



Figures 4. Vesicular dusts from the 1973 black and ash flow of Santiago Volcano, Guatemala. *A, B, C* show general and detailed views of a typical glassy granule in the flow. *D, E, F* are some typical shards. The high surface area of such particles undoubtedly aids in the fluidization of small particles in the flow, because diffusion of gas from the glass is facilitated as well as heat transfer. (*Flow Flow, Flow, and Pressure* 1977, Copyright © 1977 by Springer Verlag.)