

first-class training institutions and research laboratories, as well as colleges. These matters are, it is stated, of such overwhelming importance that they must not be permitted to become a class or caste question; there is little danger of this at the present time for already the intellectual men in Germany are combining forces in various directions: this is so in the case of the technical man and the academician, as well as in that of the artificer and the university professor. Finally, an inventors' institute must be founded in order that the inventor may be furnished with advice, the commercial possibilities of his work tested, a selection made of what is best, and a good market found for that which is of real worth.

APPROPRIATIONS FOR THE KANSAS STATE AGRICULTURAL COLLEGE

THE Kansas legislature of 1919 appropriated a total of \$1,675,500 for the support of the Kansas State Agricultural College for the biennium July 1, 1919, to June 30, 1921. This appropriation is in addition to the amount set apart for extension and demonstration work in accordance with the terms of the Smith-Lever Act. In accordance with this law, the legislature appropriated \$63,073.65 for 1919-20 and \$75,203.20 for 1920-21, the federal government supplying a like amount for each year of the biennium. The appropriations for the college proper represent an increase of more than \$400,000 or approximately 33 per cent., over the appropriation for the present biennium.

One hundred and ninety thousand dollars was appropriated for completing the central part of Engineering Hall. This will more than double the floor space and will house the electrical engineering department which is now located temporarily in Denison Hall. It will also permit of the proper growth and development of the department of farm engineering. More space will be made available for the physics department, and the chemistry department will be able to expand its quarters. The erection of the new portions of the building will also afford proper coal storage facilities, thus economizing tremendously on labor.

Work on the building will be begun at once as the sum of \$50,000 is available immediately.

The biennial appropriations also include \$12,500 for a new water plant for the college, and \$10,000 for a new hog plant, buildings and equipment. Ten thousand dollars will be spent in the two years in testing road materials for the state highway commission, the Agricultural College having been made the official testing laboratory for the commission. Forty thousand dollars was appropriated for repairs and improvements each year—an increase of 60 per cent. over the present appropriation. The appropriation for the support of the Agricultural Experiment Station will be increased from \$40,000 to \$55,000 each year of the biennium.

SCIENTIFIC NOTES AND NEWS

DR. GEORGE FERDINAND BECKER, geologist of the U. S. Geological Survey since 1879, died in Washington on April 20, at the age of seventy-two years.

THE Federation of American Societies for Experimental Biology is meeting this week at the Johns Hopkins University, Baltimore. The societies included in the federation are: The Physiological Society, the Society of Biological Chemists, the Society for Pharmacology and Experimental Therapeutics and the Society for Experimental Pathology.

THE annual meeting of the Association of American Anatomists was held from April 17 to 19 in Pittsburgh under the presidency of Robert R. Bensley, of the University of Chicago.

THE executive committee of the American Society of Zoologists has voted to hold the annual Christmas meeting in 1919 in St. Louis in conjunction with the American Association for the Advancement of Science.

PROFESSOR ROLAND THAXTER, professor of cryptogamic botany at Harvard University since 1901, has been appointed professor emeritus.

THE Distinguished Service Medal has been awarded to Colonel John J. Carty "for exceptionally meritorious and distinguished services.

He was largely instrumental in securing from the telephone and telegraph companies of the United States the best talent available to meet the urgent requirements of the Signal Corps at the outbreak of the war. He has served with marked distinction as a member of the American Expeditionary Forces and his brilliant professional attainments and sound judgment have rendered his services of exceptional value to the government."

MAJOR GENERAL SIR ROBERT JONES, lecturer in orthopædic surgery, Liverpool University, will act as honorary consultant to the British Ministry of Pensions for orthopædic cases. Sir Robert Jones is inspector of military orthopædics and has been very largely responsible for the surgical and training arrangements carried out in the special military surgical centers.

MISS LUCY MINNEGERO, of Fairfax, Va., chief nurse of the American Red Cross Unit, which was sent to Kief, Russia, in 1915, and later superintendent of nurses at Columbia Hospital, Washington, D. C., and who since 1917, has been in charge of the preparation of the Red Cross nurses for assignment overseas, has been appointed superintendent of the U. S. Public Health Service Nurse Corps.

PROFESSOR C. M. CHILD, president of the American Society of Zoologists, has nominated and the executive committee has unanimously elected the following members of the society as its representatives in the reorganized Division of Biology and Agriculture of the National Research Council: F. R. Lillie, G. H. Parker and M. F. Guyer.

DR. C. LOVATT EVANS, professor of physiology and pharmacology at Leeds, has resigned to undertake research work in the department of pharmacology and biochemistry of the medical research committee.

DR. SOLON SHEDD, head of the department of geology, State College of Washington, has been granted leave of absence for a year to engage in the production of casing head gasoline in the Oklahoma oil fields.

MAJOR GENERAL WILLIAM C. GORGAS, former Surgeon-General of the Army, and a party of

sanitary experts arrived in Panama, on April 3, and left April 7, for Guayaquil, Ecuador, to investigate sanitary conditions.

PROFESSOR HERBERT E. GREGORY, of Yale University, leaves on May 8 for Honolulu to assist the trustees of the Bernice Pauahi Bishop Museum in developing plans for scientific work in Hawaii. By arrangement between the museum and Yale University, Professor Gregory is to be absent from New Haven for the remainder of the present academic year and also during the second half of the year 1919-20.

DR. A. HAMILTON RICE, of Boston, will start early in June on his sixth journey of exploration in South America. The United States government will receive from Dr. Rice the results of his geological discoveries upon his return, as has been the case following each of his previous voyages. His biological and ethnological collections have been presented to the Peabody Museum, Harvard University. To navigate the shallow waters of the Upper Amazon, Dr. Rice has had built a 45-foot launch, which is of 14-foot beam and only 20 inches draught. It will be shipped by freight to one of the South American ports and there assembled. The boat contains living quarters and a laboratory.

At a meeting of the International Association of Poultry Instructors and Investigators held in London, England, March 11-15, 1919, Edward Brown, Fellow of the London Society, was reelected president, and William A. Lipincott, professor of poultry husbandry, Kansas State Agricultural College, as has been noted in SCIENCE, was elected secretary to succeed Dr. Raymond Pearl. Dr. Pearl recently resigned, since, in becoming head of the department of biometry and vital statistics in the school of hygiene and public health, Johns Hopkins University, he is no longer carrying on investigations with poultry. Dr. Pearl was made first fellow of the association in recognition of his untiring service as secretary since the organization of the association in 1912. By invitation of the Netherlands government, a World's Poultry Congress will be held at the

Hague in 1921 under the auspices of the International Association of Poultry Instructors and Investigators.

LORD RAYLEIGH, who recently accepted the presidency of the British Society of Psychological Research, gave his presidential address on April 11.

PROFESSOR FRANCIS CARTER WOOD, director of cancer research under the George Crocker Special Research Fund, Columbia University, lectured on April 15, before the Georgia State Medical Society and the students of Emory University, at Atlanta, Ga.

DR. C. K. EDMUNDS, president of the Canton Christian College, spoke at the Cosmos Club, Washington, D. C., on April 14, on "Thirty Thousand Miles in China." The lecture was illustrated by lantern slides. Dr. Edmunds is lecturing on scientific aspects of China at different institutions.

MR. G. S. BAKER has given £500 for the foundation at University College, London, of a prize for the encouragement of botanical research to be named after his daughter, the late Dr. Sarah M. Baker, an old student and member of the staff of the college.

GEORGE CARLTON WORTHEN, of the Bussey Institution, Harvard University, known for his work in economic botany, died on April 10, aged forty-eight years.

DR. HENRY WILDE, F.R.S., the English physicist died on March 29, at eighty-six years of age.

SIR EDWARD CHARLES STIRLING, professor of physiology at the University of Adelaide, and director of the South Australian Museum, died on March 20, aged seventy years.

THE *Experiment Station Record* notes that the renewed receipt of scientific literature from Germany brings news of the death of Geheimrat Bernhard Tollens, of the University of Göttingen. He died on January 31, 1918, in his seventy-seventh year. A graduate of Göttingen, Dr. Tollens spent several years as assistant in chemistry at Heidelberg and in Paris, going for a year to Portugal, but returned to Göttingen in 1879 as assistant to the

famous chemist Wöhler. Three years later he became director of the Agricultural Chemical Laboratory of the Agricultural Institute, occupying that position up to the time of his retirement in 1911. Professor Theodore Dietrich, known for his work on animal nutrition, was director of one of the earliest German experiment stations, established at Haidau in the district of Cassell in 1857, and removed to Marburg in 1880. He died on October 1, 1917, in his eighty-fifth year.

WE learn from *Nature* that at a special general meeting of the Geological Society, held in London on March 26, the following resolution of council was carried by 55 votes against 12: "That it is desirable to admit women as fellows of the society." In submitting the motion, Mr. G. W. Lamplugh, president of the society, said: "It will be within the recollection of most of the fellows that the question of the admission of women to candidature for the fellowship of the society has been raised on more than one occasion in the past. It was considered in 1889 and 1901, and, again, more systematically in 1908-09, when a poll of the fellows was taken and three special general meetings were held, with inconclusive results. It is generally recognized that the course of events since these dates has materially changed the situation. Women have been welcomed to our meetings as visitors, and we have had many examples of their qualifications for fellowships in the excellent papers which they have from time to time contributed to the society. The value of these papers has been appreciated by all geologists, and has been repeatedly acknowledged by the council in its awards. Therefore, in the opinion of the council, it is no longer reasonable to maintain a sex-bar against qualified candidates for the fellowship of the society, and I am empowered by the council to submit the above-mentioned resolution for your consideration."

THE summer session of the Hopkins Marine Station of Stanford University, situated on Monterey Bay, California, begins on June 17. This session corresponds to the summer quarter of Stanford University, the first half quarter ending on July 23, and the quarter, August

29. There will be six instructors in attendance and ten regular courses are offered, including work in general zoology and physiology, the classification and ecology of marine invertebrates, economic zoology with reference to marine invertebrates and to fishes, invertebrate embryology, marine botany and special work. An announcement will be sent on application to the Hopkins Marine Station, Pacific Grove, California.

PROFESSOR J. A. UDDEN, director of the Bureau of Economic Geology and Technology of the University of Texas, reports that much light upon the possible mineral contents of Texas may be obtained by the keeping of records of the holes that are being drilled in search of oil in various parts of the state. It is the theory of many geologists that large potash beds underlie parts of west Texas, and it is thought that this, or other valuable mineral may be discovered in the wild-cat oil wells that are now being drilled in nearly all the counties of west Texas, though oil is not brought to light. Two years ago the United States government sent seven men, experts in their several branches, to Cliffside, twelve miles north of Amarillo, where a permanent camp was established, a first-class derrick put up, and a complete laboratory established to make exhaustive studies of the salts that might be obtained. The results of this investigation have not been published so far, but it is believed enough has been found to warrant further observations. Potash has been found but not in workable quantities. For the present it is not expected that further explorations will be made by the government. The laboratory established at Cliffside, however, will continue to examine cores from any wells that may be sent in. The Bureau of Economic Geology and Technology of the university has also made similar analyses and will continue to make them.

THE Mexico City correspondent of the *Journal of the American Medical Association* writes that according to recently published statistics, there were 21,915 deaths recorded in the city of Mexico during 1918,

and only 7,542 births, which seems to indicate that the population has been reduced by 14,373. But this last figure can not be regarded as accurate because there are always a number of persons who fail to comply with the official regulations for notification in the respective bureaus of the birth of their children. But even making allowance for all this, there is no doubt that the death rate exceeded the birth rate. Influenza was responsible for 1,935 deaths, syphilis for 232, bronchitis for 1,556, bronchopneumonia for 1,456, pneumonia for 2,312, enteritis for 5,496, and various ailments for the other deaths.

Nature states that the Linen Industry Research Association of Belfast is about to appoint a director of research at a salary of not less than £1,000 per year. The selected candidates will be expected to make a survey of the entire field of research in the linen industry, to draft a program of research, and to organize and supervise the carrying out of the scheme.

Two new greenhouses are being completed at the New York Botanical Garden, built through a gift of \$100,000 made for the purpose two years ago by Daniel and Murray Guggenheim. These greenhouses form a part of Public Conservatory Range No. 2 on the eastern side of the garden. The larger of the two is designed as a central display greenhouse. Included is a large room where lectures on plant life will be delivered. The smaller of the new greenhouses is designed as an orchid greenhouse to hold the large collection of orchids already accumulated at the garden and others which will be brought from tropical America.

OWING to a reduced appropriation for its work, the American Museum of Natural History finds it necessary greatly to curtail its activities, and announces that one half of the exhibition halls—about 17, it is estimated—have been closed because of lack of funds to pay attendants. The museum is now open from 10 to 4, instead of from 9 to 5, daily. Retrenchment plans include also the elimination of evening lectures in the museum build-

ings and in public schools under the auspices of the museum and a 50 per cent. curtailment of lectures for school children in the museum. All of these measures are designed to cut down expenses for fuel, light, and service, as the minimum appropriation of \$240,000 asked for by the museum, figured to cover regular expenses only without provision for further development, has been cut down to \$200,00 in the city budget.

By the will of the late Major S. Field Thorn, who died recently in San Francisco, the California Academy of Sciences is to receive "Cragthorn Park," near Santa Cruz, California. The place consists of 242 acres and was Major Thorn's country home. After the various specific bequests have been paid the academy is to receive the balance of the estate, which it is thought will be considerable. Major Thorn was at one time manager of the Palace Hotel in San Francisco and was for many years interested in the Academy of Sciences.

IN connection with the spring meeting of the American Physical Society at the Bureau of Standards, Washington, on April 25 and 26, there will be an exhibit of physical apparatus illustrative of war developments in physics. The exhibit was opened on the afternoon of the 24, all day on the 25 and 26, the evening of the 25 and the afternoon of the 28.

UNIVERSITY AND EDUCATIONAL NEWS

HARVARD UNIVERSITY and the Smithsonian Institution receive \$50,000 each by the will of Mrs. Virginia Purdy Bacon. Columbia University receives \$25,000 for scholarships.

By the will of Alexander Cochrane, late of Boston, and head of the Cochrane Chemical Company, Peter Bent Brigham Hospital will receive \$10,000 for the establishment of a free bed, and at the termination of a trust fund created for benefit of the members of Mr. Cochrane's family the principal of the trust is to go to Harvard College.

THE University of California receives by the will of Mrs. Phoebe Hearst, \$60,000, to

continue scholarships and a valuable collection of paintings, tapestries and objects of art.

PROFESSOR WILLIAM A. NOYES, head of the department of chemistry of the University of Illinois; Professor Frank Morley, of the Johns Hopkins University, and Professor William T. Sedgwick, of the Massachusetts Institute of Technology, will be included in the faculty of the summer session of the University of California, giving respectively courses in chemistry, mathematics and public health.

At the agricultural college of the University of Idaho, Herbert P. Davis, dairy husbandman, Dairy Division, U. S. Department of Agriculture has been appointed dairyman of the Agricultural Experiment Station, and vice director of the station, and J. E. Nordby, lately first lieutenant in the Motor Section of the Aviation Service, has been appointed associate animal husbandman of the Agricultural Experiment Station, and will have charge of experimental work in animal husbandry.

CAPTAIN JAMES RIDDICK PARTINGTON, has been appointed to the newly established university chair of chemistry, tenable at East London College.

Nature states that Professor Ludwig Jost, of Strasburg, succeeds at Heidelberg Professor G. Klebs, who died last October in his sixty-first year, and Dr. W. Ruhland, of Halle, succeeds Professor von Vöchting at Tübingen.

DISCUSSION AND CORRESPONDENCE

BASIS OF THE GEOMETRICAL MEAN AS A *B. COLI* INDEX

COULD I have realized that Professor Cairns would honor by mathematical consideration the "Geometrical Mean" (*SCIENCE*, March 8, 1918) method of obtaining a bacteriological index, I should have hesitated to "wander into paths outside my own domain." However, no elaborate discussion of the mathematical relation between the theory of chance variation and the geometrical mean can be expected to induce the empirical bacteriologist to use it as a *B. coli* index. The simplicity of application and practical utility in daily routine will in the end be its recommendation. Still a brief mention of the grounds on which it seemed to