

Excerpt from

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by Ted Konigsmark

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ROOF PENDANTS

The granitic rocks of the Sierra Nevada batholith are responsible for many of the best known scenic features in the range. However, not all of the glory goes to the granite. In many parts of the Sierra, there are large spectacular black and red mountains with steep ridges, spires, and cliffs. These mountains represent *roof pendants* of metamorphosed rock that are surrounded by the granitic rocks of the Sierra Nevada batholith. The roof pendants sit in the batholith like plums in a pudding, and add a little mystery and pizzazz to the geology of the Sierra.

The roof pendants are the remains of the Paleozoic and early Mesozoic rocks that once covered the magma chambers of the Sierra Nevada batholith. As the roof rocks were intruded by the granite, heat from the intrusions metamorphosed the overlying rocks. Most of these metamorphosed rocks were eroded and removed when the mountains were uplifted during Cretaceous and Tertiary time. The roof pendants occur in areas where the roof rocks were especially hard or thick, or where they formed deep roots between plutons.

The roof pendants include rocks of either Paleozoic or Mesozoic age. Good examples of the Paleozoic roof pendants can be seen in a string of mountains from Tioga Pass to Big Pine. These roof pendants have rocks from all of the Paleozoic periods. The oldest rocks are of Lower Cambrian age and occur in the Big Pine Roof Pendant. The Mt. Morrison Roof Pendant, a few miles north of the Big Pine Roof Pendant, has 32,000 feet of hornfels, chert, marble, slate and quartzite. These rocks provide a near-complete record of deposition in this area during Paleozoic time. Some of these Paleozoic rocks were deposited at the same time as the rocks of the Shoo Fly Complex in the Western Metamorphic Belt. Unmetamorphosed equivalents of many of these Paleozoic rocks occur in the Inyo and White Mountains to the east.

The Mesozoic roof pendants are well-exposed in a trend of mountains from Mt. Dana south to the Ritter Range. The Triassic and Jurassic volcanic rocks in these roof pendants reflect volcanic activity associated with the Nevadan subduction zone. The roof pendants of Cretaceous volcanic rocks were largely formed during intrusion of the Sierra Nevada batholith and reflect volcanic activity associated with the Franciscan subduction zone.

