100 such cones along a 20 mile fissure. At some points, the lava has flowed quietly from fissures without forming cones or craters. Lava sheets and streams, sometimes scores of miles in length, are as barren as the domes of ice and snow. The more viscous flows have steep borders, so that they rise in ragged ridges, impassable from being covered with loose clinkery fragments. The more fluid flows have formed smooth and nearly level fields, except that their surface is here and there disturbed by irregular subsidence, or broken by great cracks which turn back the traveler. Secondary craters are numerous on certain flows, sometimes to the number of hundreds crowded together, as if the flow had run over a marsh or lake. Parts of the plateau are covered with drifting sand, swept about in blinding storms. The whole island has been deeply covered by an ice sheet (except where an occasional volcanic cone rose as a 'nunatuk' or island), as is proved by abundant striations, morainic deposits and transported boulders, save over some 5000 square miles where the glaciated surface has been buried under the more recent lavas. Lakes of glacial origin are numerous. Sheets of ice and snow to-day cover about an eighth of the island area, mostly as mantles over the domes of the plateau from which a few glacial arms descend to lower levels.

The lowlands are of small extent. They consist of narrow coastal plains (strips of sea bottom revealed by recent elevation) or of fluviatile plains built forward by waste-laden glacial rivers. Two elevated shore lines on the inner margin of the coastal plains stand at heights of 250 and 125 feet, marked by cliffs, caves and beaches; the strata of these plains contain marine shells. The fluviatile plains or 'sandr' are chiefly developed on the southern coast, where the rainfall is two or three times heavier than in the north. Here one finds all the phenomena of aggrading braided rivers; a single glacial torrent may, on emerging from the highland, split into a hundred shifting channels, with islands of sand and clay occupying the meshes of the network. The rivers are exposed to 'ice-floods' when the glaciers of the highland domes are melted by volcanic heat; overwhelming turbid torrents then bear huge ice fragments and abundant rock waste down to the sea. The southern coast has been rendered harborless by the growth of the 'sandr,' and the shore is frequently bordered by off-shore sand reefs, built by the heavy surf. Elsewhere the coast is extremely irregular, bold headlands projecting between long fiords, into which the streams from the uplands fall in high cascades. Rivers of clear 'mountain water' have not yet formed important delta plains; but where the rivers bring down 'glacial water,' the fiords are shoaled and extensive delta plains occupy their heads.

Settlements are limited to the lowlands, where the people pasture cattle and sheep on the plains, catch birds on the cliffs, and take fish from the sea. But besides suffering the disadvantages of an inclement climate, the lowlands are exposed to lava floods which bury the fields, to river floods which lay them waste, and to ash showers which poison the pastures, causing famine and death to beast and man. It is indeed curious that a people brave enough to discover distant Iceland in a stormy sea, hardy enough to inhabit it for a thousand years, and intelligent enough to develop a remarkable literature, should not have had enterprise enough to leave the island for a more favorable home. Evidently the world is not in the 'free market' that the older economists supposed.

W. M. DAVIS.

SCIENTIFIC NOTES AND NEWS.

ABERDEEN UNIVERSITY, at its graduation ceremony, conferred the degree of Doctor of Laws on Professor Josiah Royce, of Harvard, who had recently completed the second series of Gifford Lectures before the university.

PROFESSOR D. A. KENT, of the Iowa State Agricultural College has been appointed by the Sultan of Turkey, instructor of farming for the Turkish Empire.

PROFESSOR M. B. BRUMBAUGH, who holds the chair of pedagogy at the University of Pennsylvania, has been offered the office of Superintendent of Instruction at Porto Rico. It is understood that he will accept if he can secure a leave of absence of four years from the University.

Professor Ernst Haeckel has been elected an honorary member of the Academy of Sciences at Bucharest.

The Literary and Philosophical Society of Manchester has elected the following honorary members: Professor James Dewar of the Royal Institution, Professors A. Ewing and A. R. Forsyth of Cambridge University, Professors Ernst Haeckel of Jena, and H. A. Lorentz of Leiden, Mr. Robert Ridgeway of Washington, and Mr. Beauchamp Tower of London.

Professors Joseph Le Conte and William Carey Jones, of the University of California, have been granted a year's leave of absence from the University which they will spend abroad.

Professor Macfarlane, of the State Normal College, Ypsilanti, Mich., has returned from Vienna, where he has been studying geology for the past year with Professor Penck. During the autumn months he will be at Harvard University, carrying forward his studies with Professor Davis.

Dr. Charles F. Chandler, professor of chemistry in Columbia University, president of the Society of Chemical Industry, which meets next month in England, sails for England on June 16th.

Professor George F. Sever, of Columbia University, has accepted the position of superintendent of electrical exhibits of the Pan-American Exposition.

Miss Mary H. Kingsley has died at Simonstown, South Africa, where she had been superintending the arrangements of the military hospitals. Miss Kingsley, who was the daughter of Dr. G. H. Kingsley and a niece of Charles Kingsley, made in 1893 and in 1896 journeys through little known parts of Africa and published accounts of her explorations in two interesting volumes 'Travels in West Africa' and 'West African Studies.' She also made valuable botanical collections in St. Paul de Loanda, Old Calabar and the region of the Niger coast protectorate.

Mr. G. F. Göransson who made important improvements in the Bessemer process for making steel has died in Sweden at the age of 81 years.

We also regret to notice the death at the age of 77 years of Mr. James Thomson of Glasgow, known for his geological work especially on Scottish carboniferous corals.

Mr. Willard N. Clute, editor of the *Fern Bulletin*, has returned from Jamaica with several species of plants that were unknown to science. He will probably return for more specimens. In the eastern part of the island away from the cities he saw but few remains of prehistoric peoples. The present natives often bury their dead in their own front yards, erecting over each grave a rectangular structure of brick and mortar the size of the grave and about two feet high. This is covered with a large flat stone or stones. The negro folk-lore of Jamaica is being recorded by Mr. Edward S. Earle, of Kingston.

President Jordan and Mr. John O. Snyder, of the Department of Zoology in Stanford University sailed June 6th on the steamer *Gaelic*, for the purpose of making a collection of the fishes and insects of Japan. They will be assisted in Japan by S. Kuwana, an assistant in entomology at Stanford, who sailed to his native country on an earlier steamer, by Keinosuke Otaki, a graduate of Stanford, now teacher in a royal military academy in Tokyo, and by James F. Abbott, also a graduate of Stanford, now teaching in a governmental school at Otsu. The expedition is under the patronage of Mr. Timothy Hopkins, founder of the Hopkins Seaside Laboratory at Monterey. It is hoped that a full survey of the fish fauna of the islands may be made, and generous collections of other forms of life are expected.

G. B. Gordon, who has charge of the explorations to be made at Copan, has secured from President Sierra of Honduras, for Harvard University, by treaty arranged at Tegucigalpa on February 22d, the control of the ruins of Copan and the lands pertaining thereto, for a period of ten years, with the right to make excavations and to remove to Cambridge for preservation a portion of the objects that may be found.

It is stated in *Nature* that Mr. J. S. Budgett has left Liverpool on his second expedition to the Gambia, where he is going in order to com-

plete his studies of the fish-fauna of that colony, and especially to investigate the life-history and development of the abnormal fishes *Polypterus* and *Protopterus*. On reaching Bathurst, Mr. Budgett will proceed up the River Gambia to his former quarters on M'Carthy's Island, in the neighborhood of which he has already ascertained that these fishes are found breeding during the rainy season. A paper on points in the anatomy of *Polypterus*, based on specimens obtained by Mr. Budgett during his first expedition, was read before the Zoological Society on May 8th, an abstract of which we published recently.

PROFESSOR W. M. DAVIS of Harvard University, Professor R. E. Dodge of Teachers College, Columbia University, and several other geologists are engaged in making an exploratory trip through the Grand Canyon of the Colorado.

THE Royal College of Surgeons of England will, as we have already announced, celebrate its centenary at the end of July. The exercises will begin with a *conversazione* at the College on the evening of Wednesday, July 25th. On Thursday morning Professor Stewart, F.R.S., the conservator, will give a demonstration in the Hunterian Museum. On the afternoon of the same day a general meeting will be held in the theatre of Burlington House, when the President, Sir William MacCormac, will deliver an address, and honorary fellowships will be conferred. In the evening a festival dinner will be held in the great hall of Lincoln's Inn. On Friday morning Professor Stewart will again give demonstrations, and on the evening of that day a *conversazione* will be given by the Lord Mayor at the Mansion House.

A DESPATCH to the daily papers states that an explosion occurred in the mechanical laboratory at the Agricultural College, at Lansing, Mich., on June 5th, while Professor M. D. Atkins was conducting an experiment in the presence of the students. Professor Atkins was seriously burned, and the sight of his left eye was destroyed by flying particles of glass. H. D. Hornbeck, a student, who was assisting, was also badly burned, and it is feared he will lose his right eye.

M. CREVAT-DURAND, of Fontainbleau, has by his will made generous public bequests, including 150,000 frs. to the Paris Pasteur Institute. The addition to the Institute, which comprises a hospital and laboratories for biological chemistry, is now complete.

THE difference between the Senate and the House of Representatives in regard to an appropriation for the Hydrographic Bureau of the Navy Department, which created special interest and prevented the adjournment of Congress at the expected time was compromised by giving $50,000 to the Bureau for Ocean Surveys, but providing that the survey should not be extended to the coasts or inland waters.

M. MASPERO, the new *directeur des antiquités et des fouilles en Egypte*, in a paper before the *Académié des Inscriptions et Belles-lettres*, explains a long hieroglyphic inscription containing fourteen engraved columns. This granite stele was found at Kem-gayet on one of the estates of Husseinpacha, uncle of the Khedive, and was presented immediately to the Gizeh Museum. It represents the king Nectanebo II., the last pharao of the native dynasties and bears the date of the reign. Nectanebo is making an offering to the goddess Nel de Saïs in gratitude for benefits received at her hands.

DR. THEODORE BEER, whose valuable studies on the sensory organs of both vertebrates and invertebrates are well known, is engaged in writing a comprehensive work on the *Comparative Anatomy and Physiology of the Organs of Vision*, and to make this as complete as possible he is anxious to acquire separates of all articles —for which, if desired, he will send his own writings in exchange—dealing in any way whatever with the anatomy, embryology, zoology, pathology, or literature of the organ of sight in animals or the eye of man, or with reactions to light. Dr. Beer is particularly desirous that none of the widely scattered writings of Americans should escape his attention, and therefore especially invites the co-operation of all Americans who can aid him. Communications should be addressed: Dr. Theodore Beer, *Privatdocent für vergl., Physiologie a. d. Universität*, Anastasius Grün-Gasse 62, Wien, XVIII, Austria.