

W. S. S.—On the movements of diatoms and *Oscillatoria*, by Th. W. Engelmann.—On the preparation and conservation of inferior organisms, by R. Blanchard.—On the influence of motion and rest upon life, by Dr. A. Horwath.

SOCIETIES AND ACADEMIES

LONDON

Chemical Society, April 17.—Dr. Roscoe in the chair.—The following communications were made:—On heptane, from *Pinus subiniana*, by T. E. Thorpe. Wenzell, in 1872, described, under the name of abietene a hydrocarbon obtained by distilling the exudation of the Californian "nut pine." The author has subjected the crude oil (which occurs in commerce in San Francisco) to an exhaustive chemical and physical examination, and finds that it consists of nearly pure heptane. This discovery, that a paraffin is playing the part of oil of turpentine in a tree now living is exceedingly interesting, as our only natural sources of this hydrocarbon are petroleum and fossil fish oil.—On the determination of tartaric acid in lees and inferior argol, by B. J. Grosjean. The author suggests several improvements in the well-known oxalate process of Warington. The employment of the method of filtration suggested by Casamajor, the addition of potassium chloride to render the precipitation of the potassium bitartrate complete, precipitation of the latter salt by stirring, &c. By these improvements the author has shortened the time required for an estimation to four hours.—Conditions affecting the equilibrium of certain chemical systems, by M. M. P. Muir. The author has carefully studied the influence of time, temperature, and mass on certain reactions: 1. Bismuthous chloride, hydrochloric acid, and water. 2. Calcium chloride and potassium or sodium carbonate.—On the action of oxides on salts, Part II., by E. J. Mills and J. W. Pratt. The authors have examined the actions of aluminic, ferric, and stannic oxides on potassic carbonate at a temperature of 735°.—Examination of substances by the time method, by J. B. Hannay. The author has arrived at the following conclusion:—Two hydrated salts, in forming a double salt containing the normal amount of water, expend one-half of the affinity of the anhydrous salt for its water of crystallisation, in combining with each other, showing that the formation of double salts is comparable with other forms of chemical action.—Preliminary note on certain compounds of naphthalene and benzene with antimony chloride, &c., by Watson Smith. The author has obtained white needles, which he believes to be trinaphthylstibine or naphthylloxystibine. He has obtained other crystalline compounds, which have not yet been examined.

Anthropological Institute, April 8.—Mr. Hyde Clarke, vice-president, in the chair.—Mr. Coult Trotter, of the Bengal Civil Service, was announced a Member.—Prof. W. H. Flower, LL.D., F.R.S., read a paper entitled "Illustrations of the Method of Preserving the Dead in Darnley Island and South Australia." A mummy from Erroob or Darnley Island, in Torres Strait, inhabited by a Papuan race, was first described. It was fastened in an extended position upon a framework made of pieces of wood, joined together with native cords, and kept in an upright position in the house of the relatives. The surface was covered with red ochre, and a piece of the large Indian volute shell (*Melo indica*), fashioned into the shape of a shield, was suspended in front of the body, as worn by the warriors in battle. The whole of the viscera had been removed through an aperture in the right flank, which had been carefully closed by an interrupted suture. Pieces of light wood filled the abdominal and thoracic cavities. The tongue, larynx, &c., had been removed through the mouth; the lips were not closed, but the jaw was kept from falling by a piece of cord passing close to the bone, through the nostril, and round the ramus of the mandible. The orbits were filled with a resinous substance, and imitation eyes of mother-of-pearl introduced. The second specimen described was a dried mummy from near Adelaide, in South Australia, presented in 1845 to the museum of the Royal College of Surgeons by Sir George Grey. In this case the limbs were bent jointly, and fixed by a band of native netting close to the side of the body, the knees being behind the shoulders, and the feet close to the hips. The internal organs had not been removed, but the mouth had been filled with emu's feathers, and carefully sewn up, a tassel of feathers hanging from one corner. Both cases showed a considerable amount of care and trouble bestowed in what was considered the decent and proper care of the body after death; but,

as might be expected, a more elaborate development of art was attained in the Papuan than in the Australian.—A paper by Mr. M. J. Walhouse was read, on rag-bushes and kindred observances. The author, referring to the custom of tying pieces of rag to the bushes near springs of healing repute and by the tombs of holy men, once common in England, and still observed on the Continent, adduced evidence of its antiquity, and instances of its occurrence in Europe, Africa, throughout Asia, and all over America from the north to Patagonia. He also described some apparent varieties of custom, when other objects than rags were used, but with the same motive, and thought that they, as well as the rags, were offered as symbols of sacrifice or gifts, sometimes to deities, sometimes to ghosts, and often as thank-offerings for cures of sickness and other benefits. The worthless form of such offerings might be owing to the sacred spots being frequently in remote and desert regions, where travellers and pilgrims were not likely to have things of value to spare, and would leave trivial scraps and shreds ready at hand rather than nothing at all. Or they might be substitutes for more valuable offerings, once generally made, but which have a tendency to decrease in value, and at last exist only nominally as survivals. The Chinese custom of offering mock food and gilt-paper ornaments at tombs, where costly gifts were anciently made, was referred to in illustration of this. It was further suggested that the *ex voto* offerings, so commonly hung in Roman Catholic churches, are a form and development of the rags and shreds tied to bushes, and that may-poles and even Christmas-trees may have had a similar origin.—A number of antiquities from the United States of Colombia were exhibited by Mr. W. D. Powles.

Meteorological Society, April 16.—Mr. C. Greaves, F.G.S., president, in the chair.—The following were elected Fellows of the Society:—R. W. Abbotts, Rev. S. Allen, D.D., E. H. Banks, F. J. Bramwell, F.R.S., J. A. Caird, E. H. Cardwell, the Earl of Durham, J. Farquharson, W. Garnett, Rev. C. W. Harvey, W. Inskip, the Earl of Powis, and D. Robie. The papers read were: On the results of comparisons of Goldschmid's aneroids, by G. M. Whipple, F.R.A.S.—Observations on the temperature of the Atlantic during the month of March, by P. F. Reinsch.

Entomological Society, April 2.—J. W. Dunning, M.A., F.L.S., vice-president, in the chair.—Mr. McLachlan exhibited the cases of a number of species of Brazilian caddis-flies with the insects bred from the larvæ that manufactured some of them, sent to him by Dr. Fritz Müller from Santa Catharina, and read extracts (with notes) from Dr. Müller's letters on the subject. In reference to the habits of Mantidæ, which had been recently brought under the notice of the Society, Mr. Stainton referred to a larval form of probably *Mantis religiosa*, which had been forwarded to him in 1866 by Mr. Moggridge, jun., and which, from its saltatorial habits, that gentleman had described as a "curious grasshopper." De Geer had also drawn attention to the apparent similarity between these insects belonging to different orders, and Mr. Stainton considered that the peculiar motion of the young Mantis was an illustration of the remark of Mr. Darwin, that the relationships and affinities of animals are often more expressed in the embryonic than in the adult form.—Sir Sydney Saunders exhibited a bag-like fabrication, said to be the production of a large species of spider inhabiting the Fiji Islands.—The Secretary read a note from Mr. J. W. Selater, on insects destroyed by flowers.—Miss E. A. Ormerod communicated a paper entitled "Observations on the Effects of Low Temperature on Larvæ." From an examination of many species belonging to different orders, during the severe frosts of the past winter, none were found materially injured by the low temperature to which they were subjected.—Mr. Distant communicated a paper containing descriptions of new species of hemiptera collected by Dr. Stoliczka during the Forsyth expedition to Kashgar in 1873-74, to form portion of the general work on the scientific results of the expedition now in course of publication at Calcutta.

Geological Society, April 9.—Henry Clifton Sorby, F.R.S., president, in the chair.—Rev. Joseph Finemore, Thomas James Slatter, William H. Twelvetrees, Arthur Pendarves Vivian, and Ernest Westlake, were elected Fellows; Prof. Bernhard von Cotta, Freiberg, Dr. Nicolai von Kokscharow, St. Petersburg, and Dr. J. J. S. Steenstrup, Copenhagen, were elected Foreign Members; and Prof. P. J. van Beneden, Louvain, Prof. Guglielmo Guiscardi, Naples, and Prof. Gerhard von Rath, Bonn, Foreign Correspondents of the Society.—The following communications were read:—On the geological age of the rocks of the southern highlands of Ireland, generally known as "the

Dingle Beds" and "Glengariff Grits," by Prof. E. Hull, F.R.S. The author has arrived at the following results:—First, that "the Dingle Beds" are perfectly conformable to, and continuous with, the upper silurian beds of the Dingle promontory. Secondly, that they are the representatives of "the Mweelrea Beds and Salrock Slates," of West Galway and Mayo, the age of which, as shown by the fossils, is upper silurian, and that "the Dingle Beds" may therefore be regarded as of the age of the Ludlow Rocks, but unusually developed—the view adopted as far back as 1839 by Sir Richard Griffiths. Thirdly, that throughout the south of Ireland "the Dingle and Glengariff Beds" are disconnected from the succeeding conformable series, consisting of (c) lower carboniferous slate; (b) the upper old red sandstone with *Anadonia jukesii*; (a) the lower old red sandstones and conglomerate, as these three conformable formations are found resting upon, and against, the Glengariff beds successively in a direction either from south to north, or from south-west to north-east, owing to a conformable overlap against the flanks of an old shelving shore formed of the Glengariff beds. Fourthly, that at the close of the upper silurian period, and after the deposition of "the Dingle and Glengariff Beds," these strata were disturbed, upraised, and denuded, and were not again submerged till the commencement of the old red sandstone (a), when they were successively overlain by the beds of that formation with the succeeding ones of the lower carboniferous period, probably including the carboniferous limestone in some places. Lastly, that it was during this period of upheaval that, as the author believes, the marine Devonian beds (Ilfracombe and Morte series) were deposited, which accounts for their absence in the Irish area, which was either a land surface or only partially submerged. To this part of the subject the author hoped to call the attention of the Society on a future occasion.—On some three-toed footprints from the triassic conglomerate of South Wales, by W. J. Sollas, F.G.S.—On the silurian district of Rhymney and Pen-y-lan, Cardiff, by W. J. Sollas, F.G.S.

Statistical Society, April 15.—Sir R. W. Rawson, vice-president, in the chair.—Mr. E. G. Ravenstein, F.R.G.S., read a paper on the geographical distribution of the Celtic speaking population of the British Isles. He stated that four Celtic languages are at present spoken in the British Isles, three of which belonged to the northern Gaelic or Gadhelic, and one to the southern or Cymraig branch. The former are Irish Gaelic, Scotch Gaelic, and Manx; the Cymraig branch, since the extinction of Cornish, being now represented only by the Welsh. *Ireland*.—The localities where Irish Gaelic is the language of the majority, are comparatively limited and remote areas, where the population is less dense than in the more fertile and English speaking districts of the island. In 1851, 23·3 per cent. of the population spoke Irish, and in 1871 15·3 per cent. The success of the labours of the "Society for the Preservation of the Irish Language" was referred to, although it cannot be doubted that Irish is on the decrease. Opinions differ as to the agencies to which this decrease must be ascribed. The census on the whole presented a very fair picture of the linguistic condition of Ireland. *Scotland*.—Mr. Ravenstein said that not quite 9 per cent. of the population could speak Scotch Gaelic, and that there was no doubt it was dying out, although in the more remote parts of the Highlands, and in the Hebrides, it still maintains its ground. In the Isle of Man 25·6 per cent. of the population still understood Manx. *Wales* (Cymraig).—Of all the Celtic speaking races in the United Kingdom, the Welsh were the most important, and in the maintenance of their own language they showed by far the greatest amount of vitality. Including 60,000 Welsh in England, there are 1,006,100 Welsh speaking people in Great Britain. The total number of persons in the United Kingdom still speaking a Celtic tongue was:—

Irish Gaelic	867,600
Scotch "	309,250
Manx	12,500
Welsh	1,006,100

Total ... 2,195,450

or nearly 7 per cent. of the population of the British Isles.

PARIS

Academy of Sciences, April 14.—M. Daubrée in the chair.—The following papers were read:—Law of propagation of expressive nervous affections and phenomena, by M. Rambosson. A movement purely physical may be transformed into one physiological, and into one psychic or cerebral, being transmitted to these different media; and reciprocally, a psychical movement

may be transformed with a physiological and a physical; and that without altering in nature, the same phenomena being reproduced after all these transmissions and transformations, on re-passing into the same medium.—Studies on Collioure and its environs, by M. Seriziat.—On the curve-place of positions of centres of curvature of a left curve after its development on a straight line, by M. Aoust.—On various experiments with an oscillating pendulum having large amplitudes, by M. Dejean de Fonroque. The pendulum being free to oscillate in all directions, the plane of oscillation becomes rapidly oriented in a particular direction; which the author thinks is nothing but the horizontal projection of the earth's trajectory, or the resultant of the two great motions of translation of the earth, towards Hercules and round the sun. The trajectory in question does not change sensibly in direction, in the course of a day; but in this time the inclination of the horizontal plane (passing through the point of suspension) to this trajectory varies incessantly according to a law easily determined, consequently its projection on this plane must vary, also the direction of the pendulum. M. Cornu, while not accepting the causes assigned, thought the phenomena worthy of attention.—Anomaly of magnetic observations of Paris, by M. Flammarion. He does not allow M. Marié-Davy's explanation.—Fossil fauna of the environs of Castres, by M. Caraven-Cochin. He has discovered several carapaces of tortoises in the eocene sandstone of the place, also jaws and teeth of Lophiodon, scales and teeth of crocodiles (apparently three new species), remains of various mammalia, &c.—On an alteration of the cells of renal epithelium, at the commencement of Bright's disease, by M. Cornil. He describes vacuoles in the cells of the uriniferous tubes, filled with a ball or drop of granular albuminoid matter.—Researches on the Pyrenomyces of St. Paul and Amsterdam Islands, by M. Cricé.—Considerations on the Echinida of the Cenomanian formation in Algeria, by M. Cotteau. He finds remarkable relations of the system in Algeria to that in France.

GÖTTINGEN

Royal Society of Sciences, February 12.—On the constant batteries of Grove and Bunsen, by Herr Fromme.—Report on ear diseases, by Dr. Burkner.
March 1.—On the reduction of Abel integrals to elliptical and hyper-elliptical, by Herr Königsberger.

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