cystoscope was substituted, and forceps passed into the bladder grasped the substance and it was withdrawn longitudinally. Upon examination it was found to be the rubber eraser of a lead pencil. This would have been voided voluntarily had the axis come parallel with the axis of the urethra. After questioning patient, she admitted trying to bring on menstruation.

It is quite singular how few symptoms calculi in the bladder will cause. At present, a case under observation in which I have crushed phosphatic calculi still has one calculus the size of a walnut which does not cause much frequency. It seems almost incredible that the bladder will act as a cushion for it to rest on.

Treatment. Colon infection of the kidneys responds remarkably well to the washing out of the pelvis of the kidney with one-half of one per cent. silver nitrate. It seldom requires more than three or four washings before the symptoms are mitigated. In a series of ten cases a percentage of 90 per cent. showed marked improvement and at this date no recurrences.

Treatment of tuberculosis depends wholly upon the stage of the disease; the earlier the focus is found and treated the more chance the patient has of acquiring relief, or cure. It goes without saying that when infection invades both kidneys, the bladder will shortly suffer, and the only recourse is mild, soothing treatment. In searching for germs of T.B., it is always advisable to use the guinea-pig test, as oftentimes in a smear the smegma bacillus will confuse.

Treatment of prostatic obstruction again depends a great deal upon the duration of the ailment. Early prostatic disease can be remedied without the aid of the knife. Prostatitis following gonorrhea responds readily to massage, while the other prostatic enlargements are nearly all benefited by the application of heat, either with the Chetwood tube, or by more recent electrical apparatus. In median bar enlargement I have given much relief by use of fulguration with high frequency spark. Young's incisor works quite good in some cases although the disadvantage lies in the fact that the treatment is carried out without the use of direct vision and thereby danger of hemorrhage and getting a larger portion than expected. Fulguration seems to me the choice of procedure, although it takes several sittings before the desired effect is procured.

Treatment of Strictures. All sorts of meth-

ods have been devised for treatment of strictures, and today urologists are discarding both internal and external urethrotomies, and resorting to them only in extreme cases. The sound, of course, is the common weapon in the hands of the inexperienced. I say inexperienced for I believe the passage of a sound is an extremely delicate procedure, for many times these tried are of too small a calibre, and liable to cause one to make a false passage. In most cases I use a LeFort filiform attached to a sound, thus avoiding the possibility of making a false passage. Recently I have met with considerable success by using the urethroscope, looking directly at the stricture, then passing a small metal cannula attached to the negative pole of the direct current. By continuous application of ten minutes, using three to five milliamperes, the stricture is seen to disintegrate. It is somewhat more difficult to manipulate posterior strictures in this manner, nevertheless, it can be done with good success.

It still lingers in the minds of many medical men of the extreme pain connected with cystoscopy or urethroscopy, which is erroneous at the present time; for, with a four per cent. solution of novocain instillation into the posterior urethra, it can be made practically a painless procedure. The irritation may be greatly alleviated by a hot sitz-bath directly following the seance.

Medical Progress.

REPORT OF RECENT PROGRESS IN OPHTHALMOLOGY.

BY EDMUND W. CLAP, M.D., BOSTON.

CORNEAL SCARS.

HOLMES SPICER treats of the formation of clear spaces in corneal nebulae. The presence of clear lines in corneal scars has been long observed but not carefully described. Most of the changes depend on the presence of blood vessels which occur under the following types, (1) arborescent and superficial, (2) terminal loops in marginal inflammations and trachoma, (3) brush form of deep interstitial, (4) umbel form occurring in local inflammation of deep layers of cornea. Vessels keep to their own level, not anastomosing with those of a different layer. Geometrical clear lines occur in the midst of nebulae.

the lines are straight or run into large smooth curves, sometimes parallel, sometimes diverging or converging or radiating from a center. Often they are sharp and straight as if ruled. These lines are often seen only against a dilated pupil. The explanation that they are lines of clearance or disappearance of nebulae due to development of lymph tracts is not acceptable. The probable explanation is as follows: "At a certain depth within the layers of the cornea a tuft of brush vessels makes its way; at the end of the attack the vessels shrink and lose their blood but remain as potential channels. These channels become greatly flattened from compression in the layers of the cornea, during and after subsidence of inflammation, and owing to this they have a much greater width than when they contained blood." "The contractile process which follows all attacks of inflammation produces a stretching along the course of the newly formed vessels confined to the coats of the vessel and its immediate neighborhood. The result of the stretching is to straighten the course of the vessel, to remove inequalities and deviations and to make it the shortest distance between two points." Vessels running through a healthy cornea after a time cause an opacity by interfering with the lymph circulation. This secondary opacification makes the old vascular channels visible and this is more likely to occur at the center of the cornea than at the periphery. The condition most likely to result in these lines, is acute vascular interstitial keratitis running a rapid course and leaving little permanent change in the endothelium. Much deep change will mask the lines. The second type the author calls the mushroom cap. It is like a section through the top of a young mushroom showing stalk and crescent shaped cap and gills on the concave edge. The stalk is of a delicate blue gray, often with vestiges of vessels in it. Between head and stalk is an interval of clear cornea. The head has no vessels or remains of them and is a dirty white or buff. It is thin and apparently confined to one layer of the cornea and deeper than the stalk. Often a complication of two or more such systems may be made out. These mushroom heads appear some time after an ulcer has come to an end. A form is seen after attacks of scleritis. Successive attacks may leave a secondary opaque crescent in the cornea

which may interlace or form a wavy band like an irregular arcus senilis. Dermoid tumors or naevi at the edge of the cornea may leave similar opacities. Destruction of tissue with ingrowth of blood vessels is a necessary preliminary to all these formations, the contraction which follows interferes with nutrition or interrupts the flow of the lymph through the cornea leading to stagnation, concentration and deposit of salts.

ARTERIO-SCLEROSIS IN CONJUNCTIVAL VESSELS.

Dennis has studied the conjunctival circulation with the Zeiss corneal microscope and special focal illumination. We quote his conclusions; that the normal picture is as follows: the wall is transparent and the lumen regular and the blood corpuscles clearly seen. Their flow goes forward promptly and without clogging or stagnation. The rate of flow is not the same in all vessels and all of the fine capillaries are not full at the same time. One may flash out into view and then disappear, *i.e.*, the corpuscles fill the vessel, move on, and an interval passes before the vessel is again filled with corpuscles so as to be seen. The vessels themselves are not very tortuous. In beginning capillary fibrosis the corpuscles clog the lumen, forming a mass as in a log jam, holding back the blood stream; suddenly the flow goes on again. Or a bead formation happens in the lumen, remaining stationary for several seconds; occasionally the pause is 14 seconds. In advanced cases the fine vessels remain nearly empty or some may be occluded. The lumen may be deformed with alternate strictures and dilatations like links of sausages, these being minute aneurysms. One eye may show such a condition while the other eye has a nearly normal circulation. The color of the vessels in advanced cases is lighter red than normal or if the walls are thicker the color may be rusty brown and the sclera appear very white. The author thinks that in younger subjects, through treatment, even aneurysmal changes may come back to normal. Luedde noticed even reverse flow for an instant in the diseased vessels and the author has seen this, too. Serial sections show increase in connective tissue. Changes in conjunctival vessels are found when the retinal vessels show no apparent changes. The author thinks the scleral conjunctiva the best place to study and that the internist should examine this

region in cases of suspected vascular degeneration.

TREATMENT OF CATARACT.

A. S. and L. D. Green of San Francisco have tried out the non-operative treatment of senile cataract of Col. H. Smith of Amritsar. In 80% of their cases the opacification has been checked or the vision improved. These authors think that when vision has fallen to 50% of normal or below operation should be done. Before the vision has fallen to this point the non-operative treatment may be tried. The earlier the treatment is begun the better. Operation later is not interfered with. The one objection is the very considerable pain. Simple senile cataract with diffuse or radial opacities is most favorable for this method. Only the finest opacities seem to disappear. The patient should be in bed and the eye thoroughly anaesthetized with 4% cocaine. Then 20 mm. of 1-4000 cyanide of mercury solution and 2 mm. of 4% cocaine are drawn into a sterilized glass syringe. The needle is inserted under the conjunctiva just below the insertion of the external rectus muscle one cm. from the limbus in an area free from blood vessels and the solution slowly injected. Hot compresses are applied at once and maintained as long as the patient has pain. Morphine may be necessary. A week later the patient may use 1% solution of iodide of potash in an eye cup for five minutes at a time every morning and every other night. On the alternate nights 2% dionin is used and the strength increased 2% a month up to 8%. The injection is given but once. The conjunctiva may be so swollen as to protrude between the lids for a few days. The redness persists for three or four weeks. In 72 cases 18 remained stationary, 12 progressed, and 42 improved.

INTRANASAL DRAINAGE OF LACRYMAL SAC.

Fraser and Paterson of Edinburgh report fifty cases of intranasal drainage of the lacrymal sac. Of the patients 43 were female and in four the condition was bilateral. Average duration of trouble was three years. Most of the patients had dilatation, and probing and washing of the sac has been done without permanent relief. The nose was normal in 27 cases and in the others the nasal condition probably had nothing to do with bringing on the tear sac trouble. All had dilated tear sac and ab-

scesses were present in seven. The operation was similar to West's and consisted in removing the mucous membrane over the inner surface of the frontal process of the superior maxilla and chiselling through the bone to uncover the lacrymal sac, which is dilated and usually bulges in towards the nose. A probe passed into the sac from the canaliculus will keep the sac in the opening, where a piece of it is removed by a forceps punch or else drawn down by forceps and cut off with a bistoury. The operation required fifteen minutes to half an hour. Average stay in the hospital was four days. Of 24 patients seen afterwards 19 were completely cured, i.e., no watering of eye, no discharge of muco-purulent matter on pressing the sac and the intranasal opening was free. Two patients had slight watering of the eye and in three cases there was closure of the nose opening and discharge of muco-pus from the sac. Twenty-four patients who reported by letter showed 19 completely cured. The total record is 80% cured, 10% improved, 10% failures.

CONGENITAL CHOROIDEREMIA.

Connor reports a case of this rare condition in a soldier who complained of night blindness. The vision in daylight was found to be 20/20 in each eye. He had always had trouble going about after dark but was able to do clerical work. Parents not related, no family or personal history of eye disease. Pupils equal, irides brown. The ophthalmoscope showed cornea, lens and vitreous clear but the fundus glistening white with retinal vessels normal in size and distribution. In the macular region was a nearly normally reddish yellow area about twice the size of the disc, the macula showing as a slightly darker spot near the center of this patch. Elsewhere the sclerotic was exposed to view. Scattered over the fundus were a few pigment spots and a few small ciliary vessels. Both eyes presented nearly the same picture, except that the left macula was less regular in outline than the right. The fields of vision are markedly contracted as are the color fields. Nettleship in 1908 collected the cases in a paper on retinitis pigmentosa, though he regarded it as absence of the choroid,—choroideremia. Jackson says Mauthner reported the first case in 1872 and two years later Koenig reported two cases and three others have been described. The patients were

all males and in all cases but one night blindness was mentioned.

EYE LESIONS OF INFLUENZA

Jackson reports on ocular lesions of influenza. The influenza bacillus resembles the Koch-Weeks but produces a different type of conjunctivitis. It produces the other lesions of influenza and forms a toxin having an affinity for the nervous system. As far as the eye is concerned this manifests itself in spasm or paralysis of accommodation, pareses, or paralyzes of the extra ocular muscles, photophobia, transient amblyopia, optic neuritis, optic atrophy, neuralgic pain apparently not caused by local lesions and persistent asthenopia lasting months or years. The conjunctivitis caused by influenza occurs mostly in children under one year; it may be like a gonococcus infection or pseudomembranous in character but the majority of the cases are mild and without corneal involvement. Swelling of the upper lid without conjunctivitis may occur. Herpetic or dendritic ulcers of the cornea appear of neuropathic origin or corneal inflammation associated with uveitis. These conditions may arise after the influenza has run its course. Panophthalmitis of violent type may occur or a low grade chronic inflammation that proceeds to shrinking of the eye-ball without any acute symptoms. The ocular disease may be metastatic. Uveal infection by way of sinus or from focal infection may arise. Cellulitis or abscess of orbit may be a primary manifestation of the disease or occur later, and in connection with sinus disease. Toxic amblyopia and retrobulbar neuritis have been reported. A few cases of retinal disease have been seen. Glaucoma is not very rare. Senile cataract may be accelerated by the influenza.

OPHTHALMOSCOPY BY RED FREE LIGHT.

Von Der Heydt describes some ophthalmoscopic examinations made with Vogt's red free light. By this the yellow color of the macula can be seen. The retinal fibers are much more evident. In post-neuritic atrophy as well as in primary and glaucomatous atrophy and in that complicating retinitis pigmentosa and fracture of the base of the skull there is found a white marble-like mottling of the surface of the retina. One case showed a thin white line on each side of the vessels which could not be

seen with the usual light. In retrobulbar neuritis (eight cases) there was found absence of striation in the retinal fibers and a substitution therefor of the marbleized zone in the papillomacular bundle. Vogt describes honeycomb changes in the macula in retinitis pigmentosa and also after injury. Some such condition as this is present in cystic degeneration of the macula and may precede "hole in the macula." Delicate opacities in the vitreous and deposits on the lens are better seen by the red free light.

FIELDS IN GLAUCOMA.

Van der Hoeve (reviewed in *British Journal of Ophthalmology*) insists on the importance of searching for scotomata near the blind spot in glaucoma. In Bjerrum's method a scotoma is projected thirty-six times its real size instead of only six. The characteristic feature is a scotoma starting from the blind spot and semi-circling the fixation point and ending abruptly at the horizontal meridian. This scotoma may be present in every case of chronic glaucoma, in fact Priestly Smith states that if it were absent glaucoma could be almost certainly excluded. This scotoma is due to a defect in a bundle of nerve fibers which ends in the horizontal raphe of the retina. If the nerve bundle defect reaches to the periphery of the retina a sectional defect appears and the scotoma may reach to the periphery of the field or it may meet a general contraction of the field. Some of the authors' cases show that the scotoma may extend towards the fixation point and threaten the macula. He feels that in any case where the scotoma is up to ten degrees of the fixation point an iridectomy is contraindicated, as it may cause loss of vision and that a sclerectomy, either LaGrange or Elliot, should be preferred. From the cases reported Bjerrum's scotoma may begin as a relative defect for white, and blind islands gradually appear and finally the whole area becomes blind. Scotomata may appear not directly joining the blind spot at first. Scotomata, especially recent ones, may disappear after operation.

ANAPHYLACTIC CONJUNCTIVITIS.

Conlon suggests that some of the types of mild but stubborn conjunctivitis that so frequently baffle us and cause our patient to go from one oculist to another without relief may

be due to the protein of common foods. Cases that occur year after year at about the same season suggest some recurring cause. One patient that Conlon saw had had all the usual varieties of treatment without shortening the attacks and external causes of irritation had been investigated. In one patient it has proved during two years that either tomatoes or strawberries would cause the attacks. He never had an attack unless he had eaten one of these foods and later an attack was found to be due to tomato catsup eaten on beans. The protein skin test used by Walker was employed in these cases. Eggs were found to be a very definite cause in one case where the patient had been in a state of constant discomfort for two years. Another case had a yearly attack clearly traced to eating flounders caught on an annual vacation.

CONCUSSION AND CONTUSION INJURIES.

De Schweinitz discusses injuries to the eye as seen in the war. The fundus lesions are caused either directly by blow or pressure on the eye ball or indirectly by transmission of concussion or shock. The first are lesions by contact, the second are lesions by concussion as violent displacement of air by explosion of a shell or transmission of concussion or shock through the bony facial structures. Externally there may be no manifestations or only edema or ecchymosis of lid. In eyes externally clear vitreous hemorrhages have been found. In commotio retinae vision may be completely lost for several days followed by a return, though a permanent reduction follows severe types. Lister says a lesion above or below the horizontal plane was found to cause a defect in the field out of all proportion to the local disturbance. Reduction of tension is common and may not always mean a perforating wound of the sclera. In these war injuries besides the the retinal signs of commotio retinae there are more numerous hemorrhages and the yellow tint of retinal haze endures longer though it may be more circumscribed. Wrinkling of the retinal layer has been observed. Lacerations of chorioid and retina and their vessels with hemorrhage and exudate are common especially at the posterior pole of the eye and near the papilla. Transudation and hemorrhage cause separation of chorioid and of retina. Secondary to these lesions come atrophy of chorioid and retina in spots and proliferating retinitis. All manner of opacities in the vitreous occur.

The retina is pinned down by opaque plastic material. Holes at the macula are commonly observed. Extensive disorganization of the interior of the eye without rupture may occur. Injury to the optic nerve in the canal and cuts across the nerve usually end in atrophy as does hematoma of the optic nerve sheath. Avulsion of the optic nerve is not infrequent. The difference between concussion changes of fundus in military practice as compared with civil depends on the fact that in warfare the object causing the concussion or passing through the orbit moves with great rapidity.

COLORED RINGS ABOUT LIGHTS.

Colored rings or haloes about artificial lights is a symptom of glaucoma and is also observed in normal eyes and the best description of the varieties of these haloes was by Druault in 1899 at the Congress of Utrecht. This year Sheard has an instructive account and explanation of these appearances. Certain types can probably be seen by every normal individual who looks for them. The size of the pupil has little influence on these rings. A small bright source of light viewed at any convenient distance will show surrounding the whole of the luminous source a general luminous glow with striae in various directions from the central light. This may be called the ciliary corona. Surrounding this is a ring presenting colors from blue to red from the center to the periphery. These phenomena seem to be universal. Under some conditions a second ring, fainter than the first and closely bounding it with the colors in similar order, may be seen. A very bright light and a large pupil favor the finding of this latter ring. The author discusses diffraction by circular apertures and by opaque discs at length, and mathematically concludes that the apertures or particles giving rise to the first ring have an average diameter of 0.0018 cm., and those producing the second ring an average diameter of 0.00083 cm. Schiotz found the epithelial cells of the cornea varying from 25 μ . to 40 μ . Druault made similar estimations but thought that the diffraction was in Descemet's membrane. Druault attributes the second ring to the lens fibers but Sheard advances evidence to show that this cannot be so and that the second ring is due to diffraction by particles smaller than those producing the first ring, perhaps the inner layers of the anterior epithelial portion of the cornea. The ciliary

corona is without doubt due to the lens fibers and the striae to the lens star.

CORNEAL THERMO-THERAPY.

Weekers details his method of sterilizing corneal ulcers by heat. His view is that the microbes can have their virulence destroyed by heat not great enough to kill them outright and also not to injure the healthy tissue of the cornea. The author used a galvano cautery which can be kept at any degree of incandescence desired. By holding the cautery near a thermometer bulb a good idea may be obtained of the temperature at a short distance from the point, and in practice the glowing point is moved as near the surface of the corneal ulcer as possible without touching it. The progressive margin of the ulcer is especially treated, but no more than one minute at a time is necessary. The cornea should be kept moist, not allowed to dry. Such an application of heat is repeated two or three times at one sitting and a second sitting is not usually necessary for the ulcer usually does not progress. After chauffage the patient has no pain but is relieved, very different from after cauterization, and damage to the cornea is kept at a minimum. Shahan has designed an instrument which he calls a thermophore in which a metal tip can be kept at any desired temperature and held against the corneal surface to be treated for the requisite time. This enables us to be more exact and these methods promise much when we have learned by experience just how much heat is needed and how long to apply it.

Book Reviews.

Handbook of Mental Examination Methods. By SHEPHERD IVORY FRANZ, Ph.D., M.D., LL.D., Scientific Director and Psychologist, St. Elizabeth's (Government) Hospital for the Insane, etc. Second Edition, Revised and Enlarged, pp. 193. New York: The Macmillan Co. 1919.

This book is intended "to place in the hands of psychiatrists, neurologists, and students, methods of examination which have been successfully used in psychological practice to the end that the mental examination of patients may be conducted in a more systematic and thorough manner." Apart from a few minor alterations and additions this edition remains practically the same as the first with the exception of the addition of a needed chapter on

mental testing in which Woodworth's method of testing emotional instability is given at length. The more complex psychological methods of mental examination are wisely omitted, only the practical tests being described. Since its first appearance in 1912 it has amply fulfilled its promise in becoming a leading authority on the subject within the field for which it was designed.

Lectures on Sex and Heredity. By F. O. BOWER, J. GRAHAM KERR, and W. E. AGAR. London: Macmillan and Company. 1919.

These lectures, delivered by the authors at Glasgow in 1917 and 1918, aim to state in simple terms the leading facts relative to sex in plants and animals, with suggestions on the use and effect of sexual propagation. The evolutionary aspect of this subject in plants and in animals is taken in the first four chapters; the last two are devoted to questions of heredity. In further lectures of this series, it is intended to deal with the distribution of inherited characteristics in sexually produced offspring. The chief topics considered in the present volume are the origin of sex in plants, the effect of a fixed position on the sexuality of plants, the reproductive process in animals and the manifestations of this process as adaptations to life upon land, and the fundamental Mendelian phenomena of heredity. The book should be of value not only to the medical profession but to the intelligent laity desiring to acquire a rational understanding of the biology of sex and its bearing on evolution.

Surgical and War Nursing. By A. H. BARKLEY, M.D. (Hon.) M.C., F.A.C.S. St. Louis: C. V. Mosby Company. 1918.

Today, surely more than ever before in the history of the world, has the appeal for nursing services been most urgent and today the world is keenly alive to the fact that surgery as it has been carried on in Europe would have been a most laborious task were there not skilful, willing hands to attend to pre-operative arrangements and after care. In this little volume a very successful attempt has been made by the author to outline such phases of the subject of nursing as would be of practical value in the average surgical case. There is much that a nurse must know which she is not always called upon to practice and thus the purpose of this book has been to take an intermediate position between a reference book and a text book. It contains a great many illustrations and it should prove a helpful book not only to the professional nurse, but to those outside the profession, who wish to render intelligent service in the home as assistants to the doctor or to the trained nurse.