

is the ingenious arrangement whereby, by simply turning the caps with the diaphragms, orthoscopic or pseudoscopic effect can be produced instantly at pleasure. It is more particularly available for tubes of short length for which the Wenham prism is inapplicable.

Powell and Leland have completed a new I-12 having two front lenses. The maximum numerical aperture is 1.43 ($= 140^\circ$ in crown glass of mean index 1.525), obtained by a front lens several degrees greater than a hemisphere, mounted on a plate of glass .003 inch in thickness, which is itself mounted in the usual metal work by the zone projecting beyond the circumference of the lens. With this front lens the focal distance from the exposed surface of the plate on which the lens is mounted is .007 inches. A second front, nearly a hemisphere, is mounted in the usual way by a burred edge of metal covering the extreme margin of the lens. This front gives a numerical aperture of 1.28 ($= 115^\circ$ in glass) and the focal distance is then 0.16 inch. The third front provides a numerical aperture of 1.0 ($= 82^\circ$ in glass, as nearly as possible), and the working distance is then .024 inch—probably the greatest working distance hitherto obtained with a I-12 of that aperture.

Dr. Reidel, an assistant to Professor Abbe, has found two new fluids suitable for homogeneous objectives. The first is a solution of Gum Damar dissolved in hot oil of cedar-wood. The oil which is obtained in Germany has a refractive index of 1.51 *only*, but by the Damar this can be raised to 1.54. If *carefully distilled* it becomes sufficiently pale and loses its stickiness. The other medium is a solution of *iodate of zinc* in Price's ordinary glycerine ($n = 1.46$). This salt is *very* soluble in glycerine, and a refractive index of 1.56 or more can be obtained, and therefore there is no difficulty in making a solution of 1.52 which is the standard index at 18° cent. Professor Abbe has furnished Mr. Zeiss with a new formula for homogeneous $\frac{1}{2}$, this having a numerical aperture of 1.40 and adjusted for the new fluids.

Mr. T. Charters White, R. M. S., calls for some re-agent suitable for mounting insects; carbolic acid renders the chitinous envelope transparent, but has the same effect on the internal organs also. Dr. Mathews also objected to carbolic acid, as it caused the abdomen of insects thus mounted to collapse. Those who have had some experience in making preparations for insect anatomy will perhaps have suggestions to make.

We lately called attention to infusoria found in cases of epidemic catarrh, called *Asthematos ciliaris*. Dr. Leidy doubted the character of this form and suggested its being a *ciliated epithelium*. Dr. Carter now maintains that it is correct to call it an infusorium, because by culture in mucus outside the body, they increase in number, and they are found in morbid secretions of the conjunctiva where no ciliated epithelia exist—moreover, those remedies only cure the disease which kill the *Asthematos*.

THE STEREOGRAPHY.

A new specimen of this gigantic and marvellous reptile from the permian schists of Igornay (Saône and Loire) has been presented by M. Gaudry, who gives an exceedingly interesting description of it. Among the results formulated by the learned paleontologist, one of the most striking is the continuity of life of the primary epoch to the secondary one. We are tending more and more to the idea of the slow modifications of terrestrial conditions, and are therefore receiving more and more from the gratuitous supposition of the revolutions of the globe.

To the Editor of "SCIENCE:—"

DEAR SIR:—In the last number of your valuable periodical, at the close of a review of Professor Packard's work on the "Brain of the Locust," the writer states: "In view of the loudly trumpeted theory recently revived by Dr. J. J. Mason, after having repeatedly received the *coup de grâce* at the hands of Stieda, Meynert and others that large cells are motor, it is interesting to note that those of the optic ganglion in the locust are among the largest cells in its nervous system."

This is a complete error, so far as I am concerned. No such claim has ever been made by me in any form, by hint, inference or otherwise. In my last paper on the dimensions of nuclei there appears this sentence: "At the same time it may be true that all large cells connect with motor filaments. The sentence which immediately precedes this one clearly proves that I refer here exclusively to the spinal cord of turtles. This is reviving no theory.

Yours truly,

JOHN J. MASON.

NEWPORT, June 13, 1881.

SUN SPOTS.

The following record of observations, made by Mr. D. P. Todd, Assistant, has been forwarded by Prof. S. Newcomb, U. S. Navy, Superintendent Nautical Almanac Office, Washington, D. C., to Gen. H. B. Hazen.

DATE. APRIL, 1881.	NUMBER OF NEW		DISAPPEARED BY SOLAR ROTATION.		REAPPEARED BY SOLAR ROTATION.		TOTAL NUMBER VISIBLE.		REMARKS.
	Groups.	Spots.	Groups.	Spots.	Groups.	Spots.	Groups.	Spots.	
2, 9 a.m.....	1	5	0	0	1	1	3	10	Few faculæ. Faculæ. Faculæ. Faculæ.
3, 10 a.m.....	2	11	1	1	1	2	4	†20	
5, 8 a.m.....	0	0	0	0	0	0	4	†20	
6, 7 a.m.....	1	3	0	0	1	3	5	†18	
7, 7 a.m.....	1	3	1	5	1	3	4	14	Faculæ.
10, 10 a.m.....	0	3	0	3	3	8	Faculæ.
11, 8 a.m.....	0	0	0	0	0	0	2	7	Faculæ.
14, 8 a.m.....	2	15	3	†20	Faculæ.
15, 8 a.m.....	0	†20	0	0	0	0	3	†40	{ Faculæ. Many of the spots small. Faculæ. Many of the spots small. Faculæ. Many of the spots small. Spots probably disappeared by solar rotation.
17, 7 a.m.....	4	15	0	0	3	10	7	†55	
21, 9 a.m.....	0	†60	6	†115	
23, 7 a.m.....	0	0	1	†20	0	0	4	†85	
24, 9 a.m.....	0	0	1	10	0	0	3	†60	{ Faculæ. Many of the spots small. Faculæ. Faculæ. Faculæ.
26, 8 a.m.....	1	5	0	10	0	0	4	†55	
28, 7 a.m.....	0	0	2	†45	0	0	3	10	
8 a.m.....	0	0	0	0	0	0	3	10	
30, 9 a.m.....	1	4	2	9	1	4	2	5	Faculæ.

† Approximated.