

lacking in exactness. Each author has gathered historical material as an incident to other work, but the problem is deserving of intensive and continued effort. The human interests involved are considerable, for in these areas of small population every meadow and every small area of good pasturage is important. The investigator is ever confronted with questions: Has the formation of arroyos been wholly adverse to man or productive of good? If desirable, can former conditions be restored? How can existing property, fields, buildings and even towns be best protected against encroachment of the ever-widening channels? A proper solution of the practical problem will rest on considerations based on our theory of the cause of this erosion. If overgrazing or other artificial factors are the cause, regulation and a few simple structures may restore the conditions of the past. If erosion is the result of climatic change, a swing in the climatic cycle may at some future time restore the alluvial floors of the valleys without human intervention. The present need is for more facts in order that one or another of the proposed theories may be established. With the date at which cutting began definitely fixed and the date of introduction of livestock also fixed, a much better judgment as to the influence of overgrazing can be made. These historical data must be gathered locally for the many individual streams, and it is hoped that the large group of scientists interested will collect and publish the facts.

KIRK BRYAN

U. S. GEOLOGICAL SURVEY

FRANCIS HENRY PARSONS

THE death of Francis Henry Parsons on July 25 at the age of seventy years removes one who had a lifelong interest in the advancement of science. Though he left no written contribution to scientific literature, his work as librarian successively of two scientific collections is of undoubted importance.

His fifty-two years of government service comprised work in the United States Coast and Geodetic Survey, the United States Naval Observatory, and the Library of Congress. While in the Coast Survey, 1873-1894, he was made chief of library and archives, and assembled, from the scattered field parties and vessels, a library of from 12,000 to 15,000 volumes which is especially valuable for its source-material.

As assistant in charge of the Smithsonian Division of the Library of Congress, 1900-1925, he augmented the collection of transactions of learned societies and academies already gathered there, until, at the time of his retirement, it comprised 450,000 volumes. The significance of the collection is not, however, in the

number of volumes, but in the nature of the material to be found there, which is unequalled in this country, in resources for the research student.

While others will build upon this foundation and will make it more widely known, Mr. Parsons's years of earnest and constructive work will remain a contribution of permanent scientific value.

H. W. PIERSON

SCIENTIFIC EVENTS

THE FOURTH INTERNATIONAL PHYTOGEOGRAPHIC EXCURSION

IN 1908, at the International Geographic Congress in Geneva, A. G. Tansley, of England, proposed that the plant geographers and other interested botanists should get together for an extended field trip. The British vegetation committee, which was approached with the proposition, favored it. They made plans to receive the visiting botanists and in 1911 conducted them through England, Scotland and Wales on what was officially called the "First International Phytogeographic Excursion" (I. P. E.).

The second excursion was held in the United States in 1913. Then came the war and the third was not held till 1923. A neutral country, Switzerland, was chosen as the field.

The fourth International Phytogeographic Excursion was held this past summer from July 2 to August 24 in Sweden and Norway. The excursion began in Lund (South Sweden) on July 2 and continued northeasterly for eight days toward Stockholm. On July 10 began the excursion through Middle and North Sweden. In Middle Sweden interest centered upon the vegetation of the Archipelago off Stockholm, the coniferous forests and the moors. The scientific institutions in Stockholm and Uppsala were also visited and the places associated with the work and life of Linnaeus.

The route from here lay northward to Abisko (Lat. 68° N.), where five days were spent at this most northerly station in Sweden. At this point commenced the Norwegian section of the trip which lasted for three weeks and ended on August 22 in Oslo. On this date the party left for Sweden and after two days spent in and around Gothenburg, adjourned for the summer on August 24.

The Swedish botanists were hosts for the excursion and under their able secretary, G. Einar Du Rietz, should be congratulated on the efficiency with which the excursion was conducted. The Swedes set an example as guides and hosts which other nations must find hard to equal.

Twenty-eight botanists representing the following 15 countries (exclusive of Sweden) were present for all or a part of the excursion:

Australia	1	Ireland	1
Austria	1	Japan	1
Czecho-Slovakia	2	Latvia	1
England	1	Lithuania	1
Finland	2	Poland	2
France	1	Russia	2
Germany	4	Switzerland	7
United States	1		

ORAN RABER

UNIVERSITY OF ARIZONA

A COOPERATIVE COURSE IN ELECTRICAL ENGINEERING AT THE MASSACHU- SETTS INSTITUTE OF TECHNOLOGY

WITH the opening of the fall term, the Massachusetts Institute of Technology took another step in carrying out its policy of maintaining the closest possible contact with the industries of the country. Arrangements have been completed with the Bell Telephone System by which a limited number of students in electrical engineering will be given an opportunity to get thorough first-hand knowledge of the manufacture, operation and development of the most modern electrical systems of communication including wire and wireless telephony and telegraphy.

By this new arrangement, a carefully selected group of students who have successfully completed the first two years of the regular course in electrical engineering at the institute, or the equivalent at other institutions, will be sent to New York. For four months they will be under the direction of the Bell Telephone System. During part of this time they will be put to work in the Western Electric Company's plant at Kearney, N. J., learning the actual details in the manufacture of telephone appliances. The remainder of the time will be spent in the work of installing and conditioning telephone switchboards in the vicinity of New York City.

During this time the students are on the pay roll of the Bell System and must turn out their day's work like other workmen, but as fast as they master one job they are transferred to another. The new course requires these students to attend regular institute classes while they are on the practical assignment and since they can not come to the institute, the institute goes to them by maintaining an instructing staff in New York. The class hours will be in the evening in order not to interfere with the practical work. The subject matter will be almost equally divided between electrical theory, and such cultural subjects as the writing and delivering of technical papers and reports and study of contemporary English literature and drama.

At the end of the four months this group of stu-

dents returns to the Massachusetts Institute of Technology in time to join their schoolmates in starting the second term's work, and another group takes their place in New York. They will spend the alternate terms at the institute and on the job in New York City where they will complete their practical experience by doing actual telephone operating in the various plants of the New York Telephone Company and getting familiar with the technical and practical problems of maintaining plant and equipment.

A final cooperative period will be spent in the Bell Telephone Laboratories carrying on research and studying the design and development of engineering processes and apparatus for both wire and radio systems.

Because of the advanced nature of the instruction and the research work of the last year, the higher degree of master of science in electrical engineering as well as that of bachelor of science is conferred upon those who successfully complete the course. Students are subject to the usual requirements applying to the employees of the cooperating company. The compensation paid by the company to students in this cooperative course, exclusive of the allowance for expenses incidental to changes in residence, amounts approximately to a total payment of fifteen hundred dollars during the cooperative periods. The working week ranges between thirty-nine and forty-eight hours depending on the character of the work assigned.

NEW HALL OF REPTILE AND AMPHIBIAN LIFE AT THE AMERICAN MUSEUM OF NATURAL HISTORY

EARLY in the coming year a new hall of reptile and amphibian life will be opened at The American Museum of Natural History, occupying the entire third floor of the east wing, according to *Museum News*.

Here for the first time the groups prepared under the direction of the late Mary C. Dickerson—groups characterized by the curator of the department, G. Kingsley Noble, as "perhaps the finest series of reptile and amphibian habitat groups ever produced"—will be seen unconfused with an incongruous overflow from the Hall of Mammals; and with them will be shown a whole series of new groups.

An effort has been made to arrange the material within the hall so that the various types of visitors may readily discover what interests them without wearying themselves in fruitless staring at what does not. The synoptic series of models and the systematic and "biological diagrams" illustrating principles or facts of importance to the technical student are to be found in the main body of the hall. In a cloister