

OUR ASTRONOMICAL COLUMN.

COMET 1907a (GIACOBINI).—The results of numerous observations of this comet are recorded in No. 4162 of the *Astronomische Nachrichten*, wherein there also appears a set of elements communicated by Prof. E. C. Pickering. On March 11, at Vienna, Dr. Rheden found that the comet was of the eleventh magnitude, and had a diameter of 30" with a central condensation.

No. 4163 (March 20) of the same journal contains a set of elements and an ephemeris computed by the discoverer of the comet, and, according to the latter, the position on April 4, at 12h. (M.T. Paris), will be

$$a = 6h. 19.5m., \delta = +1^{\circ} 8'.5,$$

a point situated in Monoceros, and lying nearly half-way between ϵ Orionis and Procyon.

EPHEMERIS FOR THE MINOR PLANET (588) [1906 T.G.].—An ephemeris for the minor planet (588), extending from March 23 to June 19, is published in No. 4163 of the *Astronomische Nachrichten* by Dr. Bidschof. At present the planet is apparently in the constellation Leo, near to η Leonis, and is slowly travelling in a north-westerly direction; its magnitude is about 14.0.

SEARCH-EPHEMERIS FOR COMET 1900 III. (GIACOBINI).—A continuation of the ephemeris for the 1907 re-appearance of comet 1900 III. is given by Herr Scharbe in No. 4163 of the *Astronomische Nachrichten*. The ephemeris based on the assumption that perihelion passage will take place on June 8 extends from April 6 to May 16, and others, allowing for slightly different rates of motion of the comet, are also given.

THE SOLAR ECLIPSE OF JANUARY 13.—The most recent eclipse of the sun was observed as a partial eclipse at the Zi-ka-wei Observatory, and the results of the terrestrial magnetism, temperature, actinometric, and other observations appear in No. 1156 (March 23) of *Cosmos*. The magnetographs showed nothing abnormal, but, as shown by the curves which are given in the paper, there was a decided decrease from the normal, both in temperature and actinism. The former began to fall about fifteen minutes after first contact, and began to recover its normal value at about twenty-seven minutes after the maximum phase. An Arago actinometer was employed, and the effect of the moon's interposition was observed much sooner than in the case of the ordinary thermometer. The times of the first and last contacts and of the disappearances of several groups of spots were also recorded.

MAN'S PLACE IN THE UNIVERSE.—In an article appearing in the April number of the *Fortnightly Review*, Prof. Turner returns to the discussion of Dr. Wallace's views regarding the unique position of the earth in the universe. It will be remembered that Dr. Wallace advanced reasons for the belief that the earth was at the centre of the universe, and, occupying this unique position, was possibly the only inhabited sphere. But, as Prof. Turner now points out, the researches of Prof. Kapteyn and, more recently and definitely, those of Mr. Eddington (see NATURE, No. 1938, December 20, 1906, p. 182) have shown that we have to consider the question of two universes, and this renders Dr. Wallace's position untenable unless the assumption is made that the solar system is the centre about which both universes oscillate.

THE ASTRONOMICAL SOCIETY OF ANTWERP.—We have received the second annual report of the Société d'Astronomie d'Anvers, dealing with the work performed by the society during last year. This society was founded for the purpose of popularising the study of astronomy amongst the inhabitants of the town, and appears to be fulfilling its purpose in an exceedingly business-like manner. An observatory has been opened and is regularly used by the members, and, with the assistance of the city authorities, a course of free lectures on elementary astronomy is being given. The summaries of the first eleven lectures are published in the report, and these indicate that they should prove most instructive and worthy of emulation.

WIRELESS TELEGRAPHY IN LONGITUDE DETERMINATIONS.—A series of experimental determinations of longitude between Potsdam and the Brocken, made by Prof. Albrecht

during 1906, has shown that wireless telegraphy may be usefully employed for this purpose between stations not connected by the ordinary telegraph. In this case the older method has been previously employed, so that the relative precision of the two methods may be compared. In general, the differences were found to be of the order of one-thousandth of a second, and were not modified by any variation of the amount of energy used. The duration of the transmission was negligible, but it was found that atmospheric influences were more effective than in the case of ordinary telegraphy (*La Nature*, No. 1765, March 23).

ANCIENT CHINESE ASTRONOMY.—In an interesting paper appearing in the *Revue générale des Sciences*, No. 4 (February 28), M. de Saussure discusses the astronomical records contained in an ancient Chinese canonical work dating back to before 2300 B.C., and from the discussion arrives at some striking conclusions concerning the antiquity of systematic astronomical observation in China. The chief conclusion is that prior to 2000 B.C. the Chinese possessed instruments and the complete theory of their equatorial astronomy, in which they presumably observed certain selected stars situated near to the equator, and from these observations deduced the apparent position of the sun, and hence the progress of the seasons. That the inhabitants of Britain and of Egypt possessed the astronomical knowledge and the means to attain the same end—although by somewhat different methods—at an equally early date has been already demonstrated by Sir Norman Lockyer.

PUBLIC HEALTH.

THE thirty-fourth annual report of the Local Government Board, 1904-5 (Supplement containing the Report of the Medical Officer, price 4s., London, 1906) commences with a useful summary of its contents by Mr. Power. Appendix A contains the provisions of the International Sanitary Convention of Paris, 1903, and of the West Indian Intercolonial Sanitary Convention, 1904, many reports by the Board's inspectors, statistical tables, and summaries by Dr. Bruce Low of the diffusion of plague and of cholera throughout the world in 1904. *Inter alia*, we are informed that vaccination is being increasingly adopted, the abstentions for 1903 being 14.7 per cent. of births as against 15.2 per cent. for 1902, and still higher for preceding years.

Appendix B contains the auxiliary scientific investigations carried out for the Board; Dr. Klein has investigated the transmission of plague in the rat, particularly by feeding. Feeding animals with cultures of the plague bacillus mixed with food having failed to infect, Dr. Klein conceived that if the organism were first protected from the digestive juices by drying it with the food, infection might occur; this was found to be the case, and in animals so infected the dejecta probably teem with bacilli. It was also found that earth or sand to which plague bacilli had been added in the form of gelatin cultures retained its infectivity for six to eight weeks.

Dr. Houston contributes a report on the bacteriological examination of deep well waters and of upland waters. The first section shows that *B. coli* is absent from 1000 c.c. of deep well water drawing its supply from distant and pure sources. The second section deals with the results of the examination of the waters of Loch Laggan and Loch Erich (Inverness-shire). Loch Laggan is subject to a slight degree of pollution from human sources, Loch Erich is not, and bacteriologically *B. coli* was contained in 10 c.c. in 33 per cent., and in 100 c.c. in 49 per cent., of Loch Laggan samples, while of Loch Erich samples only 1 per cent. contained *B. coli* in 10 c.c. and 19 per cent. in 100 c.c. Dr. Houston therefore concludes that fish (of which the lochs contain abundance) and birds probably contribute little to the content of *coli*-like microbes, and that too stringent standards must not be adopted without topographical data.

Dr. Sidney Martin has investigated the chemical products of the *B. enteritidis sporogenes*, but finds them to be without physiological action; also the specific agglutinins of various organisms.