

Leyden Museum advocates the complete separation of the study and exhibition series, and insists on the great importance of the absolute protection of the specimens from fire, dust, and light.

Prof. Plate described a new microscope suitable for exhibition in museums; Prof. Forel a new method of collecting specimens inhabiting the deep water in lakes; while Prof. Fujii, of Tokyo, referred to some micro-technical apparatus of his own invention.

Finally, a demonstration was given on the installations of the "concilium bibliographicum," by Dr. Field.

VII.—ZOOGEOGRAPHY.

Mr. Schmidt, of St. Petersburg, explained the distribution of the fishes in the northern Pacific, and mentioned that the northern fauna of Japan should be considered as belonging to the Arctic region, and that the fishes of southern Japan and the west coast of North America are very distinct from those of the northern parts.

Prof. Simroth gave his views on the origin of the Alps, based chiefly on the distribution of the Mollusca. Dr. Pellegrin, of Paris, described the fish-fauna found in Lake Tchad and the Chari River, which he declares to be very similar to that of the Nile.

Prof. Forel gave his experiences on the occurrence of *Larus ridibundus* on the Lake of Geneva. It appears that thousands of these gulls are present on the shores of the lake during winter, and that they migrate northward in March, to return again in October with their young. A few remain all the year round. The principal lines of migration of birds across Switzerland were then described by Prof. Fatio, of Geneva.

The congress ended with a couple of days of most pleasant social intercourse. The members were afforded an opportunity of seeing the beauties of the Bernese Oberland during an excursion along the Lake of Thun, and an afternoon spent at Interlaken, where a final meeting was held in the "Kursaal." Saturday was devoted to a trip to Geneva, where, after a lunch and a visit to the museums, the venerable Mr. de Saussure entertained the guests at his country seat near the city, and a Venetian *fête* with fireworks brought the congress to a close.

ROTATION OF SATURN'S RINGS.

ON 1903 November 6, 5h. 25m., I observed a large diffused white spot a little north-east of the extremity of the western ansa. It was placed on the bright rim of the interior ring, just bordering Cassini's division, and appeared to extend faintly over the outer ring.

November 7 was cloudy, but on November 8 there was a clear sky and pretty good definition, but no certain differences of tint could be remarked in the individual rings.

On November 9, 5h. 10m., the planet was very faint, and the two ansæ seemed equally bright. At 5h. 50m., however, the western ansa was decidedly the more luminous, and the aspect appeared similar to that on November 6.

November 10, 11, 12, and 13 were cloudy; November 14 was stormy with fine intervals, but definition was very unsteady, and no white spot could be discerned on the rings.

On November 15 there was a clear, frosty sky. At 5h. 50m., under good definition, the ring seemed notably brighter on western than on eastern ansa.

On November 16 definition was very bad, and no details could be satisfactorily made out. November 17 was cloudy.

On November 18, 5h. to 5h. 40m., there was a good deal of fog, and the planet's image appeared very faint. The western ansa seemed decidedly brighter than the other, but the luminosity appeared diffused and not caused by a definite spot.

No satisfactory observations were secured after the latter date. The weather was extremely unsettled, and definition generally very bad, so that though the planet was examined, whenever visible, until December 11, no further inequalities in the luminosity of the rings were noted.

The bright area seen on November 6 and several other evenings appeared recurrent in same position at intervals of 3 days, whence I infer that the rotation period of the

ring is about 14h. 24m. This determination is, however, extremely rough, and only useful as affording evidence of the approximate value.

After I had arrived at this result, I consulted various authors to find what previous estimates had been made as to the rotation of the rings.

Laplace theoretically computed that the ring ought to rotate in 10h. 33m. 36s. (Chambers's "Descriptive Astronomy," third edition, p. 143). In Laplace's "System du Monde," however, it is stated that Saturn rotates in 0.428 day and the ring in 0.437 day, the equivalents being = 10h. 16m. 17.2s. and 10h. 29m. 16.8s.

Sir W. Herschel, from a spot or luminous point seen on the interior ring in July, 1789, ascertained that the ring revolved round the ball in 10h. 32m. 15.4s. (*Phil. Trans.*, 1790, vol. lxxx. p. 479).

Secchi obtained many measures of Saturn's system in 1854-6, and apparently detected an ellipticity in the rings, for the discordances were considerable, and harmonised at intervals of 3 and 9 days. He concluded that a period corresponding to that which a satellite would have if situated on the outer ring, viz.

14h. 23m. 18s.,

would satisfy them (*Monthly Notices*, vol. xvi. p. 52). The correspondence between Secchi's period and my own roughly ascertained value, being quite independent, is rather singular.

Now that Saturn is very favourably visible, it is to be hoped that observers will frequently examine the rings for differences in tint or tone which may afford material for the rotation period to be re-determined.

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UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

THE title of professor has been conferred on Dr. Karl Schreber, of Greifswald, for physics, and on Dr. Robert Schorr, of Berlin, for chemistry.

MR. ALEXANDER LAUDER, senior demonstrator in chemistry in the University College of North Wales, Bangor, has been appointed lecturer in agricultural chemistry in the Edinburgh and East of Scotland College of Agriculture.

In connection with the technical college which will shortly be proceeded with at Stoke-on-Trent, it is proposed to have a school of pottery, which shall not only train pupils, but also act as a central advisory and analytical department for manufacturers. There will also be a mining department. The estimated cost of the building, some 25,000*l.*, has been practically assured, the North Staffordshire Institute of Mining and Mechanical Engineers contributing 4000*l.*, the Staffordshire County Council 4000*l.*, the training authority 6000*l.*, while close on 10,000*l.* has been promised as voluntary contributions.

DR. ANTON LAMPE and Dr. Hans Benndorf, of Vienna, and Dr. F. Streintz, of Graz, have been appointed extraordinary professors of physics. Herr Reinhold Lutz has been appointed professor of mechanical engineering at the Aachen Technical College, Dr. George Schlesinger professor of the theory of mechanical implements in the Berlin Technical College. Dr. Karl Rohn, now professor of geometrical drawing in Dresden, has been appointed professor of mathematics in the University of Leipzig as from April 1, 1905. Dr. Ludwig Prandtl, now professor at Hanover, has been appointed to the chair of technical physics and agricultural mechanics at the University of Göttingen.

THE calendar for the session 1904-5 of the Merchant Venturers' Technical College, Bristol, indicates several improvements which have been made recently at this institution. Among these may be mentioned the new experimental steam engine, with its boiler and measuring appliances, and the experimental light and power station now in use by the students. The courses for engineering students have been re-arranged, and provision has been made for a fourth year's course in civil, mechanical, and electrical engineering. The staff of the engineering departments has been strengthened by the appointment of an additional lecturer.