

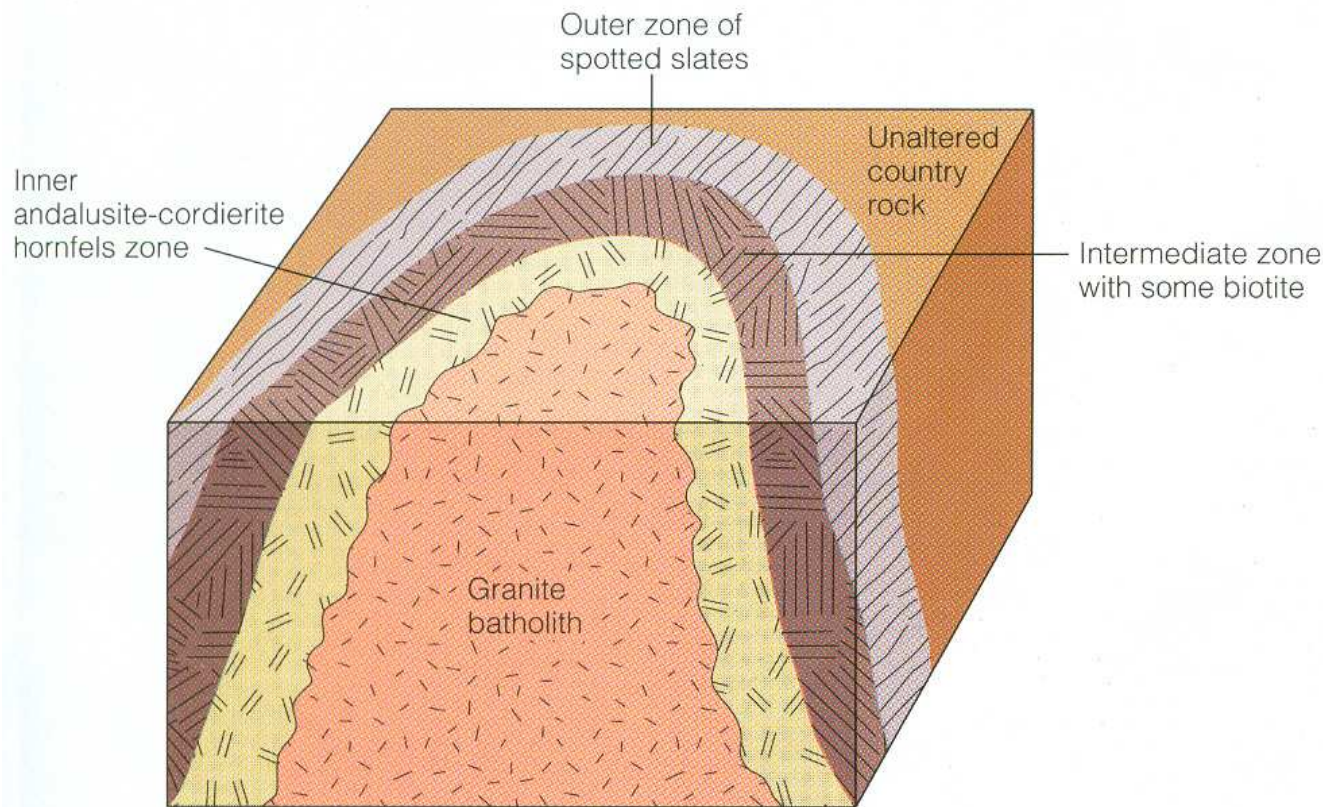


TABLE 7-1 Metamorphic Zones and Their Mineral Assemblages for Different Country Rock Types

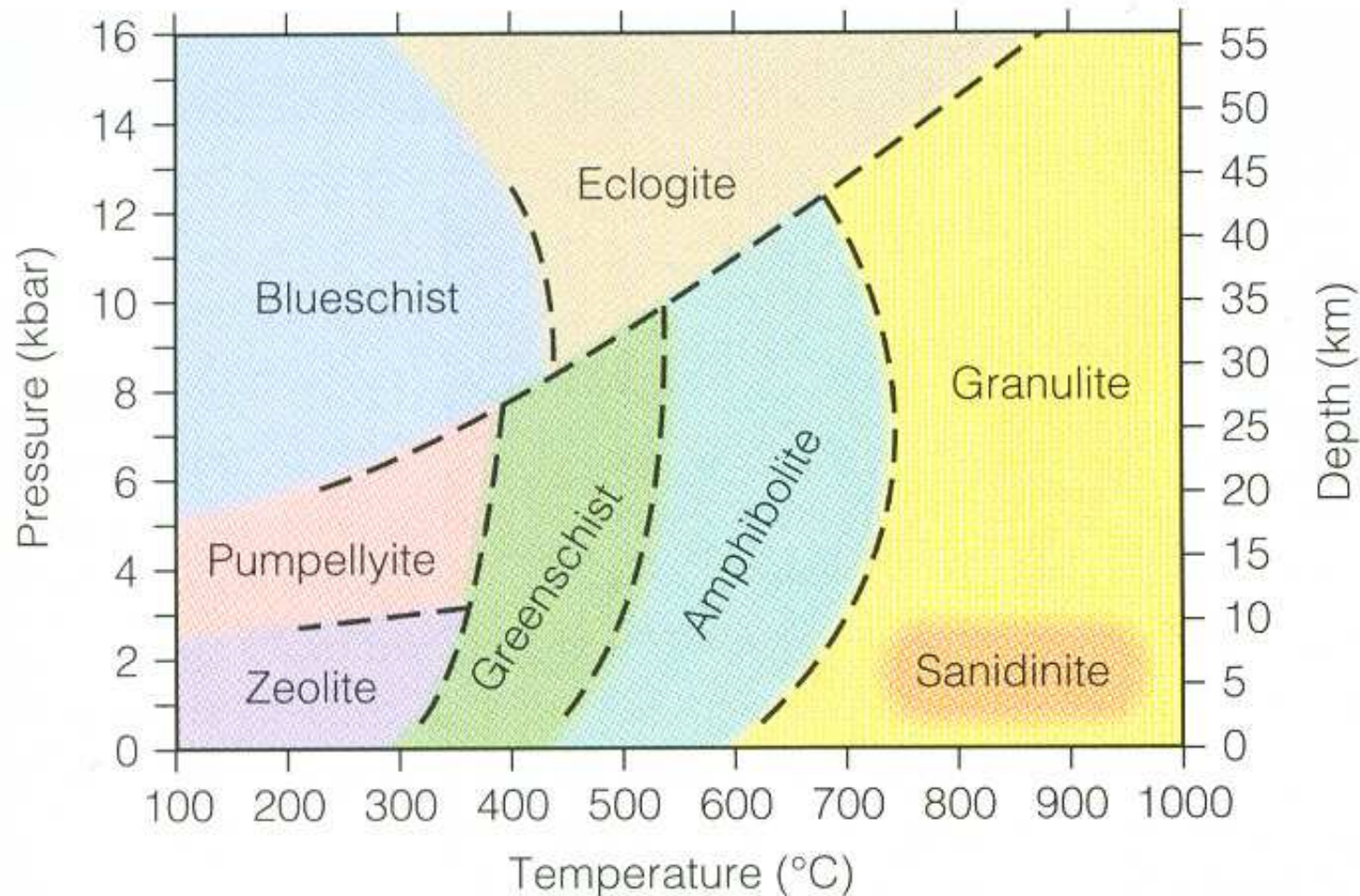


Metamorphic Grade	Metamorphic Zone for Clay-Rich Rocks	Mineral Assemblage Produced for Different Country Rocks		
		<i>Mudrocks</i>	<i>Limestones</i>	<i>Mafic Igneous Rocks</i>
Increasing				
Low	Chlorite	Chlorite,* quartz, muscovite, plagioclase	Chlorite,* calcite or dolomite, plagioclase	Chlorite,* plagioclase
	Biotite	Biotite,* quartz, plagioclase		
Medium	Garnet	Garnet,* mica, quartz, plagioclase	Garnet,* epidote, hornblende, calcite	Garnet,* chlorite, epidote, plagioclase
	Staurolite	Staurolite,* mica, garnet, quartz, plagioclase	Garnet, hornblende,* plagioclase	
High	Kyanite	Kyanite,* mica, garnet, quartz, plagioclase		
	Sillimanite	Sillimanite,* garnet, mica, quartz, plagioclase	Garnet, augite,* plagioclase	Hornblende,* plagioclase

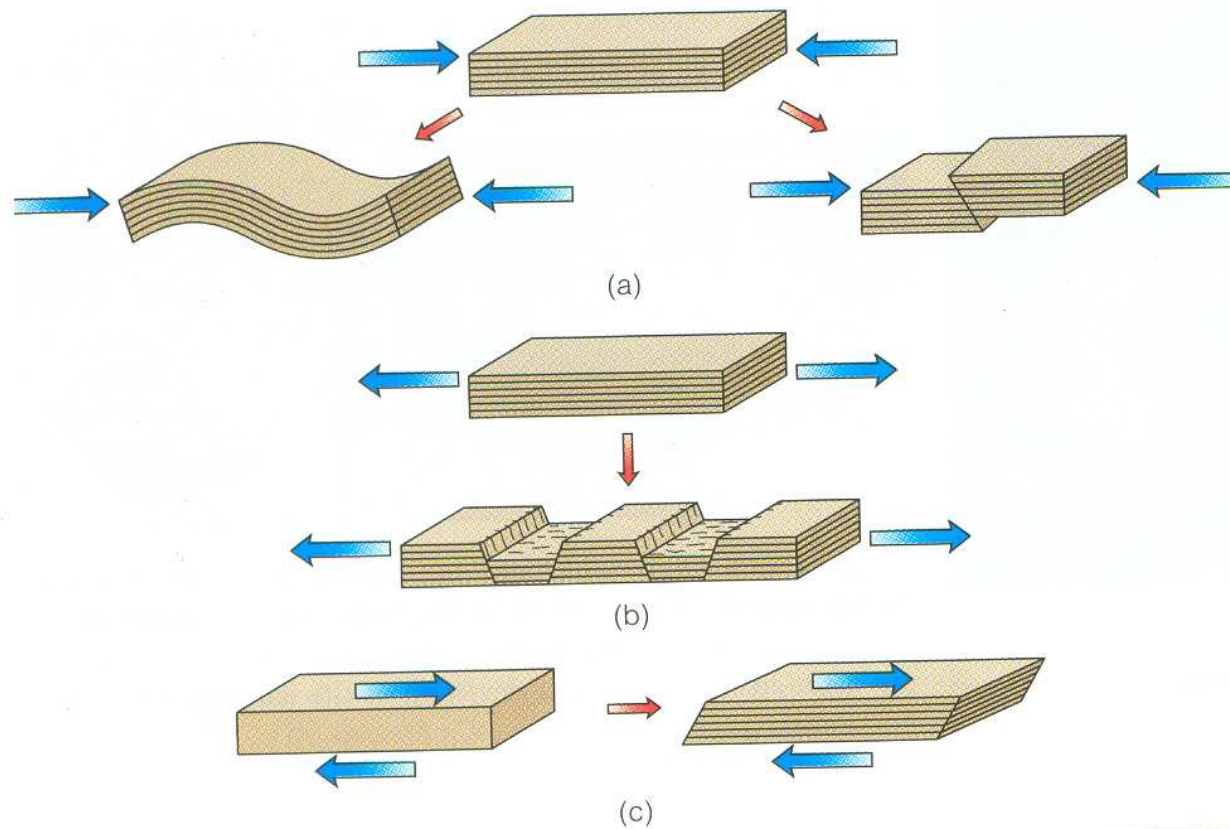
*Index mineral.



► **FIGURE 7-6** A metamorphic aureole typically surrounds igneous intrusions. The metamorphic aureole around this idealized granite batholith contains three zones of mineral assemblages reflecting the decreases in temperature with distance from the intrusion. An andalusite-cordierite hornfels forms the inner zone adjacent to the batholith. This is followed by an intermediate zone of extensive recrystallization in which some biotite develops, and farthest from the intrusion is the outer zone, which is characterized by spotted slates.



➤ **FIGURE 7-19** A pressure-temperature diagram showing where various metamorphic facies occur. A facies is characterized by a particular mineral assemblage that formed under the same broad temperature-pressure conditions. Each facies is named after its most characteristic rock or mineral.



➤ **FIGURE 13-4** Stress and possible types of resulting deformation. (a) Compression causes shortening of rock layers by folding or faulting. (b) Tension lengthens rock layers and causes faulting. (c) Shear stress causes deformation by displacement along closely spaced planes.

➤ **FIGURE 13-11** Syncline and anticline showing the axial plane, axis, and fold limbs.

