any fiscal year fall below this amount the unexpended portion must be spent the succeeding year.

THE Rockefeller Foundation has offered, through Princess Helen, mother of King Michael, to establish a national hygienic institute in Bucharest to combat social diseases. The offer was made contingent upon the Roumanian government bearing half the expense.

SIGMA XI research grants made in varying sums from $100 to $1,000 are now available for 1929–30 for workers in all fields of science, pure and applied. Aid may be given in the form of a fellowship, to purchase apparatus, to help in publication or to pay assistants. There are no restrictions as to the university or the country in which the holder is permitted to work. Application blanks may be obtained from Dean Edward Ellery, national secretary of Sigma Xi, Union College, Schenectady, New York, and should be filed before May 10.

A NATIONAL aeronautic meeting to commemorate the second anniversary of Lindbergh's transatlantic flight will be held in St. Louis from May 27 to 30. The major part of the program is taken up with the third National Aeronautic Division of the American Society of Mechanical Engineers. The remainder of the program consists of an airplane show, May 30 being given over to the finals of the Gardner Cup Air Races. Citizens of St. Louis have financed the Gardner Cup Air Races; the airplane show which will be held without cost to exhibitors; the raising of a fund to make twelve recognition gifts to be presented at the meeting to those who are most deserving of reward for services rendered to aeronautics in the last two years, and the founding of an engraved gold medal to be called the "Spirit of St. Louis," with which medal the society in the future can reward "outstanding services in aeronautics." The meeting will have sixteen sessions, with forty-two papers, divided into general and technical sessions.

GIFTS of $84,757.45 to Columbia University, chiefly for research at the Medical Center, are announced. The Rockefeller Foundation gave $50,000 for research in medical mycology. The Chemical Foundation, Inc., made three contributions. One of $10,000 represented the second payment on its five-year pledge of $20,000 annually for research in the department of biological chemistry. Another of $1,563.18 is to meet the cost of construction changes in that department. The third, of $1,075, is the first quarterly payment on a pledge of $11,900 to cover three years of research in bacteriology. From an anonymous donor came $5,000 for the special tuberculosis fund of the department of the practice of medicine. The General Education Board contributed $4,500 as the fourth quarterly share of its grant of $18,000 for the department of tropical medicine. The International Committee for the Study of Infantile Paralysis added $2,500 to the Bacteriology-Milbank Infantile Paralysis Fund.

ACCORDING to a statement made public by the U. S. Geological Survey, as a result of the season's work in Alaska about 700 square miles of hitherto unexplored territory was mapped geologically and topographically, and 350 square miles, previously mapped in an exploratory way, was remapped and corrected. This work gave a clue to the position and courses of the rivers that drain many thousands of square miles of one of America's great mountain ranges, and to routes of approach to other unexplored areas. The results of this exploration have been issued as a bulletin of the survey, by Stephen R. Capps, in which the geography and geology of the Skwentna River country are described. The report is accompanied by a map on a scale of about four miles to the inch, on which the drainage and the distribution of the rock formations are shown.

UNIVERSITY AND EDUCATIONAL NOTES

TWO appropriation bills for maintenance and new buildings for the Pennsylvania State College were passed by the General Assembly in its closing sessions. They amount to $6,311,000 and include $2,250,000 for buildings. The general college appropriation measure, in addition to the building item, would provide $300,000 for agricultural research; $650,000 for agricultural and home economics extension; $711,000 for a deficit, and $2,350,000 for general college maintenance. A separate bill would provide $50,000 for oil research.

E. A. CUDAHY, of Chicago, has given $300,000 to Loyola College for a library building on the campus facing Lake Michigan.

F. L. CARLISLE AND COMPANY, of New York, has made a gift of $100,000 to St. Lawrence University, Canton, New York, payable at the rate of $20,000 a year for five years to be used by the university to promote the teaching of forestry, although its use is not restricted to the formal teaching of that subject in the school.

THE botanical library of the late Frederick LeRoy Sargent, amounting to more than 1,500 volumes and pamphlets, has been given by Professor George Howard Parker to the Gray Herbarium of Harvard University.

DR. GEORGE A. WORKS, dean of the Graduate Library School of the University of Chicago, has been

appointed president of Connecticut Agricultural College at Storrs. Dr. Works will take up his work on July 1. Professor Charles B. Gentry, acting president of the college since the retirement of Dr. Charles L. Beach in July, 1928, will remain as a member of the faculty.

DR. WILBUR WILLIS SWINGLE, director of the department of zoology at the University of Iowa, has been appointed professor in the department of biology at Princeton University.

DR. JOHN SHAW BOYCE, who for fifteen years has been connected with the office of forest pathology of the Bureau of Plant Industry of the U. S. Department of Agriculture, has been appointed professor of forest pathology at Yale University. Dr. Henry Barnard Davis has been promoted to a professorship of geology.

PROFESSOR WILLIAM M. COBLEIGH, head of the department of chemistry and chemical engineering at Montana State College and a member of the staff since 1894, has been appointed dean of the college of engineering and professor of chemical engineering. The appointment is effective on July 1. Professor Cobleigh succeeds Dean Earle B. Norris, who resigned last year to become dean of engineering at Virginia Polytechnic Institute, Blacksburg, Virginia.

DR. FRANK R. MENNE has been appointed head of the department of pathology in the University of Oregon Medical School. He succeeds Dr. Robert L. Benson, who recently resigned.

PROFESSOR B. SMITH HOPKINS, of the University of Illinois, known for his discovery of illinium and work in the rare earths, will be the visiting professor in the department of chemistry of Western Reserve University for the forthcoming summer session from June 24 to August 2. Professor Hopkins will give two series of lectures, one on the "Inorganic Chemistry of the Less Familiar Elements and Their Relation in the Periodic System," and a second course on "The Teaching of Chemistry."

DR. E. H. JOHNSON, head of the department of physics in Kenyon College, Gambier, Ohio, will give lecture courses in the history of physics and thermodynamics at Indiana University during the coming summer session.

DR. H. RAISTRICK has been appointed to the university chair of biochemistry at the school of hygiene and tropical medicine of the University of London.

DR. NOVOA SANTOS, who has been a teacher of general pathology in the University of Galicia, has been appointed professor of the same subject in Central University, Madrid.

DISCUSSION

CLAUDE BERNARD'S CONCEPTION OF THE INTERNAL ENVIRONMENT

PROFESSOR L. J. HENDERSON entitles his valuable recently published book on "Blood" as "A Study in General Physiology," and at the same time treats blood as a physico-chemical system. It may escape notice that he thus makes a very far-reaching fundamental assumption; and the matter is so important that I ventured to bring it before the British Physiological Society on March 16. He refers to the authority of Claude Bernard in justification of his procedure; but in so doing he seems to me to have altogether misunderstood Bernard's conclusion. Bernard was the first to formulate the extremely fruitful idea that the blood of a living animal is an internal medium kept remarkably constant as regards its physico-chemical conditions by the coordinated influence upon it of the various organs of the body. He accepts as fundamental the coordination thus displayed. L. J. Henderson, on the other hand, treats the blood as simply something which, as the result of various "buffer" reactions occurring within itself, is not as readily disturbed in its physico-chemical conditions as other liquids would be. We can, for instance, add a good deal of acid or alkali to blood without much disturbing its reaction. Or if we simultaneously add carbon dioxide and abstract oxygen from it there is a similar diminution of the disturbance which would be produced by either addition of carbon dioxide alone or abstraction of oxygen alone.

These buffer reactions are of great importance and interest, but they were unknown to Bernard, and do not in any way modify his conception of the coordinated activity of organs by which the conditions in the blood are kept constant. This coordinated activity is an essential part of his conception of blood in the living body, whereas L. J. Henderson leaves it out of account, thus turning blood in the living body into what for a physiologist is a mere artifact, and completely disregarding Bernard's principle. It seems to me that if we disregard the coordination we have disregarded all that is characteristic of life, and that therefore the book in question can not be regarded as a study in general physiology, but only as a study in physical chemistry.

To come to details, L. J. Henderson treats the constancy of reaction in the living body as if it depended on the physico-chemical properties of blood. In actual fact this constancy depends during health on the coordinated activity of the kidneys and respiratory organs, in accordance with Bernard's principle; and in various individual parts of the body the constancy depends on the coordinated or regulated influence of the circulation. Not all the buffering in the world