

Mr. Hutchinson also made some interesting remarks, partly of a speculative nature, on the river systems of the Binue and the Shari, and their possible connection near Lake Chad.

MR. J. W. MOIR, of the Central Africa Trading Company, has just sent home from Livingstonia some notes of an expedition from the Mombera country, near the northern end of Lake Nyassa, to the north-west portion of the great basin of the Loangwa, which falls into the Zambesi at Zumbo, above the Kebrabasa rapids. Crossing the Kasitu river he marched a little north of west through an uninhabited, undulating forest-land, scantily supplied with water. No game was seen, but the *tsetse* fly was very abundant in several swampy valleys. Mr. Moir then crossed the Rukuru river, and after a march of twenty miles further west and north-west, passed over a low sandy watershed into the Loangwa basin. The country was that of the Basenga, whose chief village is in the bend of a very small stream which flows at the bottom of a deep broad course, probably well filled in the rainy season by the neighbouring Palao-senga hills. In this part water was very seldom to be had, except by digging in the watercourses, but the soil appeared fertile. Mr. Moir was able to get very little information about the surrounding country, as the people professed that they had never dared to leave their villages owing to their dread of the Mangoni. On the return journey the party passed through an uninhabited tract, chiefly covered with rather scrubby forest, to the Mombero country. In the Basenga country the first chief met with was Tembwe, who, it is interesting to note, saw Livingstone, probably in 1863, in the Tumbuka country further to the south; he has a large village, and there are generally some Arabs there. The principal chief of the Basenga, Kam-bombo, lives at the first-mentioned village, which is strongly stockaded. Here an Arab caravan had settled down for a time, having come from Zanzibar *via* Ujiji.

We regret to learn that fears are entertained in St. Petersburg of the safety of Col. Prejevalsky, who at the last news was attempting to make his way into Thibet from China. It is stated that the German embassy at Pekin has received a letter from Count Szecheny, who was following the Russian expedition, saying he intended to return, not wishing to share the same fate as befel Col. Prejevalsky, whatever that may be. Disquieting rumours also come from Russian Turkestan as to the traveller's safety. One guide returning from Chardini reports that while he was searching for a road that had been lost, Prejevalsky and his comrades disappeared, and he was obliged to turn back. We earnestly hope these rumours may turn out to be unfounded; Col. Prejevalsky's loss would be a severe one to scientific exploration.

Two Austrian travellers, the *Times* Calcutta correspondent telegraphs, March 21, have arrived at Rangoon from China by the overland route through Yunnan and Bhamo. They attempted to enter Thibet, but were prevented by Chinese officials. No doubt this is the party of Count Szecheny referred to above.

In its last summary of colonial intelligence the *Colonies and India* furnishes a curious piece of news from New South Wales, which recalls to memory a sad incident in Australian exploration. A few years ago, we are told, a man named Hume, who had penetrated very far into the interior, stated that there was a white man living with the blacks in the far west, who, he was confident, was a survivor of Leichhardt's expedition. This assertion was at the time mostly disbelieved, but information has now been received which leads to the impression that Hume's statement was true, and that the white man in question died about November, 1876, when making an attempt to leave the black tribe with which he had been living, and to reach the camp of some white explorers.

FROM the Hongkong papers we learn that Commander Salmond, in H.M.'s Gunboat *Midge*, has recently paid a visit to Sandakan Bay, in Northern Borneo, where he found Mr. Pryor, the agent of the English Association, holding, as we have before recorded, a large concession from the Sultan, diligently prosecuting his work of inquiring into the resources of the country. The natives are reported to be quite content with his system of administration.

THE current number of *Les Missions Catholiques* contains the first instalment of Pere Janvier Martini's account of his journey from Kharitum to Gardaref, as well as much information respecting the late Abbé Debaize, who died at Ujiji on December 12. Under the title of "Captivité et Délivrance,"

Pere Deguette also commences the narrative of his misfortunes in Corea.

THE *Fresse* of Vienna announces that Capt. Weyprecht is making, in conjunction with Count Wilczek, the final arrangements for a new Polar expedition. Many Dalmatian sailors have already offered to take part in the expedition. Count Wilczek and Capt. Weyprecht will shortly visit Hamburg to confer with representatives of various European Societies.

ACCORDING to the *Times* Candahar correspondent Mr. Giesbach, geologist, has, at the Sirdar's special request, been appointed by the Indian Government to report on the mineral capabilities of the Candahar district. Major Leach, R.E., has also been specially deputed for survey purposes in that district under Col. St. John's orders.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE

CAMBRIDGE.—The number of failures to pass the Local Examinations continues very large; possibly this may be traced to defective teaching of science subjects, and the relation of the elements of the theoretical to the concrete aspects of geometry and physics. Four senior girls and twenty three senior boys obtained a first class. None of the former are distinguished in the physical science subjects. Thirty-six junior girls and 215 junior boys obtain a first class. More than one-third of these junior girls have distinguished themselves in one or more subjects of physical science.

PROFESSORS PAGET, Stokes, Liveing, C. C. Babington, and Dewar will lecture in the coming term; also Mr. W. J. Sell (Chemistry), Mr. Sedgwick (Demonstrations in Mammalia).

SOME new cases for the Bird Room, and apparatus for the Chemical Laboratories has been voted.

THE late Dr. Andrew Vans Dunlop of Edinburgh has left the University of that City the residue of his estate, amounting to about 50,000*l.* Of this sum, 30,000*l.* will, it is understood, be paid to the University authorities; while the remaining 20,000*l.* will ultimately accrue to the University. 3,000*l.* is to be added to the general fund of the University; and the remainder of the 50,000*l.* is to be employed in founding sixteen "Vans Dunlop Scholarships," of the annual value of 100*l.* each, tenable for three years. It is also provided by the will that the first six scholarships created shall be for students of medicine, while the others are to be equally divided amongst students of the classes of chemistry, English literature, classics, political economy, logic and moral philosophy, natural philosophy, mathematics, natural history and engineering.

SCIENTIFIC SERIALS

THE *Proceedings of the Linnæan Society of New South Wales*, vol. iv., parts 1 and 2 (Sydney, 1879).—Part 1. Rev. J. E. T. Woods, on some tertiary fossils; describes a large number of fossil shells from the tertiary (probably miocene) beds of Muddy Creek, Western Victoria; figures of all the species are given. On some new marine shells from Port Jackson (three new species described and figured). On some freshwater shells from New Guinea (three new species of *Melania*, with figures).—On some new marine shells from Moreton Bay (three new species). On *Arauja albens* (notice of its appearance at Moreton Bay).—F. M. Bailey, on some of the introduced plants of Queensland. On a new species of *Asplenium* from Trinity Bay Range.—W. A. Haswell, M.A., on the Australian species of *Penæus* (six species described as new). A contribution to a monograph of the Australian Leucosiidæ; adds twelve new species to the list of Australian forms, *i.e.*, four new species of *Leucosia*, two of *Myra*, one of *Myrodes*, three of *Phylxia*, one of *Lithadia*, one of *Arcania*, nearly all of which are figured.—Wm. Macleay, on some fishes from the Solomon Islands; gives a list of fifteen species, not one of which is mentioned in the fishes of this group as given in the "Voyage of the *Curaçoa*," and describes a new species of *Mesopion*.—E. P. Ramsay, on the zoology of the Solomon Islands (enumerates forty-five species of birds). Contributions to the zoology of New Guinea; parts iv. and v. On Mr. Goldie's collections, with a list showing the distribution of the species of birds.—N. de Miklucho-Maclay, the proposed zoological station at Sydney.—E. Meyrick, on a micro-lepidopteron destructive to the potato (*Lita solanella*).—Dr. Cox, on two new species of *Helix* from the Louisiade group.—Part 2.

Rev. J. E. T. Woods, on the relations of the Brisbane flora ; and, with the assistance of F. M. Bailey, a census of the flora of Brisbane, including the plants of Moreton Island and the country within twenty-five miles of the city of Brisbane ; the total number of species enumerated is 1,228.—E. Meyrick, descriptions of Australian micro-lepidoptera. Part 2. Crambites.—James Hobson, notes on *Cypræa guttata* ; gives as the habitat of this extremely rare shell, New Britain, but few particulars are given.

Journal de Physique, February.—On the determination of the elements of a vibratory movement, by E. Mercadier.—On the law of the thermal capacities of gases, by N. Slonginoff.—Atmospheric polarisation and influence of the terrestrial magnetism on the atmosphere, by H. Becquerel.—On the differential equation $\frac{d^2u}{dt^2} = a^2 \frac{d^2x}{dx^2}$, which leads to the theoretic expression of the velocity of sound, by M. Amagat.

SOCIETIES AND ACADEMIES

LONDON

Royal Society, March 18.—“On the Structure of the Immature Ovarian Ovum in the Common Fowl and in the Rabbit. To which is appended some Observations upon the Mode of Formation of the *Discus proligerus* in the Rabbit, and of the Ovarial Glands or ‘Egg-tubes’ in the Dog.” By E. A. Schäfer, F.R.S.

“On the Modifications of the Spectrum of Potassium which are Effected by the Presence of Phosphoric Acid, and on the Inorganic Bases and Salts which are found in combination with Educts of the Brain.” By J. L. W. Thudichum, M.D., F.R.C.P.L. Communicated by John Simon, C.B., F.R.S.

“Researches into the Colouring Matters of Human Urine, with an Account of the Separation of Urobilin.” By C. A. MacMunn, B.A., M.D. Communicated by A. Gamgee, M.D., F.R.S., Brackenbury Professor of Practical Physiology and Histology in Owens College, Manchester.

“On the Coalescence of Amoeboid Cells into Plasmodia, and on the so-called Coagulation of Invertebrate Fluids.” By P. Geddes. Communicated by Prof. Burdon Sanderson, LL.D., F.R.S.

Zoological Society, March 16, Dr. A. Günther, F.R.S., vice-president, in the chair.—Mr. W. K. Parker, F.R.S., exhibited and made remarks on the eggs and embryos of some crocodiles (*Crocodylus palustris*), obtained in Ceylon by Dr. W. R. Kynsey, Principal Medical Officer of Colombo.—Mr. W. A. Forbes read a paper on some points in the anatomy of the Sumatran rhinoceros.—Mr. Edward R. Alston exhibited and made remarks on a coloured drawing of an adolescent specimen of *Tapirus dowi*, now in the Paris Museum.—Mr. Alston also exhibited a specimen of a remarkable and little known Australian marsupial, *Antechinomys lanigera* (Gould).—A communication was read from Mr. L. Taczanowski, giving the descriptions of a collection of birds made in Northern Peru by Mr. Stolzmann during the last months of 1878 and the first half of 1879. Amongst them were examples of three species believed to be new to science, and proposed to be called *Turdus maranonicus*, *Arremon nigriceps*, and *Colaptes stolsmanni*.—Mr. Alfred E. Craven read descriptions of three new species of land and freshwater shells, from Nossi-Bé Island, N.W. coast of Madagascar.—Mr. Craven also read a paper on a collection of land and freshwater shells, made during a short expedition to the Usambara country, in Eastern Africa, with descriptions of seven new species.—Mr. F. Jeffrey Bell read some remarks in reference to certain statements made by Mr. A. Agassiz in a paper on the synonymy of the echini, communicated to the Society at a previous meeting.—Mr. W. K. Parker, F.R.S., read a paper on the structure of the skull in the chameleons.

Geological Society, March 10.—Robert Etheridge, F.R.S., president, in the chair.—John Ward was elected a Fellow, and Prof. F. von Hochstetter, of Vienna, and Prof. A. Renard, of Brussels, Foreign Correspondents of the Society.—The following communication was read:—“On the geological relations of the rocks of the south of Ireland to those of North Devon and other British and Continental districts, by Prof. Edward Hull, F.R.S., Director of the Geological Survey of Ireland. In this paper the author, after referring to his previous paper on the geological

age of the Glengariff beds (*Quart. Journ. Geol. Soc.*, vol. xxxv. p. 699), in which he showed that between them and the succeeding Old Red Sandstone in the south of Ireland there existed a very great hiatus, proceeded to compare the sections of the rocks of the south of Ireland with those of North Devon, and to show that the hiatus in question is represented in the latter locality by the whole of the Middle and Lower Devonian rocks. He then discussed the relations of the Devonshire rocks to those occurring north of the Severn, in Scotland, and in Belgium ; and from this review of the whole question he arrived at the following conclusions:—1. That there is only one Old Red Sandstone properly so-called—represented in Devonshire by the Pickwell-Down Sandstone ; in Ireland by the so-called Upper Old Red Sandstone, including the Kiltorcan beds ; in Scotland by the so-called Upper Old Red Sandstone ; and in Belgium by the “Psammites du Condroz.” 2. That the so-called Old Red Sandstone of Herefordshire is the estuarine representative of the Middle and Lower Devonians of Devonshire ; and that the so-called Lower Old Red Sandstone of Scotland, with its fish-remains, is the lacustrine representative of the Upper Silurian rocks. In conclusion the author discussed the physical conditions under which these various formations were deposited.

Physical Society, February 28.—Prof. W. G. Adams in the chair.—A paper was read by Mr. Ridout on some effects of vibratory motion in fluids. It was found by Savart and Tyndal that jets of water were sensitive to notes or air vibrations like flame, and the author conceived the idea of vibrating the jet of water internally. To do this he caused an electro-magnetic arrangement to pinch the tube, conveying the water 400 to 500 times per second, so as to communicate a vibratory motion to the stream of fluid. The issuing jet spread out in two streams, beautifully broken into drops, and representing the fundamental note. When the pinching lever vibrated irregularly harmonics were observed. When the water was thrown into vibration in two different planes, the resulting jet rotated in the tube. Froude's deduction that a liquid moving in a tortuous tube has a tendency to straighten the tube was illustrated by oscillating a pipette with its nozzle in a vessel of water, and filling a coloured liquid into it, which is seen to flow from the nozzle through the water in a tortuous line. By giving the pipette also a motion round its axis, the line becomes a spiral. A sounding body produces no disturbance in the stream. The author also showed that the cardboard experiment of M. Clement Desormes can be extended to water. In this experiment a cord is attracted to another cord by blowing a jet of air through the latter upon the surface of the former. Mr. Ridout allows a jet of water to flow out of a glass tube with a cup-shaped mouth upon the surface of a glass ball, and when the ball is within a certain distance of the mouth, it is attracted towards the latter and sticks in the mouth. In explanation of this fact it was shown that the ball and cup remained in such a position that the outflow of water was greater than if the globe had been entirely absent. Prof. Perry explained this action by the hydrodynamical fact that the pressure is less at the centre of the mouth of the cup than at the edges. Prof. Guthrie said that he had tried a similar experiment with a funnel-shaped mouth and a glass cone, but failed. He surmised that perhaps the cohesion of the water for itself, as it formed a shell round the ball, might help to cause the success of the ball method. Prof. Adams pointed out that with the cup and ball there was less difference of head of water between the centre of the mouth and the edge where the water escaped, than with the funnel. Dr. Stone stated that he had been able recently to imitate many physiological sounds, such as the murmur of the heart, by means of constrictions, in tubes through which water and air were flowing. His demonstrations were made before the Royal College of Physicians.—Dr. C. W. Wright then read an important paper on a determination of chemical affinity in terms of electromotive force. After giving a history of the subject, he described his original experiments. These consisted in performing electrolysis of sulphuric acid and measuring the heat evolved in the process, and by recombination of the materials. A voltmeter with spade-shaped platinum electrodes soldered to stout copper wires, and sealed by a large plug of gutta-percha, was employed for the electrolysis. An ordinary water calorimeter was used to measure the heat given off, as Bunsen's was found to contain sources of loss of heat. The strength of the current employed was varied from 6 webers to $\frac{2}{3}$ weber. The volume of gas produced was measured by Joules's plan. Radiation loss was corrected for by three methods. From an average of eighteen experiments the value of ϵ , the electromotive force was found to be 1.5038 C.G.S.