Notes A department for short papers of immediate interest.

Corn Plant Resistance Factor

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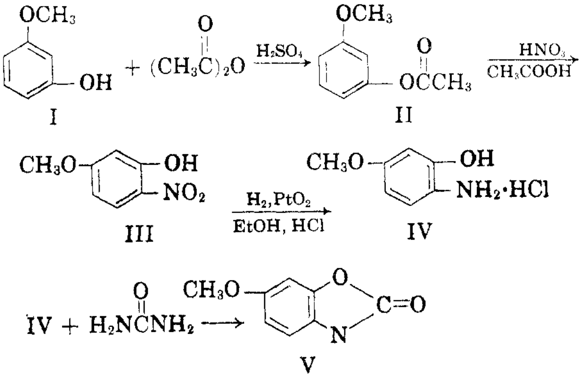
We have isolated a compound from the corn plant which appears to be partially responsible for the resistance of the plant to attack by the European corn borer. Virtanen and Hietala[1] previously reported a compound to be present in the rye plant which is benzoxazolinone. They found this compound prevented the growth of *Fusarium nivale*, a rye plant rot. After corresponding with a former member of our group Virtanen assumed a product he isolated from wheat and maize plants to be 6-methoxy-2(3)-benzoxazolinone[2] but never confirmed this assignment.

We have synthesized 6-methoxy-2(3)-benzoxazolinone and have shown it to be identical with the natural product by infrared spectra comparison and by mixed melting point. In our isolation procedure we designated the naturally occurring compound as *factor A* and found it to have the following constants: m.p. 154–155°; $\lambda_{\max}^{H_2O}$ 230, 287 ($E_{\max}$ 10,000, 4,500); benzoyl derivative m.p. 161–163°; benzene sulfonyl derivative m.p. 163–164°.

Anal. Calcd. for $C_8H_7O_3N$: C, 58.18; H, 4.27; N, 8.48; CH_3O-, 18.75; Mol. Wt., 165. Found C, 58.41; H, 4.29; N, 8.40; CH_3O-, 18.46; Mol. Wt., 171 (ebulloscopic).

The material was readily recrystallized from water and was found to be soluble in dilute sodium hydroxide. On reviewing our infrared spectra, our analysis, the chemical nature of the compound and its degradation products, we decided to synthesize a methoxy-2(3)-benzoxazolinone. The 5-methoxy-2(3)-benzoxazolinone was previously synthesized,[3] m.p. 172°. On the basis of our absorption spectra we synthesized the 6-methoxy-2(3)-benzoxazolinone which had been postulated by Virtanen, *et al.*[2]

The procedure we followed involved the acetylation of monomethyl resorcinol, I, to give acetoxy methyl resorcinol, II, b.p. 135–136°/23 mm. Mononitration using nitric acid in glacial acetic acid gave 2-hydroxy-4-methoxynitrobenzene, (III), m.p. 94–95°, which on catalytic reduction gave the corresponding amino compound, IV. This compound on fusion with urea afforded 6-methoxybenzoxazolinone, V.



The product, V, obtained from the synthesis gave no depression in melting point when mixed with factor A and their infrared spectra were superimposable.

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[1] A. I. Virtanen and P. K. Hietala, *Suomen Kemistilehti*, **28B**, 165 (1955); *Acta Chem. Scand.*, **9**, 1543 (1955).

[2] A. I. Virtanen, P. K. Hietala, and O. Wahlroos, *Suomen Kemistilehti*, **29B**, 143 (1956).

[3] W. J. Close, B. D. Tiffany, and M. A. Spielman, *J. Am. Chem. Soc.*, **71**, 1265 (1949).

Rearrangement of Dihydroquercetin Tetramethylether with Alkali

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In a recent paper dealing with the methylation of dihydroquercetin (taxifolin) Hergert, Coad and Logan[1] found that methylation under certain conditions led to the formation of 2-(3,4-dimethoxybenzyl)-2-hydroxy-4,6-dimethoxycoumaran-3-one (II). The same compound could also be obtained by treatment of dihydroquercetin-3′,4′,5,7-tetramethylether (I) (Hergert, Coad and Logan[1] use the incorrect name 3′,4′,5,7-tetramethoxydihydroquercetin for this compound) for a few minutes with alkali. When treated with concentrated sulfuric acid II was converted into 2-(3,4-dimethoxybenzylidene)-4,6-dimethoxycoumaran-3-one (III). This is all in accordance with expectations.[2] However, their further statement that prolonged treatment of I or

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[1] Hergert, Coad and Logan, *J. Org. Chem.*, **21**, 304 (1956).

[2] Gripenberg, *Acta Chem. Scand.*, **7**, 1323 (1953).