gastric anacidity and macrocytic anemia responding to the administration of extracts of liver known to be effective in pernicious anemia. Of greatest immediate importance, however, is their observation that the intrinsic factor disappeared from the gastric juice of certain affected animals and that their livers were shown no longer to contain the thermostable principle effective in pernicious anemia. Here, then, is evidence that by a type of dietary deficiency the essential gastric defect of pernicious anemia has been produced. Although it is probable that defective diets are not the sole cause of such changes in Addisonian pernicious anemia, defective diets are very common in related types of macrocytic anemia such as occur in sprue and in pregnancy in certain parts of India. The facts disclosed by Miller and Rhoads must nevertheless be taken into account in any consideration of the possible original causes of the changes of the gastric secretion in Addisonian pernicious anemia. Even in this disease, aversion to meat was described by Fenwick[3] in 1880 and other peculiarities of the diet are often noted. Lindgren[40] has recently found that gastric anacidity in the general population is unusually common in Sweden in regions in which diets low in meat, vegetables and fruit and high in starchy foods are prevalent. It is hoped that students of nutritional deficiency may recognize that for an adequate explanation of the manifestations of deficiency disease in man the effects of dietary deficiency upon the gastrointestinal tract are worthy of further study.

SCIENTIFIC EVENTS

COURSES IN GAME MANAGEMENT AT THE STATE UNIVERSITIES

COURSES in game management, to be set up in the several state universities, will have the active support of the Bureau of Biological Survey, which is prepared to supply instructors and to cooperate with the universities and with state game commissions in financing the new development.

J. N. Darling, chief of the bureau, in announcing this new policy, stated that one of the leading American manufacturers of arms and ammunition has agreed to contribute $30,000 a year for the purpose. The Biological Survey will be able to supply $42,000. The game commissions and universities also will share in the expense.

Research work in wild-life subjects as well as in teaching the application of methods of modern game management will be included in the courses. Many universities now have important schools of forestry and it is anticipated that the new educational service in game management will follow similar lines.

Several schools and state game commissions are ready to proceed with the inauguration of courses in game management. The Biological Survey has men competent to direct the work. The courses will be designed to fit students with practical and scientific knowledge in game management and to turn out graduates equipped to do work in the restoration of valuable forms of wild life.

Mr. Darling points out that for years colleges and universities have been training foresters and park-planning engineers and developing specialists in the use and preservation of many of our natural resources, but nowhere are there facilities to prepare young men for the equally important task of administering the supply of wild birds, animals and fishes. As a result of this neglect there are few men who have the scientific and technical qualifications necessary to enable them to deal with the steady decrease in our wild life. by applying the known principles of game restoration.

Under this new policy the Biological Survey will supply institutions with technically trained instructors who will make available to students, farmers, landowners and sportsmen the results of experimental work conducted by the wild-life agencies of state and federal governments and by conservation organizations. These units under the direction of the Bureau of Biological Survey will do away with this duplication of effort.

THE LEVERHULME FELLOWSHIPS AND AWARDS FOR RESEARCH

AWARDS of Leverhulme Research Fellowships in 1935 and grants to research workers are announced by the Advisory Committee and are given below. The Advisory Committee have recommended and the trustees have approved 20 nominations to fellowships and seven grants in aid of research, tenable for varying periods up to two years.

The names of the fellows and the subjects of the researches in the sciences are as follows:

W. N. BAILEY, M.A., D.Sc., senior lecturer in mathematics, University of Manchester.—"The Study of Functions of Hypergeometric Type."

D. B. BLACKLOCK, M.D., D.P.H., professor of tropical Medicine, University of Liverpool.—"A Study of the Present Practise of Hygiene (including Rural Hygiene) in Certain Eastern Countries."

MRS. M. G. BLACKLOCK, B.Sc., M.B., B.Ch., curator of the museum, Liverpool School of Tropical Medicine.—"A Comparative Study of the Organizations for the Improvement of Health of Women and Children in Eastern Countries."

[40] S. Lindgren, *Acta med. Scandinav.*, Suppl. 48: 1–235, 1932.

C. DARYLL FORDE, B.A., Ph.D., professor of geography and anthropology, University of Wales, Aberystwyth. —"Field Study of the Economy of a West African Village Community."

S. D. GARRETT, B.A., formerly assistant plant pathologist, Waite Agricultural Research Institute, University of Adelaide, South Australia.—"The Biological Antagonism of the Soil Microflora towards Root Disease Fungi of Crop Plants."

MRS. K. LONSDALE, D.Sc., research worker, Royal Institution, London.—"Relation between Structure and Physical Properties of Organic Molecules."

E. P. MUMFORD, M.A., M.S.C., late director, Pacific Entomological Survey, Honolulu.—"Terrestrial and Freshwater Biota of the Marquesas Islands."

R. G. W. NORRISH, B.A., Ph.D., director of studies, Emmanuel College, Cambridge.—"The Mechanism of Certain Chemical Reactions."

F. R. PERRY, M.Sc., member of research department, Metropolitan-Vickers Electrical Company, Limited, Manchester.—"The Study of Over-voltages Due to Lightning on Transmission Lines."

L. R. WAGER, M.A., B.Sc., lecturer in mineralogy and petrology, University of Reading.—"The Tertiary Igneous History of East Greenland."

W. D. WARE, washery supervisor, Cefn Coed Colliery, Crynant, South Wales.—"Research on the Lower Part of the Coal Measures and Millstone Grit in Pembrokeshire."

Grants in aid of research have been made to the following:

P. FORD, B.Sc., Ph.D., head of department of economics, University College, Southampton.—"Statistical Inquiries into Sources of Family Income."

R. D'OYLEY GOOD, M.A., head of department of botany, University College, Hull.—"A Botanical Survey of Dorset."

J. W. HESLOP HARRISON, D.Sc., F.R.S., professor of botany, Armstrong College, Newcastle.—"Genetical and Evolutionary Studies with Special Reference to Closely Allied Species and Local Races."

J. W. LAYARD, B.A.—"The Social Anthropology of North-Eastern Malekula and Allied Cultures."

J. W. W. STEPHENS, M.D., D.P.H., emeritus professor of tropical medicine, University of Liverpool.—"Treatise on Blackwater Fever in Its Historical, Clinical and Other Aspects."

THE OXFORD CONGRESS ON SOIL SCIENCE

OVER 400 workers in the particular branch of agricultural research which is known as soil science, or pedology, opened the third International Congress at Oxford on July 30. The congress continued until August 7, and afterwards, according to the London *Times,* 200 of the delegates toured Britain, in the course of which three days, from August 11 to 14, were spent in Aberdeen. The *Times,* writing in advance of the meeting, says:

The chief object of their visit to Aberdeen is to inspect the Macaulay Institute for Soil Research at Craigiebuckler. There are only two centers in the British Isles which are devoted to scientific research on soils, one being the Rothamsted Experimental Station at Harpenden and the other the Scottish Station at Craigiebuckler. This, the most recent addition to Aberdeen's scientific institutions, was founded in 1930, when Mr. T. B. Macaulay, the president of the Sun Life Assurance Company of Canada, purchased the property of Craigiebuckler and provided a sum of money which made possible the establishment of a Scottish soil research institute. He was also responsible for the provision of a fully equipped demonstration farm on the Island of Lewis, which forms part of the institute. During the past five years the Macaulay Institute, the director of which is Dr. W. G. Ogg, has carried out much valuable work.

Previous soil congresses were held in the United States in 1927 and in Russia in 1930. Many notable figures in the world of science will attend the Oxford congress. The president of the International Society of Soil Science, under whose auspices the congress is held, is Sir John Russell, the director of the Rothamsted Experimental Station, which is the oldest agricultural research station in the world. The secretary of the society is Dr. D. J. Hissinck, the director of the Soil Science Institute at Groningen, in Holland. Dr. Hissinck took a prominent part in the reclamation of the Zuider Zee, one of the most interesting agricultural achievements of modern times. Dr. Marbut, who has been responsible for the preparation of a soil map of the United States, and Dr. Stremme, of Danzig, who has prepared the first soil map of Europe, will be at the congress, and it is hoped they will take part in the post-congress tour.

About 30 countries will be represented in the post-congress tour. The United States has sent the largest contingent of members to the congress; there are a few Canadian workers, and Russia and Germany are well represented. India has sent seven representatives, and Africa about the same number. China, Denmark, Norway, Sweden, Japan, Egypt, Palestine, Estonia, Finland, Czechoslovakia, Holland, Hungary, Rumania, Poland and France are all represented. Hawaii and the West Indies have also sent members.

The delegates were welcomed by the vice-chancellor of the university at the opening session, and were entertained by the Government at a dinner in Christ Church Hall on July 31. The meetings were arranged so that questions of wide interest were discussed in the mornings at plenary sessions, and more specialized ones in the afternoons at commission sessions. The presidential address of Sir John Russell was on "The Place of Soil Science in Agriculture," and Professor G. W. Robinson presented a general survey of British soils. There was a plenary session of Commission IV—Soil Fertility.