The treatment consists in the administration of general tonics, chiefly iron, along with aloes, or some other remedy to regulate the bowels. I prefer, in these cases, Blaud's mass to any other form of iron. I would recommend the following pill to be taken:

℞ Aloin, gr. ½, or less;
Ext. of nux vomica, gr. ¼;
Powd. rhubarb, gr. i;
Blaud's mass, gr. iv.
This to be taken after each meal for some months.

This treatment will probably greatly improve this girl's health, and perhaps restore regular menstruation. In addition to this, of course, the girl should be allowed plenty of fresh air and exercise, and, if her circumstances will permit, let her make use of salt-baths and horseback-riding, and an abundance of the most nourishing food. She has a slight anteflexion of the uterus, but it is of no consequence, and is present in a large proportion of young girls. It does not give rise to any symptoms and does not require any treatment.

Case IV.—The next patient is forty years old, and is single. She flows every four weeks for three days, the last time being one week ago. She complains of pain during menstruation, and also of pain on the right side of the abdomen and in the back. She also complains of neuralgic pains all over the head, of pains in the epigastrium, and of vomiting. She is sent here by Professor Gray to see if there is any cause in the pelvis for her neuralgia.

Digital examination shows a peculiar and rather uncommon displacement of the uterus, but one which I think has nothing to do with her symptoms. Instead of lying in the normal position, it is tilted, with the fundus to the left side, and is sharply anteflexed, and the uterus cannot be readily returned to its normal position. She may have had an inflammation of the appendages on the left side, which would account for the displacement, but the displacement in itself does not give rise to any local or reflex symptoms. It is possibly even a congenital condition. Lateral displacements of the uterus, whether flexions or versions, are the results of one of two conditions,—viz., either a congenital shortening of the ligaments on one side or the other, or an inflammatory contraction of the ligaments on one side: thus, a contraction of the broad ligament on one side, or of the cellular tissue following inflammation, would cause the cervix to be dragged over to that side, and *vice versa*. The treatment by pessaries is very unsatisfactory, and, fortunately, the condition rarely calls for such interference.

Ophthalmology.

DISEASES OF THE EYE ASSOCIATED WITH DISEASES OF THE KIDNEY.

CLINICAL LECTURE DELIVERED AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL.

BY WILLIAM OLIVER MOORE, M.D.,
Professor of the Diseases of the Eye and Ear, New York Post-Graduate Medical School and Hospital, etc.

Gentlemen,—I shall speak to you this morning of diseases of the eye occurring in connection with affections of the kidney. This patient, now under treatment, gives a fair clinical picture of this affection. Susan R., aged twenty-one years, for several months prior to coming under observation complained of severe headache with nausea. She is, however, able to attend to her work as a domestic, but her general health has become impaired to such an extent that she will be unable in a short time to fill her position. The examination of the eyes reveals $V = \frac{10}{100}$ in each eye. To external appearance they are normal in every respect, but the ophthalmoscope shows the well-marked signs of neuro-retinitis nephritica or albuminurica. The examination of the urine shows slight traces of albumin and granular casts. She has had at different times pain across the back; she is not married, and menstruation is regular.

Half a century before Dr. Bright published his discovery of the association of renal disease with albumin in the urine, cases of dropsy were recorded in which remarkable loss of vision occurred. These cases had been ascribed to lesions of the brain, but were in reality due to chronic renal disease. Although in 1827 Bright made his announcement, and in 1832 published a report of one hundred cases, in many of which ocular symptoms were present, very little attention was paid to this complication until Landouzy, in 1851, made it a

special study, and found that the lesion was in the retina, and not in the brain, as formerly held. It was in this same year that Helmholtz invented that most exact of all the aids to physical diagnosis, the ophthalmoscope, which opened such an era in general as well as in ophthalmic medicine. Instead of the visual disorders in kidney-disease being looked upon as interesting symptoms in the progress of the disease, they have now become an index of unsuspected kidney-affection, and a means of diagnosis. Frequently patients with failing vision present themselves to our notice complaining only of this defect, and by the ophthalmoscope we are able to diagnosticate albuminuria and renal disease, already well established, by the invariable retinal picture, and so characteristic is it that when once seen it cannot be mistaken thereafter for anything else. The peculiar changes seen in the retina are not found in any other disease of this tissue, although Wadsworth says that the same appearances obtain in neuro-retinitis from cerebral tumors. In speaking of the peculiar and characteristic picture seen in the retina in both acute and chronic renal disease, we exclude for the present that form of disturbance of vision due to uræmic convulsions, where the vision is impaired, as a rule, for only a few hours. The changes which take place in the retina in kidney-diseases are more commonly retinitis albuminurica, amaurosis uræmica, and detachment of the retina.

RETINITIS ALBUMINURICA.

This diseased condition may occur in every form of renal inflammation, and has been seen in amyloid degeneration, yet it is more commonly associated with the granular or contracted kidney. It occurs during and after scarlatina, and may be found in some cases of spontaneous origin. The frequency with which it is associated with renal disease is variously stated; for example, Galezowski found retinitis albuminurica in thirty-three per cent., Lebert in twenty per cent., Lecorche in twenty-one per cent., Earle in twenty-nine per cent., and Ayres in nine and a half per cent. Voelcker, in thirty cases, found two incident to pregnancy, and the rest associated with contracted kidney. It would thus seem that about twenty-three per cent. of patients with renal inflammation have disorders of vision at some period of the disease. In many cases the renal disease is well established before the eye-symptoms present themselves; but very often the eye-lesion is the first indication of the general disease. Patients with this complication of kidney-disease complain only of gradual failure of sight, everything appearing blurred and smoky. This failure

of vision may in some instances come on rapidly; it generally occurs in both eyes simultaneously, although I have seen it in only one eye, the other remaining normal. Such a case has recently been under my care, and the following is a brief summary of the history of this patient. I mention it because it is unique. Male, sixty-seven years old, has albuminous urine and hypertrophy of the left ventricle, and other well-marked evidence of granular kidney. The right eye was injured twenty years ago, resulting in a traumatic cataract with adhesions of the iris to the cornea. Owing to the pain in this eye produced by the iritic adhesions and the cataract, cataract extraction was performed, with good result. The retina and choroid, as seen by the ophthalmoscope after the operation, were found to be normal. One year later the patient returned with failure of vision in the left eye, and the fundus showed all the well-marked appearances of albuminuric retinitis; the right eye remained normal. The left eye presented later the symptoms of acute glaucoma, due to intra-ocular hemorrhage, and the patient died two years after this, the right eye never having become affected with albuminuric retinitis. This occurrence of one-sided retinitis albuminurica has been noticed by several authors. Yvert reports the case of a man whose urine contained albumin, who, after being under observation seventy-two hours, died. The autopsy showed only one kidney, and this of the large white variety. This patient had retinitis albuminurica on the same side as that on which the kidney was found, the opposite eye being normal. Yvert explains this one-sided eye affection by assuming an irritation of the sympathetic nerve on one side, due to unilateral affection of the kidney, and he cites five cases, reported by Potain, where there was anasarca of only one side in consequence of contusion of the kidney in which he considered the sympathetic of one side of great importance. In our case, we should rather consider the reason to be the difference of tension of the eyeball,—the right eye, the one from which the cataract had been removed, being less firm, and the vascular system less interfered with. The course of the disease is various, but rarely results in recovery.

Ophthalmoscopic Appearances.—We rarely have the opportunity of seeing the first stage of the disease, but those who have seen it describe the appearances as those of congestion. Subsequently, when the patient presents himself for treatment, we find cloudiness of the papillæ of the optic nerve and of the adjacent retina, the nerve looks gray and swollen, its margin is indistinct, the retinal veins are large and tortuous, and show points of different color, depending upon their varying depth.

The arteries are smaller than usual or normal in size; the retina about the nerve is cloudy and œdematous, with extravasations of blood here and there present, concealing the vessels in some instances. They are sometimes round, and again irregular in shape; we also notice white spots of various sizes from a pin's point to the size of the papilla itself. In the macular region we find on its temporal side many fine white dots radiating from it as a centre. These dots look very much as if a brush full of white kalsomine had been thrown upon the retina at this point. Often the previous cloudiness of the retina already mentioned increases, the exudations grow larger, coalesce, and surround the optic papillæ; the hemorrhages may increase, and the specks and dots about the macula also increase and become confluent. The refraction of the eye in these cases is usually hypermetropic, owing to the œdema of the retina. These appearances are usually present in both eyes alike, yet they may vary. In some cases they are much less marked, and we have only the peculiar stippling at the macula, without any swelling at the optic papillæ, and with only a few hemorrhages, or perhaps none at all. These changes may subside again, the white patches becoming smaller, and the vessels they cover becoming again visible, the cloudiness of the retina subsiding, and the outline of the optic nerve again appearing. Only in that form following scarlatina, and that which accompanies the nephritis of pregnancy, do we see occasional complete absorption; of course, when the optic nerve has had much infiltration in the beginning more or less damage has been done to it, and atrophy of its fibres will ensue. The changes just described are found in retinitis albuminurica occurring in pregnancy and in the various forms of renal disease.

Anatomical Appearances of Retinitis Albuminurica.—In this form of retinitis we find that portion of the retina in the neighborhood of the optic papillæ and macula lutea involved. In these regions all the parts of the retina suffer, and in many cases not only the blood-vessels and connective tissue but also the nerve-filaments are altered. Microscopically we find much swelling of the optic papillæ, which is due to œdema and hyperplasia of the connective tissue. In the macular region we find cells which contain numerous fat-globules having a nucleus. These are ganglionic cells undergoing retrograde metamorphosis. Numerous hemorrhages are also found in the nerve-fibre layer and in the neighborhood of the blood-vessels, or they may lie in the deep tissue of the retina. Crystals of hæmatoidin are never found after such hemorrhages. The hemorrhages are probably due to changes in the walls of the vessels. Dr. Johnson says that the muscular walls of the minute arteries in most of the organs are hypertrophied, owing to long-continued over-action in chronic renal disease, and that this contraction of the small arteries impedes the onward flow of blood, and calls for an increased effort on the part of the heart to carry on the circulation, causing hypertrophy of the left ventricle; hence, owing to the increased action of the heart, and the increased arterial resistance, great pressure is brought to bear on the arterial wall, and there is necessarily a greater risk of extravasation. This increased thickness of the arteries differs in various parts. The retinal hemorrhages have been thought to be due to this want of hypertrophy in the small retinal vessels, the heart-action not being counterbalanced by an increase in their thickness. Denissenko examined all parts of the eye, and found no evidence of inflammation, but all parts were infiltrated with albuminous liquid, and a general œdema prevailed, the interstices of the tissues being distended and torn. The albuminous exudation may coagulate, and even undergo fatty degeneration; only a few wandering cells were found in the swollen tissue. The cause of the exudation here, as well as in the rest of the body, must be said to be in the nervous system. According to this author, the exudation causes compression of the blood-vessels, and to this also he ascribes the extravasation of blood, and detachment of the retina, when present. The peculiar stellate dots referred to in the macula, in the ophthalmoscopic appearances, are owing to fatty degeneration of the radial fibres of the retina, the stellate appearance, according to Schweigger, being due to the anatomical arrangement of these fibres at the macula. The pathological process in the retina I do not believe to be an inflammatory one, but a tissue-metamorphosis, which produces permanent changes in the retina, such as are brought about by the changes in the vascular system generally, which in turn are caused by the effete materials circulating in the blood, due to improper action of the kidneys; this material may be urea alone, or other substances. The cardiac complication so frequently found naturally increases the difficulty in the vascular system already mentioned. These same phases are found in the retinitis albuminurica of pregnancy and scarlatina.

Retinitis Albuminurica in Pregnancy.—It has long been known that pregnant women are liable to suffer from disturbances of vision, from a slight impairment to complete and permanent blindness. This was known long before Bright's time, the cause being usually referred to cerebral origin. We now find it due in the majority of cases to renal disease. The same retinal changes are found as those already

described. It occurs at varying times during pregnancy from the second to the eighth month, but it is more apt to occur during the last four months; it may occur after abortions. Many cases have been reported where the retinal disturbance produced blindness for weeks, and then after labor complete recovery occurred, and others, of less fortunate women, who have remained partially blind. The occurrence of this disease during pregnancy opens up some very interesting points regarding the proper course to pursue. Eastlake reports an interesting case of a patient, thirty-four years of age, who had had nine children at full term, and no miscarriages, who at the birth of the first child had no ocular symptoms, yet on the second day after the birth of the second child, and after all the seven subsequent labors, suddenly became totally blind in both eyes, the blindness lasting from three to five weeks. Ophthalmoscopic examination of these eyes long afterwards demonstrated only the existence of contracted retinal arteries and blanched optic nerves,—the last stages of albuminuric retinitis. Dr. W. J. Scott, of Cleveland, Ohio, reports a number of similar cases, and says, in 1875, "What advice shall be given to patients who have suffered from these conditions in the first pregnancy? Would it be justifiable to advise against conception, or to remove the fœtus afterwards?" He answers by saying, "I think only after serious symptoms have presented themselves should we interfere."

The first case under our notice in which labor was induced for the reason that permanent blindness was feared was reported by the late Dr. E. G. Loring, in a very interesting article published in the *New York Medical Journal*, vol. xxxvii. Since this case was reported before the American Ophthalmological Society, I have had a case under my own care in which labor was induced at the eighth month for the sole purpose of preventing permanent blindness. The history is briefly as follows. A woman, forty-eight years old, was pregnant with her twelfth child, and had never presented ocular symptoms in the previous pregnancies. Three weeks before coming under observation she had a chill, and since then had not felt so well. Impairment of vision was noticed shortly after the chill, and she became nearly blind. When first seen she was anæmic, there was no anasarca, the urine contained one-third albumin with some epithelial casts, and the ophthalmoscopic picture showed the media clear, the retina much swollen, and a neuro-retinitis with exudations and well-marked hemorrhages, more especially in the macula of the left eye. R. V. = $\frac{1}{70}$; L. V. = fingers at one foot. The field of vision was much narrowed, so that the patient was unable to walk alone. *Without examination of the urine*, it was decided best for the future welfare of the eyes that premature labor be induced, and, as there were no proper facilities at hand in the institution where she was first seen, she was transferred to a neighboring one, where premature labor could be induced. An examination per vaginam showed the os dilated one inch, and the breech and foot of the fœtus presenting. By irritation of the uterine walls with the finger, labor was induced, and a dead fœtus was expelled, together with a fatty placenta. The patient made a good recovery after a convalescence of two weeks. Vision began to improve from the time labor was completed, and three months subsequently R. V. was improved to $\frac{20}{50}$, and L. V. to $\frac{20}{70}$. Her vision remained at this point up to the time of her death, two years later.

Here we see a case where, in my opinion, had the patient been allowed to go on to full term she would have been blind for some time before natural labor took place; very much more damage would have been done to the delicate tissue of the retina. It will be noticed that this patient was about to abort owing to the fatty placenta and the dead fœtus produced by the kidney-disease. Premature labor was advised solely for the preservation of sight, and on the assumption that the child was viable, the eighth month being considered a perfectly safe time. Had I known at the time that the fœtus was dead, the same treatment would have necessarily followed. Life is often endangered when vision is, and when the life of the mother is in danger there is no doubt about the weight of authority among obstetricians concerning the general question of abortion or premature labor. Dr. Howe, of Buffalo, in an analysis of cases occurring during a period of fifteen years, says, "These tend to show that when vision begins to be impaired only in the last two weeks of pregnancy, recovery follows almost invariably. Of those described as being in the eighth month, or thereabouts, when the retinitis commences, not one-half recovered, and several did not materially improve. Again, when this began earlier than was estimated, as the middle of the seventh month, when nature did not interfere by bringing on a miscarriage, and when the patient escaped with her life, it was only to remain blind for ever afterwards." From this array of facts I would conclude that where great failure of sight has occurred, and where it is progressive, the induction of premature labor is justifiable, and often demanded. Again, when in one pregnancy failure of vision has occurred which remained permanent, abortion in a subsequent pregnancy, with proper restrictions, is justifiable and often a necessity.

AMAUROSIS URÆMICA.

In this class of cases there are no intra-ocular changes except in some rare instances. There is œdema of the retina, which passes away in a few days, or more rarely it is so marked as to cause a separation of the retina by serous infiltration, as in the case reported by Heyl, where retinal separation in the right eye and uræmic amaurosis in the left occurred simultaneously. As to the cause of the blindness in uræmic amaurosis, Traube's theory seems at present to hold good. He considers the cerebral symptoms of uræmia to be due to acute anæmia of the brain, caused by œdema of the brain-tissue, due to the circulation of urea in the blood. The blindness in these cases is sudden and complete, and it usually is associated with a group of uræmic symptoms, —convulsions, etc. The treatment of this, as of the other ocular symptoms occurring in renal diseases, needs no special local measures; the treatment of the general disease is the best that can be done for the eyes. As regards the prognosis of retinitis albuminurica not associated with pregnancy, the duration of life does not, as a rule, exceed eighteen months. Thus it behooves us all, gentlemen, when we do not adhere to the code of health of the "school of Salernum," which says,—

> "At least six times in every fleeting day
> Some tribute to the renal function pay,"—

to consult some fellow-practitioner.

TREATMENT OF ACUTE PURULENT CONJUNCTIVITIS AND OPHTHALMIA NEONATORUM.

CLINICAL LECTURE DELIVERED AT THE NEW YORK POLYCLINIC.

BY THOMAS R. POOLEY, M.D.,

Professor of Ophthalmology in the New York Polyclinic, and Surgeon-in-Chief of the New Amsterdam Eye and Ear Hospital.

Gentlemen,—The other day we considered the treatment of the severer forms of purulent ophthalmia. Continuing this subject, I may say that considerable importance is to be attached to the proper cleansing of the eye, and whether an antiseptic solution is to be employed or not is for you to decide, and will depend upon the extent to which your mind or your imagination is carried away with the present views concerning the advantages of antiseptics. Personally, I think cleansing the eye with lukewarm water is as good as anything. It should be done by a competent nurse, the pus being wiped away with absorbent cotton every thirty minutes or oftener. The cotton should be destroyed after each washing. The cleansing of the eye by the use of syringes should be severely condemned, for it is obvious that the attendant is subjected to the danger of contamination with the secretions from the patient, and also because it is very difficult to control the force of a stream from a syringe, and if the cornea be weakened, as it often is, by the disease, you favor the rupture of the eyeball. A great variety of antiseptics are recommended; some use carbolic acid, others bichloride, and still others boracic acid.

Let us speak of the treatment of what may be termed the complications which arise in the course of severe purulent ophthalmia; and, first of all, let me urge you to examine such eyes with great care, for it is not always an easy matter to tell when the cornea is implicated. In a very severe case of gonorrhœal ophthalmia which I had under treatment, I told one of my colleagues I thought there was a perforating ulcer in the upper corneal margin, but he could not see it until I suggested that he raise the chemotic conjunctiva which