

### Notice of a Binocular Microscope.

BY J. L. RIDDELL.\*

I devised last year, and have lately constructed and used, a combination of glass prisms, to render both eyes simultaneously serviceable in microscopic observation.

Behind the objective, and as near thereto as practicable, the light is equally divided, and bent at right angles, and made to travel in opposite directions, by means of two rectangular prisms, which are in contact by their edges somewhat ground away. The reflected rays are received at a proper distance for binocular vision upon two other rectangular prisms, and again bent at right angles; being thus either completely inverted, for an inverted microscope; or restored to their first direction for the direct microscope. These outer prisms may be cemented to the inner by Canada balsam, or left free to admit of adjustment to suit different observers. Prisms of other form, with due arrangement, may be substituted.

I find the method is applicable with equal advantage to every grade of good lens, from Spencer's best sixteenth to a common three inch magnifier, with or without oculars or erecting eye-pieces, and with a great enhancement of penetrating and defining power. It gives the observer perfectly correct views in length, breadth, and depth, whatever power he may employ. Objects are seen holding their true relative positions and wearing their real shapes. A curious exception must be made. In viewing opaque solid bodies, with one piece to each eye, depression appears as elevation, and elevation as depression, forming a singular illusion. For instance, a metal spherule appears as a glass ball silvered on the under side; and a crystal of galena, like an empty box. By the additional use of erecting eye-pieces, the images all become normal and natural. Match drawings of any solid object, made from each eye-piece, by the aid of the camera lucida, when properly placed in the common stereoscope, appear to stand out in natural relief. These, if engraved and printed in the proper position with respect to each other, might find an appropriate place in books on the arts and sciences.

In constructing binocular eye-glasses, I use for lightness and economy four pieces of common looking glass instead of prisms.

With these instruments the microscopic dissecting-knife can be exactly guided. The watchmaker and artist can work under the binocular eye-glass with certainty and satisfaction. In looking at microscopic animal tissues, the single eye may perhaps behold a confused amorphous or nebulous mass, which the pair of eyes instantly shapes into delicate superimposed membranes, with intervening spaces, the thickness of which can be correctly estimated. Blood corpuscles, usually seen as flat disks, loom out as oblate spheroids. In brief, the whole microscopic world, as thus displayed, acquires a tenfold greater interest, in every phase exhibiting, in a new light, beauty and symmetry indescribable.

### MISCELLANEOUS INTELLIGENCE.

#### Ontario, Simcoe, and Huron Union Railroad.

The Directors of the Ontario, Simcoe, and Huron Railroad, accompanied by the Chief Engineer, made an excursion over the road on the 5th instant. So much has been said disadvantageous to the character of this road, that we have much satisfaction in being enabled to state that the road is in excellent order, and that the distance of thirty miles now completed, going northward, was run in one hour; and that on a portion of the road a speed of forty-five miles per hour was attained.

In the vicinity of Newmarket the Directors inspected some heavy works now in progress, and which have been undertaken with a view to the reduction of some objectionable curves made in the original location. When these works are completed,—as they will be early in April,—the grading and bridging will be completed to Barrie; and as the timber for the superstructure is distributed over the line, the laying of the track will then be rapidly proceeded with; and it is expected the road will be opened as far as Barrie early in June.

### OBITUARY.

Died, November 11th, at the age of about, 63 or 64 Gideon Algernon Mantell, L.L.D., F.R.S. The renowned geologist, Dr. Mantell, imbibed at an early period of his life a taste for natural history pursuits, and

having fixed his residence, as a medical practitioner, at Lewes, was led to devote himself with great natural enthusiasm to the investigation of the fossils of the Chalk and of the Wealden of Sussex. In 1812-15 Dr. Mantell commenced forming at Lewes, the magnificent collection of 1300 specimens of fossil bones, which is now in the British Museum; and in 1822 appeared his "Fossils of the South Downs," a large quarto work, with forty plates, engraved by Mrs. Mantell, from drawings by the author. Another work was published by him about the same time, entitled "The Fossils of Tilgate Forest," and compared with the geological literature of the period in which they were written, they are meritorious productions.

In 1825, Dr. Mantell was elected a Fellow of the Royal Society, and he has contributed some important papers to its "Philosophical Transactions." For his memoir "On the *Iguanodon*," he had the honour in 1849 to receive the Royal Medal. He was also an active member of the Geological Society, and in 1835 was presented with the Wollaston Medal and Fund, in consideration of his discoveries in fossil comparative anatomy generally. From Lewes, Dr. Mantell removed about this time to Brighton, and his collection being materially added to, was purchased by the Trustees of the British Museum for £5000. Upon this he removed to the neighbourhood of London. Dr. Mantell took great delight in imparting to others a knowledge of his favourite science; he was fluent and eloquent in speech, full of poetry, and extremely agreeable in manners to all who manifested an admiration of his genius. He now turned his attention to the more popular and attractive works for which his name will be chiefly remembered. "Wonders of Geology," "Medals of Creation," "Geological Excursions round the Isle of Wight," and an enlarged edition of his "Thoughts on a Pebble," all of which are profusely illustrated, and have passed through several editions. His latest work was a hand-book to the organic remains in the British Museum, entitled, "Petrifications and their Teachings." To these may be added, "Thoughts on Animalcules," and a "Pictorial Atlas of Fossil Remains," selected from Parkinson's and Arlis's paleontological illustrations; and among his early productions a handsome quarto narrative, with portraits of the "Visit of William the 1st and Queen Adelaide to the Ancient Borough of Lewes," which included some original poetry. Dr. Mantell was a most attractive lecturer, filling the listening ears of his audience with seductive imagery, and leaving them in amazement with his exhaustless catalogue of wonders.

### THE CANADIAN JOURNAL

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There are three classes of persons who may with propriety join the Institute. First—Those who by their attainments, researches, or discoveries, can promote its objects by their union of labour, the weight of their support, and the aid of their experience. Second—Those who may reasonably expect to derive some share of instruction from the publication of its proceedings by the *Journal*; and an acquaintance with the improvement in Art and the rapid progress of Science in all countries,—a marked feature of the present generation. Third—Those who, although they may neither have time nor opportunity of contributing much information, may yet have an ardent desire to countenance a laudable and, to say the least, a patriotic undertaking,—a wish to encourage a Society where men of all shades of religion or politics may meet on the same friendly grounds: nothing more being required of the Members of the CANADIAN INSTITUTE than the means, the opportunity, or the disposition to promote those pursuits which are calculated to refine and exalt a people.

All communications relating to the CANADIAN INSTITUTE to be addressed to the Secretary. All communications connected with the *Journal* to be addressed to the Editor. Remittances on account of the *Journal* received by the Treasurer of the CANADIAN INSTITUTE, Toronto.

\* University of La., New Orleans, Oct. 1, 1852.—*Sil. Jour.*