occurred, while from all other positions immediate and direct orientation with anterior end toward the kathode followed the closing of the circuit. On reversing the current, it was seen that the animals always gained the new orientation with anterior end to the new kathode by turning to the *right*. The fact was shown that sudden breaking (as well as reversal) of the current always caused the typical motor reflex that is given by the organism as a response to stimuli of other sorts—the animal always turning to its right.

3. The kataphoric effect of currents of moderate intensity in carrying *Chilomonas* and suspended particles in the water toward the anode was shown.

Following the demonstrations an account was given of the electrotactic reaction of a number of infusoria, and the bearing of the results on the recent work of other investigators was discussed. Reference was made to the reactions of some of the lower Metazoa which resemble in many ways the reactions of the infusoria.

H. S. Jennings,
Secretary.

DISCUSSION AND CORRESPONDENCE.

CORRECTION TO ANDRÉ'S ASTRONOMIE STELLAIRE.

The favorable notice of André's 'Traité d'astronomie stellaire' contained in the number of Science for April 19, 1901, leads me to call attention to the following curious error contained in that work, which appears to have escaped the notice of all its reviewers.

In Vol. I., § 225, the author seeks to account for the well-known fact of a progressive variation in the periodic time—interval from minimum to minimum—of certain variable stars, and resorting to the hypothesis of a uniform motion in the line of sight, he proceeds by elementary mathematical methods to derive the effect of this motion in altering the periodic time of the light variations. It is almost self-evident that the effect of this motion is to produce a small but constant difference between the true period, and that furnished by observation, and this result is confirmed by the author's analysis when properly executed. But at the equation marked (2) in the text, André commits the algebraic error of dividing two terms of his equation by a certain factor, $n' - n$, while neglecting to divide the third term and obtains thereby an erroneous result which he interprets, correctly enough so far as the equation itself is concerned, as showing that the star's radial velocity produces a progressive change in the periodic time of its light variations. He applies this equation to certain well-known variables having secular terms in their light equations, and derives from purely photometric data, numerical values for their motion in the line of sight, which, although plausible enough in respect of magnitude, are entirely wrong in principle. The entire section entitled 'Terme séculaire' should be suppressed since it is completely vitiated by the algebraic error noted above.

George C. Comstock.

AN APPEAL FOR COOPERATION IN MAGNETIC AND ALLIED OBSERVATIONS DURING THE TOTAL SOLAR ECLIPSE, MAY 17-18, 1901.

To further test the results obtained by the United States Coast and Geodetic Survey during the total solar eclipse of May 28, 1900, arrangements are being made for obtaining simultaneous observations of the magnetic elements and of allied phenomena over the entire globe during the next total solar eclipse, May 17–18, 1901.*

* CIRCUMSTANCES OF THE ECLIPSE.

	Greenwich Mean Time.				Longitude from Gr.	Latitude.
Eclipse begins	May 17 d.	14 h.	59 m.	.9	51° 34′.4 E.	20° 21′.9 S.
Central eclipse begins	17	15	57	.6	40 11 .2 E.	27 27 .6 S.
Central eclipse at noon	17	17	28	.8	96 51 .9 E.	2 07 .1 S.
Central eclipse ends	17	19	10	.2	156 53 .6 E.	12 49 .0 S.
Eclipse ends	17	20	07	.9	145 04 .5 E.	5 38 .0 S.

To make the investigation exhaustive, an earnest appeal is herewith made to all persons who have instruments at their disposal to participate in the proposed observations and to put themselves in communication with the Division of Terrestrial Magnetism, U. S. Coast and Geodetic Survey, Washington, D. C., so that the necessary directions may be given them.

The scheme of work proposed embraces the following:

1. Simultaneous magnetic observations of any or all of the elements, according to instruments at the observer's disposal, every minute from May 17, 14 h. to 21 h., Greenwich mean astronomical time.*

[To insure the highest degree of accuracy attainable, the observer should begin work early enough to have everything in complete readiness in proper time.†]

2. At magnetic observatories all necessary precautions should be taken, so that the self-recording instruments will be in good operation, not only during the proposed interval, but also for some time before and after, and eye-readings should be taken in addition, wherever circumstances will permit.

3. Such meteorological observations as are possible for the observer should be made at convenient periods (as short as possible) throughout the interval. It is suggested that temperatures, *e. g.*, be read every fifth minute (directly after the magnetic reading for that minute).

4. Observations of atmospheric electricity and of earth currents should be made wherever possible, and any other phenomena of importance should be fully noted.

The request is made that observers send, as soon as possible, a full report of their work to the Superintendent of the Coast and Geodetic Survey.

L. A. BAUER.

*For America this interval occurs during the night hours of May 17th and 18th, civil dates, while for Europe, Asia, Africa and Australia, it occurs during the morning or afternoon hours (according to longitude of station) on May 18th, civil date.

†See directions followed by the Coast and Geodetic Survey during the recent eclipse, Journal 'Terrestrial Magnetism,' Vol. V., p. 143.

CLAYTON'S ECLIPSE CYCLONE AND THE DIURNAL CYCLONES.

IN a letter with the above title, in SCIENCE of April 12th (N. S., Vol. XIII., p. 589), Professor Bigelow criticizes my papers on the 'Eclipse Cyclone and the Diurnal Cyclones.' His criticism is subdivided into two heads: (1) concerning 'some minor errors' which he thinks he finds in the formulas, and (2) concerning the theory of the cold-center cyclone.

My method of treating the winds observed during the eclipse was first to find the mean wind during the eclipse at each station, then to find the deflections of the observed wind from this mean at intervals during the eclipse, in order to see if there were any systematic changes which might reasonably be attributed to the eclipse. In getting the mean wind, I plotted the individual observations of direction and velocity, taking them as nearly as possible at regular intervals, and drew the resultant direction for each station. As a check on this method and for greater exactness I next computed the mean wind for stations where the wind directions were recorded to degrees of azimuth, or the observations were otherwise considered sufficiently accurate. Observations to only eight points of the compass are not in general sufficiently accurate to show the eclipse wind. The general winds were from the southwest near the central path of the eclipse of May 28, 1900, in our Southern States, and the observations with which I had to deal were something like the following:

	Direction in degrees.	Velocity in miles.
(1)	S. 23° W.	3
(2)	S. 56° W.	2
(3)	S. 80° W.	1

These were plotted as shown in diagram 1 *A*, in which the continuous arrows are the observed winds and the broken arrow is the mean wind. With the above values the plotted mean was found to be S. 44° W. Calling the observed wind o and its velocity v, the mean was then computed as follows:

	sin. o	cos. o	(sin. o)v	(cos. o)v
(1)	.391	.921	1.173	2.763
(2)	.829	.559	1.658	1.118
(3)	.985	.174	.985	.174
Sum.			3.816	4.055