

more than thirty years Dr. Garzón Nieto has been director of the Colombian Office of Longitudes. During this period the principal work of his bureau has been the production of a series of maps of the departments of Colombia on the scale of 1:500,000, based on astro-

nomical observations, made at hundreds of places throughout this country, and compiled to a considerable extent from surveys made expressly for them. This work was instituted by Dr. Garzón and has been carried on under his direction.

## SCIENTIFIC NOTES AND NEWS

ALFRED NOBEL, the Swedish industrialist, whose philanthropy is usually commemorated on December 10 in Stockholm or Oslo with the announcement of the new Nobel Prize winners, was honored instead at a dinner in the Hotel Roosevelt on December 11 at which eleven Nobel laureates were guests of honor. The celebration marked the fortieth anniversary of the first awards. The prizes have been suspended for the duration of the war. Nobel laureates who were present at the dinner included Viktor Franz Hess, Clinton Joseph Davisson, Enrico Fermi, Otto Meyerhof, Karl Landsteiner, Irving Langmuir, Harold Clayton Urey and Peter J. W. Debye. Dr. Vilhjalmur Stefansson presided.

THE Charles Reid Barnes life membership award to an outstanding plant physiologist of the American Society of Plant Physiologists will be presented this year at the annual dinner of the society. Philip R. White, recipient of last year's Stephen Hales Prize, will deliver the prize address on "Vegetable Dynamics and Plant Tissue Cultures." The society will meet with the American Association for the Advancement of Science at Dallas from December 29 to 31, inclusive. The program on Monday afternoon will be a symposium on "Electrodynamics of Living Systems." The annual dinner will be held on Monday evening. On Monday and Tuesday mornings and Wednesday morning and afternoon, sessions will be held for the presentation of submitted papers.

THE medal of honor of the American Group of the Société des Architectes Diplômés par le Gouvernement was presented at a dinner given in his honor at the Architectural League of New York City on December 12 to Dr. Frederick P. Keppel, who retired last month as president of the Carnegie Corporation of New York. The award was made in recognition of "distinguished service in the advancement of art and architecture."

THE Institute of Medicine of Chicago at its annual dinner on December 2 conferred the honor of citizen fellowship on Albert D. Lasker, advertising executive. Only ten such awards have been made in the history of the institute. Dr. Joseph A. Capps, in presenting Mr. Lasker, paid tribute to his distinguished ability in the business world and to his valuable contribution to medicine in realizing the "importance of research in

advancing understanding of the processes of disease and furthering the progress of medicine in its treatment." Mr. Lasker has given liberally to cancer research, to the investigation of the degenerative diseases and more recently to the cause of birth control.

DR. HERBERT GROVE DORSEY, chief of the Research Section of the U. S. Coast and Geodetic Survey, recently received the first annual award of the Washington Society of Engineers, "To a member whose accomplishments in engineering have made an outstanding contribution to the advancement of engineering knowledge and practice and to the maintenance of a high professional standard."

EDWARD KASS, M. Scherago and R. H. Weaver, all of the department of bacteriology of the University of Kentucky, have been awarded the King Prize of \$50 for the best paper presented at the 1941 meeting of the Kentucky Academy of Science. The award was in recognition of their work on "Enzymic Purification of Antitoxins."

DR. EDWARD H. HATTON, who recently retired as professor of pathology and bacteriology at the Dental School of Northwestern University, has received the Callahan Award of the Ohio State Dental Society for 1941. He will continue to serve as general secretary of the International Association for Dental Research, with an office at Northwestern University.

THOMAS J. TALBERT, chairman of the department of horticulture and forestry of the College of Agriculture of the University of Missouri, was reelected president of the American Pomological Society at a joint meeting of the society with the Michigan State Horticultural Society on December 4. The society is ninety-three years old and this was the fifty-seventh convention.

DR. WALTER C. COFFEY, acting president of the University of Minnesota since the retirement on June 30 of President Guy Stanton Ford, has been elected the seventh president of the university. He will have approximately two and a half years in office before reaching the retiring age of sixty-eight years. Dr. Coffey has for twenty years held the position of dean and director of the university department of agriculture.

DR. HARRY NOBLE WRIGHT, acting president of the

College of the City of New York, has been recommended for the presidency by the Board of Higher Education. He will succeed Dr. Frederick B. Robinson, who resigned in June, 1939. Dr. Wright has been a member of the faculty of mathematics since 1931. He had previously been dean and president of Whittier College, Calif., and dean of Earlham College, Richmond, Ind.

DR. WILLIAM CARSON VON GLAHN, of the College of Physicians and Surgeons of Columbia University, associate professor of pathology, has been appointed professor of pathology at New York University College of Medicine and director of the department of pathology and laboratories at Bellevue Hospital.

DR. T. T. CHEN, research associate in zoology at the University of California at Los Angeles, has been appointed lecturer.

RAFAEL E. PONTIS, director of the government laboratory of phytopathology at Mendoza, Argentina, has joined the division of plant pathology of the University of California College of Agriculture as research fellow.

C. FOSTER WRAY has been made temporary custodian of the anthropological collections at the Rochester Museum of Arts and Sciences. He will supervise the removal of the collections to the new building of the museum.

DR. E. S. NASSET, associate professor of physiology, department of vital economics of the University of Rochester, and Dr. R. G. Dagg, associate professor of physiology at the College of Medicine, University of Vermont, have been appointed majors in the Sanitary Corps for service in the Food and Nutrition Division of the Medical Department of the Army. They are now at the Army Medical Center in Washington, D. C.

PROFESSOR JAMES G. NEEDHAM, of Cornell University, is visiting Stanford University in order to prepare for a collecting trip in the Olympic Mountains in the spring.

ACCORDING to the *Journal* of the American Medical Association, Dr. Ragnar T. Westman has resigned as health director of Kansas City to assume rank as surgeon of the U. S. Public Health Service and serve as federal consultant in epidemiology to extra cantonment and defense areas. He is stationed in Bethesda, Md.

*Nature* states that Sir Franklin Sibly, vice-chancellor of the University of Reading, has been appointed a member of the Advisory Council to the Committee of the Privy Council for Scientific and Industrial Research. The Right Hon. Viscount Fal-

mouth has retired from the council on completion of his term of office.

*The Lancet* announces that a dietetic council has been set up in Ireland "to experiment on ways and means of aiding the people's nutrition under wartime conditions, paying special attention to children's diet." The following have been appointed: Dr. P. T. O'Farrell (chairman), Professor W. J. E. Jessop (secretary), Professor W. R. Fearon, Dr. Catherine O'Brien, Dr. John Mowbray and Dr. Oliver Fitzgerald.

DR. TRACY J. PUTNAM, professor of neurology and neurosurgery at the College of Physicians and Surgeons, Columbia University, gave a lecture in the series for the laity of the New York Academy of Medicine on December 11. He spoke on "The Mechanisms of the Mind."

DR. STANHOPE BAYNE-JONES, professor of bacteriology in the Yale University School of Medicine, will deliver, on January 23, the eighteenth Ludwig Hektoen Lecture of the Frank Billings Foundation of the Institute of Medicine of Chicago. The subject of his lecture will be "Tetanus."

DR. A. G. MCNISH, of the department of terrestrial magnetism of the Carnegie Institution, gave an address, on December 6, at the annual meeting of the Philosophical Society of Washington. He spoke on "Great Geomagnetic Storms of the Present Sun-Spot Cycle."

DR. HAROLD E. BURTT, professor of psychology at the Ohio State University, addressed the University of Cincinnati Chapter of the Society of the Sigma Xi on December 3, on "Psychology's Contribution to Scientific Crime Detection."

DR. EDWARD TELLER, professor of physics at George Washington University, who was recently appointed visiting professor of physics at Columbia University, delivered, on December 9, the annual public lecture before the Columbia University Chapter of the Society of the Sigma Xi. This lecture was entitled "Energy Production in Stars."

THE annual meeting of the Metropolitan New York Section of the Mathematical Association of America has been set for April 18, at Hunter College in New York City.

THE Soil Science Society of Florida held the fourth annual meeting in Gainesville on December 5 and 6. There were three half-day sessions at which fourteen papers were presented. Soil research, with special emphasis on Florida agriculture, plant food, soil and water conservation, and Inter-American agricultural education and research were discussed.

"SCIENTIFIC Planning in Defense Production" was

the subject of a conference in New York on December 13. The conference, conducted under the sponsorship of the American Association of Scientific Workers, was the first of an important series of similar meetings to be arranged by the association in Boston, Chicago and other cities for the purpose of interesting a larger group of scientific and technical workers in methods of participating more actively in defense and of drawing wider public attention to vital problems of national significance. The conference consisted of reports by speakers followed by discussions from the floor. The program was as follows: *Mineral Resources*—Professor C. H. Behre, department of geology, Columbia University; *Power*—P. W. Swain, editor, *Power*; *Machinery*—John Haydock, managing editor, the *American Machinist*; *Utilization and Training of Personnel*—Dean Albert B. Newman, School of Technology, College of the City of New York; *Organization and Planning*—Dr. Harlow S. Pearson, a former president of the Taylor Society. Professor Walter Rautenstrauch, of the department of mechanical engineering, Columbia University, is chairman.

DUE to the present uncertainty of delivery, issues of the *Rivista di Parassitologia*, Rome, are being stored for all foreign subscribers and exchanges. This practice will be continued until a return of normal conditions, unless the publishers are requested to mail the issues at the subscriber's risk.

A NEW joint university library to serve Vanderbilt University and Peabody and Searritt Colleges was dedicated in Nashville on December 5 and 6. This library, designed as a step toward the realization of a great regional university center in Nashville, was established to eliminate unnecessary duplication and to coordinate and expand the library resources and services of the three institutions. Erected on a plot of ground connecting the three schools, the new library is designed to house 550,000 volumes and is so planned that its initial capacity can be increased to a million books by expanding the center of the structure. The building and its endowment represent an investment of approximately \$2,000,000, half of which came as a grant from the General Education Board, a substantial sum from the Carnegie Corporation and the remainder from more than 5,000 students, faculty members, alumni, employees and friends.

SUPREME COURT JUSTICE LOUIS A. VALENTE refused on November 17 to restrain Park Commissioner Robert Moses from keeping the Aquarium in Battery Park, New York City, closed, but said that an application for an injunction might be renewed in the future, "should subsequent developments disclose that the Aquarium building is being razed or damaged without the proper authority of the Board of Estimate." In denying the

restraining order sought by Pierce T. Wetter, treasurer of the Greenwich Village Historical Society, Justice Valente upheld the right of Commissioner Moses to close the building temporarily to prevent accidents during construction of the Brooklyn-Battery tunnel, but indicated that a permanent closing might be a different matter.

SIMON GUGGENHEIM, president of the American Smelting and Refining Company and formerly United States Senator from Colorado, who died on November 2, left nearly all his estate to "The John Simon Guggenheim Memorial Foundation" established by him and his wife as a memorial to their son, who died in April, 1922. The foundation was created in 1925 to "promote the advancement and diffusion of knowledge and understanding and the appreciation of beauty." Among other bequests are the sum of \$200,000 to the University of Colorado and \$100,000 to the School of Mines at Golden, Colo., to which he had given \$80,000 when his son was born.

By the will of Frank Graham Thomson, who died in September, Harvard University will receive eventually the sum of \$750,000 which it is suggested should be used for "training young men for the Federal Service of the Government of the United States." Mrs. Thomson will receive the income of the fund so long as she lives; on her death the fund will go to the Harvard department of government.

It is reported in the *Journal* of the American Medical Association that Swift and Company, Chicago, has announced the establishment of a series of fellowships for research in nutrition. Intended to aid the Federal Government in its long-range national program in nutrition, the fellowships provide for special research to be undertaken in laboratories of universities and medical schools with funds set aside by Swift and Company as grants-in-aid, beginning on November 1. The fellowships will be for one year but may be renewed when the project warrants it. Any fundamental study of the nutritive properties of foods or the application of such information to improvement of the American diet and health will be eligible for consideration for a grant. Placement of the new fellowships will be coordinated by R. C. Newton and his staff of the Research Laboratories of Swift and Company, Union Stock Yards, Chicago.

IN accordance with the desire of the late Dr. A. C. Langmuir, Mrs. Langmuir has presented five hundred volumes from his library to the Boyce Thompson Institute for Plant Research at Yonkers, N. Y. Many books in excess of the five hundred volumes were presented to other institutions, either because they represented phases of science not covered at the institute or because duplicates were already in its library.

THE John Wesley Hyatt Award, a gold medal and a thousand dollars, to be made annually to the individual rendering the most distinguished service in the field of plastics, has been established by the Hercules Powder Company, manufacturers of the basic raw materials used in the plastic industry. Its administration is in the hands of an Awards Committee, including Richard F. Bach, Metropolitan Museum of Art, New York; Dr. Lyman J. Briggs, director of the National Bureau of Standards; Dr. Karl T. Compton, president of the Massachusetts Institute of Technology; Watson Davis, director of Science Service, Washington; Dr. Harry N. Holmes, Oberlin College, president-elect of the American Chemical Society, and Eric Hodgins, publisher, *Fortune*, New York. L. T. Barnett, editor of *Modern Plastics Magazine*, is secretary of the committee. John Wesley Hyatt, for whom the award is named, was a pioneer in the plastics industry.

THE cornerstone of the building for the new laboratories at Princeton, N. J., of the Radio Corporation of America was laid on November 15 by General J. G. Harbord, chairman of the board of the corporation. The speakers included Dr. David Sarnoff, president of the corporation, who spoke by radio from the *S. S. Matsonia en route* from Honolulu to San Francisco, and Dr. Gano Dunn, member of the Board of Directors. Otto S. Schairer, vice-president in charge of the laboratories, presided. In laying the corner-

stone, General Harbord sealed into place an air-tight lead box containing radio and electronic devices, as well as literature, representative of current development in the radio age. Included among the contents were an iconoscope and a kinescope, a cathode-ray tube, several new and special types of electronic tubes, a microphone, a loudspeaker and the latest design of a personal radio receiver.

THE Oregon State Board of Higher Education recently approved the restoration of courses leading to graduate and undergraduate degrees in six scientific divisions at the University of Oregon. The degrees will be offered, beginning with the academic year of 1942-43 in mathematics, chemistry, physics, geology, botany and zoology. In 1932 the board transferred all major work in science to Oregon State College as a part of the program of unification and prevention of duplication in the curriculum of the centralized Oregon system of higher education. Service courses in all the branches of science for lower division work were retained at the University of Oregon. In granting the request of the university that the department of science be restored, the committee on curricula of the board pointed out that the request of the university was reasonable and would strengthen the whole system of higher education. It was further stated that for a university to perform its educational function, it must have a complete college of liberal arts, including the sciences.

## DISCUSSION

### ON THE PRECISION OF ESTIMATES FROM SYSTEMATIC VERSUS RANDOM SAMPLES

IN recent years marked advances have been made in increasing the efficiency of sampling through the development of modern theories of mathematical statistics, which has led to the more wide-spread use of stratified random sampling. It has been possible, in many instances, to effect considerable reductions in the variation to which sample estimates of population parameters are subject by a knowledge of the population to be sampled and a judicious choice of the strata from which the samples are to be drawn.

Gains in efficiency through this kind of restriction have been limited, however, in three ways, *i.e.*, (1) by the extent to which the population to be sampled is stratified, (2) by the size of the sample and additional cost of selecting observations by strata, which determine the extent to which advantage can be taken of the existing stratification, and (3) by the requirement imposed by the mathematical model, upon which error formulae are based, that there must be at least two independently and randomly selected observations in each of the strata sampled. This requirement, which

appears to be inconsequential, turns out in actual tests to have a quite serious effect.

A large part of the work of the U. S. Forest Service, whether it be research, administration or land-use planning, requires sampling, to provide estimates of timber volume, forage, infiltration capacity or other characteristics of the land and its cover. Also, basic to many of these sample estimates, is an estimate of the area in each of the recognized cover types. In this sampling work, one of two systematic methods of selecting the samples has usually been employed. These are the line-plot and strip methods of sampling, by which evenly spaced plots along evenly spaced lines are observed, or evenly spaced strips are used as plots. It is evident that selection of plots in either of these two ways does not satisfy the requirement of independence and randomness and that, therefore, data so obtained do not provide a valid estimate of sampling errors when random sampling error formulae are used. In considering revisions of these sampling schemes, it is important to know the extent to which substitution of methods of sample selection allowing straightforward calculation of sampling errors affects the precision of sample estimates. More