

Rhynchota. Dr. Giles, the Surgeon-Naturalist to the Indian Marine Survey, writes on the structure and habits of *Cyrtophium calamicola*, a new tubicolous amphipod from the Bay of Bengal, a description of a new species of the amphipod genus *Melita* from the same place, and notes on Prothallus of *Padina pavonia*. These three form part of the Natural History Notes of the Indian Marine Survey steamer *Investigator*. Commander Alfred Carpenter, of the same steamer, under the title "The Swatch of no Ground," explains the presence in the deltaic banks ("the-Swatch") off the mouths of the Ganges and the Brahmaputra of channels of great depth. Mr. Hill, the Meteorological Reporter to the North-Western Provinces and Oudh, contributes observations on the solar thermometer at Lucknow, while last of all comes a paper from Japan. Dr. O. F. von Möllendorff (not to be confounded with his brother of recent Corean fame) writes on Japanese land- and freshwater-mollusks, a series of notes based chiefly on a collection made by Dr. John Anderson during the year 1884, and sent to the writer for classification.

WE are glad to learn that Prof. Morse, Director of the Peabody Academy of Science, has in the press a work entitled "Japanese Homes and their Surroundings." Prof. Morse, it may be remembered, was Professor of Zoology in the University of Tokio, and his prehistoric discoveries in Japan formed one of the earliest of the publications of that institution. The publishers of the work, which will contain numerous illustrations by the author, are Messrs. Ticknor and Co. of Boston.

AT a meeting of the Seismological Society of Tokio held on November 18, 1885, in the University there, Prof. Shida described an instrument which he had designed to give an automatic record of earth-currents. The chief feature in it is an ingenious method of obtaining a record of the position of the coil or needle which indicated the current which might be passing through the instrument. This was accomplished by the needle, as it turned, making a series of almost frictionless electrical contacts between a series of metallic points and a film of liquid. The instrument has been practically worked, and is said to have yielded satisfactory records. A second paper by the same writer gave a history of all the facts with which we are acquainted respecting the phenomena of earth-currents. A considerable portion of the material embodied in the paper was derived from Prof. Shida's own observations on the lines and cables of this country. He made numerous references to instances where earth-currents of unusual magnitude had accompanied or preceded earthquakes. Many theories have been advanced to account for these phenomena, and it has been demonstrated by several investigations that they have a connection with the occurrence of sunspots. In the discussion which followed, Prof. Knott referred to the possibility of these disturbances being due to the inductive action of electrified bodies of air, while Prof. Milne added to the instances adduced by Prof. Shida of the simultaneous occurrence of earthquakes and earth-currents. Earthquakes occurring in America have, by the currents which had accompanied them, recorded themselves in Europe.

THE Japanese do not appear to have lost any of their faith in the efficacy of vaccination for the small-pox. They have just enacted a very stringent law on the subject, for, besides ordinary vaccination in the first year of infancy, it provides for at least two subsequent re-vaccinations at intervals of from five to seven years, so that by the time a child has reached its fifteenth year it will have been vaccinated three times. Besides, during epidemics of small-pox, local authorities have power, when they deem it necessary, to order the vaccination of all the inhabitants of their districts, irrespective of the vaccinations required by the law.

WE are informed that it is not the case that Dr. Sklarek has arranged to edit a new scientific journal to be published in Brunswick.

THE additions to the Zoological Society's Gardens during the past week include a Macaque Monkey (*Macacus cynomolgus* ♀) from India, presented by Mr. T. W. Hall; a Sooty Mangabey (*Cercocebus fuliginosus* ♀) from West Africa, presented by Mr. T. Riseby Griffith; a Common Badger (*Meles taxus*), British, presented by Mr. Charles E. Russell; a Siamese Blue Pie (*Urocissa magnirostris*) from Siam, a Chinese Jay Thrush (*Garrulus chinensis*) from China, a Brazilian Hangnest (*Icterus jamaicæ*) from Brazil, presented by Mr. Charles Clifton, F.Z.S.; an Alexandrine Parakeet (*Palaeornis alexandri*) from India, presented by Mr. C. Kerry Nicholls, F.Z.S.; a Ring-necked Parakeet (*Palaeornis torquatus*) from India, presented by Miss Shackthwaite; a Larger Hill-Mynah (*Gracula intermedia*) from India, presented by Miss G. Lampard; a Greater Spotted Woodpecker (*Dendrocopos major*), British, presented by Mr. A. S. Hutchinson; a Scops Owl (*Scops giu*), British, presented by Mr. J. H. Leech, F.Z.S.; a Caracal (*Felis caracal*), a Puff Adder (*Vipera arietans*), three Horned Vipers (*Vipera cornuta*), an African Cobra (*Naja haje*), a Hyghian Snake (*Elops hygie*), a Smooth-bellied Snake (*Homalosoma lutrix*), two Rhomb-marked Snakes (*Psammophylax rhombeatus*) from South Africa, presented by the Rev. G. H. R. Fisk, C.M.Z.S.; twelve Quails (*Coturnix communis*) from South Africa, presented by Capt. M. P. Webster; a Leopard (*Felis pardus*) from India, five Mauge's Dasyures (*Dasyurus maugei*), a White-backed Piping Crow (*Gymnorhina leuconota*) from Australia, deposited; a Virginian Opossum (*Didelphys virginiana*) from North America, purchased; a Collared Fruit Bat (*Cynonycteris collaris*), born in the Gardens.

OUR ASTRONOMICAL COLUMN

DISCOVERY OF A NEW NEBULA BY PHOTOGRAPHY.—MM. Paul and Prosper Henry have recently announced the discovery by means of photography of a new nebula in the Pleiades. It was first photographed on November 16 last, and, though it was again photographed on December 8 and 9, MM. Henry have as yet been unable to detect it by direct telescopic observation. The nebula is about 3' in extent, and "très-intense." It presents a well-marked spiral form, and seems just to escape Maia. Its position is as follows:—R.A. 3h. 38m. 57s., Decl. 24° 1' N.

GORE'S NOVA ORIONIS.—M. C. Wolf, who has examined the spectrum of this star, finds that the impression of the presence of bright lines which a first glance produces is not confirmed when the spectrum is more carefully examined under a high dispersion. The spectrum is simply that of the well-known third type, viz. a continuous spectrum crossed by a succession of bands, which terminate towards the violet in a very dark and sharp edge, and which gradually shade away towards the red. M. Wolf further believes that he was able, in the moments of best definition, to resolve the dark bands into lines. The Nova therefore does not appear to resemble the so-called "temporary" stars, but to be simply a variable of the same class as Mira Ceti. Prof. Millosevich gives its exact position for 1885 as follows:—R.A. 5h. 48m. 59.59s., Decl. 20° 9' 13".2 N.; or Im. 25.21s. *f* and 5' 59".14 *s* of χ Cygni. It is almost precisely due north of α Orionis, and distant from it 12° 46' 20".

THE ASTRONOMICAL PRIZES OF THE PARIS ACADEMY OF SCIENCES.—The Lalande Prize of the Académie des Sciences has been decreed to M. Thollon for his great map of the solar spectrum. This map, which has so far demanded four years of uninterrupted work, extends from *A* to *b*, and contains 3200 lines, 900 of which M. Thollon has been able to identify as of telluric origin. The Damoiseau Prize is reserved, no memoir having been offered for it. The subject proposed is the same as in former years: a revision of the theory of the satellites of Jupiter; a discussion of observations with special reference to the direct determination of the velocity of light; and lastly, the

construction of particular tables for each satellite. The Valz Prize has been awarded to Dr. Spörer for his researches on sun-spots,—his discovery of the striking relationship between the distribution of the spots in latitude and the epochs of their maxima and minima receiving especial notice.

FABRY'S COMET.—The following ephemeris from elements he has recently computed is given by Dr. S. Oppenheim in the Astr. Nach., No. 2702 :—

Ephemeris for Berlin Midnight

Table with columns: 1886, App. R.A. (h. m. s.), App. Decl. (h. m. s.), Log. Δ, Log. r, Brightness. Rows for Jan. 9, 11, 13, 15, 17.

BARNARD'S COMET.—Dr. J. von Hepperger has computed the following parabolic and elliptic elements for this comet :—

Table with columns: T, 1886, Parabola (May 6 2586), Ellipse (May 4 5165), ω, Ω, i, log q, log a, log e. Values for various parameters.

Error of the middle place (o - C).

Δλ = - 2.4 Δλ = + 4.8
Δβ = - 3.9 Δβ = + 1.9

The following ephemeris is by Dr. A. Krueger :—

Ephemeris for Berlin Midnight

Table with columns: 1886, App. R.A. (h. m. s.), App. Decl. (h. m. s.), Log Δ, Log r. Rows for Jan. 9, 11, 13, 15, 17.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1886 JANUARY 10-16

(FOR the reckoning of time the civil day, commencing at Greenwich mean midnight, counting the hours on to 24, is here employed.)

At Greenwich on January 10

Sun rises, 8h. 5m.; souths, 12h. 7m. 51.1s.; sets, 16h. 11m.; decl. on meridian, 21° 55' S.: Sidereal Time at Sunset, 23h. 31m.

Moon (at First Quarter on Jan. 13) rises, 10h. 17m.; souths, 15h. 56m.; sets, 21h. 45m.; decl. on meridian, 4° 41' S.

Table with columns: Planet, Rises (h. m.), Souths (h. m.), Sets (h. m.), Decl. on meridian. Rows for Mercury, Venus, Mars, Jupiter, Saturn.

* Indicates that the rising is that of the preceding evening and the setting that of the following morning.

Occultations of Stars by the Moon

Table with columns: an., Star, Mag., Disap., Reap., Corresponding angles from vertex to right for inverted image. Rows for 14, 16, 16, 16, 16, 16, 16, 16, 16, 16.

Phenomena of Jupiter's Satellites

Table with columns: Jan., h. m., II. ecl. disap., II. tr. ing., II. tr. egr., I. ecl. disap., I. tr. ing., I. tr. egr. Rows for Jan. 11, 13, 13, 13, 14, 14.

The Occultations of Stars and Phenomena of Jupiter's Satellites are such as are visible at Greenwich. Attention may be drawn to the Occultations occurring on the evening of January 16, and especially to that of Aldebaran.

Table with columns: Jan., h., Saturn in conjunction with μ Geminorum and less than 1' north of that star, Venus at her point of greatest evening brilliancy.

Variable-Stars

Table with columns: Star, R.A. (h. m.), Decl., h. m., Jan. 13, h. m. Rows for U Cephei, Algol, T Monocerotis, ζ Geminorum, U Monocerotis, δ Libræ, U Coronæ, U Ophiuchi, R Lyræ, η Aquilæ, δ Cephei.

M signifies maximum; m minimum.

Meteor Showers

The cloudy weather generally prevailing at this season of the year greatly interferes with meteor-observation, but a number of fairly active radiants have been observed, the following amongst others :—From the constellation of the Lynx, R.A. 104°, Decl. 53° N.; from Coma Beren, R.A. 181°, Decl. 35° N.; from near χ Cygni, R.A. 295°, Decl. 53° N. Large meteors should be looked for on January 15, 16, and 17.

STANDARDS OF WHITE LIGHT*

THE experimental work of the Committee during the past year has not been extensive, as they had no funds at their disposal for experimental research, and they have been chiefly occupied with reviewing what has been done in the past and laying plans for future operations.

Lord Rayleigh has constructed an instrument which he calls a monochromatic telescope, by means of which the illuminated screens of a photometer may be examined, allowing light only of one definite colour to pass. It was hoped by Lord Rayleigh that experiment might show that, with some suitably-chosen colour, this instrument, used with any ordinary photometer, would, in comparing lights of different intensities and temperatures, give to each a candle-power which would be sufficiently accurate to represent for commercial purposes the intensity of the light. The Secretary has made some experiments at the Society of Arts, where he was kindly permitted to use the secondary batteries and glow-lamps; but the results so far are not definite enough to justify their publication.

Mr. Vernon Harcourt has been engaged on an investigation on the barometrical correction to his pentane standard, and on another concerning the possibility of using lamp-shades as a protection from air-currents. His researches are communicated independently to the meeting.

Capt. Abney and Col. Festing have continued their observations on the intensity of radiations of different wave-lengths from incandescent carbon and platinum filaments at different

* Report of the Committee, consisting of Prof. G. Forbes, Capt. Abney, Dr. J. Hopkinson, Prof. W. G. Adams, Prof. G. C. Foster, Lord Rayleigh, Mr. Preece, Prof. Schuster, Prof. Dewar, Mr. A. Vernon Harcourt, and Prof. Ayrton, appointed for the purpose of reporting on Standards of White Light. Drawn up by Prof. G. Forbes (Secretary).