

graphs, by Mr. G. J. Williams, of the face of the quarry and of some of the footprints are reproduced in the report of H.M. Inspector of Mines for the Liverpool district for 1906 (Cd. 3449, vii).

THE *Journal of Hygiene* for July (vii., No. 4) contains a number of interesting articles. Among others, Castellani shows that human yaws is transmissible to monkeys, and that in the lesions, spleen, and glands the same spirochaete (*S. pertenuis*) is present as in man.

An interesting account of the evolution of the steam turbine and a sketch of the career of its inventor—the Hon. C. A. Parsons, F.R.S.—by Mr. A. A. Campbell Swinton, appears in the current issue of the *World's Work*. Other articles of scientific interest in the number are "Lobster Farming," by Mr. F. A. Talbot, dealing mainly with the work carried on at Mill Cove, Wickford, Rhode Island, by Dr. A. D. Mead, and "Scientific Taxidermy," by Mr. H. J. Shepstone. The two last-named contributions are strikingly illustrated.

WE recently published a review of part i., vol. i., of "Research in China," dealing with descriptive topography and geology (*NATURE*, August 8), and have now to read the receipt of part ii. of the same volume of the work. The bulk of the section before us treats of petrography and zoology, and is the work of Mr. Eliot Blackwelder, but there is also a syllabary of Chinese sounds by Dr. Friedrich Hirth, professor of Chinese at Columbia University. The work is issued by the Carnegie Institution of Washington.

A SECOND edition of "Impianti Elettrici a Correnti alternate semplici, bifasi e trifasi" has recently been received from Mr. U. Hoepli, Milan. The book forms one of the very practical series of Manuali Hoepli, and will be of service to students and electrical engineers able to read Italian.

MESSRS. A. AND C. BLACK announce a book entitled "The Norwegian Fjords," which is to be written and illustrated by Mr. A. H. Cooper. The work will describe the home life, domestic industries, religion, superstition, and folk-lore of the peasants of Norway.

THE Patent Office has just published a subject list of works on military and naval arts, including marine engineering, in the library of the Patent Office.

OUR ASTRONOMICAL COLUMN.

DANIEL'S COMET, 1907*d*.—This comet is now at its maximum brightness, and with a clear sky and good horizon may be seen quite easily by the naked eye for some time before sunrise. Its naked-eye magnitude on August 12 was estimated to be equal to that of *Meminbrum*, about 3.5.

The comet rises about 25° north of east, in London, at about 2 a.m., and on August 22 will be some 12° 11' directly south of Pollux.

Two excellent photographs of this object were secured by M. Quénisset, at Juvisy, at 2 a.m. on July 19 and 20 respectively, and are reproduced in the August number of the *Bulletin de la Société astronomique de France*. On the former date the photograph showed five tail streamers, but on the latter seven were to be seen on the plate. The longest tail extended some 4° from the nucleus, representing at least some 12,000,000 kilometres (7,500,000 miles); on July 20 the diameter of the nucleus was about 4', or 173,000 kilometres (about 108,000 miles).

SEARCH-EPHEMERIDES FOR COMETS 1894 IV. AND 1900 III.—No. 4195 of the *Astronomische Nachrichten* (p. 319, August 1907) contains two sets of search-ephemerides, one by P. J. Seares for the De Vico-E. Swift comet (1894 IV.) discovered in 1894, but not seen on its return in 1901, the other by Herr Scharbe for Giacobini's comet, 1900 III.

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The former was referred to in these columns on August 1, and the comet's brightness on August 25, according to the ephemerides, will be either 0.61 or 0.86, its brightness when its magnitude was 13.1 (November 21, 1894) being taken as unity.

Ten alternative ephemerides are given for comet 1900 III.

MARS.—In a telegram published in No. 4195 of the *Astronomische Nachrichten* (p. 323, August 7), Prof. Lowell announces that the Martian double canal Gihon has been photographed as double both by Mr. Lampland and himself.

In Bulletin No. 30 of the Lowell Observatory the same observer discusses the results of the observations of the North Polar Cap of Mars during the period March–June, 1907. It appears that the cap commenced quite suddenly and in an extensive manner just as it did in 1903 and 1905, and on practically the same date, the Martian August 22–23. Further, the first frost melted again on the succeeding days and was followed by another fall a little later, again as it did in 1903 and 1905.

This striking fact led Prof. Lowell to investigate mathematically the problem of the daily insolation upon a planet, and he shows that the Martian phenomenon is in accordance with his deductions.

Among other points he demonstrates the existence of an atmosphere sufficient to retard the general deposition of frost by some nineteen days. He also states that the arctic and antarctic regions of Mars are actually warmer in the Martian summer than are ours, although the mean temperature of the planet, 48° F., is some twelve degrees less than the mean temperature of the earth.

THE TOTAL ECLIPSE OF JANUARY, 1908.—From No. 114 (p. 167, vol. xix., June 10) of the Publications of the Astronomical Society of the Pacific we learn that arrangements have been made for an expedition from the Lick Observatory to observe the total solar eclipse of January 3, 1908.

Only two islands are crossed by the shadow-path, and of these the Lick expedition has selected Flint Island (long. 151° 48' W., lat. 11° 26' S.), which lies in the central Pacific Ocean some 390 miles north-west of Tahiti.

Under the existing conditions the eclipse will occur at 11h. 18m. (local mean time), with the sun 15° from the zenith. The duration of totality, according to the American ephemeris, will be 4m. 6s.

The expedition, the sending of which has been made possible by the generosity of Mr. William H. Crocker, will leave San Francisco on November 22, journeying thence to Tahiti, and will be conveyed from the latter island by a U.S. gunboat.

At the instigation of Prof. Campbell, Prof. Abbot, of the Smithsonian Institution, will accompany the Lick expedition in order to secure bolometric observations of the corona. The two expeditions will be independent scientifically, but will be united in the travelling and subsistence arrangements.

In the August number of the *Observatory* (p. 333, No. 386) it is tentatively suggested that it may be possible for some European astronomer, who could not otherwise see the eclipse, to obtain some assistance from the Lick expedition.

THE LEEDS ASTRONOMICAL SOCIETY.—The fourteenth annual Journal and Transactions of the Leeds Astronomical Society contains some interesting papers communicated by the members during 1906.

An observatory, in connection with the University and the city council, was opened on May 4, 1906, on Woodhouse Moor, and contains an 18½-inch Newtonian reflector and a transit instrument. These instruments are to be used by members of the University staff, certain university students, teachers and selected students from the Education Committee's schools and by members of the astronomical societies.

Among the papers published in the Journal, one may mention a discussion of the existence of an intra-Mercurial planet, an illustrated description of the immense Jai Singh observatories located at Benares, Delhi, and Jaipur, and a lengthy discussion of Tennyson's astronomy.