When a cancer recurs, it is because some part of the growth has been left in. The recurrence is in the neighbourhood of the original tumour, or in the connected lymphatic glands—this itself indicating a direct connection with the primary tumour. When we consider that a cancer consists of vigorously growing epithelium, which has a special tendency to propagate into the lymphatics, and so to send offshoots or grafts into parts around, we can scarcely be surprised that complete eradication is so difficult. When once the epithelium has broken bounds, and has been transplanted to parts which may be more favourable to its growth than its natural site, then it will frequently be impossible to determine the limits of its extension.

I have said so much as to the constitutional tendency to cancer. The determining cause is frequently stated to be a local injury or irritation. Such injury or irritation may produce changes in the connective tissue such as I have already referred to, and it is possible that the coexistence of the two factors already considered may determine the occurrence of the disease. It is possible also that injury or irritation, while damaging the more inert connective tissue, may stimulate the more active epithelium.

I need hardly add that cancer frequently induces a very serious constitutional state, leading on to a fatal issue. The so-called cachexia is, however, a secondary result of the cancer. This is manifest enough in the case of external cancers. We are familiar with the fact that cancer of the mamma or of the lip or larynx frequently shows itself in persons of robust general health, and that the constitutional decadence is often the result of a long struggle between the vigorous vitality of the individual and the inroads of the disease. The cancer leads to these effects by ulceration, by using up the nutritious material of the body in its growth, and by extending to parts which are important in the economy. There is the important distinction in these secondary effects from those in tuberculosis, that, as cancer is not associated with a specific microbe, there are no poisonous alkaloids evolved, and there is consequently no fever, as a rule. In the case of internal cancers, which are concealed from view, the constitutional effects may be manifest before the local cancer is discovered. It is not infrequently the office of the pathologist to find a large and old ulcerating cancer of the stomach, whose existence had by no means been certainly distinguished during life.

CONCLUSION.

The subject on which I have entered is an exceedingly wide one, and I am only controlled in my efforts to expound it by considerations of time and space, as well as of your patience. I had intended, for instance, to enter more particularly on the subject of immunity to certain diseases, as determined by constitutional susceptibilities, a subject already hinted at in speaking of the susceptibilities of the liver, and a subject also which has received much elucidation in my mind from the interesting observations, already referred to, of Metschnikoff, and of the no less remarkable investigations of Pasteur into the nature of certain vaccines. I must however conclude my remarks, but before doing so I may, in a sentence or two, sum up the deductions which appear to me to follow from what I have adduced.

The constitution or frame of a man or animal is made up of a multitude of local items, each of which is liable to variation in structure and function within normal limits. These variations form the *differentie* of species and of individuals, and they are generally subject to inheritance. Susceptibility to disease varies greatly in different men and animals, and this variation is correlated to the structural and functional peculiarities which determine the differences of constitution. The individual organs of the same animal show very different degrees of susceptibility to certain diseases, as is shown by the relations of the liver and lungs of man to tuberculosis, syphilis, and cancer. In different individuals of the same species of animal, also, the same organs, such as the lungs or liver, vary greatly in susceptibility to disease. Finally, as such diseases as tuberculosis and cancer are, in man, primarily local, susceptibility to them must be related to local constitutional peculiarities in the situations primarily attacked.

THE Calcutta Jubilee Fund has made over 20,000 rupees to the local Dufferin Hospital, and a further balance will shortly be devoted to the same object, thus exhausting the fund.

NATIONAL PENSION FUND FOR NURSES.—Mr. W. Rathbone, M.P., and Mr. Jonathan Hutchinson have become Vice-Presidents of the National Pension Fund for Nurses, and Dr. Broadbent has been elected a member of the Council.

AN ADDRESS

DELIVERED AT THE OPENING OF

THE SECTION OF OPHTHALMOLOGY.

At the Annual Meeting of the British Medical Association, held in Leeds, August, 1889.

By ANDERSON CRITCHETT, F.R.C.S.ED., M.A.CANTAB.,
Senior Ophthalmic Surgeon to St. Mary's Hospital.

ON THE TREATMENT OF IMMATURE CATARACT.

GENTLEMEN,—When the history of the nineteenth century comes to be written in its entirety, the phenomenal growth of scientific knowledge will, I doubt not, be placed upon permanent and honourable record; and, although it represents only a small unit amidst the multitude of the sciences, I think I may venture to claim for ophthalmology that it has not “lagged reluctant in the race.”

It is indeed almost impossible for us at the present time to conceive the difficulties which were encountered and successfully overcome by the pioneers of ophthalmic surgery. When we remember the wonderful results which they achieved although unaided by the ophthalmoscope, by any accurate knowledge of optics, by cocaine, by the galvano-cautery, or by the numerous instruments of precision which we now possess, we must indeed marvel, as did the Israelites of old when the mighty giant was laid low by a sling and a stone.

Time has, alas, robbed us of most of those who commenced their labours in that, which we may perhaps term the pre-ophthalmoscopic, period, and it seems difficult to realise that our honoured friend, Professor Donders, who presided only a year since with so much native dignity and urbanity over the International Ophthalmic Congress at Heidelberg, and whose mental and physical vigour gave promise of days extended beyond the ordinary span, now lives but in the cherished memory of a noble and beneficent career. He has left us the example of a blameless life, devoted not alone to abstract scientific research, but also to the practical development of those great discoveries in optics which have conferred such lasting benefit upon mankind; of him we may indeed say with truth “*Vir nullâ non donandus lauru.*”

And now with reference to the work which lies immediately before us, I feel I may congratulate this Section upon the very interesting list of papers which we are promised, and which will, I doubt not, be the cause of much profitable discussion.

I will not intervene at any length between you and so appetising a mental feast, but I desire briefly to allude to a subject the importance of which is, I think, becoming more and more recognised by ophthalmic surgeons; I mean the best method of dealing with immature cataracts. Each one here present must, I feel sure, have met with numerous cases where not a little hardship has been endured, not only by the individual sufferer, but also by those who are dependent on him where the patient is the bread-winner, when cataract has become so far advanced as to seriously interfere with the pursuit of any occupation, but is not sufficiently mature to render an operation justifiable. A few years since the outlook for such a patient was exceedingly gloomy, for the ophthalmic surgeon, influenced by most worthy and conscientious scruples, could only advise postponement till a more convenient season, which sometimes occupied many years in its advent, until at length hope repeatedly deferred became supplanted by despair, and the unfortunate patient too often drifted into the hands of some unscrupulous charlatan, who robbed him of his already diminished resources under the cover of specious promises which could never be fulfilled. Within the last decade great practical advances have been made in several directions towards a solution of the difficulty, and we may broadly divide the recognised operative methods into two classes—that which deals with the immature cataract by immediate extraction, and that which involves an artificial ripening of the lens before its removal. Amongst those who are adherents to the first-mentioned plan I may mention Mr. Tweedy, Mr. Couper, and Dr. McKeown. More than eight years since, at Moorfields, Mr. Tweedy removed an immature cataract from a respectable artisan, who had to no slight extent forced his hand by declaring that, if no surgical aid could be afforded him, he must enter the workhouse and remain there till the eye was ready for an operation. Referring to

this case in May, 1888, Mr. Tweedy writes: "The extraction was uncomplicated, and the lens left the capsule entire. Recovery was prompt, and a few weeks later, with suitable glasses, the patient could read 'brilliant' type quite fluently. Since that operation I have rarely refused to extract a cataract, no matter how immature, whenever both eyes were so affected that the patient was unable to earn his livelihood.

"The success which so far I have had I ascribe entirely to the kind of operation which I have been in the habit of performing—namely, a corneal section upwards with a Graefe's knife, with an iridectomy, and a peripheral section of the capsule of the lens with the cataract knife, leaving the anterior capsule, as far as practicable, intact. By this means the lens is taken, as it were, out of a pocket."

Mr. Tweedy claims that any lens matter which is left behind remains within the capsule to which the aqueous humour finds ready access, causing disintegration, liquefaction, and absorption, so that in due time, in the large majority of cases, a perfectly transparent capsule remains; while in those rare instances where opaque matter still obstructs the pupillary area a single needle will suffice to tear a capsule, the natural fragility of which has not been impaired by previous instrumentation. In the peripheral section of the capsule Mr. Tweedy was, I believe, anticipated by Dr. Knapp, of New York, who, however, used a cystotome for that purpose, while Mr. Tweedy thinks that a cleaner and better regulated incision can be obtained with a Graefe's knife. Mr. Couper is equally ready to operate on immature cataracts, and claims that he has done so with a large measure of success, but he adopts a plan which is the antipodes both in principle and in practice of that mentioned above, since he introduces a pair of specially constructed forceps into the anterior chamber, and endeavours to remove a considerable portion of the centre of the anterior capsule.

The much canvassed plan of Dr. McKeown, of Belfast, who uses a syringe and warm water to wash the chamber free of soft lens substance, is already well known to you, and, although it has encountered much adverse criticism, I believe that it owns some staunch adherents, who are ready to substantiate their opinions by reliable statistics.

These, gentlemen, are the principal methods of dealing directly with unripe and unripened lenses; but Dr. Förster's introduction of artificial maturation, which consists of iridectomy combined with cortex triturations, is an operative procedure which has already gained the approval and support of not a few ophthalmologists. There is, however, considerable difference of opinion; first, respecting the particular forms of the disease in which this method proves especially effective; and, secondly, as to its exact *modus operandi* upon the lens substance. Thus Förster considers the chief factor to be a mechanical destruction of the layers between the capsule and the nucleus, while Samelsohn thinks that the proceeding produces a change in the lymph stream, resulting in a disturbance of nutrition, and Helfreich seeks an explanation in the mechanical displacement of the individual lens layers.

Time will not permit me to go at length into the minute details of Förster's method, but the subject has been exhaustively dealt with by Dr. Otto Schirmer, who gives the results of numerous experiments. The chief point of difference between Förster and himself is as follows. Förster believes it to be essential to the success of his process that some opacity of the anterior cortex, even though lying very peripherally, must already exist, and in this view he is confirmed by Ottinger, who carried out ten trituration experiments in clear rabbit lenses with and without iridectomy, and in no case did any opacity result, in spite of the application of the most varied degrees of pressure.

Schirmer, on the other hand, after experimenting on fifty-two rabbit lenses, failed to find opacity in only six instances, and, as four of these belonged to his first cases, he believed the cause of failure must be attributed to imperfection of procedure. The other forty-six showed distinct opacity of lens. During the first few hours and sometimes days, this was frequently veiled by deposits of fibrin in the aqueous humour, occasionally consolidated to membranes over the anterior surface of the lens.

The opacification always made its first appearance at the anterior pole, close under the capsule, and by focal illumination an exceedingly fine striation was seen placed radially around the broad, gaping anterior extremity. In a few hours it progressed towards the equator, and its density became increased. Dr. Hess obtained similar results to those just mentioned, except that in every case but one he produced total cataract, which may be attri-

buted to the fact that he continued trituration for three or four minutes instead of half a minute; and this explanation gains probability from the fact that Voelckers, who only momentarily crushed the lens, never obtained a total cataract. The chief dangers of this proceeding seem to be that, if any excessive pressure be used during the trituration, there may subsequently be loss of vitreous when the lens is extracted, and also that the process sometimes produces troublesome iritis. Dr. Noyes, of New York, has published the results of Förster's operation in eight cases, all the patients being over 50 years of age. In two instances iritis ensued; in one of these both eyes were operated on at different times, and both ultimately gave a good result, but severe iritis occurred after each preliminary operation, and again after each extraction. It is to be noted that in this case the cataracts were devoid of all cortical opacity. In the other case iritis with a few synechiæ occurred, but without any prejudicial result. In all the cases an increase of opacity was observed to ensue immediately, but the rate of increase varied in different individuals. Where cortical opacity was already abundant, the effect was prompt and unaccompanied by unpleasant reaction, and in no case did glaucomatous symptoms arise. I believe I am justified in stating that in Great Britain Förster's method of artificial maturation has as yet met with no very general adoption, though some ophthalmic surgeons, including Mr. McHardy, have given and are still giving to it an impartial trial, and I hope that at no distant date we may be favoured with the result of their experiences.

I have endeavoured, gentlemen, briefly, and I fear very imperfectly, to place before you the different plans which have hitherto been suggested for dealing with immature cataracts. I do not desire to hold a special brief on behalf of any individual proceeding, though I think it is probable that the best solution of the question will ultimately be found in a happy union of Förster's somewhat radical method with the eminently conservative ophthalmic surgery which is advocated by Mr. Tweedy, but I have striven to place the facts judicially before the enlightened and impartial members of this ophthalmic jury, and to leave the issue in your hands. The subject, I am well assured, thoroughly merits our most careful consideration, and, although I fear that the time at our disposal will not allow of its discussion on the present occasion, I venture to hope that at some future meeting we shall be able to exchange for our own benefit, and for that of the suffering public, the outcome of an extended research in this particular region of ophthalmology.

There now only remains to me the pleasant task of bidding you welcome to the Ophthalmic Section of our great Association, coupled with the expression of an earnest desire that the work which lies immediately before us may result in both pleasure and profit to each and all.

AN ADDRESS

DELIVERED AT THE OPENING OF

THE SECTION OF OTOTOLOGY.

At the Annual Meeting of the British Medical Association, held in Leeds, August, 1889.

By GEORGE P. FIELD, M.R.C.S.,
Aural Surgeon to St. Mary's Hospital.

ON THE TREATMENT OF AURAL EXOSTOSES.

GENTLEMEN,—It is with mingled feelings of pleasure and responsibility that I find myself once again called upon to occupy the honourable post of President in the Otological Section of the British Medical Association. Naturally I am gratified at this expression of confidence; but if, when chosen to act as your President during the meeting at Liverpool in 1881, I was weighed down with a sense of my insufficiency for the task before me, I am now still more conscious of the inadequateness of my resources, for since that time has not the science of aural surgery reached a far more important position?

Mankind could not fail in olden days to recognise the ear as the organ of sound, but of the minute and complex internal construction of the machine, of its subtle mechanical and physical adaptations to the requirements of the human race, and, last and most important, of the origin and treatment of its ailments, next to nothing, or even worse than naught, was apprehended. Late in the dawn of modern physiological and surgical knowledge