

tions during the entire malady, but in advanced stages ulcerations are liable to ensue as in the other varieties, and not only at the points mentioned but in other parts of the structures.

Pallor of the mucous membrane of the larynx of a phthisical subject, followed by the circumscribed tumefactions just alluded to, form the chief indications of the slower variety of tuberculosis of the larynx in which the prognosis of a more prolonged existence may be given.

The tardy progress of the morbid process affords better opportunity for beneficial results from therapeutic measures; and their judicious selection at an early period in the disease may not only prolong the life of the patient, but even start him on the road to recovery.

The pallor of the mucous membrane of the larynx, evident as it often is before anæmia is recognized elsewhere, indicates the advisability of the administration of meat as food and iron as medicine. A meat diet requires more or less exercise in the open air, or its substitute. Inhalations of compressed air by some of the methods now in vogue, massage of the limbs, and similar methods promote oxidation of the products of meat digestion, and thus invigorate the patient. Enrichment of the blood by the meat may be supplemented by the administration of iron. Tincture of the chloride of iron in ten minim doses, with fifteen minims of dilute phosphoric acid and a teaspoonful of the best syrup of the hypophosphites, preferably of lime in most cases, if that is at his command, is the prescription most relied upon by myself, given after meals in a tablespoonful of water.

The tumefactions are well painted every two or three days with equal parts of the compound solution of iodine and glycerine, or with a few drops of solution of iodine and of carbolic acid to the ounce, and the parts kept free as possible from secretory products by the alkaline spray already mentioned.

When ulceration takes place, antiseptics are added to the treatment locally and by inhalation.

Compressed air, alkaline sprays, iodine locally, iron internally, animal diet, and as free exposure to the air as practicable, constitute the therapeutic measures which have been followed by the best results in my own hands; and by these means modified or supplemented, as occasion may indicate, with such general measures, hygienic and remedial, as are indicated from time to time, I have reason to believe that the course of certain forms of tuberculosis of the larynx may be retarded in occasional instances to such an extent as to give the patient a chance to recover.

#### QUESTIONS ON THE ETIOLOGY OF SOME FORMS OF LENTICULAR OPACITY.

BY J. L. THOMPSON, INDIANAPOLIS.

[Presented to the Section on Ophthalmology, Otology and Laryngology, June, 1883.]

In looking over my records of cases for a number of years back, affections of the crystalline lens are found to sustain a relation of 9 per cent, and of these, a very large majority are opacities, idiopathic, and

traumatic, mostly the former. In these I have been very much struck by the very large number which have taken place below, as compared with the upper peripheral portion of the lens, and still more surprised at seeing the opacity so often at the lower-inner margin. On first meeting with these, my practice was to inform those who were so affected that they had commencing cataracts, and I usually requested them to call on me from year to year that I might watch their progress toward ripeness, but after observing them for a number of years and seeing no increase in their extent, I soon became more guarded in prognosis and, indeed, began to ask myself whether or not some of them were congenital and similar to the arcus senilis (a very wrong term of course for congenital cases). But remembering that though I had frequently seen the gerontoxon in persons of all ages, in the youthful just as well as in the aged, yet the peculiar opacity of which I speak rarely ever came under my notice in persons under forty, so it seemed to be a senile change. I was still more convinced of this by witnessing a case almost at its very inception in a lady eighty years of age, whose eye I had examined several times before the opacity made its appearance. She first came to consult me on account of dimness of vision which she feared was caused by cataract, indeed she was morbidly sensitive on the subject of cataract. I examined her under a mydriatic and found each lens perfectly clear (or as clear as one ever finds it in an elderly person), with not the least trace of opacity in either; her dimness of vision being the result of myopia, with hyperæmia of the choroid and retina. I informed her of these facts, and in answer to her questions upon the subject, told her that in all human probability she would never be troubled with cataract. In just one year from that date she again called upon me, when an opacity was readily seen in each lens downwards and inwards, greater in the left than in the right eye. I saw her once or twice a year until she died, always comparing her condition with the pencil sketch taken when she was first examined, and there never was a particle of increase in the breadth or depth of the stippling. All through my case book are these opacities to be seen, and the uniformity of their position viz. at the lower inner margin of the lens is very striking. It certainly must be more than simple coincidence that so many of these cases should have occurred in my patients; and yet in conversing with many of my acquaintance who practice in this department of the field of medicine, they seem not to have had their attention called especially to this feature of it; nor do I remember having seen it mentioned in any of the eye literature which has fallen under my notice. 'Tis true one often reads of small opacities forming a circle around the periphery of the lens in elderly persons, which Dr. De Wecker looks upon as being "clearly connected with the movements of shrinkage in the nucleus, and an accompanying separation of the fibers in the portion corresponding to the opaque ring, while the fibers themselves have undergone no appreciable changes." But in such cases the upper portions are as often, it seems, affected as are the lower; and yet as far as my memory serves

and my books show (I keep a pencil sketch of all intraocular affections) these opacities occur at least twenty times in the lower, to one in the upper, and ten times in the lower inner to one in the lower outer portion. Occasionally one meets with them in both inner and outer lower portions of the same lens, but the inner are invariably more pronounced than are the outer; another remarkable peculiarity is, that they are often met with almost exactly alike in each eye.

Indeed these cases are so numerous that they often come to me in pairs, as my books show on several pages, but this is a coincidence which often takes place in the practice of us all. Many of these patients have I seen, from time to time, for years afterwards and they nearly all seemed to remain as when first examined. It is evident that they widely differ from the congenital gerontoxon which has, or seems to have the impression of the zonula upon it. That gravitation is an important factor in the position of these clouds there can be no doubt, and the fact of their sudden appearance and their remaining ever afterwards just as when first seen, shows that some temporary change in the nutrition of the tissues similar to those which follow rheumatic, gouty, and other inflammations which are often followed by degenerative deposits, must obtain in these cases also. Were they simply fatty degenerations of the fibrillæ of the lens, one would certainly meet with them as frequently in the upper as in the lower peripheral portions.

#### OPACITIES OCCURRING DURING CHOROIDAL INFLAMMATION.

Doubtless all present can recall one or more cases of opacity of the lens occurring very suddenly during the treatment of choroido-hyalitis with floating bodies in the vitreous chamber. A typical case of this kind came under my notice in a Doctor E. aged 26, single, who consulted me some years ago on account of the above named floating bodies in the vitreous humor of the left eye, which he informed me had existed about four years. When I first examined him the eye was so filled with these floating bodies as to render the fundus very indistinct in some places, and totally so in others, thereby reducing vision to  $\frac{20}{80}$ . He said that since he first discovered them he had been better and worse; that occasionally they would partially disappear, and the vision would slightly improve, but that they never left entirely, nor did vision ever reach the normal acuity. The right never participated in this abnormal process, it being entirely confined to the left eye. His health, he said, had always been good, that he never, so far as he was aware, had been troubled with any form of heart disease, and was confident that he never had syphilis. He looked delicate, tired and under-tone, but he had been taking large doses of iodide of potassium, which may have caused this appearance. I placed him on the use of jaborandi, used artificial heat and counter-irritation occasionally, but without good effect. He called on me very often, but the eye remained apparently about the same, until on one occasion the anterior chamber was found to be so shallow that the iris rested against the cornea. Prior to this time the lens had been as clear as one ever sees it, but in five

days' time it became thoroughly opaque throughout its whole extent. For a period of nine months he had no visible anterior chamber, but at the end of that time it was re-established, and the tension, which was formerly — 1 became normal. At this date his field of vision is good, he sees one's hand between him and the light, and were one examining him as to his prospects for a cataract extraction without having a thorough history of his former condition it would be pronounced a very promising case.

A very similar one to the above occurred in a patient aged 50, who consulted me for a dimness of vision which I found to be from choroido-hyalitis with floating bodies in the vitreous. "Is it catharack, docthur?" was the question. "No;" and I took great pains to convince him that it was nothing like cataract. Again in two weeks did he call, with the same question, with his eye in the same condition; but in one week more he had a well-pronounced opacity of the lens, which on former examinations was as clear as ever it is seen. "And do you tell me that it isn't catharack?" was the first question with which he greeted me, he having been to another physician in the interval of his visits to me. What could I say to an ignorant patient under the circumstances? Such cases are exceedingly trying, as well as interesting. What a help it would be to one did he know something more concerning their etiology, that he might know just when and in what cases to predict them. Many, with choroidal troubles similar in all appearance to the above, will go on for years, becoming better and worse until vision equals simple perception of light and yet the lens will remain clear, while in others apparently no worse nor even so severe, cataract will be developed almost at the very inception of the malady. In all probability these cases of former choroidal inflammation often cause our smoothest and best performed cataract operations to result disastrously. Diabetes, again, is a well-known cause of rapid opacity of the crystalline. Several cases have come under my care in which the person has been able to read the newspaper readily ten days before the date of his coming and yet an examination has revealed the fact of a completely opaque lens in each eye. Other cases, again, often go on for years with urine of the same specific gravity, and all other conditions apparently similar, and yet no sign of lenticular opacity ever takes place.

#### OPACITIES FOLLOWING OPERATIONS AND WOUNDS.

How common it is to meet with an opacity of the lens very soon after an operation for artificial pupil in cases of complete synechia posterior. The lens remains clear for some time after the operation, except a few spots of pigment remaining where the iris was formerly adherent, but in a few weeks cataract is made manifest, so it is often after an iridectomy for glaucoma, where we are positive that neither knife nor forceps ever touched the lens capsule. The question arises, in what way or manner does the operation so interfere with the nutrition of the lens as to cause its rapid degeneration in one case, while in ninety-nine other similar ones no such result follows an apparently identical operation?

Opacities resulting from foreign bodies entering

into or passing through the lens are, as you are all aware, by no means infrequent. In a few of these the opaque spot has remained partial—sometimes even it becomes smaller—years afterward than just after the wound. Especially is this so where a very fine body jams through into the vitreous with great force, while wounds from pins, or bodies, be they never so small, which have been passed only just through the anterior capsule and been withdrawn are almost invariably followed by complete opacity sooner or later. The following unique case is, however, an exception: Chas. Lutz, aged 22, residence Terre Haute, Ind., was sent to me by his physician on account of an injury to the right eye by a piece of percussion cap three days before. On examination I found that it had passed through the lower part of the cornea and iris into or through the lens, the last named body being quite opaque throughout—at least its lower two-thirds.

As he could not remain under my care I wrote to his physician, suggesting ice, atropine, and leeches if the inflammation ran high, and requested that he be sent down if much pain and tenderness in ciliary region became manifest. I heard that he was doing well two months subsequently, and did not again hear from him until I met with Dr. J. P. Farrell, of Terre Haute, about three weeks ago who informed me of the following very remarkable behavior of the case. When the doctor returned to Terre Haute from Europe the patient immediately called upon him, when a projection of the iris was visible, looking as if a body was lodged behind it. Again, in a few weeks, some kind of a foreign body was seen in the lower part of the aqueous chamber. Again in a few weeks, it was seen in the tissue of the cornea, and, lastly, the young man accosted the doctor on the street to inform him that he had the foreign body at home, he having picked it from the eye. At my request Dr. Farrell kindly wrote me the following letter on June the 1st inst.:

"\* \* \* I found the eye quiet, presenting a ring-shaped, or, rather, semicircular white opacity at the lower and inner quadrant of the cornea. In the space included between this semi-circle and the corneal border there is a dark point evidently due to adhesion of iris to inner corneal surface. Pupil eccentric and pear-shaped, due to ant. synechia. Lens clear, with the exception of the slight degree of opacity along a cicatricial line which is seen in the ant. capsule V =  $\frac{1}{2}$ . The eye is entirely quiet and has given him no trouble, though actively engaged at his work, that of a nail-feeder, which requires close attention.

"The foreign body, I may add, is about 2 mm. square, being of the thickness of good writing paper. Further, I wish to say, that running from the situation of the cicatrix on the capsule, to the point of union of the synechia to the cornea, is a white band to which the lacerated iris is attached. This band I once thought was the lens capsule, but yesterday I came to the conclusion that it is not.

"Signed, J. P. FARRELL."

The above questions have been of deep interest to me, and doubtless similar ones have often agitated

the minds of many others, and, as no better opportunity will ever offer for an interchange of views and the relating of personal experiences upon the above questions, I therefore give it as my reason for bringing the subject before you on this occasion.

#### DISCUSSION.

Dr. Noyes, of New York, said he had seen similar cases quite frequently, and had them divided into two classes—those accompanying myopia and being of a molecular form, and those in which the opacity is striated and caused by choroidal retinitis. He thought the opacity was due to impaired nutrition of the hexagonal epithelium, and that it required years for its development.

Dr. Frothingham said that the paper was the result of carefully kept records, and if every one would take the trouble to keep such records, many points about which we are still in the dark might thereby be cleared up.

Dr. Thompson, in closing the discussion, said that he had nothing further to add except that he had found his records of cases of great advantage to him.

#### THE ACTION OF NITRATE OF SILVER UPON THE MUCOUS MEMBRANE OF THE THROAT AND NOSE.

BY CARL SEILER, M.D., OF PHILADELPHIA.

[Read to the Section on Ophthalmology, Otology, and Laryngology.]

It is not my intention to present an exhaustive essay to the Section, but simply to make a few remarks concerning the action of the silver salt upon the mucous membrane, and to record some observations made by myself, with the hope of giving rise to a discussion on this interesting subject.

We are all familiar with the popular notion that nitrate of silver is a caustic, and is held in abhorrence by the patients, and used sparingly and in weak solutions by the physician in dealing with inflammations of the mucous membrane of the throat and nose. It may, therefore, be startling to you when I make the statement, the conclusion arrived at from clinical experience and microscopical examination of the tissue, that nitrate of silver, solid or in solution, is not a caustic—*i. e.*, it does not destroy the epithelial covering, and its action is different with the strength of solution used. The action of the solid stick or super-saturated solution upon the undenuded mucous membrane is first a combination of part of the silver with the albumen, mucine, and chlorides contained in the secretion of the immediate neighborhood of the spot touched, and the formation of a thick, tenacious, yellowish white pellicle adhering tightly to the epithelial covering. The surplus of silver which is not thus converted penetrates the interstices of the epithelium and becoming reduced to the oxide of silver or deposited as very fine granules of oxide of silver which act as foreign bodies and give rise to congestion and inflammation in their immediate neighborhood, which continues with more or less severity until the tissues