

center of research, either at home or abroad. Under present conditions preferential consideration will be given to subjects for which existing provision is inadequate.

From the large number of applications received last year, 17 selections have been made by the Advisory Committee and approved by the trustees of the will of the late Lord Leverhulme. These are for varying periods up to two years. The names of the fellows in the sciences and the subjects of the researches are as follows:

E. C. BULLARD, demonstrator in geodesy, University of Cambridge, "Gravity and Magnetic Measurements." Research to be carried out in Great Rift Valley, East Africa.

C. R. BURCH, physicist, Metropolitan-Vickers Electrical Company, Ltd., "On the Production of Aspherical Optical Surfaces and on Their Imaging Properties in Combination."

F. FRASER-DARLING, chief officer, Imperial Bureau Animal Genetics, Edinburgh, "An Ecological Study of a Herd of Scottish Red Deer, with Special Reference to Behavior."

C. S. ELTON, director of the Bureau of Animal Population in University of Oxford and university demonstrator in zoology, "Fluctuations in Numbers of Wild Mammal Populations."

D. H. HAMMICK, fellow and tutor, Oriel College, Oxford, "Investigations on the Interaction of Nitro-compounds with Aromatic Bases and Hydrocarbons."

H. S. HATFIELD, London, "The Behavior of Crystalline Substances in Electric and Magnetic Fields."

L. S. B. LEAKEY, fellow of St. John's College, Cambridge, "The Prehistory of East Africa."

D. L. R. LORIMER, lieutenant-colonel, Indian Army (retired), late of Foreign and Political Department, "Anthropological and Linguistic Research in the Gilgit Region of the Karakorum and Hindukush."

A. G. LOWNDES, Marlborough College, Wilts, "The Polygraphic Process." Ultrarapid cinema-photo-micrography.

HUNAN-YALE PUBLIC HEALTH PROJECT IN CHANGSHA SCHOOLS

A SPECIAL government grant of \$12,000 Chinese currency has been made to the Hunan-Yale Medical School by the Hunan Provincial Government to carry on a public health program in the schools of Changsha. Sixteen schools in the north of Changsha have been chosen as a starting point for the new project, and it is estimated that 6,000 students, most of them of primary grade, will be reached. Chu King-lung, Commissioner of Education, has been appointed chairman of the committee, while Dr. K. Y. Wang, president of the Hunan-Yale Medical School, is to be vice-chairman, and Dr. L. S. Liu, of the department of preventive medicine at Hunan-Yale, will act as general secretary.

The project as outlined by the committee includes health education in the schools through lectures, lantern slides, exhibits, habit training classes, etc. This branch will be chiefly for the students themselves, but additional material will be presented to cooperating parents. There will be an annual physical examination of all students in these schools, with careful records and a monthly check-up in weight and height. The program also includes a weekly clinic for correction of defects as far as possible; inspection for infectious diseases, preventive inoculation, isolation and sanitary inspection of school and grounds.

Two doctors and four trained public health nurses will be assigned to this work. The additional grant for this purpose is a significant indication of the interest of the government, coming as it does at a time of financial stringency. The principals of the sixteen schools affected have expressed their hearty endorsement of the project.

The Hunan-Yale Medical School was started in 1914 as a joint enterprise between the Hunan Provincial Government and Yale-in-China, and it is believed that this new plan will give a great opportunity to aid in health education. It is said that many fields of preventive medicine require more in the way of finance and government organization that can be afforded, but that this development is within present facilities, especially as there is a growing interest in public health measures. The Hunan-Yale Hospital now has 180 beds, with a special children's ward, and is equipped to carry on the treatments that may be needed for conditions found in the health examinations.

REPORT ON THE ELECTRICAL HAZARDS OF AIRCRAFT

A SUB-COMMITTEE of the National Advisory Committee for Aeronautics has issued a report on the results of an investigation made at the request of the Navy Department on "Hazards Due to Electrical Phenomena."

Members of the committee appointed by Dr. Joseph S. Ames, president of the Johns Hopkins University and chairman of the National Advisory Committee were: Dr. Charles F. Marvin, Weather Bureau, *chairman*; Dr. L. J. Briggs, Bureau of Standards; Commander Garland Fulton (C. C.), U. S. N.; Dr. W. J. Humphreys, U. S. Weather Bureau; Dr. J. C. Humphreys, Massachusetts Institute of Technology; Dr. F. B. Silsbee, Bureau of Standards; Professor John B. Whitehead, the Johns Hopkins University; Dr. G. W. Lewis, National Advisory Committee for Aeronautics (*ex officio*). They were assisted by Dr. M. F. Peters, of the Bureau of Standards.

The findings of the committee as summarized by Science Service are as follows: An airship inflated with inflammable hydrogen is no more liable to dam-

age from lightning than one inflated with non-inflammable helium, provided it is properly "caged" with electrically conducting metal framework. In the airship the protection is greater the closer the meshes of the metallic framework, the wire bracing and the wire netting enclosing the gas bags, and particularly the more highly electrically conducting the surface of the outer envelope.

A number of reports of damage by lightning to airplanes are reviewed. It was generally agreed that "It is possible, without serious complication, to render an airplane practically immune to serious danger either to the airplane or to the occupants."

Though neither airplanes nor airships are in serious danger from lightning, it is important that every effort be made to avoid thunderstorms. The violent winds during thunderstorms, rather than the lightning, are the cause of destruction.

STREAM SURVEYS IN THE NATIONAL PARKS BY THE U. S. BUREAU OF FISHERIES

THE program of stream surveys in the national parks and forests to be conducted by the Bureau of Fisheries on funds allotted by the Public Works Administration is rapidly nearing completion. On January 8 and 9 a conference of the administrative and supervisory personnel was held in Washington, D. C., for the consideration of details of this organization. Besides the administrative officers of the bureau, the conference was attended by Dr. H. S. Davis, who will have general technical supervision of the investigations, and by Dr. A. S. Hazzard, Dr. P. R. Needham and Dr. Eugene Surber, all of the regular scientific staff.

The purpose of this survey is to formulate a sound scientific stocking and improvement program for the most heavily fished waters of the national forests, based on an actual assessment of the physical and biological characters of the streams and lakes within the areas studied. The improved program of planting resulting from such a survey will effect material economies by coordinating the activities of the Federal and State Governments engaged in stocking public waters, and in addition recommendations will be offered to the Forest Service for the more effective improvement of stream conditions, utilizing the services of the emergency conservation workers. Owing to the limitation of trained personnel, however, recommendations for stream improvement will be offered only in the particular forest areas that can be surveyed by the various bureau parties in the field. Since there are upward of 120 national forests, these recommendations for improvement will cover but a very small portion of the national forest areas.

The survey program will be organized in three

major sections: The eastern section, including a part of forest area 7; the intermountain section, including parts of forest areas 1, 2, 3 and 4; and the western section, including selected forests in area 5.

Four survey parties will be placed in the field in the eastern section. One will operate in the Pisgah National Forest, parts of the Great Smoky National Park, and a portion of the Nantahala National Forest, where work will be undertaken about March 15; one in the George Washington and Monongahela National Forests and a portion of the Shenandoah National Park; one in the White Mountain National Forest and adjacent regions in New Hampshire, and one in the Green Mountain National Forest and the Battell Forest and adjacent regions in Vermont. Work in the latter areas can not begin before April or May owing to climatic conditions.

In the intermountain region one party will work in Glacier National Park, completing the surveys that have already been undertaken in the past. One will be assigned to each of the seven Intermountain States, including Idaho, Wyoming, Nevada, Utah, Colorado, Arizona and New Mexico. In each case one or more national forests will be surveyed as fully as possible during the limited working season of midsummer.

In the western section three survey parties will be engaged in studying the waters of the Yosemite National Park and the Stanislaus, Tahoe, Klamath and Trinity National Forests in California. Weather conditions will not permit effective work in these high mountain areas until late in the spring.

In all, 15 parties will be placed in the field varying from 4 to 7 in number, including a skilled biologist in charge of the party; 2 to 4 assistant biologists and 1 or 2 unskilled assistants to assist in maintaining and moving the camps, caring for pack horses, trucks and equipment. In all approximately 85 persons will be employed for periods varying from 3 to 8 months.

THE NEW YORK STATE PLANNING BOARD

FUNDS have been placed at the disposal of the National Planning Board by the Federal Emergency Administration for Public Works for the employment of qualified experts to further the development of planning on a state-wide basis. As a condition of providing a technical adviser without expense, it is stipulated that state planning boards shall be appointed. The boards will work in cooperation with the National Planning Board as part of the Federal Recovery program. The Public Works Administration will defray expenses for salaries and for administrative work for six months.

Robert Whitten has been appointed expert director of the New York State Board, and Dr. A. R. Mann, provost of Cornell University, has been named chair-