

from Mr. Wilfred Mark Webb, honorary secretary of the Selborne Society, at 42 Bloomsbury Square, W.C., post free for three halfpenny stamps.

MESSRS. SWAN SONNENSCHN AND Co. will publish at an early date an English translation of "Spiritism and Insanity," by Dr. Marcel Viollet. This book forms part of the Library of Experimental Psychology and Metapsychism published under the direction of Dr. Raymond Marcel, of Paris, and has been translated by Mr. Dudley Wright, editor of the *Annals of Psychological Science*.

The report and transactions of the East Kent Scientific and Natural History Society for the year ending last September have reached us. The society is affiliated with the British Association and the South-eastern Union of Scientific Societies. The pamphlet, which has been edited by Mr. A. Lauder, the honorary secretary of the society, contains an account of the annual meeting in October, 1908, abstracts of the lectures delivered during the session, notes on the work done by the various sections of the society, and useful meteorological statistics for 1909.

MR. W. ENGELMANN, of Leipzig, has lately issued the third (enlarged) edition of Ostwald and Luther's well-known work, "Hand und Hilfsbuch zur Ausführung physiko-chemischer Messungen." The first edition was reviewed in NATURE of January 4, 1894 (vol. xlix., p. 219), and the second in the issue for December 4, 1902 (vol. lxxvii., p. 101). The volume provides teachers and students with details of apparatus and practical hints on manipulation not found in any ordinary text-book, and the new edition claims a place in every chemical and physical laboratory. A second edition of Prof. M. Verworn's lectures on the mechanism of psychical life ("Die Mechanik des Geisteslebens") has been published by Mr. B. G. Teubner, Leipzig. This little work appeared in 1907, and the original edition was reviewed in NATURE of April 16, 1908 (vol. lxxvii., p. 557).

Erratum.—In NATURE of June 9 (vol. lxxxiii., p. 445), column A, line 15 from bottom, for "Thaumatocrinus" (a recent genus) read "Traumatocrinus" (a genus characteristic of Upper Trias).

OUR ASTRONOMICAL COLUMN.

JULY AND AUGUST METEORS.—With the advent of July every meteoric observer is induced to make preparation for the active campaign which the season offers. After the middle of July meteors usually become extremely abundant, and any patient watcher of the skies may record a plentiful harvest of meteor-tracks. In May and June there are comparatively few shooting stars, and perhaps the average horary number is not more than four or six, but in the two succeeding months the rate of appearance often equals twenty or twenty-five per hour.

In July there is a very active display from Aquarius, which apparently reaches its maximum on July 27-31, though the meteors continue to fall from the same centre at about 339-11 during the first half of August—and in July there are many early Perseids displayed, though the latter are a different class of meteor to the Aquarids. Those which are directed from Perseus are of the swift, streaking order, while those from Aquarius are of the slow, trained variety, and they have long flights, the radiant being in low altitude.

This year both the Aquarids and Perseids may be observed to advantage, as the moon will offer little interference. On August 12, when we are led to expect the greatest abundance of meteors, our satellite will set at 10.9 p.m. and leave us with a dark sky, on which the meteors may be seen at their best; but, of course, in our English climate atmospheric conditions are always very doubtful. What we require is a series of beautifully transparent skies such as

we experienced during the first half of August, 1909. Observers should seize such opportunities as are available and determine the place of the radiant and horary rate of meteoric apparitions on every clear night. The individual paths of those meteors equal to or brighter than first magnitude should be carefully recorded. The last few years have furnished average displays of Perseids; there is some reason to expect a richer shower this year.

THE LACINGS BETWEEN JUPITER'S BELTS.—Circular No. 124 from the Kiel Centralstelle contains a telegram from Prof. Lowell, dated June 14, announcing that the "criss-cross filaments interlace all Jupiter's belts." This refers to the lacings first observed between the equatorial belts by Mr. Scriven Bolton, and apparently means that similar lacings have been observed between all the belts.

OBSERVATIONS OF ORIONIDS IN 1909.—To No. 4418 of the *Astronomische Nachrichten* Prof. Dubiago communicates the results of the Orionid observations made at the Engelhardt and Kasan Observatories during October 17-20, inclusive, 1909. The times and apparent paths of ninety-six meteors were observed at the former station, and of forty-eight meteors at the latter. Eight meteors were observed at both stations, and for these real paths have been computed; the heights vary from 35 to 890 km. The following is the position of the radiant as determined from these observations: $-\alpha = 88^{\circ} \pm 2.9^{\circ}$, $\delta = +21^{\circ} \pm 1.7^{\circ}$.

THE CAPE OBSERVATORY.—Mr. Hough's report of the work done at the Cape Observatory during 1909 contains several items of special interest. Among other things, we learn that Dr. Halm's new spectrometer, giving direct readings of wave-lengths, was extensively employed for the measurement of stellar spectra, and the results found not to be inferior in accuracy to those secured by the older methods. It is also of interest to learn that arrangements have been made to take daily photographs of the sun to supplement those taken at Greenwich and other observatories in the Empire. A large number of stellar spectra were secured and measured in the research on the solar parallax and for the examination of the systematic motions of stars in the line of sight. For Prof. Kapteyn's "Selected Areas" programme a number of proper-motion and parallax plates were secured; satisfactory progress in the *Carte du Ciel* programme is also reported.

THE TRANSIT AND TAIL OF HALLEY'S COMET.

THE question as to whether the earth passed through the tail of Halley's comet is discussed, from the point of view of the Helwan observations, by Mr. Knox Shaw in No. 4418 of the *Astronomische Nachrichten* (p. 31). On May 18, at 13h. G.M.T., the tail was seen to stretch as far as α Equulei, where it was 2° broad, although 8° broad where it involved γ Pegasi. At 13h. on May 19 there was no sign of the tail in the west, but it was traced to θ Aquilæ, where it merged with the Milky Way. The form was still tapering, and was 15° broad at α Pegasi. Similar observations followed on May 20, when still no tail was seen in the evening; but at 14h. it was traced to the Milky Way, and was about 10° broad in Pegasus. At 6h., G.M.T., on May 21 the tail was visible for a distance of 20° , but none could be seen at dawn. The narrowness of the tail (8°) on May 18 and the increased breadth next morning suggest that it was bent back in the orbit, and probably did not begin to sweep past the earth before 12h. on May 20. At this time the earth was some four million miles south of the comet's orbit plane, and consequently the tail probably passed well to the north of the earth, for the Helwan observations, during May, suggest that it was not nearly wide enough to envelop the earth at that distance. They also show that its length was well over twenty million miles, and would therefore have enveloped the earth had the planes coincided. No sign of the comet's transit of the sun's disc was observed, although observations were made with the 4-inch Cooke equatorial. Dr. Meyermann also reports that, at Tsingtau, no trace of the comet was seen during the transit, nor were any extraordinary magnetic or meteorological effects recorded by the respective instruments.

Observations at the Stockholm Observatory were interfered with by heavy skies, but Dr. Bohlin reports that some photographs were obtained on orthochromatic plates used in conjunction with a yellow screen.

Further negative results, accruing from careful observations made on May 18 and the following days, are recorded by Father S. Chevalier in a special circular from the L6-S6 Observatory. The sun was observed directly and by projection by several observers, but no trace of the comet was seen on the disc about the computed time of transit. Photographs were also obtained, and clearly showed dark pores of 2nd diameter on the disc, but no trace of the comet. It therefore appears unlikely that any part of the comet having a diameter of 0.5", or, actually, 60 km., was dense enough to be registered on the plate. The magnetic curves, of which reproductions accompany the circular, obtained at the Lu-Kia-Pang Observatory on May 17, 18, and 19, show no perturbations which could with certainty be ascribed to cometary influence.

The *Comptes rendus* for June 13 (No. 24) contains several interesting notes concerning observations of the comet at various observatories.

M. Marchand reports that at the Pic-du-Midi station the solar halo seen from May 19 to 25 was still visible on May 31 and June 2 with the same diameter, 3° or 4°, but much paler, and a notable sunset effect was seen on May 31. Such an effect has not been recorded for several years, and is ascribed to the presence of very tenuous matter in the atmosphere at great altitudes.

MM. Cirera and Pericas describe the varying forms of the comet as observed at the Observatoire de l'Ébre (Spain) from May 1 to June 6. A table of the apparent and real lengths—the latter given in astronomical units—shows that up till May 12 the increase in the length of the tail was continuous, but a decrease was noted on May 26, followed by further progressive increase until June 2; observations on some of the intermediate dates were interfered with by clouds. It is suggested that the fluctuation was possibly produced by the earth capturing several million kilometres of the tail during the predicted passage on May 19. Photographs were secured on a number of dates during May and the first week in June, but bad weather prevented a continuous series from being obtained. The series shows, however, some striking changes in the form, extent, and brightness of the nucleus and head, especially about May 27; on May 30 the coma was much less bright and extensive.

M. Eginitis reports on the observations of the tail, made at the Athens Observatory on May 18, 19, and 20. On the Thursday morning, about an hour before the computed time of passage, the tail was seen to be nearly straight, but having a slight curvature, which may have been due to the proximity of the earth to the comet's orbit plane. At 3 o'clock on the Friday morning the tail was nearly 130° long, but no trace of it could be found on the Saturday morning. On the Friday evening, however, it was seen, like a crescent moon, and on Saturday evening was some 30° long. Observations of the sun's disc during the time of transit failed to reveal any sign of the comet.

MM. J. Baillaud and Boinot discuss, in detail, the transformations of the nucleus depicted on the photographs taken at the Paris Observatory on May 30 and 31 and June 2. A sudden transformation took place in the nucleus on May 31, the previously extensive elliptical form giving way to a circular condensation with bright extensions. Secondary condensations appeared, some of which were only temporary; but one of them persisted undiminished until June 2, and the authors liken the phenomenon to the doubling which occurred in the case of Biela's comet.

In No. 6, vol. lxx., of the *Monthly Notices* (R.A.S.) Dr. Rambaut publishes positions of the comet determined from photographs secured at the Radcliffe Observatory, with the 24-inch telescope, between November 7, 1909, and February 11. Such places depending upon stars generally taken from the *Astrographic Catalogue* will be invaluable in the subsequent discussions of the orbit; the comet was first picked up at the Radcliffe Observatory on November 5, 1909.

Mr. H. H. Gruning, of Ealing, sends us an interesting account of his observations of the comet. Between April 18 and June 18, using five-times field glasses (2-inch aperture), he saw the comet fourteen times, and on ten of these occasions it was visible to the naked eye. No tail was seen

except on May 31 and June 1, when, with the glasses, he was able to follow it to a distance of 1°. These carefully made observations well illustrate, when compared with the glowing reports from lower latitudes, the disadvantages under which we, in this country, have laboured during the present return of the famous comet.

Another correspondent sends us a cutting from the *Lancashire Daily Post* for June 1, in which Mr. L. Whitaker reports a remarkable phenomenon observed at Salterforth at about 3.30 a.m. on May 26. According to this report, a tail about 40° in length was seen rising from the eastern horizon. It would be of interest to have further records of this curious phenomenon.

THE ROYAL SOCIETY OF NEW SOUTH WALES.

THE Royal Society of New South Wales is the oldest scientific society in Australasia and in the southern hemisphere, unless there are older ones in South America or South Africa, and it will be able to celebrate its centenary in another eleven years.

It was started in 1821 in a similar way to the Royal Society of London, under the name of the Philosophical Society of Australasia, by a small band of friends, ten in number, under the presidency of the Governor, Sir Thomas Brisbane, K.C.B., F.R.S., who met at each other's houses, where papers were read and discussed; there was a penalty of 10l. for any member failing to present a paper in his turn. They also lent each other books, as there was no public library in those days and hardly a bookseller in the whole of Australia.

The first members were Mr. Alexander Berry, whose brother, Mr. David Berry, died in 1889 at the age of ninety-seven, and left 100,000l. to his Alma Mater, St. Andrews University, N.B., and the same amount to found a hospital in New South Wales—the writer of this, a member of the society, knew Mr. A. Berry, and thus the chain of membership has been kept up since 1821; Dr. Henry Grattan Douglas, who in after years was one of the prime movers in founding the first university of Australia, viz. the University of Sydney; Judge Barron Field, of the Supreme Court of Australia, author of a work upon Australia, published by John Murray in London in 1825; Major Goulburn, Colonial Secretary; Mr. Patrick Hill, Colonial Surgeon; Captain Philip Parker King, R.N., afterwards F.R.S. and Rear-Admiral, a son of Philip Gidley King, third Governor of New South Wales, who surveyed the north coast of Australia, and later on was engaged in the *Adventure* and *Beagle* surveying expedition along the coast of South America—it is interesting to note that the Hon. Philip Gidley King, M.L.C., a son of Admiral Philip Parker King, born in 1817, served as an officer on board the *Beagle* with Charles Darwin, and was a member of the society until four or five years ago; Lieut. John Oxley, R.N., Surveyor-General, who was one of the distinguished early explorers in Australia; Dr. Charles Staggard Rumker, astronomer, who started the first observatory in Australia; and Mr. Edward Wolstonecraft. As previously stated, the Governor, Sir Thomas Brisbane, F.R.S., was the president. For many years the Governor of Australia, and later of New South Wales up to 1874, was always the president, and some of the earlier ones, like Sir T. Brisbane and Sir W. Denison, F.R.S. (afterwards, for a short time, Governor-General of India), were men of scientific attainments who not only took a special interest in the society, but attended its meetings regularly and contributed several papers.

Some of the first papers read before the society were collected by His Honour Judge Barron Field, and published by John Murray in a book entitled "Geographical Memoirs of New South Wales," and it is interesting to note that the subjects which engaged the attention of the members in those early days are typical of the majority of the papers presented to the society ninety years later; e.g. the following were amongst those read in 1822:—(1) on the aborigines of New Holland and Van Diemen's Land, by Barron Field; (2) on the geology of part of the coast of New South Wales, by Alexander Berry; (3) on the astronomy of the southern hemisphere, by Dr.