

its discussion of structural and petrographical problems, it is of use to the physiographer also in giving excellent description and illustration of typical examples belonging to this peculiar member of the volcanic group of forms. It may thus serve as a corrective to the undue share of attention ordinarily allowed to the superficial loose-textured and short-lived volcanic cone. It serves also to enforce the idea that the surface of the land as we see it is often deeply carved in land of earlier times; truly a primitive geological conception, but one which geographers have been slow to recognize and utilize.

THE RUN-OFF OF RIVERS.

THE same report of the survey contains a chapter by F. H. Newell on the results of stream measurements, in which an important relation is indicated between rainfall and topography, on the one hand, and 'run-off,' on the other. For example, where the mean annual rainfall on mountainous regions is 40 inches, the run-off approaches 30 inches; where the rainfall is 25 inches, the run-off is 15; where the rainfall is 12, the run-off is only 5. On more open country, where the mean annual rainfall is 50 inches, a run-off of 25 inches may be expected; where the rainfall is 30 inches, the run-off is about 8 inches; while where the rainfall is 20 inches, only about 3 inches gets into the streams. In both mountainous and open country, the percentage of run-off rapidly decreases as the rainfall lessens. One notable exception to this rule is noted. In regions of small rainfall, under twelve inches, the rain usually falls at long intervals, but then at an excessive rate, often as 'cloud bursts.' In such cases the water has little time to penetrate the ground, and the run-off is exceptionally large. An interesting map of the mean annual run-off of our country accompanies this essay.

W. M. DAVIS.

HARVARD UNIVERSITY.

SCIENTIFIC NOTES AND NEWS.

THE BRITISH MEDICAL ASSOCIATION.

THE sixty-third annual meeting of the Association convened in London on July 30th, with an attendance of nearly 3000 members. The growth of the Association in recent years has been remarkable. When it last met in London (1873) the membership was 1500, whereas now it is the strongest medical society of the world, having 15,669 members and property of great value. The address of the president, Sir J. Russell Reynolds, was entitled 'The power of life in life,' and discussed in part the use of 'living things' in the conservation of health and the prevention or cure of disease. The address also reviewed the progress of medicine since the preceding London meeting and the relations of professional life to certain aspects of art and religion. The Association met in fifteen sections, before each of which many papers were presented, followed by discussions of much interest, not only to members of the medical profession, but also to all interested in the progress of science. The Association occupies somewhat the position of a professional trades union, and with its great membership and means and its organ, *The British Medical Journal*, is able to influence, not only the etiquette and practice of the profession, but also legislation. The reports of committees, such as that on Parliamentary bills, and the discussions that followed, were consequently of great practical importance.

SECTION C, CHEMISTRY, OF THE A. A. A. S.

THE committee appointed by the Council to prepare a programme for the meetings announce that the Committee after careful consideration believe that added interest may be given to the meetings by providing, in addition to the original papers that may be offered, a series of discussions of subjects of current interest to chemists, in

which all who may be present may take part. In order that a systematic course may be followed in these discussions, each general division of chemical work arranged for this meeting will be introduced by a member of the section, who will be followed in turn by some other members who may have anything to offer. These discussions will be open to all members of this Section, but it is requested that those who may have something to offer will advise the Chairman of the Committee of the fact and submit to him as early as possible a brief abstract or syllabus of the material. The object of this is to enable the Committee to make a systematic arrangement of the work to be done. The several sessions will be devoted respectively to physical, general inorganic, general organic, analytic, didactic, biologic, hygienic, agricultural and technical chemistry. The address of the vice-president, Dr. William McMurtrie, is on 'The Relations of the Industries to the Advance of Chemical Science.'

THE BOTANICAL SOCIETY OF AMERICA.

THE Botanical Society of America was formally organized last summer at Brooklyn. The first annual meeting will be held at Springfield, Mass., Tuesday and Wednesday, August 27th and 28th, immediately preceding the meeting of the A. A. A. S. The sessions of the Society will be held in the High School building, room 6, first floor, beginning at 3 P. M., Tuesday. The Council will meet at the Hotel Worthy at 2 P. M. of the same day, for the purpose of arranging the program and for such other business as may come before it.

C. R. BARNES, *Sec'y.*

VITAL STATISTICS OF NEW ENGLAND.

A SUMMARY of the vital statistics of the New England States for the year 1892 has been compiled under the direction of the

secretaries of the State Boards of Health and published by Damrell & Upham, Boston. It appears that the birth rate of New England, 24.9 per thousand of the population, was less than that of any European country excepting France and Ireland. The death rate (19.9) was less than that of Italy, Hungary, Austria, Germany, France, Holland and Belgium, but greater than that of the British Islands, the Scandinavian countries and Switzerland. The marriage rate (18.5) was higher than that of any other country. The illegitimate births were only 13.4 per thousand living births, whereas in Europe they vary from 25 in Ireland to 143 in Austria. The total population of New England (4,700,745) is almost equally divided between the urban population contained in cities having a population larger than 10,000 and the rural population. The marriage, birth and death rates in the two groups were as follows:

	Marriage.	Birth.	Death.
Urban Group	20.66	29.68	21.01
Rural Group	16.42	20.00	18.72

GENERAL.

AT the *Versammlung deutscher Naturforscher und Aerzte*, which will be held in Lübeck, under the presidency of Professor J. Wislicenus, from the 16th to the 21st of September, the following lectures will be given: On Some Problems of the Physiology of Reproduction, by Professor G. Klebs; Serum Therapeutics, by Professor Behring; Surgical Operations on the Brain, by Professor Riedel; Atomic Problems, by Professor Victor Meyer; Neo-Vitalism, by Professor von Rindfleisch; The Origin of the East Sea, by Professor R. Credner; The Overthrow of Scientific Materialism, by Professor W. Ostwald.

ACCORDING to the *Naturwissenschaftliche Rundschau*, the 'Göttingen Gesellschaft der Wissenschaften' offers a prize of 500 marks, to be awarded February 1, 1897, for an anatomical research and description of the cavities of the body of the new-born child and their contents compared with those of the adult. The Academy of Sciences of Cracow proposes, as subject for the Copernicus prize (1000 and 5000 fl.), theories concerning the physical condition of the globe. The essays must be received before the end of December, 1898, and must be written in the Polish language.

The Annual Congress of the British Institute of Public Health was held at Hull, on August 8th to 13th.

MR. ADOLPH SUTRO, Mayor of San Francisco, has offered to the Regents of the University of California thirteen acres of land on which to erect buildings for the affiliated colleges of the University. In addition he offers to deed to the trustees of the city thirteen acres adjoining as a site for the Sutro Library. The collection of books is said to contain 200,000 volumes, and the total value of gifts to be \$1,500,000.

MR. GRANT ALLEN has written *The Story of the Plants* for Appleton's Library of Useful Stories.

THE Japanese government has made an appropriation for the laboratory of Dr. Kitasato, in which researches of great importance are now in progress on the cause of leprosy.

At a conference on the deaf and dumb held recently at Exeter Hall, London, a constitution for a new national association was adopted. Among other addresses was one by Mr. J. N. Bannerji on the position of the 200,000 deaf mutes in India, the education of whom is unassisted by the government. The following resolutions were passed: "That it is desirable that facilities should be given by which pupils of our in-

stitutions who show exceptional ability should have the advantage of a more extended education than it is now possible to give them." "That this conference considers it desirable that the governing bodies of institutions should at once petition the government to reduce the proportion of one-third, to be provided out of sources other than rates of moneys provided by Parliament, to the proportion of one-fifth." "That the committee of the National Association of Teachers of the Deaf be requested to draft at the earliest possible opportunity a scheme of education for children of school age as a suggestion to the Education Department."

THE 100th anniversary of the foundation of the Institute of France will be celebrated on October 23d, 24th and 25th with appropriate ceremonies.

THE Chemical Industry Society, an English society devoted to the study and practice of applied chemistry, with a membership of 2892, held its annual meeting at Leeds during the first week in August.

THE 'Berliner Akademie der Wissenschaften' has recently appropriated over \$5000 for the promotion of scientific work and research. Among others we may mention an appropriation of 2000 Mk. to Professor Fuchs, of Berlin, to be devoted to the continuation of the publication of Dirichlet's works; 2000 Mk. to Professor Weierstrass, of Berlin, for the publication of his collected works; 1500 Mk. to Professor Gerhardt for the publication of the Mathematical correspondence of Leibnitz, and 2000 Mk. to Dr. Schauinsland for researches on the Fauna of the Pacific islands.

THE Steward Prize of the British Medical Association for 1895, consisting of an illuminated address and a cheque for £50, was awarded to Brigade-Surgeon-Lieutenant-Colonel D. Douglas Cunningham, M. B., C. I. E., F. R. S., for his bacteriological

work in India, especially in the investigation of the bacillus of cholera.

THE chief article in the June number of the 'Quarterly Journal of Microscopical Science' is a study of Metamerism by Prof. T. H. Morgan, of Bryn Mawr College, in which he treats, on the basis of a large amount of original research, irregularities in the serial repetition of rings of annelids.

It has been shown in a report of the sub-committee of the Glasgow corporation that some samples of French peas examined contain fifteen grains of copper sulphate in the pound. The French government forbids the use of these peas in France, but allows them to be exported.

THE exhibition of the Department of Mines at the Cotton States and International Exposition will include four oil paintings 120 feet long, showing sections of the Appalachian range of mountains drawn on the scale of one foot to a mile. In these paintings every mineral and coal vein in the Appalachian system will be shown. Sections from the different coal veins of the United States will be exhibited, some of these sections weighing seven tons and showing the whole vein. The exhibition is personally superintended by Dr. David T. Day, Chief of the Department of the Government Board of the Exposition.

GINN & Co. announce for publication this summer 'Lakes of North America,' by Professor Israel C. Russell. The origin of the lake basins and their place in topographic development, the movements of lake waters, the topography of lake shores, the relation of lakes to climatic environment, the life histories of fresh and of saline lakes, are some of the subjects discussed.

THE British Museum has recently published the accounts of the income and expenditure of the 'Special Trust Funds' for 1895. These are six in number, amounting to £24,177, of which the interest is £1,518.

This has been expended on salaries, the purchase of manuscripts and excavations in Cyprus. The number of visitors to the museum in 1894 was 578,977. An average of 670 daily visit the reading rooms for purposes of research and reference. 413,572 people were admitted to the collections of the Natural History department; of these 20,029 were students, chiefly in the department of zoölogy.

DURING the year a valuable collection of Hindu coins has been bequeathed to the museum by the late Sir Alexander Cunningham, and a large collection of Turkish books published in Constantinople during the reign of the present Sultan, by whom the volumes were sent. The museum has also acquired a portion of the collection of rare English books of the period of Elizabeth and James I., discovered in 1867, at Lamport Hall, the seat of Sir Charles Isham, where they appear to have been forgotten for two centuries.

By the will of Benjamin P. Cheney the sum of \$50,000 was left to various public institutions. The Massachusetts Institute of Technology receives \$10,000.

M. LUCIEN NAPOLEON BONAPARTE WYSE, a well-known engineer and explorer, died at Paris on August 12th, at the age of 51. He was a grandson of Lucien Bonaparte. He made extensive hydrographical and other scientific explorations, and in 1875 undertook the survey of the Panama isthmus. His "Rapport," 1876-78, on this survey was followed by the operations of M. de Lesseps on the Panama ship canal.

THE astronomer Andreas Löwald Pihl died in Christiania on July 1st, at the age of 73 years.

THE *Lancet* announces the deaths of Dr. S. Moos, professor of otology in Heidelberg; Dr. Kiener, professor of pathological anatomy in Montpellier, and Dr. Albert Nagel, professor of ophthalmology in Tübingen.

DR. ADOLF GERSTÄCKER, professor of zoölogy in the University of Greifswald, died on July 20th, at the age of 67 years.

DR. GUSTAV VON GROFE, professor of mathematics in the University of Dorpat, died recently at the age of 47 years.

MR. JOSEPH THOMPSON, one of the most distinguished and successful of modern African explorers, died on August 7th, at the age of 37.

UNIVERSITY AND EDUCATIONAL NEWS.

FEW realize the great work done at the University of Kansas along scientific lines. To-day, as happens every summer, several expeditions are in the field collecting for the enrichment of the university museums and laboratories. Professor S. W. Williston is spending his second vacation in the Bad Lands of Wyoming. Last summer he returned to the University richly rewarded for his summer's work by valuable specimens which were described by him during the year in the *Kansas University Quarterly*. Also under his direction, but not personal supervision, a party has been at work in the cretaceous deposits of western Kansas and eastern Colorado. Professor E. Haworth has been constantly busy in directing the Geological Survey of the State; this work being done in connection with the State Irrigation Survey. Last summer Professor Haworth completed a stratigraphical survey of the southeastern portion of the State. L. L. Dyche, curator for the zoölogical museums, is with the Peary Relief Expedition as chief naturalist. Professor Dyche hopes to secure many valuable specimens of Arctic mammals. Last season Professor Dyche was with the party on board the ill-fated *Miranda*. He had secured a large amount of material, all of which was lost when the vessel went down. Another expedition which goes out each summer is that from the Department of Entomology. This season collections for this department are

being made in northern Wyoming. Last year the summer was spent in New Mexico. But it is not alone in natural history that advances are being made. Along every other line work is being done. The physics and electrical engineering department has taken possession of the new building just completed which is to be devoted to the study of electricity. It is true that rare advantages are given the Kansas students of science in natural proximity to the great collecting regions of the west. But these rare advantages might have been allowed to remain undeveloped had not early in the history of Kansas a teacher been found who possessed in the highest degree the rare quality of being not only an enthusiast himself, but also a teacher capable of arousing enthusiasm in others. This teacher was Francis H. Snow, first professor of natural history, then professor of botany and entomology, and now Chancellor of the University. To him Kansas owes more than to any one man for the upbuilding of her great University. He laid the foundation for the great entomological collections now only second in size and value to those of Harvard; for the famous Kansas collection of mounted mammals; for the geological and paleontological museums, and for the excellent herbarium. But it is as Chancellor of the University that perhaps his most noticeable work has been done. Since 1890, when he was placed in the president's chair, the institution has doubled in size of equipment, number of students and power in the State. The standard of scholarship has been raised, and the University has been placed in the front rank of State Universities. X.

The Botanical Gazette states that on account of serious financial difficulties and a distrust of the progressive and enlightened educational policy of President John, the trustees of De Pauw University at Greencastle, Indiana, have forced the resignation of the president and set about a return to