

OUR ASTRONOMICAL COLUMN.

ASTRONOMICAL OCCURRENCES FOR JANUARY:—

- Jan. 4. 15h. 20m. Neptune in conjunction with the Moon (Neptune  $5^{\circ} 39'$  S.).
- „ 16h. 0m. Mercury stationary.
- 9. 9h. 0m. Venus in conjunction with Jupiter (Venus  $1^{\circ} 38'$  N.).
- 13. 10h. 0m. Neptune at opposition to the Sun.
- 14. 17h. 57m. Jupiter in conjunction with the Moon (Jupiter  $4^{\circ} 6'$  N.).
- 15. 5h. 26m. Venus in conjunction with the Moon (Venus  $5^{\circ} 51'$  N.).
- „ 10h. 0m. Mercury at greatest elongation W. of the Sun.
- 16. 4h. 0m. Saturn stationary.
- „ 18h. 23m. Mercury in conjunction with the Moon (Mercury  $5^{\circ} 48'$  N.).
- 18. 23h. 51m. Uranus in conjunction with the Moon (Uranus  $4^{\circ} 33'$  N.).
- 20. 7h. 0m. Uranus in conjunction with the Sun.
- 27. 12h. 10m. Saturn in conjunction with the Moon (Saturn  $4^{\circ} 9'$  S.).
- 28. 13h. 58m. Mars in conjunction with the Moon (Mars  $0^{\circ} 37'$  S.).

MARS.—A telegram from Prof. Lowell, published in No. 4543 of the *Astronomische Nachrichten*, states that, on December 17, 1911, the old south snowcap on Mars had practically disappeared, and new spots were forming outside.

M. Jarry Desloges, telegraphing from the Sétif Observatory on December 16, 1911, states that on December 15 the south polar cap was veiled, and that Libya, which was grey at the beginning of the Martian afternoon, was white towards sunset; Deucalionis Regio, clear during the morning, became grey in the afternoon.

Four splendid photographs of Mars taken by Prof. Barnard with the Yerkes 40-inch refractor in September, 1909, are published on the frontispiece of the September-October (1911) Journal of the Royal Astronomical Society of Canada.

EPHEMERIDES FOR COMETS 1911a, 1911f, AND 1911g.—As the position of Wolf's comet (1911a) during the summer will be unfavourable for observation, it is important that observations should be made during the next few months, and for this reason M. Kamensky publishes an ephemeris, extending to April 7, in No. 4543 of the *Astronomische Nachrichten*; observations already made show that his fourth ( $K_4$ ) system of elements needs but small corrections. It is hoped that observations will be secured, as they may clear up the question of the possible enfeeblement of the comet. The present position (January 4) is 21h. 41m.,  $-1^{\circ} 55.5'$ , and the path lies nearly directly eastwards through Aquarius and Pisces; the magnitude is about 14.0.

Quénisset's comet (1911f) is still moving nearly directly southwards through Scorpio, and will soon enter Lupus: R.A. = 15h. 49.6m., dec. =  $-31^{\circ} 54.7'$ . In the ephemeris published by Dr. Ebell the magnitude is 8.3.

Beljowsky's comet (1911g) is also too far south for observation in these latitudes. Dr. Ebell's ephemeris shows it to be in Corolla, and its magnitude is estimated as 8.6.

A PECULIAR VARIABLE STAR.—The measures and light-curve of the variable star 232848 Z Andromedæ, published in Circular 168 of the Harvard College Observatory, show the light-changes to be unique among stars yet observed. For the last six years the magnitude has been nearly constant at 11.0, but in 1901 there was a great outburst, the magnitude becoming 9.2. Prior to that, since 1889 there had been considerable oscillations of magnitude between 11.5 and 9.7.

This star is  $+48^{\circ} 4093$ , mag. 9.5, and its variability was discovered by Mrs. Fleming in 1901, who, examining its spectrum of October 17, 1900, recorded it as "Bright lines. Nova or Var?" An examination of the spectrum plates by Miss Cannon shows that the spectrum is unlike that of variable stars, and resembles that of several new stars. On the best photographs it is seen to be like those of

Nova Persei, No. 2, on April 12, 1901; Nova Geminorum on March 29, 1903; and Nova Sagittarii, No. 1, on April 21, 1898; it also resembles that of RS Ophiuchi on July 15, 1898, at or near the time of the remarkable outburst of light in that object.

In addition to the bright lines H $\beta$ , H $\gamma$ , H $\delta$ , and H $\epsilon$ , there is one at about  $\lambda$  4688 which, Prof. Pickering suggests, probably corresponds with the bright band in the spectra of fifth-type stars.

THE PARALLAX OF THE DOUBLE STAR KRUEGER 60.—During the period August 29, 1907 to April 10, 1910, Dr. L $\ddot{u}$  employed the 10-inch refractor of the Urania Observatory, on fourteen nights, to measure the interesting double star Krueger 60. From these measures he derived a value for the parallax, which he now publishes in No. 4542 of the *Astronomische Nachrichten*. His result is  $+0.22'' \pm 0.038''$ , with a probable error from one equation of  $\pm 0.129''$ ; earlier measures by Barnard, Schlesinger, and Russell gave, in the mean, the value  $+0.25''$ .

THE HEIGHT OF PERSEID METEORS.—Employing the parallax method, Dr. Philipp Broch has calculated the heights of the beginnings and ends of 102 meteor paths observed during the period 1823-58, and now publishes the results in No. 4541 of the *Astronomische Nachrichten*. For all the meteors he finds the values 130.0 km. and 96.0 km. for the mean heights at the beginning and the end of the flights respectively, the mean length of the paths being 72.5 km. Of this number fifty-eight were certainly Perseids, and for these he finds the mean values 133.1 km. and 95.5 km., respectively, for the heights, the mean length of path being 72.0 km.

THE LILLE OBSERVATORY.—In No. 4543 of the *Astronomische Nachrichten* M. Jonckheere gives notice that his observatory, L'Observatoire d'Hem, taking the name of the prefecture under whose patronage it is, is to be known officially as the Lille Observatory.

PRIZE AWARDS OF THE PARIS ACADEMY OF SCIENCES.

AT the annual meeting of the Academy of Sciences, held on December 18, 1911, the prize awards for the year were announced as follows:—

*Geometry*.—The Franccœur prize to Emile Lemoine, for the whole of his work in mathematics; the Bordin prize to A. Demoulin, for his researches on triple orthogonal systems.

*Mechanics*.—The Montyon prize to M. Jouguet, for his contributions to thermodynamics and chemical mechanics, Captain Duchêne receiving a recompense (500 francs) for his mathematical study of the aeroplane; the Poncelet prize to M. Rateau, for his work as a whole; the Vaillant prize (in equal parts) between Charles Doyère and Henry Willotte, for memoirs on the application of the principles of the dynamics of fluids to the theory of helices; the Vaillant prize to M. Liénard, for his memoir on the movement of an ellipsoid in a viscous liquid.

*Navigation*.—The extraordinary Navy prize between M. Doyère (1500 francs), for his study of the bending of a thin sheet or thin ring submitted to any forces whatever, H. Roussilhe (1000 francs), for his hydrographic work on the coast of Madagascar, M. Leparmentier (1000 francs), for his book on the calculations relating to inclined hulls, G. Simonot (1000 francs), for his memoir on the resistance of a cylindrical tube of infinite length submerged in water, Pierre Lemaire (750 francs), for his memoir on the theory of the gyroscopic compass, and E. Perret (750 francs), for his work relating to nautical astronomy; the Plumey prize to Robert Lelong (1000 francs), for his work on marine motors.

*Astronomy*.—The Lalande prize to Lewis Boss, for his star catalogue; the Valz prize to C. Rambaud, for the whole of his astronomical researches; the G. de Pontécoulant prize (increased to 1700 francs) to L. Schulof, for his researches on the theory of comets and on lunar tables; the Damoiseau prize (in equal parts) between M. Millosevich, M. Witt, and M. Lagarde.

*Geography*.—The Tchihatchef prize between M. de Schokalsky (one half) and M. Deprat and M. Mausery (one

half); the Gay prize to Paul Lemoine, for his geological work in the French colonies.

*Physics.*—The Hébert prize to M. Hemsalech, for his work on spark spectra; the Hugues prize to Ch. Féry, for his researches in physics, especially those dealing with the laws of radiation and the measurement of high temperatures; the Gaston Planté prize to Paul Janet, for his researches in electricity and magnetism.

*Chemistry.*—The Jecker prize between M. Darzens (500 francs), M. Fosse (250 francs), and M. Tiffeneau (250 francs), for work in organic chemistry; the Cahours prize (in equal parts) between Louis Hackspill and M. Richard; the Berthelot prize to André Wahl; the Montyon prize (unhealthy trades) to M. Tissot, for his apparatus permitting work in a poisonous atmosphere, an invention of especial importance in mines.

*Mineralogy and Geology.*—The Delesse prize to Albert Michel-Lévy, for his petrographical and stratigraphical work; the Joseph Labbé prize to René Nicklès, for his geological and practical work in connection with the discovery of the coal basin at Meurthe-et-Moselle; the Fontannes prize to M. Cossmann, for his palæontological studies; the Victor Raulin prize to Emmanuel de Margerie, for the whole of his geological work.

*Botany.*—The Desmazières prize to Camille Sauvageau, for his recent researches on the brown algae; the Montagne prize is not awarded, but Jean Beauverie and Antoine Lauby each receive an encouragement of 500 francs; the de Coigny prize to E. Achille Finet, for his publications relating to orchids.

*Anatomy and Zoology.*—The Grand prize of the physical sciences to M. Anthony, for his memoir on the characters of adaptation to tree life in vertebrates; the Savigny prize to Ferdinand Canu, for his work on the Bryozoa; the Cuvier prize to L. Cuénot, for the whole of his scientific work.

*Medicine and Surgery.*—Montyon prizes to L. Testut and O. Jacob (2500 francs), for their treatise on topographical anatomy; to Alexandre Besredka (2500 francs), for his work on the mechanism of anaphylaxia; and to E. Cassaet (2500 francs), for his memoir on the diagnosis of posterior pericarditis.

Mentions of 1500 francs are accorded to Pierre Nolf, Emile Feuillé, and E. Sacquépée, and citations to Léopold-Lévi and H. de Rothschild, S. Mercadé, G. Faroy, L. Panisset; the Barbier prize to H. Guilleminot, for his memoir on fluoroscopic radiometry; the Bréant prize is not awarded, but prizes from the foundation funds are given to M. Auclair and Louis Paris (2000 francs), to M. Dopfer (2000 francs), and M. Duvoir (1000 francs); the Godard prize to Jean Louis Chirié; the du Baron Larrey prize to H. Coullaud and E. Ginestous, for their work on the physiology and vision of shooting, Maurice Boigey receiving a very honourable mention; the Bellion prize is divided between M. and Mme. Victor Henri, for their studies on the action of ultra-violet light on toxins and micro-organisms, and M. Courmont and M. Nogier for their researches on the sterilisation of water by the ultra-violet rays; the Mège prize is not awarded, but a prize of 300 francs is awarded to P. Nobécourt and Prosper Mercklen; the Chaussier prize to M. Imfert.

*Physiology.*—The Montyon prize (experimental physiology) divided equally between Dr. Marage and Raoul Combes; the Philipeaux prize between Mme. Z. Gruzewska, for the whole of her work in physiology, and Maurice Piettre, for his researches on bile; the Lallemand prize to Henri Piéron, for his work on the memory, Maurice Brissot receiving a very honourable mention, and J. Lévy-Valensi an honourable mention; the Pourat prize is not awarded.

*Statistics.*—Montyon prize (1000 francs) to René Risser, and a mention (500 francs) to Charles Heyraud.

*History of the Sciences.*—The Binoux prize divided between Antonio Favaro and Edmond Bonnet.

*General Prizes.*—Berthelot medals to MM. Darzens, Tiffeneau, Tissot, André Wahl, Louis Hackspill, Richard; the Gegner prize (increased to 4000 francs) to J. H. Fabre; the Frémont prize to Charles Frémont; the Lannelongue prize between Mme. Cusco and Mme. Ruch; Wilde prizes to M. Stefanik (2000 francs) and A. Trillat (2000 francs); the Lonchamps prize to M. Mazé, for his researches in

agricultural chemistry and bacteriology; the Saintour prize to Jules Drach; the Fanny Emden prize is not awarded, but encouragements are attributed to M. Ochorowicz (1000 francs) and M. Boirac (2000 francs); the Pierson-Perrin prize to (the late) Henri Pellat, for the whole of his work; the Petit d'Ormoys prize (mathematics) to Jules Tannery and (natural science) to M. Depéret; the Serres prize to L. Vialleton, for his researches on embryology and comparative anatomy; the Jean Reynaud prize to Emile Picard; the Baron de Joest prize divided between H. Mouton and Charles Tellier; the Leconte prize is held over to this year; the prize founded by Mme. la Marquise de Laplace to Georges Marie Antoine Perrin; the prize founded by Félix Rivot between Georges Perrin, Francois Walckenaer, Henri Terrisse, and Jacques Denis.

#### *The Bonaparte Foundation.*

Thirty-four applications for grants from this fund were received, and the eleven mentioned below received favourable consideration:—M. Hartmann (4000 francs), for assistance in his experimental researches on the elasticity of solid bodies; M. Alluaud (3000 francs), for carrying on studies of the Alpine fauna and flora of the tropical mountains Kilimanjaro, Ruwenzori, and Kenia; H. Barbieri (3000 francs), for pursuing his chemical studies on nerve substance; M. André Broca (3000 francs), for constructing an apparatus for the measurement of geodesic angles by the Borda method; M. Krepf (3000 francs), for completing his work on the biology of the coasts of Indo-China; M. Sollaud (3000 francs), for pursuing his researches on the Palemonidæ; M. Topsent (3000 francs), for the zoological study of the fresh water of Saint-Jean-de-Losne (Côte d'Or); MM. Buisson and Fabry (2000 francs), for the purchase of apparatus to enable them to pursue their researches on the distribution of the energy in the solar spectrum; M. Gaubert (2000 francs), to acquire the apparatus necessary to pursue his work on liquid crystals; M. Houard (2000 francs), to permit him to pursue in America his researches on the Zooecidæ; and M. Moureu (2000 francs), to permit him to pursue his studies on the rare gases and their distribution in nature.

The total grants from the fund amount to 30,000 francs for the year.

#### FORESTRY EDUCATION AT THE UNIVERSITY OF EDINBURGH.

IN October, 1910, Mr. E. P. Stebbing, who had been appointed university lecturer in forestry the previous May, delivered an inaugural lecture in the University, taking as his subject "Forestry Education: its Importance and Requirements." Extracts from this lecture were printed in NATURE of November 10, 1910 (vol. lxxxv., p. 61). Mr. Stebbing directed attention to the three chief requirements of the department of forestry of the University. These he considered to be: (1) a forest garden; (2) more accommodation for museums and laboratories; (3) an increase in the forestry staff.

The University has been giving undivided attention to these three wants of the department, and the following statement, which has been issued by the University to the Press, places the present position of Edinburgh as a forestry educational centre clearly before the public.

During the past year afforestation questions and forestry education have been receiving considerable attention in this country. In a resolution on the subject, the Development Commissioners decided that their first grants with the object of furthering the progress of afforestation would be made with the object of improving the means of affording sound forestry education in the country.

In Scotland a lecturer in forestry was appointed so long ago as 1888 at Edinburgh University, and an annual course of lectures has been delivered since that date during the winter session.

A few years ago the Edinburgh and East of Scotland Agricultural College inaugurated a short course of evening lectures in simple forestry for working foresters and others. This course has during the past year been extended, and a month's course of simple forestry, forest botany, and forest entomology is now delivered in August at the Agricultural College.