# DISEASES OF TIMBER.

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Trees while living are subject to the attacks of various plant enemies, mainly fungi and bacteria, and when dead are immediately set upon by a legion of other members of the same groups. Biologically, the first set are parasites, for they derive their nourishment from the life streams or stores of their hosts, and the latter are saprophytes, for they obtain their livelihood from dead tissues and plant remains. The parasite is of interest to the biologist in that it presents a three-sided struggle in the fight for existence, the struggle between the parasite and the host on the one hand, and between the host and its uninfected fellows on the other. More than one termination is possible in such a struggle, but in most cases the greatest desideratum of the economist is the evolution of a form that is proof against attack. The saprophyte is of interest because it is a factor in the breaking up of complex organic compounds (incidentally ridding the earth of vegetable debris), and restoring again to soil and air the simple food materials essential to the existence of present and future generations. Without the restoration of these all life would soon cease to be, for the reserves of unused food substances in nature are too small to allow for a break in their circulation.

The forester, the lumberman, and the wood-consumer, look at these wood-attacking bacteria and fungi from a somewhat different standpoint. To them the parasites are the causes of the deformation, stunting, and death of greater or smaller quantities of timber, decreasing and depreciating the supply, and providing material for destructive fires; and the saprophytes are the cause of certain rots and discolorations, resulting frequently in the ruin of sawn but unused timber, and the necessity for the untimely renewal of such as has been put into use. There is hence a demand made by them of the economic botanist for two things, first, the prevention of further infection in the forests, and