

from an anthropological standpoint, it appears that so far from the black races being the most leprosy, and the yellow the least, over the great area dealt with, the black races are quite free from leprosy, except where, as in Fiji, it has been recently introduced; and the yellow race, the Chinese, is the leper and the distributor of leprosy. In not a single instance are the native races attacked without there being Chinese lepers in the country. In other words, leprosy follows the lines of Chinese emigration, and in the East Indian Archipelago and Oceania is co-terminous and co-existent, in time and area, with the Chinese coolie. Mr. Skertchly believes that the only way to stop the spread of leprosy is to put an end to the coolie traffic from the infected provinces, and this cannot be done except by concerted action of the Governments holding possessions in the Far East.

THE Wilde lecture "On the Physical Basis of Psychological Events," delivered by Prof. Michael Foster before the Manchester Literary and Philosophical Society last March, is printed in Manchester *Memoirs*, vol. xliii. (1898), No. 12.

A COPY of "Bourne's Handy Assurance Manual" (1898), edited by Mr. William Schooling, has been received. The volume shows the position of every assurance office, and should be consulted before taking out a policy in any company. Students of statistics will also find the tables useful.

A NINTH edition of Skertchly's "Geology," revised in accordance with the latest requirements of the Science and Art Department's syllabus, has been prepared by Dr. J. Monckman, and published by Mr. Thomas Murby. A new section dealing with minerals and their microscopic characteristics has been added, but the general appearance of the book and the illustrations are behind the times.

THE additions to the Zoological Society's Gardens during the past week include a Ring-tailed Coati (*Nasua rufa*) from South America, presented by Mr. S. C. Rogers; two Little Armadillos (*Dasyops minutus*) from Patagonia, a Vociferous Sea Eagle (*Haliastur vocifer*), a Chameleon (*Chamaleon vulgaris*) from Africa, deposited; a Pleasant Antelope (*Tragelaphus gratus*, ♀), bred in Amsterdam, purchased; a Crested Porcupine (*Echystrix cristata*), three Swinhoe's Pheasants (*Euplocamus swinhoii*), three Mandarin Ducks (*Aix galericulata*), bred in the Gardens.

OUR ASTRONOMICAL COLUMN.

THE NEBULA OF ANDROMEDA.—A telegram from the Centralstelle, Kiel, received here on the 20th, announces that Seraphimoff has observed a stellar-like condensation near the centre of the nebula of Andromeda.

This is not the first time that variations near the centre of this nebula have been observed. In 1885 a star of 6.5 mag. appeared suddenly near the centre, giving a continuous spectrum containing probably a few bright lines; in 1886 this had entirely disappeared. Espin thought that the nucleus was variable, and that he could see stars in it; and Young, with a 23-inch refractor, confirmed this. The fine series of photographs taken by Roberts also indicate that the nucleus of the nebula is variable.

An examination of the nebula on the early morning of the 21st, with the 30-inch reflector of the Solar Physics Observatory, South Kensington, gave the idea that the centre of the nucleus seemed more elongated and was more of a stellar nature than usual. The application of the spectroscope indicated nothing more than a continuous spectrum, although there may have been faint bright lines which could not be seen.

COMETS TEMPEL 1866 AND PERRINE-CHOFARDET.—Just after we had gone to press last week we received another telegram, concerning the comet discovered by Pechuele, saying that it was Wolf's comet and not that of Tempel.

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Another telegram, dated September 15, informs us that Perrine, on September 13, discovered a comet at 16h. 14.3m. Lick Mean Time, in position of R.A. 9h. 41m. 40s. and Declination + 30° 36'. Two circulars from Kiel (Nos. 11 and 12), which have since reached us, give the elements of the comet's orbit and an ephemeris for the present month, besides telling us that Chofardet made the same discovery independently at Besançon on September 14, 16h. 37m. local time.

Both the elements calculated by Berberich from observations on September 12, 13, 15, and by Perrine and Aitken from observations on September 13, 14 and 15 are very similar, so we will confine ourselves to the former, which are namely:—

$$T = 1898 \text{ October } 19^{\text{h}} 9^{\text{m}} 56^{\text{s}} \text{ Berlin M.T.}$$

$$\omega = 165^{\circ} 56' 29''$$

$$\Omega = 36^{\circ} 20' 85''$$

$$i = 29^{\circ} 16' 41''$$

$$\log q = 9.57608$$

For the present month the positions of the comet for every two days are as follows:—

1898.	12h. Berlin M.T.			Decl.	Br.
	R.A.	h.	m. s.		
Sept. 22	10 35 2	...	...	+25 9'9"	...
" 24	10 48 3	...	...	23 32'4"	... 2'08"
" 26	11 1 11	...	...	21 46'6"	...
" 28	11 14 23	...	...	+19 52'3"	... 2'67"

CATALOGUE OF NEBULÆ.—Mr. Lewis Swift publishes in a recent number of *Astr. Nachr.* (No. 3517) a catalogue of nebulae which have been discovered by him during the last three years. All the observations were made at the Lowe Observatory, Echo Mountain, California, the low latitude of this station, namely +34° 20', enabling him to search further south than when he was situated at Rochester, New York. He says: "I am further south than any observatory in Europe and America north of the equator except the one at Tacubaya, Mexico, yet I find that the southern sky has been pretty thoroughly explored by Sir John Herschel, Dunlop, and others."

The present catalogue contains 243 objects, some of which are very interesting. Thus, Nos. 6 and 27 are described as being very singular. They resemble a fairly bright double star, each component being an exceedingly small nebulous disc "like an imaginary double nebulous Uranus distant about 5" or 6".

No. 56 is described as "a nebulous hair-line of one uniform size from end to end," while No. 91 has one side extending like a brush.

In addition to the above, this keen-eyed observer has discovered no less than four comets, one of which is of short period, and his son has discovered a fifth, also of short period.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

THE Calendar of University College, Bristol, for the Session 1898-99 has been published. The College offers excellent opportunities for the study of science, languages, history and literature, and possesses good facilities for giving systematic instruction in the branches of applied science more nearly connected with the arts and manufactures. Medical education is provided by the Faculty of Medicine of the College; and students can complete in Bristol the entire course of study required for the various medical and surgical degrees.

IN order to encourage systematic study, a definite course of instruction extending over three years has been established in the Morley Memorial College (for working men and women), Waterloo Bridge Road. In the first and second years all students will follow almost the same course of study, but in the third year they will take up a selected group of literary, mathematical, or scientific subjects. Organised courses of this kind are of far greater educational value than the study of a large number of disconnected subjects.

MAJOR P. G. CRAIGIE's annual report to the Board of Agriculture on the distribution of grants for agricultural education and research in 1897-98, has just been issued as a Parliamentary paper. The total amount distributed during the financial year to each of the fifteen institutions receiving assistance was 7200£, as compared with 7000£ in the previous year. The following table shows how this money was expended:—

Institutions aided.	Work.	Grant, 1897-98.
University College of North Wales, Bangor	Collegiate centre	£ 800
University College of North Wales, Bangor	College farm	200
Durham College of Science, Newcastle-on-Tyne	Collegiate centre	800
Durham College of Science, Newcastle-on-Tyne	College farm	200
University College of Wales, Aberystwyth	Collegiate centre	800
Reading College	Collegiate centre	800
Yorkshire College, Leeds	Collegiate centre	600
University College, Nottingham	Collegiate centre	600
South-Eastern Agricultural College, Wye	Collegiate centre	600
Cambridge and Counties Agricultural Education Committee	Collegiate centre	500
Eastern Counties Dairy Institute, Ipswich	Dairy instruction	300
British Dairy Institute, Reading	Dairy instruction	300
Royal Botanic Garden, Edinburgh	Class for foresters and gardeners	150
Bath and West and Southern Counties Society	Field experiments	50
Bath and West and Southern Counties Society	Cider experiments	50
Bath and West and Southern Counties Society	Cheddar cheese research	200
Highland and Agricultural Society, Agricultural Research Association, Aberdeen	Agricultural experiments	100
Stewartry of Kircudbright Dairy Association	Cheese discoloration inquiry	50

The grants to the collegiate centres in England and Wales are of a general character, intended to assist and improve the local provision made for instruction in the higher forms of agricultural education. The thirty-two separate counties are thus provided with an efficient and economical means of systematising their local instruction, and of supervising demonstration plots and agricultural experiments by securing scientific advice and the assistance of qualified lecturers drawn from the collegiate educational staffs. The Durham College of Science and the University College of North Wales have been granted special assistance in consideration of their having taken farms for practical work and field experiments.

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, September 12.—M. Faye in the chair.—Meadow land in warm drysummers, by M. Ad. Chatin. A list of those species of plants which have been found to be the most capable of resisting a hot, dry summer.—Observation of an aurora borealis, by M. H. Deslandres. An aurora was observed at Meudon on September 9 about 9 p.m., and its general direction was very nearly that of the magnetic meridian, the rays having a greenish colour.—On the crystallisation of the anhydrous sulphides of calcium and strontium, by M. Mourlot. The crystallised sulphides of these metals can be prepared in two ways, either by heating a mixture of the corresponding sulphate with carbon, or by simply fusing the anhydrous sulphide obtained by the method of M. Sabatier, the temperature employed being that of the electric furnace with a current of 1000 amperes at 60 volts. The crystallised sulphides thus produced are more stable than the corresponding amorphous salts, and are attacked with difficulty by reagents; carbon at a very high temperature converts them into carbides. Both crystallise in the cubic system, and are without action upon polarised light.—On a double carbide of iron and tungsten, by M. Percy Williams. This compound, the existence of which was indicated in an earlier paper, is prepared by heating a mixture of tungstic acid, iron and coke, in the electric furnace with a current of 900 amperes at 45 volts. The ingot formed in the reaction contains the carbide of tungsten WC, probably W₂C, and the double carbide 3W₂C.2Fe₃C.—On the commercial extraction of thorium, by MM. Wyrnhoff and A. Verneuil. The mineral is worked up by one of the usual methods as far as the production of the oxalates, these precipitated by sodium carbonate and hydroxide, and the washed precipitate dissolved in hydrochloric acid. This liquid is treated with small portions of barium peroxide, until hydrogen peroxide no longer gives a precipitate. The deposit, which is

of a reddish orange colour owing to the presence of cerium, contains the whole of the thoria, with about 20 to 30 per cent. of impurities. Further treatment with hydrogen peroxide after a similar set of operations readily gives a very pure thoria. The method has been applied on the large scale, starting with five tons of monazite, with good results.—On the composition of the humic constituents of the soil, by M. G. André.—On the transformation of luminous variations into mobile relief, by M. Dussaud.—On a new coccus, by M. Louis Leger. The new species is found in the digestive tube of *Lithobius hexodus*, and belongs to the genus *Echinospira*. Its microgametes are furnished with vibratile cilia; the name *E. ventricosa* is suggested.—Influence of light on the form and structure of the branches of the wild grape and ground ivy, by M. Maige. Comparative cultures placed in light of decreasing intensities showed that both from the morphological and anatomical points of view, a feeble light increases the adaptive powers of climbing plants, diffused light favouring the conversion of a flower-bearing bud into a tendril. Direct sunlight produces the opposite effect.—On the adherence of the cupric solutions used for curing the cryptogamous diseases of the vine, by MM. Guillon and Gouirand.

BOOKS RECEIVED.

BOOKS.—The Unconscious Mind: Dr. A. T. Schofield (Hodder).—U.S. Department of Agriculture: Report of the Chief of the Weather Bureau, 1896-97 (Washington)—Bird Studies: W. E. D. Scott (Putnam).—Coffee and India-rubber Culture in Mexico: M. Romero (Putnam).—The Sphere of Science: Prof. F. S. Hoffman (Putnam).—A Text-Book of General Astronomy: Prof. C. A. Young, new edition (Arnold).—A Pocket Dictionary of Hygiene: C. T. Kingzett and D. Homfray (Baillière).—University College, Bristol, Calendar, 1898-99 (Bristol).—A Memoir of T. Sterry Hunt: J. Douglas (Philadelphia).—Infinitesimal Analysis: Prof. W. B. Smith, Vol. 1 (Macmillan).—Die Photometrie der Gestirne: Prof. G. Müller (Leipzig, Engelmann).—Die Photographie der Gestirne: Prof. J. Scheiner (Leipzig, Engelmann).—Atlas ditto (Leipzig, Engelmann).—Untersuchungen zur Physiologie der Pflanzlichen Organisation: Prof. G. Berthold, Erster Teil (Leipzig, Engelmann).—A Text-Book of Geodetic Astronomy: I. T. Hayford (Chapman).

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