The north trending, east-dipping ductile thrust between the Calaveras and Shoo Fly Complexes juxtaposes rocks of contrasting sedimentology, structure, metamorphism and age and appears to be a cryptic suture. The Shoo Fly is probably a Lower Paleozoic continental margin sequence and the Calaveras is a terrane of oceanic crust and chaotic sediments. A flattening foliation ($S_1$) with local mineral elongation formed during thrusting in the lower plate Calaveras rocks while in the upper plate Shoo Fly, a coeval mylonitic foliation ($S_2$) developed. Stratigraphic units, two pre-thrust metamorphic fabrics and deformed granitoids in the amphibolite grade Shoo Fly are truncated against the CSFT. Within 1000m a mylonitic zone is found composed of disarticulated Shoo Fly locally intermixed with Calaveras rocks. In the Shoo Fly ductile transposition of old, pre-CSFT metamorphic fabrics ($S_1, S_2$) culminates in the formation of $D_3$ blastomylonites. Foliated quartzites in megascopic to microscopic slivers and ellipsoidal masses are sheathed in $D_3$ mylonite. They are flattened into $S_3$ and elongated parallel to a stretching lineation in the mylonite zone. East of this zone of obliterator deformation the Shoo Fly contains spaced $D_3$ shear zones and ultramylonite with sporadic transposition of older fabrics into $S_3$. Roughly 8 km east of the CSFT a 500m thick strongly L-tectonic mylonitic zone affects older ($D_1$ and $D_2$) mylonitic rocks. This zone marks a secondary $D_3$ ductile imbrication within the Shoo Fly Complex. The juxtaposition of polydeformed quartzitic and plutonic rocks of the Shoo Fly with younger, less deformed oceanic rocks (Calaveras), along a zone of ductile shear, suggests an originally deep-seated plate boundary between continental basement rocks and accreted oceanic sediments.

To Cite This Abstract: Merguerian, Charles, 1981a, Tectonic significance of the Calaveras-Shoo Fly Thrust (CSFT), Tuolumne County, California (abs.): Geological Society of America Abstracts with Programs, v. 13, p. 96.