

On February 15th the urine still contained sugar ; sp. gr. 1025. I now thought there was a very faint whitish haze around the yellow spot in both eyes.

March 1st (seven weeks after admission).—Urine contains plenty of sugar ; sp. gr. 1032 ; is passing from four to five pints a day (twenty-four hours) ; is taking a modified diet. For several weeks past he has begun to smoke again a little, and he admits that even when he ceased smoking for a time after he first came under care he chewed instead. V. has not improved (reads 16 J. as on admission) ; there is still a well-marked central scotoma for red and green, *not for blue*.

April 3rd.—Sees 10 J. barely and $\frac{20}{200}$.

24th.—Has not been so well ; is lame, and the ankles are swelled ; is not passing more urine, and is not thirsty. V. seems worse again (16 J. and $\frac{20}{200}$). Discs now pale on outer side.

May 22nd (four months and a half after admission).—Has been feeling languid and ill ; quantity of urine not greater, and no thirst. V. R. not $\frac{20}{200}$. Scotoma for red and green still present. L. 16 J. and $\frac{20}{200}$ by fixing eccentrically, scotoma well-marked and large.

July.—Patient has not been seen since.

(December 14th, 1882.)

4. *Examination of optic nerve from a case of amblyopia in diabetes.*

By WALTER EDMUNDS, M.D., and J. B. LAWFORD, M.D.

(With Plate XIII.)

GEORGE Y—, æt. 29 years, was admitted into St. Thomas's Hospital (under Dr. Ord's care) on December 16th, 1881, and died on the 21st of the same month.

History.—A year before admission he was passing a

DESCRIPTION OF PLATE XIII.

Illustrating a case of Disease of the Optic Nerves in Diabetes, by Drs. Edmunds and Lawford (p. 160). From drawings by Miss Alice Boole.

FIG. 1 is from a transverse section of the optic nerve between the globe and the point of entrance of the central vessels. The drawing includes rather more than half the width of the nerve, and extends beyond the limit of the disease. The outer sheath is absent. The diseased area, involving about a quarter of the section, and extending, where widest, from the central artery to the inner sheath, shows an increase of nuclei, chiefly in the nerve-fibre bundles, but also to some extent in the fibrous septa; considerable disorganisation of the trabeculæ, and thickening of the portions remaining; increase in thickness of the inner sheath of the nerve where it skirts the diseased patch. $\times 21$.

FIG. 2.—Part of the diseased area. The nerve-fibres are greatly disorganised; in many of the bundles only a few, which can be recognised as fibres, remain. There is considerable increase of fibrous tissue surrounding the small vessels (*v, v*). In that portion of the nerve intervening between the patch of disease and the inner sheath the fibrous septa are somewhat thickened, though the nerve bundles appear normal. $\times 84$.

s. Inner sheath.

v, v. Small vessels.

a and *b* point to corresponding parts in the two figures.

Fig. 1.

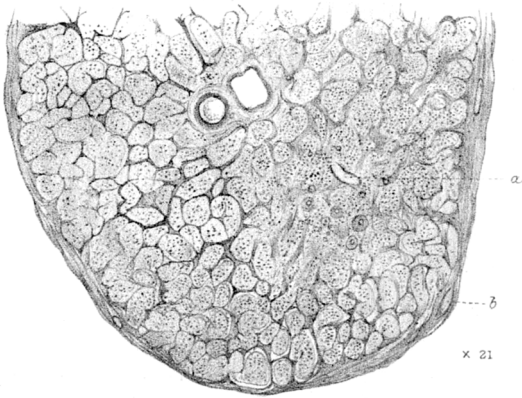
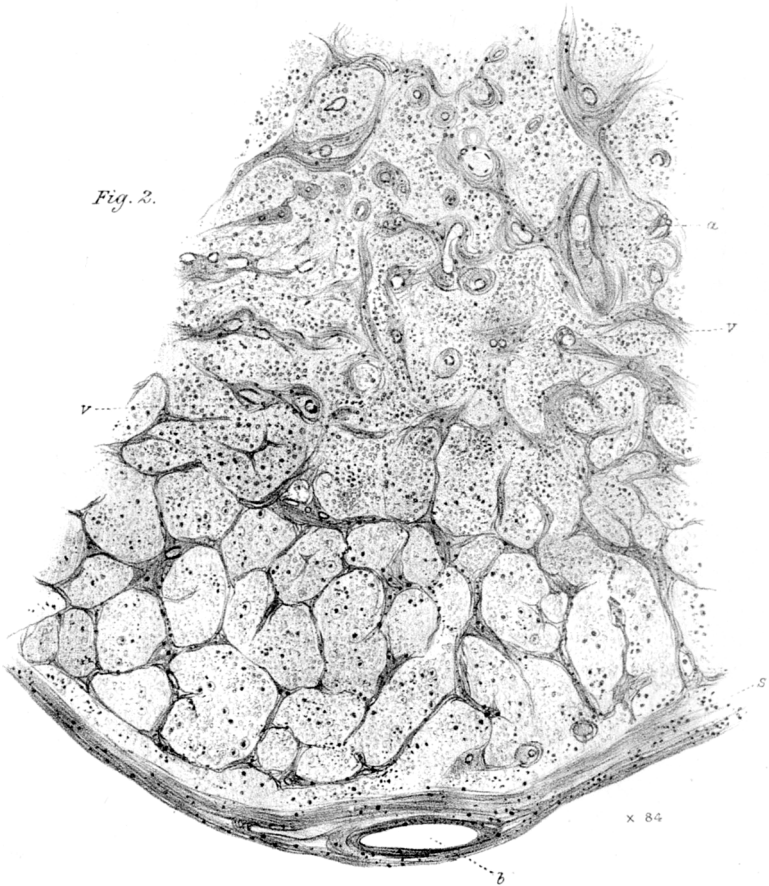


Fig. 2.



large quantity of urine. His sight began to fail four months before admission, and was now very bad. Used to smoke an ounce of shag a day.

State on admission.—Extremely emaciated and weak ; great thirst. Passes eight pints of urine in twenty-four hours of sp. gr. 1036 ; urine contains a large quantity of sugar and a trace of albumen. Left pupil larger than right. Complains of pains in the limbs and great weariness.

The eyes were examined ophthalmoscopically and found normal. Owing to his very weak condition a prolonged examination could not be made. Total absence of both patellar reflexes. Thirty-six hours before death diabetic coma came on.

Post-mortem examination.—Liver large, 4 lbs. $\frac{1}{2}$ oz. Spinal cord appeared to the naked eye normal. Back of right eye and right optic nerve kept for further examination.

Examination of the optic nerve shows no abnormal appearance to the naked eye.—*Microscopically*, marked changes were found in a group of the nerve-bundles throughout the whole length of the orbital part of the nerve; the portion of the nerve posterior to the optic foramen was not examined.

In the diseased area (Plate XIII) there is seen to be a great thickening of the trabeculæ and of the walls of the nutrient blood-vessels there ; the bundles of nerve-fibres seem to have the fibres in them destroyed, and they seem to be replaced by an irregularly granular structure in which there is a large number of staining nuclei. This diseased area does not at any part reach quite to the surface of the nerve, nor is it anywhere centrally placed ; but it cannot be determined, from the sections, on which side of the axis of the nerve the altered area lies. The left optic nerve was, unfortunately, not kept for examination.

Remarks.—The absence of knee-jerk and the occurrence of pains in the limbs would seem to indicate that the optic nerves were not the only part of the nervous system affected.

The changes found in the nerve appear to us to be too great to be secondary.

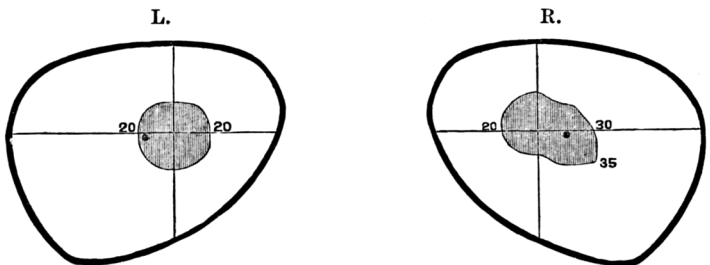
A comparison of these drawings with those exhibited by Mr. Nettleship and Dr. Edmunds, at a meeting of this Society in 1881 (see 'Transactions,' vol. i, pl. iv) seems to show that the disease in our case had reached a later stage, and that the inflammatory had been succeeded by degenerative processes, causing loss of considerable portions of the trabeculæ and of many of the nerve-fibres.

(December 14th, 1882.)

5. *A case of central amblyopia in a smoker with diabetes.*

By W. LANG.

HENRY S—, æt. 28, attended at Moorfields on March 2nd, 1882. He gave the following history:—Previous to February, 1881, his health had been very good, but about that time he was seized with an unquenchable thirst, passed large quantities of urine, and gradually lost strength and flesh. In June he attended at St. Peter's Hospital and



Fields of Vision: R. right, L. left. The shaded area in each shows the scotoma. The numbers indicate the size of the scotoma in degrees, measured from the fixation point at the crossing point of the vertical and horizontal meridians. The black dot is the blind spot.

was under the care of Mr. Heycock, who tells me there