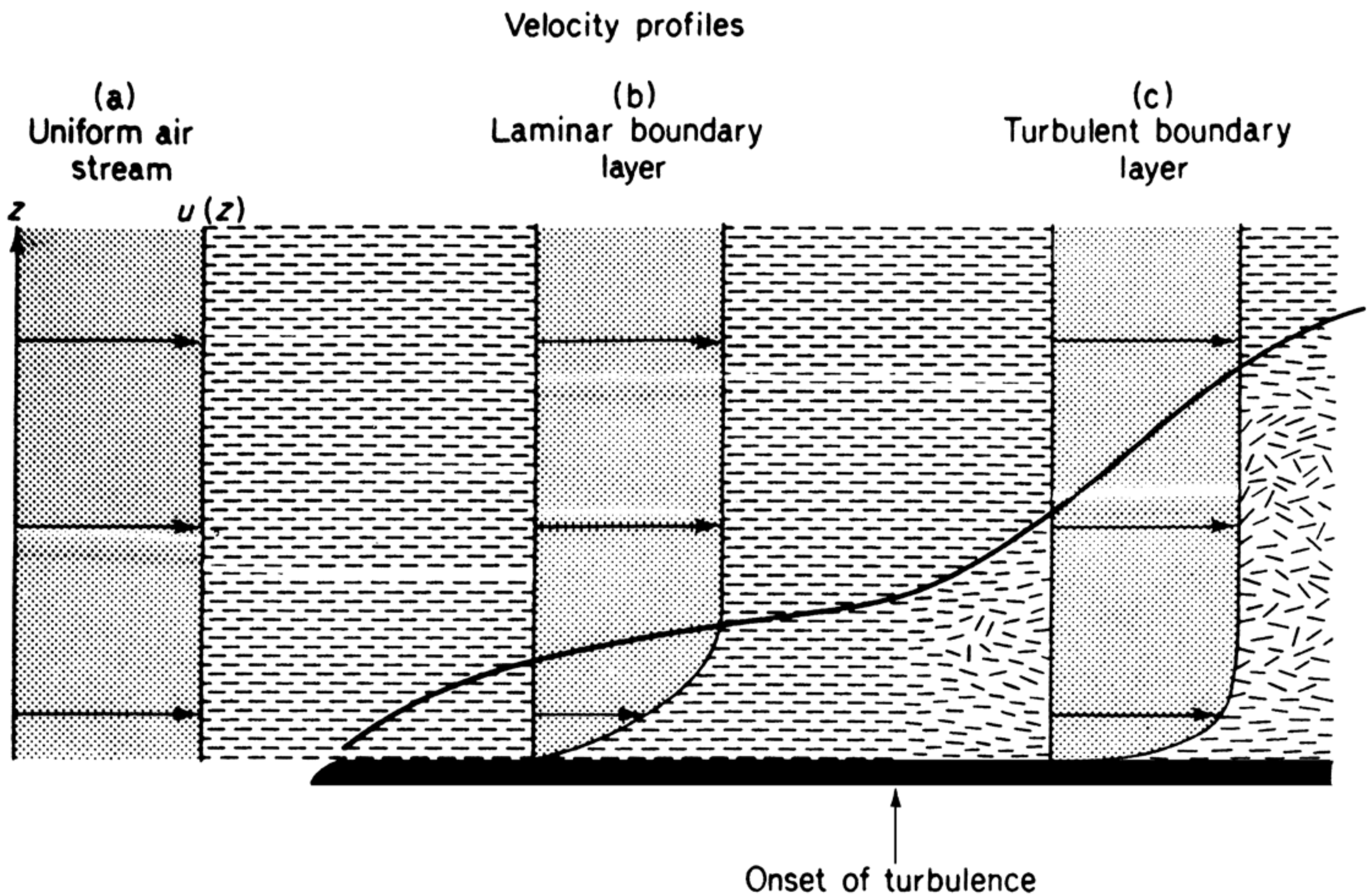

Figure 9.1 Development of laminar and turbulent boundary layers over a smooth flat plate (the vertical scale is greatly exaggerated).

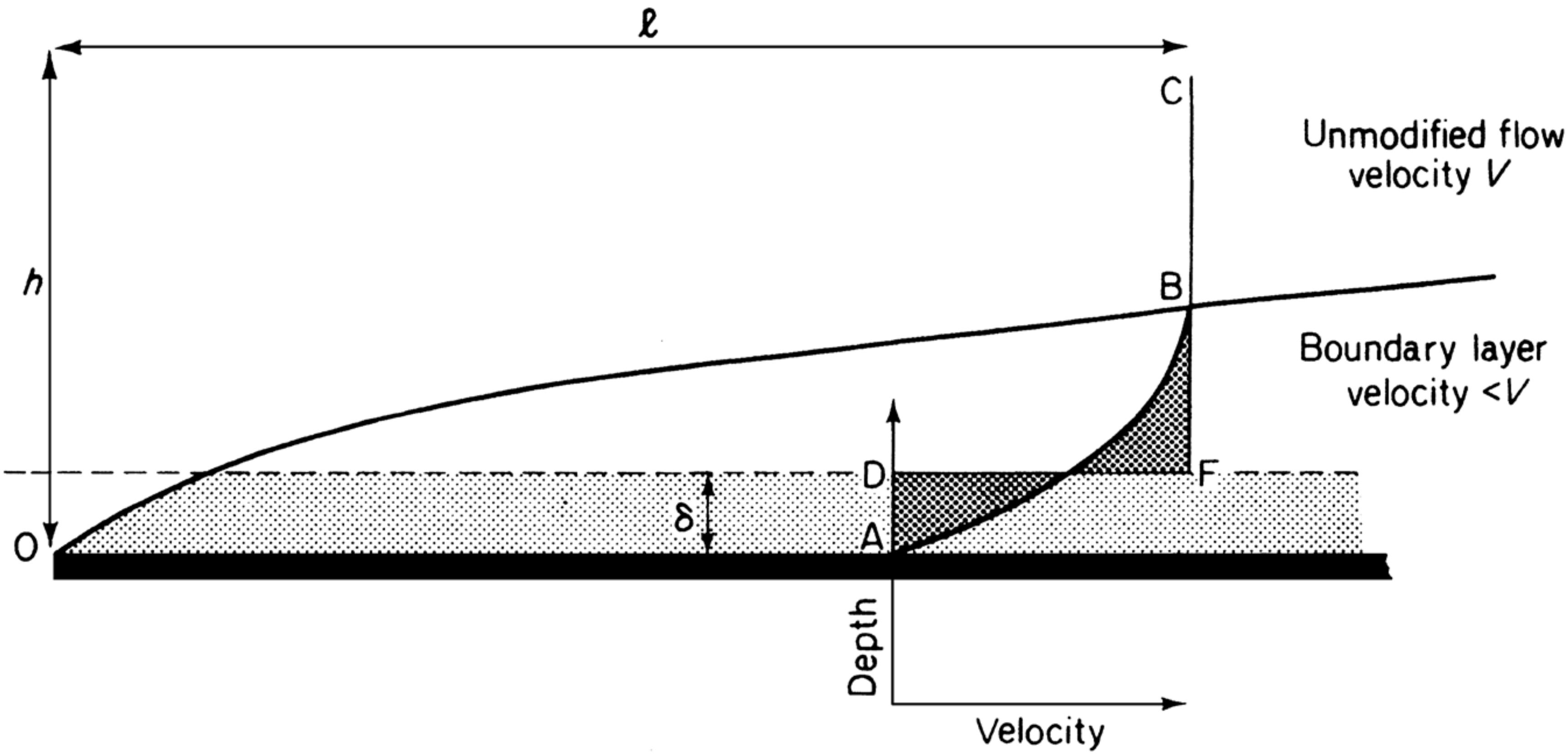

Figure 9.2 Boundary layer OB, displacement boundary layer (gray), and wind profile (CBA) over a smooth flat plate exposed to an airstream with uniform velocity *V*.

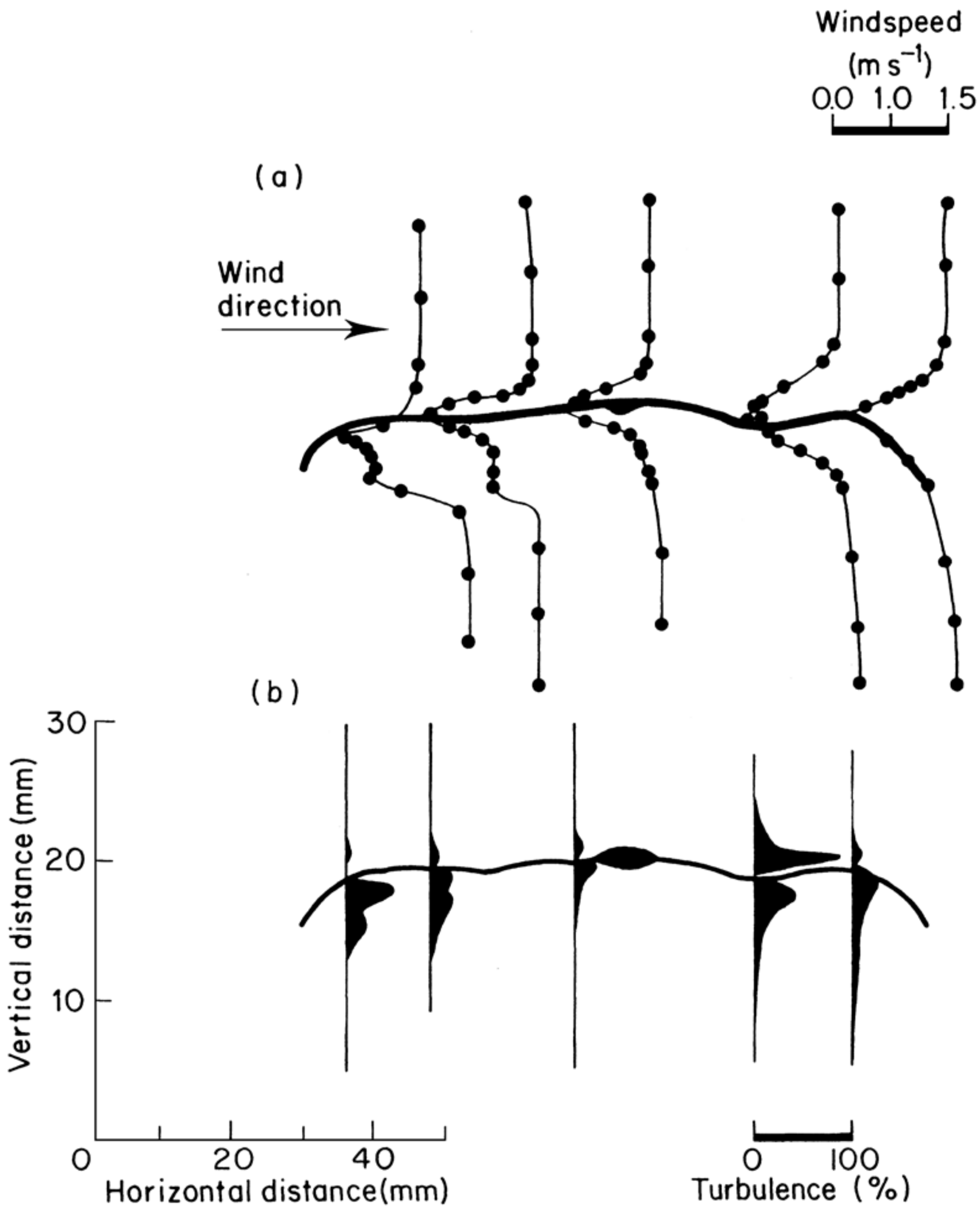

Figure 9.3 Profiles of mean windspeed (a) and turbulence intensity *i* (b) around a *Populus* leaf shown in transverse section in a laminar free stream (from Grace and Wilson, 1976).

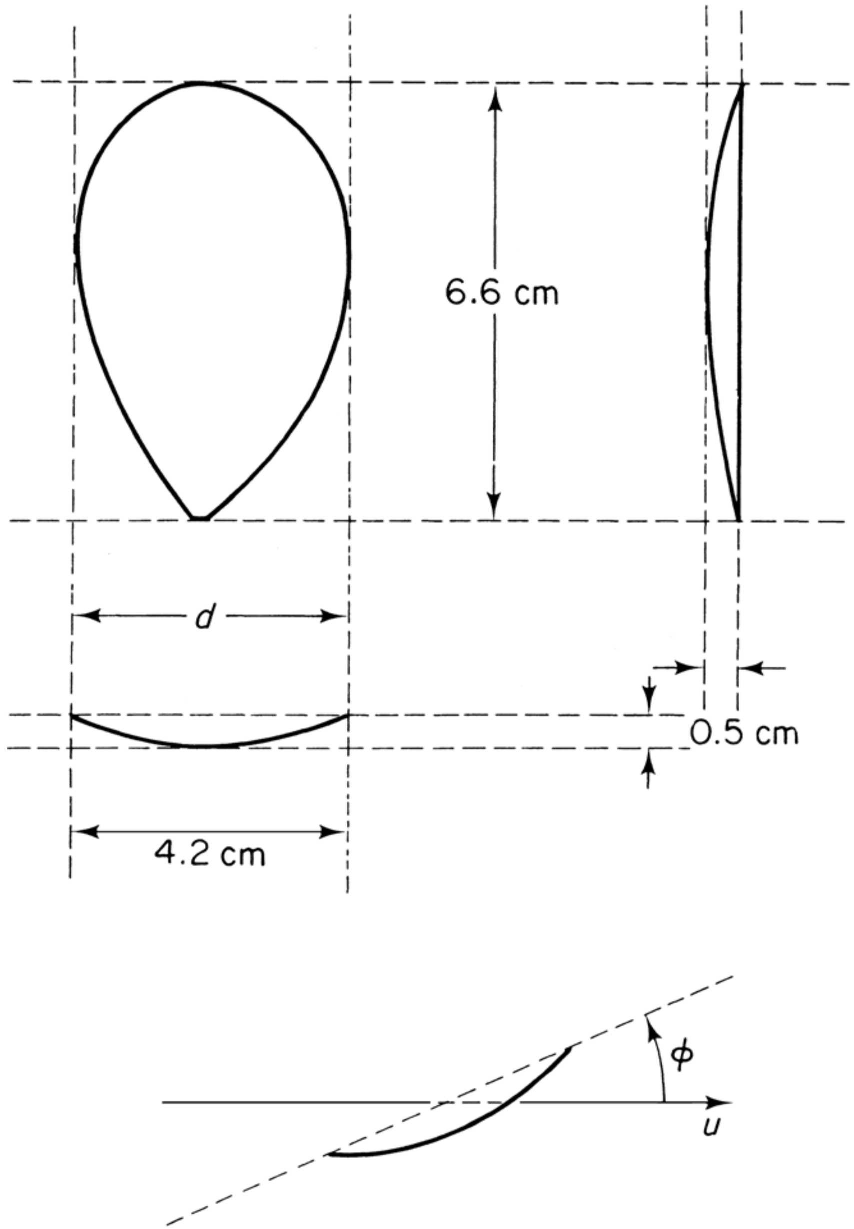

Figure 9.4 Shape and dimensions of model leaf used by Thom (1968).

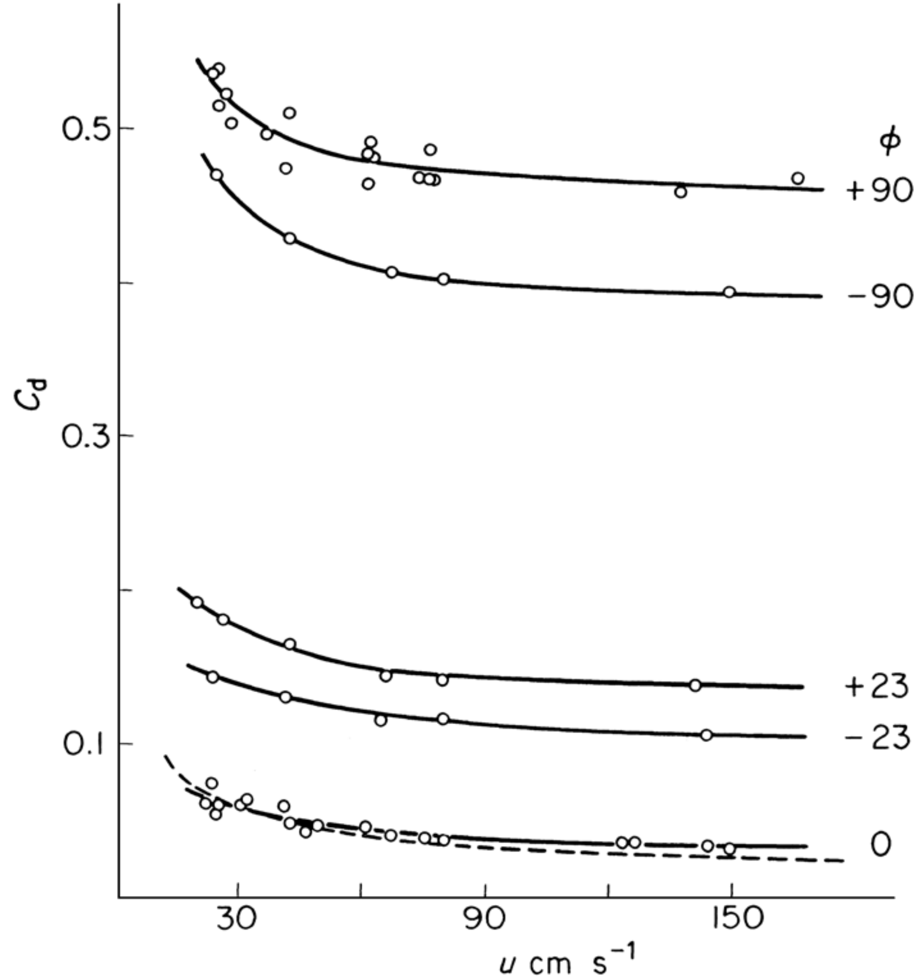

Figure 9.5 Drag coefficient of a model leaf (full lines) as a function of wind speed *u* and angle between leaf and airstream (see Figure 9.4). The broken curve is a theoretical relationship for a thin flat leaf at $\varphi = 0$ (from Thom, 1968).

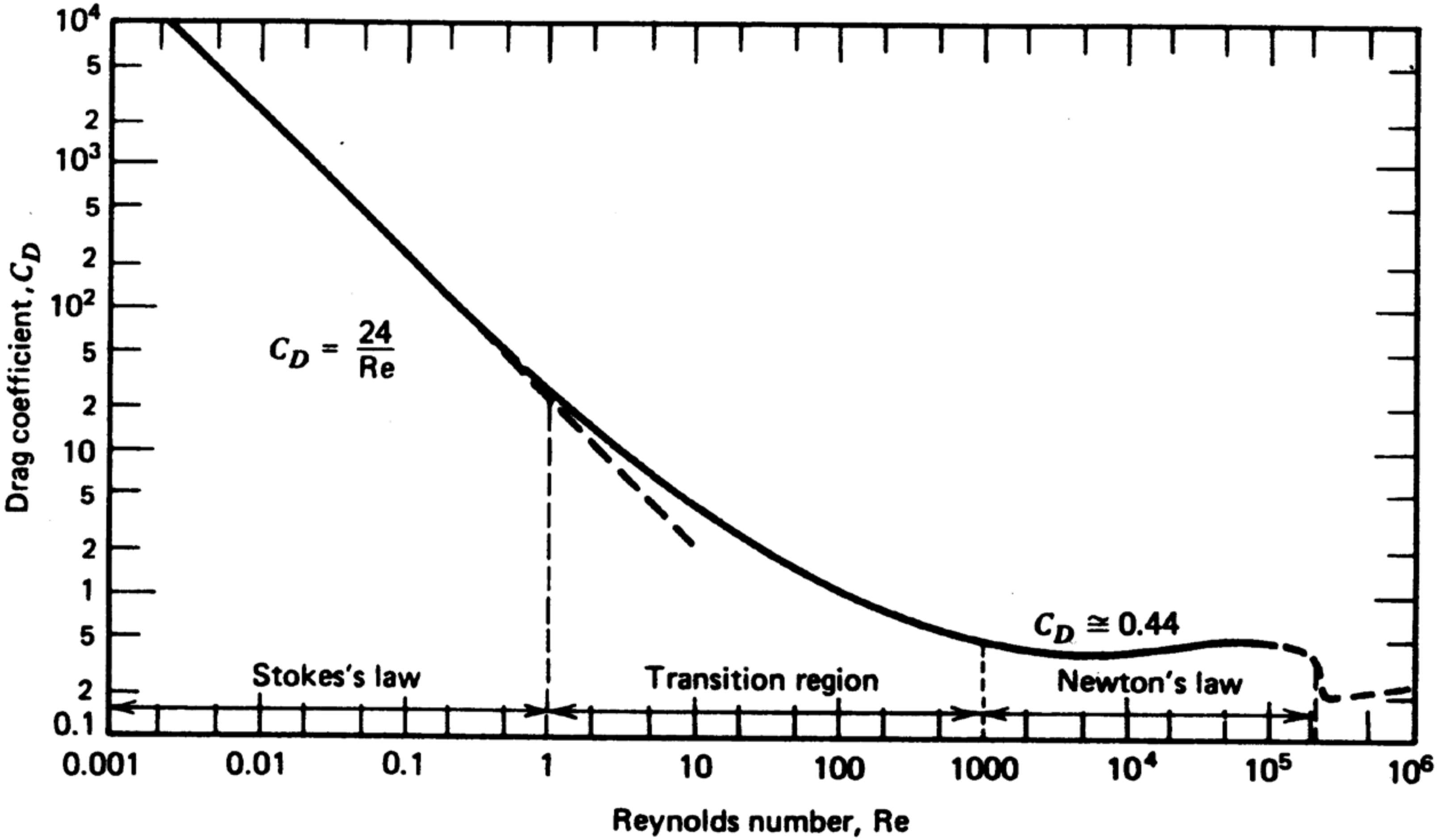

Figure 9.6 Relation between the drag coefficient for a sphere and Reynolds number. The pecked line is based on Stokes' Law. The discontinuity at Re = 3×10^5 corresponds to the transition from a laminar to a turbulent boundary layer (Hinds, 1999).

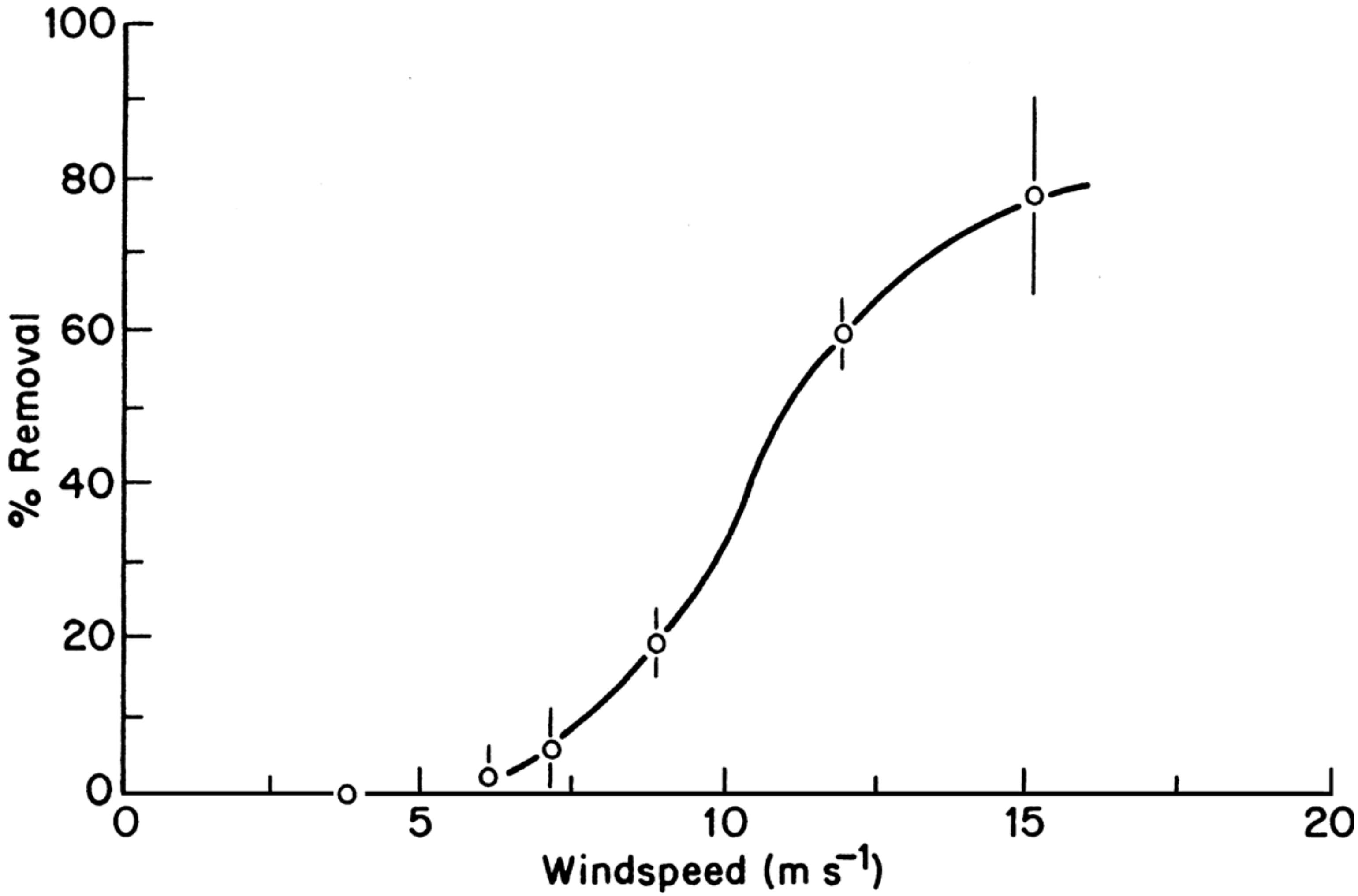

Figure 9.7 Percentage of spores removed by blowing for 15 s on spores reared on dried plant material (from Aylor, 1975). Vertical bars represent standard deviations.

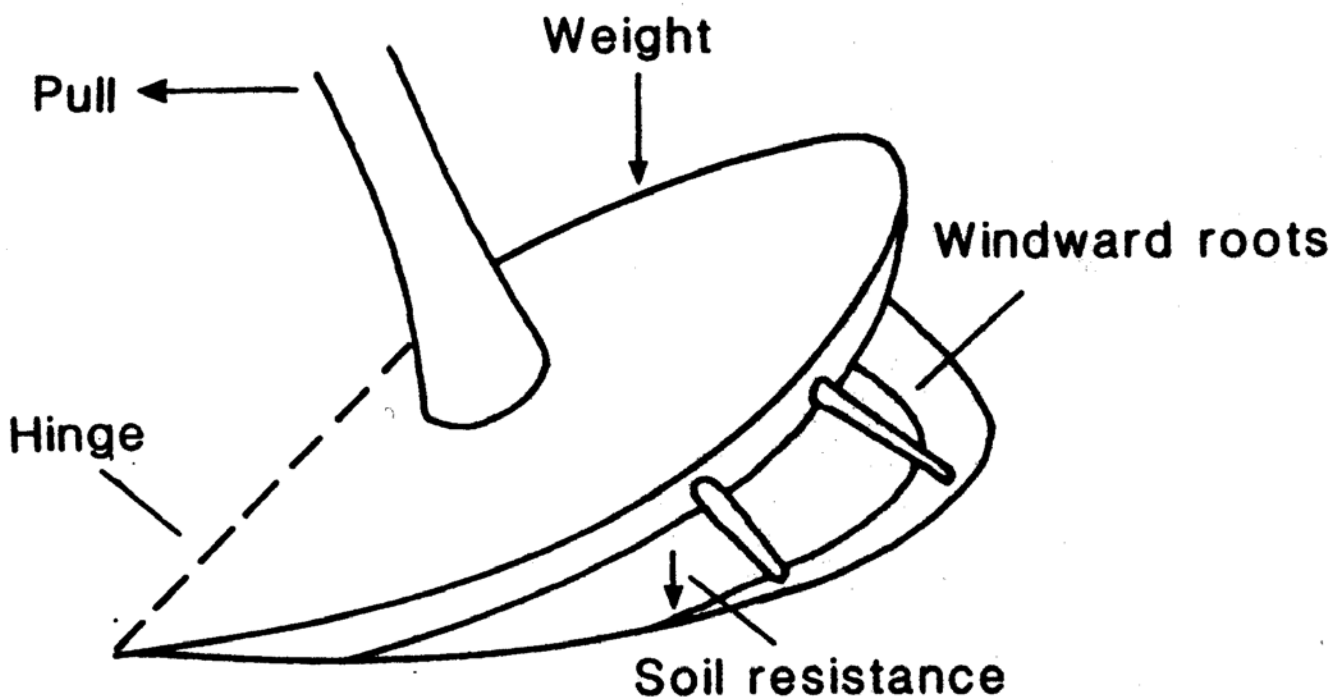

Figure 9.8 Forces acting on an isolated plant exposed to the wind.

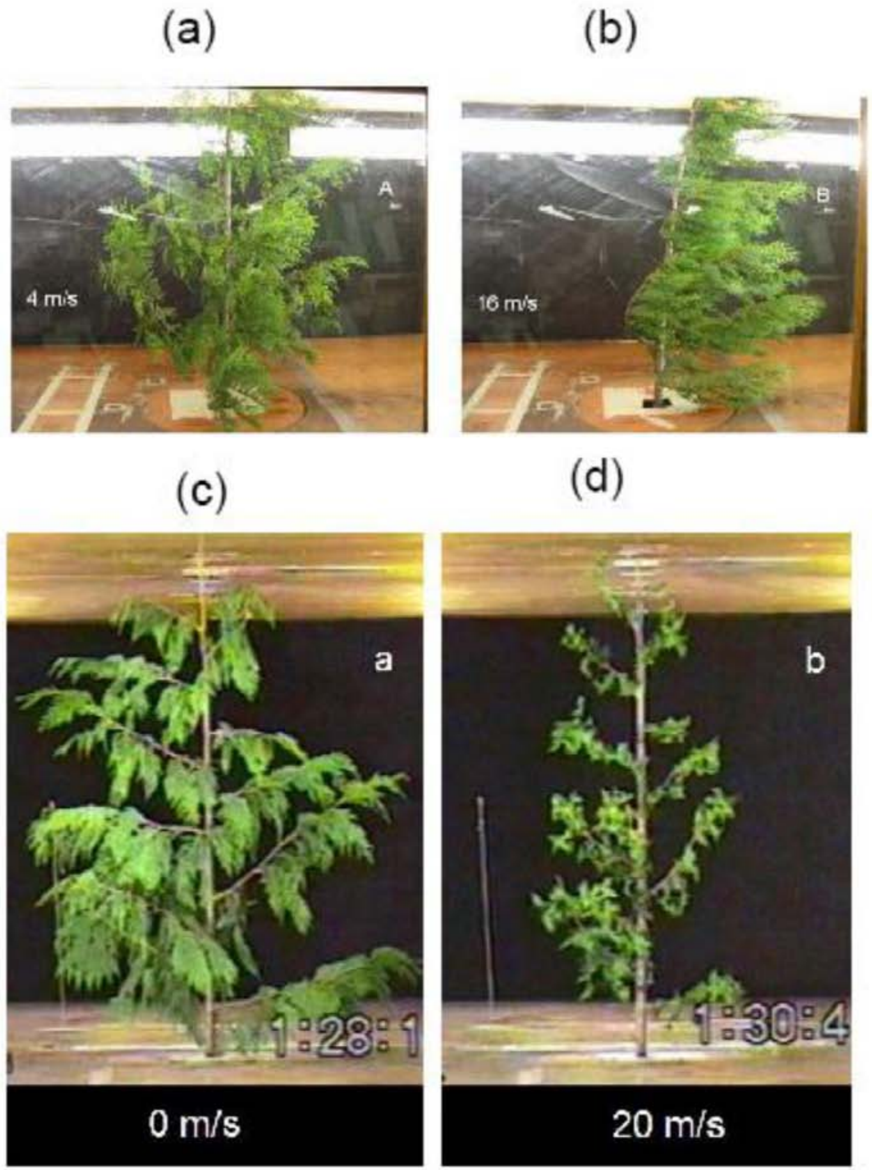

Figure 9.9 (a) and (b): Side views of a western red cedar tree in a wind tunnel at 4 m s^{-1} and at 16 m s^{-1}; (c) and (d) frontal views in still air and at 20 m s^{-1}. Note the decrease in the effective cross-section of the crown at high wind speeds due to the streamlining of leaves and branches. (From Rudnicki et al., 2004; images courtesy of Dr. SJ Mitchell).

Figure 9.10 A wind-tunnel experiment using an array of model trees with realistically scaled properties. The researcher is holding an element of the array, showing how the trees are attached to strain gauges to measure wind forces (from Wood, 1995).