

MESSRS. MACMILLAN AND CO., LTD., have published the mathematical papers for admission into the Royal Military Academy and the Royal Military College for the years 1900-9 in a single volume, the price of which is 6s. The book has been edited by Messrs. E. J. Brooksmith and R. M. Milne, who have supplied answers to the questions.

A SECOND edition of "Acetylene: the Principles of its Generation and Use," by Messrs. F. H. Leeds and W. J. Atkinson Butterfield, has been published by Messrs. Charles Griffin and Co., Ltd. The original issue of the work was reviewed fully in NATURE of December 10, 1903 (vol. lxi., p. 122), and it will suffice to say that the book has been revised and enlarged, an appendix including descriptions of representative acetylene generators having been added.

THE second part of "A Catalogue of Books on Natural History" has been issued by Mr. Bernard Quaritch, of Grafton Street, London, W. The present part completes the general works, and this section includes scientific voyages and transactions of learned societies; and the works on zoology are also begun. We notice that the section of the catalogue concerned with entomology includes two important libraries brought together by authorities on the subject. It is expected that the catalogue will be completed in ten parts.

THE St. Catherine Press, Ltd., has published a handbook to the Scandinavian winter health resorts, written by Dr. T. N. Kelynack. The substance of the book originally appeared as a series of articles in the *Lancet*. The descriptions of places are written in a bright, interesting style, and indicate that Dr. Kelynack speaks from personal knowledge derived from direct inquiry and observation. Numerous illustrations add greatly to the attractiveness of the guide, which altogether should prove of value both to physicians and patients and to holiday seekers. The price of the book is 1s. net.

OUR ASTRONOMICAL COLUMN.

DISCOVERY OF A NEW COMET, 1910b.—A telegram from the Kiel Centralstelle announces the discovery of a new comet by M. Pidoux at the Geneva Observatory. The position of the comet on February 20, at 7h. 10m. (Geneva M.T.), was R.A.=oh. 46m. 22.1s., dec. =+7° 50' 41", and the daily motion was -2.4 m. in R.A. and -24' in declination.

This position is in the constellation Pisces, the comet at the time of discovery being slightly east of north from δ, and a little north of west from ε, Piscium. Reference to the ephemeris for Halley's comet will show that, when discovered, this new object was apparently less than 1½° away from Halley's.

COMET 1910a.—The story of the discovery of comet 1910a is now exactly recorded, by Mr. Innes, in No. 4387 of the *Astronomische Nachrichten* (p. 311, February 12). It appears that the first intimation received by Mr. Innes arrived by a telephone message on January 15 from the *Leader*, a Johannesburg newspaper. This message stated that "Halley's comet was seen by Foreman Bourke, Driver Tricker and Guard Marais at 4h. 45m. rising in front of the sun. It was visible for about twenty minutes."

The next morning, Sunday, Messrs. Innes and Worssell kept watch, but clouds prevented an observation. The morning of January 17 was also cloudy, but there was a break just above the place of sunrise, and the comet was seen, at 5h. 29m. (standard time), by both observers independently, but by Mr. Worssell a few seconds the earlier; the telegram to Kiel was then dispatched.

Mr. Innes asks that, if seen by no one else earlier, it may be placed on record that this comet was first seen by railway officials at Kopjes, Orange Free State.

In the same number of the *Astronomische Nachrichten*

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Dr. Kobold gives the daily ephemeris, based on the improved elements, extended to March 12; the following is an extract:—

Ephemeris for 12h. (Berlin M.T.).

1910	α (1910°)	δ (1910°)	log r	log Δ	Mag.
	h. m.				
Feb. 24	22 10 9	+11 55.6	0.05563	0.29959	5.4
28	22 14 6	+12 53.8	0.08681	0.31812	5.6
Mar. 4	22 18 1	+13 48.5	0.11505	0.33461	5.8
8	22 21 3	+14 40.5	0.14086	0.34936	6.0
12	22 24 3	+15 31.0	0.16463	0.36238	6.2

The magnitudes are based on the observation made by Prof. Hartwig on January 27 that the magnitude was then about 2.0, and by calculation the magnitude at perihelion becomes about -1.4. Observations made at Arcetri on February 7 gave corrections of +2s. and +0.4' to the ephemeris places.

From this ephemeris we see that the comet is now apparently travelling, very slowly and in a direction slightly east of north, through Pegasus, and when it rises on the morning of March 3 it will be about 100' north of 31 Pegasi, a fifth-magnitude star; but observations will be difficult owing to the apparent proximity of the sun.

The ephemeris also shows that the comet is retreating from the earth and sun at the rate of about two million miles per day, approximately in the direction of the earth-sun line; the present distances (February 24) are about 185 and 106 million miles respectively.

In No. 7 of the *Comptes rendus* (February 14, p. 369) M. E. Esclançon describes some remarkable transformations which he observed to take place in comet 1910a between January 22 and 30. On the former date the nucleus was about 15" in diameter and very bright, and from each side of it, normally to the general direction of the tail, there appeared two currents of matter, nearly rectilinear near the source, but curving rapidly at some distance from it to form the tail. On January 30, however, the aspect was entirely changed, the nucleus being only 3" or 4" in diameter, and very sharply defined. The two currents of bright matter had been replaced by a circular nebulosity eccentric in regard to the nucleus; on February 9 no tail was visible. M. J. Comas Sola also communicates a paper dealing with the form of the comet, to which we hope to refer later. In a brief note M. Borrelly reports that on February 7 the comet was very faint, appearing fainter than stars of the eighth magnitude; on February 10 the magnitude was estimated as 8.5, and the comet was nearly circular, with a diameter of 2.5'.

HALLEY'S COMET.—The following is a further extract from Mr. Crommelin's ephemeris as published in No. 4379 of the *Astronomische Nachrichten*:—

Ephemeris for Greenwich noon.

1910	R.A.	Decl.	log r	log Δ
	h. m.			
March 1	0 34.0	+7 55	—	0.2774
6	0 30.2	+7 57	0.0397	0.2779
11	0 26.4	+8 0	—	0.2761
16	0 22.6	+8 2	9.9744	0.2711
21	0 18.5	+8 4	—	0.2523
26	0 14.2	+8 5	9.9017	0.2492
31	0 9.7	+8 4	—	0.2311
April 5	0 4.9	+8 1	9.8297	0.2069

These positions will be found plotted on the chart we gave in our issue of January 13 (No. 2098, p. 320), and during the greater part of April the comet will probably be unobservable. At present (February 24) the distances of the comet from the sun and from the earth are 116 and 175 million miles respectively, and the latter is increasing; but during the first week in March the earth and comet will again approach each other, until on March 31 the distance separating them will be but about 158 million miles.

In No. 419 of the *Observatory* (p. 105) Mr. Crommelin directs attention to the following parallelism of the election results of 1835 and 1910—both comet years—which is sufficiently remarkable to quote here:—

Parliaments of	1832	1906	1835	1910
Liberals	514	513	385	396
Opposition	144	157	273	274

THE QUESTION OF "ABSORBING MATTER" IN SPACE.—In the January number of the *Astrophysical Journal* (vol. xxxi., No. 1, p. 8) Prof. Barnard discusses some of the "dark lanes," seen on a number of his beautiful photographs of nebulae, from the point of view of their representing masses of actual absorbing matter. A nebulous region involving ν Scorpii is shown to be nearer than the general background of stars, and is at least partially transparent, but the absorption of the light of the stars behind it must be considerable, for it seems to show a distinct veiling tendency in certain regions. In the case of ρ Ophiuchi nebula, also, there are dark lanes which tempt Prof. Barnard to believe in the existence of opaque matter in the sky, although, if there is, it must be there, as shown on the photographs, on a gigantic scale. If it does exist, it is probably in connection, in some way, with nebulae, for it is in nebulous regions that it is found. A magnificent photograph of the ρ Ophiuchi region is reproduced with the article, and Prof. Barnard believes that better photographs will show the nebulous region which he has photographed near π and δ Scorpii to be connected with the ν Scorpii and ρ Ophiuchi nebulosities.

PHOTOGRAPHIC OBSERVATIONS OF η AQUILÆ.—In No. 4385 of the *Astronomische Nachrichten* Herr A. Kohlschütter discusses a number of photographic observations of η Aquilæ made at Göttingen during 1906-7, and compares the results with those obtained from visual observations. This comparison shows that, essentially, the variability is the same photographically as visually, but the amplitude of the photographic variation is about 0.42 magnitude the greater.

EPHEMERIS FOR DANIEL'S COMET, 1909e.—A revised ephemeris for Daniel's comet (1909e) is given in No. 4387 of the *Astronomische Nachrichten*. Dr. Ebell, having been informed by Mr. Crommelin that the previous ephemeris, to which we directed attention last week, was incorrect, has calculated another, which he now publishes.

PRESENTATION TO SIR EDWARD THORPE, F.R.S.

AT the Government Laboratory on Friday, February 18, Sir Edward Thorpe was presented with a silver tea and coffee service and silver cigarette box subscribed for by former colleagues on the staff of the laboratory, and by members of other public departments intimately connected with the laboratory. Among the company present, besides Sir Edward and Lady Thorpe, were Sir George Murray, G.C.B., permanent secretary to the Treasury; Sir Thomas Elliott, K.C.B., secretary to the Board of Agriculture; Sir Nathaniel Highmore, Board of Customs and Excise; Mr. Middleton, Board of Agriculture; and Dr. J. J. Dobbie, principal of the Government Laboratory.

In making the presentation, Sir George Murray said he remembered being present at the opening of the Government Laboratory, and he had had ample opportunities of watching the progress of the department and the working out of what seemed in its inception to be a very novel and perhaps rather hazardous experiment. That experiment arose from a conviction that the demands of the Government on chemical science, as applied to the administrative business of government, could best be satisfied by a great central institution with an adequate equipment, and placed under the control of the most eminent man of science the Treasury could procure. The opposite idea was always dear to the hearts of departmental chiefs. They preferred a series of independent laboratories under their own control. From the moment of Sir Edward Thorpe's appointment, however, the laboratory gained the confidence of all the departments concerned, as well as of the public and the scientific world. He thought that the imposing variety of the work which was done in the laboratory could not fail to strike even the most uninstructed observer. The excellence of that work could be appreciated by only a very few.

Sir Thomas Elliott took this occasion of thanking Sir Edward Thorpe for the assistance, and more than the assistance, for the friendly advice and help that he had always shown himself ready to tender to the Board of

Agriculture and Fisheries. Sir George Murray had referred to the relations between various departments, likening them to water-tight compartments. He, however, would compare them with so many foreign Powers treating with one another through the ordinary channels of diplomacy. He was sure that in overcoming such obstacles Sir Edward Thorpe showed the qualities of a statesman as well as those of a public official.

Mr. H. W. Davis, deputy principal, Mr. H. J. Helm, I.S.O., former deputy principal, and Mr. J. Connah, of the Customs branch of the laboratory, all referred to the excellent relations which had existed between Sir Edward and his colleagues, and to the great interest which Sir Edward had always taken in everything affecting the welfare of the laboratory staff.

Sir Edward Thorpe, in reply, said there was a large number of those present who could have very little conception of the difference between the old state of affairs at Somerset House and the new state in the Government Laboratory. The stars were favourable when he planned the new building, and he was glad to acknowledge the great assistance he received from individual members of his own department. The laboratory was planned, as all laboratories should be, from the inside outwards. He at once recognised that the removal from Somerset House to the new building was the opportunity for making new departures quite impossible to achieve under the old conditions. With the improvements possible in the new building, economies had been effected which practically repaid the cost of the building several times over. Sir Edward said that, apart from the routine work, several very important matters had devolved upon the laboratory which had taxed its energies to the utmost. One of the earliest arose out of the imposition of the sugar duties. The laboratory was obliged to carry out experiments upon the thermal expansion and specific gravities of glucose solutions of varying qualities, and to weld the results into tabular form. The arsenic poison scare, too, resulted in the elaboration of an apparatus for the rapid and accurate determination of infinitesimal quantities of arsenic. This apparatus had since come into official use in several countries besides our own. Further, at the present time the laboratory was, in amicable conjunction with the Brewers' Institute, engaged in a series of experiments with a view to the reconstruction and amendment of the tables upon which the method for determining the original gravity of beer is based.

A vote of thanks to Sir George Murray was proposed by Dr. Dobbie, and carried with acclamation.

BRILLIANT METEOR OF FEBRUARY 17.

ON February 17, at 6.8 p.m., a brilliant fireball was observed from various parts of the country. The evening twilight was strong, but the object created a very luminous effect; one observer, situated fully 250 miles from the meteor, estimated its light as quite three times as bright as Venus, and the streak or trail was visible for seven minutes.

Observations have come from the Thames near Sheerness, Guildford, Cardiff, and other places, and the radiant point appears to have been near Capella, from which a fine shower of February meteors is directed. The meteor was situated over Lundy Island or that region, and its height was probably from 88 to 46 miles, and velocity about 15 miles per second. As seen from Guildford, the streak remained on view nine minutes, when a cloud obscured it. It drifted far to the S.W. during its visibility, and it will be possible to compute the motion and direction of the drift very exactly.

More observations are required to define the real path with greater certainty, and amongst the large number of persons who saw the meteor it is hoped that some good records were obtained. The writer would be much interested in hearing some further particulars about the object, and especially with regard to its path in the heavens and place of the drifting streak. The meteor was probably the most brilliant observed in the British Isles hitherto this year.

W. F. DENNING.