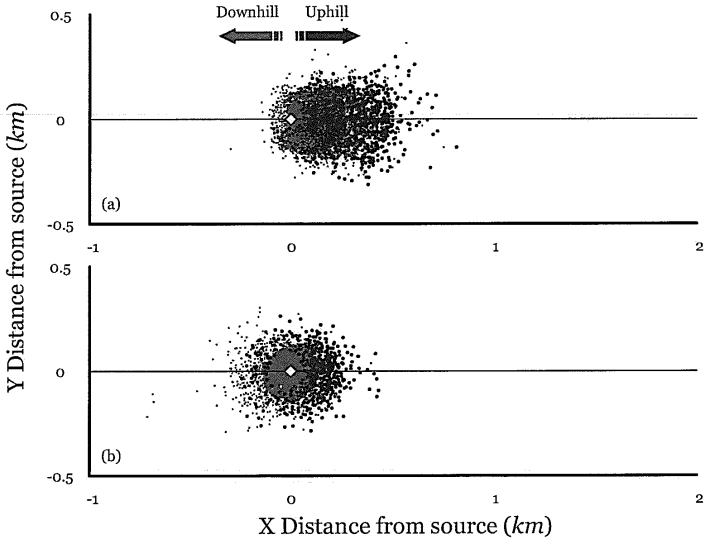
SEED CATCHER

Seed dispersal, or the transport of seeds away from a parent plant, is the main movement mechanism of plants. While some plants produce fruit which is dispersed by animals, most flowers rely on wind as their main propelling force.
Hilly terrain changes the basic balance of forces driving wind flow compared to flat terrain. Seed dispersal distances on hills with upwind are up to two times longer than on flat terrain.
The main factors affecting wind flow over a hill are the hill slope, surface roughness and the atmospheric stability parameter. A plant located on a hill slope will disperse, at least over short distances, mostly uphill toward the crest. This is contrary to the flat-terrain scenario, where the majority of the seeds are dispersed in the direction of the prevailing regional wind and any reversal in direction is only due to turbulence.



An example of the effect of topography on dispersal directionality (a) on flat topography and (b) on a symmetric cosine hill with 10% slope, released from mid-slope. The seed release location is marked by rhombs.

STOPPING POWER

Compressed by 200 million years and the pressure of 600 meters of earth and rock, opaline clay is densified into hard slate-like plates. The clay can be found north of the alpine region stretching up to the southern parts of Germany and France. The name opalinus derives from the *Leioceras opalinum*, a type of marine mollusc whose fossil can commonly be found in the clay.
Radiative diffusion through material is influenced by water passing through. Since the opaline clay is slated, waterflow is greatly constricted to horizontal direction. Almost any material can act as a shield from radiation if used in sufficient amounts. The effectiveness of shielding is dependent on its stopping power, a factor which varies with the type and energy of radiation and the shielding material used. Stopping power increases with material density, except for neutron shielding, which only works for materials which can absorb neutrons. Because of its slight negative charge and its low Z-Value, the opaline clay provides a higher neutron shielding than its surrounding materials.