probably have occupied separate territories. In that case a soil sample taken randomly from the field would indeed have resulted in a "man made" mixture. Disease symptoms are primarily caused by high nematode infestations, independent of pathotype or species. In some cases, consideration of the cultivar grown may be helpful. This particular field grew an Ro3-resister, indicating that nematode attack most likely must be attributed to \( G. \ pallida \). If, however, an Ro1-resister had been grown, a pathotype test with cysts from a patch in either of the two separate territories would have given incomplete information on the pathotype situation in this field. Lack of foreknowledge about the actual situation in infested fields prevents improvement of the sampling technique in this respect.

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—— et al. (1977). An international scheme for identifying and classifying pathotypes of potato cyst-nematodes \( Globodera \) rostochiensis and \( G. \ pallida \). Nematologica 23, 333-339.

R. Cook¹) & R. W. McLeod²): Resistance in wheat to \( Heterodera \) avenae in Australia and Britain.

Resistance of \( Triticum \) aestivum L., cv. Loros to \( Heterodera \) avenae Woll. was first reported by Nielsen (1966) in Denmark, in an accession identified by its United States Department of Agriculture number C.I. 3779. This resistance is effective against all European pathotypes of \( H. \) avenae (Cook & Williams, 1972). Subsequent testing of Loros in Australia led to confusion over its reaction; in Victoria, Brown (1969) tested a Swedish stock (accession AUS 2897 in the Australian Wheat Collection) which was as susceptible as the control varieties. This was confirmed in tests reported by Brown & Meagher (1970) and by McLeod (1976) with \( H. \) avenae from Koraleigh, New South Wales. The ability of \( H. \) avenae to reproduce on Loros thus appeared to be a distinctive feature of Australian populations. However, another accession of Loros was found resistant to Australian \( H. \) avenae; Loros AUS 11577, an introduction traceable to C.I. 3779 (Brown, J. A. M., 1974), is resistant in Victoria (Brown, R. H., 1974) and in South Australia (O’Brien & Fisher, 1974).

The purposes of the present work were to establish that AUS 11577 resists \( H. \) avenae in New South Wales and to determine if the reactions of AUS 2897

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and AUS 11577 distinguish Australian *H. avenae* from common European pathotypes. We also included in our tests AUS 10894, a spring wheat found resistant in South Australia (O’Brien, 1972) and Victoria (Brown, R. H., 1974) but not tested elsewhere.

**METHODS**

Pot test, Australia. 25 seedlings each of Loros AUS 11577, AUS 10894 and Robin (susceptible control) were germinated in sand in 5 x 2.5 cm glass specimen tubes and each seedling inoculated with a single cyst of *H. avenae* collected from plants grown in naturally infested soil from Koraleigh, N.S.W. Each cyst was crushed and checked for viable eggs and active larvae under a binocular microscope. After one week seedlings and sand were transferred to sterilized potting soil in 15 x 8 cm diameter plastic tubes and grown at 22° day and 17° night temperature for 12 weeks. Cysts on the roots were then counted by the method of Cotten (1963) and in the soil by simple flotation and sieving (Shepherd, 1970).

Outdoor microplot test, Australia. Rows of AUS 11577, AUS 10894 and Robin were grown in 12 metal trays, 50 cm x 50 cm x 20 cm deep, sunk 15 cm into the ground and filled with infested Koraleigh soil. Fourteen weeks after planting, 40 plants of each variety were lifted and the numbers of new cysts on their roots and in surrounding soil counted.

Field test, Australia. AUS 11577, AUS 10894 and Egret (susceptible control) were sown in 100 m rows at Koraleigh, N.S.W. Fourteen weeks later 40 randomly selected plants of each variety were dug. Numbers of new cysts on their roots were counted as in the previous test.

Pot test, Britain. Seedlings of AUS 2897, AUS 11577, AUS 10894, 63/1-7-15-12 (resistant control derived from Loros and used in the International Test Assortment for *H. avenae* (Nielsen, 1972) and Kleiber (susceptible control) were planted singly in plastic pots filled with 100 ml of infested field soil. There were eight pots each of pathotypes A and C. Plants were grown in a glasshouse and new cysts and white females counted at 12 weeks by the methods of Cotten (1963).

**RESULTS AND DISCUSSION**

In the microplots of Koraleigh soil and the field test (Table I) at Koraleigh, AUS 11577 was virtually free of cysts. In Britain (Table II), AUS 2897 was susceptible to pathotype A and, perhaps to a lesser extent, to pathotype C while AUS 11577 was resistant to both pathotypes. Thus the reaction of these two wheats to European pathotypes A and C is the same as their reaction to *H. avenae* in Australia. The results support the suggestion (Brown, J. A. M., 1974) that stocks called Loros in Australia differ and confirm the effectiveness of Loros AUS 11577 as a source of resistance in both countries.