Along with the polarized light, Dr. Brewster also observed a faint nebulous light not polarized, which he also finds in transmission through cornelian and chalcedony, and thinks it important as leading to a satisfactory theory of polarization.

The next observation of the author relates to the high refractive power of chromate of lead, which, he remarks, is greater than that of any other body hitherto recorded; and upon its double refraction, which, he says, is so enormous, that the deviation of the extraordinary ray is more than thrice that produced by Iceland-spar.

The index of refraction assigned by Dr. Brewster to chromate of lead, is 2·926, and along with it he names realgar, of which the index is 2·510, as another substance that refracts more strongly than the diamond. Phosphorus, he adds, stands higher than has been supposed, being 2·224, and then native sulphur next in order 2·115.

The dispersive power of chromate of lead is observed to exceed that of other substances in a still greater proportion than its refractive power, being more than ten times as great as that of the densest flint-glass, and fifteen times as high as that of water.

The concluding section of the author's letter relates to the existence of two dispersive powers in all doubly refracting media. Mr. Cavallo, and others, have already observed, that the dispersions occasioned by the two refractions of Iceland-spar are not equal. Dr. Brewster observes that this is general to all, and he undertakes to assign the proportion of these two powers in different substances.

In chromate of lead the dispersive power manifested in the rays ordinarily refracted, is double that of rays obliquely refracted; and in Iceland-spar the disparity is nearly as great.

The existence of a double dispersive power, it is observed by the author, instead of assisting in the explanation of other properties, only adds one to the numerous difficulties that are to be surmounted in reducing to any general rules those capricious phenomena exhibited by light in its passage through transparent bodies.

An Appendix to Mr. Ware's *Paper on Vision. By Sir* Charles Blagden, *F.R.S.* Read February 4, 1813. [*Phil. Trans.* 1813, *p.* 110.]

The author remarks, that Mr. Ware's observations with regard to short-sightedness, being in general merely the consequence of habit acquired at an early age, is conformable with his own experience in general, and that he himself is a particular instance of natural long-sightedness gradually converted into confirmed short sight. He very well remembers first learning to read, at the common age of four or five years, and that at that time he could see the usual inscriptions across a wide church; but that at the age of nine or ten years he could no longer distinguish the same letters at the same distance, without the assistance of a watch-glass, which has the effect of one slightly concave. In a few years more the same glass was not sufficiently powerful; but yet his degree of short-sightedness was so inconsiderable, that he yielded to the dissuasion of his friends from

using the common concave glasses till he was upwards of thirty years of age, when No. 2 was barely sufficient; and he very shortly had recourse to No. 3. In the course of a few years an increase of the defect rendered it necessary for him to employ glasses still deeper, and his sight soon required No. 5, where it has remained stationary to the present time. From the progress which Sir Charles Blagden has observed in his own short-sightedness, he is of opinion that it would have been accelerated by an earlier use of concave glasses, and might have been retarded, or perhaps prevented altogether, by attention to read and write with his book or paper as far distant as might be from his eyes.

In this communication he takes the same opportunity of adding an experiment made many years since on the subject of vision, with a view to decide how far the similarity of the images received by the two eyes contribute to the impression made on the mind, that they arise from only one object. In the house where he then resided, was a marble surface ornamented with fluting, in alternate ridges and concavities. When his eyes were directed to these, at the distance of nine inches, they could be seen with perfect distinctness. When the optic axes were directed to a point at some distance behind, the ridges seen by one eye became confounded with the impression of concavities made upon the other, and occasioned the uneasy sensation usual in squinting. But when the eyes were directed to a point still more distant, the impression of one ridge on the right eye corresponded with that made with an adjacent ridge upon the left eye, so that the fluting then appeared distinct and single as at first, but the object appeared at double its real distance, and apparently magnified in that proportion. Though the different parts of the fluting were of the same form, their colours were not exactly alike, and this occasioned some degree of confusion when attention was paid to this degree of dissimilarity.

A Method of drawing extremely fine Wires. By William Hyde Wollaston, *M.D. Sec. R.S.* Read February 18, 1813. [*Phil. Trans.* 1813, *p.* 114.]

The author refers to Musschenbroek for an instance of a gold wire, recorded to have been drawn by an artist at Augsburg so fine, that one grain of it would have the length of 500 feet. It is not said how this was effected, and some doubt has been entertained of the possibility of it; but the author of this paper shows how gold may be drawn to the same degree of fineness, and also that platina may be made with great facility much finer than is above described.

The general principle of the method is the same for both. The metal intended to be drawn is first reduced, in the common mode, to a wire of about $\frac{1}{100}$th of an inch in diameter; and it is then coated with silver, so as to form a rod of considerable thickness. The rod is then drawn, as usual, till it is reduced to a slender wire, and it is presumed that the gold or platina contained in it is reduced in the