METAMORFİK KAYAÇLAR

Figure 7.2 Deformed metamorphic rocks exposed in a road cut in the Eastern Highland of Connecticut. (Photo by Phil Dombrowski)

Figure 7.4 Metaconglomerate or stretched pebble conglomerate. These once nearly spherical pebbles have been heated and stretched into elongated structures. (Photo by E. J. Tarbuck)

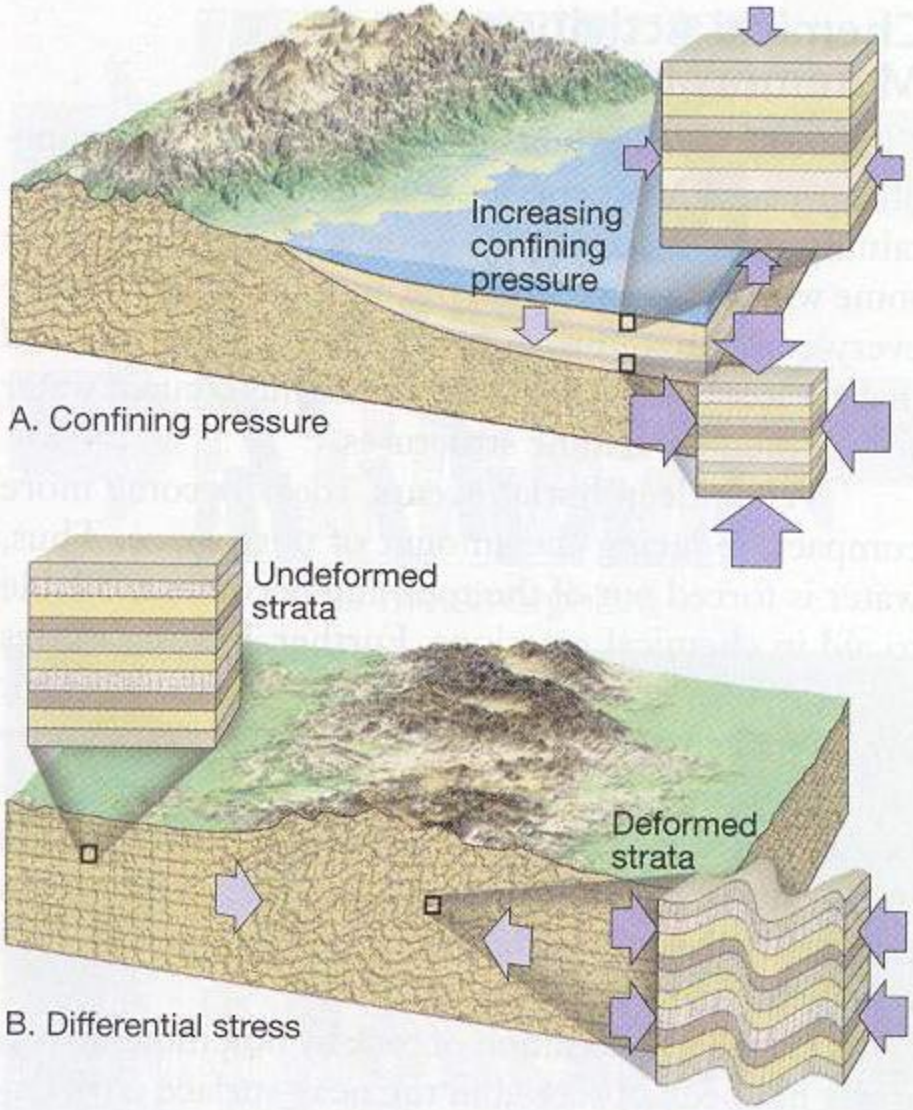


Figure 7.3 Pressure (stress) as a metamorphic agent. **A.** In a depositional environment, as confining pressure increases, rocks deform by decreasing in volume. **B.** During mountain building, differential stress shortens and deforms rock strata.

Before metamorphism

After metamorphism

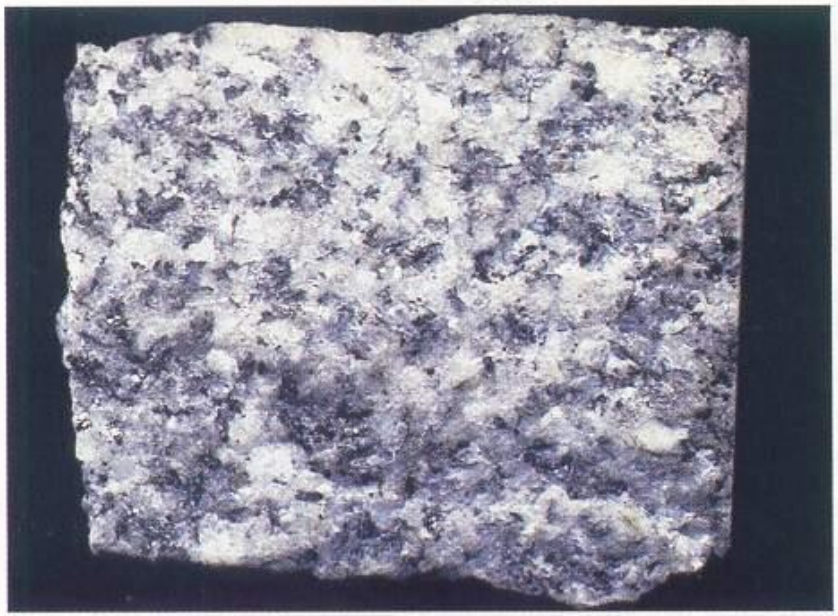


Figure 7.5 Under directed pressure, flat or needle-shaped minerals (top left) become reoriented or recrystallized so that they are aligned at right angles to the stress (top right). The resulting parallel orientation of mineral grains gives the rock a foliated texture. If the coarse-grained igneous rock (granite, bottom left) underwent intense metamorphism, it could end up closely resembling the metamorphic rock on the bottom right (gneiss). (Photos by E. J. Tarbuck)

Figure 7.6 Slaty cleavage is the type of rock cleavage exhibited by this metamorphic rock, California. The parallel mineral alignment in this rock allows it to split easily in the flat plates visible in the photo. (Photo by E. J. Tarbuck)

Figure 7.7 Slate used for roofing material on a house in Switzerland. (Photo by E. J. Tarbuck)

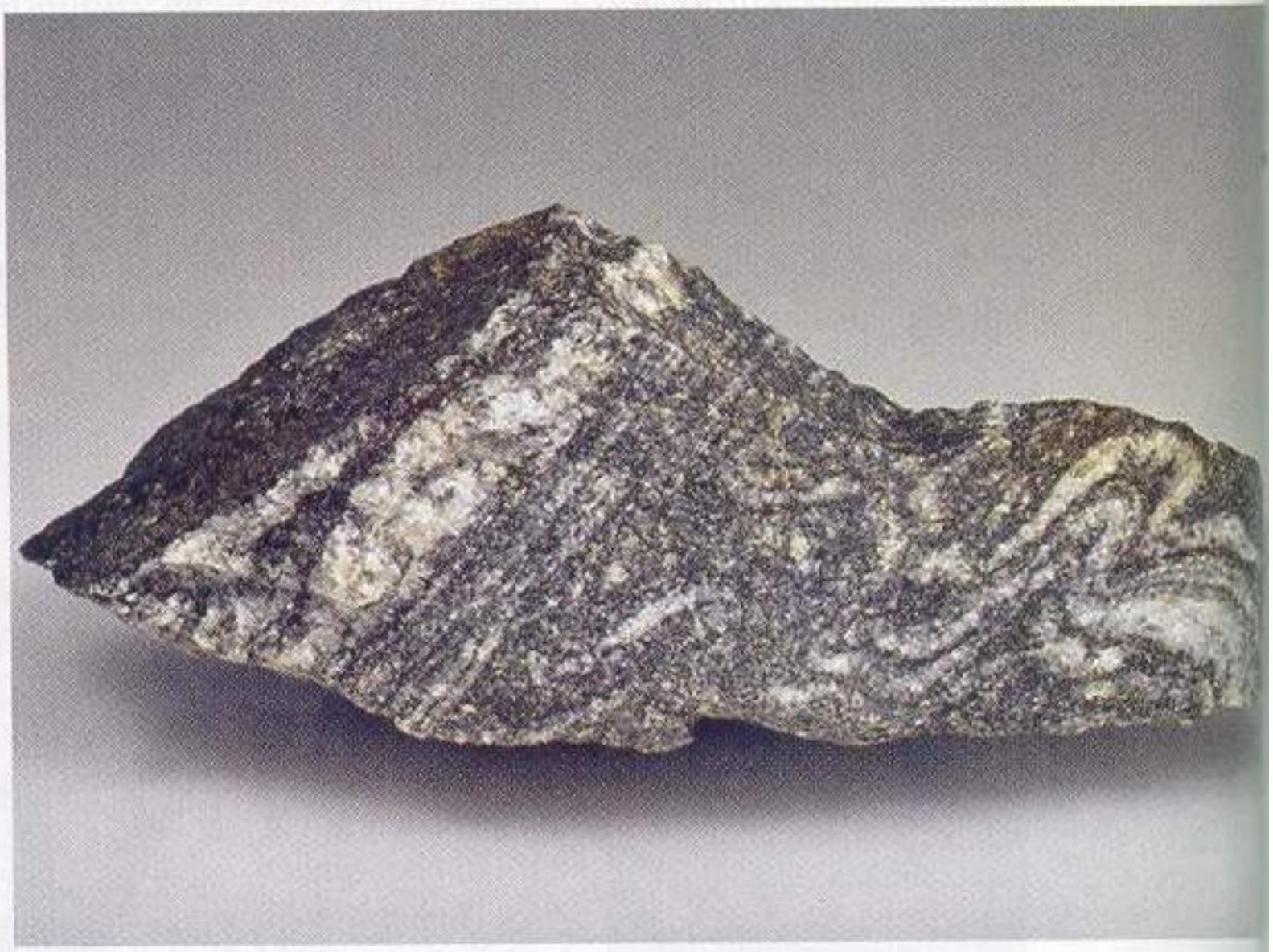


Figure 7.11 Deformed and folded gneiss. (Photo by E. J. Tarbuck)

Figure 7.9 Phyllite (left) can be distinguished from slate (right) by its glossy sheen. (Photo by E. J. Tarbuck)

Close up

Figure 7.10 Garnet-mica schist. The dark-red garnet crystals and the light-colored mica matrix formed during the metamorphism of shale. (Photo by E. J. Tarbuck)

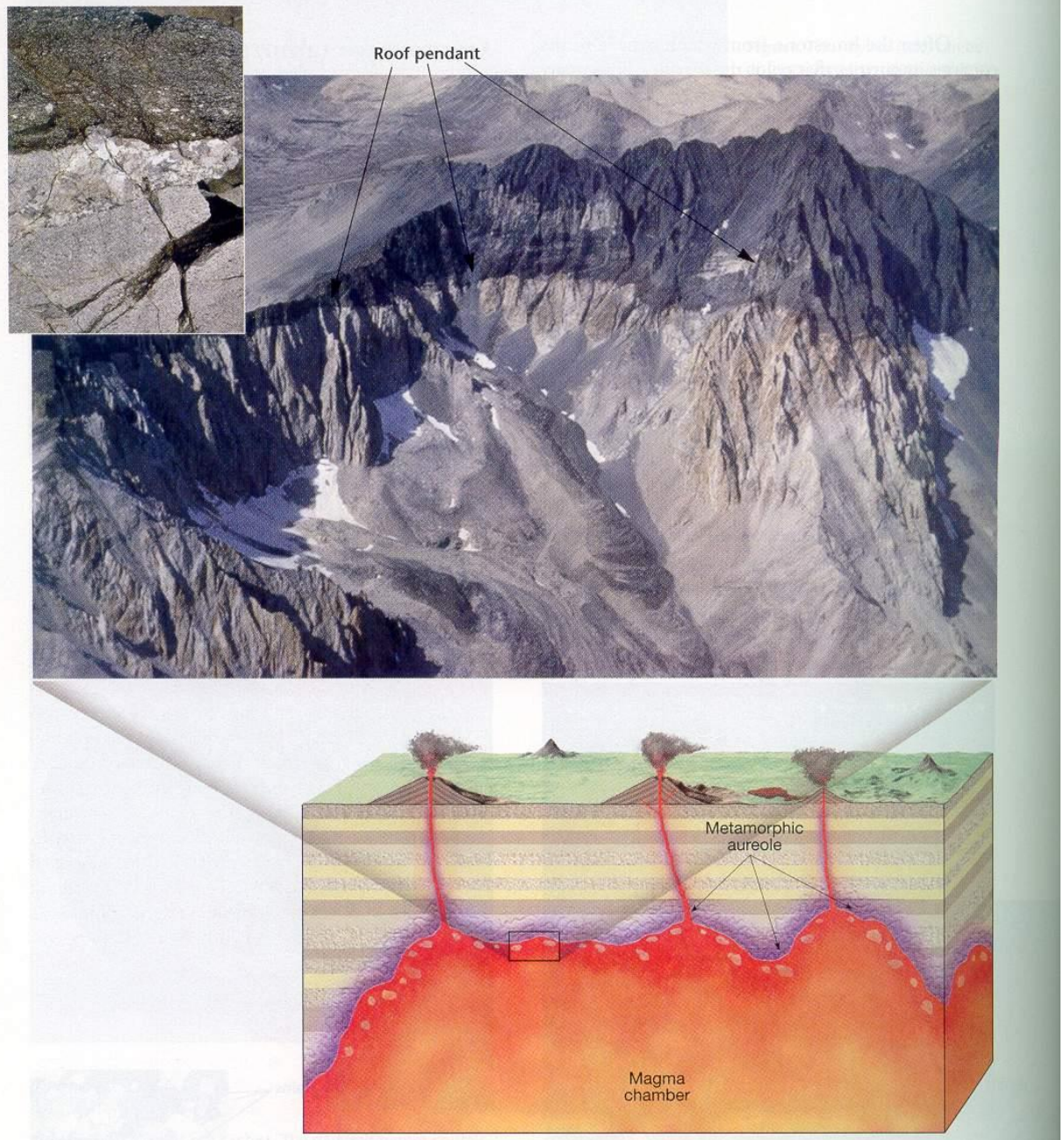


Figure 7.14 Contact metamorphism produces a zone of alteration called an *aureole* around an intrusive igneous body. In the photo, the dark layer, called a *roof pendant*, consists of metamorphosed host rock adjacent to the upper part of the light-colored igneous pluton. The term *roof pendant* implies that the rock was once the roof of a magma chamber. Sierra Nevada, near Bishop, California. The inset photo is a closeup of a contact between an igneous pluton and metamorphosed host rock. (Photo by John S. Shelton)

Figure 7.15 Fault breccia consisting of large angular fragments. This outcrop, located in Titus Canyon, Death Valley, California, was produced along a fault zone. The largest dark fragments are about 2 to 3 meters across. (Photo by E. J. Tarbuck)

Figure 15.18 Faulting caused the vertical displacement of these beds located near Kanab, Utah. Arrows show relative motion of rock units. (Photo by Tom Bean/DRK Photo)

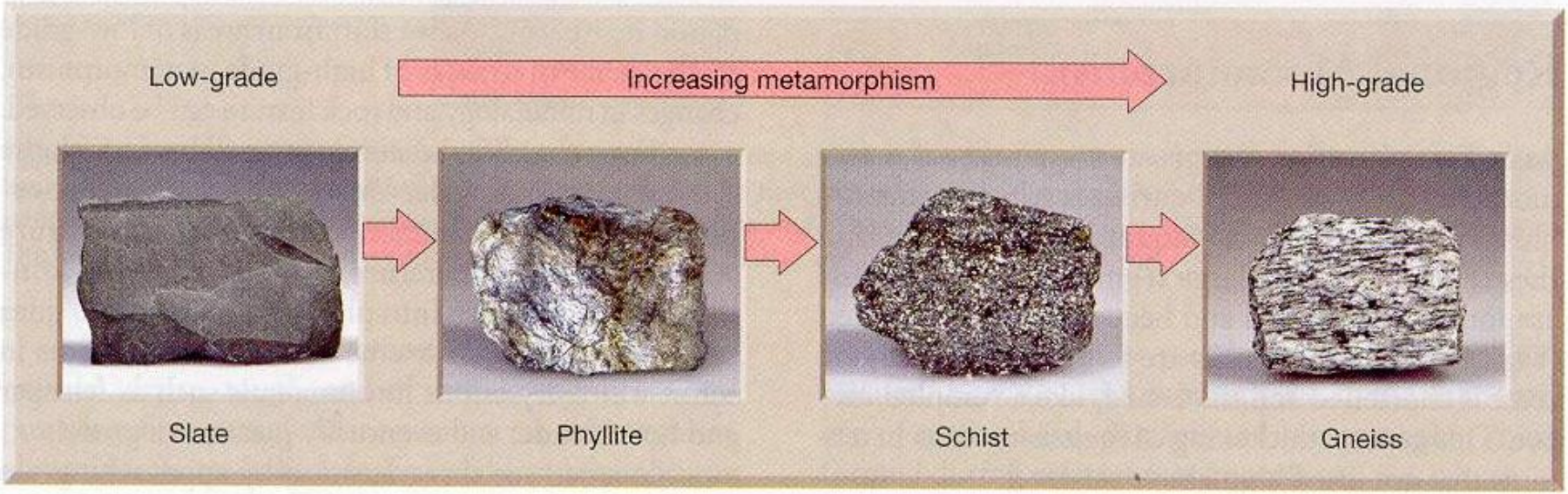


Figure 7.17 Idealized illustration of progressive regional metamorphism. From left to right, we progress from low-grade metamorphism (slate) to high-grade metamorphism (gneiss). (Photos by E. J. Tarbuck)

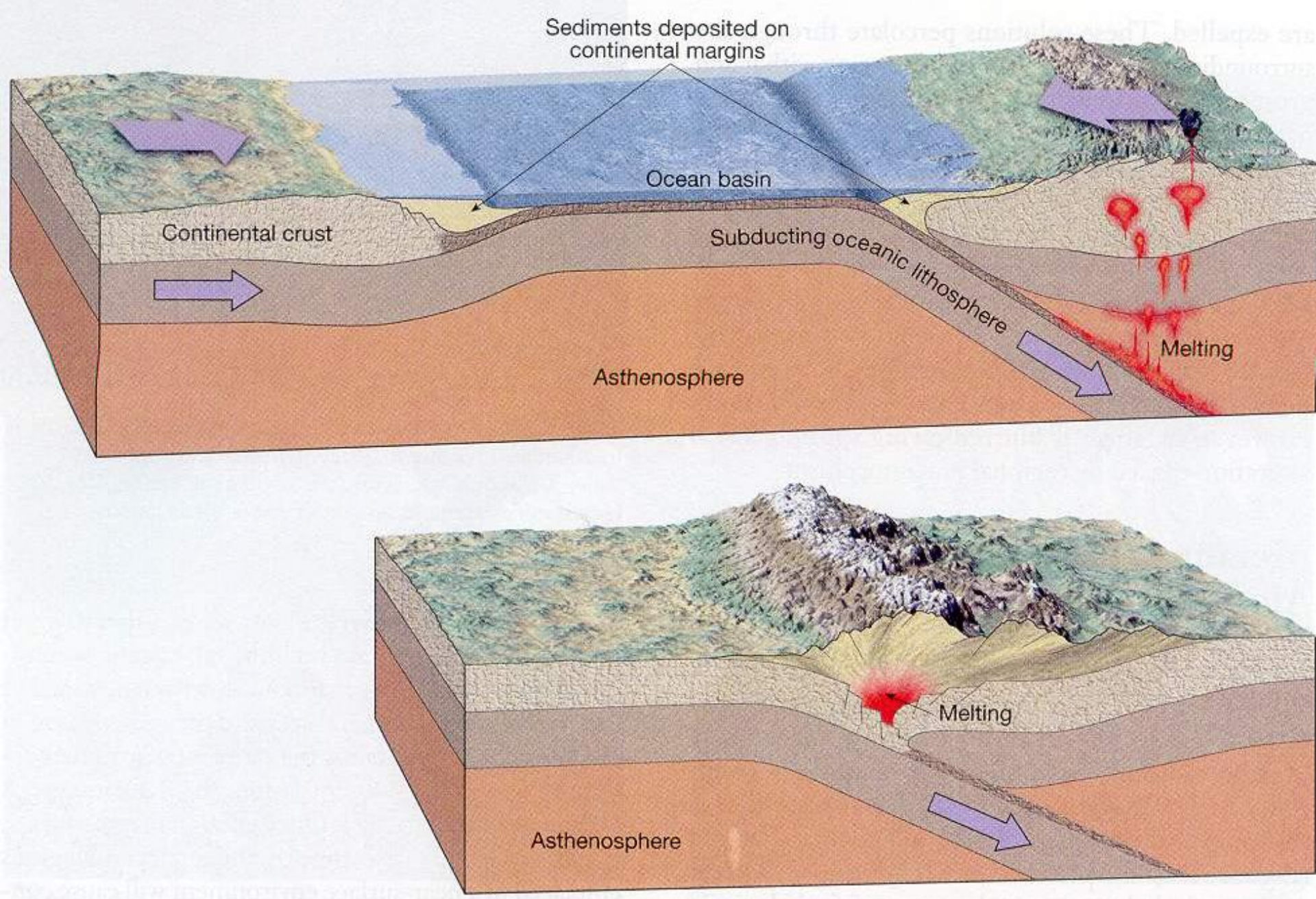
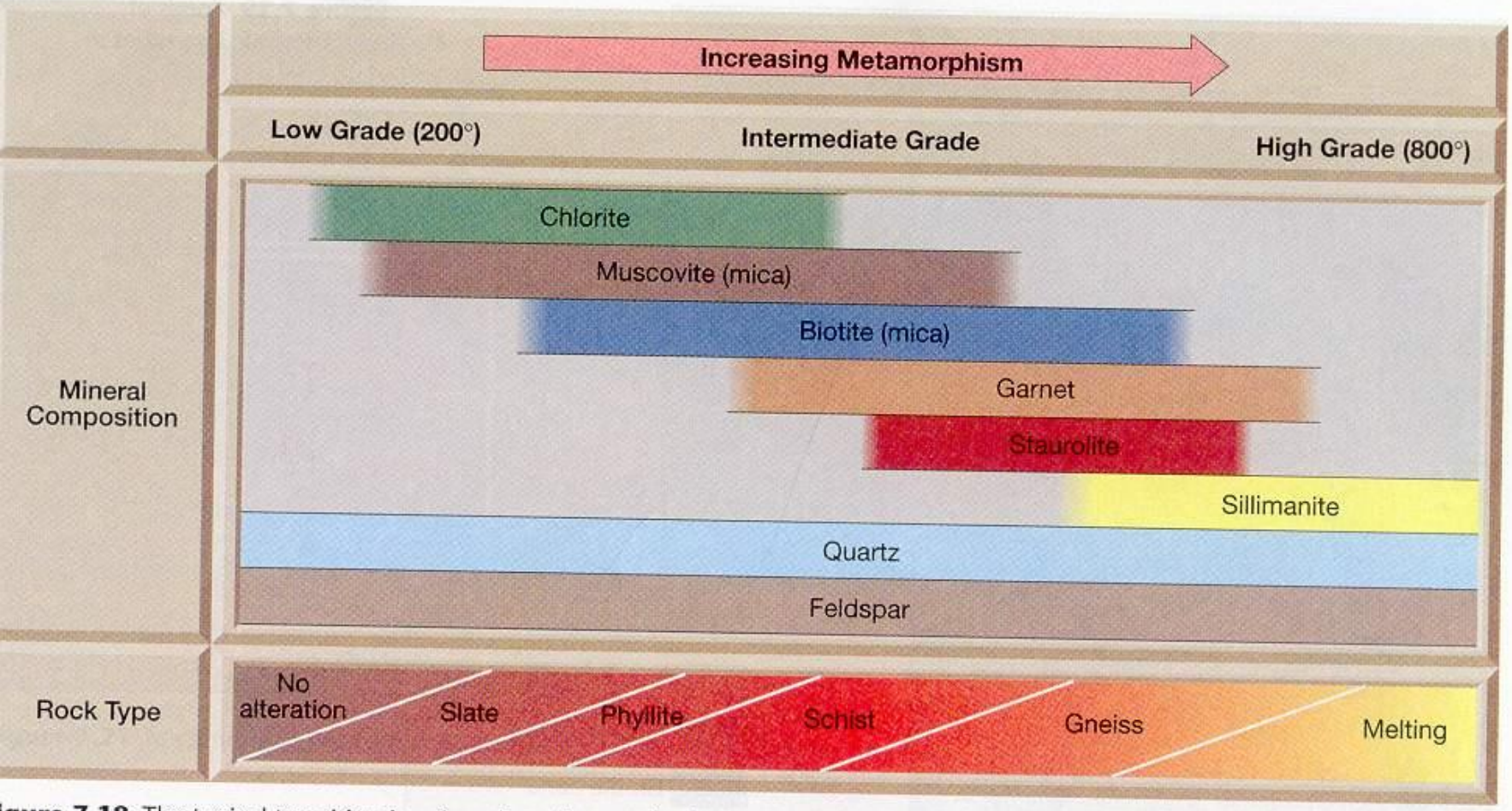
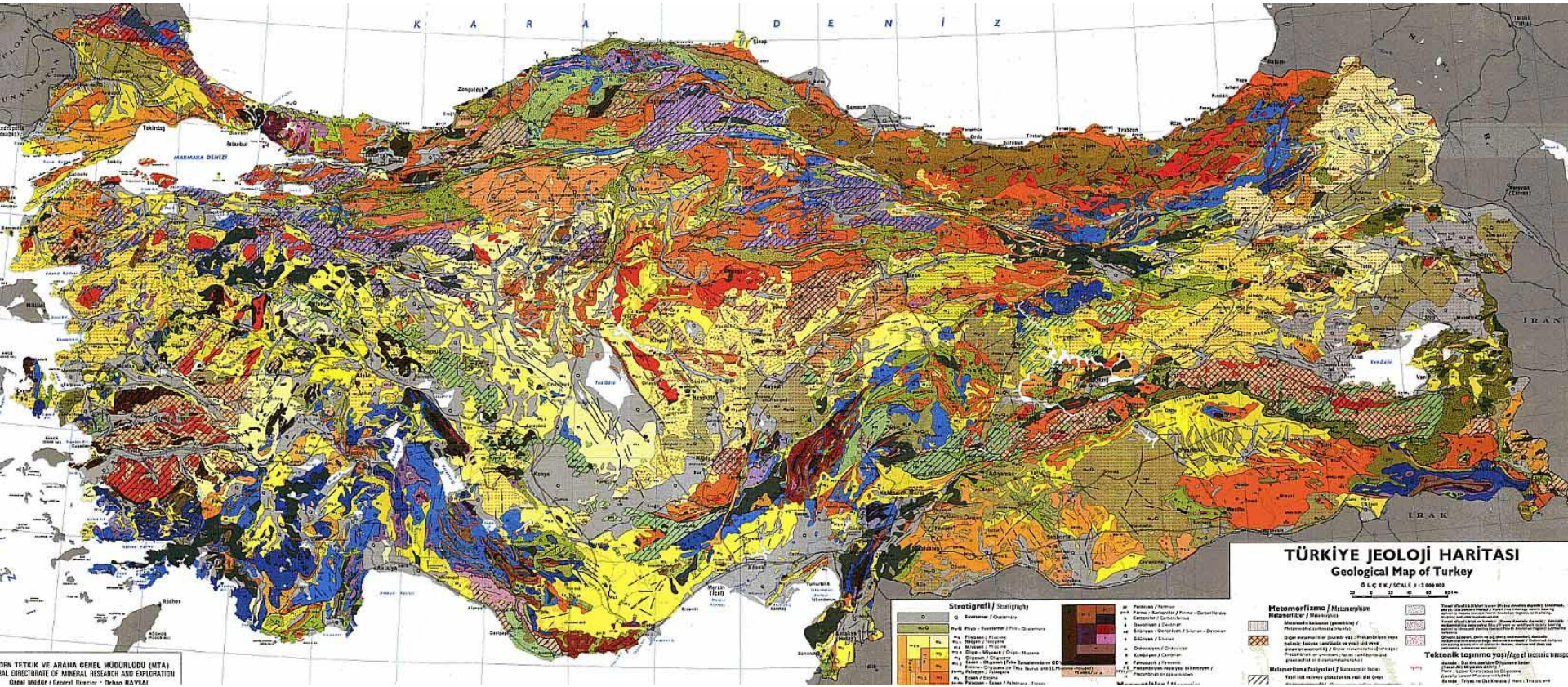


Figure 7.16 Regional metamorphism occurs where rocks are squeezed between two converging plates during mountain building.



igure 7.18 The typical transition in mineralogy that results from progressive metamorphism of shale.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Geological Map of Turkey
ÖLÇEK / SCALE 1:1 000 000
Stratigrafi / Stratigraphy
Metamorfizma / Metamorphism
Metamorfitler / Metamorphics
Tektonik taşınma yaşı / Age of tectonic transport
DEN TETKIK VE ARAMA GENEL MÜDÜRLÜĞÜ (MTA)
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Figure 7.20 Migmatite. The lightest colored layers are igneous rock composed of quartz and feldspar, while the darker layers have a metamorphic origin. (Photo by Hal Roepke)

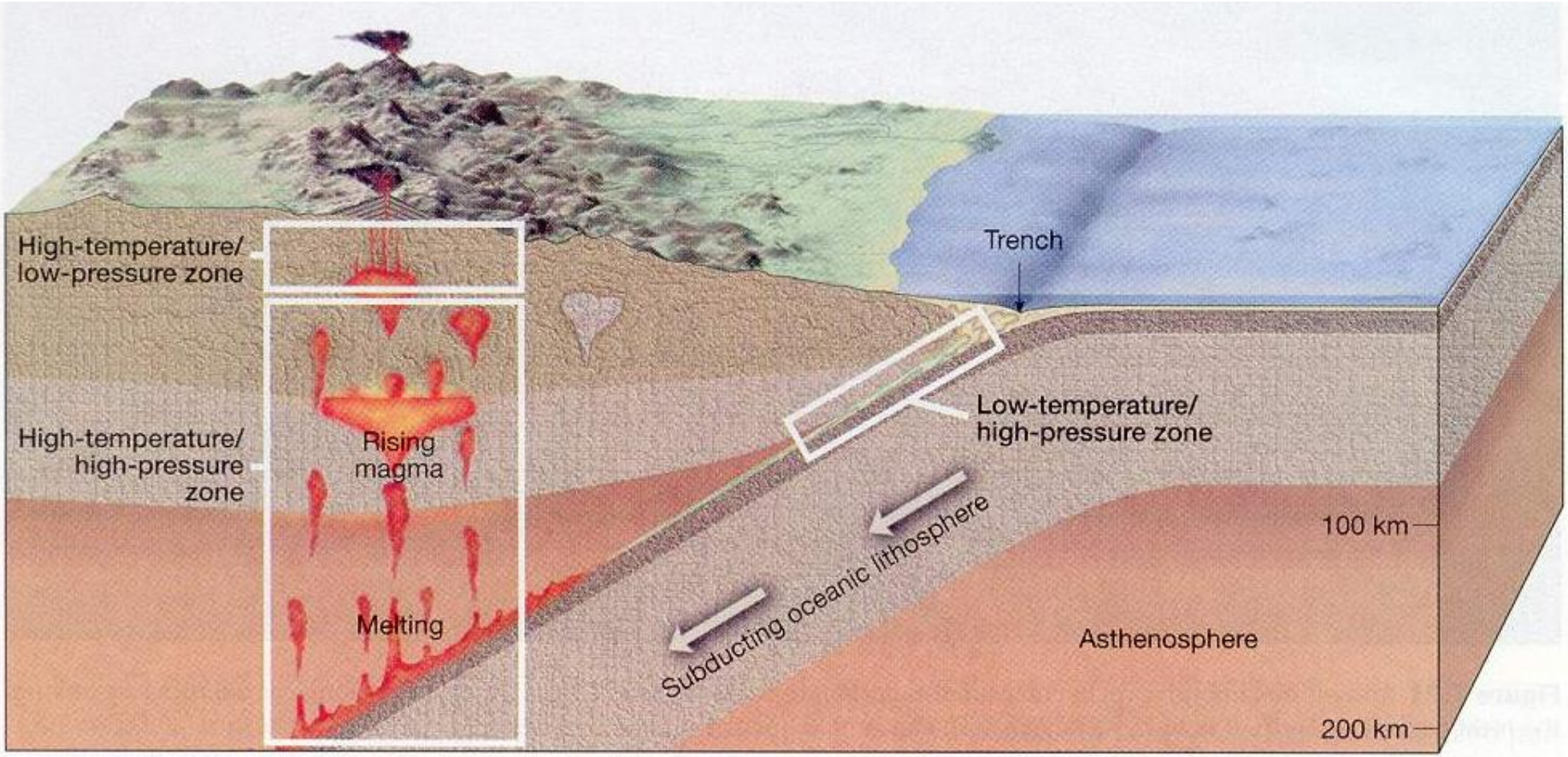

Figure 7.21 Metamorphic environments according to the plate tectonics model.