be taken that progress is not delayed. Where one organization is outstandingly qualified to conduct a particular piece of research, the problem is turned over to that organization even though it may have other defense research work under way. On the other hand, as between two or more organizations approximately equally well qualified to engage in a particular piece of research, preference is given to that organization which does not have other defense research activities under way.

Thus far, the National Defense Research Committee has authorized 126 separate contracts with a total of 51 different academic and industrial establishments. Of this total, 80 contracts are with 32 different academic institutions and 46 with 19 different industrial concerns.

The order establishing the National Defense Research Committee states that its purpose shall be to correlate and support scientific research on mechanisms and devices of warfare except those relating to problems of flight included in the field of activities of the National Advisory Committee for Aeronautics. It may conduct research for the creation and improvement of instrumentalities, methods and materials of warfare. The committee has recently adopted the following resolution as a general indication of the limits of its activity:

> The National Defense Research Committee, by reason of the order of the Council of National Defense which established it, is concerned with scientific research on and development of new instrumentalities or materials of war, or of new materials or methods to be used primarily in the manufacture of instruments of war; and of the improvement of existing instrumentalities or materials of war, or of existing material or methods to be used primarily in the manufacture of instruments of war. Where a material or method is widely used or useful in industry, in addition to its use in the manufacture of instruments of war, as for example in the case of substitute materials of wide utility, the research and development involved do not lie within the province of the National Defense Research Committee, but rather within the province of many existing industrial and scientific research agencies, and in particular, when appropriate requests for investigation or research in such fields are made by government agencies, within the province of the National Academy of Sciences and the National Research Council.

COMMITTEE ON FOOD AND NUTRITION OF THE NATIONAL RESEARCH COUNCIL

AT the request of Miss Harriet Elliott, head of the consumer division of the Advisory Commission to the Council of National Defense, the National Research Council of the National Academy of Sciences has organized a committee to promote the development and application of nutritional science. A national program for improving nutrition is in the planning stage under the immediate direction of Director M. L. Wilson, of the Extension Service of the Department of Agriculture, and in this program the Committee on Food and Nutrition of the National Research Council is expected to play an important part. The membership of the committee includes physicians, biochemists and representatives of home economics, dietetics, agriculture and industry. A group of consultants and representatives from governmental services with nutritional responsibilities are associated. It is anticipated that the work of the committee will have a bearing upon the national welfare not only for the time of the present emergency, but in later years as a continuing agency. The committee is organized under the Division of Biology and Agriculture, the Division of Medical Sciences and the Division of Anthropology and Psychology.

The membership of the committee is as follows:

Executive Committee: Russell M. Wilder, *Chairman;* Helen S. Mitchell, *Secretary;* George R. Cowgill; Icie Macy Hoobler.

Members: John N. Black, Henry Borsook, F. G. Boudreau, Joseph S. Davis, C. A. Elvehjem, Philip C. Jeans, Norman Jolliffe, C. G. King, James McLester, S. C. Prescott, Lydia J. Roberts, W. C. Rose, Cullen Thomas, R. R. Williams, John B. Youmans.

Government Representatives: Grace Bulman, William DeKleine, Martha M. Eliot, J. K. Fuller, Colonel Paul E. Howe, E. M. Nelson, W. H. Sebrell, Louise Stanley, Commander Charles S. Stevenson.

Consultants: E. V. McCollum, John R. Murlin, Mary Swartz Rose, H. G. Sherman.

Ex Officio: Robert F. Griggs, *Chairman,* Division of Biology and Agriculture; Lewis H. Weed, *Chairman,* Division of Medical Sciences; Carl E. Guthe, *Chairman,* Division of Anthropology and Psychology; M. L. Wilson, National Defense Nutrition Program.

SCIENTIFIC NOTES AND NEWS

DR. HARRY N. HOLMES, head of the department of chemistry at Oberlin College, Ohio, has been elected president of the American Chemical Society for 1942. Dr. Holmes will take office as president-elect on January 1 at which time Professor William Lloyd Evans, head of the department of chemistry at the Ohio State University, becomes president of the society, succeeding Dean Samuel Colville Lind, of the University of Minnesota.

AT a meeting in New York on December 20 of the fellows of the American Geographical Society, the

Cullum Geographical Medal was presented to Dr. Robert Cushman Murphy, curator of oceanic birds at the American Museum of Natural History; the Charles P. Daly Medal, "for valuable or distinguished geographical services or labors," was presented at the same time to Professor Carl Ortwin Sauer, head of the department of geography of the University of California in recognition of "his outstanding contributions to geography as a teacher and research scholar." The inscription on the medal to Dr. Murphy was "Robert Cushman Murphy—by following the sea birds to their haunts he has deepened our knowledge of the world of waters."

SIR ARTHUR KEITH, master of Buckston Brown Research Farm at Downe, anatomist and anthropologist, was elected an honorary member of the New York Academy of Sciences at the annual meeting of the academy, held in New York on December 11.

DR. FRED H. ALBEE, president of the International College of Surgeons, formerly professor of orthopedic surgery at the New York Postgraduate Medical School, received a bronze plaque designating him "the Man of the Year" for 1940 from the Greek letter fraternity, Kappa Sigma, at the annual Founders Day banquet held in Washington on December 10. The award was made in recognition of his achievements on bone graft surgery and in rehabilitation work.

W. D. COOLIDGE and Stuart M. Crocker have been appointed vice-presidents of the General Electric Company. Dr. Coolidge will continue as director of the research laboratory in Schenectady. Mr. Crocker will relinquish his work as manager of the department of air-conditioning and commercial refrigeration of the company at Bloomfield, N. J., and will make his headquarters in New York City, where he will cooperate with and be assisted by all commercial departments in furthering the general interests of the company.

THE Scientific Society of San Antonio, Texas, at its thirty-sixth annual meeting, elected as president Colonel W. Lee Hart, Medical Corps, United States Army, now serving as chief surgeon of the Eighth Corps Area.

THE Detroit Academy of Natural Sciences has elected the following officers for 1941: *President,* Robert T. Hatt; *Vice-president,* Bert Hudgins; *Secretary,* Bert Lambert; *Treasurer,* Fred Robinson; *Member of the Council,* George Rawson.

OFFICERS for the coming year of the Botanical Society of Washington have been elected as follows: *President,* J. E. McMurtrey, Jr.; *Vice-president,* Victor F. Tapke; *Recording Secretary,* L. Edwin Yocum; *Corresponding Secretary,* Marguerite S. Wilcox; *Treasurer,* Harvey L. Westover; *Counsellors,* John R. Magness, Earl S. Johnston; *Representative to the Washington Academy of Sciences,* Melvin C. Merrill.

THE board of governors of the Society of the New York Hospital has elected William Harding Jackson, member of the law firm of Carter, Ledyard and Milburn, president of the society. He succeeds Berklie Henry, president for the past two years, who was elected vice-president. Augustine J. Smith, senior member of the board and a governor for thirty-eight years, was reelected secretary. Henry S. Sturgis, vice-president of the First National Bank, was reelected treasurer.

HOWARD R. BARLOW, associate professor of aeronautical engineering, of the University of Minnesota, who has been acting head of the department this summer during the absence of Professor John D. Akerman, has been made head of a new department of aeronautical engineering at the Texas Agricultural and Mechanical College Station.

BURGESS H. JENNINGS, of Lehigh University, has been appointed professor of mechanical engineering at Northwestern University; Carl C. Branson has been appointed visiting assistant professor of geology and geography.

DR. MICHAEL PEECH, chemist at the Florida Citrus Experiment Station, has been appointed assistant professor of agronomy in the New York State College of Agriculture of Cornell University to fill the position held by Professor Benjamin D. Wilson, who died on September 5 of injuries suffered in an automobile accident.

DR. ROBERT D. DEFRIES has been appointed director of the School of Hygiene and of the Connaught Laboratories of the University of Toronto. During the past twenty-five years he has been engaged in the work of these two institutes, having early in 1915 become actively associated with the late Dr. J. G. FitzGerald, whom he now succeeds.

DR. MAX TRUMPER, chief of the department of biochemistry and toxicology of St. Luke's and the Children's Hospital, Philadelphia, has been elected a member of the Board of Trustees of the National Farm School at Doylestown, Pa.

ACCORDING to *Nature* the following appointments have recently been made in the British Colonial Service. P. R. Akehurst, agricultural officer, Nyasaland; L. H. Browne, agricultural officer, Nigeria; J. W. D. Goodban, agricultural officer, Nigeria; A. P. MacWilliam, agricultural officer, Trinidad; D. B. Murray, agricultural officer, Nigeria; P. Paine, agricultural

officer, Nigeria; M. F. H. Selby, botanist, Nigeria; N. Harris, geologist, Uganda.

DR. HENRY K. SVENSON, curator of the herbarium at the Brooklyn Botanic Garden, sailed for Ecuador on December 20. The recipient of a fellowship from the Guggenheim Foundation, Dr. Svenson plans to study the plants on the coast of Ecuador and determine what relation they may have to the plants of the Galapagos Islands. He expects to be absent for about four months.

DR. CORNELIUS P. RHOADS, director of the Memorial Hospital for the Treatment of Cancer and Allied Diseases, New York, has been appointed a member of the National Advisory Cancer Council for a term of three years. The council cooperates with the federal government in the treatment of cancer throughout the country and in research and education to combat the disease.

DR. ERHARD FERNHOLZ, chief of the Division of Chemistry at the Squibb Institute for Medical Research at New Brunswick, N. J., disappeared on December 14. It is reported in the press that the Federal Bureau of Investigation has not been able to find any clue.

DR. E. A. DOISY, professor of biological chemistry and director of the department of chemistry at the School of Medicine of St. Louis University, has presented the first lecture under the Julius Stieglitz Memorial Lectureship at the University of Chicago. The lectureship was established through joint effort of the Chicago Section of the American Chemical Society and alumni of the department of chemistry of the University of Chicago.

DR. LANCELOT HOGBEN, of the University of Aberdeen, at present guest professor of genetics at the University of Wisconsin, spoke at the Iowa State College on December 13 on "Recent Developments in the Evolutionary Theory" and on "Methods and Problems of Human Genetics." The latter lecture was given at a meeting of Sigma Xi.

DR. ISAAC STARR, Hartzell professor of research therapeutics at the University of Pennsylvania, gave on November 13 the fourth annual Paul Reed Rockwood Lecture of the College of Medicine of the Iowa State University. His subject was "The Ballistocardiogram; Its Contribution to Our Knowledge of the Commoner Diseases Affecting the Heart and Circulation."

DR. FRANK H. LAHEY, director of surgery at the Lahey Clinic, Boston, president-elect of the American Medical Association, formerly professor of surgery at the Medical School of Tufts College, delivered the second Floyd Wilcox McRae Memorial Lecture on December 16, before the Fulton County Medical Society, Atlanta. His subject was "The Management of Gastric, Duodenal and Jejunal Lesions."

J. D. BERNAL, associate director of research in crystallography at the University of Cambridge, gave an address on "The Physics of Air-raids" at the Royal Institution, London, on December 3.

THE American Mathematical Society is endeavoring to increase interest in questions of the application of mathematics by special lectures and symposia designed for engineers and applied mathematicians and intended to call the attention of pure mathematicians to problems in the applied field. As the initial lecture in this connection, it is planned to have Dr. C. Rossby, of the U. S. Weather Bureau, speak at the joint meeting of the society and the American Association for the Advancement of Science in Philadelphia at Christmas time. His subject will be "The Mathematical Problems in Meteorology." At the February meeting of the society, it is planned to devote Friday afternoon to applied mathematics. First, there will be talks by Dr. W. A. Shewhart, of the Bell Telephone Laboratories, on "Statistics" and by Professor J. J. Stoker, of New York University, on "The Mathematical Problems Connected with the Buckling of Elastic Plates." Further lectures of this type are planned for future meetings.

THE Hoffmann Scholarship of the Chemists' Club, established by the late Dr. William F. Hoffmann, will be available for the school year 1941–42. Candidates are limited to men entering the last year of post-graduate work leading to the Ph.D. degree in chemistry or in chemical engineering in an institution of recognized standing. Applications will be considered after January 1, but will not be accepted after April 15. Harvey H. Grice, a candidate for the Ph.D. degree in chemical engineering at the Ohio State University, has been awarded the Bloede Scholarship of the club for the school year 1940–41. This scholarship, which was founded in 1916 by the late Dr. Victor G. Bloede, was originally given every year. Appointments are now to be made in alternate years; the stipend is $580.

Two graduate fellowships in chemistry have been established at the University of Buffalo by the Buffalo Electro-Chemical Company. The fellowships will provide the holders with $1,000 each for the academic year. During his tenure each fellow will be engaged in research work under the supervision of the department of chemistry and will be a candidate for the degree of doctor of philosophy.

THE Iowa State College has received a farm and a gift of $10,000 from Rollins E. Hinds, of Ottumwa. On accepting the gift, the Board of Education estab-

lished the Hinds Fund for Agricultural Research. This fund will be used, in cooperation with the Soil Conservation Service, for the study of soil erosion.

THE California Commission, a body created by the governor of the state to aid the recent Golden Gate Exposition, has presented exhibits valued at $80,000 to the University of California. Among exhibits sent to other institutions, two went to the Buffalo Museum of Science in Buffalo, N. Y. These were the Demonstration of Human Heredity and the Migration of the Races of Man. The Museum of Science and Industry in Chicago received the model of the San Francisco-Oakland Bay Bridge. The Griffith Observatory, a part of the Los Angeles City Park System, received the exhibit on Nuclear Charge, otherwise known as the Soap Bubble Gun, and Stanford University acquired the exhibit of the Embryology of the Salamander, which was prepared in cooperation with Dr. V. C. Twitty, of that university.

IN an article in *Industrial Standardization* R. P. Anderson, chairman of the American Standards Association, states that despite the war situation in Europe, the American Standards Association has continued its support of the International Electrotechnical Commission and also of the International Standards Association. While much of the international work is at a standstill and the future situation is uncertain, it is maintaining contacts with a number of foreign standardizing bodies and continuing to obtain copies of their standards wherever possible. So far, the association has encountered no great difficulty in sending and receiving communications from these groups abroad and its file of foreign standards has been invaluable to American firms filling orders for export. Even the British Purchasing Commission has found it necessary to call on the association on numerous occasions for standards and specifications which they did not have themselves. Recently the American Standards Association has received copies of the second edition of the International Electrotechnical Vocabulary, which is being distributed in the United States.

DISCUSSION

PERCEPTUAL DISORIENTATION DURING LANDING OF AIRPLANE

UNDER the above title in SCIENCE, November 22, A. D. Moore described an illusion which he had noted during landings of airliners, and he raised a question on the possibility of trouble in case a pilot was confronted with unusual conditions that might make him subject to this illusion. Writing partly as a pilot with a thousand-and-some hours, but more as a physicist, I feel sure the illusion will not cause any such trouble, but I should like to add a point to Moore's explanation.

Briefly, the illusion is this: Looking across the ship from a seat in the passengers' cabin, when the ship had "started to skim along the runway," the field "appeared to slope down forward at an angle of about 15 degrees." This illusion continued after the wheels touched the ground, even though Moore turned his head repeatedly between that window and one on his own side, through which the ground "remained horizontal." But, "when the plane, with a low remaining speed, wheeled through a short turn to taxi back, the phenomenon abruptly ceased."

In explanation, Moore notes that during each flight before such an observation he had got accustomed to the fact that the window frame lines were horizontal and vertical, so it was natural to persist in thinking of the horizontal ones as horizontal even when the ground seen through the frames was no longer parallel to them. This is indeed natural, as I can testify in terms of a memory from age 10 or 12, of exploring the hold of a schooner, which had been wrecked on a beach and lay heeled over some 10 or 20 degrees, and feeling seasick, apparently because of the conflict of such evidence with that of my semicircular canals and other internal senses.

There is more to it, however, in my opinion. Airline pilots use their controls and throttles with most expert smoothness. In their hands the ship changes its attitude and its speed with none of the bumps of a railroad train or an automobile. And the cruising speed is so high that in stopping the ship with a backward acceleration of the order of 20 per cent. of gravity there is time to build up this acceleration very gradually and then maintain it for a long time.

Let us apply these principles to the approach and landing. In the straight glide, for perhaps a mile or two, the ship is nosed down and the passenger gets used to the downward slope of the floor and of the "horizontal" frame lines of the windows. The speed is almost constant, the propeller thrust and the forward component of gravity being balanced by the drags of the ship and its flaps, which are usually down for most of this time. Nearing the airport boundary the throttles are closed smoothly, reducing the propeller thrust to zero and thereby introducing a considerable backward acceleration. But during this change the nose is rising and the flight path is becoming more level. So, as the backward acceleration grows, the forward component of gravity fades out. The passenger, however, so long as he keeps his eyes within the ship, has no way to tell backward acceleration from forward gravity. If the changes are smooth enough, and properly correlated as to time and magnitudes,