mental subjects are practical; and the number of students who took practical work is as follows: Inorganic Chemistry, 15,169; Magnetism and Electricity, 2694; Sound, Light, and Heat, 1793; Organic Chemistry, 1538. The remaining practical subjects—human physiology, general biology, zoology, botany, and metallurgy—divided 1852 students between them. There are now 169 Schools of Science in which organised courses of study are taken in connection with the Department, and the number of students attending them is 20,879.

SCIENTIFIC SERIALS.

THE most important contribution to *Himmel und Erde* for this month is a long paper on the terminal moraines of North Germany. The other papers comprise one in which is given the conclusion of a lecture by Dr. Drygalski on Greenland, dealing mainly, in this part, with the habits and customs of the Esquimaux; and another by Herr G. von Gleicke treating of the existence of an intra-mercurial planet or planets, generally surveying the various theories that have been put forward to explain the motion of the perihelion of Mercury. The only result that appears certain in the paper is the practical confirmation of the reality of the motion, originally determined by Le Verrier. The presence of a single planet or of a ring of meteoric matter; the existence of an unknown satellite of the planet itself, or an ellipticity in the figure of the sun; an alteration in the expression of the law of gravitation or the introduction of terms suggested by electrodynamic considerations; all seem to offer insuperable objections, or to be based on pure empiricism. The enigma is not solved yet. The subjects to which the shorter notes refer have generally been mentioned in these columns. They include some account of the Greenland Meteor; the sinking of the surface of the earth in the neighbourhood of the Canadian lakes, and its effect on the Niagara Falls; the depth of the sea and the determination of ocean currents around Australia derived from floating bottles. A short notice is also added of a proposed attempt on the part of MM. Godard and Surcouf to reach the North Pole by means of ballooning. The expedition would start in the summer of 1898, selecting Spitsbergen as a base of operations. The peculiar feature of the attempt seems to consist in carrying twelve small balloons, filled with hydrogen to serve as a gasometer to supply the main balloon, which is of gigantic dimensions, with the gas which may leak or waste. M. Godard counts on spending sixty days aloft, and to carry with him the means of support of no less than seven people, among whom will be found a chemist, a meteorologist, and a physician.

Memoirs of the Caucasian Branch of the Russian Geographical Society, vol. xviii.—On the distribution of precipitation in Caucasia during the spring and summer of 1894, by A. Woznesensky, with four maps.—Journey in the Chernomorsk district, in 1894, by N. Alboff; with a map (on the scale of seven miles to an inch) of the Chernomorsk district and the western part of the district of Sukhum; and botanico-geographical researches in Western Transcaucasia, by the same author, being a continuation of his paper inserted in a preceding volume of his *Memoirs*. In this paper two important excursions across the main ridge of Abhasia are described. The flora of the limestone-mountains having been the special subject of studies, it is dealt with in detail. The rare new species *Amphoricarpus elegans*, which was formerly found at two places only of Abhasia and Mingrelia, was met with in thousands. A bush-like *Campanula*, which M. Alboff considers as a new species, was found and was named *C. regina* for its rare beauty. Numbers of other rare species were found. Detailed lists of the limestones' fauna in Abhasia and Mingrelia are given. In addition to the glaciers previously discovered on the northern slope, a hanging glacier was found on the southern slope. Very interesting remains of the ancient population of the region are mentioned.—On the Kumyks, anthropological sketch by J. Pantukhoff. The paper contains a sketch dealing with the possible origin of this Tartar stem, anthropological measurements made by the author, and a comparison of the same with measurements on other Caucasian stems.—The Pshaves and their land, by D. Khizanachwili.—A journey in the central portion of the Mountain-Chechnya, by Madame A. Rossikoff, with a map three and a half miles to the inch. Detailed and lively account of a journey in that imperfectly known part of Daghestan, the seat of Shamil's wars.—Statistical description of, and statistical data relative to, the provinces of Baku, Kars, Erivan, Daghestan, and Elisabethpol.—On the condition of glaciers and of the lakes on the northern slope of Central Caucasus, by K. Rossikoff.—In a very interesting appendix we find (1) a beautiful atlas of eight ethnographical maps of Transcaucasia, one for each separate province, on the scale of thirteen miles to an inch (it is the work of E. Kondratenko); (2) a map of the distribution of the Armenian population in Asia Minor, on the basis of V. Cuinet's data, 1890-94, accompanied by a paper by General Zelenyi and Colonel Sysoeff; and (3) the distribution of Armenian populations in Transcaucasia.

WE have received the number of the *Irish Naturalist* for February, and are always glad to say a word on behalf of these local natural history journals, which have done so much to encourage the early enthusiasm of many who have afterwards become eminent naturalists. In the present number Mr. Allan P. Swan describes and figures a new species of *Leptolegnia*, *L. bandoniensis*, belonging to the *Saprolegniaceæ*.

THE *Journal of Botany*, in its numbers for January and February, still continues to cater chiefly for descriptive and "critical" botanists. Mr. F. Townsend describes and figures a new species of *Euphrasia*, *E. canadensis*, from the neighbourhood of Quebec; and Miss Ella M. Tindall enriches British Hepaticæ with a species new to science, *Fossombronia Mittenii*, from North Devon, which is also figured

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, January 20.—"Fergusonite, an Endothermic Mineral." By William Ramsay, Ph.D., LL.D., Sc.D., F.R.S., and Morris W. Travers, B.Sc.

The mineral fergusonite, discovered by Hartwall, occurs in felspar and mica deposits, in the same manner as most of the rare Norwegian minerals, such as euxenite, orthite, samarskite, &c. The position in which such minerals are found, embedded in masses of felspar, or encrusted with mica, leaves the question of their origin an open one. Whether they are deposited in the felspar by water, or whether they are contemporaneous with the felspar, is a matter of speculation. Fergusonite is a black lustrous mineral, not unlike obsidian in outward appearance, but of considerably higher density. Seen under the microscope, even with the highest power, there is absolutely no sign of crystalline structure, though in thin slices the substance is translucent, and transmits yellow-brown light. It is, however, macrocrystalline, occurring in quadratic sphenoids. It is quite homogeneous, and displays no sign of cavities. Like similar minerals, it contains helium, which is expelled on the application of heat.

But this mineral presents a peculiarity, which has led us to publish this note. When heated to a temperature not exceeding 500° or 600°, it suddenly becomes incandescent, and evolves much of its helium; while its density decreases.

The analysis of the mineral was kindly undertaken by Miss Emily Aston, to whom we desire to express our indebtedness.

It showed that fergusonite is mainly a niobate of yttrium, containing oxides of uranium, but in no great quantity.

The gases evolved by the incandescence of nearly 5 grams (4·852) of the mineral, heated in a vacuous tube, were analysed and found to consist of helium, hydrogen, carbon dioxide, and nitrogen.

The density was determined before and after heating. Great care was taken to make sure of the absence of air-bells, by warming the powdered mineral under water in a vacuum, before weighing it.

Density before heating	5·619
,, after ,, ...	5·375

It is thus seen that the mineral loses density on incandescence.

The amount of heat lost by this curious mineral in parting with its helium was determined. The plan of operation was to burn in oxygen a known weight of hydrogen, ascertained by measuring it, under a small platinum crucible, in a calorimeter. The rise of temperature was noted. This operation was repeated several times, so as to standardise the calorimeter. Some grams of mineral were then placed in the crucible, and the operation was repeated; the heat evolved by the incandescing mineral added itself to that from the burning hydrogen, and the