None of the crystalline penicillins tested appreciably retarded germination.

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A New *Helminthosporium* Blight of Oats[1]

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A new *Helminthosporium* disease affecting mainly oat varieties and selections possessing the Victoria-type resistance to crown rust has become widespread in most oat-growing regions of the United States (*1, 2*). Although the first isolation from oats was made in November 1944, the organism was previously isolated from timothy seed. Numerous field isolations were obtained in 1945, and in the 1946 oat season infection was so severe in many areas as to cause serious reduction in yields. The fungus is known to have been present in 19 states in 1946, from Texas to New York and from Florida to Idaho.

Plants infected in the seedling stage were characterized by necrosis of the basal portions, and striping or reddening of the leaves, progressing upward from the lower leaves. The same symptoms were evident on plants in later stages of maturity, but the basal stem- and root-rot became the primary factors in identifying the disease, since striping and discoloration of leaves may be due to a number of causes. The leaf striping is believed to be a secondary toxic effect of basal infection. Mature plants in the field were blackened at the nodes with abundant sporulation of the fungus, and the lower internodes showed a characteristic brownish translucence. Culms weakened by severe infection broke over near the ground line and at the lower nodes, and excessive lodging made harvesting of many fields difficult.

The species of *Helminthosporium* responsible for this destructive disease of oats resembles three other members of the genus in several respects: *H. setariae* Sawada, *H. sacchari* Butler, and *H. sativum* Pam. King and Bakke. These similarities will be discussed in detail in a subsequent paper. Since, however, no description of a species of *Helminthosporium* which corresponds satisfactorily to this species has been found in the literature, it is proposed that it be recognized as a new species under the name *Helminthosporium victoriae*. This specific name is suggested because of the potential importance of this parasite as the cause of a foot-rot and leaf-stripe disease of oat varieties and selections possessing the Victoria resistance to crown rust (*Puccinia coronata avenae* (Corda) Eriks. & E. Henn.).

HELMINTHOSPORIUM VICTORIAE SP. NOV.

Conidiophoris erectis, simplicibus, pallide olivaceis usque brunneis, 60–280 × 5.8–10 μ, 4–10 septatis, apicibus geniculatis 30–80 μ; conidiis pallide olivaceis subcurvatis, elongato-ellipsoideis parte superiori plerumque angustiori, hilis aliquantulus protrudentibus, 40–130(70) × 11–25(15) μ, 4–11(8) septatis, muris modice tenuibus, tubulo uno e quaque cellula terminali germinantibus.

Hab.—In radicibus et culmis *Avenae sativae* L. (typus) et *A. byzantinae* C. Koch et hybridis inter eas parasiticus; et in plantis variis saprophyticus vel leniter parasiticus.

Conidiophores form velvety growth on lower nodes and sparse fructifications on basal leaf sheaths of mature oat plants. Conidiophores are erect, simple, emerging usually singly or occasionally in clusters of 2 to 5 from stomata or from between epidermal cells of infected culms, and measure 60–280 μ in length × 5.8–10 μ in width with 4–10 septa, mostly 120–160 μ × 6.5–7.8 μ with 6–8 septa; they are light olivaceous to medium brown and have a rather closely geniculated apical spore-producing area, 30–80 μ in length.

Conidia are fuliginous to dark olivaceous but typically light olivaceous, slightly curved, rounded at the base, widest near the center, and tapering to a rounded tip. Normal conidia measure 40–130(70) μ × 11–25(15) μ with 4–11(8) septa, have moderately thin walls, and germinate by one polar germ tube from each terminal cell, the basal germ tube emerging adjacent to the slightly protruding hilum. Conidia produced on water agar approach normality but are somewhat smaller and have fewer septa. Weathered spores at bases of mature plants in the field frequently are atypical, dark brown, irregular in shape, and with thick exospore. Typical cultures form a light- to medium-gray tufted colony on oat agar. One saltant, a profusely sporulating strain, produces a dark greenish-black colony.

The fungus is evident chiefly on the basal portions of *A. sativa* L. and *A. byzantina* C. Koch and hybrids between them, producing necrosis of roots and lower stem parts. On immature plants, it causes reddish-

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