Fall Deposits

Ballistic Ejection

Basic equations of motion

$$m g h = 1/2\ m v^2$$

$$h = v^2/2g$$

$$v = (2g\ h)^{1/2}$$

Fallout of Tephra

Terminal fall velocity (v_t)

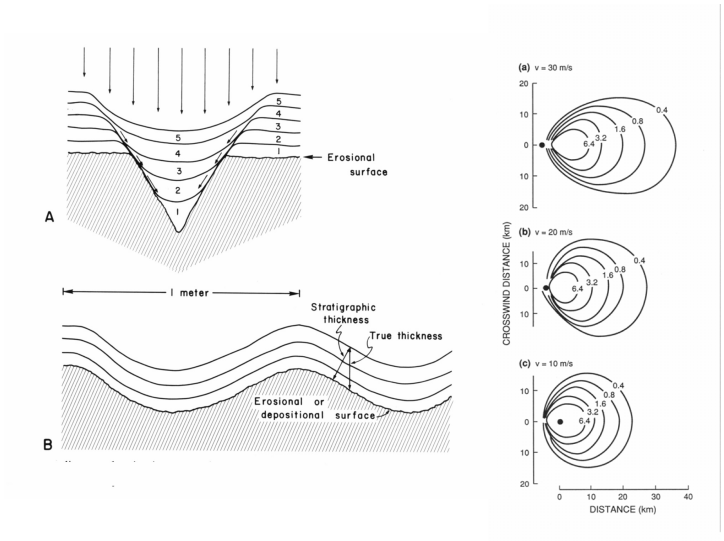
$$v_t = C_d\ (d\ g\ \sigma/\beta)^{1/2}$$

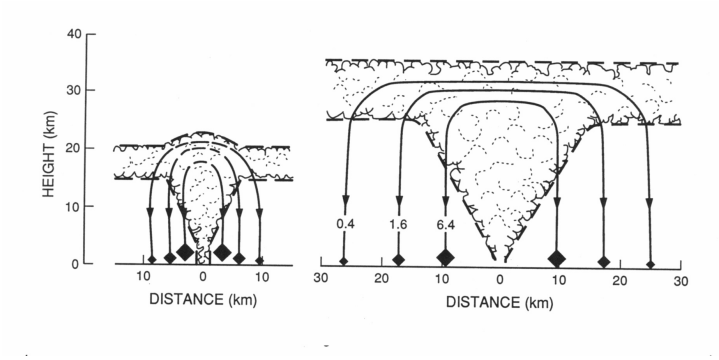
d = clast diameter

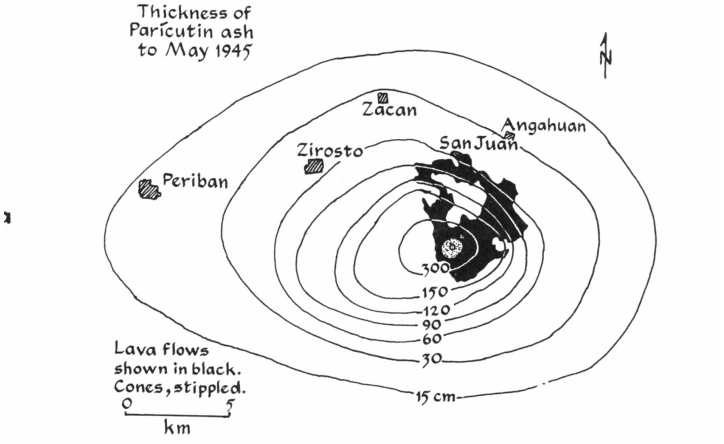
C_d = drag coefficient

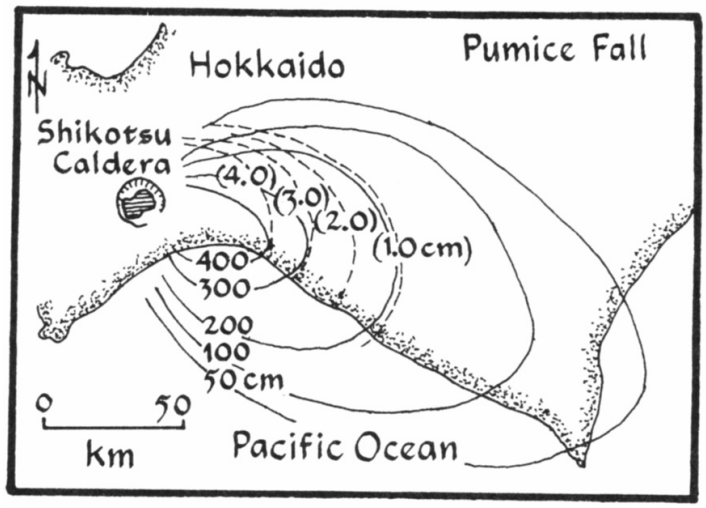
σ = clast density

β = atmospheric density

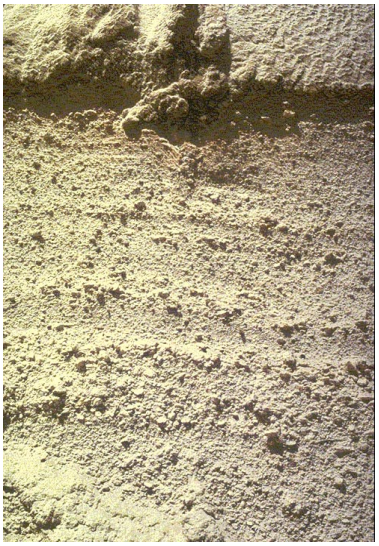


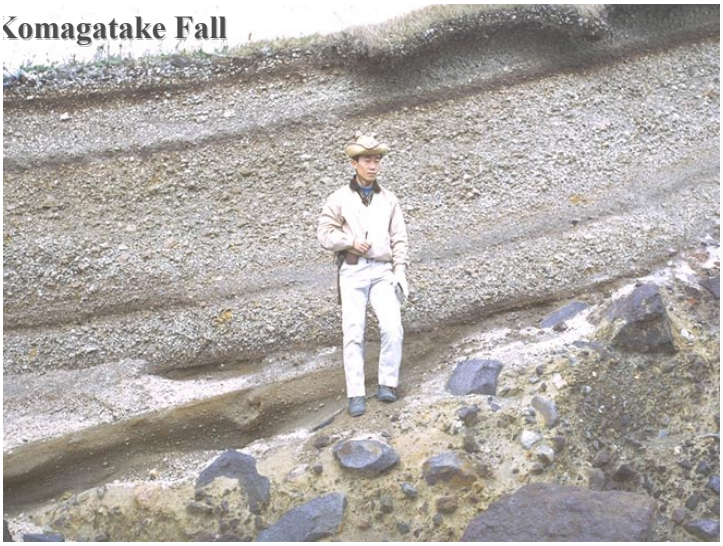


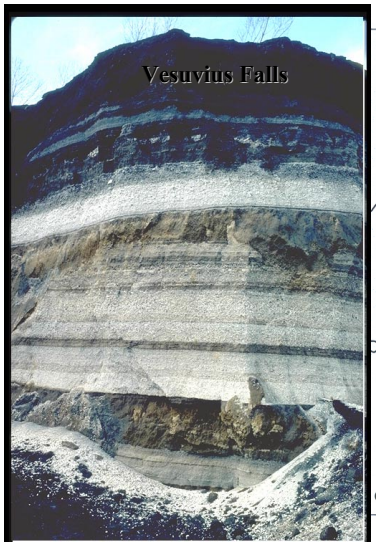


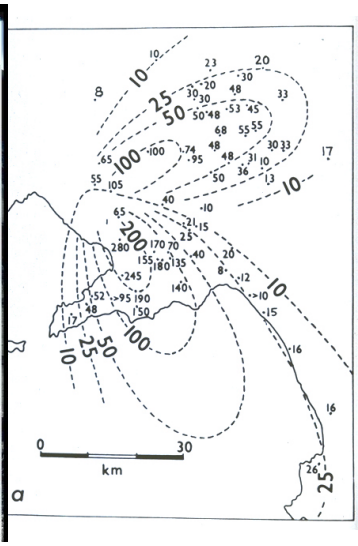


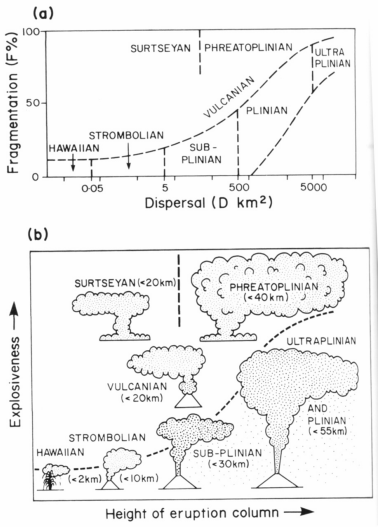
Shokotsu Fall

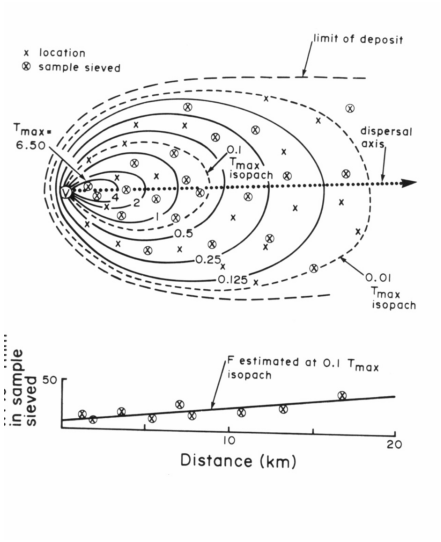


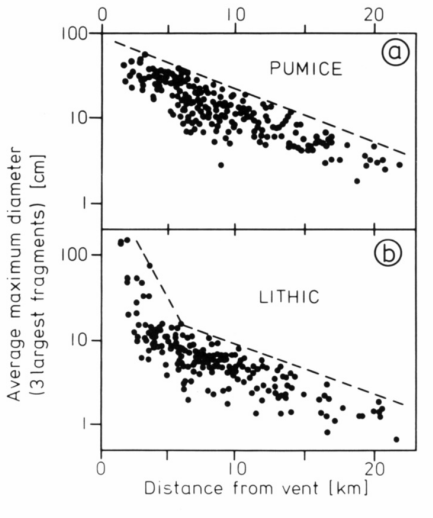









x location
⊗ sample sieved
limit of deposit
T_{max} = 6.50
dispersal axis
0.1 T_{max} isopach
4
2
1
0.5
0.25
0.125
0.01 T_{max} isopach
F estimated at 0.1 T_{max} isopach
in sample sieved
50
10
20
Distance (km)


0
10
20
100
10
1
PUMICE
a
LITHIC
b
Average maximum diameter (3 largest fragments) [cm]
Distance from vent [km]