

SCIENTIFIC SERIALS

THE *American Naturalist*, March, 1881.—D. S. Jordan and Chas. H. Gilbert, observations on the salmon of the Pacific.—J. Walter Fewkes, the anatomy and development of *Agalma*, part 2.—A. J. Cook, on the relation of agriculture to science.—Wm. H. Holmes, glacial phenomena in the Yellowstone Park.—E. Holterhoff, jun., a collector's notes on the breeding of some Western birds.

Reale Istituto Lombardo di Scienze e Lettere. Rendiconti, vol. xiv, fasc. iii.—Results of observations on the amplitude of diurnal oscillations of the magnetic needle, made in 1880, at the Brera Royal Observatory, Milan, by S. Schiaparelli.—On Prof. Cantor's new History of Mathematics, by the same.—Some observations on *verglas* and its theory, by Prof. Serpieri.—On some post-glacial fissures in the southern Alps, by Prof. Taramelli.—A physiological sign of true death, by Doctors Verga and Biffi.—On sanguineous effusion in the bottom of the eye and in the cavity of the tympanum through death by hanging, by Prof. Tamassia.

Berichte über die Verhandlungen der naturf. Gesells. zu Freiburg i. B., Band vii. Heft iv., 1880.—On the optical structure of ice, by Fr. Klocke.—On the behaviour of crystals in solution that are but a little short of saturation, by the same.—On torsion, by E. Warburg.—The forms of vibration of plucked and rubbed strings, by F. Lindemann.—Contribution to a knowledge of protozoa, by A. Gruber.

SOCIETIES AND ACADEMIES

LONDON

Royal Society, March 17.—A paper by C. Greville Williams, F.R.S., was read "On the Action of Sodium upon Chinoline."

The author, after giving a historical sketch of what he had previously done upon the subject, calls attention to the fact that for a yellow oil-like dichinoline to give a red crystalline hydrochlorate is probably a unique reaction. He also states further on that the colour of this hydrochlorate is so brilliant that the finest vermilion looks brown by comparison. His most successful preparations were made from chinoline purified by conversion into a crystallised chromate. The base so prepared is almost colourless, and becomes yellow with extreme slowness as compared with a product obtained without that precaution. On treating chinoline with sodium, converting the resulting purplish fluid into hydrochlorate, separating the scarlet crystals by filtration, and fractionally precipitating with platinic chloride, he obtains several products, the most conspicuous being a salt of the formula $2(C^{18}H^{14}N^2)HCl \cdot PtCl^4$. Sodium amalgam reacts in a similar manner, and this appears to be the best way of obtaining the scarlet hydrochlorate of dichinoline in its greatest beauty.

On recovering the chinoline unacted on from the mother liquors it had the same boiling-point as before the treatment with sodium, but on treating the recovered base again with sodium amalgam it yields a solid yellow resinous base, instead of the fluid one previously obtained. The author studies all the basic products by conversion into hydrochlorates, and fractionally precipitating with platinic chloride, and points out the remarkable similarity in the percentages of platinum obtained from the mother liquors of the scarlet hydrochlorate of dichinoline, from the scarlet salt itself, and from the hydrochlorate of the yellow solid base.

Zoological Society, March 15.—Prof. W. H. Flower, LL.D., F.R.S., president, in the chair.—The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of February, and called special attention to a female Bactrian Camel (*Camelus Bactrianus*), formerly belonging to Ayoub Khan, which Col. O. H. St. John, F.Z.S., has purchased from its captors at Candahar and presented to the Society, and to a male Wild Sheep (*Ovis cycloceros*), obtained from Afghanistan, and presented to the Society by Capt. W. Cotton, F.Z.S.—Mr. A. G. More exhibited some eggs of the Red-necked Phalarope, believed to have been taken in England; and an egg of the Tree-Pipit, taken near Dublin, this bird having been considered only doubtfully Irish. Mr. More also exhibited a specimen of the Red-crested Pochard, obtained near Tralee, being the first record of the occurrence of this species in Ireland.—Mr. R. Bowdler Sharpe exhibited a specimen of the so-called Sabine's Snipe (*Gallinago Sabini*). This

bird had been shot in July last by the Hon. W. W. Palmer at Woolmer Pond, near Selborne, Hants.—Prof. F. Jeffrey Bell, F.Z.S., read the fourth of his series of observations on the characters of the Echinoidea. The present paper dealt with most of the genera of the Echinometiadae; their systematic affinities were discussed and their relations to the Echinida shown to be so intimate as not to justify their separation into two distinct families.—A second paper by Prof. Bell gave the description of a new species of the genus *Mespilia*, obtained at Samoa by the Rev. S. J. Whitmee, which the author proposed to name after its discoverer, *M. Whitmei*.—Mr. W. A. Forbes read the fourth of his series of papers on the anatomy of Passerine birds. The present communication was devoted to the consideration of some points in the anatomy of the genus *Conopophaga* and of its systematic position.—A communication was read from Prof. Newton, F.R.S., in which he proposed to substitute the name *Hypositta* for *Hypherpes*, which he had formerly proposed for a genus of Passerine birds found in Madagascar.—A communication was read from Mr. M. Jacoby containing descriptions of new genera and species of phytophagous coleptera.

Physical Society, March 12.—Sir W. Thomson in the chair.—New Members: Mr. Colville Brown, Dr. J. P. Joule.—Col. Festin read a paper by Capt. Abney and himself, on the absorption spectra of organic bodies. The method of photographing the infra-red region of the spectrum gave better results for absorption than thermopile. Organic compounds were chosen as giving the larger molecules. The apparatus employed consisted of a small Gramme machine driven by a Brotherhood engine, and an electric lamp with a plevic for shifting the negative pole so as to get the crater on one side of the other carbon point. The image of the positive pole was allowed to fall on the slit of the spectroscope: the light of the arc not being used. Three prisms were used, and a camera with a back-swing to it so as to get a considerable length of spectrum in focus. Maps of the various spectra were made with six inches of the substance examined inclosed in a glass tube. Alcohols, acids, oils, and water were examined, and gave spectra of bands and lines. When hydrogen was absent in the compound there were no lines, and the authors conclude the lines to be due to hydrogen. Oxygen appeared to obliterate the space between the lines and make it a band. The authors hope by this method to detect the radicles present in a substance. They found correspondences between some lines and lines in the solar map. Dr. Coffin said that two kinds of chloroform, apparently the same, produced different physiological results: the method might distinguish between these. Sir William Thomson thought it might throw light on the ultimate constitution of matter.—Mr. Brown read a paper on the definition of work in text-books, and gave reasons for preferring that in Rankine's books.

Anthropological Institute, March 8.—F. W. Rudler, F.G.S., vice-president, in the chair.—The election of Dr. G. D. Thane was announced.—A collection of rubbings taken from door-posts and window-frames in New Zealand was exhibited. They were chiefly interesting from the proof which they afforded of the clear influence of matted and woven materials on the ornamentation of stone architecture, a parallel to the influence of wood architecture on stone architecture pointed out by Fellowes in Lycia and by Lepsius in Egypt; also from the remarkable coincidence between some of these ornamentations and the outlines on the tombstones of Mykenæ, a near approach to the triglyph in New Zealand.—A short note by Mr. S. E. Peal, on Assam pile-dwellings, was read, and was illustrated by a series of sketches by the author.—Lieut. Col. R. G. Woodthorpe, R.E., read a paper on the wild tribes inhabiting the so-called Naga Hills on our North-Eastern frontier of India. The paper dealt only with the Angami Nagas, who, it was stated, differ from all the other hill tribes of Assam in many important particulars, such as appearance, architecture, mode of cultivation, language, and dress. In appearance they are a finer, cleaner, and better-looking race than their neighbours; they build their houses resting on the ground, and not raised on piles as all the other hill tribes of Assam (except the Khasias) do, and after a pattern not seen elsewhere. Differences in physical or topographical conditions do not account for this difference in the style of architecture, as the Angami villages are found on the same ridges as, and often not a mile from, villages constructed on the other principle. In dress the Angami differs most strikingly from all the other tribes in the kilt or short petticoat of dark cloth ornamented with rows of white cowrie

shells, the waistcloth of all other Nagas consisting only of a flap of cloth in front and behind, and often only in front. The Angamis erect tall monoliths in commemoration of the dead or of some social event. These monoliths, often of great size, are dragged up hill on sledges running on rollers. The paper was illustrated by a large collection of specimens and drawings, and also by some fine diagrams, in the preparation of which the author had been much assisted by Mr. C. Holroyd.

Royal Microscopical Society, March 9.—The president, Prof. P. Martin Duncan, F.R.S., in the chair.—Swift and Sons' new "working" microscope and fine adjustment and the "Griffith Club Portable Microscope" were exhibited.—Mr. Powell showed *Amphipleura pellicida* with the vertical illuminator, and Mr. Stephenson pointed out that the illumination was not "opaque," as supposed, but that the diatom was illuminated by transmitted light reflected back by its own under-surface.—Mr. Crisp exhibited Prof. Abbes' radiation apparatus for showing the increased amount of light emitted by a radiant in glass or balsam compared to one in air.—Mr. A. D. Michael read a paper on a supposed new species of *Acarus*, *Dermaleichus heteropus*, and Dr. E. Cutter's paper on a supposed Infusorian in the nasal passage in cases of catarrh was explained by Mr. Stewart and commented on by the president.—Discussions also took place on carboic acid for mounting, and on the "Society" standard screw.

Meteorological Society, March 16.—Mr. G. J. Symons, F.R.S., president, in the chair.—Rev. A. J. C. Allen, E. Chapman, Rev. E. W. Ford, G. T. Gwilliam, H. B. Jupp, A. Ramsay, and J. Stokes were elected Fellows.—The President gave a historical sketch of various classes of hygrometers, and described about 120 different patterns; after which an exhibition of instruments was held, showing various kinds of hygrometers, and also some new instruments which have been brought out since January 1, 1880.

Victoria (Philosophical) Institute, March 21.—Mr. J. F. Bateman, F.R.S., read a paper on meteorology, in which he analysed the causes of a variation of rainfall in the United Kingdom. In the discussion special remarks were made as to the causes and effects of the almost tropical rainfall that once obtained in these islands; after which a paper on Indian rainfall, by W. P. Andrew, was read. At the close of the proceedings it was announced that Prof. Balfour, F.R.S., would read a paper on the visible universe at the next meeting.

EDINBURGH

Royal Society, March 7.—Lord Moncrieff, president, in the chair.—The President read the second part of his paper on the rise of the constitutional idea. In the half-century that elapsed after the publication of Buchanan's "De Jure Regni apud Scotos," important political changes were taking place and were shaping themselves, under the skilful hand of James VI. of Scotland, especially after his accession to the English throne, towards a despotism that would place the king alongside the arbitrary monarchs of the Continent. Charles I. however lacked the kingcraft to carry on successfully this policy of diminishing the power of the Parliament; and in 1644, in the heat of the contest between King and Commons, Samuel Rutherford published his "Lex Rex," which contains the first enunciation in the English language of the true rationale of the British Constitution. Passing on to the time of the Commonwealth, his lordship touched on the famous controversy on the divine right of kingship between Salmazius and Milton, a controversy which was continued by Hobbes and Harrington. Lastly, the paper discussed Algernon Sidney's work on Government, which was characterised as out of sight the best and ablest of the list.—Dr. D. J. Cunningham, in a paper on the intrinsic muscles of the mammalian foot, gave an interesting account of several of the most striking modifications that occur in the arrangement of these muscles in different animals. The typical arrangement of three layers of four muscles each was found in certain marsupials, and the deviations from this typical arrangement could be grouped in two classes—those that resulted from division, and those that resulted from fusion. The peculiar modifications in the ox, horse, ape, baboon, gorilla, and man were specially referred to, many of these deviations being of the nature of degeneration or retrograde development.—Mr. A. H. Anglin communicated a paper on the expansion of rational fractions.—Dr. A. Macfarlane, in his third paper on the algebra of relationship, showed the nature of the problems that came under the

scope of his symbolic method.—Prof. Tait communicated a note on a problem in kinetics of peculiar difficulty. One of two equal masses, originally balanced on an Atwood's machine, is set oscillating through a small arc. What is the subsequent motion? The equations of motion are peculiarly intractable, but may by suitable transformation be thrown into a form from which may be derived by simple inspection the general result that the oscillating mass moves under the action of a downward acceleration, so that the mixed potential and kinetic energies tend to become altogether kinetic. When both masses are set oscillating, a further complication is of course introduced; and it is found that the mass that is oscillating through the greater angle is subject to a downward acceleration.

VIENNA

Imperial Academy of Sciences, March 17.—V. Burg in the chair.—C. Ludwig, studies made at the Physiological Institute at Leipzig during the time of 1879-80.—Dr. L. Boltzmann, enunciation of formulæ useful for determining the number of diamagnetism.—Dr. Synas Klemencic, relating to the determination of the proportion of the magnetic to the dynamical unit of the intensity of circuit.—Dr. F. Streitz, on decomposition of water on platinum-electrodes caused by the discharges of Leyden-jars.—E. Ratkay, on *Exoascus Wiesneri*.—Prof. Dr. Edm. Reitlinger and Dr. F. Woechter, on the "disgregation" of electrodes by positive electricity and explanation of the figures of Lichtenberg.—Dr. P. Weselsky and R. Benedikt, a sealed packet containing the description of some new dyeing materials.—Josef Wentze, on the flora of the Tertiary diatomæ-slate at Sulloditz (Bohemia), central chain of mountains.—H. Schroetter, on the oxidation of Borneolacetate.—E. Stefan, on the equilibrium of a solid elastic body at a different or variable temperature.—Dr. Ernst v. Fleischl, physiologico-optic notes.—Dr. T. Puluj, on radiant electrode-matter (third paper).

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