The sight-hole in the mirror is two millimeters in diameter, as it is found that a small sight-hole permits of a more satisfactory examination of the fundus through a small pupil.

A NEW OPHTHALMOSCOPE.

Presented in the Section on Ophthalmology, at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, Pa., June 1-4, 1897.

BY J. L. BORSCH, M.D.
PARIS, FRANCE.

In this instrument the first noticeable feature is the construction and placing of the mirror; this not only tilts but also revolves about its own axis. The second feature is that the body of the instrument is so constructed that it can be revolved around its own axis carrying the mirror with it. This gives the mirror a third motion, first, tilting; second, revolving around its own axis; third, revolving around the axis of the body of the instrument, whereby the user can place the mirror at any desired position while the arrangement of the lenses remain undisturbed.

There are two lens discs effectually covered and protected from dust and handling, one containing the following lenses: 1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 12 convex, and 0.50 and 13 concave. The other disc contain: 1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 12 concave and 0.50 and 13 convex.

These combined produce seventy-six numbers as follows: 0.50; 1; 1.50; 2; 2.50; 3; 3.50; 4; 4.50; 5; 5.50; 6; 6.50; 7; 7.50; 8; 8.50; 9; 9.50; 10; 10.50; 11; 11.50; 12; 12.50; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25 both in concave and convex.

The second ophthalmoscope has the same arrangement of the mirror, viz., tilting and two rotary motions, only there is but one disc and a quadrant. The former contain the following lenses: 1; 2; 3; 4; 5; 6; 7; 8 concave and 1; 2; 3; 4; 5; 6; 7 convex, while the latter contains 0.50 and 16 concave, and 0.50 and 16 convex. The disc and quadrant combined produce the following numbers: 0.50; 1; 1.50; 2; 2.50; 3; 3.50; 4; 4.50; 5; 5.50; 6; 6.50; 7; 7.50; 8; 8.50; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24 concave and 0.50, 1; 1.50; 2; 2.50; 3; 3.50; 4; 4.50; 5; 5.50; 6; 6.50; 7; 7.50; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; producing sixty-four (64) numbers in all, the same as produced by the Loring ophthalmoscope.

55 Rue Cherché Midi.

ANTINOSIN IN THE TREATMENT OF DISEASES OF THE EYE AND EAR.

BY W. FRANKLIN COLEMAN, M.D.
PROFESSOR OF OPHTHALMOLOGY IN THE POST-GRADUATE MEDICAL SCHOOL, CHICAGO, ILL.

For some time I have felt the need of an antiseptic remedy which would be efficient, and non-irritating to the eye. While formalin is one of our best, if not the best of antiseptics, a solution of even 1 to 5,000 causes considerable pain. The action of sublimate is very superficial, and clinically unsatisfactory. Boric acid and iodoform are only very slightly antiseptic. I have also desired to get some of the properties of iodin, the tincture of which is well known to be curative when applied to ulcus corneæ; on account of its irritative effects its usefulness is very limited.

I have recently used antinosin in a considerable number of cases (both in my private and clinical practice) of catarrhal, palpebral and follicular conjunctivitis, phlyctenulæ, ulcus corneæ, blepharitis marginalis, and also in otitis media purulenta. In a 1 to 2 per cent. solution it does not cause pain in the eye or ear, the patient rarely complaining of any unpleasant sensation. Antinosin is the sodium salt of tetra-iodo-phenol-phthalein. It is a dark blue amorphous powder, readily soluble in water and alcohol, odorless, non-toxic and non-irritant. It makes a purplish solution in water. The stain caused by very strong solutions can be readily removed by washing.

I refer to a few cases taken at random, which were treated by antinosin:

Case 1.—A. G., aged 48 years, had been treated for a long period on account of trachoma. The palbebral conjunctiva was smooth, but the patient complained of great sensibility to light and inability to read. Various applications were used, such as boric acid powder and massage, red oxid of mercury and massage, weak solutions of nitrate of silver, etc. These afforded very slight relief. A 1 per cent. solution of antinosin dropped in the eyes, t.i.d., afforded him in a few weeks, comparative comfort, relieved the photophobia and enabled him to do a moderate amount of reading. It also acted promptly in relieving several attacks of recurring ulcers of the cornea.

Case 2.—Miss G. B., aged 8 years. A case of long standing phlyctenular conjunctivitis, accompanied by intense photophobia. After using several of the classical remedies with very slow improvement, recovery was very much hastened by a collyrium of antinosin, 1 per cent. t.i.d.

Case 3.—J. H. D., aged 24 years. Palpebral conjunctivitis. The conjunctiva presents a velvety surface. There is also a blepharitis marginalis. There is a history of inflamed eyes for past five years, during which time medicine had afforded him little relief. A quarter of a diopter of astigmatism in each eye was corrected; the red oxid ointment, and argentum nitrate, 2 per cent. were applied for a month with little improvement. Under the use of antinosin, t.i.d., and massage, the case went on to recovery in a few weeks.

Case 4.—J. R., aged 34 years. History: Eyes have always been weak and inflamed. There is follicular conjunctivitis of the reflex folds and palpebral conjunctivitis, the ocular conjunctiva much injected. Glasses were prescribed, nitrate of silver, 2 per cent., applied on alternate days for one month, and tincture of iodin 1, to 3 per cent. of glycerin proved to be too painful for application to lids. Antinosin, 2 per cent., was applied t.i.d., and massage to lids once a day. In three weeks the eyes had very much improved and much more satisfactorily than under previous treatment.

Case 5.—Mrs. K., aged 71 years, has chronic palpebral conjunctivitis, for which I had previously treated her with the red oxid of mercury ointment and powdered boric acid and massage alternately, with a satisfactory result. A relapse occurred and antinosin, 2 per cent., and massage, were used daily for ten days, and the recovery was more rapid and complete than under previous treatment.

Case 6.—W. C., aged 40 years, complains of inflammation of the eyes for the past two years, which has been particularly troublesome for the past three months. There is palpebral conjunctivitis in both eyes and tarsal tumors of the right upper lid. Treatment: Tumors removed and curetted; antinosin 3 per cent. applied. Repeat antinosin, 1 per cent. t.i.d. After two months' treatment the lids were normal.

Case 7.—Miss S., aged 40 years, seamstress. Eyes have been inflamed off and on for six years past. The bulbar conjunctiva is much injected; chronic palpebral conjunctivitis. Palpebral conjunctiva is very red but smooth. Glasses were prescribed, and antinosin, 3 per cent. In three weeks the lids and eyes were much improved but still inflamed.

Case 8.—K. T., aged 4 years, when two years of age had a left mastoid abscess, for which an operation was performed by a surgeon. During the past week there has been otitis media purulenta of the right ear, and swelling over the left mastoid at the site of the previous operation. The swelling fluctuates on pressure and is exquisitely sensitive. Diagnosis: Mastoid caries and abscess. Incision was made and sequestrum and caries were found in the antrum, which was thoroughly curretted down to the dura. The wound was packed and covered with nosophen gauze, and bandaged. The right ear was treated with hydrogen peroxid and 2 per cent. antinosin and Politzerization daily. In six weeks the discharge had completely ceased in the right ear, and hearing improved from loud voice close to ear, to whisper at twenty feet. The left mastoid completely

healed, and the hearing of left ear improved to ordinary conversation at ten feet. The general health is better than it has been during the past year.

Many other eye and ear cases have been treated with good results, but these few suffice for illustration.

SOCIETY PROCEEDINGS.

Chicago Ophthalmological and Otological Society.

Regular meeting held Dec. 14, 1897, in the Stewart Building.

Dr. MONTGOMERY in the chair.

There were thirty visitors and members in attendance.

The minutes of the previous meeting were approved.

The applications of Drs. J. F. Fulton of St. Paul, Minn., Frank Allport and Wm. L. Ballenger of Chicago, were referred to the Committee on Membership.

On motion of Dr. Starkey, a committee consisting of Drs. Gradle, Starkey and Wilder, was appointed to confer with the editors of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and the *Ophthalmic Record* as to the publication of the minutes.

Dr. STARKEY opened a discussion on the

USE OF X-RAYS IN OPHTHALMOLOGY,

as follows: We all know that certain substances which are transparent, or nearly so, to ordinary light, are opaque to the X-rays, and *per contra* certain substances opaque to ordinary light are more or less transparent to the X-ray. In general, it may be said that the greater the density of the object, the greater its opacity to the X-ray, and it may also be said that the higher the vacuum tube the more transparent are bodies to the X-ray. Starting with this knowledge we can readily see that pieces of metal will cause a denser shade from the X-ray than bones, if a sufficiently high vacuum is used.

As far as I am aware, the case I shall report is the first one ever successfully skiagraphed in Chicago as to the location of a foreign body in the eye. It can be seen that it is necessary in the majority of instances that the skiagraph should be taken from two positions, from the side of the head and from the front, and by means of these two skiagraphs the body can often be definitely located. Dr. Sweet of Philadelphia has invented a plate holder and indicator which I had hoped to show, but am not able to do so. The tube now used is one made by the Queen Company, which overcomes the difficulty of getting a proper vacuum. This tube is arranged with a chemical and a shunt which controls the vacuum.

The first patient is a male 31 years of age, who was struck in the left eye on June 28 with a piece of metal. He was seen the next day, when the lens was found opaque so that nothing could be seen within the eye. The eye quieted down and he was discharged from the hospital, but in August the eye began to soften and it appeared that it was going to be destroyed. On August 20 a skiagraph was taken and it showed definitely that he had a large piece of metal in the eye. An attempt was made to extract the bit of iron with a strong electromagnet, but was unsuccessful, and the eye was removed.

The second case was seen October 28, male, struck in the eye with a piece of metal. A hole in the cornea, and iris and lens opaque. The next morning a skiagraph was taken, which showed the presence of a foreign body in the eye. An unsuccessful attempt was made to remove the steel, although it was only forty eight hours after the accident. The eye was removed and a piece of steel imbedded in the blood clot, so that a magnet could not affect it much.

Dr. Starkey showed many interesting skiagraphs of the bones of the head and of foreign bodies in different parts of the body.

DISCUSSION.

Dr. CASEY A. WOOD—My experience has been very disappointing with the X-ray. Two or three weeks ago a man appeared in my office with, presumably, a foreign body in his eye, but the patient refused to have a skiagraph taken because he feared untoward results. It certainly looks as if with improved methods and short exposures we may expect some benefit from the use of the X-ray in ophthalmology in the future.

Dr. HALE—My experience, which is limited to one case, has been very disappointing, but I am also inclined to think that it was due to imperfect apparatus.

Dr. STARKEY, in closing, said that the exposure is never longer than eight minutes with the proper vacuum tube.

Dr. K. K. WHEELOCK of Fort Wayne, Ind., read a paper entitled

TROPHO-NEUROTIC KERATITIS.

My attention was first called to this class of cases in March, 1887, when A. F. K., aged 55 years, a farmer by occupation and German by birth, consulted me with an attack of herpes zoster ophthalmicus of the right eye. The following I transcribe from my note book: Large ulcer on cornea at upper, inner segment; excavation shallow. Patient complains of a cold sensation in the eyeball as though the eye were a ball of ice. Anterior chamber one-fourth filled with pus, and iris bound down to capsule of lens leaving pupil the size of a pinhead. Patient a strong, healthy man, but pain had reduced him very much. The most complaint was on account of a sensation of continuous cold in eyeball. Ulcerative area had extended at next visit. The entire cornea is anesthetic. Faradization is used, and the cornea subsequently tested, when the sensibility is found to have returned. At next visit corneal sensation diminished. Faradization again employed. After fourth seance with faradization sensation remained in nearly normal state. Current had been applied from five to seven minutes over closed lids. There seemed to be no difference which pole was applied to neck. When sensation began to return to cornea the ulcer began to diminish in extent and depth. Ulcer did not penetrate into anterior chamber, and got well with an eschar. Three points in this case impressed my mind. 1. The diagnostic significance of corneal sensibility. 2. The value of faradization in such cases as presented subnormal corneal sensation. 3. The pathology of herpes zoster ophthalmicus centering in the Gasserian ganglion. After this I gave much attention to testing corneal sensibility.

In January, 1889, Charles F. K., aged 39 years, German, machinist, was referred to me by Dr. M. F. Porter of Fort Wayne, with the statement that patient had gotten some sand in his right eye while engaged in his work. The notable features were slight lachrymation, very slight photophobia, no pain; simply a sense of irritation. Inspection showed a scarcely perceptible injection at sclerocorneal junction, no foreign body on cornea or conjunctival surface. The upper outer segment of the cornea was roughened as though it had been picked in many places with a minute sharp needle. The statement of the physician that the eye looked as if it had received a "sand blast" could be readily credited, only there was no history of such an accident. I tested the cornea with a spill of cotton, twisted hard, and found the cornea practically insensible over the area of roughening, while over the unaffected five-sixths of the cornea the sensibility was noticeable, but very much reduced, the reflex being lost: T. minus, pupil contracted. Treatment continued about one month. On February 19 notes show that the corneal reflex had returned. T. —2, and the roughened area was smaller in extent and less marked in point of apparent roughness. Treatment had been strychnia, quinin and arsenic and electricity systemically, while locally the usual cleansing solutions were applied. On June 23, 1893, Dr. T. J. Dills, then my partner, enucleated this eye, which is here submitted.

Dec. 4, 1895, Henry L., aged 55 years, farmer by occupation, German, consulted me with the following history: Four weeks before while hauling corn fodder from the field the wind carried something into his left eye. He had some pain at the time, and had to rub the eye and, for further relief, used chamomile poultices, which relieved him of the severe pain. He has suffered from occasional attacks of neuralgia of head for years. The last attack of neuralgia was ushered in by a chill, but he had no return of the chill.

He never suffered from digestive disturbance, but has suffered much from head pain, which always began over left eye. Years ago the pain would last for two or three days, but latterly it would pass off after a sleep of half an hour. Examination showed R. E. S. $^{20}/_{20}$; L. E. S. fingers at four feet, slight injection of sclerotic; cornea rough over outer third and center; reflex abolished as shown by touching with cotton spill; T. minus; cornea looked as though fine sand had been dusted over it. Under strychnia, arsenic and quinin, hot fomentations and boracic acid for a period of ten weeks, he recovered with perfect sight and only a fine nebulous eschar.

February 15, 1897, E. F. C., aged 31 years, electric engineer, consulted me for the purpose of having a foreign body removed from right eye. He had already visited an experienced ophthalmologist, in Pittsburg, who informed him that there was a solution of continuity on the cornea, but no foreign body was present. A drop of cocain was employed and patient went about his work of inspecting some mechanical devices in the city. He did not note the irritation again till next morning, when he arrived at Fort Wayne. He then called at my office. Inspection showed no injection at sclerocorneal junction. Very slight photophobia; pupil contracted; a roughening of epithelium at inner upper quadrant; T. clearly minus 1; no sensa-