time. The results presented in Tables 1 and 2 show a definite quantitative difference in the reducing ability of such cells, and seem to indicate dependence of the synthetic, energy-requiring processes of cellular reproduction on a high-reduction potential.

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Some Host Relationships of the Potato-rot Nematode, *Ditylenchus destructor* Thorne, 1945

THORNE[1] described *Ditylenchus destructor* from potato (*Solanum tuberosum* L.) in Idaho, U.S.A., and recorded *Taraxacum officinale* Weber as a host. Baker[2] identified *D. destructor* from potato tubers in Prince Edward Island. Baker[4], working with a species of *Ditylenchus* infesting the roots of *Mentha arvensis* L. and conforming closely to Thorne's[1] description of *D. destructor*, transferred this nematode from *M. arvensis* to the potato tuber; typical potato-rot nematode injury was produced, thus confirming its identity as *D. destructor*. Baker[4] also made successful transfers of *D. destructor* from potato tubers and the roots of *M. arvensis* to the sweet potato and to onion bulbs (*Allium cepa* L.). He made successful return transfers from onion bulbs to potato tubers and to the sweet potato. Baker[4] and Thorne[5] have tentatively identified *D. destructor* from *Trifolium pratense* L. and *Solidago graminifolia* (L.) Salisb., the identification being subject to confirmation by transfer to potato tuber. Goodey and Goodey[6] recorded *Mentha arvensis* L. and *Sonchus arvensis* L as hosts of *D. destructor* at Rothamsted.

In work in Prince Edward Island, successful transfers have been made from the roots of alsike (*Trifolium hybridum* L.) and red clover (*Trifolium pratense* L.) to the potato tuber, with the production of typical potato-rot nematode injury. Nematodes in a water suspension were inoculated into the tubers by the flap method[3], a hypodermic needle being used. Tubers from a potato plant grown in sterile soil, in which infested alsike roots were planted, exhibited typical potato-rot nematode injury. Transfers were also made of nematodes conforming to Thorne's[1] description of *D. destructor* from the roots of *Sonchus arvensis* to potato tubers; the lesions produced were small and the nematodes recovered were smaller than those originally taken from *S. arvensis*. Baker[4] attempted this transfer, but considered his results inconclusive. The possibility must therefore be considered that the nematode infesting the roots of *S. arvensis* is a variety of *D. destructor*, or even another species of *Ditylenchus*.

Larvæ, adults, and, in some cases, eggs, of nematodes resembling Thorne's[1] description of *D. destructor* have been found infesting the roots of a number of plants in Prince Edward Island, in addition to those mentioned above. The most frequent and most definitely infested of these are: *Solidago graminifolia* (L.) Salisb., *Linaria vulgaris* Hill, *Plantago major* L., *Taraxacum officinale* Weber, *Sisyrinchium angustifolium* Miller, *Vicia sativa* L. and *Daucus carota* L. The identity of the nematode from *D. carota* has been confirmed by Baker[4], who made a successful transfer to potato tubers. The nematodes were found within the healthy root tissues of all plants except *Taraxacum officinale*, in which they were beneath the dead epidermis usually adhering to the tap-roots. *D. destructor* has not so far been found infesting the aerial parts of any plants. Transfers to the potato tuber are still required to confirm the identity of the nematodes found in these plants.

This work is part of an investigation being conducted through the Potato-rot Nematode Research Committee, Science Service, under the direction of Dr. A. D. Baker.

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An Indigenous Source of Swollen Shoot Disease of Cacao

Cola chlamydantha K. Schum. is already known to be a natural host of cacao viruses in the Wiawso district, Western Province, Gold Coast[1]. It is now further evident that cacao virus infection occurs in this species in other parts of the Western Province, though apparently to a less extent than in the north-west, around Wiawso.

C. chlamydantha is a small understorey tree native to the Guinea Forest, reputedly restricted to parts of Liberia, the Ivory Coast, the Western Province of the Gold Coast, southern Nigeria and the French Cameroons. It is absent from the forests of Ashanti and the Eastern Province of the Gold Coast and apparently from most of southern Nigeria.

Surveys for virus infection in the species have been confined to the Gold Coast. Survey stations were selected arbitrarily at 1- to 2-mile intervals along stretches of road, and at each one a footpath was followed for 100–200 yards. All conveniently placed specimens were examined for symptoms, and where necessary stem tips were collected for virus transmission tests in the laboratory, using cacao as the indicator and *Pseudococcus njalensis* Laing as the vector.

From Wiawso, *C. chlamydantha* was traced eastwards and north-westwards as far as it occurred. Specimens were common at twenty-five out of twenty-nine stations along a 40-mile transect of the area, and symptoms were seen at fifteen of these stations. At the latter, most of the specimens examined were symptomless; but it need not follow that all such were virus-free. Laboratory tests with material from symptomless specimens chosen at random along forest paths near Wiawso showed that twelve out of twenty-seven trees, one out of four coppiced trees and three out of nineteen saplings were infected.

Another survey was conducted along stretches of road in the Dunkwa, Enchi, Prestea, Axim, Sekondi and Cape Coast districts of the Western Province.