826	= $32\frac{1}{2}$	1334	= $52\frac{1}{2}$	1842	= $72\frac{1}{2}$
330	= 13	838	= 33	1347	= 53	1855	= 73
343	= $13\frac{1}{2}$	851	= $33\frac{1}{2}$	1359	= $53\frac{1}{2}$	1867	= $73\frac{1}{2}$
356	= 14	864	= 34	1372	= 54	1880	= 74
368	= $14\frac{1}{2}$	877	= $34\frac{1}{2}$	1385	= $54\frac{1}{2}$	1893	= $74\frac{1}{2}$
381	= 15	889	= 35	1397	= 55	1905	= 75
394	= $15\frac{1}{2}$	902	= $35\frac{1}{2}$	1410	= $55\frac{1}{2}$	1918	= $75\frac{1}{2}$
406	= 16	915	= 36	1423	= 56	1931	= 76
419	= $16\frac{1}{2}$	927	= $36\frac{1}{2}$	1436	= $56\frac{1}{2}$	1943	= $76\frac{1}{2}$
432	= 17	940	= 37	1448	= 57	1956	= 77
444	= $17\frac{1}{2}$	953	= $37\frac{1}{2}$	1461	= $57\frac{1}{2}$	1969	= $77\frac{1}{2}$
457	= 18	966	= 38	1474	= 58	1981	= 78
470	= $18\frac{1}{2}$	978	= $38\frac{1}{2}$	1486	= $58\frac{1}{2}$	1994	= $78\frac{1}{2}$
482	= 19	991	= 39	1499	= 59	2000	= $78\frac{3}{4}$

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THIS bibliography is obviously not exhaustive. References to further literature will be found in the works cited.

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A.f.A.	Archiv für Anthropologie, Braunschweig.
B.A.E. Bull.	Bureau of American Ethnology, Bulletin, Washington.
B.M.S.A.P.	Bulletins et Mémoires de la Société d'Anthropologie, Paris.
B.S.A.P.	Bulletins de la Société d'Anthropologie, Paris.
G.J.	Geographical Journal (R.G.S.), London.
J.A.I.; J.R.A.I.	Journ. Roy. Anth. Inst. London (the addition of "Royal" was made in vol. xxxvii, 1907).
L.A.	L'Anthropologie, Paris.
T.R.S.E.	Transactions of the Royal Society of Edinburgh.
Z.f.E.	Zeitschrift für Ethnologie, Berlin.

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