man who had the skin stripped off the forearm and hand on either side. He recovered; but it is a question if the hands are of much use to him, overrun as they are with cellular tissue, which has grown in them from loss of the cutaneous veins, and consequent imperfect return of the blood carried to them through the arteries; but the man says they are of some service to him, and so he is satisfied.

It is impossible to give you fixed rules for your guidance in determining how far you may trust Nature's power to repair disease; if you have a thorough knowledge of a case, and watch your patient closely from day to day, you will rarely err in the decision you may come to. In the case of an injury, when prompt action is needed, you may reckon that you may succeed in saving well-nigh any limb (if the antecedents of the patient are good), unless life be crushed out of it, or unless its main vessels or nerves are destroyed. Whether a limb be worth the preserving, must depend upon the extent of the damage it has sustained short of these major hurts.

PRACTICAL REMARKS ON CONGENITAL CATARACT.*

By GEORGE CRITCHETT, F.R.C.S.,

Senior Surgeon to the Royal London Ophthalmic Hospital; Ophthalmic Surgeon to the Middlesex Hospital; etc.

IMPORTANT gatherings like the present have two main objects: the consolidation of that which is known, and the expansion of theories which may be to many quite unknown or only dimly shadowed forth. It is probably in the former, rather than in the latter, field that the best work will now be done. There is, however, a third direction in which such a meeting as this may, I think, usefully occupy itself.

There are certain questions of considerable practical interest and importance, involving a right decision as to operative proceedings or the reverse, and as to the methods of operating which should be employed in the event of such being decided upon: questions which may be viewed in widely different aspects by some of the best authorities, and upon which the author of this paper may find himself at variance with some of those for whose opinion he entertains the highest esteem. Under these circumstances, it may be for the advantage of the public and of ourselves that such questions should be freely ventilated and discussed, so that we may, if possible, arrive at some definite and well considered laws which shall give greater uniformity of practice; or, failing that consummation, at some point of divergence where we might agree to differ for reasons that may seem to be sufficient to each of us, since an intelligent and well considered difference of opinion is often the highest point attainable, and is only second in result to complete uniformity. I am disposed to think that these remarks apply with special force to the subject of congenital cataract, more particularly in reference to the question of treatment. The form of congenital cataract to which I would especially direct attention is that which is known as the "cataracte stratifié", in which the opacity is arranged in layers parallel to each other, and extending towards the circumference, leaving more or less of the outer portion transparent, and differing, also, in the degree of opacity of the grey layers.

Before, however, I enter upon this, which constitutes the chief subject of my paper, I would make a few passing remarks upon that form of congenital cataract which comes before our notice during infancy, where the lens or its capsule, or both, are so obviously opaque, and of such a dense white or greyish colour, as to attract our notice, and call for immediate surgical interference. All will probably agree that the best method of operating upon these cases is (having first freely dilated the pupil) to break up the cataract by means of a fine needle introduced through the cornea, and either allow the fragments to become gradually absorbed, or to perform linear extraction. Whichever method be selected, the operation may be pronounced to be very free from risk, although, even in these cases, I have more than once met with a failure. The practical point that I wish to take this opportunity of insisting upon is, that such cases frequently have serious complications at the fundus of the eye; it is, therefore, important to give a guarded prognosis. The eyes may have a perfectly healthy aspect, the

tension may be normal, and the pupil active; and yet the presence of an opaque lens and capsule may be only one indication of an unsound condition of retina. I have met with rather a large proportion of these cases, and I do not think sufficient attention has hitherto been drawn to them. The point that should excite suspicion is the condition more especially of the capsule, and sometimes of the lens itself. In operating on these cases, some difficulty will be found in piercing the capsule with the needle; or, when this is accomplished, and the needle is moved from side to side, in order to effect a free opening and break up some of the lenticular matter, the lens in its capsule will move with the needle; then no further opening can be effected, and no progress will be made, unless a needle be introduced on the other side, so as to co-operate with the first; or an opening may be made in the cornea, and the opaque lens in its capsule be drawn out. It will then be found that the lens-matter is unduly small in quantity and soft in consistence. Whenever this condition exists—and, as I have before hinted, my experience would lead me to say it is not uncommon—the prognosis is very unfavourable: a perfectly clear black pupil may be obtained, but no vision results.

I do not argue from this that the operation should not, under all circumstances, be undertaken; but, until the condition of the capsule has been ascertained, care should be taken on the part of the oculist not to give undue encouragement to parents and friends. I will now revert to the consideration of those partial forms of lenticular cataract, also congenital, to which I alluded at the commencement of this paper, and which constitutes my chief motive for writing it.

Among the various groups of cases that come under our notice, or which seem to call for some operative interference, it has always appeared to me that those cases of partial cataract require to be approached in a very cautious and judicial spirit; so much is at stake, and the risk is by no means inconsiderable. In an ordinary case of cataract, failure following the operation, though very disappointing, has some rays of consolation; the sight has become useless, the individual is usually descending into the vale of years, and his condition is not materially impaired; no positive harm has been done, and he suffers rather from having missed an anticipated benefit. In the case of these partial congenital cataracts, the conditions are very different; the subjects are young, and have all their lives before them, either to be made or marred by the results of an operation; the patient is very far from being blind; the sight may have been sufficient to admit of a certain amount of education, and of the performance of many of the ordinary functions, duties, and even businesses of life; it may be very stationary, or be making slow progress; and we might almost certainly predict that it will not lead to loss of all useful sight, even if left till the term of life. The failure of an operation under these circumstances involves perpetual darkness, the blighting of what might otherwise have been an active and useful career—the taking away of that which the poor patient would give all he possesses to regain even in its former imperfect state; if old enough to estimate his loss, he becomes the subject of painful but unavailing regrets, and his future is enshrouded with gloom. Such cases have happened in my own experience, and they have left a strong and painful impression on my mind. If only one such case occur in the lifetime of any oculist, it must be a source of constant regret, especially if, on a careful review of all the circumstances, it seems that a more judicious course might have been adopted so as well-nigh to ensure a more favourable result. This form of cataract, as its name implies, "cataracte stratifié", having been formed during foetal growth by the deposit of alternate layers of opaque and transparent material, the latter being the last layer deposited, and, constituting a transparent margin, presents slight differences in two directions: (1) in the density of the opacity; (2) in the relative proportions of the opaque and the transparent material to each other, whereby the extent of the clear margin is regulated: and this becomes an important element when the question of treatment has to be considered. There is yet another point in which these cases present a difference the one from the other. In the majority of cases, the margin is perfectly transparent, like a healthy normal lens; but, in some few instances, opaque lines, and even thin flakes, may be seen radiating at certain intervals from the opaque nucleus towards the extreme margin, leaving, however, well defined and clear intervals of transparent material.

Two questions have been broached respecting these cases about which authorities are not agreed. First, it has been asked whether the opacity increases in degree as the patient grows older, or remains *in statu quo* through life? Secondly, does the transparent marginal portion always retain that property, or may it at some period of life become opaque? These questions are not very easy to answer: partly because individual experience is not very large; and partly because we are obliged, in a great measure, to trust to the testimony of patients who are young and inexperienced, and who, unless they were subjected to some accurate

* Read before the Ophthalmic Section of the International Medical Congress in Brussels.

test, are scarcely able to form a just estimate of slowly waning sight, and whose opinion, therefore, must be received with caution. On the one hand, I have been assured by intelligent young adults, that their power of vision has, without doubt, diminished since their boyhood; on the other, I have met with one case of the somewhat mature age of thirty-four, where no diminution of vision since childhood could be discovered. On the whole, I am disposed to think that possibly the opaque layers may gradually increase in density as age advances, though I am equally convinced that some cases remain stationary; and I still think it possible that the evidence to the contrary may be delusive, and that, as age and intelligence have advanced, and as the requirements of life have become more exacting, the vision has seemed to the patient to be undergoing a slow degenerative change. The other question is, perhaps, more important in a practical point of view, and, perhaps, equally difficult to answer; at any rate, it has received different solutions from authorities on the subject.

It has been stated that the transparent margin is always liable to become opaque, and that this is more especially the case where the radiating opaque striæ exist. Judging from my own experience, I should say that I have never known an instance in which the transparent margin has become opaque, and I have had cases under observation for several years. I should feel less confident of those cases in which opaque striæ already exist in the margin of the lens.

It will be obvious that a correct reply to these questions is important in a practical point of view. In deciding to operate, and in selecting the method of operation, if we are justified in regarding the case as stationary, and as having reached its ultimatum, we know exactly how much we are risking, or, rather, how much the patient is about to risk; whereas if the case be progressive, it assumes a graver aspect, and seems to justify bolder measures and more decisive treatment. It has been the conviction forced upon me by long experience that these cases are for the most part stationary, and not progressive, which has induced me to recommend a very cautious plan of treatment. The characteristics of this partial form of congenital cataract have been well described in various treatises on ophthalmology, I therefore merely glance at them, so as more clearly to explain my views upon treatment. The symptoms, both subjective and objective, in all these cases, are very similar in kind, differing chiefly in degree. The subjective symptoms often attract but little attention until the child has reached the age of nine or ten years; and cases are not unfrequent in which they do not come before the notice of the oculist until the age of puberty, or even after this period. The defective vision is often mistaken by parents for aggravated myopia. The patient gropes about and elects to avoid a strong light; he is very dependent upon the conditions and arrangement of light; within certain limits and under certain favourable circumstances his sight is fairly good; he can even read small print by some peculiar method of his own, which he has instinctively acquired; he is not usually assisted to any appreciable degree by the use of any kind of glasses. I have met with cases where this form of cataract existed to a marked extent; and yet the patient has passed through all the ordinary stages of an educational course, has taken a good degree at college, and commenced a professional career. It has not been until the extra requirements of an active occupation have brought home to the patient, in a painful form, the deficiencies of his sight, that the advice of an oculist has been sought. The objective symptoms are very obvious: the grey discoloration of the lens can be readily seen, either by oblique illumination or by transmitted light. If the pupil be fully dilated, the degree and extent of the opacity can then be clearly defined, as also the exact limits of the transparent margin through which the fundus of the eye may be accurately examined by means of the ophthalmoscope. It is in the extent of the transparent margin that the chief diversity is found to exist, which has an important practical bearing on the case. Sometimes we find that but little more than the nuclear half of the lens is opaque, leaving a broad, clear, well-defined transparent margin. Sometimes two-thirds of the lens will be involved in the opacity, and the clear margin is proportionately narrow; whilst occasionally the border is so thin, and the opaque part so preponderates, that for all practical purposes the opacity may be regarded as invading the entire lens.

[To be concluded.]

NORWICH MEDICO-CHIRURGICAL SOCIETY.—The fifth meeting of the Society was held at the Norfolk and Norwich Hospital on Tuesday, February 1st. The following communications were read. A Case of Puerperal Fever, by Mr. Charles Firth; a Paper on Intussusception successfully treated by Inflation, and by Abdominal Section, by Dr. Barnes; a Paper on Delirium, by Mr. Horace Turner. The next meeting will be held at the Medical Library, March 7th, at 7.30 P.M.

SOME ANTHROPOMETRICAL OBSERVATIONS.

By PERCY BOULTON, M.D.,

Physician to the Samaritan Hospital.

LAST year, the British Association made a grant for carrying out anthropometrical observations; and, as I have for many years used the scales and rule as means of physical diagnosis, I think it may be a good opportunity to lay before the profession the results at which I have arrived, hoping, at the same time, that others may be led to work in the same field, and help to perfect what is a very extensive subject.

Dr. Hutchinson has written on vital capacity, and has published tables relating to adults from five to six feet in height, but I am of opinion that adult weight is only of value in noticing variation from an ascertained standard. Weight alone is of no value as a scientific fact; and it is a pity that height is not always taken also, for then a reference to a table of averages would at once indicate any serious discrepancy, and the weighing-machine would become a powerful agent in preventive medicine.

I have examined at the Anthropological Society, through the courtesy of Mr. Francis Galton, the statistics of the following large schools: Marlborough, Christ's Hospital, Haileybury, Birmingham, City of London, Clifton College, Liverpool, King Edward's School, Britannia, etc.; and it seems to me that all this evidence is rather chaotic till viewed by the light of some such plan of uniform development as I am about to lay down.

These school statistics show that boys of the same age may be of all weights and all heights, but they do not indicate what they ought to be. At Marlborough, boys of fourteen weigh from $4\frac{1}{2}$ to $10\frac{1}{2}$ st., and measure from 4 feet 3 inches to 5 feet 7 inches. Some explanation is, therefore, much wanted to simplify the matter; and this I think my method does.

The most important indications to be gleaned from the scales and measures are those which, so far as I am aware, have not before been noticed, and relate to infancy and childhood. It is when growth is actively proceeding that we can hope best to turn such information to account. I do not mean to argue that we can ever hope to make the child of diminutive parents a giant, or *vice versa*; for the embryo receives a stamp at the time of conception which will defy all our efforts, and we cannot undo in one, what has been the work of many generations. Children born of average sized and healthy parents frequently become stunted, or grow weedy for want of care during development, hygienic or other conditions being unfavourable; and in these cases the scales and measure offer indications second in value to none of those means of information which medical men have at their disposal. If parents would once or twice a year have their children weighed and measured by a competent person, or under the guidance of such tables as I have prepared, they would frequently gain information which would be of the utmost prospective value. They would detect, at an early stage, irregularities of development, which would act as danger signals to give warning of approaching mischief; for arrest of growth, whether in latitude or longitude, is one of the earliest appreciable signs of disease.

A subject involving so many figures and so much calculation as this, is necessarily rather dry, but I shall make it as little tedious as possible.

The first table which I have prepared has a double object.

1. It relates to the fetus *in utero*, and will be found useful as a ready means of arriving at the probable age of any fetus expelled prematurely, and may therefore be of service in a medico-legal point of view.

2. It points out the rate of development which takes place *in utero* and the apparent law which it follows. This rate of development is very extraordinary, and I fancy is not generally appreciated. Ramsbotham says: "Size is influenced by circumstances not very easily explained"; but the study of Table I will make the matter simple. I have commenced with the youngest human embryo, recorded by Professor Thomson in 1839. Two weeks after conception, it measured one-twelfth of an inch in length. I have never seen one less than three-eighths of an inch long, and have found it very difficult to arrive at the exact age of these early embryos; for, even if there have been intercourse on only one occasion, it is not possible to say the exact time when the ovum was impregnated, as the spermatozoa might be some days in arriving at the point of contact.

A fetus of twelve weeks measures three inches when stretched straight, and weighs 1 oz. This is very extraordinary; for if at two weeks it measures one-twelfth of an inch, it must multiply thirty-six