

Museum attendance for the year was 1,450,685, exceeding the number of visitors in the previous year by more than 40,000. It is pointed out that extramural educational activities, conducted by the Raymond Foundation and the N. W. Harris Public School Extension, brought the total number directly reached by museum activities up to nearly 2,200,000. Millions of others received scientific information from the museum through indirect channels such as radio, publications and press reports.

Detailed reports are given of the activities of the four scientific departments—anthropology, botany, geology and zoology; and of all other divisions of the museum, educational, administrative, public service, maintenance, library, etc. The report contains also a complete membership list.

### U. S. CIVIL SERVICE EXAMINATIONS

THE U. S. Civil Service Commission reports that the Government continues its search for specialists in all branches of industry and business. The Federal Civil Service examination for industrial specialist, announced on July 7, has been amended to remain open for receipt of applications until further notice. The National Defense Program needs men with experience in one or more of the following fields: Iron and steel, non-ferrous metals, machine tools, ordnance, aircraft, marine and automotive equipment, railroad repair shops, radio and other electrical equipment, supplies and apparatus, textiles, forest products, paper, printing and publishing, chemicals and allied products, plastics, petroleum and coal products, rubber products, stone, clay and glass products, leather and its manufactures and food and kindred products. Salaries range from \$2,600 to \$5,600 in the various grades. No written examination is given.

Those trained in engineering are again called upon for government service. An examination will be given for engineering aids in two fields: photogrammetry

and topography. Salaries range from \$1,620 to \$2,600 a year. Persons are particularly needed in the three lower grades (paying \$1,620 to \$2,000) in the field of photogrammetry. A written test will not be given but competitors will be rated on their education and experience. Although the completion of 14 units of high-school study is a basic requirement, applicants may substitute an additional six months' engineering experience. In addition they must have had responsible civil engineering experience, including some work in the optional branch selected.

To secure economists in all branches of economics for government service the commission announces an examination for positions paying from \$2,600 to \$5,600 a year. Applications will be accepted until further notice and will be rated as soon as practicable after receipt. Those who filed applications for the general economist examination announced in September, 1940, and who received eligible ratings need not file another application. However, if they wish to apply for a higher position, they should file a new application. Superintendents of building maintenance are needed by the Federal Works Agency. Positions are to be filled in public housing projects and public buildings in various sections of the country. The salaries range from \$2,600 to \$3,800 a year. Applications must be filed not later than August 26, 1941. A written test will not be given, but applicants must show experience of the proper scope and responsibility. To qualify as junior superintendent (\$2,600 a year) four years of experience is required; for the superintendent positions (\$3,200 a year) six years; and for the senior superintendent (\$3,800 a year) nine years. Applicants for these positions must not have passed their fifty-fifth birthday.

Further information and application forms for these examinations can be obtained at any first- or second-class post office or from the Civil Service Commission in Washington.

## SCIENTIFIC NOTES AND NEWS

DR. GEORGE D. BIRKHOFF, Perkins professor of mathematics at Harvard University, has been elected an honorary member of the London Mathematical Society.

The degree of doctor of science has been conferred by McMaster University, Hamilton, Ontario, on Dr. Donald Church Balfour, director of the Mayo Foundation and past-president of the American College of Surgeons.

THE honorary degree of doctor of science was awarded at the commencement exercises of the University of Maryland to Dr. Wortley F. Rudd, dean of

the School of Pharmacy of the Medical College of Virginia.

SIR ROBERT ROBINSON, Waynflete professor of chemistry at the University of Oxford, was awarded on August 6 the first Paracelsus Gold Medal of the Swiss Society of Chemistry.

PROFESSOR EMIL ABDERHALDEN, professor of physiology in the University of Halle, has been made an honorary member of the Society of Physics and Natural History of Geneva.

*Nature* states that Griffith Brewer has been elected president of the Royal Aeronautical Society for the

year October, 1941–September, 1942; Professor L. Bairstow, W. C. Devereux and the Right Honorable J. T. C. Moore-Brabazon have been elected vice-presidents.

DR. ANDREW C. IVY, professor of physiology and pharmacology at the Medical School of Northwestern University, has been elected president of the Chicago Society for Internal Medicine.

DR. A. M. HARDING, professor of mathematics and astronomy at the University of Arkansas, became president of the university on July 1.

DR. BENNET M. ALLEN, professor of zoology at the University of California at Los Angeles, has been appointed acting dean of the Graduate Division. He will take the place of Dr. Vern O. Knudsen, who has been granted a leave of absence to assist in a national defense project. Dr. Knudsen's leave will continue until the end of December, and will probably be continued.

LAURENCE J. ACKERMAN, associate professor of insurance of the University of Newark, has been appointed dean of the School of Business at the University of Connecticut.

FREDERICK K. TEICHMANN, associate professor of aeronautical engineering, has been appointed acting director of the department of aeronautical engineering at New York University. He succeeds Dr. Alexander Klemin, formerly head of the Guggenheim School of Aeronautics, who last spring retired as director to become research professor of aeronautics.

At the University of Minnesota Dr. Clarence M. Jackson, professor and head of the department of anatomy, who retired at the close of the academic year, has been appointed professor emeritus. A committee consisting of the following professors has been formed to administer the department for the coming year: Dr. Edward A. Boyden, chairman; Dr. Andrew T. Rasmussen and Dr. Hal Downey. Dr. C. D. Creevy has been promoted to a professorship of surgery. He has also been made chief of the division of urology and assistant dean of the Medical School; Dr. James A. Johnson has been appointed clinical professor of surgery.

DR. SAMUEL R. M. REYNOLDS, associate professor of physiology at the Long Island College of Medicine, has been appointed research associate of the Carnegie Institution of Washington, in the department of embryology, Baltimore. He will assume his duties there on September 1.

MORTIMER MENAKER, who was granted the Ph.D. degree in agricultural biochemistry at the Pennsylvania State College in August, has joined the research staff of the Fisher Scientific Company at Pittsburgh.

DR. ALBERT EDWIN SIDWELL, JR., has been named director of the Chemical Laboratory of the American Medical Association in Chicago, a unit of the Division of Drugs, Foods and Physical Therapy. He has been a chemist in the chemical laboratory since 1938.

RAYMOND G. BENDER has resigned his position as research chemist with the Borden Company, Research Division, Bainbridge, N. Y., to become chemist and plant manager of the Harris Laboratories, Tuckahoe, N. Y.

DR. GEORGE B. KISTIAKOWSKY, professor of physical chemistry at Harvard University, and Dr. Robert C. Elderfield, professor of organic chemistry at Columbia University, members of the National Defense Research Commission, who have been in England, arrived in New York on the American Clipper from Lisbon on August 4.

ACCORDING to the *British Medical Journal*, Dr. G. M. Findlay, of the Wellcome Research Institute of London, will direct the manufacture of yellow fever vaccine for the South African Institute for Medical Research in Johannesburg.

THE following pharmacologists are working at the California Medical School this summer: Dr. F. Luedena, of the University of Rosario, Argentina; Dr. Hamilton H. Anderson, of Peiping Union Medical College, China; Dr. S. A. Peoples, professor of pharmacology at the University of Alabama; Michael Shimkin, of the National Institute of Health, Washington, D. C., and Dr. P. K. Knofel, professor of pharmacology at the University of Louisville.

WITH reference to a note in *SCIENCE* for June 20, we learn from Dr. Frans Verdoorn, editor of *Chronica Botanica*, that Dr. L. G. M. Baas-Becking has been released by the German authorities and that he has assumed again the directorship of the Botanical Institute of the University of Leyden.

DR. WILLIAM DE B. MACNIDER, Kenan research professor of pharmacology at the Medical School of the University of North Carolina, delivered a series of three lectures on July 29, 30 and 31 on "Acquired Resistance of Tissue Cells," under the auspices of the department of materia medica and therapeutics of the Medical School of the University of Michigan. The subjects of his lectures were "The Repair of Tissue and Tissue Resistance," "The Ageing Process and Tissue Resistance" and "The Adjustability of the Life Process to Injurious Agents."

THE Pacific Coast Convention of the American Institute of Electrical Engineers will meet at the Yellowstone National Park on August 27, 28 and 29. Headquarters will be at the National Hotel.

THE eighth annual Metal Mining Convention and

Exposition of the American Mining Congress, Western Division, will be held at San Francisco from September 29 to October 2. The subject of the meeting will be "Metals for Defense." In addition to the program devoted to economic and operating subjects, there will be a display of machinery and supplies, covering all the material and equipment needs of the industry.

THE cornerstone of the new petroleum engineering building at the University of Texas, to be built at the cost of \$200,000, has been laid. The formal dedication of the building will take place early this autumn.

ACCORDING to *Museum News* a new building is planned for the Army Medical Museum to replace the old brick structure at Seventh Street and Independence Avenue, Washington, D. C. Construction of the building was authorized by Congress in 1938 and the sum of \$130,000 was appropriated for the preparation of plans, which have been drawn by Eggers and Higgins. The proposed building, which will be started as soon as funds are provided by the Congress, will cost about \$3,750,000. It will be about 212 feet square in ground dimensions and will contain more than four million cubic feet of space. It will accommodate both the museum and the Army Medical Library.

THE Royal College of Surgeons, London, has received the sum of £40,000 from the Bernard Baron Trustees to endow a Bernard Baron research professorship at the college. A letter addressed to the president of the college by the trustees reads in part: "The scientific work which has formed such a notable part of the activities of the Royal College of Surgeons of England must and will continue. The trustees realize, however, that one of the essential sinews of your and their endeavor to benefit mankind is the provision of funds for the prosecution of research. They have therefore decided to make a gift of £40,000 for the endowment of a Bernard Baron Research Professorship at the Royal College of Surgeons, so that, whatever the difficulties with which the council may be faced in other directions, research will not suffer."

THE University of Sydney recently received a bequest of £60,000 for scientific research, general and unconditional, from the estate of the late Sir Hugh Denison.

It is stated in *Nature* that the University of Oxford is making a grant to the Department of Chemistry to carry out a nutritional survey and a study of anti-septics in relation to burns.

THE Museum of Northern Arizona, Flagstaff, has begun an extensive program of geological research

on fundamental problems relating to the Colorado Plateau area. Plans call for intensive and detailed studies to be conducted in several related fields, especially stratigraphy, structural geology and geomorphology. Work is already being conducted both by the museum staff members and by associates representing other institutions. The central location of the museum and its library and laboratory facilities favor it as a natural center for students interested in geological problems of northern Arizona.

It is announced that *The American Journal of Cancer*, edited by Dr. Francis Carter Wood, is now discontinuing publication because of lack of funds. It is reported that on account of the war there has been a considerable loss owing to the discontinuance of many European subscribers. This loss has been made up hitherto by the Chemical Foundation, which, however, has also been suffering a shrinkage of funds as the result of the expiration of important patents. The *Journal*, which has been issued monthly, was founded ten years ago by the late Francis P. Garvan, president of the Chemical Foundation.

THE Office of Information of the U. S. Department of Agriculture has issued a new list of agricultural workers in the land-grant colleges and experiment stations, as MP 420. It can be obtained from the Division of Publications.

THE name of the department of zoology at the University of Texas has been changed to "department of zoology and physiology." Funds have been provided by the university for the development of a comprehensive graduate program in biophysics.

THROUGH the cooperation of three transportation companies, the Pan-American airways, the Delta Line of New Orleans, and a third company, which requested that its name be withheld, there have been established four fellowships at the Louisiana State University, by which four young men of the Latin American Republics will be provided with fees, maintenance at the university and transportation from and return home at the end of the session. Dr. Robert H. Bradbury has been appointed director of a Division of Latin American Relations. The following have received fellowships: Alberto Raja Gabaglia, of Rio de Janeiro; Luis Fernando Moore, of Buenos Aires; Jose Serrano Martinez, of Quito, and Hugo Perez de Leon, of Guatemala.

A DECREE issued by the Argentine Government forbids for ten years the hunting of certain wild birds and animals which live in the Andes Mountains. These include the condor and several species of deer, which are said to have diminished alarmingly.

R. S. HUDSON, British Minister of Agriculture, has announced the appointment of an Agricultural Improvement Council for England and Wales, to devise methods for seeing that promising results of research are brought as rapidly as possible into ordinary farming practice. The council will advise from time to time on agricultural problems that seem to need scientific investigation. It will consist of a chairman and twelve members, appointed for three years with the possibility of reappointment, and will include practical farmers as well as distinguished men of science.

THE Universities Bureau of the British Empire has

announced the selection for the Rockefeller Foundation of medical studentships for the present year. These studentships have been awarded as the result of a grant by the Rockefeller Foundation of \$100,000 to aid the training in their clinical years of British medical students at a time when they may be deprived of the usual facilities. The amount of each studentship will cover the cost of tuition and living for two or three years. Between 90 and 100 applications were received and nearly two thirds of the candidates were interviewed. The 26 students selected are being sent to 19 universities in the United States and Canada.

## DISCUSSION

### THE CULTIVATION OF COTTON BY PUEBLO INDIANS OF NEW MEXICO

COTTON was cultivated by many of the Indian pueblos of the Rio Grande valley before the days of Coronado (1540).<sup>1</sup> It was used in the manufacture of textiles and also for ceremonial purposes. But the cultivation of cotton, except for ritual use (twine for prayersticks; to be placed unspun on the top of dance masks, etc.) has long since been discontinued. Early reports of the U. S. Indian agents do not mention the cultivation of cotton at all.

Very little is known about the botanical nature of the cotton cultivated by the Rio Grande pueblos. F. L. Lewton speaks of a specimen received from Mrs. Mathilda C. Stevenson, Española, N. M., which, he says, appears to be *Gossypium hopi*.<sup>2</sup> Where and when the specimen was collected and where it was deposited, if preserved, are not known. Dr. Elsie Clews Parsons reports that cotton is still cultivated at Jemez<sup>3</sup> and at Isleta,<sup>4</sup> but so far no report on identification of specimens from these pueblos has appeared.

In August, 1934, the writer collected a specimen of cotton from a garden at Ranchitos, the farming community of the Santa Ana Pueblo Indians which is located on the east bank of the Rio Grande just north of Bernalillo. Mr. Volney H. Jones, ethnobotanist in the Museum of Anthropology, University of Michigan, identified it tentatively as *Gossypium hopi* Lewton. The specimen has been deposited in the collections in Mr. Jones's custody (Catalog No. 14695). Late in the summer of 1936, Mr. Jones saw cotton under cultiva-

tion at Ranchitos and collected seeds. These seeds, together with those collected by the writer, were sent to the U. S. Department of Agriculture Field Station at Sacaton, Arizona, where plants from them have been grown annually since 1936.

R. H. Peebles, of the Field Station, who has examined these plants, reports, in correspondence, that this cotton, while quite variable, is similar to *G. hopi* in several taxonomically important respects. It is adapted to early flowering and fruiting, as is Hopi cotton. On the other hand, he notes that in certain characteristics the Santa Ana cotton diverges from *G. hopi*, and suggests affinity to Upland cotton (*G. hirsutum*). His conclusion is, however, that the "Santa Ana material is more closely related to *Gossypium hopi* Lewton than to *G. hirsutum* L."<sup>5</sup>

The following conclusions seem warranted: (1) The Santa Ana cotton and Hopi cotton have a common origin, that the cotton cultivated at Santa Ana to-day is a relic of aboriginal agriculture rather than a recent introduction from the cotton growing states of the Gulf coast region. (2) The minor differences in the morphology of these two (Hopi and Santa Ana) cottons are explainable in terms of differences in environment and, perhaps, differences in manner of cultivation (irrigation). (3) With regard to diffusion, the direction seems to have been from the Hopi country to the Rio Grande, rather than the reverse, since both cottons are adapted to a very short growing season and because the growing season at Santa Ana (196 days) is considerably longer than in the Hopi country (135 days). Our Santa Ana specimen is the only authentic and completely documented identification of cultivated cotton from an Indian pueblo in the Rio Grande region that has yet been reported, so far as we know.

LESLIE A. WHITE

UNIVERSITY OF MICHIGAN

<sup>1</sup> See V. H. Jones's exhaustive "A Summary of Data on Aboriginal Cotton of the Southwest" in "Symposium on Prehistoric Agriculture" (*The University of New Mexico Bulletin*, 1936).

<sup>2</sup> "The Cotton of the Hopi Indians: a New Species of *Gossypium*" (Smithsonian Miscellaneous Collections, Vol. 60, No. 6; 1912).

<sup>3</sup> "The Pueblo of Jemez," p. 14, 1925.

<sup>4</sup> "Isleta, New Mexico," p. 211, 1932.

<sup>5</sup> I am greatly indebted to Mr. Peebles and to Mr. Jones for their kindness and cooperation in this matter.