

**Sharp, W. D.; Saleeby, Jason; Schweickert, R. A.; Merguerian, Charles; Kistler, Ron; Tobisch, Othmar; and Wright, W. H., 1982, Age and tectonic significance of Paleozoic orthogneisses of Sierra Nevada Foothills Metamorphic Belt, California.**

The easternmost tectono-stratigraphic unit of the Foothills Metamorphic Belt between lat. 37°30' and 39°0' N, consists of metasedimentary rocks of the Shoo Fly Complex. Within the Shoo Fly, orthogneisses characterized by large feldspar porphyroclasts in a thinly banded matrix of flattened recrystallized quartz, feldspar, and micas occur as sills meters to hundreds of meters wide and as larger stocks. The gneisses have normative corundum, SiO<sub>2</sub> = 58-74 wt. %, Rb = 60-220 ppm, Zr = 100-360 ppm, %LREE = 150-200 ppm, whole rock δ<sup>18</sup>O = +14.0 to +15.2, and initial <sup>87</sup>Sr/<sup>86</sup>Sr = 0.71113- 0.72613. These characteristics, as well as the presence of a late pre-Є Pb component in zircon, indicate that the gneisses were derived from sources of continental affinity. Isotopic dating of zircon, sphene, and amphibole indicate that: 1) intrusion of protoliths took place at 275±10, 330±10, and 440±15 m.y. (Permian-Silurian); 2) the last deformation and metamorphism of the gneisses occurred at 215±10 m.y. (Late Triassic). These data indicate that in the central Sierra, the Shoo Fly is Silurian or older. The gneisses and quartz rich metasediments of the Shoo Fly constitute a terrane of continental affinity which occurs west of the Sierran Batholith as far south as Yosemite and is probably correlative with lithologically similar lower Paleozoic rocks of the eastern Klamath Mts. and pendants in the eastern Sierra. Structural relations mapped by Sharp indicate that the intense deformation and accompanying greenschist/amphibolite grade metamorphism of Late Triassic age was an event of regional extent affecting both the Shoo Fly and the adjacent Calaveras Complex and overprinting the Calaveras-Shoo Fly Thrust. Thus, Calaveras Complex metasedimentary rocks of oceanic character are pre-Late Triassic as is the faulting which juxtaposed them with the Shoo Fly Complex.

**To Cite This Abstract:** Sharp, W. D.; Saleeby, Jason; Schweickert, R. A.; Merguerian, Charles; Kistler, Ron; Tobisch, Othmar; and Wright, W. H., 1982, Age and tectonic significance of Paleozoic orthogneisses of Sierra Nevada Foothills Metamorphic Belt, California (abs.): Geological Society of America Abstracts with Programs, v. 14, p. 233.