sity of Illinois, assistant professor of zoology; Max Mapes Ellis, Ph.D., instructor in biology in the University of Colorado, instructor in zoology; Harry Nichols Whitford, Ph.D., instructor in botany, and Paul Smith Welch, A.M., fellow in zoology in the University of Illinois, instructor in entomology.

THE American Museum of Natural History, New York, has adopted a pension plan which went into effect on March 1. It is said to be the first instance in this country of a museum of sciences originating a pension system for the benefit of its employees. The idea was suggested to President Osborn after an investigation of the pension plans in operation in Europe. The plan is a contributory system, three per cent. of the annual salaries being paid to the fund by the employees and a like amount by the corporation. The plan provides: (1) Pensions—Six classes of pensions according to length of service and age, the pensions varying from twenty-five to fifty per cent. of the average salary of the last three years. (2) Health Insurance—Gratuity to the employee in case he is totally disabled through illness, or his position is abolished. (3) Life Insurance—Gratuity to a beneficiary, in the event of the death of the employee, and under certain conditions in the event of the death of a pensioner. (4) For the return of the employee's contribution with simple interest at three per cent. in case the employee leaves the service of the museum before he is eligible for a pension.

THE U. S. Civil Service Commission announces an open competitive examination on May 12 for irrigation managers and assistants to fill vacancies in the position of irrigation manager at salaries ranging from $1,800 to $2,500 a year, and vacancies in the position of assistant manager at salaries ranging from $1,500 to $2,000 a year, in the Reclamation Service, the salaries being dependent upon the size of the project and individual qualifications.

A LONG summer trip is being planned for advanced geological students in Sheffield Scientific School of Yale University who are ready to complete their field work in geological surveying. For the past two summers, this work has been carried on in the region about Natural Bridge, Virginia; this year the field course, which will cover the six weeks from June 25 to August 6, will be carried on in the Spearfish Quadrangle, near Deadwood, South Dakota, in the heart of the Black Hills.

A CABLEGRAM to the New York *Times* states that the Atlantic transport steamship *Minneapolis* is carrying to America a consignment of about 600 British song birds for the great aviary in Michigan owned by Mr. Henry Ford, the automobile manufacturer. The aviary consists of about ten acres of land inclosed and covered with netting and is said to be the largest in the world. The consignment includes 120 larks, 120 linnets, 70 chaffinches, 100 greenfinches, 20 yellowhammers, 12 bullfinches, 40 blackirds and 12 jays.

UNIVERSITY AND EDUCATIONAL NEWS

THE legislature of Kansas has appropriated $1,226,000 for the University of Kansas for the next biennium. The legislature refused all requests for new buildings except one for the medical school at Rosedale. The appropriation for maintenance is about $200,000 more than has been granted for any previous biennium for that purpose.

THE total appropriations for special purposes of the Ohio State University carried by the appropriation measure now before the legislature, amount to $371,730. Two new buildings are provided for and half of the necessary cost appropriated, the balance to be appropriated next year. These buildings will be for the departments of zoology and botany, and the departments of horticulture and forestry. In addition to the special appropriations, the state levy will provide $400,000 for the general expenses of the university.

AN endowment fund of $1,000,000 has been subscribed for Goucher College, Baltimore.

HARVARD UNIVERSITY has received from the estate of Mrs. Sarah A. Matchett, $150,000 on account of her bequest, to be held as a special

fund to be called the "Matchett Fund," the income of which is to be used for the general purposes of the college.

THE Catholic University, Washington, D. C., is to have three new buildings—two laboratories and a main dining-hall, which will seat 1,000. One building, the chemical laboratory, is to cost $300,000. The second laboratory building will house the departments of physics and mechanical engineering.

GOVERNOR SPRY, of Utah, has approved a bill recently passed by the legislature creating a department of metallurgical research in the state school of mines, the engineering school of the University of Utah. The new department will be in charge of a director who will be given from four to six young mining engineers and metallurgists as assistants. He will have no teaching whatever to do, but will devote his entire time to research work.

VERY radical changes are in progress in the chemical laboratory of the Rensselaer Polytechnic Institute. A new and larger lecture room is being built on top of the present one, and a new "water" laboratory, capable of accommodating sixty students, is under construction on the second floor. This additional laboratory will be very completely equipped for the analysis of water and sewage and every facility will be provided for undertaking such work from the chemical, bacteriological and microscopical standpoints. The quantitative and organic laboratories will be greatly extended, reequipped and furnished with conveniences of recent type, including glass shelving, enlarged hoods and individual arrangements for blast and suction on the desks.

THERE is pending in the Texas legislature a bill providing for the removal of the State Agricultural and Mechanical College from its present location near Bryan to Austin and its merging with the State University.

THE college of education of the Ohio State University will conduct the educational survey of Ohio, which was provided for by a recent act of the legislature. The purpose of this survey is to secure concise information concerning the condition of all educational interests of the state. Upon this information future legislation on educational matters will be based. Dean W. W. Boyd, of the college, will have personal supervision over the survey, which will be started at once.

THE Prussian ministry of education (Kultusministerium) has established a bureau of school information (Kgl. Preuss. Auskunftsstelle für Schulwesen) which was opened on April 1, 1913. Dr. Kullnick has been placed in charge of the bureau and will publish an annual year-book under the title of "Jahrbuch der Königlich Preussischen Auskunftsstelle für Schulwesen." The first issue will appear in November of this year and will include all manner of information concerning school matters, such as is not readily accessible in other official or non-official publications. Each volume will contain at least 320 pages. Persons who are desirous of securing information about German schools or school systems are referred to the new bureau, which will be ready at all times to answer any questions concerning these matters.

THE income of the Theresa Sessel fund given to Yale University for promoting original research in biological studies, will, for the present, be used in establishing two research fellowships, to be awarded on the recommendation of a standing committee composed of the chairman of the departments of physiology, zoology and botany, in consultation with the dean of the graduate school. In making the award, preference will be given to graduates of Yale or other universities, who have already obtained their doctorate and who have demonstrated by their work fitness to carry on successfully original research work of a high order. The fellowships will be of the value of $1,000.

FREDERICK SHELDON traveling fellowships for 1913–14 have been awarded in the sciences at Harvard University as follows:

Donald Clinton Barton, for research in geology in Europe and Egypt during the summer of 1913.

Sidney Fay Blake, for research in botany in Europe.

Elmer Keiser Bolton, for research in chemistry at Berlin.

Richard Maurice Elliott, for research in psychology, particularly in the psychophysics of handwriting, at Berlin and in the various psychological laboratories of Germany.

Harvey Cornelius Hayes, for travel in the United States, between September and February, for the purpose of observing the manufacture of alloys.

Sidney Isaac Kornhauser, for research in zoology at Würzburg and at the Naples Zoological Station.

Edward Hale Perry, for travel in the mining districts of the United States during the summer of 1913.

Joseph Slepian, for research in mathematics in Europe.

Paul Dudley White, for research in pharmacology at London and Strasburg.

Professor Ernest J. Berg, of the department of electrical engineering of the University of Illinois since 1909, has resigned that position to return to a similar position at his alma mater, Union University, at Schenectady, N. Y., and also to become consulting engineer of the General Electric Company of that city.

Professor R. W. Thatcher, director of the Washington Agricultural Experiment Station and head of the department of agriculture of Washington State College, has been elected professor of agricultural chemistry and soils in the University of Minnesota, the appointment becoming effective on May 1.

DISCUSSION AND CORRESPONDENCE

ELECTROMAGNETIC INDUCTION AND RELATIVITY

To the Editor of Science: In the last number of Science (March 14) Professor A. L. Kimball expresses the opinion that my recent experiments on electromagnetic induction are "not so definitely in contradiction to the principle of relativity as may appear at first sight," basing his conclusion on the fact that in certain cases the indication of a measuring instrument depends upon the manner in which it is connected to the apparatus under test.

This is a very important point, but it is naturally one which I had not failed to consider with great care. That no fallacy was made in reaching my conclusion will be evident, I think, from what follows.

Case I.—In my own recent experiments the cylindrical condenser, with its armatures A and B connected together by a wire C, remained at rest while the agent producing the magnetic field, whose direction was parallel to the common axis of the two cylinders, was rotated. The short-circuit by the wire C was then interrupted, *leaving the inner conductor B completely insulated. After the rotation was stopped and the field annulled,* B was tested for charge by connection to an electrometer. *No charge was detected.*

Case II.—Now imagine the condenser, together with its short-circuiting wire C, to rotate while the agent producing the magnetic field remains fixed to the earth. If the wire C is now interrupted, *leaving B completely insulated from A,* and if the condenser is then brought to rest and the field annulled, the cylinder B, *tested exactly as in Case I., will be found charged.* While the experiment in this form has not been made, the result given is an *immediate and necessary consequence* of the experiments by Faraday and others referred to in my earlier article. For no one will contend that in this case the seat of the motional electromotive force is elsewhere than in the wire C and in the dielectric, if any, entrained by the conductors in their motion. Moreover, that the ether is not entrained, and that the entrainement of any air would produce no appreciable effect, are facts which follow from some of the experiments (those on insulators) already referred to. In addition to these considerations only one assumption is necessary to the argument, viz., the assumption that an electric charge of one sign on an insulated conductor is not altered by being brought to rest from a state of motion.

Thus the condenser is actually charged in one case and not charged in the other, the relative motion in the two cases being exactly the same. If complete relativity existed, the condenser, tested in the way described, would be