

everywhere. Some striking instances were given in 1885 before the Select Committee of the House of Commons on Forestry. For example, what was fifty years ago the great rice-producing district of the west of India, Ratnagiri, has suffered terribly from the denudation of the Western Ghats of the dense forests which extended all over that range of mountains. Again, the native State of Jinjira was all but ruined by the indiscriminate felling of the forests which covered the whole State, which is from fifteen to a hundred miles in breadth, and about forty in length. Similarly, in Ceylon itself, the chena cultivator in the Southern and North-Western Provinces and in the Province of Uva is threatened with ruin.

The recommendations made by Colonel Clarke in 1887, and approved of by Government were the following:—The Government Agent and the Conservator of Forests were annually, subject to the approval of the Government, to agree on what works were to be accomplished in the way of demarcation, conservation, &c., and these were to be carried out by the Provincial Forester under the authority and protection of the Government Agent. In departmental questions, such as those relating to pay, promotion, discipline, and other matters, the Conservator of Forests was to be supreme. The present mode of working is illustrated by the plan of operations for this year, drawn up by Colonel Clarke, and sanctioned by the Government in March last. The plan is drawn up under four heads: (1) demarcation; (2) timber and firewood supply; (3) re-forestation; (4) extra establishments. With regard to demarcation it was seen that this was urgently needed in the neighbourhood of the large towns, and Government was, therefore, recommended to allow the whole available staff to be placed at this work. The forests in the northern, eastern, and north-central provinces were to be allowed to take care of themselves for a time, as the population was very sparse in those regions. Thus it was proposed to begin at once with the Mittrigala and Kananpella forests, which lie in the vicinity of Colombo and on the banks of the Kelani. The present system, by which contractors cut timber for the Public Works Department, is to be changed, for no sufficient check can be exercised over the contractors and their workmen, and it is intended to establish depots in various centres where it is considered that there will be sufficient demand for timber and firewood. When this is done, not only will the heavier timber be utilized as at present, but also the lighter portions which are now left to rot in the forests. Two great depots are to be established, one on the east coast and one at Colombo. To the latter will be sent all the timber that is intended for export, such as ebony, satinwood, &c., and to the other depot those timbers which are in demand in India, but which would not bear the cost of transit to Colombo. According to the Report ten depots in all will be established this year. An effort will be made to give the forests of Ceylon a trial for railway sleepers. Colonel Clarke says that the local demand should be met, as two trees which are very plentiful in the island are, in his opinion, suitable for that purpose, Palai (*Mimusops Indica*) and Kumbuk (*Ternstroemia glabra*). Re-forestation, in Colonel Clarke's opinion, is not a pressing question; demarcation should first be completed. Many of the Ceylon forests, he thinks, are overworked, and require a long period of rest. To carry out the works now absolutely necessary for the protection of the forests, the staff is to be increased by adding forest-rangers and river-guards.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—The list of lectures in Physics this term includes Prof. Stokes's on Physical Optics, Prof. Thomson's on the Properties of Matter and on Mathematics for Students of Physics, and Mr. Wilberforce's on Dynamo-electric Machines. Among the numerous chemical lectures we do not note any very novel feature. Prof. Newton will lecture on the Evolution of the Animal Kingdom, and Mr. Gadow on the Morphology of the Ichthyopsida, recent and extinct. In Botany, the Readership has not yet been filled up; Mr. Gardiner is giving a general elementary course, Mr. Potter is lecturing on the Geographical Distribution of Plants, and Mr. Vaizey on the Classification of Plants. In Geology, Mr. Marr lectures on the Principles and on Advanced Stratigraphy, Mr. Harker on Petrology, Mr. Roberts on Advanced Palæontology, and Mr. Seward on Palæobotany. The physiological and anatomical courses are much as usual. There are three (graduated) sets of demonstration classes in Mech-

anism, and lectures by Prof. Stuart and Mr. Lyon. In Mathematics, Prof. Cayley is lecturing on Elliptic Functions, Prof. Darwin on Orbits and Perturbations of Planets, Mr. Pendlebury on the Theory of Numbers, Mr. Hobson on Fourier's Series and on Conduction of Heat, Mr. Larmor on Electrostatics, Mr. Forsyth on Theory of Functions, Dr. Besant on Analysis, Dr. Glaisher on Elliptic Functions, and Mr. Herman on Hydrodynamics.

At Sidney Sussex College, an examination for Open Scholarships in Natural Science will be held on January 1 next; two are offered, one of £70 and one of £40; subjects—Chemistry, Physics, Biology, and Geology. The Tutor will give further particulars on application.

King's College offers one Exhibition for Natural Science; examination to begin about December 10.

Emmanuel, Jesus, and Christ's Colleges will hold joint examinations for Open Scholarships on December 11 and following days. All candidates must show a competent knowledge of Chemistry. Candidates may also be examined in Physics, in Elementary Biology, and in Geology. The Tutors will give full particulars.

SCIENTIFIC SERIALS.

Bulletin de la Société de Naturalistes de Moscou, 1888, No. 2.—On the development of Amphipods, by Dr. Sophie Pereyaslavtseva.—List of plants of Tambouf, by Litvinoff.—On the great comet of 1887, by Th. Bredichin (in French).—Short notes on some Russian species of *Blaps*, by E. Ballion (in German).—On the Mollusks of Caucasia, by O. Retowski. Twenty-nine species from Novorossiisk, and ten from Abhasia are described (in German).—The *Chlorophyceæ* of the neighbourhood of Kharkoff, by D. B. Ryabinin. Until now, this subdivision of Algæ has been rather neglected in Russia, and only 100 species have been described in the neighbourhood of Moscow. M. Ryabinin's list comprises 233 species, belonging to 74 different genera (with notes in French).—Materials for the flora of Moscow, by Prof. Gorjankin (in Russian). The capital work of the late Prof. Kaufmann, "The Flora of Moscow," which was published in 1866, has been revised by M. Petunnikoff, who compared it with the rich materials of the Moscow Botanical Garden, and published a supplementary list. Students of the Moscow University having been directed during the last three years to collect new materials during special excursions, Prof. Gorjankin has availed himself of all their collections, as well as of a dozen other collections, and now publishes a new supplementary list, which contains 102 new species of Phanerogams and two species of Cryptogams.—The spiders and other insects of Sarepta, by A. Becker (in German).—The Dariinsk mineral water in the Government of Moscow, by A. Sabanéeff (in Russian). The spring is rich in iron, and is like that of Lipetsk.

SOCIETIES AND ACADEMIES.

LONDON.

Entomological Society, October 3.—Dr. D. Sharp, President, in the chair.—Mr. F. P. Pascoe exhibited a number of new species of *Longicornia*, from Sumatra, Madagascar, and South Africa.—Dr. P. B. Mason exhibited, for Mr. Harris, a specimen of *Charocampa Nerii*, recently captured at Burton-on-Trent.—Mr. S. Stevens exhibited a specimen of *Vanessa Antiopa*, which he caught in the Isle of Wight in August last.—Mr. E. B. Poulton exhibited a living larva of *Smerinthus ocellatus* in the last stage, fourteen larvæ of *Boarmia roboraria*, and some cocoons of *Rumia cratægata*. The object of the exhibition was to show the influence of special food-plants and surroundings on the colours of the larvæ and cocoons.—Mr. M. Jacoby exhibited a varied series of *Titubæ sanguinipennis*, Lac., from Central America. He stated that many of the varieties exhibited had been described in error as distinct species.—Mr. Billups exhibited specimens of *Bracon brevicornis*, Wesm., bred from larvæ of *Ephesia Kühniella*. He remarked that this rare species had only been recorded as bred on two or three occasions, viz. by the Rev. T. A. Marshall, Mr. W. F. Kirby, Herr Brischke, and Mr. Sydney Webb.—Mr. W. Warren exhibited specimens of *Antilhesia ustulana* and *A. fuligana*; also bred series of the