for peeling, one for the extraction of the embryos, and one for diagnosis and miscellaneous operations. (3) The method is unaffected by seed dormancy.

(Editor's Note,—The note by R. B. Moorhouse in the last issue of this Journal, on Selenium Seed Germination Tests is drawn to the reader's attention.)

“‘The Canker of Cupressus induced by Coryneum cardinale n. sp.”


As Coryneum cardinale is the cause of one of the very few known stem canker diseases attacking exotic forest trees in New Zealand (two species of Phomopsis are the others), this paper is of particular local interest.

A brief note on the occurrence of a stem canker disease on C. macrocarpa appeared in this Journal in 1933, the pathogen later being identified by Dr. Wagener as identical to that causing the virtual extermination of C. macrocarpa in California.

“The causal fungus affects primarily the living bark and cambium of the host tree, with the production of a lesion that spreads by the progressive killing of these tissues until the attacked part is girdled. Heavy resin flow from around the edges of the cankered area is characteristic of the disease on thrifty trees.”

Although the disease occasionally causes the death of young apparently healthy trees, it has not reached epidemic proportions in New Zealand; there is, in fact, evidence of the ability of thrifty trees to suppress the disease by the vigour of the cambial growth, resulting in a deformed stem which usually attracts little attention unless the tree is considered as potential sawn timber.

The disease has been recorded in New Zealand on Cupressus sempervirens, C. lawsoniana, and Thuja plicata in addition to C. macrocarpa, and the reviewer would appreciate receiving field observations on the incidence of the disease on these or other hosts.

Discussing the Problem of Control, the author holds out little hope of eradication owing to the difficulty in recognising early stages of infection.

The possibility of resistant strains of C. macrocarpa is discussed although it is admitted that the problem of the commercial production of strains from cuttings remains to be solved, it having been shown that Californian stock of C. macrocarpa reproduced from cuttings of the current year’s growth is not so vigorous nor so long lived as stock grown from seed.

In the meantime, the finding of a substitute for Monterey cypress is of primary importance in California and particular attention is being paid to the suitability of the following promising cypress strains:—Cupressus sargentii, C. sargentii var. duttonii, and C. forbesii.
The following details of these cypresses, extracted from an article by C. B. Wolf, read at the fifth Western Shade Tree Conference, Sacramento, California, April, 1938, are worth recording, as one or more of them may eventually be adopted as the successor of Monterey cypress in California and even in this country.

"Sargent's Cypress (Cupressus sargentii).

Sargent's Cypress (Cupressus sargentii) was described from the 'Mayacamas Range as a small tree 10 to 15 feet high. The species 'has a wide distribution in the coast Ranges from Lake and Colusa 'Counties, south to San Luis Obispo and Santa Barbara Counties. 'This and the McNab Cypress are the only two species of Californian 'Cypress which actually grow side by side in the wild, but Sargent's 'Cypress is easily distinguished by its harsher, glandless foliage and 'its straight, central trunk. Some magnificent specimens occur in 'sheltered canyons and attain heights of nearly 100 feet. In cultivation 'our trees make dense growth, are exceptionally resistant to wind-burn 'and drought. The top of the tree is usually blunt and not "finger- 'pointed." There are no evidences in our plantings, as yet, of attacks 'by the Coryneum fungus."

"Dutton's Cypress (Cupressus sargentii duttonii).

Closely related to Sargent's Cypress is Dutton's Cypress (Cupressus 'sargentii duttonii) from Cedar Mountain, Alameda Co. In growth 'and appearance it is about the same as some of the best types of 'Sargent's Cypress. It was botanically separated from Sargent's Cypress 'mainly on its larger cones, but further studies may demonstrate 'that it is not essentially distinct. Our older cultivated plants of this 'cypress have made beautiful rapid growing trees."

"The Tecate Cypress (Cupressus forbesii).

The wild groves in San Diego County and adjacent Baja California 'have been known for a long time and were called the Tecate Cypress. 'Great diversity of opinion has existed as to the proper botanical 'name for this species. Some authors called it C. goveniana, others 'C. guadalupensis, and others C. sargentii. Dr. Jepson finally described 'it as a distinct species and called it Cupressus forbesii, the latter 'being the name which we have adopted. It occurs on Otay Moun- 'tain, Tecate Mountain, Guatay Mountain and King Creek in the 'Cuyamaca Mountains, all in San Diego County. There is also 'a large grove at the north end of the Santa Ana Mountains, in 'Orange County, and a few trees stray down into the Santa Ana 'River Canyon on Rancho Santa Ana. Most of the wild trees are less 'than 30 feet high, green in appearance and have smooth, cherry 'bark. Old wild trees are usually rather open in growth and have 'many lateral branches from the comparatively short central trunk. 'In cultivation this is the most rapid growing of all the Californian 'species. It is the most promising at present of all the species and 'seems to be resistant to the Coryneum fungus.

T.C.B.