May 15.

A.M.

1.15.—Weather wet. High winds coming on.

7.0. —Nearly six hours' rain and wind.

The numbers 199, 200, 201, and 202 are those of the wires.

Mr. Ellis has also told us (p. 641) of what was observed at Greenwich. Although the magnetic disturbance commenced about 6 P.M. at Greenwich, it only reached a maximum at 9 P.M., when the electric disturbances were observed at Haverfordwest, though indifferent working, most probably due to them, commenced at 6.40. At 11.45 P.M. the north end of the needle at Greenwich moved sharply westward, and about the same time the currents were reversed at Haverfordwest. From midnight to 12.40 A.M. the currents gradually disappeared. Earth currents were also active at Greenwich, as indeed they were everywhere. Unfortunately the wires at the post-office were so fully occupied with press work during these hours, that no observations could be taken. It will be noticed that the aurora borealis was observed. W. H. PREECE

October 21

Giddiness

A TRUE theory of the cause of giddiness ought to explain the following extreme experience, which deserves record in print. The method was first told to me by a friend; I once tried it myself successfully in a mitigated form, and will assuredly not repeat the experiment, and I persuaded a philosophical friend to try it also, with much the same result. Stand in the middle of a soft field where you can't hurt yourself by tumbling on the ground or against anything; avoid having your best clothes on, and secure appreciative spectators. Then put both hands one above the other on the top of your umbrella or walking-stick, and bend down until your forehead rests on the back of your hands. Thus your legs will be vertical, your body will be more or less horizontal, and the umbrella will be vertical. Shut your eyes. Then get a friend, by touching your hips, so to guide you that you shall circle three times, with a sidelong gait, round the vertical umbrella as an axis. Finally raise your head quickly, and try to walk straight as though nothing particular had happened. What will occur is a frightful giddiness and feeling of sickness, a sense of the ground rising up tumultuously on all sides, a wild rush to save yourself, and a headlong tumble.

F. G.

OUR ASTRONOMICAL COLUMN

THE SATURNIAN SATELLITE HYPERION.—In a letter from Prof. Asaph Hall it is remarked that the ephemeris for September last, given in NATURE, requires correction by nearly two days, although it was deduced from the elements which he showed to closely represent the Washington observations in 1875 and 1876 (*Astron. Nach.*, No. 2,137). There appear to be great difficulties attending the satisfactory determination of the orbit of this satellite, doubtless arising in the main from the magnitude of the perturbations with which its motion is affected, but for this reason it is the more necessary that it should be regularly observed, and a rough indication of the position of so extremely faint an object is better than none.

If we take for a peri-saturnium passage September 24·8393 G.M.T. with Prof. Hall's other elements, the calculated and observed distances on September 27 agree, and the computed angle is one degree in excess of observation. On the same system the following angles and distances are found for 10h. G.M.T.:—

	Angle.	Distance.		Angle.	Distance.
	°	″		°	″
Oct. 25	271	137	Nov. 1	95	217
,, 26	268	82	,, 2	94	225
,, 27	250	23	,, 3	94	211
,, 28	107	41	,, 4	93	175
,, 29	99	99	,, 5	92	119
,, 30	97	150	,, 6	87	49
,, 31	96	191	,, 7	287	29

THE MEAN PARALLAX OF A STAR OF FIRST MAGNITUDE.—Prof. Gylden, director of the Observatory at Stockholm, has reported the result of a preliminary calculation bearing upon the mean distance of a star of the first magnitude. Remarking that in the actual state of our knowledge, when a general result is to be deduced from the parallaxes so far measured, we must not only take into account the apparent brightness of the stars concerned, but also their apparent proper motions, since the magnitude of the proper motion is to be viewed as at least as sure a criterion of a measurable parallax as the apparent brightness; as a hypothesis, it is then assumed that the actual parallax p of a star of nth magnitude with the apparent motion s, will be given by the formula

$$p = P \frac{s}{\sigma_n M_n}$$

where σ_n signifies the mean apparent motion of a star of nth magnitude and M_n the distance estimated according to its brightness. P is a constant, which for M = 1 indicates the mean parallax of a star of the first magnitude.

Prof. Gylden takes the following data, depending upon observation, for sixteen stars, of which the parallaxes are supposed to be known with the greatest degree of approximation:—

	mag.	p	s
		″	″
α Centauri	1	0·900	3·674
61 Cygni	5	0·511	5·221
L. 21185	7	0·501	4·734
34 Groombr.	8	0·307	2·801
L. 21258	8·5	0·260	4·403
Oelt. 17415	9·5	0·247	1·200
σ Draconis	5	0·222	1·925
Sirius	1	0·193	1·252
70 Ophiuchi	4	0·162	1·108
α Lyræ	1	0·153	0·349
1830 Gr.	7	0·147	7·053
ι Urs. maj.	3	0·133	0·525
α Bootis	1	0·127	2·258
γ Draconis	2	0·092	0·063
α Aurigæ	1	0·046	0·438
α Urs. min.	2	0·046	0·045

From the adopted values of p, s, together with the products $\sigma_n M_n$, 16 equations of condition can be formed, the solution of which by the method of least squares will furnish the value of P. But Prof. Gylden points out that this mode of treatment will not be found to answer the object in view, since the determination of the weights of the different equations, which can in no wise be considered equal, is attended with great difficulties. On the assumption of equal weight, the value of P comes out, 0″·048. As another mode of treatment, normal equations may be formed in various ways, each containing the unknown quantity P, and consequently each serving for a determination of the quantity sought. The sum of all the equations thus obtained gave P = 0″·062.

This value, however, is greatly influenced by several stars of the first magnitude with large proper motion. Omitting α Centauri, α Bootis, and Sirius, the remainder give P = 0″·086, or if all stars of the first magnitude are omitted, P = 0″·083. Again, if all stars with extreme motions are neglected, and a value of P derived from the nine stars which remain, with proper motions less than 2″ annually, it is found to be 0″·084. Prof. Gylden considers that the near agreement of values obtained from these two calculations, in which the extreme case of brightness and motion enter, affords some support to the inference that the relation indicated by the above formula between parallax, apparent motion, and apparent brightness may be taken as an approximation to the truth. It may be remarked that Prof. Peters found for the mean parallax of a first-magnitude star, 0″·102 ± 0″·026; the new value is within the limit of his probable error.