

## A COMPARISON OCULAR \*

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While working on certain changes in the tissues of the guinea-pig, it proved of great advantage, in observing the finer changes, to use two microscopes side by side, one showing the normal tissues and the one the abnormal

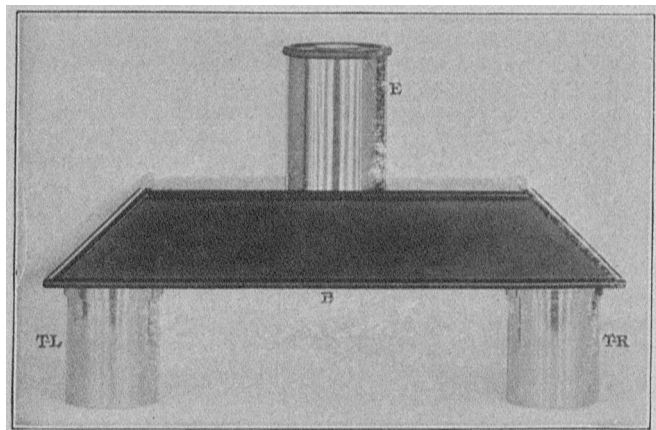


Fig. 1.—The comparison ocular. The ocular consists of a set of reflecting prisms within the box *B*, which carries the eyepiece *E*, in the middle, and a short tube at each end, marked *T-L* and *T-R*. The tube *T-L* fits snugly into the body tube of the microscope stand to the left, while the other tube, which is of smaller diameter, moves freely within the body tube of the stand to the right.

tissues. On Jan. 29, 1912, I communicated with Mr. Edward Bausch, suggesting that a microscope be so equipped with two objectives, "that on looking through the eyepiece one would see half of the field of each objective." The Bausch and Lomb Optical Company

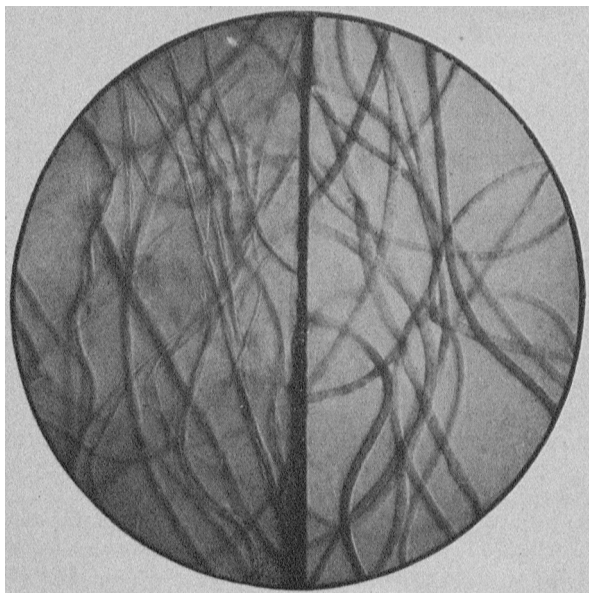


Fig. 5.—Cotton fibers (left), and woolen fibers (right).

kindly worked out the idea, using, however, two microscopes and one comparison ocular, which method is more practical and less expensive than that of two objectives on one microscope.

The purpose of the comparison ocular is to permit the examination, side by side in the same field of the micro-

scope, of two specimens, as, for example, a normal tissue and a pathologic tissue, the field being divided into two halves in which the objects on the stage are imaged, the images being separated by a straight line.

Two identical microscopes are placed side by side (Fig. 2), the draw tubes are removed, and the collars of the body tubes replaced; the comparison ocular is now attached by fitting the short tube *TL* snugly into the body tube of the instrument to the left, at the same time slipping the loosely fitting tube *TR* into the body tube of the instrument to the right. To avoid binding, the tube of the instrument to the right must be nurlled down until the objective nearly touches the slide. Then the

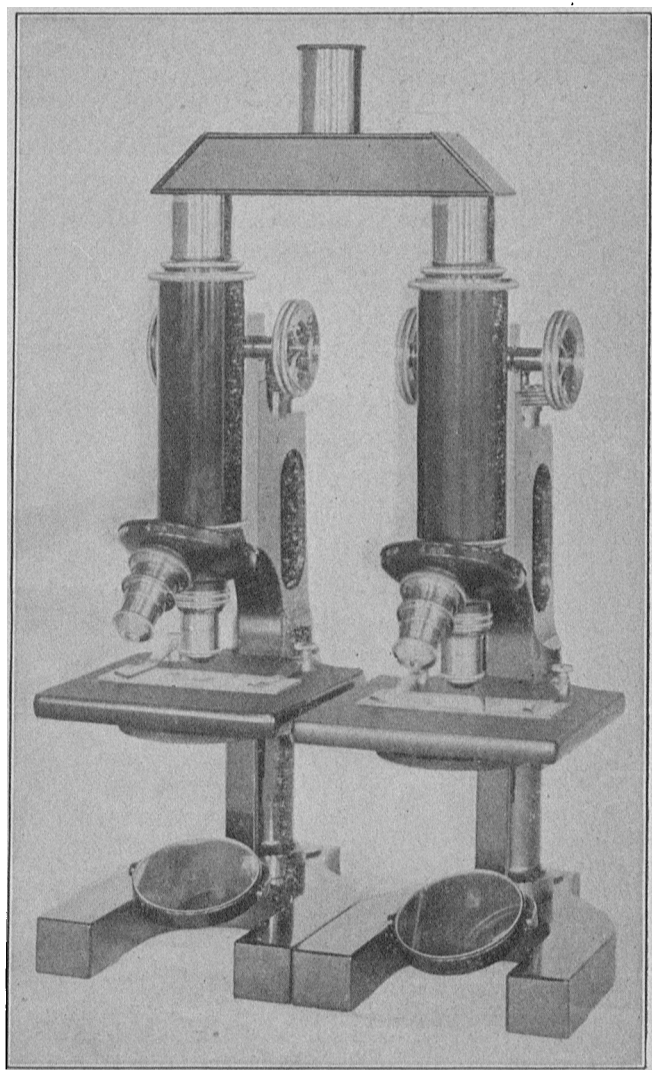


Fig. 2.—The comparison ocular and two microscopes in position ready for use.

left instrument, which carries the ocular, is focused, after which the right instrument is focused with an upward motion.

The following illustrations are photomicrographs taken through the comparison ocular; direct diffuse daylight, from a north window, was used to illuminate the field; 16 mm. lenses were used, which with the comparison ocular gave a magnification of seventy-five diameters; the exposure was forty seconds.

The comparison ocular has been in use in this laboratory since May, 1912, and has proved valuable. Recent articles describe a comparison microscope devised in Ger-

\* From the laboratory of the Kentucky Agricultural Experiment Station.

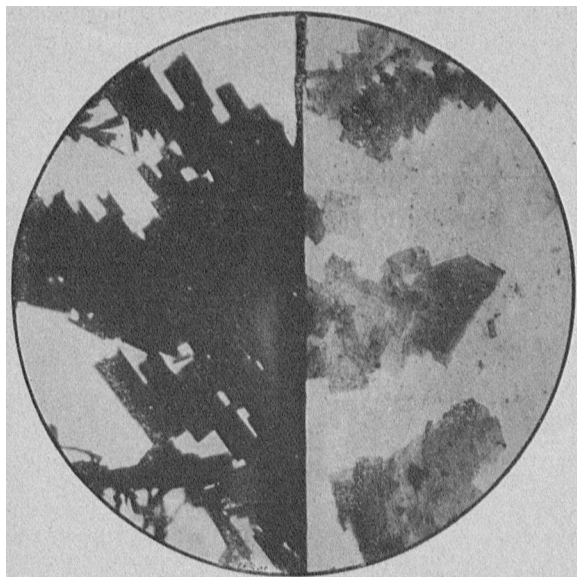


Fig. 4.—Crystals of morphin periodid (left), and cocain permanganate (right).

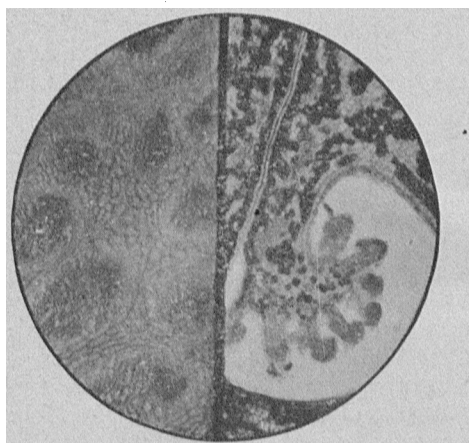


Fig. 5.—Cross-section of thimothy (left), and Hypericum (right).

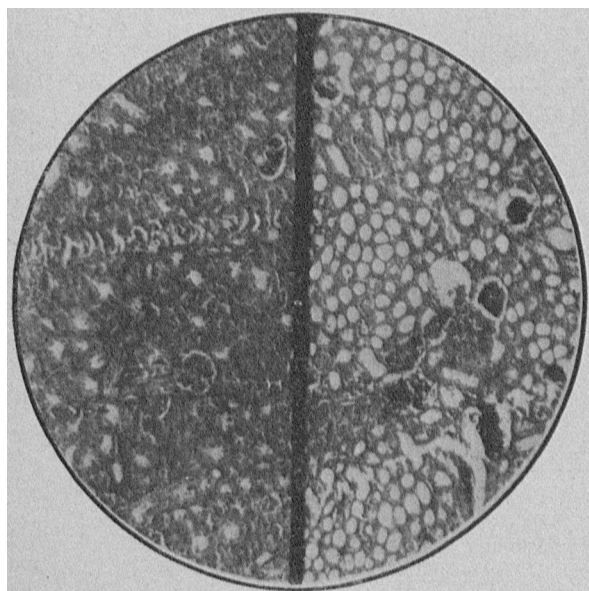


Fig. 6.—Sections of normal kidney of guinea-pig (left), and of acute parenchymatous nephritis of guinea-pig (right).

many by Dr. W. Thörner.<sup>1</sup> As will be observed, we were using the comparison ocular six months before Dr. Thörner's article was published. The comparison ocular has the advantage in that it does not require a specially constructed microscope like the German instrument, thus being much less expensive and quite satisfactory in operation.

## MYOTONIA ATROPHICA \*

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The rarity of this curious muscular degeneration is the excuse for the report of a single case. Myotonia congenita, so-called Thomsen's disease, is not very uncommon, but the combination of increased tonus in some muscles with a primary flaccid palsy in others in remarkably constant distribution is so rare that but four cases have been reported<sup>2</sup> as yet in the medical literature of this country.

The disease is apparently peculiar to persons in middle life, is of a very slowly progressive character, and, in rather more than half the number of cases, is of familial type. The symptom-complex is so constant and so characteristic that, when once understood, recognition of subsequent cases becomes simple.

### REPORT OF CASE

*History.*—G. F., an unmarried Swiss, aged 46, was admitted March 27, 1913, to the Cornell Division of Bellevue Hospital, New York, and was placed under the care of Dr. Gilman Thompson.<sup>3</sup> The patient's parents had both died in old age. Three brothers and three sisters were in good health, but one sister, a resident of the United States, had arthritis deformans. There was no neuropathic family history. Neither the patient nor his sister knew of any near or collateral relative affected in any way similarly to the case under consideration. For fourteen years he had been employed as a farmer in New England. His habits were regular and his general health good. His consumption of alcohol was limited to two or three glasses of beer a day. He denied having had any venereal disease and said that his previous health had always been good.

In 1893 his left cornea was injured by a spark which fell on it from a passing engine. In 1887 his hands and feet are said to have been frost-bitten. In November, 1911, after hard work during a heavy harvest season, he began to have cramp-like pain in the lumbar region. These pains were at first intermittent and rare, but later became more frequent, so that at the time of examination he constantly complained of their presence. He could remember no injury that would account for this condition, which became more severe when he worked in a bent posture. He strenuously denied having any difficulties in his gait or in the use of his hands. There were no sphincter troubles. He had not worked for a year but had never been confined to bed.

*Examination.*—The patient's facial appearance was quite strikingly characteristic of the disease, and was the result of an incomplete ptosis of both eyelids, with marked hollowing of the temporal fossae and flattening of the masseteric region on each side (See illustration). The orbicular muscles were very weak and there was no movement in the temporal or masseter muscles. The left pupil was hidden by a corneal scar, the result of the injury previously spoken of. The reaction of the right pupil was normal. A well-marked and advanced

1. Literary Digest, Nov. 16, 1912; Scientific American, Feb. 15, 1913.

\* From the Cornell Division of the Bellevue Hospital.

2. Hunt, J. R.: Jour. Nerv. and Ment. Dis., 1908, lxx, 200; Kennedy, Foster and Oberndorf, C. P.: THE JOURNAL A. M. A., 1911, lvi, 1117.

3. Dr. Thompson kindly asked me to see this case, and by his courtesy I am permitted to use these notes.