OUR ASTRONOMICAL COLUMN.

ASTRONOMICAL OCCURRENCES IN OCTOBER.

Oct. 1. 11h. 14m. to 11h. 53m. Moon occults B.A.C. 1240 (mag. 5·7).
3. 17h. 10m. to 18h. 9m. Moon occults 71 Orionis (mag. 5·1).
11. 11h. 2m. Minimum of Algol (β Persei).
13. Ceres 7′ S. of γ Ceti (mag. 3).
13. 7h. Venus in conjunction with δ Scorpii. Venus 10′ N.
14. 7h. 51m. Minimum of Algol (β Persei).
15. Venus. Illuminated portion of disc = 0·705.
15. Mars. Illuminated portion of disc = 0·951.
17. 5h. 2m. to 5h. 38m. Moon occults ξ Ophiuchi (mag. 4·5).
19–21. Epoch of the Orionid meteors (radiant 91°+ 15°).
22. 9h. 5m. to 9h. 7m. Moon occults c' Capricorni (mag. 5·2).
23. 4h. 44m. to 7h. 38m. Transit of Jupiter's Sat. IV.
23. 8h. 53m. to 10h. 6m. Moon occults κ Aquarii (mag. 5·5).
24. 14h. 35m. to 15h. 30m. Moon occults λ Piscium (mag. 4·7).
27. 2h. 25m. to 4h. 6m. Partial eclipse of the moon. Our satellite will rise at 4h. 35m., 29m. after the earth's shadow has passed off her disc, but the penumbra will remain until 5h. 26m., though it will be observed with difficulty.
28. Ceres in opposition to the sun (Ceres, mag. 7·4).
31. 12h. 44m. Minimum of Algol (β Persei).

FIREBALL OF SEPTEMBER 14, 1901.—Mr. W. F. Denning writes :—

"One of those brilliant fireballs which often appear suddenly n the early part of the night, and for a few seconds illumine the sky and landscape, was seen by many persons in various parts of the country on September 14 at about 8h. 44m. It was especially bright over the western part of England, and people in South Wales and North Devon obtained a fine view of the phenomenon. As seen from these parts, the fireball was many times brighter than Venus, and it moved with moderate slowness, leaving a strong trail or train of sparks, which, however, quickly died out. The head was bluish-white, and it seemed to plough its way through the atmosphere with an irregular motion and fluctuating light, as though strongly resisted.

"The fireball was well observed at Manchester, Wallingford (Berks), Chiddingfold (Surrey), Bristol and many other stations. The direction of its flight from the best descriptions was from between the constellations Aquarius and Pegasus, the radiant being at 345° + 1° near the star β Piscium. The height of the meteor when first seen was 66 miles vertically over a point 6 miles N.E. of Ilfracombe, North Devon, and when last seen the height was about 26 miles over a point in the sea 3 miles N.W. of St. David's Head, Pembrokeshire. The length of path was 83 miles and velocity about 20 miles per second. Possibly the path may have been longer and the object may have approached to within about 23 miles of the earth's surface, but the observations are not quite accordant. It is to be hoped that further descriptions of this splendid object will be forthcoming, so that the real path may be very accurately ascertained.

"On September 14, 1875, at 8h. 27½m., a large fireball passed over the eastern counties of England, falling from a height of 63 to 14 miles and directed from a radiant at 348°±0°. Lieut.-Colonel Tupman computed the real path from twelve accordant observations, and there is no doubt that this brilliant object, which appeared exactly twenty-six years ago, belonged to the same system as that which furnished the recent fireball. Apart from the large meteors which are often directed from it, the radiant is well defined every year from ordinary shooting stars, and it appears that its chief activity is displayed during the months of August and September."

NEW VARIABLE STAR 77, 1901, HERCULIS.—Dr. T. D. Anderson announces that he has detected variability in the star B.D. + 7°·3199, the position of which is

R.A. = 16h. 25m. 49·7s.
Decl. = + 7° 8′·9.

Some years ago it was estimated to be about the ninth magnitude, while on August 19 and 21 it was invisible in a 3-inch finder with which tenth magnitude stars were easily visible.

THE GLASGOW MEETING OF THE BRITISH ASSOCIATION.

SECTION E.

GEOGRAPHY.

OPENING ADDRESS BY HUGH ROBERT MILL, D.Sc., LL.D., F.R.S.E., F.R.G.S., PRESIDENT OF THE SECTION.

On Research in Geographical Science.

Introductory.

THE annual reassembling of friends and fellow-workers in the old re-visited towns, and the annual accession of new lovers of science, furnish a unique opportunity for a survey of the advances made in each department, a fitting occasion also for remembering those who have finished their work and can aid our deliberations only by the memory of their example.

Apart from our more intimate losses in the death of many distinguished geographers and devoted workers, the period since our last meeting has been for all a year of mourning. The passing of the nineteenth century was almost like the death of a friend, and it is still difficult to realise that the century which we had been so long in the habit of associating with everything new and great and progressive has itself become part of the past. Few coincidences have been more striking than the almost simultaneous close of that unparalleled reign which gave a name to the Era including all that was best and most characteristic of the century. The death of Queen Victoria carried so keen a sense of personal loss into every heart that few attempts have been made to show how vast a portion of the stream of time—measured by progress—intervened between the terminal dates of her life. Think for a moment of the splendid advances in the one small department of geographical exploration during the late Queen's reign, the multitude of landmarks which have been crowned by the great name of Victoria—of the Earth's most southerly land and its most northerly sea, of the largest lake and most majestic waterfall of Africa, the loftiest lake of Asia, the highest peak in New Guinea, the widest desert and most populous colony in Australia, and of the two thriving seaports on either side of the North Pacific which couple together the British Dominions of western America and eastern Asia.

What could be more appropriate in this first meeting after the close of such a century and of such a reign than to pass in brief but appreciative review the advances of geography during those hundred or those sixty-five years? One thing in my opinion is more appropriate than to dwell on past triumphs or to regret past greatness, and that is to survey our present position and look ahead. In the first year of a new century and of a new reign we are reminded that we have a future to face and that the world is before us, and I propose to seize this opportunity in order to speak of the science of geography as it is now understood and especially to urge the importance of the more systematic pursuit of geographical research henceforward.

Geography in the Universities.

The prospect of immediate expansion in many British universities seems at last likely to afford more than one opportunity of wiping out the old disgrace of the neglect of geographical science in the accredited seats of learning. Already Oxford has a well-manned School of Geography, and Cambridge has a Reader in Geography. The reconstituted University of London occupies the best position in the world for creating a chair of geographical research, situated as it is in the very centre of the comings and goings of all mankind, and in touch with the most complete geographical library and map-collection in existence. The new University of Birmingham may, it is hoped, prove better than its promises, and may perhaps after all provide some more adequate treatment of geography than its proposed partition amongst the professors of half a dozen special subjects, all of them concerned in geography, it is true, but none of them individually, nor all of them collectively, capable of embodying that coordination of parts into a harmonious unity which gives to geography its power as a mental discipline and its value for practical application. But England in all that pertains to higher education is still a poor country, and the will to do well is hampered by the grinning demon of poverty. Here, on the other side of the Border, we are in a different atmosphere. The wave of the magician's wand in the hands of Andrew Carnegie has brought wealth that last year would have been deemed fabulous to the ancient universities in Scotland, and it will be a