

Merguerian, Charles, 1981a, Tectonic significance of the Calaveras-Shoo Fly Thrust (CSFT), Tuolumne County, California.

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_3) 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 oblitative 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.

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