

## Our Astronomical Column.

RETURN OF TEMPEL'S COMET.—Tempel's second periodic comet, discovered in 1873, was detected by Mr. Kudara at Kyoto, Japan, on May 25d. 7h. 10m. G.M.T., in R.A. 20h. 55m. 7s., S. decl.  $4^{\circ} 53'$ . The approximate time of perihelion passage is 1920 July 10.36. The other elements are approximately as follows:— $\omega$   $186^{\circ} 38' 43''$ ,  $\Omega$   $120^{\circ} 37' 59''$ ,  $i$   $12^{\circ} 45' 17''$ ,  $\phi$   $33^{\circ} 54' 21''$ ,  $\mu$   $685.881''$ . The following ephemeris has been computed for midnight:

		K.A.			S. Decl.	Log $r$	Log $\Delta$	
		h.	m.	s.				
June	4	...	21	28	0	4 34	0.1402	9.8077
	12	...	21	54	28	4 41	0.1330	9.7739
	20	...	22	21	44	5 7	0.1274	9.7440
	28	...	22	48	40	5 58	0.1236	9.7166
July	6	...	23	15	20	7 15	0.1216	9.6950

The comet is probably faint, but as it is approaching both sun and earth its brightness should increase perceptibly. It rises half an hour before midnight, and is fairly well placed for observation just before dawn.

DOUBLE STARS.—Since its erection in 1894, the 28-in. equatorial at Greenwich has been mainly used for the observation of double stars; the list included many of special difficulty owing to faintness or close proximity. Mr. J. Jackson has discussed the observations made at Greenwich and elsewhere in Monthly Notices for March, and publishes twenty revised orbits. One of the stars is Struve 2525, for which very discordant values of the period have been found. The new value, 354.9 years, is larger than those previously found, which range from 138 to 307 years. The semi-axis major is  $1.1''$  and the eccentricity 0.93, so that at the time of periastron, 1887.3, the star could not be separated.

The star Struve 2055 had given much trouble to computers; two observations by Sir William Herschel in 1783 and 1802 were mutually inconsistent. Mr. Jackson has unearthed a note that the micrometer reading was not written down at the time, and that the reading entered may be wrong. The quadrant noted is shown to have been correct, and Herschel's other observation in 1802 is well satisfied. The period assigned is 110 years and the eccentricity 0.86.

With respect to notation, he directs attention to diversity in the method of reckoning the angle  $\omega$ , and recommends the general adoption of the system used by Campbell, Aitken, and Hussey, in which it is measured in the direction of motion in the orbit plane.

DIFFRACTION IMAGE OF A DISC.—Mr. H. Nagaoka contributes a useful article on this subject to the *Astrophysical Journal* for March. Diagrams of the "isophotes" are given, and it is shown that the results explain the black drop observed in transits of Venus, and the projection of bright stars upon the moon's disc that has often been observed in occultations at the illuminated limb. A striking case of this phenomenon has lately been noted in the reappearance of the star Leipzig I 4091 from behind Saturn on March 22 last. Messrs. Reid, Dutton, and McIntyre, observing in South Africa, saw the star reappear within the limb of the planet, its conspicuous orange colour facilitating its detection. They give the explanation that the outer portion of Saturn is composed of transparent clouds, but it would seem that the expansion of the disc by diffraction is sufficient to account for it. (*B.A.A. Journal* April.)

It is of interest to note that in South Africa the star at disappearance passed behind the ring, while in Europe, owing to parallax, it did not. It was clearly visible through the ring, showing that the separate particles composing the ring are not very densely massed.

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## Monument to Charles Gerhardt.

NOW that Alsace is once more united to France, it is peculiarly fitting that Strasbourg, his native place and where he lies buried, should be the site of the long-delayed monument it is proposed to erect to the memory of Charles Gerhardt. British chemists who are at all familiar with the history of their science scarcely need to be reminded of the part played by Gerhardt in its development, or of the influence which his writings exercised in the search for methods of elucidating the structure and constitution of chemical compounds.

His "Traité de Chimie organique" may be said to mark an epoch; it was a significant feature of a movement which characterises the middle of the nineteenth century, and which the book itself greatly accelerated. Although much of its teaching, as the systematised expression of the facts of organic chemistry, is obsolete, the work is, and will remain, a classic, for it forms the basis upon which the superstructure of modern chemistry is erected. Gerhardt, however, was not only a speculative philosopher of the highest type; he was also an experimentalist of uncommon power and insight who framed his theoretical conceptions in the light of his own ascertained facts, and tested them by further investigations designed either to substantiate or to disprove them. His name is associated with the discovery of many new substances, some of which, like the acid anhydrides, are of the greatest theoretical and practical importance. It may be claimed for him that, together with Dalton and Berzelius, he was one of the principal founders of the atomic theory and the originator of the notation which immediately flows from it.

An influential committee has now been formed to discharge the debt—long overdue—which the chemical world owes to Gerhardt's memory. It comprises the names of some of the most eminent of French men of science and of those of Allied countries, under the presidency of M. Armand Gautier, member of the Institute, with an executive consisting of M. Haller, member of the Institute, as chairman; M. Chenal, treasurer of the French Chemical Society, as treasurer; and M. Tiffeneau, assistant professor of the Faculty of Medicine, as secretary. The object is well worthy of the consideration of British chemists, and may be specially commended to the notice of the Chemical Society and the Society of Chemical Industry if these bodies have not already responded to the appeal.<sup>1</sup>

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## Biological Papers from Bengal.

THE publications of the Asiatic Society of Bengal during the years 1916 to 1919, which we have lately received for review, contain a large number of contributions to biology, showing an activity in this department that has not been surpassed before. If we consider also the publications issued by the Indian Museum, the Calcutta Botanic Gardens, and the flourishing Bombay Natural History Society, we have reason to rejoice over the prosperous state of this branch of knowledge in our Indian Empire. Allusion should be made also to the enterprise of Dr. N. Annandale, who, alone or with other members of the Zoological Survey of India, of which he is the director, has in the last seven years investigated the

A circular signed by Sir James J. Dobbie, president of the Chemical Society, has just been issued inviting fellows of the society to contribute to the memorial fund. Such contributions should be sent to the Treasurer, Chemical Society, Burlington House, London, W.1.—ED. NATURE.