

to race 8) and Richland (resistant to race 7) and their derivatives, constituted approximately 5% of the isolates, as they did also in 1953. Races 2, 7, 7A, 8, 10, and 11 were distributed across the country; races 6 and 13 were found only in Ont; races 5 and 12 occurred only in Western Canada and race 4 only in N.B. Race 7A occurred in Eastern and Western Canada as it did in 1953. Races 6 and 13 have occurred in Eastern Canada for several years but have not been found in Western Canada in recent years.

Puccinia coronata var. avenae

Uredinial collections of crown rust of oats were obtained, in 1954, from all the Canadian provinces except B. C. and Nfld.

The crown rust races present in these collections were identified on the basis of the rust reactions produced on the ten new differential host varieties, Anthony, Appler, Bond, Bondvic, Saia, Ukraine, Trispernia, Victoria, Santa Fe, and Landhafer. The rust reaction of the two new oat varieties, Garry and Rodney were ascertained also to each of the rust collections.

In all 177 isolates were studied. The number of isolates identified is indicated in brackets after the number of the race. 201 (24), 202 (45), 203 (18), 205 (1), 209 (3), 210 (1), 211 (8), 212 (10), 216 (1), 226 (2), 228 (7), 229 (1), 231 (4), 234 (7), 235 (6), 237 (7), 238 (2) 239 (12) and 240 (12). Two of these races 205 and 216, had not been found previously in Canada but both have been found repeatedly in the United States.

Races 201, 202 and 203 were the most prevalent races in Western Canada, while in Eastern Canada, races 201, 202 and 239 were most prevalent. In Western Canada, races 201, 202, 203, 205, 209, 210, 211 and 216, all of which heavily attack varieties which possess the Bond type of resistance, comprised 80.5% of all isolates, whereas in Eastern Canada, these races comprised 49.5% of all isolates. The varieties Garry and Rodney proved resistant to about 70% of the isolates. The variety Victoria was susceptible to one isolate (race 216) while Trispernia, Santa Fe and Landhafer were resistant to all the isolates.

Isolations from Aecia

During June and early July of 1954 collections of aecia on barberry (Berberis vulgaris) and buckthorn (Rhamnus spp.) were forwarded to the Winnipeg Laboratory by cooperators in Eastern Canada. For this assistance we wish to thank the following: K. A. Harrison, Kentville, N. S.; J. L. Howatt, Fredericton, N. B.; H. R. Klinck, Macdonald College, Que.; J. W. MacRae, Kemptville, Ont., W. H. Waddell, Guelph, Ont.; T. C. Vanterpool, Saskatoon, Sask.; D. B. O. Savile, and I. L. Conners, Ottawa, Ont.; and D. W. Creelman, Kentville, N. S.

Aecia on Barberry

As in recent years, Little Club wheat, Victory oats, Rosen rye,

Agrostis alba, and Poa compressa were inoculated with aeciospores. Five varieties of stem rust were isolated. Var. secalis, which was present in 12 of the 13 collections, was the most common variety. Var. agrostidis was present in six collections, var. tritici in three, var. avenae in three and var. poae in two. Races 15B-1, 31, 34, and 204 were identified from 2 collections of var. tritici (from Kemptville, Ont.) and races 8 and 13 from the 3 collections of var. avenae. This order of prevalence agrees with that of 1953, except that var. poae was not isolated in that year.

In 1954, Phleum pratense, Lolium perenne, Phalaris arundinacea, and Elymus canadensis were also inoculated with aeciospores. P. pratense and L. perenne were not infected, whereas, rust developed frequently on P. arundinacea and E. canadensis. Inoculation tests showed that in one instance P. arundinacea was infected with var. avenae and in two instances with var. agrostidis; only var. secalis was isolated from Elymus canadensis.

Aecia on Rhamnus spp.

In 1954, 38 aecial collections obtained on Rhamnus spp. in Eastern and Western Canada were studied. Most of the aecial collections were made on Rhamnus cathartica. However, collections were made also on R. japonica, R. saxatilis, R. utilis, and R. tinctoria. The aeciospores were transferred to certain cereals and grasses which distinguish between some of the varieties of crown rust. These were: Oats, rye, Festuca elatior, and Holcus lanatus.

From these collections three varieties of crown rust, Puccinia coronata var. avenae, P. coronata var. secalis and P. coronata var. festucae were obtained. Var. avenae was present in 37 of the collections; var. secalis in 9; and var. festucae in 4.

Fourteen physiologic races were identified from isolates obtained from the 37 collections of the var. avenae. The races identified were as follows with the numbers of isolates of each race given in brackets: 202 (3), 203 (2), 210 (1), 211 (1), 212 (3), 228 (2), 230 (2), 231 (8), 232 (4), 235 (5), 236 (1), 237 (1), 226 (4), and 240 (7).