



Fig. 3. X-ray shadowgraph of book louse (*Liposcelis granicola*) and silver grid of 1,500 mesh/in. Original magnification,  $\times 25$ ; final magnification,  $\times 37$

needed and the advantage of the specimen being in air would be lost.

The apparatus described, a fuller account of which will appear elsewhere, can also be used as a fine-focus tube for X-ray analysis. Indeed, the use of a magnetic lens is similar to that in the diffraction tubes devised by Goldsztaub<sup>5</sup> and by Witty and Wood<sup>6</sup>. It gives a much smaller spot than the fine-focus diffraction tube of Ehrenberg and Spear<sup>7</sup>, which makes the maximum use of the electrostatic focusing action of the electron gun but employs no subsequent lens.

Thanks are due to D. A. Taylor and S. S. D. Jones, who assisted in the preliminary experiments. One of us (V. E. C.) has been supported by a Keddey Fletcher-Warr Research Studentship of the University of London (at the Electrical Laboratory, Oxford, 1939-41) and by an I.C.I. Research Fellowship (at Cambridge, 1946-49), and the other (W. C. N.) by a Scholarship of the Research Council of Ontario.

[May 3.

<sup>1</sup> Sievert, R., *Acta Radiol.*, **17**, 299 (1936).

<sup>2</sup> von Ardenne, M., *Naturwiss.*, **27**, 485 (1939).

<sup>3</sup> Cosslett, V. E., "The Electron Microscope", pp. 72, 116 (Sigma Press, London, 1947).

<sup>4</sup> See Crowther, J. A., "Handbook of Industrial Radiology", pp. 151-182 (Institute of Physics, London, 1946); and Engström, A., "Progress in Biophysics", pp. 164-196 (Butterworth, London, 1950).

<sup>5</sup> Goldsztaub, S., *C.R. Acad. Sci., Paris*, **224**, 458 (1947).

<sup>6</sup> Witty, R., and Wood, P., *Brit. J. App. Phys.*, **1**, 305 (1950).

<sup>7</sup> Ehrenberg, W., and Spear, W. E., *Proc. Phys. Soc., B*, **64**, 67 (1951).

## EMPIRE COTTON GROWING CORPORATION, 1921-50

A SHORT history of the Empire Cotton Growing Corporation, 1921-50, originally published in the *Empire Cotton Growing Review* of January 1951, is now available as a pamphlet. It includes a number of matters of scientific interest. The Corporation was incorporated by Royal Charter on November 1, 1921, as a result of the report of the Board of Trade's Empire Cotton Growing Committee in 1920, and was financed partly by a capital grant from the Imperial Government and partly by a levy on all raw cotton spun into yarn in the United Kingdom. Since the repeal of the Cotton Industry Act on March 31, 1948, the Corporation has received an annual grant of £18,000 from the Cotton Board.

Resembling in many ways a research association, the Corporation has concentrated mainly upon production, with its relevant agricultural and scientific problems and requirements. A first step was the training and enlistment of a scientific staff, and in this, since 1922, the Corporation has been in close association with the Imperial College of Tropical Agriculture in Trinidad. Relations established with the Shirley Institute at Manchester, by enabling plant-breeders to test new cottons at a much earlier stage, have led to a great saving of time, land and labour. Another early step was to enlist the help of scientific experts in general agriculture, soil science, genetics and plant breeding, plant physiology, entomology and plant pathology, and particular tribute is paid to the services of the late Sir John Farmer.

The agricultural and scientific policy of the Corporation has fully recognized that cotton-growing, to be permanent, must be associated with other crops in the general system of agriculture of the countries concerned. A Research Station was established in Trinidad in 1926 and closed at the end of 1944, when it was decided that the next phase of the work could more advantageously be carried out in a country producing a commercial cotton crop. A site for the new Station was found at Namulonge, Uganda, and of the estimated capital cost of £206,500 half was provided from Colonial Development and Welfare Funds, £78,250 from the Corporation's invested resources, and £25,000 from the Cotton Industry War Memorial Trust. The Corporation is to find £170,000 of the recurrent expenditure, estimated at £400,000 over the ten years from October 1, 1947. Colonial Development and Welfare Funds are providing £100,000 and the Governments of Uganda, Tanganyika, Nigeria, Kenya and Nyasaland, jointly, have promised £130,000. The Uganda climate has necessitated stationing the Cytogenetics Section at Shambat, near Khartoum. Figures are quoted to demonstrate, on the basis of record crops, the capacity of the Empire to grow more than a million bales of cotton per annum; and three-year averages show that production in the Anglo-Egyptian Sudan has increased from 23,225 bales in 1918-21 to 299,872 in 1946-49; in Uganda from 55,196 to 262,929; in Kenya from 233 to 6,574 bales; and in Tanganyika from 2,442 to 48,345 bales, for the same periods.

## SOUTH-EASTERN UNION OF SCIENTIFIC SOCIETIES ANNUAL CONGRESS

AT the invitation of the Camberley and District Natural History Society, the South-Eastern Union of Scientific Societies held its fifty-sixth annual congress at Camberley during April 26-29 under the presidency of David Seth-Smith. The local committee for the congress was under the chairmanship of Major Maxwell Knight, with Miss Jean Armitage as local secretary.

At the 'young naturalists' evening', Dr. W. E. Swinton, of the British Museum (Natural History), lectured on "Prehistoric Reptiles", illustrating his remarks with lantern slides and films. A Nature quiz competition took place between teams from the junior section of the Natural History Society and the