The Eskimo are generally below the middle size, though not so dwarfish as they have been sometimes represented. Their head is large, their legs short, and their hands and feet small. Their complexion is not copper-coloured like the American Indians, but rather dusky or swarthy, like that of a southern European. Their hair is black, straight, and coarse, the beard and moustache generally scanty, though sometimes moderately developed. The eyes are small, black, and sparkling; the elevation of the outer end of the aperture, and the vertical fold covering the inner canthus, spoken of before as characteristic of the most typical Mongolian races, have often been observed in them. The nose is usually straight and narrow, and more or less sunken between the prominent cheeks, sometimes to such a degree as to give rise to the extraordinary statement, from more than one original observer, "that a ruler, when placed from cheek to cheek, would not touch the nose" (Lyon.) The mouth is large, and the lips rather prominent, generally kept somewhat apart. The chin is small and pointed.

In their osteological characters, the Eskimo present many points of interest. Those of the cranium are now well known, and are very well illustrated in the College Museum, which contains as many as twenty-seven adult skulls, the collection of various Arctic expeditions, the most recent contribution being a series of ten obtained at Upernavik in 1876 by Mr. A. C. Horner, surgeon to Sir Allan Young's yacht *Pandora*. Of the twenty-seven skulls, three are not in a condition to afford reliable measurements. Of the remaining twenty-four, seventeen appear to be those of males, and seven of females.

It is always with the greatest satisfaction that the anthropologist who bases his researches on anatomical characters, and especially on those derived from the cranium, treats of the skull of the Eskimo. It presents a combination of characters absolutely unknown in any other race, and which is very rarely wanting in even the most aberrant examples. In other words, a typical Eskimo skull can never be mistaken for that of any other of the groups of mankind; and although variations are met with in details, the great majority of Eskimo skulls deviate very little from the typical form. One of the most interesting circumstances connected with the Eskimo cranium is its large size, especially in relation to the rather small stature of the people. The average capacity of 17 male crania in the collection is 1546 cubic centimetres, or 94.3 cubic inches. Independent observations on different series of crania by Barnard Davis and Broca very nearly corroborate this estimate, as they give respectively 1607 and 1539 cubic centimetres as their averages. This is almost exactly the same as the average English (of the lowest class), which by our system of measurement on 17 individuals is 1542 cubic centimetres, and by B. Davis's, on a larger series, 1595; but it exceeds that of 74 modern Italian males by 71 cubic centimetres, and it is above the average of Australian males by as much as 261 cubic centimetres, or 16 cubic inches. The large size of the brain of all the hyperborean races, Lapps as well as Eskimo, seems not necessarily to be connected with intellectual development, but may have some other explanation not at present quite apparent. The next distinctive character of the Eskimo skull is its great length and narrowness, especially in the upper part. The base is fairly broad, the mastoid processes are well developed; but, instead of expanding upwards to the parietal region (as seen best in the view from behind), it narrows and, towards the median line above, contracts so rapidly, that the upper part of the skull has the form of the roof of a house. Measurements of various series of Eskimo skulls by different observers give remarkably uniform results as regards the latitudinal index. The average of the 17 males in our own collection is 71.2; that of 15 measured by Broca, 71.4; of 11 by Barnard Davis, 71.2; of 101 by Bessel, 71.37; so that it may be considered as perfectly established, that the Eskimo are among the most dolichocephalic of races; some of the Melanesians and the Australians being the only others which resemble them in this respect. The female skulls, judging at least from those in our own collection, are somewhat broader than the male. The index of height is slightly greater than that of breadth, averaging 73.5. The cranial sutures are very simple; and among the specimens examined, there is no case of metopism or persistence of the frontal suture, nor is there any case of the squamosal bone meeting the frontal at the pterion.

Although in the great length and lateral compression of the cranium, the Eskimo may present some resemblance to the Australian, the characters of the bones of the face are totally different, being essentially Mongolian, even to exaggeration. The whole face is large, both high and broad; the forehead is flat, the glabella little developed, the orbits are round, the malar bones of great size and very prominent, giving a nasi-malar angle of 144°. The skeleton of the nose is extremely characteristic; the nasal bones being very small and narrow, often coming to a point at their upper ends, and the whole aperture is very long and narrow. The Eskimo are, in fact, the most leptorhine of all races; the average nasal index of our 17 male skulls is only 42.2, and the average

of 14 at Paris measured by Broca, 42.33, a correspondence which shows the constancy and value of this character. The average nasal index in European crania, it will be remembered, is about 47, that of Australians, 56. The projection of the jaw is moderate, giving an alveolar index of 100.8, which brings them into the mesognathous category, with an inclination towards prognathism. The arch formed by the series of teeth is remarkably short, broad, and round. The teeth are small, and generally become worn down to stumps as life advances.

The Museum contains three Eskimo skeletons, two of males, and one of a female; of course, far too small a number from which to draw any general conclusions, but they offer many points of interest which make it desirable that other specimens should be obtained and examined. Two of the skeletons possess one more than the usual number of vertebrae, the additional one being interposed between the dorsal and lumbar series, and partaking of the character of both. The pelves of the three skeletons differ from those of average Europeans, in the opposite direction from that of the black races, all having the brim remarkably wide transversely; so that it is not true, as once thought, that long and narrow heads, and narrow pelvic brims are necessarily associated. In the limbs, also, in all points in which the proportions differ from those of Europeans, they deviate more widely still from the negro type. For example, the humero-radial index which we found in the Andamanese as high as 82, in Negroes 79, in Australians 77, and in Europeans 74, does not exceed 71.3 in either of these three skeletons, the average being 71.1; and in the Eskimo skeleton in Paris, measured by Broca, it is 70.3.

It has been shown by Dr. Barnard Davis that the special characters by which the Eskimo skull is distinguished from that of other races are most marked in individuals from the eastern extremity of their area of distribution, *i.e.*, in Greenland, and gradually diminish towards Behring Straits. There is also good evidence that the Eskimo have migrated from the west towards the east, and did not reach Greenland, at all events its southern parts, until the fourteenth century. Their affinities, moreover, as shown by physical characters, are more with the inhabitants of North-Eastern Asia than with the American Indians, and it is not at all improbable that they are derived from the same stock as the Japanese. If this view be correct, we seem to see how races may be formed by the gradual intensification of certain peculiarities under very special external conditions, and with complete isolation; for the Eskimo have been as much debarred from intermixture with other races as the Andamanese or Tasmanians in their island homes, being bounded on the north by the uninhabited frozen ocean, and on the south by tribes of Indians, from whom they have always held themselves aloof. The peculiarities by which the Eskimo are differentiated from the Asiatic Mongolians cannot then have been developed by crossing with other races, but must be attributed to those gradual modifications, produced by causes at present little understood, by which most of the striking variations we have met with in the human species have been brought about; modifications more strongly expressed the more completely isolated the race has become, and the further removed from its original centre of distribution.

MEMBRANOUS CROUP AND DIPHTHERIA.

By GEORGE JOHNSON, M.D., F.R.S.,

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THE writer of the leading article on croup and diphtheria in the JOURNAL for May 24th makes the following statement. "It is admitted that diphtheria occurs after scarlatina, after measles, in some epidemics of typhoid, after erysipelas, after the inhalation of sewer-gas, etc. What have all these conditions in common, that they should each and all be liable to be grafted into diphtheria? Dr. Johnson evades the difficulty by saying that in such cases we have instances of two distinct specific diseases attacking the same individual at the same time. What evidence is there for this?" As the author of the article, in his advocacy of the quality of membranous croup and laryngeal diphtheria, is severe in his criticism of me, I beg permission for a brief reply.

First, then, as the term "specific," when applied to diphtheria, is evidently a source of confusion and contention, I shall not in future speak of diphtheria as a *specific*, but content myself with designating it a *contagious* disease; and the proof that a patient who has scarlet fever with a diphtheritic throat has two distinct contagious diseases, is afforded by such a tragical occurrence as that which I related in my speech at the Royal Medical and Chirurgical Society. A boy convalescent from the complication of scarlet fever with diphtheria communicated a fatal laryngeal diphtheria to his brother, who was convalescent from an uncomplicated scarlet fever. The grafting of diphtheria upon such dis-

eases as measles, scarlet fever, erysipelas, or simple catarrhal inflammation of the fauces and air-passages, is intelligible enough, if we bear in mind the following notorious and indisputable facts.

1. All classes of society are daily exposed to the risk of poisoning by sewer-gas. 2. Sewer-gas is one of the most frequent vehicles of the diphtheritic poison, or the septic agency which excites diphtheria. And 3. This septic poison is notoriously apt to inoculate an abraded cutaneous or an inflamed mucous surface. Here, then, is the explanation of the fact, not that other diseases are grafted upon diphtheria, but that diphtheria is apt to be grafted upon other diseases which cause inflammation and abrasion of the throat. If, then, we consider, on the one hand, these acknowledged facts in the history of diphtheria, and, on the other, the notorious absence of membranous exudation as a result, in innumerable cases, of the most intense catarrhal inflammation of the fauces and air-passages, we surely are right in maintaining that upon those who still hold the theory, that there is a form of membranous croup which is not the result of the septic agencies which develop diphtheria, rests the burden of proof. I do not doubt that membranes more or less resembling diphtheritic exudations may result from various influences; but a careful inquiry will serve to show their essential difference. Thus Dr. Greenfield stated that the exudation produced by the injection of ammonia into the air-passages of dogs "is in no way comparable to that of ordinary membranous laryngitis"; also that the membranes ejected in Mr. Reid's case of eau de Cologne inhalation were unlike the exudation in any case of membranous laryngitis; and that the membrane expectorated by Dr. Poore's patient after exposure to a cold wind was hydatid.

I find no evidence to support the doctrine that a true membranous laryngitis results from any other cause than an infecting septic agency allied to, if not identical with, the diphtheritic poison. The author of the article in question says that "the majority of the members of the medical profession believe in the existence of membranous croup as one disease and diphtheria as another". This may be true of the profession in this country; but most assuredly it would not be applicable to the members of our profession in France, who, as regards this question, are a quarter of a century in advance of us; and obviously it is incumbent upon those who endeavour to influence professional opinion upon an important pathological and practical problem to ascertain, not what the majority believe, but what doctrine has the preponderance of evidence in its favour.

The term croup has been applied, and will continue to be applied, to three distinct forms of disease. 1. Laryngismus stridulus, a pure neurosis, unassociated with structural disease in the larynx or trachea, has been called "*spasmodic croup*". 2. Catarrhal laryngitis, the result of cold, apt to recur again and again in the same individual, characterised anatomically by congestion and swelling of the mucous membrane of the larynx with a muco-purulent exudation, but not by the formation of a coherent false membrane. This is *inflammatory croup*. 3. Laryngo-tracheal diphtheria, characterised by the formation of a more or less tenacious membrane in the air-passages, usually but not constantly associated with the appearance of a similar membrane on the palate and fauces. This is *membranous croup*—a contagious disease—the result either of infection from a previous case or of inoculation by a septic poison.

THREE CASES OF ACUTE ANTERIOR POLIO-MYELITIS (ACUTE SPINAL PARALYSIS) IN ADULTS.

By W. ALLEN STURGE, M.D., M.R.C.P.,
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ONE of the commonest diseases of the spinal cord, and one which has received, perhaps, more study than any other at the hands of physicians and pathologists, is the condition which is familiar to all practitioners under the name of "infantile paralysis". Yet, although it is frequently met with, and although in its clinical aspects it is well defined, and in the greater number of cases easily distinguished from all other diseases, it is not many years since the first careful description of the disease was written, and it is still more recently that its pathology has been understood. A few isolated cases seem to have been put on record in the latter half of the last, and in the early decades of the present century; but it was not until 1840 that the disease came to be recognised as a distinct clinical entity. In that year, a careful account of it was written by von Heine, who called it "spinal infantile paralysis". He confined himself, however, to giving an accurate description of its clinical features, leaving its pathology to be explained by others. The pathology remained unexplained for nearly a quarter of

a century; for it was not until 1863 that Cornil first recognised a morbid condition of the spinal cord in cases of this kind. Cornil was unable to arrive at any satisfactory conclusion regarding the localisation and nature of the lesion; but in 1865, Prévost and Vulpian stated that the morbid changes were principally confined to the anterior horns of grey matter, a statement which was before long confirmed by Lockhart Clarke, Charcot, and others, and which has now taken its place as one of the most certain facts in pathology. There has been some little difference of opinion as to the exact nature of these changes, some believing that the primary condition is an acute inflammation of the true nervous tissue; others that the interstitial connective tissue of the cord is the starting point of the morbid process. But however that may be—and the question must at present be left an open one—the disease may be looked upon as due to an acute inflammation of the anterior horns of grey matter, either confined entirely to these horns, or diffusing itself more or less widely in their neighbourhood. The inflammation may resolve entirely; or, as is far more commonly the case, it may produce more or less damage to the organ of a permanent nature, destroying the softer, more delicate tissues—namely, the nerve-cells and nerve-fibres, and producing overgrowth of the harder less vitalised interstitial connective tissue. As the result of these changes, we have the phenomena of "infantile paralysis".

It was for some years thought that this disease was one peculiar to young children, a belief which originated in the fact that it occurs very much more frequently in them than in adults, and which has been fostered and encouraged by the designation by which it is almost universally known. One of the results of the immense advance which has been made in the last few years in our knowledge of nervous diseases, has been to show that "infantile paralysis" is by no means confined to children, but that it is met with, though less frequently, at almost any period of life. It is often the case with discoveries, that the merit of having been the first to make them is disputed by two or more observers. The discovery is not made by a sudden leap, but is gradually led up to by a succession of advances; and as several men are working in the vein thus opened up, it frequently happens that two or more workers reach the goal about the same time, but quite independently of one another. So here, the merit of having been the first to describe cases of spinal disease in adults, which resembled in all points the condition known as "infantile paralysis", is claimed in France for Duchenne de Boulogne, and in Germany for Moritz Meyer. As a matter of chronological fact, it would appear that Meyer was the first to publish cases of this kind, but that the first detailed description which showed the position which such cases should hold among diseases of the spinal cord was given by Duchenne shortly afterwards. Since that time, cases have been reported in France by Charcot and one or two other physicians; in Germany by Bernhardt, Kussmaul, Erb, Weiss, etc.; in America by Seguin; but in this country, so far as I am aware, the only cases published have been by Dr. Althaus, in a paper which he read last year before the Medical Society of London, and which he has since published;* a case described by Dr. Glynn of Liverpool, in a lecture which he published in the *Lancet* for September 21st, 1878; and a case in a lad of 14, described by Dr. Octavius Sturges in the *Lancet* for January 4th and May 3rd, 1879.

In consequence of the discovery that the disease is not confined to young children, the name "infantile paralysis" has lost its force; and as it has now been settled beyond dispute what is the pathological basis of the disease, an endeavour should be made to supply in its place a more strictly scientific name, one which shall in itself indicate the true nature of the disorder. It is not very easy to designate in two or three words a condition such as that which forms the pathological basis of this disease; and hitherto nothing better has been devised for the purpose than the somewhat uncouth name with which I have headed this paper, namely, "acute anterior polio-myelitis" (πολιός = grey), for which we are indebted to Professor Kussmaul. The name has been adopted by Professor Erb in his article in the recently published volume of Ziemssen's *Cyclopædia*, on Diseases of the Spinal Cord; and in this country, Dr. Althaus has described the disease under this name in the little work just referred to. It would seem, therefore, that the name is one which is likely to be permanently adopted.

It will be scarcely necessary to recapitulate the symptoms in an ordinary case of infantile paralysis; the feverish attack, with perhaps pain in the back and limbs, followed within a few hours or a few days by very rapid onset of paralysis in one or more limbs, the paralysis being associated with absolute muscular flaccidity, but usually unaccompanied by any marked modification of sensation; the more or less complete recovery of certain groups of muscles, others being left per-

* On Infantile Paralysis and some Allied Diseases of the Spinal Cord. By Julius Althaus, M.D., M.R.C.P.