

Biological Types of Man in England and Wales.

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In January 1902 a young foreigner found help and counsel under the guidance of Professor HESCHELER and realised that the Professor was interested not only in animals as such, but also in animals as related to man and in biology as an approach to the study of mankind. These interests have been developed in subsequent years and are one reason for the choice of subject for this article, the writer having found opportunities in Great Britain for the study of man on biological lines in correlation with geographical and archaeological researches.

Methods in the study of human biology have been the subject of much discussion. How may we describe the physical characters of a population? Many have followed the plan of taking a large sample and then working out separately the means and standard deviations of the values measured for each character throughout the sample. This done, the description of the population becomes a list of figures. Head length $X \pm \sigma$ and so on for every character. Underlying this method is the theory that, given free intermarriage, a group will tend to become more or less uniform, with a certain range of variation round about a mean. But this is not to any large extent true; in old established British populations that have long intermarried freely we have tall and short, longheaded and broadheaded, blond and brunet side by side generation after generation. There may be mingling of characters; there is also segregation of characters. MENDEL's view of heredity must not be ignored. The above-mentioned method however has another drawback; it attaches too great importance to small arithmetical differences. Thus, if in one sample the mean of cephalic indices be 78.5 and in a neighbouring one 78.8, it is dangerous to argue very much, even if the samples be

large. A small difference in mean values may often hide considerable differences in the populations concerned. Moreover the longer-headed individuals may be taller or shorter than the broader-headed ones, but the method of treating the characters separately will not bring this out at all. We need to try to see the whole man, not only separate characters.

Another method has been to describe the diverse elements within a population by referring them to certain hypothetical standard types which may be, in part, scientific inferences, but which usually have large subjective elements in them. For example, the population of Northern Germany is said by some writers to be largely "Nordic", and this is based upon the fact that fair hair and light eyes are widespread; a high value is subjectively attached to 'blondness' and the facts of widespread broadheadedness, etc. are given less weight. The method of reference to standard types, when used conscientiously, can be of somewhat more value than the method of means and standard deviations; it at any rate allows for inheritance of diversities side by side, but it has many pitfalls.

At present it seems best to try to find out any groups of characters occurring together in numbers of individuals in a population, and to describe those groups of characters and give an estimate of their abundance or otherwise in a population by means of a percentage statement. Thus in the south-east of the Isle of Man, in some areas south of Rossendale in Lancashire, as well as in some parts of Wales, quite an important percentage of the population shows the following group of features: a head that among males rarely gives a cephalic index above 78.5 or 79, a smooth oval face without browridges or cheekbones strongly marked, rather small bones and short stature, dark brown hair and brown pigment in the iris of the eye. When care is taken to record the family history of the people concerned and only those are considered whose grandparents all belong to the district, the proportion of men in these areas carrying this group of characters is raised, and this points to its being an old-established feature of the regions mentioned. Though exact surveys have not yet been made in many other parts of England and Wales, it is generally known that this group of characters occurs in a relatively high proportion of the people of parts of Devon, of the Chiltern Hills¹⁾ and of some valleys among

¹⁾ HADDON, A. C. *Physical Characters of the People of Barley, Hertfordshire*, Rept. Brit. Assoc. Advance. Sci 1897 and BRADBROOKE, W. and PARSONS, F. G. *Journ. Roy. Anthr. Inst. London* 1922.

the Pennine Hills of which Rossendale is, as it were, a western branch.

In some remote districts in Wales one finds also men with very narrow long heads²⁾, giving a cephalic index usually under 74, along with strong brows and cheek-bones, rather broad noses and prominent mouths and a skull with a high median line, while hair and eyes are dark and the skin usually shows a little brown tinting. Now the latter group of characters, apart from the pigmentation, is much like a group of characters common among the skeletons of the late Palaeolithic Age in Europe and among some indigenous populations of remote or isolated areas such as certain Indian forest-lands and Australia. There is thus some ground for thinking that these characters, or tendencies towards them, have been handed down from the early days of man, man in the stricter sense, and survive amongst us.

The former group of characters on the other hand, again apart from pigmentation, agrees in many respects with characters of skeletons found in the graves associated with the megalithic culture which marked the advent of civilisation in West Britain and which spread to West Britain mainly from southwest Europe. As similar features, this time including those of pigmentation, are widespread among peoples of the southwest of Europe and the western Mediterranean, we infer that these groups of characters reached Britain in considerable proportions in the early stages of the development of its maritime connections with lands to the south. One should however note that pigmentation is usually less marked in Britain than it is in southwest Europe, and this is one of a multitude of indications that pigmentation is rather related to climatic, even to latitudinal, zones than endowed with a high constancy independent of environmental stimuli.

If next we ask why the characters just discussed are widespread in the particular regions mentioned, the answer is a complex one. Firstly Devon and Cornwall, as well as parts of Wales and the Isle of Man, were specially and diversely affected by the two more maritime facies of the prehistoric megalithic culture, and there are many indications that that culture for a very long time had a strong hold on men's minds. Naturally enough, therefore, the characters we are considering are firmly rooted and widely distributed in the region in question. As regards the Pennines, and especially Ros-

²⁾ FLEURE, H. J. and JAMES, T. C. Geographical Distribution of Anthropological Types in Wales. Journ. Roy. Anthr. Inst., London, 1916.

sendale, we know through history that the region long served as a refuge for old-fashioned ways however much parts of it may have been industrialised in the nineteenth century. The area of the Chiltern Hills again was long an old-fashioned forested area under the charge of a special steward and some of its humble village families can be traced back in the same little group of villages for centuries.

But, it may be asked, is not all this merely a historical curiosity? Has not modern industrial movement obliterated all this? It has indeed been shown that in several cases there are appreciable contrasts between the general present-day population of a certain area and that portion of it which is of long local ancestry³⁾, but the differences have not been obliterated by movement. All observers have noticed that the majority of industrial migrants of the nineteenth and late eighteenth centuries moved only relatively small distances, so that large numbers of the ancestors of the workers of Bolton, a large town just southwest of Rossendale, can be traced back to village ancestors within a radius of perhaps twenty miles.

Be it noted that the short, dark, long-headed, smooth-cheeked people of these British areas are not necessarily identical with the people of southwest Europe who have similar characters, nor are they all alike. There is only a limited value attached to the term 'Mediterranean Race'. It is better to think of a number of strains inherited side by side with some mingling and segregating of characteristics, and to remember that among most of these groups can be found individuals here and there with the very long narrow head and other features already noticed. Here it may be worth while to state that COLLIGNON⁴⁾ in the last quarter of the nineteenth century noticed this group of characters among the living people of the Dordogne department in France and said that he felt sure it was a survival of an ancient type as yet undiscovered. Years afterwards the Combe Capelle skeleton (*Homo awrignacensis*) was found in this same region and it exhibited the characters in question.

The argument of the preceding paragraph should help us to disabuse our minds of the idea of a pure race. Probably there never has been one, and it is very likely that it would lack vigour were it brought into existence. The danger of intermarriage between two

³⁾ DANIEL, G. H. Changes in the Racial Character of the Population of the Llandebie District. Journ. Roy. Anthr. Inst., London, 1937.

⁴⁾ COLLIGNON, R. Anthropologie de la Dordogne. Mem. Soc. Anthr. Paris 1894 pp. 46 ff. et 64.

people with just the same chromosomal defect would be greater in a pure race than it is among more mixed populations, and defects among human folk are specially liable to involve mental weakness or trouble. The mixture of somewhat diverse stocks, not so diverse as to produce marked disharmonies, seems to be one of nature's methods of insurance against biological deficiency. On the cultural plane also, history has shown repeatedly that minglings of diverse heritages have produced vigorous development. The Huguenots brought immense gains to the thought of Britain, Holland, Prussia and Switzerland, and the Jews have been another fertilising stream in many lands, the debt of Britain and Germany to them being a notable feature of the life of both lands.

Though something, at any rate, can be argued about the advent of the short dark longheaded smooth-faced characteristics in Britain, we are still at a loss about another group of characters⁵). These are found chiefly on various spots near the west coasts of England and Wales, in south Devon, in south and west Wales here and there, in west Lancashire, in the Hebrides of Scotland and so on. The men have broad heads, broad squarish faces, often large prominent noses, broad strong shoulders, sometimes tall stature, dark hair and grey or brown eyes. They occur in small patches and rarely form more than, say, twenty per cent of a local sample, but outside these small patches the percentage usually drops immediately to three, sometimes even lower.

If we look outside Britain we find these same characters among the people of the Tréguier-Paimpol area in north Brittany, the Morbihan and sundry coastal patches in western France, Spain, Sardinia, Sicily and south Italy. There may also be some kinship with men who are broad-headed and dark and live on the Norwegian coast south of Bergen, but these people are relatively short. The probability is that we are here dealing with descendants of a sporadic deposit from coastwise movements, not forming separate communities, perhaps, but penetrating into communities already in existence. When such coastwise movements may have occurred we can hardly decide. It is certain that there were many movements involved in the spread of the various facies of the megalithic culture, an effort probably stretching over several centuries. Some movement in that series may be responsible for what has just been described. Again, in the immediately pre-Roman Iron Age, trade

⁵) FLEURE, H. J. and WINSTANLEY, L. *Anthropology and our older Histories*. Journ. Roy. Anthr. Inst., London, 1918.

and intercourse up the west coasts of Europe revived after a period of poverty, and we cannot rule out the possible influence of the movements involved.

Another group of characters that is somewhat uncommon in England and Wales and has not yet been identified in special measure with particular localities is nevertheless of considerable interest. It includes a broad head rather highly arched from front to back, often with the occipital region sloping rather steeply down instead of bulging out as it does among the dark longheaded people. The brows tend to be very strong and so, often, do the cheek bones, the nose is strong and may be arched, the colouring varies but is often rather light, the bones are strong and the stature often high. These characteristics, apart from those of pigmentation, occur among the skeletons associated with beaker pottery in burials of the dawn of the metal age in the east of Great Britain⁶⁾ and, so far, no case with these characters is known from periods before this in the British Isles. The burials in mounds with beaker pottery demonstrate a fashion which spread to Britain from the Low Countries and Central Europe and analogous skeletons are found there; and similar characters are found among individuals here and there in central and western Europe. In Britain it seems likely that further work will demonstrate the importance of the survival of these characters in Derbyshire and in eastern Aberdeenshire⁷⁾, both areas famous for the ancient burials in question. Here again, however, as before, we are unable to say anything about the colouring of the people of the ancient burials. In addition to the possibility of local concentrations, the group of characters under discussion occurs generation after generation in some British families, the DARWIN family being a famous example here and a useful instance of the handing on of characters in spite of intermixture through marriage. The traditional English farmer, so often drawn more or less in caricature under the name John Bull, is shown with the features that have just been discussed. This fact gives an impression of widespread occurrence of these characters which is in the main contradicted by observations thus far, though people showing these features may be claimed to be an important, even if not very numerous, element in the British population.

⁶⁾ GREENWELL, W. and ROLLESTON, G. *British Barrows*, 1877.

⁷⁾ LOW, A. In *Proc. Anat. and Anthr. Soc. Aberdeen* 1902-4 and 1904-6.

TURNER, SIR W. *Craniology of the People of Scotland*. *Trans. Roy. Soc. Edinburgh* 1914-15.

The northern part of the Isle of Man⁸⁾, the Ribble valley in mid-Lancashire and parts of Pembrokeshire have been shown to have large numbers of men with large and rather long or medium heads giving cephalic indices massing between 74 and 82, maxima being attained about 77 and again about 79 to 80. Those with lower cephalic indices include rather more tall men as the table shows for the Isle of Man:

	Fair adult men.		
	Ceph. Index x—78,5	Ceph. Index 78,6—82,5	Ceph. Index 82,6—y
Stature k—1715 mm	78 or 38%	98 or 41,5%	21 or 42,9%
Stature 1716—1 mm	127 or 61,9%	138 or 58,5%	28 or 57,1%

In the north of the island, where 47.3 % of the sample of men taken are fair and 48.9 % dark, the proportion of men with stature above 1715 mm is as great as 71.8 %. This is one of several indications that fair colouring and tall stature often go together. What can we say about the tall fair men and the factors of their occurrence in these parts of Britain?

It is well known that considerable numbers of sea-rovers, in the west often called Norsemen, came to the north of the Isle of Man in the early Middle Ages and, perhaps a little earlier, made parts of Pembrokeshire a station for their maritime intercourse between Dublin and Bristol. As preliminary observations suggest that fair colouring and stature above the average are fairly widespread in other 'stations' of that maritime intercourse, in the Gower peninsula and south Glamorganshire, it is at least possible that these areas received accessions of rather tall blond population from some part of northern Europe during the period named. It is not easy to reach a conclusion at present about the Ribble Valley. Rather tall blond men are apparently more numerous in both Cumberland and Yorkshire than they are in southeast Lancashire and the element in question in the Ribble Valley may be connected with either or both these counties; the Ribble valley on the Lancashire side links itself over a low col with the Aire valley on the Yorkshire side. There is however a further question concerning the relationships of these tall blond men with north European peoples. In the districts of Norway in which tallness and blondness are found least mixed with shortness or darkness the cephalic indices of the men are massed between the cephalic indices of 75 and 80, with a sharp

⁸⁾ See DAVIES, E. and FLEURE, H. J. Anthropometric Survey of the Isle of Man. Journ. Roy. Anthr. Inst., London 1936.

drop about the latter figure⁹⁾. In Sweden¹⁰⁾ again the numbers are massed between the cephalic indices of 73 and 80 and especially between 75 and 78. Unfortunately we do not get information as to how blondness and cephalic index are bound up together but in a specially blond zone including the following l a n d s Södermannsland, Östergötland, Göteborg and Bohus, Älvsborg, Skaraborg, Värmland, Örebro, Västmannsland, Kopparberg, Gävleborg the maximum is at the cephalic index 76 and it is only the indices 75 to 78 that have, each, more than ten per cent of the sample. In Jönköping, Kronoberg and Kalmar, l a n d s just south of the zone mentioned, there is a slight tendency towards larger numbers for somewhat broader heads; for example, it is the indices 75 to 79 that have, each, ten per cent or more of the sample, and the figure does not fall below five per cent until the index 82 is reached whereas it falls thus on reaching 81 for the zone first mentioned.

Comparing these figures with those thus far obtained in the British Isles we reach the tentative conclusion that the maxima of the Norwegian and Swedish graphs and the maximum in British graphs around the index 77 mean much the same, but that, in the British Isles, there is another element which, being superadded, gives another maximum at 79 and 80 reaching at times even to 81. It is generally allowed that the Norwegian and Swedish areas above-mentioned show the Nordic characters in the highest degree. Therefore, while, in the British districts hitherto studied in some detail, these characters are represented in a moderate proportion of the blond individuals, it would be easy to exaggerate the pure Nordic element by adding to it those persons whose characters give the curve its second maximum. The same is true for North Germany, where, so far as is known, the second maximum of the British graph for blond men would be far more important than the first. This however needs much more investigation.

The biological investigation of a country's population on the lines above sketched out, with analysis according to districts of ancestry and with the steady effort to ascertain the groups of characters that tend to go together, is a long and difficult process, and it has, thus far, only begun so far as Britain is concerned. If carried out, it would give more detailed information about Britain than we have about most other countries, for it is rare that we have

⁹⁾ BRYN, H. *Der nordische Mensch*. München, 1929.

¹⁰⁾ LUNDBORG, H. et LINDERS, F. J. *Anthropologica Suecica* MCMXXVI. Uppsala 1926.

scientific reports of groups of characters handed on together within a population. It is seen that, when analysis is made on these lines, light is sometimes thrown on problems of origins and distributions by the study of archaeology, and a review of the vegetative covering of the country in past times would also help for, until iron came into use, forests were formidable, and even later, swamps remained serious barriers¹¹). On the other hand the dip-slopes of porous rocks such as the chalk and the Jurassic limestones and sandstones of southern and eastern England were mostly covered with relatively light scrubby vegetation grading into woodland in places, but fairly easy to clear. The heavy, cold, impervious soils of the clay-vales bore thick, damp, oak forest (*Quercus robur pedunculata*) and were only slightly occupied by man, save along banks of river-gravel. In the areas of old rocks, usually higher land, the surface is often impervious and frequently has a covering of morainic materials, so there is a marked tendency to woodland, with the limitation however that high surfaces specially exposed to the salt southwest winds would often be bare of trees even if not too wet for them. The trees of special importance are the birch and the little oak (*Quercus sessiliflora*), less formidable than those of the clay-vales of England, but also less valuable to man. This is a general statement of the condition of affairs in England and Wales given climatic conditions like those of the present, but those conditions have varied. In the warm period of the Bronze Age (Le bel âge de bronze en Suisse) British woodlands were probably thinner, the hills drier, and occupation of the valleys, especially the river gravels, denser. In the cold wet period (about 750-450 B.C.) called the sub-atlantic phase¹²), which followed the above, peat bogs spread over woodlands, and swamps increased so that hill-brows and well-drained slopes gained a special value. FOX¹³) has shown that, while some forest clearing was done during the Roman occupation of Britain and probably just before it, much more of this occurred in the post-Roman period, as in Germany, where this phase is often described as 'Die Rodungszeit'.

Allowing for climatic variations we may say that, speaking broadly for prehistoric times, after the Ice Age and its main

¹¹) FLEURE, H. J. and WHITEHOUSE, W. E. Early Distribution and Valleyward Movement of Population in Britain. *Archaeologia Cambrensis* 1916.

¹²) See GAMS, H. and NORDHAGEN, R. Postglaziale Klimaänderungen Geogr. Gesellschaft in München, 1923; and FLEURE, H. J. The Bearing of Changes of Climate on History. *Bulletin of the John Rylands Library* 1935.

¹³) FOX, SIR CYRIL F. *The Archaeology of the Cambridge Region*, 1923.

consequences had passed away, various lines of hills and hill-brows, mainly of porous rock, meeting near Stonehenge (Wiltshire plateau) were the more important areas of settlement and the Stonehenge district was correspondingly a metropolitan region where east (the culture with beaker pottery for example) and west (the coastal culture with megaliths) both combined to produce great works. This area was repeatedly the chief region of England until after the great forest clearing of Anglo-Saxon times. It was, notably, the essential Wessex, which first created a measure of unity in Anglo-Saxon Britain.

To these lines of hills we must add many windswept and rocky areas, high and low, of the west, Cornwall, Devon, Wales, Cumberland, etc. mostly separated from the more eastern group of settlement locations, the hill lines converging upon Stonehenge, by damp oak forest, so that the two regions retained many differences though they did communicate, apparently by sea and to some extent by land. It is these westcoast areas, and some of the eastern group, that seem to have received the mass of the short dark longheaded people, whereas the eastern group almost alone received the makers of Beaker Pottery, following earlier immigrants.

We must further add the Pennine and other northern hills forming a third, again rather separate, region of settlement stretching into what is now Scotland.

Readers of SHAKESPEARE will recall that while Lear was overlord, Cornwall (the west) and Albany (the north) were powerful sub-states. The story of Lear has its basis in legendary history which, at several points, suggests links with archaeological data.

We cannot say when the tall fair longheaded characteristics began to come into the country, but we have many reasons for arguing that they were an important feature of Anglo-Saxon and Danish invasions. Since that time, if not already before it, the east of Britain has had far more tallness and blondness than the west, yet with small patches of darker shorter people with long heads around some of the heaths, such as that of Brandon in Norfolk, a prehistoric centre of some importance.

The British population is thus characterised by a number of groups of physical characters which have distributions that can be to some extent interpreted through a knowledge of archaeology and history and a study of the various local environments and their features prior to their alteration by man through forest cutting, draining, ploughing, etc. Naturally by no means every man can be

said to show one or other of the groups of characters above discussed, Some show mixtures, mixtures that do not necessarily prelude fusion, rather do they at times give rise to segregation once more; but we are as yet so ill-informed about heredity of human characters, and the subject is made so difficult by the impossibility of experiment, that not much can be said.

The fact, however, that colourings of skin, hair and eyes are so distributed in the Old World as to coincide broadly with large climatic regions may be mentioned in partial interpretation of such facts as the practical absence from Britain, among natives, of absolutely black hair and of really swarthy skin. The 'dark' elements in Britain would in many cases be considered medium in colouring if they were found in south Italy, just as dark colouring in Italy would often be considered medium in parts of north Africa. Whether in these matters we are observing results of a process acting continuously, even if very slowly, or of a process that acted in and after some past crisis but has now ceased to operate, we cannot as yet tell. At any rate, the observed fact is that in Great Britain, and perhaps still more in Ireland there are numerous individuals with rather, even very, dark hair but eyes without brown pigment. Some such persons may owe their characteristics to crossings between dark and fair elements in their ancestry, but it is to be remembered that, before the various immigrant agricultural and later groups came to Britain, there was a small population of hunters and collectors which had been in the country probably for thousands of years and had passed through considerable changes in environment that may well have given occasion for biological changes in the people themselves. If pigmentation may have been altered by variations under influence of environment, so may also stature. Whether or not sex maturity is somewhat delayed in cold climates, it seems a widespread fact that the cool-temperate zone tends to favour tallness more than do the warmer zones, though there are exceptions, and we may be dealing with an indirect influence working through food, mineral and other deficiencies, stunting effects of malaria, dysentery, etc., in warm climates and so on. At any rate the British dark long-heads, though short, are usually a little taller than the dark long-heads of south Italy and some other warmer regions.

In some ways the British population is thus inclined to show intermediacy between south European and north European characters, along with marked contrasts among its constituents in relation with their various histories. The nation is made up of

mingled stocks and, little as we know of correlations between physical characters and psychical characters, we can say that diverse stocks with diverse outlooks and freedom of discussion not only enrich the whole, but also help to maintain contact with ever-changing reality, a contact which enforced uniformity in the end destroys.

If anyone finds it difficult to credit the persistence of characters through hundreds of generations the following reflections may be of use. Each of us would be represented by 32 768 ancestors, were they all separate people, at the time of the fall of Constantinople. But a great many of us trace our ancestry back in small rural localities which had no such numbers of people. The same strain comes again and again into our ancestry as can be shown by means of well-known pedigrees such as those of kingly families. Therefore strains are often reinforced and their maintenance is thereby greatly helped. The matter becomes clearer still if we take figures for an older time. Each of us would be represented by nearly 1100 million ancestors, were they all separate persons, about the time of the Norman Conquest of England. But this figure undoubtedly greatly exceeds that of the then population of the world, and, especially as mediaeval ancestry was so largely local within small groups for the great majority of the people, this means that the threads of inheritance are much tangled and any one of us is likely to receive one and the same group of inheritances through a large number of ancestors.
