

airiness and light. The north front looks across the botanical garden to an unobstructed view of the Cathedral, half a mile away; on the south is a wooded hill. The architect has taken full advantage of these opportunities, and the beauty of the prospect from the reading room windows or from the balconies above the eastern entrance is a daily refreshment.

Externally, the central portion of the building and large parts of the eastern wing are brick faced with artificial stone; the large glass surfaces of the entrance halls, the main staircase and the library are striking features, and copper has been extensively used. The roof, all the copings and window-sills, as well as the outer walls and window mullions of the theatre, are of copper cladding, the total area of which amounts to about half an acre. Its use in conjunction with the galvanized steel of the window-frames has presented some problems of insulation. It may be well to add that all was purchased and in store before the rise in price and recent restrictions.

The building is surrounded by a nicely adjusted arrangement of lawns, pavements and cobble-stones; and on the south side, as a reminder of the imperfection attending all human achievement, is a projecting terrace ending in a turnip field, where it is hoped that sooner rather than later a companion block for the biological sciences will be built.

AGRICULTURE AND FORESTRY RESEARCH IN EAST AFRICA

THE East African Agriculture and Forestry Research Organization was established in 1948 to conduct basic research in the sciences bearing on agriculture and forestry, having developed from the East African Agricultural Research Station at Amani in Tanganyika Territory, and which itself was previously the old German research institute started in 1906 in a clearing in the forest in the Usambara Mountains. Long-range research work on an East African basis was begun at Amani in 1927, and the achievements of the small staff of never more than nine research workers during 1927-47 are described in a short account by Dr. H. H. Storey*.

The basic research work of Geoffrey Milne between 1929 and his death in 1942 placed our knowledge of East African soils on a sound basis and established for him an international reputation as a soil scientist. By 1935 he and his colleagues in the several Departments of Agriculture had gained sufficient knowledge of the soils to permit Milne to prepare a provisional map of East Africa. His conclusions on the nature of the soils studied were interpreted by him into recommendations for their proper use, and correct land use in East Africa derives much from principles enunciated in his writings. A reconnaissance report of his 1935-36 journey through Tanganyika Territory was published by the *Journal of Ecology* after his death. This journey covered part of the area recently developed by the Overseas Food Corporation, and the report has been a basis for soils work by the scientific staff of the Corporation.

Amani played an important part in the survey of the wild plants of East Africa. This work centred around the Amani Herbarium which, when taken over in 1928, contained about ten thousand dried

specimens collected by expeditions of leading botanists from Germany during the nineteenth and early twentieth centuries. These collections contain many 'type' specimens, some of them the only 'types' existing, owing to the loss of duplicates in Europe during the Second World War. P. J. Greenway, the systematic botanist at Amani, has preserved and augmented this collection, which in 1950 contained seventy thousand specimens, and the Amani Herbarium was regularly visited by collectors and botanical expeditions from all over the world.

Investigations by the plant physiologists on the coffee plant led to the discovery of the effects of overbearing on the root system. As a result of F. J. Nutman's work, the coffee root system and something of how soil conditions and treatment affect it, the effect of carbohydrate starvation on the root system and cultural conditions which allow a maximum economic crop are known. The root system of sisal in relation to different soil conditions has also been studied.

Work on virus diseases of cassava led to a search for varieties resistant to mosaic disease and to extensive hybridization of cassava with other species of *Manihot*. In the study of plant diseases, the chief contribution made at Amani, under the inspiration of H. H. Storey, was fundamental research into the relationship between a virus, the plant and the insect that carried the disease. Means of controlling leaf-curl in tobacco and tea 'yellows' were developed as a result of basic research by Storey.

During the Second World War much of the long-term research work at Amani was discontinued. Staff were posted to other work and some direct war research was undertaken at the Station, including processes for large-scale extraction of quinine from cinchona bark, production of camouflage nets from sisal twine, making local dye for army tents from an extract of mangrove bark, devising a process for heat insulation of armoured fighting vehicles, development of a process for cracking vegetable oils to give petrol and kerosene substitutes, and a method of distilling camphor from the wood of *Cinnamomum camphora*.

In 1946 it was proposed at a conference in East Africa that all agricultural specialist officers and the research staff of Amani should be transferred to a new body which became the East African Agriculture and Forestry Research Organization†, situated at Muguga in a forest reserve of 1,600 acres near Nairobi, with Dr. B. A. Keen as director; Dr. Keen's services have been acknowledged by the honour of knighthood conferred recently in the Queen's Birthday honours list.

In the director's annual report for 1950‡ the construction of headquarters and the scientific work of the Organization are described. Fertilizer experiments which have been running for three years are showing results. Investigations on sudden-death of cloves in Zanzibar have not proved the virus hypothesis of transmission, and investigations have revived interest in possible fungus pathogens. The East African Herbarium has been moved from Amani to a new building in Nairobi, and the welding of the Coryndon Museum Herbarium of some twenty thousand sheets with the Amani collection has begun.

* Basic Research in Agriculture: a Brief History of Research at Amani, 1928-1947. By H. H. Storey. Pp. 24+7 plates.

† East African Agriculture and Forestry Research Organization: its Origin and Objects. By Dr. B. A. Keen. Pp. 12.

‡ East African Agriculture and Forestry Research Organization. Annual Report, 1950. Pp. ii+57. (Kikuyu: East African Agriculture and Forestry Research Organization, 1951.)