

added another object glass to his equatorial. What he has done has been to employ a twin cell in which the glasses have been placed; the whole is then hung on an axis fixed rigidly to the side of the telescope tube so that by a simple rotation each glass, whether for photographic or for visual purposes, can be brought to the centre of the front of the tube. In order to make use of that objective which is not temporarily required for the main instrument, a tail-piece near the eye-end is also mounted, thus completing another telescope, only without a tube. One great disadvantage of this arrangement would be the difficulty of centring the lenses after each change, but this is not so as we are informed, no difficulty at all being experienced. In *Astronomy and Astro-Physics* for August, there is shown a picture of Mars emerging from occultation on July 11, taken without the tube. In the original photograph, which is about $\frac{1}{32}$ inch in diameter, the polar caps on the planet are clearly shown together with some of the other markings on the surface.

JUPITER.—During the next two months the planet Jupiter will be in a very good position for observation. This year he is as much as 5° to 8° north of the equator, being situated now in the constellation of Pisces, just north of the two stars μ and ν . The next opposition occurs on the 12th October.

NOVA AURIGÆ.—In a communication to the *Daily Graphic*, the Rev. A. Freeman gives the results of some observations of the revived new star in Auriga, made by him on Sunday, August 28. Adopting Mr. Stone's values for the magnitudes of the neighbouring stars, the nova would appear to have then been a trifle brighter than mag. 10.3, but decidedly fainter than 9.7. By comparison with the zone star +30° 924, the nova was rated at mag. 10.1. As Mr. Espin estimated it to be 9.2 on August 21, it is probable that the star is again waning.

From the Astrophysical Laboratory at South Kensington we have received the following:—There was no opportunity of observing the nova here until 1.30 a.m. on Thursday, September 1, and it was then too dim to be readily seen with the 10-inch refractor. A photograph of the region was taken with the $\frac{3}{4}$ -inch portrait lens, the exposure being thirty minutes, but this failed to show the nova, although clearly showing stars of the 10th magnitude.

COMET SWIFT, MARCH 6, 1892.—The following is a continuation of the ephemeris for Comet Swift, which we take from *The Edinburgh Circular*, No. 29:—

1892.	R.A.	Decl.	log. Δ .	log. r .	Br.
	h. m. s.	° ' "			
Sept. 8	0 32 27	+51 56.5			
9	31 8	51 48.8			
10	29 49	51 40.7	0.2751	0.4085	0.073
11	28 30	51 32.1			
12	27 10	51 23.2			
13	25 50	51 13.9			
14	24 30	51 4.1	0.2788	0.4164	0.069
15	23 11	50 54.0			

Brightness at time of discovery is the unit of Br.

The Edinburgh Circular, No. 30, announces the discovery of a comet by Mr. Brooks, at Geneva, U.S., at midnight on the 29th ult. The comet was then in R.A. 6h. 20min. and declination 31° 48' north, its daily motion being +1min. 44sec. and 2' south. The same comet has also been observed at Kiel on the 31st inst. at 12h. 32.2min.; its place then was found to be R.A. 6h. 5min. 59.1sec. North declination 31° 42' 27". Whether this comet is a new one or not cannot of course be said yet for certain, but it is neither Brooks' 1886 IV. nor Tempel 1867 II. if we can depend on the two search ephemerises we have at hand, for their declinations in both instances should be at this time over 30° south.

GEOGRAPHICAL NOTES.

MONTENEGRO, though one of the smallest, is certainly one of the least known countries in Europe. Dr. K. Hassert, who has already made important journeys in the less known parts of the Balkan peninsula, is this summer travelling through Montenegro, and describes the scenery as in many places of very great beauty. The frontier river Cijevna flows through a steep-sided gorge, the height of the precipices bordering which he estimates as over 3000 feet, while in its appearance it rivals the cañons of the Colorado. The traveller in this part of the country runs considerable risks from the predatory Albanian tribes.

THE Times publishes a telegram from Captain MacDonald of the Mombasa-Victoria-Nyanza Survey, announcing that the Survey had found a good route for a railway to Sio Bay on the Nyanza, and had returned to Kikuyu on August 8. The Survey work has been carried on rapidly, and, which is more important, without any fighting.

RAILWAYS in tropical Africa may ultimately derive more revenue from native passengers than might be anticipated. The railway from St. Paul de Loando is being pushed forward to Ambaca, and now nearly reaches Casengo, where there are flourishing coffee plantations under Portuguese management. Until this point is reached the revenue from goods cannot be large, but the natives having speedily got over their distrust of the innovation, now travel freely by rail in large numbers.

PROF. POUCHET has this summer succeeded in visiting Jan Mayen Island and Spitzbergen in the French gun-boat *La Manche*. Jan Mayen, on which a landing had not been made for ten years, was visited on July 27, and the vessel proceeded to Spitzbergen, where a fortnight was spent. The west coast was followed up to 78° N., and some excursions made on foot into the interior. Glacier phenomena were studied, and collections of native fauna and of fossils made. The sea was found to be entirely free from ice.

NEWS has recently been received in Copenhagen of the safety and success of the East Greenland Expedition, which left Denmark in June 1891 under Lieutenant Ryder. The expedition passed the winter on the Greenland coast in Scoresby's Land at a point in 70° 27' N. Important scientific results have been obtained, but the expedition is not yet over, Lieutenant Ryder intending, after a short visit to Iceland, to make an attempt to trace out the hitherto unvisited coast-line between 70° N. and the Arctic circle.

THE first chart on which the American continent appears is being reproduced in facsimile for the approaching Columbus Exhibition in Madrid. The following details are given in a Reuter telegram from Madrid. The work, which is now approaching completion, is being done by Señor Canovas Vallejo, a nephew of the Spanish Premier, and by Prof. Traynor. The original chart, which was traced in the year 1500 by the famous navigator and cartographer Juan de la Cosa, who acted as pilot to Columbus in more than one of his voyages across the Atlantic, has been since carefully preserved in the Naval Museum in Madrid. The chart presents some most interesting features, displaying, as it does, the extent of the knowledge of the best-informed geographers of the day. On it are depicted the West Indies and a small portion of South America—namely, the north-eastern section lying between the River Amazon and Panama. To this land the general name of Tierra Firme is given, to mark the contrast between the continent and the Antilles. Here and there are traces of modern names, such as Venezuela, Maracaibo, and Brazil. The chart even comprises some particulars of the discoveries made in Northern America by Sebastian Cabot in 1497, and such titles as these:—"Sea discovered by the English," "English Cape," "Lizard," and "St. George." La Cosa has also clearly depicted Cuba as an island, whereas Columbus died in the belief that it was a continent, and it was not until eight years later that the correctness of La Cosa's chart was in this respect finally established.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

ROCHESTER MEETING.

THE forty-first annual meeting of the American Association for the Advancement of Science was held at Rochester, New York, August 17-23, Prof. Joseph Le Conte, of California, the well-known geologist, presiding.

Rochester is one of the most beautiful of American cities, being laid out quite on the *rus in urbe* principle, so that each residence is generally surrounded by grounds, instead of being built in a solid block. It is pre-eminently a city of freeholders, as appears by the fact that a recent census showed more land-owners than voters in the city. It is moreover situated in the beautiful and picturesque region of western New York, within a very short distance from numerous glacial lakes, as well as the