

the moulds were being erected. Chimney flues and other stoneware pipes were enclosed in the moulds and embedded in the concrete subsequently poured in. The mould consisted of some 2600 castings of size and weight convenient for handling, and assembled by about 10,000 bolts and nuts; the erection of the mould occupied about eight days, pouring about six hours, followed by two days' rest; removal of the mould occupied two days, making thirteen days in all for construction. Colloidal material is added to the concrete in order to avoid segregation and to facilitate its flow to all parts of the mould.

A USEFUL bibliography of the papers and records published with respect to the geology and palæontology of the north of England (Yorkshire excepted) during 1910 was contributed by Mr. Thomas Sheppard to *The Naturalist* in May and June of this year. The bibliography has now been issued in pamphlet form by Messrs. A. Brown and Sons, Ltd., of London, Hull, and York.

MR. FRANCIS EDWARDS, of High Street, Marylebone, London, W., has issued a catalogue of books relating to Australasia, which he is offering for sale. The books include some important volumes on the Antarctic.

ERRATUM.—In NATURE of June 27, p. 426, col. 2, line 41, for 89½ miles read 63¼ miles.

OUR ASTRONOMICAL COLUMN.

ASTRONOMICAL OCCURRENCES FOR JULY:

- July 4. 12h. om. The Sun at greatest distance from Earth.
5. 14h. om. Venus in superior conjunction with the Sun.
10. 16h. 13m. Saturn in conjunction with the Moon (Saturn 5° 36' S.).
13. 8h. 31m. Venus in conjunction with Neptune (Venus 1° 27' N.).
14. 2h. 29m. Neptune in conjunction with the Moon (Neptune 5° 34' S.).
- „ 3h. 58m. Venus in conjunction with the Moon (Venus 4° 6' S.).
15. 17h. 24m. Mercury in conjunction with the Moon (Mercury 3° 57' S.).
- „ 23h. om. Neptune in conjunction with the Sun.
16. 12h. 9m. Mars in conjunction with the Moon (Mars 2° 46' S.).
22. 1h. om. Venus in perihelion.
23. 18h. 12m. Jupiter in conjunction with the Moon (Jupiter 4° 36' N.).
24. 7h. om. Uranus at opposition to the Sun.
25. 3h. om. Mercury at greatest elongation E. of the Sun.
28. 5h. 45m. Uranus in conjunction with the Moon (Uranus 4° 21' N.).
29. 10h. om. Mercury at greatest distance from the Sun.

THE NOVA OR VARIABLE 87, 1911, PERSEI.—On April 3 Prof. Wolf gave an hour's exposure, with the reflector, on the region of the nova, or variable star 87, 1911, Persei, discovered by Mr. C. R. D'Esterre, and the photograph is reproduced, together with Mr. D'Esterre's plate of November 13, 1911, for comparison, in No. 4585 of the *Astronomische Nachrichten*. On Prof. Wolf's plate the nova(?) is very faint,

while on the earlier plate it is comparable in brightness with two of the brightest stars seen on both photographs. Practically identical with the position of the nova(?) there is a faint pair of stars, the more northerly of which Prof. Wolf shows to be variable, so the region is evidently one of exceptional interest.

PERSEIDS IN AUGUST, 1911.—Simultaneous observations of meteors were made by Herren Büss and Djukow at Dorpat and Elwa respectively, on August 9-12, 1911; Elwa is not very far west of Dorpat. The results are tabulated in No. 4582 of the *Astronomische Nachrichten*, and embody the observed paths of 122 meteors observed at the former and 31 observed at the latter station. The maximum took place on August 12, and some of the observed paths were curved or wavy; there was a tendency also, noted on previous occasions, for the Perseids to appear in pairs travelling along parallel paths. A number of radiants were determined, the mean position being $\alpha=44^{\circ}5'$, $\delta=+56^{\circ}5'$. Nine meteors were recognised in both records, and the heights of the appearance and disappearance were calculated; these range from 40.5 to 103.6, and from 30.5 to 101.0 kms. respectively.

OBSERVERS' HANDBOOK.—We have received the first fascicule of a work by M. G. Raymond, entitled "Les Merveilles du Monde Sidéral," in which the author gives brief descriptions and positions of the interesting celestial objects found in the first six hours of right ascension. The book reminds one of the "Celestial Objects," only that the author has arranged the double stars, nebulae, &c., under single hours of right ascension, giving the constellations in each hour in alphabetical order; thus, for example, the especially interesting objects in the constellation Andromeda are found in six different parts of the book under 0h., 1h., 2h., 21h., 22h., and 23h. The positions are given to the nearest minute for 1910, and amateur observers should find the work most useful; it is published by G. Thomas, 11 rue du Sommerard, Paris, at 4 francs for the one part.

VARIABLE STARS OF SPECIAL INTEREST.—The light-variations of twenty-five variable stars in the Small Magellanic Cloud are discussed by Miss Leavitt in Circular 173 of the Harvard College Observatory. A previous investigation indicated that there existed a relation between the brightness of these variables and the length of their periods, and this is confirmed in the present study; the logarithm of the period (in days) increases by about 0.48 for each increase of one magnitude in brightness. As the distances from the earth are presumably alike, it would appear that the period is associated with the actual emission of light determined by the physical conditions of the stars. The average range of brightness is about 1.2 magnitudes, and the periods range from 1.2 to 127 days.

Circular No. 171 contains the data for the light-curves of five variable stars having secondary minima. One of these, RT Persei, appears to be an Algol variable, and the other four, RV Ophiuchi, V Serpentis, RZ Draconis, and U Scuti, are of the β Lyrae type.

SEARCH-EPHEMERIDES FOR COMETS.—In No. 4577 of the *Astronomische Nachrichten* Dr. Hnatek publishes ten search-ephemerides for comet 1852 IV. (Westphal); the periods on which the ephemerides are respectively based range from 60.2 to 61.0 years, increasing in steps of 0.1 year. The comet is far south, and is not likely to be found during the present year.

Dr. H. J. Zwiers has calculated elements for Holmes's comet, based on the observations of 1906, and in No. 4584 of the same journal he gives an ephemeris for June and July. The comet is unfavourably placed, and is not observable in these latitudes.