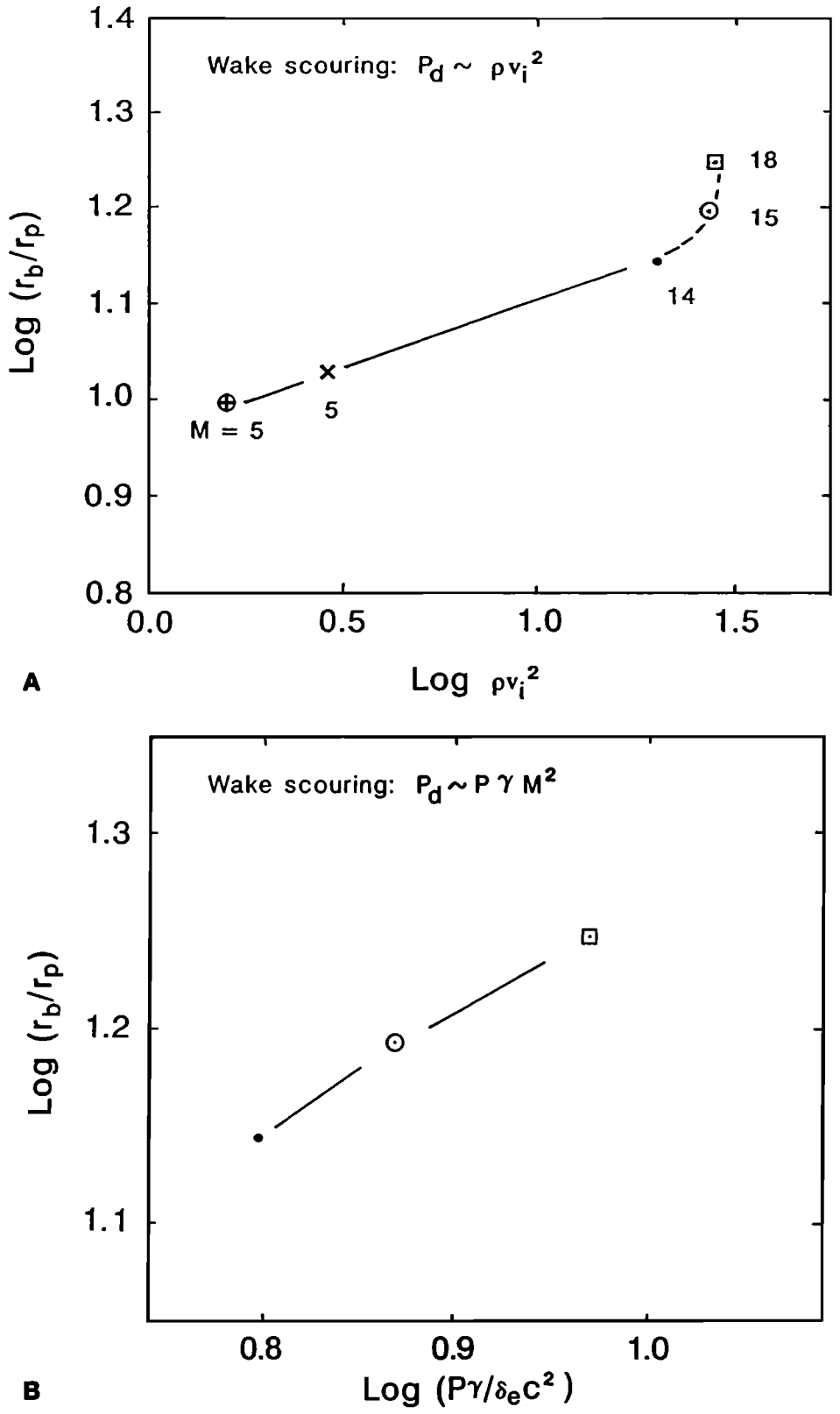

Fig. 13. Wake-blast scouring efficiency expressed in terms of a subsonic wind (Figure 13*a*) and supersonic blast (Figure 13*b*). Figure 13*a* relates the observed radius r_b of the wake-blast scaled to impactor radius r_p (more specifically, square root of the sand-scoured area to projectile cross-sectional area) to the impinging dynamic pressure (ρv^2) of a subsonic wake wind where it is assumed that the impact velocity of the wake wind is a constant fraction of the impactor velocity. The size of the wake-blast zone gradually increases with dynamic pressure at low impact velocities but is increasingly enhanced at high velocities. Figure 13*b* considers the wake blast size for only hypervelocity impactors expressed in terms of the stagnation pressure P_s of the colliding wake of incompressible gas ($P_s = P\gamma M^2$, for pressure P, ratio of specific heat γ, and Mach number M). When $P\gamma M^2$ is scaled to $\delta_t v_i^2$, the resulting dimensionless ratio becomes $(P\gamma/\delta_t c^2)$, which depends simply on $(P\gamma/c^2)$ for a given target. Figure 13, then, provides evidence that the colliding wake decoupled from the projectile might affect crater scaling, particularly at high Mach numbers and high atmospheric densities. (Density ρ is shown in terms of ambient air; sand density is assumed to be unity; P is in bars with v and c in km/s.)