

those of the frontier between Russia and Persia, from the Caspian to Babadurmaz, and of the frontier between Russia and Turkey, from the Black Sea to Ararat; both are accompanied with maps.—General Stebnitzky contributes a most valuable sketch of all that is known about the Pontian range, which follows the southern coast of the Black Sea from the Yeshil-irmak to the Chorokh.—M. Stepanoff contributes an interesting paper on the province of Kars, recently annexed to Russia; and M. Bakradze one on the ethnography of the same province. The province consists of three different parts: the lowlands of the basin of the Olti River, covered with clay hills intersected with irrigation canals, and offering great advantages for gardening; the 5000 to 6000 feet high plateau of Kars, 50 miles long and 35 miles wide, bordered with mountains the highest of which reaches 9700 feet. It is covered with lavas and basalts, deeply cut by rivers; the mountains are devoid of wood; agriculture is carried on on this plateau, notwithstanding its great height. The third part of the province is again a plateau, 6000 to 7000 feet high, where agriculture becomes impossible, but covered with good pasture-land, and dotted with lakes. The population of the province has suffered much from wars. In the basin of the Olti and in the north-east it was formerly Georgian, who have become Mussulmans; the Kurds make one-sixth of the population. The basins of the Araxes and Kars rivers were formerly occupied by Armenians. The capital of Armenia, Ani, now in ruins, was situated here. After 1830, no less than 90,000 Armenians emigrated into Russian dominions, whilst Turks, Turcomans, Karapakhs, and Caucasian emigrants (Kabards and Ossets) occupied their place, forming thus a most mixed population. Presently the Mussulmans emigrated back from the province (no less than 65,447 souls during two years), and 7100 Russian Nonconformists have occupied their place, as well as 10,000 Greeks and about 4100 Armenians. The migration of whole populations is thus still going on in our times, as it was going on formerly after the great wars of the past. It is easy to foresee that the country contains most remarkable Armenian antiquities, such as churches built in the ninth and tenth centuries.

Since the year 1880 the director of the Tifis Observatory, M. Milberg, has undertaken a series of measurements of the temperature of the ground, together with measurements of temperature by a black-bulb thermometer suspended 1.5 metres above the ground, and M. Smirnof analyses the results of these measurements. The blackened thermometer has given a somewhat higher average temperature for the year than the usual thermometer suspended in shade ( $12^{\circ}7$  Celsius, instead of  $11^{\circ}6$ ); the same was observed, as is known, in England. At the same time its maxima are obviously higher and its minima are lower than those of the usual thermometer in shade, its range being from  $-14^{\circ}5$  to  $+42^{\circ}9$ , instead of  $-12^{\circ}0$  to  $+37^{\circ}6$ ; whilst the range of average temperatures of different months was  $28^{\circ}6$  instead of  $27^{\circ}5$  in the shade. The underground thermometers were placed at depths of 1, 2, 5, 12, 20, 41, and 79 centimetres, and were observed, the six former every hour, and the last each three hours. Two other thermometers, placed at depths of 1.6 and 3.5 metres, were observed once a day. The whole series of observations is published in the *Memoirs* of the Caucasian Agricultural Society, and the *Izvestia* give the monthly averages, as well as a *résumé* of the results. We shall add to this *résumé* that the observations at Tifis show well the retardation of seasons at a depth of 79 centimetres, the coldest and warmest months being February and August, instead of January and July. The frosts at the spot where the observations were made do not penetrate deeper than 40 centimetres.—M. Maslovsky gives some observations of temperature at Askhabad, in the Akhalkette oasis, during the summer months; the moisture in May was but 31 to 33 per cent., falling as low as 17 per cent., and reaching sometimes 59 per cent.—M. Chernyavsky gives the Abkhaze, Mingrelian, and Georgian names of different plants.

Several papers deal with the population of the Caucasus; M. Zagursky has contributed a paper on the ethnographical maps of the Caucasus, and, after having sharply criticised the works of M. Rittich, recommends as the best ethnographical map of the Caucasus, that which was published by M. Seidlitz in *Petermann's Mittheilungen*, and in which M. Zagursky has embodied the results of the little-known but remarkable linguistic works of the late General Uskar. Still this map leaves much to desire and ought to be accompanied by an explanatory memoir.—The much-debated question as to the number of Armenians in the Russian dominions is discussed by M. Eritsoff, who comes to the conclusion that it must be (taking into account the increase of

population until 1881) 860,456 on the Caucasus, and 56,536 in European Russia.—M. von Eckert gives the results of anthropological measurements he has made, according to the instructions of Virchow, on 30 Adighes, 7 Ingushes, 11 Georgians, 14 Ossets, 14 Armenians, 9 Aderbikan Tartars, and 80 Little-Russians from the Government of Kharkoff. They proved to be all brachycephalic, the average indexes being  $80.7$  for the Ossets,  $80.9$  for the Tartars,  $81.9$  for the Ingushes,  $82.0$  for the Adighes,  $82.2$  for the Little-Russians,  $83.3$  for the Georgians, and  $86.5$  for the Armenians. The percentage of broad faces (*chamäprosope* faces, that is, those where the breadth between the cheek-bones is less than 89.9 per cent. of the length of the face, measured from the upper part of the nose to the lower part of the chin) is 44 for Tartars, 64 for Armenians, 71 to 77 for Ossets, Georgians, and Adighes, 86 for Ingushes, and 90 for Little-Russians.

The same volume contains several notes: on the Charjui; a list of heights in the Aderbikan; on the Scotch colony at Kuras and many others; and a bibliographical notice, by M. Stebnitzky, of Elisée Reclus's description of the Caucasus, which is spoken of in high terms.—The Appendix contains the translation, with notes, of the memoir, by Major Trotter, on the Kurds in Asia Minor, and of the Consular Report of W. Gifford Palgrave on the provinces of Trebizond, Sivas, and Kastamuni.

The eleventh volume of the *Memoirs* of the Caucasian Geographical Society contains three papers by M. Petrushevitch: on the Turcomans between the Uzboy and the northern borders of Persia; on the north-eastern provinces of Khorassan; and on the south-eastern coast of the Caspian and the routes to Merv. Some of these papers are already known to English geographers; and the others probably will be translated in full. They are accompanied by a map of the Russian Trans-Caspian dominions and of Northern Persia.

The twelfth volume of the *Memoirs* contains the first part of a large work, by the late General Uskar, on the ancient history of the Caucasus. It deals with the oldest traditions about the Caucasus, and is a most remarkable attempt at a *scientific* inquiry into the remotest history of this country. It is accompanied by a biographical notice of General Uskar, by M. Zagursky, his collaborator and follower. It is certain that M. Uskar, who pursued for many years the truly scientific exploration of Caucasian languages (undertaken first by Sjögren), has done in this branch far more than anybody else. But his works—which were only lithographed in a few copies, and each of which is not only a serious study of separate languages, but also a thorough description of the nation it deals with—are very little known, and this only from the short reports that were made on them by the late Member of the Russian Academy of Sciences, M. Schiefner. The few pages in which M. Zagursky gives an account of the work of Uskar, of the methods he followed, and of the results he arrived at, ought to be translated in full, as surely they would be most welcome to all those in England who are interested in the study of ethnology. They deserve much more than a short notice. P. K.

#### UNIVERSITY AND EDUCATIONAL INTELLIGENCE

OXFORD.—Prof. Moseley and Prof. Burdon Sanderson have been appointed *ex officio* Members of the Board of the Faculty of Natural Science.

Prof. Clifton has been elected a Member of the Hebdomadal Council in place of the late Prof. Smith.

The Professorship of Archaeology and Art, founded by the late Commissioners out of the revenues of Lincoln College, has been in abeyance owing to the proposed statute not having received the Queen's assent. The College now proposes to endow the professorship, and a statute will be promulgated at the beginning of next term, providing for a Professor of Classical Archaeology and Art, "who shall lecture on the arts and manufactures, monuments, coins, and inscriptions of classical antiquity, and on Asiatic and Egyptian antiquities, or on some of those subjects."

Mr. G. A. Buckmaster, B.A., and late Natural Science Demy of Magdalen College, has, after examination, been elected to the Radcliffe Travelling Fellowship. Mr. Buckmaster also obtained the Burdett Coutts Scholarship for proficiency in geology in 1882. The Fellowship is of the annual value of 200*l.*, tenable for three years. The candidate must declare that he intends to graduate in medicine in the University of Oxford, and to

travel abroad with a view to his improvement in that study. A Fellow forfeits his Fellowship by spending more than eighteen months within the United Kingdom.

SCIENTIFIC SERIALS

*Journal of the Franklin Institute*, February.—An account of certain tests of the transverse strength and stiffness of large spruce beams, by G. Lanza.—The abstraction of heat by mechanical energy, by J. Rowbotham.—On the application of the principle of virtual velocities to the determination of the deflection and stresses of frames, by G. F. Swain.—Cone pulleys, by H. W. Spangler.—Dust explosions in breweries, by C. J. Hexamer.—A summary of progress in science and industry, 1882.

The January number of the *Revue d'Anthropologie* (Premier Fasc., 1883), contains the first part of a valuable memoir—unfortunately left incomplete by Paul Broca at the time of his death—on the cerebral convolutions of the human brain, as shown by casts. Broca, having found from long experience that it is almost impossible to obtain specimens of a normal cerebrum in which both hemispheres are symmetrical, devoted his attention to the preparation, for the special use of students, of exact models of the convolutions divested of the secondary folds, whose extreme variability makes it difficult to determine their true character. The memoir now first printed supplies an exhaustive description of the brain at every stage from foetal to senile life, with explanations of the significance of the different colours used in the preparation of the models, which have been completed under the superintendence of M. S. Pozzi.—“Buffon Anthropologiste” is the title of a paper by M. P. Topinard, in which he has reprinted the main part of a lecture previously addressed to his class in the Ecole d'Anthropologie. The object of the address is to show that Buffon was the precursor of Darwin and Lamarck, both as to the theory of development from one, or at most a few original types, and in his belief in the survival of the fittest. His undoubted contradictions M. Topinard ascribes to the necessity of the times, which compelled him to respect the opinions of the clergy so far as to address to the Faculty of Theology a written retraction of fourteen propositions contained in his “Histoire Naturelle,” which that body had condemned. This curious document is here given *in extenso*.—M. C. Sabatier, a former *jugé de paix* in Kabylia, in an article on “La femme kabyle,” explains the nature of the enactments by which the French Government is endeavouring to ameliorate the condition of women among the Kabyles, who till the present time have virtually been slaves, being treated alike by their fathers and husbands as the least valued of chattels. As the result of long discussions with the heads of the tribes, two new “kanouns,” or laws, have been agreed to and put into force, which M. Sabatier believes to be decisive steps towards the social regeneration of the men as much as of the women, one of these enactments restricting the rights of the father to give his daughter in marriage before she has reached a fixed age, and the other freeing a wife from the control of her husband under certain conditions of desertion and neglect.—MM. Corre and Roussel's report of their observations of 200 crania of criminals preserved in the Anatomical Museum of Brest is supplied with various tables exemplifying their precise cranial characteristics, the nature of the crimes committed, the birth-place of the criminals, &c. The general conclusions are in complete accord with those of Bordier, Broca, &c.

*Archives des Sciences Physiques et Naturelles*, January 15.—On a refractometer for measuring the indices of refraction and the dispersion of solid bodies, by M. Soret.—Theoretical and experimental study of a rapid vessel, by M. Pictet.—On the apparent forces arising from the terrestrial motion, by M. Cellérier.

*Bulletin de l'Académie Royale des Sciences de Belgique*, No. 12, 1882.—Considerations on the stratigraphic relations of the psammites of Condroz and the schists of the Famenne properly so-called; also on the classification of these Devonian deposits, by M. Mourlon.—Second note on the dynamo-electric machine with solenoid inductor, by M. Plücker.—Determination of the general law ruling the dilatibility of any liquid chemically defined, by M. de Heen.—On the aurora borealis of November 17, 1882, by M. Terby.—Reports on prize competitions, &c.—The great discoveries made in physics since the end of last

century (lecture at public *séance*), by M. Montigny.—Dwarfs and giants (lecture), by M. Delboeuf.

*The Proceedings of the Linnean Society of New South Wales*, vol. vii. Part 2 (April–June, 1882); Part 3 (July–September, 1882). The chief contents are, *Botanical*: Botanical notes on Queensland. No. 2, the tropics; No. 3, the Mulgrave River; No. 4, Myrtaceæ.—On a coal-plant from Queensland, by Rev. J. E. Tenison-Woods.—Half-century of plants new to South Queensland, by the Rev. B. Scortechini.—Forage-plants indigenous to New South Wales, by Dr. Woolls.—On *Myoporum platycarpum*, a resin-producing tree of the interior of New South Wales, by K. H. Bennett.—Botanical notes in the neighbourhood of Sydney, by E. Haviland.—*Zoological*: On a new Gobiesox from Tasmania; on two new birds from the Solomons; on a new *Coris* from Lord Howe's Island, by E. P. Ramsay.—Australian Micro-lepidoptera, No. 7, by E. Meyrick.—On a reported poisonous fly from New Caledonia; new species of fish from New Guinea and Port Jackson; on an insect injurious to the vine, by Wm. Macleay.—On a new species of *Allopora*, by Rev. J. E. Tenison-Woods.—On Australian freshwater sponges; on the brain of *Galeocerdo rayneri*; monograph of Australian Apoditea (Plates 6 to 11); notes on anatomy of pigeons, by W. A. Haswell.—Some new Queensland fishes; on a new species of squill from Moreton Bay, by W. de Vis, B.A.—Habitat of *Cypræa citrina*, of Gray, by J. Brazier.—New variety of *Ovulum depressum*, found at Lifou, by R. C. Rossiter.—On a breeding place of *Platalea flavipes* and *Ardea pacifica*, by K. H. Bennett.—*Geological*: Physical structure and geology of Australia, by Rev. J. E. Tenison-Woods.

*Journal of the Asiatic Society of Bengal*, vol. li. Part 2, Nos. 2 and 3, 1882 (December 30, 1882) contains:—Some new or rare species of Rhopalocerous Lepidoptera from the Indian region, by Major G. F. L. Marshall, R.E. (Pl. 4).—On an abnormality in the horns of the Hog-deer (*Axis porcinus*), with an amplification of the theory of the evolution of the antlers in ruminants, by John Cockburn.—On the habits of a little-known lizard (*Brachysaura ornata*), by John Cockburn.—Second list of butterflies taken in Sikkim in October, 1882, by L. de Nicéville.

*Morphologisches Jahrbuch, eine Zeitschrift für Anatomie und Entwicklungsgeschichte*, Bd. 8, Heft 3, contains:—The nasal cavities and lachrymo-nasal canals in amniotic vertebrata, by Dr. E. Legal.—The structure of the hydroid polyps, by Dr. Carl F. Jickeli (Plates 16-18).—The tarsus in the birds and Dinosaurs, by G. Baur (Plates 19 and 20).—Contribution to a knowledge of the development of the vertebral column in Teleostians, by Dr. B. Grassi.—On an hypothesis concerning the phylogenetic derivativion of the blood system of a portion of the Metazoa, by Dr. O. Bütschli.

*Reale Istituto Lombardo di Scienze e Lettere Rendiconti*, vol. xv. fasc. xx.—Reports on prize-awards; announcements of prize-subjects, &c.

SOCIETIES AND ACADEMIES  
LONDON

**Royal Society**, February 15.—“Description of an Apparatus employed at the Kew Observatory, Richmond, for the Examination of the Dark Glasses and Mirrors of Sextants.” By G. M. Whipple, B.Sc., Superintendent.

In the *Proc. Roy. Soc.* for 1867, Prof. Balfour Stewart described an apparatus designed and constructed by Mr. T. Cooke for the determination of the errors of graduation of sextants. This instrument has from that date been constantly in use at the Kew Observatory, and since the introduction of certain unimportant improvements has been found to work very well.

No provision was made, however, for its employment in the determination of the errors of the dark shades used to screen the observer's eyes when the sextant is directed to the sun or moon, and it has been found that errors may exist in the shape of want of parallelism in these glasses, sufficiently large to seriously affect an observation accurate in other respects.

It has also been found that sextant makers are desirous of having the shades examined before proceeding to fit them into their metal mountings, and also to have the surfaces of the mirrors tested for distortion before making the instruments up. With a view to the accomplishment of these ends, for some time past the Kew Committee have undertaken to examine both dark glasses and mirrors, and to mark them with a hall-mark when