

North Atlantic is colder than usual, the centres of depressions pass almost directly over the British Isles and produce excessive cloudiness and rain.

*The Builder* for August 30 has an illustrated article on the reconstruction of the campanile of St. Mark's, in Venice. Preserving the old foundations as a nucleus, a strong enclosure of Istrian stone has been constructed around them; the old foundations had a superficies of 222 square metres, and the present foundations cover 407 square metres, nearly double the surface. As the tower began to rise, a movable framework was employed; for the carrying up of the materials a Steigler elevator was used, which also lifted the bells into position. The bells weigh respectively 3625, 2556, 1087, 1366, and 1011 kilograms, and the angel 1300 kilograms. The tower itself from outside the ground to its summit weighs 8,900,000, and with its foundation included about 12,970,000 kilograms. The Loggetta of Sansovino has also been successfully restored. The loggia had been completely crushed by the campanile in its fall. All the fragments of sculpture were carefully collected before commencing the work of reconstruction; in the group of the Virgin and Child alone there were no fewer than 1600 separate pieces. The new campanile was opened on April 25 of this year.

"THEORIES OF SOLUTIONS," by Svante Arrhenius, director of the Nobel Institute of the Royal Swedish Academy of Science, Stockholm, is being published this week by Mr. Frowde for the Yale University Press. The volume constitutes the eighth of the series of Silliman Memorial Lectures at Yale.

#### OUR ASTRONOMICAL COLUMN.

**DISCOVERY OF A COMET.**—A telegram from the Kiel Centralstelle announces the discovery of a comet by Mr. Gale, of New South Wales, on September 9. The position at 7h. 24'8m. (Sydney M.T.) on that date was:—R.A. = 13h. 37m. 1s., decl. = 36° 31' 2" South.

**THE MARKINGS OF JUPITER.**—A valuable summary of the phenomena attending the various prominent markings on Jupiter is contributed by Mr. Denning to No. 452 of *The Observatory*. He first deals with the large dusky marking discovered by Major Molesworth, in the same latitude as the red spot, in February, 1901. This remarkable object, which can be seen well with a 3-in. refractor, has exhibited some extraordinary variations in length, having, for example, decreased from 115° in June, 1911, to 63° recently. It has also exerted a marked influence on the red spot, the motion of the latter being considerably accelerated at the conjunctions of the two features in 1902, 1904, 1906, 1908, and 1910. For the period 1894-1910 the rate of rotation of the red spot was 9h. 55m. 40'63s., exactly that adopted for system ii., but then a rapid acceleration set in, and for the two succeeding years the period was 9h. 55m. 37'5s. This drifting westward was at the rate of about 22,000 miles per year, but recent observations indicate that it is temporarily suspended.

**OBSERVATIONS OF NOVA GEMINORUM No. 2.**—A number of observations of Nova Geminorum No. 2 are discussed in No. 4598 of the *Astronomische Nachrichten*, chiefly dealing with determinations of position

and magnitude. Dr. H. E. Lau, from observations made between March 14 and May 18, finds secondary maxima on the light-curve on March 14, 23, and 31, April 18, and May 1. At first the period appeared to be about eight days and the amplitude 1.0 magnitude, but later the period lengthened and the amplitude decidedly decreased. Most of the observations indicate that the magnitude became fairly stationary about the end of May, its value being about 8.0, but Prof. Eginitis records an apparent augmentation from 8.0 on June 4 to 7.4 on June 7.

Prof. Newall states that spectroscopic observations by Messrs. Stratton and Brunt on August 13 showed the nebula line, 501 $\mu$ , to be much the strongest line in the visible spectrum; other lines observed were at  $\lambda$ 464 (?), 486 (H $\beta$ ), 496, 531 (?), and 575. The magnitude, difficult to estimate, was probably a little brighter than 9.0.

Prof. Strömrgren records the magnitude as 7.70, on the PD system, on August 24, while, in No. 452 of *The Observatory*, Mr. Harold Thomson gives it as 7.7 on August 20, on the scale employed by the Variable Star Section of the B.A.A.

**THE ORBIT OF  $\xi$  PERSEI.**—The star  $\xi$  Persei is one of those interesting binaries in which the radial velocity as determined from the H and K lines of calcium differs from that determined from the other lines. Its spectrum is of the Oe 5 B class, according to Miss Cannon, and shows lines of H, He, Ca, and Fe, but the H and He lines are generally too diffuse to give trustworthy results for the velocity.

Using the H and K lines only, Mr. Cannon, of the Ottawa Observatory, has derived an orbit from his own measures and those made at the Yerkes Observatory, which he publishes in No. 3, vol. vi., of the *Journal of the R.A.S., Canada*. He finds the period to be 6.951 days, the range of velocity 15.7 km., and the velocity of the system 15.4 km. The diameter of the projected semi-major axis of the orbit is 751,800 km. An attempt was also made to determine the velocity from the broad lines, other than calcium, but nothing more definite can be said than that they show a much higher positive velocity than do the H and K lines.

**CATALOGUE OF STELLAR PARALLAXES.**—No. 24 of the *Publications of the Astronomical Laboratory at Groningen* contains a wealth of information concerning the parallaxes, probable intrinsic luminosities, &c., of 365 stars. The table has been made up from many sources, and relative weights are given to the different values. There are eleven stars with parallaxes greater than +0.300", the five nearest, with their adopted parallaxes, being:  $\alpha$  Centauri (+0.759"), Sirius (+0.376"), *Piazzi*, oh. 130 (+0.360"),  $\tau$  Ceti (+0.334"), and Procyon (+0.324"). Ten stars have computed luminosities greater than one hundred times that of the sun, the five most luminous being:  $\beta$  Centauri (520), Regulus (423), Achernar (350), Capella (300), and Arcturus (230); the values in brackets are the computed luminosities, that of the sun being taken as unity.

**THE ORBITS OF COMETS.**—In No. 4598 of the *Astronomische Nachrichten*, Prof. Strömrgren points out, in reference to a recent note by Prof. W. Pickering on the fundamental form of cometary orbits, that Prof. Pickering has misconstrued the sense of his conclusions. The final contention of Prof. Strömrgren's (not Prof. Kobold's, as was inadvertently stated in our previous note on August 15) was that if the effects of Newtonian gravitation be strictly taken into consideration it is probable that all the cometary orbits yet considered would prove to be *elliptical*.