

# "WHITE SPOT" OF TURNIPS: A DISEASE NEW TO CEYLON

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**I**N December, 1942, the writer's attention was drawn to a severe leaf-spotting disease of turnips (*Brassica Campes- tris* L.) occurring in a garden at St. Coombs, Talawakele\*. The disease was identified as "white spot", due to the fungus *Cercospora brassicae* (Fautr. and Roum.) von. Hoehn., which has not hitherto been reported from Ceylon. The purpose of the present article is to place this occurrence on record and to give a short description of the disease and the control measures to be adopted against it.

The disease causes an intense spotting of the leaves (Plate I., fig. 1). The spots, which are more or less circular in outline and rarely exceed a quarter of an inch in diameter, are at first dull brown or purplish in colour. Later they become bleached white in the centre, remaining coloured and with a slight tendency to zonation at the margins. It is at this stage that the common name "white spot", used by British (7) and American (6) authors, is particularly applicable. The further development seems to depend on the severity of the infection. Where the spots are close together, and especially at the tip and margins of the leaf, their combined effect is to cause a general drying out of the tissues which become brown and crumpled as in the leaf in the centre of the figure. Otherwise, where the spots are relatively scattered, they continue to expand slowly and the bleached centres eventually fall out, giving a "shot-hole" effect as shown on the right of the figure.

No special fructifications are produced by the fungus which forms its spores freely on both surfaces of the spot. The spore-bearing hyphae are short, colourless and exceedingly delicate and can be seen only with a lens of good magnification: there is no felted or "mildewy" appearance visible to the naked eye. Nevertheless, the spores are produced in great abundance and their dispersal by wind and rain leads to a rapid spread of the disease when conditions are favourable.

Seen under the microscope, the spores (*conidia*) are much elongated, cylindrical, straight or slightly curved, hyaline and 1-4 septate (Plate I., fig. 2). A sample of fifty, measured in water, gave the following dimensions:—

Length :	44.5 $\mu$ —89.5 $\mu$	:	mean	$64.9 \pm 1.47 \mu$ †
Width :	2.0 $\mu$ — 3.0 $\mu$	:	mean	$2.4 \pm 0.05 \mu$

\* Elevation 4,500 feet

† The standard error of the mean is implied by this expression.

These characters serve to identify the fungus as *Cercospora brassicae* (Fautr. and Roum.) von Hoehn., = *Cylindrosporium brassicae* Fautr. and Roum. As shown recently by Mason (2), this fungus and *Cercospora brassicicola* P. Henn., which causes leaf spots of cabbage (*Brassica oleracea* L.) and Chinese cabbage (*B. chinensis* L.) in the tropics and the United States, have been confused in the past and together wrongly associated with the name "*Cercospora bloxami* Berk. and Br." There is no record of any of these fungi on *Brassica* spp. in Ceylon (Bertus, *in litt.*), and none of them is listed in the "Fungi of India" (1, 3).

The disease appears to be best known in the southern United States (6). It is of little economic importance in Britain (4), and probably is severe only when the crop is grown in warmer, subtropical or tropical climates. No attempt has been made to examine its distribution in detail, since many of the records are of doubtful value owing to the confused nomenclature of the fungus, already noted.

"White spot" should be controlled by picking off the diseased leaves as they appear, or in severe attacks by a copper emulsion spray prepared according to the directions given in the recent Peradeniya Manual on "Diseases of Village Crops" (5). The sudden origin of the disease, in a bed of young plants grown from freshly imported seed, suggests the possibility of an introduction through a contaminated seed supply. In any case, hygienic measures should be attended to and no seed should be saved from diseased plants.

#### SUMMARY.

An account is given of a disease of turnips (*Brassica campestris* L.) known as "white spot", caused by the fungus *Cercospora brassicae* (Fautr. and Roum.) von Hoehn., which is new to Ceylon.

#### REFERENCES.

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- (5) Park, M. and Fernando, M.—Diseases of Village Crops in Ceylon. *Peradeniya Manuals, IV.*, 1941.
- (6) Weber, G. F.—Some diseases of cabbage and other crucifers in Florida. *Bull. Fla. agric. Exp. Sta.* 256, 1932.
- (7) "List of common names of British Plant diseases". 2nd. edn., Cambridge, 1935.