

be substantiated by more exacting methods than they have employed, there is one general weakness in method throughout in that the identification of causal agents has been carried out almost solely on the basis of propinquity of fruiting bodies; in contrast to the investigations of other plant diseases there has been very little work by the application of bacteriological method—establishment of cause and effect by cultures and inoculations—at least, there is very little indication of this in the literature published on the subject.

Among the many polypore that attack our structural and standing timber there is none more conspicuous owing to the large size of its perennial applanate bracket, or more frequent, than the species *Elvela mialoma*, more generally known as *Fomes applanatus*. It is very widely distributed, being found throughout Canada and the United States, and within this territory is of very common occurrence. In the hardwood localities where it occurs its fruiting bodies are to be seen in great abundance on tree trunks, stumps, dead stubs and logs. It grows more frequently on deciduous than on coniferous species, and while it usually attacks dead wood it is also found quite extensively on living trees. With its wide distribution, common occurrence and rapid growth, it is responsible for the decay of very large quantities of wood annually. Because of its frequency, many references are made to this fungus, but, strangely enough, aside from Hedd's studies (20) on its relation to a disease of cottonwood, no intensive investigation has been heretofore undertaken on the form. This may be accounted for by the fact that its ravages in Europe do not appear so great as in America, consequently receiving little attention there, or because of the reiterated statement of opinion expressed by certain pathologists that the fungus is a pure saprophyte. To this must be added the very important fact that in dealing with the question of parasitism versus saprophytism of wood destroying forms there have been so far no reliable criteria for distinguishing between the two, and so there have been meagre grounds for combating any widely accepted view either one way or the other.

The present investigation on *Fomes applanatus* comprises three main lines of inquiry—a study of the action of the fungus, a determination by the application of cultural methods as to whether it is really responsible for the rot feature it seems to cause, and to investigate in relation to the larger subject of host relationship the possibility of finding some reliable and definite criteria by which we may distinguish parasitic action on wood from saprophytism.