

idea of a future state and also of punishment for one offender, the niggardly man. When an old man came near death he was placed upon a litter, and carried round to see the old scenes amid which he had passed his life—his canoe, the sea, and all the old familiar subjects, and then he was taken back to wait his time. After death he was placed in a sitting posture and taken into the public square, with his weapons by his side, and before him the people placed offerings of their valuable goods and money.

Notes on Photographs of Mummies of Ancient Egyptian Kings recently Unrolled, by Sir William Dawson, F.R.S.—The photographs representing the mummies of Seti I., Rameses II., and Rameses III. were communicated by Dr. Schweinfurth, of Cairo. They are of great interest as enabling us to see the actual features of these ancient Egyptian kings, and to compare them with their representations on the monuments and with modern Egyptians. It appears that the features of Seti are scarcely of Egyptian type, as represented either by the monuments of the older dynasties or by the present Egyptians; though, as Dr. Schweinfurth shows in a drawing accompanying the photographs, a similar style of countenance still exists among the Copts. It also appears that the features of Rameses II. strongly resemble those of his father, and are very like those of some of his statues. Both Seti and Rameses have narrow and somewhat retreating foreheads, and strongly developed jaws, indicating men of action rather than of thought; and both were men of great stature and bodily vigour, and seem to have lived to advanced ages.

Prehistoric Man in Manitoba, by Mr. C. N. Bell, F.R.G.S. (Winnipeg, Canada).—The author announced the existence in the Canadian North-West of sepulchral mounds, and pointed out the hitherto unknown fact that there is a continuous line of mounds from the mound-centres of the Mississippi River, down the Red River, to Lake Winnipeg. Human remains, much decayed, were found in the mounds, all buried by being placed on the surface under heaps of earth in which patches of charcoal and ashes frequently occurred, though no remains of funeral feasts, as bones, &c., were met with. Indian; when first met with, buried weapons with their warriors, but none were found in these mounds, though implements and ornaments of shell, bone, and stone were common, as well as pottery, which latter was unknown to the Indians of North-West Canada on the arrival of white emigrants. One mound had a floor of burnt clay and boulders, similar to the sacrificial mounds and altars of Ohio. Ornaments were found made of sea-shells, which must have been carried 1200 miles from their native waters. These mounds, from Lake Winnipeg to the Gulf of Mexico, were of the same character, and very likely were made by one race, though the whites found great diversity of mortuary customs prevailing among the Indian tribes inhabiting that great tract of country.

Notes on a Tau Cross on the Badge of a Medicine-Man of the Queen Charlotte Isles, by R. G. Haliburton.—Mr. Haliburton said this badge was noteworthy, as Queen Charlotte Isles form one of the most isolated groups of the Northern Pacific. They lie off the west coast of British Columbia. This symbol was used by the Indians on large sheets of copper, to which they assigned a high value, and each of which they called a *Tau*. The connection of that name with the symbol is world-wide. Our τ is simply the tau symbol, and is called *tee* or *tau*. The medicine-men represent the tau sometimes on the forehead. The ancients used to mark the captives who were to be saved with a tau or cross; Ezekiel refers to this, and the word he uses for "the sign" to be marked on the foreheads of them that are to be saved really is the "tau" or "cross." No one has divined why the *scarab* was so sacred. He was led to a solution by seeing an exaggerated *tau cross* on the back of a *scarab*. On looking into the Egyptian name for the *scarab* he found it to be *torz*, and that the sutures on the beetle form a tau cross. But the same name is applied to the same beetle by our peasantry—*tor-beetle* or *dor-beetle*. Wilkinson represents a god with a *scarab* for a head, one of the names of which was *Torz*. The use of the prehistoric or pre-Christian cross is world-wide.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE

OXFORD.—This term begins under a new official régime. Prof. Jowett, Master of Balliol, retires from the Vice-Chancellor-

ship, and Dr. Bellamy, the President of St. John's College, succeeds to his place. The Master of Balliol's four years of office have seen several important reforms in which he bore a prominent part. Among them we may mention the alteration in Honour Classical Moderations, the disestablishment of the Examination in the Rudiments of Faith and Religion, the establishment of a University course for medical students, and the abolition of Pass Classical Moderations in favour of Preliminary Examinations for students of law, natural science, and mathematics. The last reform, indeed, has not yet become law; but the necessary steps to complete the legislation are already taken, and the Statute will doubtless pass Convocation during the present term.

Scholarships in Natural Science are announced this term for competition at Balliol, Trinity, and Christ Church.

The following scheme of lectures in Natural Science is announced for the present term:—

Physics.—Prof. Clifton lectures on General Electricity, and Mr. Selby on Electrostatics treated Mathematically. Practical instruction in Physics is given in the Clarendon Laboratory by Prof. Clifton and Messrs. Walker and Selby.

At Christ Church, Mr. Baynes lectures on Fourier's Theorem. At Balliol, Mr. Dixon lectures on Elementary Light and Heat.

Chemistry.—Prof. Odling lectures at the Museum on the Benzoic Compounds. Mr. Fisher gives a course of Inorganic Chemistry, and Dr. Watts a course of Organic Chemistry. Practical instruction is given by the above, and by Messrs. Baker and Marsh.

At Christ Church, Mr. Vernon Harcourt gives a course of lectures on Inorganic Chemistry for the Preliminary Examination. Practical instruction is also given at the Christ Church and Balliol Laboratories.

Animal Morphology.—Prof. Westwood lectures on the Hexapod Arthropoda. Prof. Moseley lectures on Comparative Anatomy. Mr. Baldwin Spencer gives an elementary course on the same subject. Mr. Hatchett Jackson lectures on Comparative Embryology. Mr. Barclay Thompson lectures on the Osteology, Odontography, and Distribution of Mammals. Practical instruction is given by Prof. Moseley, Mr. Spencer, and Mr. Robertson.

Physiology.—Prof. Burdon-Sanderson lectures on Circulation, Respiration, and Bodily Motion. Mr. Dixey lectures on Histology; and Mr. Hatchett Jackson on Elementary Physiology. Practical classes are conducted by Messrs. Dixey and Gotch.

Human Anatomy.—Mr. A. Thomson lectures on the Central and Peripheral Nervous System, and Digestive System. He also gives demonstrations on Topographical Anatomy, and has a daily class for Dissection.

Medicine.—Dr. Darbishire gives demonstrations at the Radcliffe Infirmary, in Physical Diagnosis and Regional Anatomy, and Mr. Winkfield gives demonstrations in Surgical Diagnosis.

Botany.—Prof. Bayley Balfour lectures at the Botanic Garden on Vegetable Morphology and Physiology.

Mineralogy.—Prof. Story-Maskelyne lectures at the Museum on Minerals occurring in Lodes.

Geology.—Prof. Prestwich lectures at the Museum on the Principles of Geology.

Anthropology.—Dr. Tylor lectures on the Development of Culture, Sign Reading, &c.

Mr. A. L. Selby, B.A., Demonstrator of Physics in the Clarendon Laboratory, has been elected a Fellow of Merton College.

Mr. H. B. Dixon, M.A., of Trinity College, has been elected a Fellow of Balliol College.

SCIENTIFIC SERIALS

IN the *Journal of Botany* for August Mr. J. G. Baker concludes his notes on British Rubi, and Messrs. Roy and Bisset contribute the second and concluding part of their notes on Japanese Desmids (illustrated).—The number for September commences with an interesting and important paper by Mr. G. Masee, on the structure and functions of the subterranean parts of *Lathraea squamaria*, L. (also illustrated). He regards the plant as of saprophytic rather than parasitic habit, the disks or haustoria on which its parasitism depends being frequently entirely absent from old plants. In some instances, but not all, the roots are covered with the mycelium of a fungus similar to that described by Kamienski in the case of

Monotropa.—The instalment of Mr. J. G. Baker's synopsis of the Rhizocarpeæ is occupied by a monograph of the forty species of *Marsilea*.—The remaining articles in these and those in the October number are of less general interest, or are reprints or reports.

Rivista Scientifico-Industriale, September 15.—Experiments on the electric conductivity of vapours and gases, by Prof. Giovanni Luvini. The important experiments here described have been carried out for the purpose of exposing the commonly accepted fallacy that moist air and gases in general are good conductors. Having already argued against this view in his recent memoir on the origin of atmospheric electricity, the author now clearly shows by a series of carefully conducted experiments that such bodies as moist air, aqueous vapour, and other gases are under ordinary pressure absolute non-conductors. Under pressures varying from 16° to 100° C. none of the vapours tested by him betrayed the least conductivity, all acting as excellent insulators. He promises to resume the subject in his work on the Polar auroras, to which the present essay and the memoir on the origin of atmospheric electricity serve as introduction. The conclusions so far arrived at, combined with Faraday's memorable experiments on the causes of the electricity in Armstrong's hydro-electric machine, tend to show that gases and vapours are not even electrified by friction with themselves or with solid or fluid bodies. Henceforth physicists must reject, as erroneous, all such theories respecting the electricity of machines, of the air, or the clouds, as rest on the assumed conductivity of moist air or on the property of gases to be electrified by friction. It is pointed out that, were the saturated atmosphere and clouds really good conductors, such a phenomenon as lightning would be simply impossible, or at all events extremely rare.—Separation of nickel from cobalt, by Pietro Gucci. For the new method here proposed and described it is claimed that it is both easier and much more expeditious than that of Fischer and Stromeyer, also that it determines the presence of the smallest particle of nickel in any quantity of cobalt.—New hygrometric formula and tables, by Prof. Paolo Cantoni.

SOCIETIES AND ACADEMIES

LONDON

Entomological Society, October 6.—Robert McLachlan, F.R.S., President, in the chair.—Mr. W. Bartlett Calvert, of Santiago, Chili, was elected a Fellow.—Mr. McLachlan exhibited a number of seeds of a Mexican species of *Euphorbiaceæ*, popularly known as "jumping seeds," recently received by him from the Royal Horticultural Society. He stated that these seeds were known to be infested with the larvæ of a species of *Tortricidæ*, allied to the apple *Tortrix*. They were first noticed by Prof. Westwood at a meeting of the Society held on June 7, 1858, and the moths bred therefrom were described by him as *Carpocapsa saltitans*. These seeds have since, from time to time, been referred to both in the United Kingdom and America.—Mr. Roland Trimen exhibited and read notes on some singular seed-like objects found in the nests of *Termites*, and also in those of true ants, in South Africa. They were apparently of the same species as those from the West Indies, described in 1833 by the Rev. L. Guilding as *Margarodes formicarius*, which was usually referred to the *Coccidæ*. They were of various shades from yellowish pearly to golden and copper colour, and were strung together by the natives like beads, and used by them as necklaces.—Mr. W. F. Kirby exhibited, on behalf of Mr. John Thorpe, of Middleton, a long series of buff and melanic varieties of *Amphidasis betularia*, and read notes on them communicated by Mr. Thorpe.—Mr. Kirby also exhibited, on behalf of Mr. Nunney, a dark variety of *Argynnis aglaia* from Caithness, and a tawny-coloured variety of *Vanessa urticae* from Bournemouth.—M. Alfred Wailly exhibited a fine series of Saturnias and other Bombyces, mostly bred by him, from South Africa; also specimens of *Dirphia tarquinia*, *Attacus orizaba*, *Platysamia cecropia*, *P. ceanothi*, *Callosamia angulifera*, and *C. promethæa*, from Central America. M. Wailly stated that several of the large South African *Saturnidæ* formed no cocoons, the larvæ entering the earth to undergo the change to the pupal state. Mr. Trimen said he was able to confirm this statement.—The Rev. W. W. Fowler exhibited a number of minute *Acari* which had been doing injury to fruit trees near Lincoln.—Mr. Poulton gave an account of the experiments recently made by him with the larvæ of several species of the genus *Vanessa*,

for the purpose of ascertaining the relations of pupal colour to that of the surface on which the larval skin was thrown off, which had formed the subject of a paper lately read by him before the British Association. He also exhibited the frame constructed by him for the purpose of these experiments.—Mr. Slater exhibited a specimen of *Prionus coriarius* found in Devonshire on fennel, and a specimen of *Calandra palmarum* from Pembroke Dock.—Mr. Enock exhibited *Myrmica pulchellus*, and a specimen of *Atypus piceus* recently taken on Hampstead Heath.—Mr. Elisha exhibited a series of *Gelechia hippophaella*, bred from larvæ collected at Deal on *Hippophae rhamnoides*.—Mr. Billups exhibited *Echthrus lancifer*, a species of *Ichneumonidæ* new to Britain, taken at Walmer on August 15 last. He remarked that Brischke had bred members of this genus from *Sesia s/hectiformis*, *S. formiceformis*, and *Leucania obsoleta*; but that in this country the genus was little known, only one species being mentioned in Marshall's list of *Ichneumonidæ*.—Mr. E. A. Butler exhibited living specimens of *Chilacis typhae*, received from the Rev. E. N. Bloomfield, of Guestling, Hastings; and a pair of *Harpalus discoideus*, obtained in August last, near Chilworth, Surrey.—Mr. A. J. Rose exhibited specimens of a mountain form of *Lycana virgaurea*, recently collected by him in Norway.—Mr. Champion exhibited *Teratocoris antennatus* and *Dryinus pilicornis*, taken near Sheerness.—Mr. W. White exhibited a specimen of *Chelonia caja* with abnormal antennæ, and read notes on the subject.—Mr. Elisha read a paper on the life-history of *Geometra smaragdaria*.—Mr. C. O. Waterhouse communicated a paper on the tea-bugs of India and Java.

SYDNEY

Linnean Society of New South Wales, Aug. 25.—Prof. W. J. Stephens, M.A., F.G.S., President, in the chair.—The following papers were read:—Note on *Eu. alyptus leucoxylon* (F. v. M.), by W. Woolls, Ph.D., F.L.S. In the "Flora Australiensis," vol. iii., two *Eucalyptus* previously regarded as distinct species (*E. leucoxylon*, F. v. M., and *E. sideroxylon*, A. Cunn.) were united under the former name. Dr. Woolls has long thought that this step was a mistake, and in his paper he gives reasons based upon the examination of specimens of both forms, in favour of their specific distinctness, and of the restoration of Cunningham's name to the red-flowering iron-bark of New South Wales, the other name being restricted to the white gum of Victoria and South Australia.—Contributions towards a knowledge of the Coleoptera of Australia, No. III., by A. Sidney Olliff, F.E.S. This paper contains notices of several new species of *Nascio*—a genus of Buprestidæ—of which two are named *L. munda* and *N. multesima*. Additional localities for some previously known species are also given, *N. carissima* being recorded from Sydney.—List of the Orchidæ of the Mudgee District, by Alex. G. Hamilton. In this paper, which is a contribution towards a knowledge of the geographical distribution of plants in New South Wales, fifty-seven species of orchids are enumerated as occurring in the Mudgee District; and particulars are given concerning their habitats and the months during which they flower. In addition a comparison of the orchids of this district with those of the county of Cumberland and of the other Australian colonies is also given.—On an undescribed species of *Chilodactylus* from Port Jackson, by E. P. Ramsay, LL.D., F.R.S.E., and J. Douglas Ogilby. Under the name of *Chilodactylus polyacanthus*, a new species of Morwong is described, and its affinity to *C. carponemus*, Cuv. and Val., is discussed.—Dr. Ramsay exhibited a number of very rare birds from Derby, North-West Australia, recently collected in that district by Mr. Cairns. He particularly drew attention to the following:—*Poephila acuticauda*, *Poephila mirabilis*, *Donacicola pectoralis*, *Emblema picta*, *Estrella annulosa*, *Estrella ruficauda*, *Pecilodryas ceriniventris*, *Smicrorhis flavescens*, *Pardalotus rubricatus*, *Pardalotus uropygialis*, *Malurus coronatus*, *Malurus cruentatus*, *Cacatua gymnopis*, *Climacteris melanura*, *Geophaps albiventris*, *Astur cruentus*, *Trichoglossus rubritorquatus*.—Mr. Macleay exhibited the following new or rare reptiles and fishes collected by Mr. W. W. Froggatt in the vicinity of Cairns, Queensland:—Snakes: *Tropidonotus picturatus*, Schlegel, *Dipsas boydii*, Macleay, *Hoplocephalus assimilis*, Macleay, *Hoplocephalus nigrostriatus*, Krefft, *Nardoa crassa*, Macleay, and *Dendrophis bilcealis*, Macleay. Lizards: *Varanus ocellatus*, Gray, *Varanus*, sp.?, *Hinulia*, n. sp., four species of Geckotidæ unknown, one with tail of remarkable width, and several other unknown lizards. Fishes: *Dules Haswellii*, Macleay, *Aristeus rufescens*, Macleay,