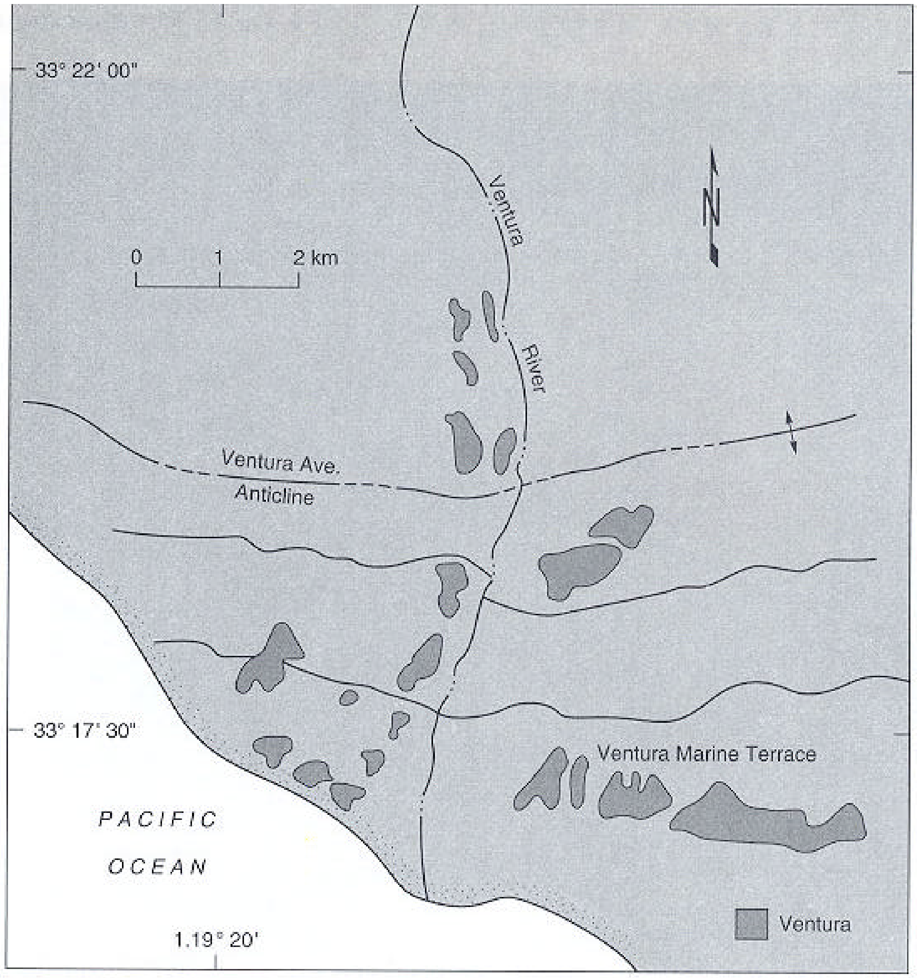
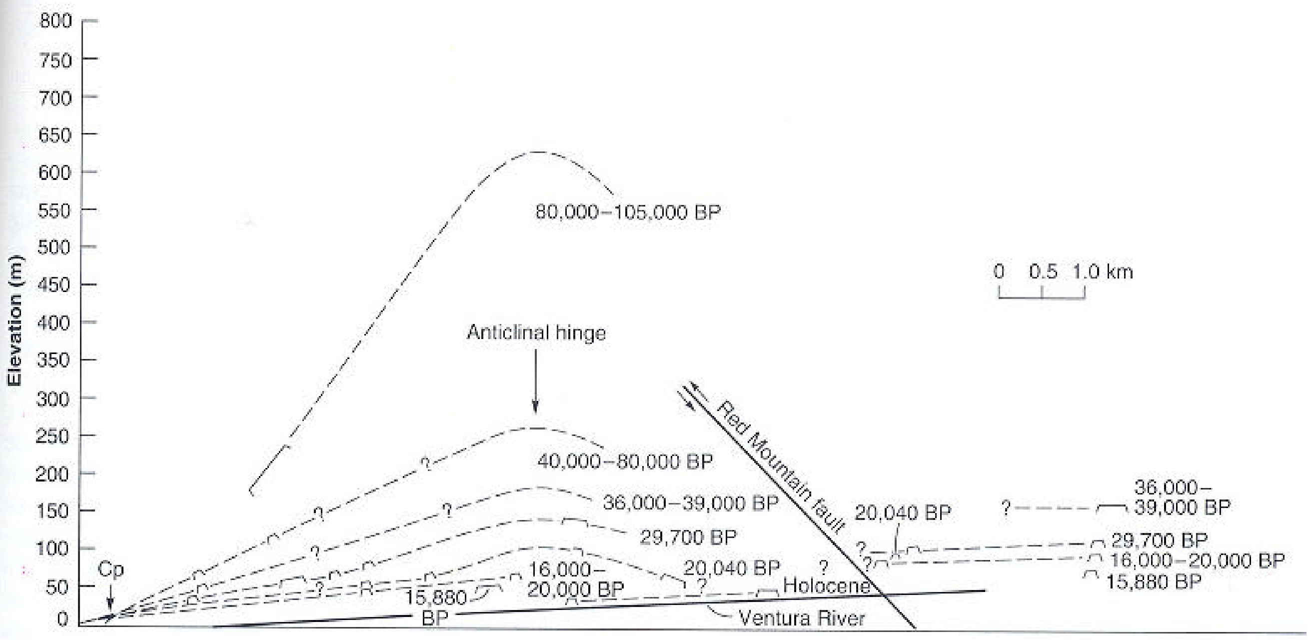
FIGURE 9–1
Anticlinal ridge cut by an antecedent stream, the Yakima River, cutting across Umtanum Ridge, Washington.



A.



B.

FIGURE 9–2
(A) Map of the Ventura anticline, (B) cross section of the Ventura anticline showing rates of movement. (From Rockwell et al., 1988)

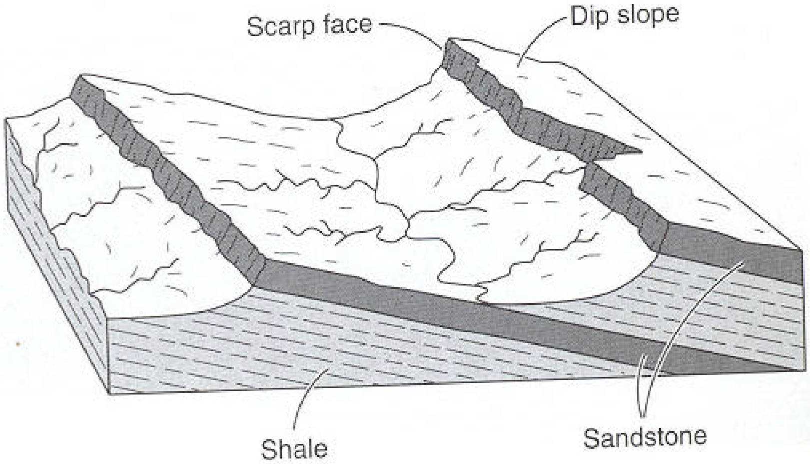


FIGURE 9–5
Adjustment of topography to geologic structure.

FIGURE 9–10
Plunging anticline, Sheep Mountain, Wyoming.

Another method of establishing geologic structures is by **projection of known dip** along the strike of one part of a complexly folded area to permit determination of an entire set of folds. For example, Figure 9–16 shows a complexly folded area in the Appalachian Mountains. Analysis of the structure may be made by examining critical localities. At X, the tapering nose of the structure indicates that it is a plunging anticline. Thus, the bed making the ridge diagonally across the photo to the southwest must dip to the southeast, away from the axis of the anticline. At Y, the short, blunt nose of the structure is diagnostic of a synclinal plunging to the northeast. Projection of dips along the strike from the known points then allows determination of dips of all of the beds making up the linear ridges.

The bowing up of **domes** or elliptical folds may be accomplished either by tectonic warping or by intrusion of material from below. In either case, the resulting landform in initial stages is an oval-shaped hill or mountain. Until

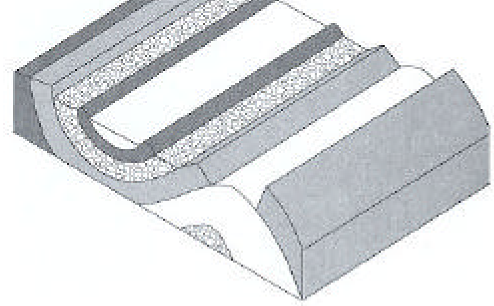


FIGURE 9–11
Topographic expression of nonplunging folds.

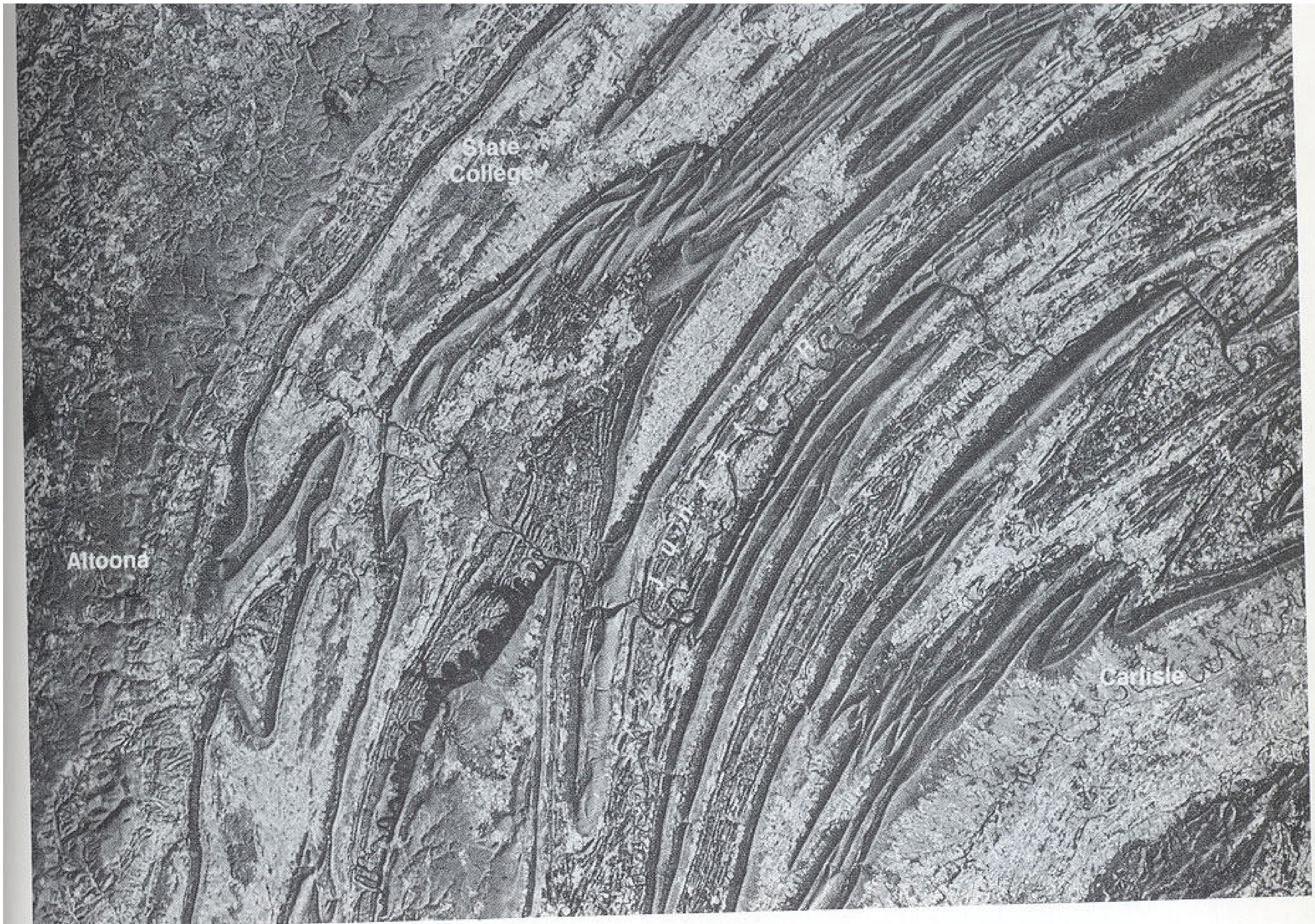


FIGURE 9–16
Plunging folds, Appalachian Mountains, Pennsylvania. (Enhanced NASA photo, Earth Satellite Corp.)

FIGURE 9–25
Susquehanna River cutting across ridges of folded Paleozoic beds, Appalachian Mountains. (Enhanced NASA photo, Earth Satellite Corp.)

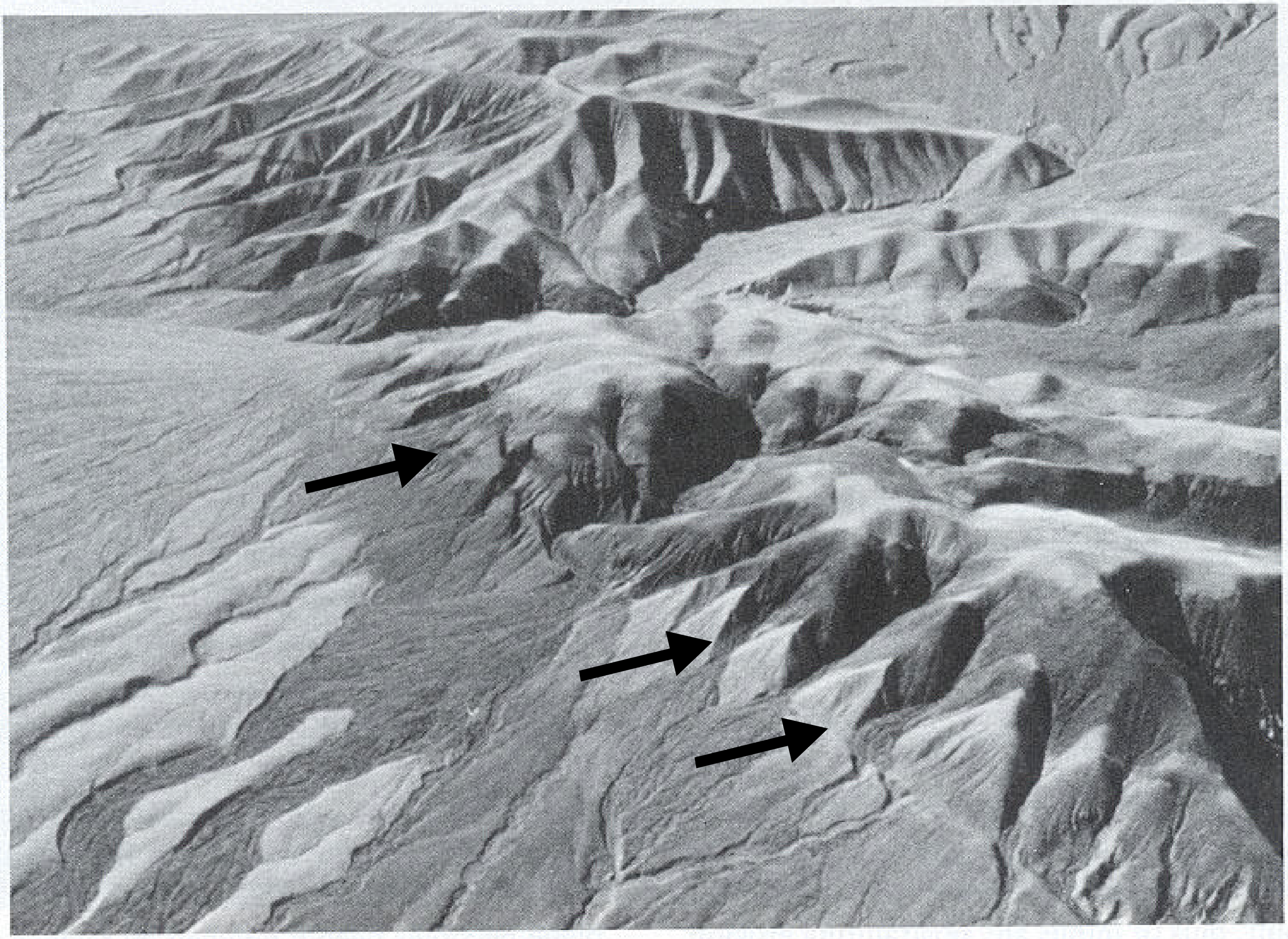
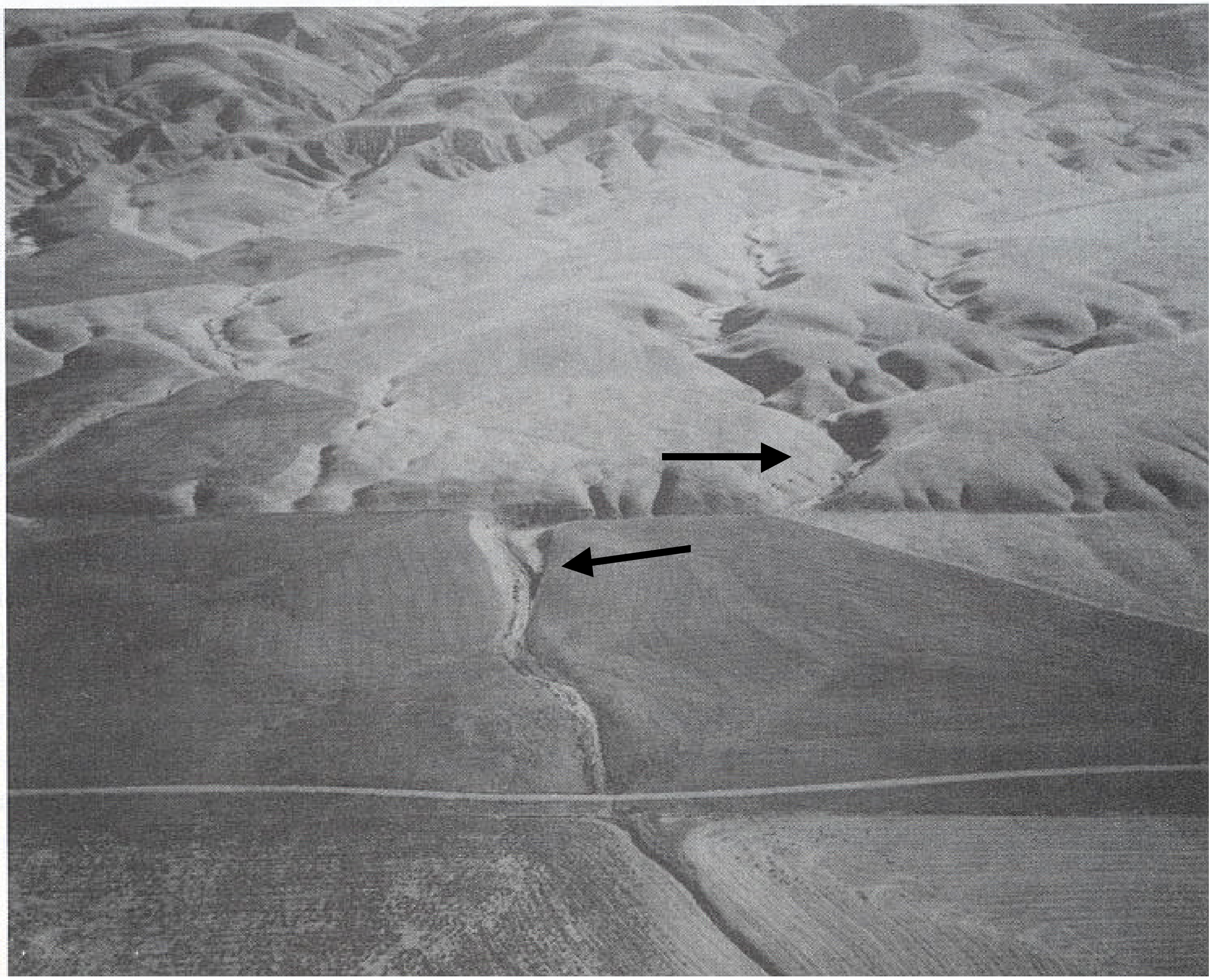


FIGURE 10–8
Fault scarp cutting across alluvium. Triangular facets occur along the upthrown block, and new alluvial fans are forming on the downthrown block.

FIGURE 10–9
Discontinuity of geologic structures truncated by a fault. (Photo by U.S. Geological Survey)

FIGURE 10–29
Offset streams along the San Andreas fault in California. (Photo by R. Wallace, U.S. Geological Survey)



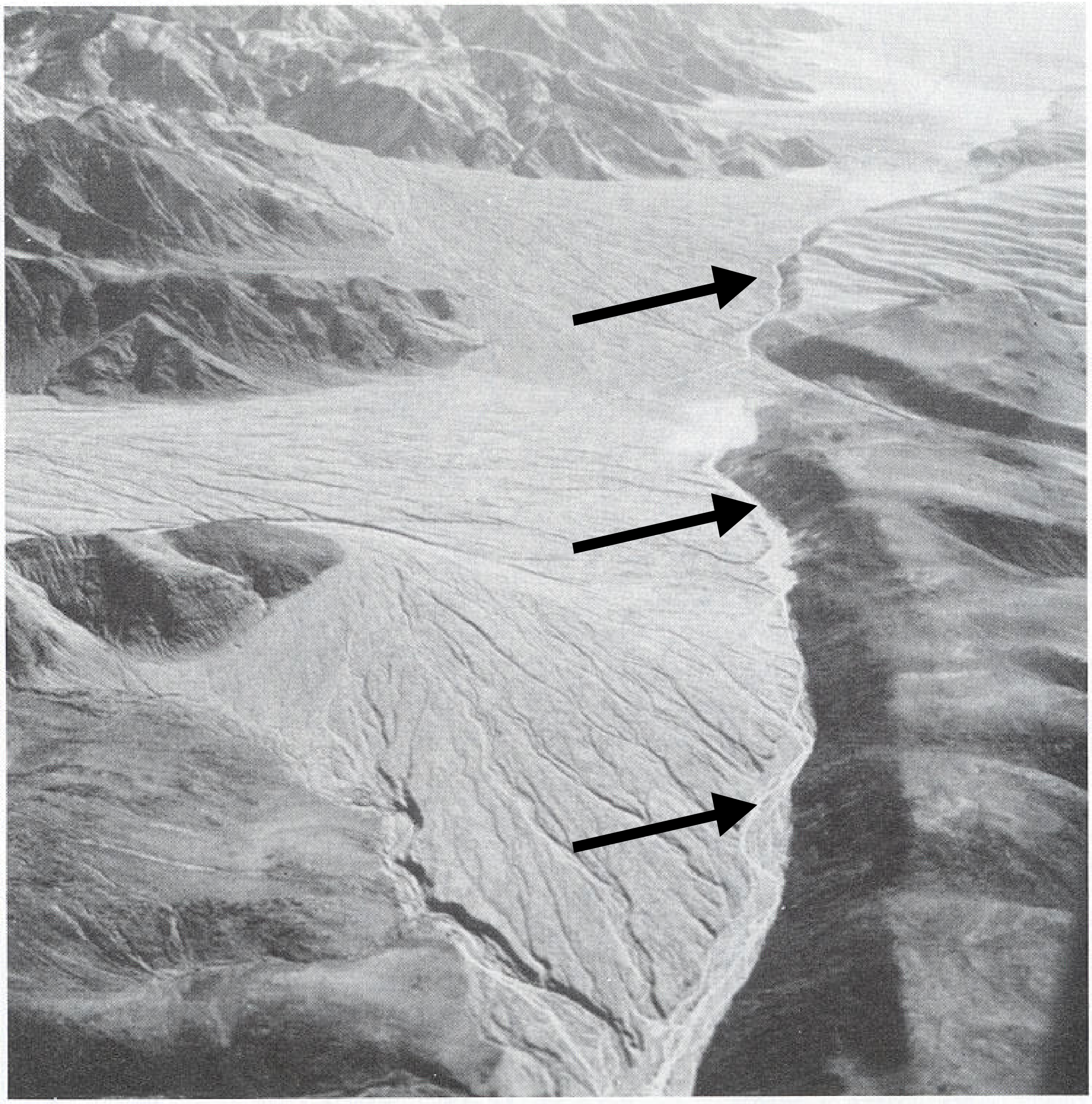


FIGURE 10–20
Fault scarp across an alluvial fan, Death Valley, California. Note the new alluvial fans on the downthrown block (left) and the collection of drainage against the scarp on the upthrown block (right).

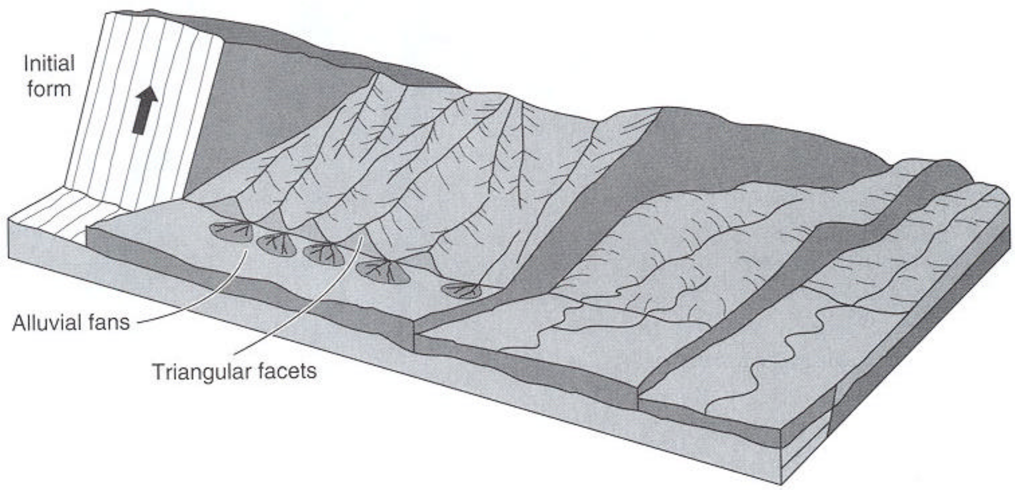


FIGURE 10–14
Progressive erosion of a fault scarp.

maintains a generally straight base along the fault plane. Because scarps can be created by other geomorphic processes in addition to faulting, such as from resistant beds, joint planes, or ancient shorelines, a scarp is not necessarily proof of faulting.

Although faults may occur as clean breaks on single planes, they often break into thin, parallel slices, along which the total displacement is distributed, or they may be splintered into several branching fault planes (Figures 10–15 and 10–16). Where **splintering,** also known as **splays,** occurs, the height of the fault plane diminishes and is re-

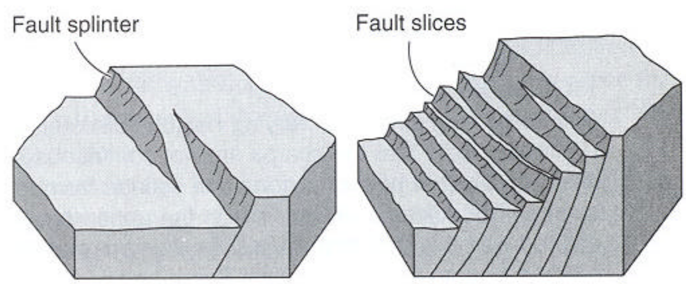


FIGURE 10–15
Fault splinters and slices.