

Egypt, presented by Mr. M. W. Edgley; one Egyptian Jerboa (*Dipus aegyptius*) from Egypt, presented by Mr. W. R. Clark; a Golden Eagle (*Aquila chrysaetos*) from Scotland, presented by Mr. Bryan Cookson; a Buzzard (*Buteo*) from West Africa, presented by Mr. Rice; three Tench (*Tinca vulgaris*) from British Fresh Waters, presented by Mr. Arthur E. Rumsey; two Collared Fruit Bats (*Cynonycteris collaris*), a Wapiti Deer (*Cervus canadensis*, ♂), a Japanese Deer (*Cervus sika*, ♀) born in the Gardens.

OUR ASTRONOMICAL COLUMN.

DOUBLE STAR MEASURES.—Nos. 3185-86 of the *Astronomischen Nachrichten* contains the micrometrical measures of double stars made by Mr. Tarrant during the years 1889-92. This series is a continuation of that published in a preceding number (2991) of the same journal. The same instrument has been employed as formerly, but its position has been changed, it now being 510 feet above the sea level. Stars with considerable southern declination can thus be much more accurately measured. The objects are arranged in the following order:—Dorpat Catalogue, Pulkova Catalogue, Burnham, and Miscellaneous.

PUBBLICAZIONI DELLA SPECOLA VATICANA.—In the third volume of this publication there are several contributions of interest and importance to which we can here briefly refer. In the Astronomical Section, M. P. G. Lais gives an account of the measurements of the position of Nova Aurigæ (with a photograph), and also a few words on the comets Swift, Holmes, and Brooks. M. P. F. Denza, in addition to a communication on the total eclipse of the moon that occurred on November 4, 1892, gives a summation of the observations made of the shooting stars of August in that year, and of the shooting stars of November in the same year, and also of solar spots, magnetic disturbances, and auroræ. In the Astro-Photographic Section, M. P. G. Lais and F. Mannucci give an account of the work done for the international chart and catalogue of the heavens; twenty-six photographs for the chart, and 115 for the catalogue were taken, while 154 other photographs, including groups of stars, nebulae, comets, &c., were obtained. These communications are accompanied by some fine photographs, which include the Præsepe group, Nebula of Orion, and some of the sun. M. P. F. Denza communicates most of the articles in the Magnetic Section, while the Meteorological Section contains many important communications, with several diagrams, among which we must mention that on the classification of clouds, by M. F. Mannucci, which is illustrated by a beautiful series of photographs showing the various forms which they assume.

COMET FINLAY AND THE PRÆSEPE.—The ephemeris of Finlay's comet showed that a passage through the star-group Præsepe would take place about the beginning of October. In *Astronomischen Nachrichten*, No. 3187, Prof. A. Berberich gives a comparison of the ephemeris with the star-places in Yarnall's catalogue the measures of C. Wolf and Winnecke giving the following table of conjunctions. (γ. Pr. = number in Yarnall's catalogue):—

γ. Pr.	Conj in R.A. M. T. Paris.	Comet-Star Δ δ
5	2 Oct. 20.9	... - 0.2
9	3 " 3.8	... - 2.3
16	3 " 15.1	... - 1.4
37	4 " 6.0	... + 0.3
59	4 " 21.1	... - 0.6
69	5 " 2.2	... - 1.0
74	5 " 3.0	... + 0.2
89	5 " 7.5	... + 1.0
134	6 " 8.8	... - 0.0
148	7 " 12.7	... - 1.4
150	7 " 17.0	... + 1.9

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, September 11.—M. Lævy in the chair.—Treatment of vines infested by *Phylloxera* with peat moss impregnated with schist, by M. F. de Mély. The results of

the treatment proposed last year have been controlled by the Inspector-General of Agriculture and by the Inspector-General of the Compagnie de Lyon. As a consequence of their visit, the Minister of Agriculture has sent Dr. Colas, of Lyon, to organise further applications of the method. A vine already attacked by *Phylloxera* has been under treatment since June, and although some of the insects have survived, the vine has not turned yellow. The portion of the vineyard treated by this method for two seasons has retained its rootlets in a perfect state, and those vines which were treated with the maximum dose—viz. 2 kgr. of the mixture, containing 200 grs. of pure schist, show no trace of *Phylloxera*.—Magnetic observations recently made in Russia by M. Venukoff. Observations at about a hundred stations comprised between 45° 11' and 36° 42' of latitude, and 65° 47' and 82° 17' of longitude east of Greenwich prove that the isogonal lines inserted in Berghaus's *Physikalischer Atlas* are not exact for Central Asia; in particular, the degrees of declination accepted are too large. Local variations of the magnetic elements in European Russia have recently been investigated, and some very large disturbances have been discovered. In the province of Grodno the magnetic declination was found to change by 10° in a distance of 21 km., and in the neighbourhood of Belgorod the deviation mounted up to 180° in a space of a few tens of square km. This implies the presence of a small and perfectly local magnetic pole. It must be remembered that in the Neva delta the fortress of St. Peter and Paul is known to deflect the magnetic needle by 10°.—Presence of a ferment analogous to emulsine in mushrooms, and particularly in parasitic mushrooms of trees or those growing on wood, by M. Em. Bourquelot. It is proved that several mushrooms, and especially those developing on living or dead wood, contain a soluble ferment possessing the property of doubling various glucosides, such as amygdaline, salicine, and coniferine. It is not possible to say that this ferment is identical with the emulsine of the almonds, but it acts in the same manner and upon the same substances. This ferment was found in two ways. In one, the fresh mushroom was placed in a saturated atmosphere of ether or chloroform vapour, which produces an abundant exudation of liquid holding in solution a large portion of the principles contained in the cellular juice. This liquid was placed for 24 or 48 hours in direct contact with a solution of a glucoside; or an aqueous solution was formed by precipitation with alcohol, and treated in the same manner. In the second process, the mushroom was triturated with sand and transformed into a paste; this paste was treated with distilled water and filtered off, the liquid being used as before. One specimen, picked from an elder branch, gave a liquid which completely converted a dose of coniferine into grape-sugar in the course of three days. The ferment is limited to fungi living on wood, enabling them to assimilate the glucosides contained in it.—On a method of determining the density of gases for industrial purposes, by M. Maurice Meslans.

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