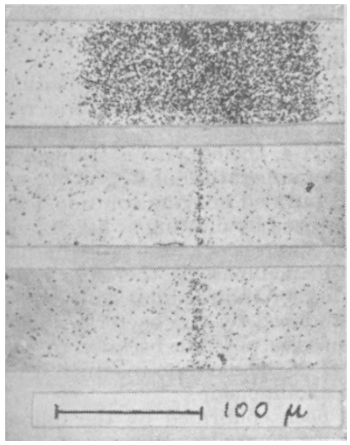

(*a*) PLATE 30 MM. FROM REFLECTOR, EXP. 90 SEC.; (*b*) 167 MM., EXP. 5 SEC.; (*c*) 174 MM., EXP. 5 SEC. COPPER ANTICATHODE, 15 kV. R.M.S., 10 mA., KODAK *B5* EMULSION

of a plate bent by a symmetrical pair of couples forms a reflector almost free from 'spherical' aberration in the region between the inner supports, and that the accuracy in setting required is not beyond one which could be reached by careful design and good workmanship. A 'camera' based on these computations provides for a separation of 35 cm. between slit and plate, with a reflector of gilded glass of an effective length of 3 cm. half-way between. The accompanying microphotographs are of photographic plates exposed in the converging beam emerging from the reflector, (*a*) at 30 mm. from the centre of the reflector, (*b*) at 167 mm., and (*c*) at 174 mm. It is seen that at 167 mm. an image only a few microns wide is obtained, the width on the plate being of the order of the range in the emulsion of copper *K* photo-electrons.

With a leverage of 15 cm., interferences arising from spacings of 0·005 mm. should thus be resolved. It was noticed, however, that for very much prolonged exposures such as would be required for their detection, the focal line develops rather extended wings, which may be due to a number of causes. For example, it was observed that the mirror develops a tarnished appearance, probably due to deposition of particles from the heavily ionized atmosphere in front of it. Experiments are in progress in order to find the cause of this small-angle scattering, and a remedy for it.

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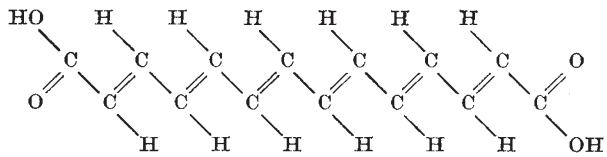
Corticrocin, a Mycorrhiza Pigment

FROM the yellow mycorrhiza fungus *Corticium croceum*, a pigment has been isolated for which the name 'corticrocin' is proposed. *Corticium croceum* is a symbiont on the roots of *Pinus silvestris*, *Picea excelsa*, *Vaccinium vitis idœa* and other plants. The symbiosis is especially common when the plants grow on a poor, acid, sandy soil or on raw humus.

Corticrocin is extremely sparingly soluble in most organic solvents, but may be crystallized from pyridine, forming long yellow needles containing pyridine. This is easily removed by washing with ether, acetone or alcohol or by evaporation over concentrated sulphuric acid. It forms orange-red needles which are soluble in dilute alkali and decompose at about 310°. Very small samples may be sublimed in a high vacuum. In sealed, evacuated capillary tubes the substance starts to sublime at about 270–280°. The composition agrees with the formula $C_{14}H_{14}O_4$. With diazomethane a dimethyl derivative is obtained, forming golden yellow, glistening plates or orange needles m.p. 230–232°, which have the composition $C_{14}H_{12}O_2(OCH_3)_2$. This derivative is sufficiently soluble in camphor to permit the determination of the molecular weight (found 284 and 305; calc. 274). On catalytic hydrogenation six molecules of hydrogen are absorbed and the dimethyl ester of *n*-tetradecane dicarboxylic acid $(CH_2)_{12}(COOCH_3)_2$, m.p. 44–45°, is formed. Hydrolysis of this acid affords *n*-tetradecanedicarboxylic acid, m.p. 125–126°. The melting points were not depressed on admixture with the appropriate authentic specimens.

Consequently corticrocin is very probably tetradecahexa-enedicarboxylic acid. This conclusion is supported by the fact that all the physical properties of the substance, such as ultra-violet absorption, colour, solubility and melting point of the acid and the ester fit very well into the series of polyene dicarboxylic acids studied by R. Kuhn *et al.* They prepared all the dicarboxylic acids up to dodecapentaenedicarboxylic acid, the next lower analogue of corticrocin. It is probable that the molecule has the trans-configuration :



Corticrocin is the first *n*-polyenoid diacid found in Nature. Its nearest analogues among the true carotenoids are crocetin and *nor*-bixin.

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Production of Citrinin by Five Species of *Penicillium*

IN the course of a routine examination of species of *Penicillium* for antibacterial activity, the following were shown to produce citrinin : *P. lividum* Westling ; *P. phœo-janthinellum* Biourge ; *P. implicatum* Biourge ; *P. chrzaszczi* Zaleski ; *P. citreo-sulfuratum* Biourge.

All five cultures were supplied by Prof. J. Westerdijk, of the Centraalbureau voor Schimmelcultures, Baarn. Another strain of *P. lividum* (No. 6522, National Collection of Type Cultures, London) was tested and found inactive. Another strain of *P. implicatum* (N.C.T.C. No. 6524) and one of *P. chrzaszczi* (N.C.T.C. No. 6611), previously reported to produce antibacterial activity[1], were also found to produce citrinin.

The first three species belong to the section Stricta of the division Monoverticillata, and so are fairly closely related. *P. citreo-sulfuratum* is placed by Thom[2] in the section Stricta of the division Monoverticillata. Westerdijk[3], however, lists it as synonymous with *P. chrzaszczi* Zaleski. *P. chrzaszczi* has