20 and O.S. 20. One month later tension was O.D. 12; O.S. 12. The drug was then reduced to grs. 1/240, three times a day, and after two weeks the tension was O.D. 12; O.S. 17. The pilocarpin was further reduced to grs. 1/480 once a day. Two weeks later the tension was O.D. 16 and O.S. 13. I feel that the eye has just passed thru another period of high tension and will go along now for a time with normal tension without any miotic. The field in the left eye was reduced one-quarter when first seen, but at no time has there been other evidences of disease in this eye.

The youth of the patient and the long intervals between the unexplained elevation of tension makes the case of interest, the latter feature illustrating the necessity of considering, in cases of apparent glaucoma without increased tension, the possibility of these having been increased in the past life of the patient.

**Increased Hyperopia in Diabetes.**

Dr. Hayward Post presented C. F., female, aged fifty-seven, who had been a patient at the office for about thirty years. February 1, 1915, patient was given a slight change in glasses:

- O.S. + .75c. sph. C+0.87c. Ax. 180° V=20/15.

She required + 2.25 added for reading. Later she reported blurred vision, with glasses, O.D. V 20/96; O.S. V 20/120. The ophthalmoscope showed slight hyperemia of discs and retina.

Dr. H. W. Soper reported that one month previously he had found sugar in the urine, but that she had now been sugar free for the past three days, but that there were still large quantities of acetone and diacetic acid.

On October 10th vision O.D. with +0.75 sph. added to present glasses, was 20/15 and O.S. with +1.00 sph. added, 20/15. +2.25 sph. was still required as a reading addition. By November 20th, the patient still remaining sugar free, the additional hyperopia had disappeared, and the vision, either eye, was 20/15.

**Case II.** Mrs. J. T. Mc., female, aged sixty-one, was given O.D. + 3.00 d sph. + .75c. Ax. 45° V 18/24.

- O.S. + 2.75 d sph. + .75c Ax. 132° V 18/15.

With + 3.00 sph. added for reading. Later, glasses not satisfactory; O.D. V 18/60; O.S. V 18/19. The ophthalmoscope showed some edema of either retina and the normal physiologic cups were absent. She stated that she is under treatment for diabetes. With + 1.00 sph. added, O.D. V 18/30.

I told her to await developments and and report in about one month but have not seen her since.

Fuchs states that there are two main causes for hyperopia in diabetes:

1. Increased refractivity of media.
2. Shortening of the eye ball which may result from tumor or edema under the retina. The probabilities are, that increased hyperopia in these cases is due to edema of the retina.

**Discussion: Dr. J. W. Charles.** In a recent discussion by the Ophthalmological Society of the United Kingdom, of "Ocular Disturbances in Diabetes," Garrod stated that the theory that the cataract of diabetes is caused by osmosis from the lens because of the amount of sugar in the blood, is no longer tenable; because the amount of sugar in the blood is too small and also sugar has been found in the lens.

It would seem, therefore, that Dr. Post is correct in excluding lens changes from the possible causes of his case.

**Changes in Refraction.**

Dr. Lawrence Post presented a statistical report in patients observed over a long period of years.

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**ST. LOUIS OPHTHALMIC SOCIETY.**

**November 25, 1921.**

Dr. A. E. Ewing, Presiding.

"Ophthalmic Illuminator."

Dr. W. E. Shahan presented this new instrument.

**Subnormal Accommodation.**

Dr. J. F. Shoemaker presented case reports as follows:

In January, 1905, Dr. Geo. M. Gould
published a paper on “Subnormal Accommodation and Premature Presbyopia,” reporting twenty-seven cases, illustrating the subject.

He said: “Many of our puzzling non-successes are due to failure to recognize insufficient or paretic accommodation or premature presbyopia. There is no test by which the fact may be learned, because for the time required in the ordinary tests there is almost always the ability to hold the vision perfect, or seemingly so, by an effort which exhausts with long continued reading, writing or sewing.”

The following two cases appear to belong in this class:

Case I. J. B. M., aged 20, consulted us in July, 1918, complaining of eyes burning and feeling dry.

V.O.D.—18/30= jaeger No. 1 at 3°.
V.O.S.—18/30= jaeger No. 1 at 3°.

Under homatropin cycloplegia:
V.O.D. w—1.00 S.C+1.75 C. ax. 90° = 18/15.
V.O.S w—1.50 S.C+2.75 C. x. 90° = 18/15.

These glasses were prescribed for constant use and he was given some drops to use. The muscle test showed orthophoria for distance; 10 degrees exophoria for near.

A month later he complained that his near vision blurred in the afternoons and eyes still felt dry. Drops were continued. After two weeks more, near vision still blurred and head ached some the latter part of the day. Pilocarpin gr. 1/6 to the fluid ounce was added to the collyrium t.i.d. Three weeks later eyes were better, but still had headaches when he used eyes during evenings. Pilocarpin was increased to gr. 1/4 to the oint.

This relieved the headaches and his near vision was good. For a period of six months he got along nicely so long as he used the drops, but N.V. blurred and head would ache the latter part of the day if he stopped them.

After six or eight months, he got along nicely by using the drops once or twice daily, and a little later was able to discontinue them entirely with no further trouble.

Miss B. W., aged 22, came complaining of pain in eyes, forehead and occiput. She was wearing +1.00 S. C. ax. 180°, right and left, with which she said her distant and near vision were good.

Under homatropin cycloplegia she accepted:
O.D. +1.00 S.C+0.25 C. ax. 180° =18/15.
O.S.+1.25 S.=18/15.

In the postcycloplegic examination she accepted:
O.D. +1.00 S. C+2.25 ax. 180° giving her 18/12 vision and Jaeger No. 1 at 4°.
O.S. +1.00 S. giving 18/12 vision and Jaeger No. 1 at 4°.

She had practically orthophoria.

These glasses were given her. She was referred to a rhinologist who reported hypertrophy of both middle turbinates.

Six weeks later she reported that she could not read any length of time without it making the back of her head ache. She was given drops with one-fourth grain pilocarpin to the ounce to use three times daily.

Three months later she reported that her eyes were more comfortable; but that she got a pain in the back of head as soon as she read or sewed, or when travelling in car. Thinking that while the test showed normal accommodation there might, nevertheless, be a weakness of the ciliary muscles which caused trouble when eyes were used continuously for near work, I placed a +1.25 S. right and left, over her distance glasses and had her sit in the waiting room and read. With these additional glasses she read with perfect comfort for two hours, not having a trace of the usual occipital headache. Accordingly she was given
O.S. +2.25 S.

for near work. Several days later she stated that she had read as long as three hours continuously without any headache.

Two and one-half years later she reported that she had worn the reading glasses with perfect comfort for about one year and then had gotten along comfortably with the distance glasses, until two months previously when she began to have occipital headaches again. As she had broken her glasses she was given her full distance correc-
tion and some pilocarpin drops, and presumably she got along comfortably with these as I have not heard from her since.

Edema of Lids Due to Endocrin Disturbances.

Dr. J. F. Shoemaker said numerous observers have reported conjunctivitis and excessive lacrimation occurring in patients after removal of the thyroid glands, and also in myxedematous patients. The following two cases had these symptoms and in addition another worth while noting, viz.: swelling, or edema of the eyelids. This last symptom is one that might be expected to occur in patients whose thyroid glands were secreting much under the normal amount of thyrotoxin, as in myxedema there is often much thickening and swelling of the skin, to such extent even as to decidedly change the patient's expression and appearance.

The first patient, Mrs. J. R. C, consulted me suffering with a chronic conjunctivitis and considerable lacrimation. She stated that she had been having frequent colds in head. Blood pressure was 165. She was treated for the conjunctivitis several weeks and improved considerably but did not get entirely well. Six weeks later she returned with eyes watering and lids swollen and edematous. She was referred to an internist for examination, especially as to decidedly change the patient's expression and appearance.

His diagnosis was (1) general arteriosclerosis; (2) hypopituitarism, posterior lobe, with hypothyroidism; (3) hypertension (systolic 195). He prescribed thyroid gland, and pituitary substance (entire gland). After two months of endocrine treatment he reported that the general endocrine symptoms had improved very materially and her blood pressure had dropped from 195 to 150 systolic. The swelling of the lids soon disappeared with the improvement of the other symptoms.

In cases of edema of the eyelids, when searching for the cause, aside from any local causes which might be responsible for the condition, we think of involvement of the kidneys, chronic arsenical poisoning and trichinosis. It would seem advisable to keep hypendocrinism in mind also as a possible etiologic factor in these cases.

Pigmentation of Conjunctiva of Lids.

Dr. W. A. Shoemaker presented case reports as follows: Mrs. S., aged 61, consulted me in May, 1919, on account of poor vision for distance and for reading, and on account of some burning of the lids.

The ophthalmoscope revealed incipient cataract in both eyes. The burning of which she complained was due to a chronic catarrhal conjunctivitis. Blood pressure and urine normal. General health good. Lenses were prescribed, and she was given a zinc and boric acid solution for her conjunctivitis.

In September, 1920, she reported that recently her eyes had been watering, felt rough and were sensitive to light. Upon everting her lids the palpebral conjunctiva which had been perfectly smooth was found to be thickly dotted with small blackish deposits, only a little of which could be rubbed off. A zinc sulphat and boric acid solution was again prescribed. On October 18th the deposits were more numerous and more prominent. The
conjunctiva looked as if black pepper had been sprinkled on it. On November 5th, under cocain, the lids were thoroughly rubbed with cotton pledgets dipped in 1/5000 bichlorid of mercury solution. Most of the deposits were removed by this procedure. A piece of pigmented conjunctiva was excised and it with some of the separated pigment, was given to Dr. Buhman, the pathologist, for examination.

Boric acid ointment, 15 gr. to the ounce of white vaselin, was freely applied and the eyes bandaged. The same treatment was applied daily for three days. On the fourth day she was allowed to go home, with instructions to use white silver (Hille) three times daily. Two weeks later she reported that her lids no longer felt rough, did not water and her eyes were no longer sensitive to light. The conjunctiva was looking very much better but there was still a good deal of pigment below the surface.

The same treatment was continued and on January 6, 1921, she reported that her eyes had been feeling perfectly comfortable. Only a few pigment spots were left on the conjunctiva; in the right there were quite a number, but none on the surface.

Ten months later she reported that she had used the white silver for one month and since that time had used nothing, as her eyes felt perfectly comfortable. Only a few very small pigment spots could be seen and the conjunctiva was smooth.

Dr. Buhman's report is as follows:

"Sections from the specimen submitted show some edema, a rather large amount of lymphocytic and some leucocytic infiltration. There is some yellowish brown granular pigment present in several areas. This pigment seems to be extracellular and is no doubt blood pigment. Cultures of the pigment on blood serum causes liquefaction of the media. The organism was, in pure culture, a long fat bacillus, gram positive, actively motile in young culture and proved to be the bacillus subtilis." The pigment under the microscope is a blackish brown amorphous looking substance.

Serous Cyclitis Caused by Diseased Teeth.

DR. W. A. SHOEMAKER reported on A. T. C, aged 22. November 11th gave the following history:

Seven years ago the right eye had an attack of iritis which lasted several weeks and promptly subsided after the extraction of a tooth. Last June he developed an iritis in his left eye which also promptly got well after having a tooth extracted. On October 19th the left iris again inflamed.

On November 2nd he had severe serous cyclitis, with moderate iritis; upper lid edematous, marked laceration and photophobia. The eye was extremely sensitive to touch over the upper ciliary region and there was a marked descemetitis. The vitreous was somewhat hazy but no exudates were discovered. Pupil widely dilated. An X-ray of the teeth showed a diseased upper left bicuspid which was removed. Wassermann negative, loid of potassium and bichlorid of mercury were prescribed. Hot applications were ordered and the pupil was kept widely dilated with atropin.

November 5th the eye showed decided signs of improvement. November 11th it was less sensitive to light, ciliary injection was less marked and he had no pain. November 19th there was very little ciliary injection, the descemetitis was clearing and his vision, with correction, was 22/30. The vitreous was apparently clear. The acuity of vision was no doubt lessened by the descemetitis still present.

Mrs. W. S., aged 30, came November 23, 1920. For the last four days her eye had been sore and sensitive to light. Examination revealed decided ciliary injection with a very sensitive spot in the ciliary region under the upper lid. The iris reacted promptly to light and convergence. The pupil dilated promptly with a drop of atropin. There was a marked descemetitis. Vitreous fairly clear, no exudates. Wassermann negative; dental roentgenograph showed an apical abscess of the upper molar, upper left bicuspid and lower left first molar. These teeth were extracted. The pupil was kept dilated with atropin and hot applications were made. Bichlorid of mer-
cury and iodalin were given internally. November 30th the tender spot in the ciliary region and the ciliary injection had disappeared. Decemetitis less marked. December 23rd, no trace of descemetitis, vitreous clear, no exudates and vision is normal.

September 24, 1921, she reported that for the last five days her right eye had been sore to the touch and a little bloodshot, and that vision was somewhat blurred. Examination revealed a tender spot in the ciliary region, ciliary injection, and an active pupil. A diagnosis of serous cyclitis was made. She was put on the same treatment as in the previous attack. Another X-ray picture showed so many diseased teeth that her dentist advised having them all removed. After the teeth were removed the eye steadily improved and by October 19th was normal.

JOHN GREEN, JR., Editor.

NASHVILLE ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY.

FEBRUARY 20, 1922.

DR. HILLIARD WOOD, PRESIDENT.

Intraocular Hemorrhage Following Vaccination.

DR. E. L. ROBERTS presented a girl, R. H. aet. 10, with internal strabismus of the left eye; vision never better than 20/200. Four years ago he fitted the patient with proper glasses. One month ago the patient was vaccinated, and as the arm became sore, a very similar sore developed on the left, lower lid; the cornea became somewhat hazy; and anterior chamber filled with blood. Tension slightly subnormal. Present vision only perception of light.

Discussion.—DR. E. B. CAYCE.—In all cases of doubtful diagnosis a Wassermann is always in order, and one should be made in this case, as it might possibly throw some light on the condition. This case was one in which, in the beginning, there was a strong indication for the injection of the cyanid of mercury, as the important thing is to get absorption at the earliest possible moment, and such absorption is most readily promoted by a violent reaction of the eye.

DR. GEO. H. PRICE.—Had there been a very marked reaction or inflammation about the eye, with patient sick from the vaccination, there might be some connection between the two; but in the absence of such symptoms the occurrence of the hemorrhage at this time was purely accidental. He suggested, however, the possibility of the patient's having scratched the arm, and then the eye or lid, thus carrying infection.

DR. FRED E. HASTY was inclined to the belief that the hemorrhage following vaccination was merely a coincidence. He would deal with this as with an eye which had been injured. He would advise clearing up all possible foci of infection, even in the presence of a strongly positive Wassermann, as he believes that many mistakes are made in attributing pathology to plus Wassermans and overlooking other contributory causes.

Intraocular Hemorrhage, Vascular Loop.

DR. E. R. CAYCE presented Mr. F. H. aet. 57, traveling salesman. General history irrelevant. September 19, 1920, stooped over suddenly and at once realizing that he had lost vision of left eye. Went to the Vanderbilt Hospital, where his condition was diagnosed as intraocular hemorrhage. General physical examination, including a negative Wassermann made. Urinalysis showed rather high percentage of sugar, which cleared up in a few days under appropriate treatment, and he has been almost entirely free from sugar since.

Dr. Cayce first saw patient February 20, 1922. R. Eye: V. 12/20; field of vision contracted—(See field); beginning optic atrophy. L. Eye, V. nil. Fundus shows typical optic atrophy, with very unusual appearing fundus in one particular, viz., that there is a vein that apparently comes with the central artery and extends towards the nasal side about one-half of the diameter of the nerve head, and then loops back and enters the nerve head at almost the same point. The condition, in his