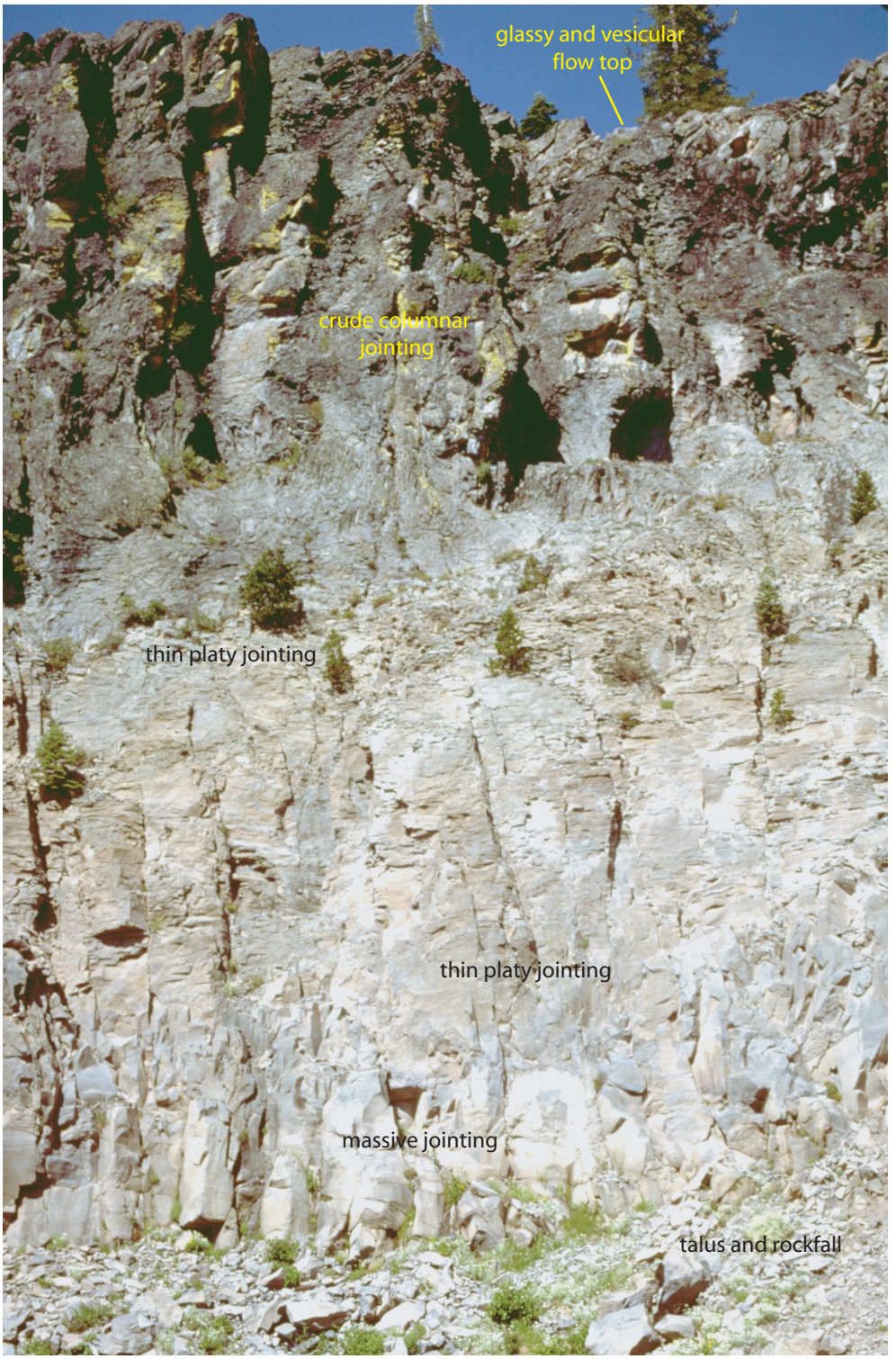

Andesite flow in Bluff Falls quarry

View looking west at the face of Bluff Falls quarry, just west of Calif. Hwy 89, 0.8 mile south of the south entrance to Lassen Volcanic National Park (Lassen Peak quadrangle). The glacially carved cliff, modified by quarrying, exposes nearly the entire thickness of the andesite of Bluff Falls quarry (unit abf, 467±10 ka), a typical silicic andesite flow from the Diller Sequence of Brokeoff Volcano. The base of the flow (not exposed here) consists of a thin, reddened, scoriaceous flow breccia that is overlain by a massively jointed, faintly flow-banded glass-rich zone. This zone grades upward into a thick zone of thin platy jointing. In the flow interior, platy jointing is nearly horizontal to slightly wavy, but at flow edges it can be ramped upward or highly contorted. On the glaciated flanks of Brokeoff Volcano, the orientation of platy jointing can be used map flow edges and flow direction. The platy-jointed interior of the flow grades upward into a zone of crude columnar joints superimposed on the platy jointing. The upper surface of the flow is glassy and vesicular. Color change halfway up the cliff marks the base of the natural exposure. Large blocks at bottom of photograph are 1–2 m; cliff is ~50 m high.

Photograph by Michael A. Clynne.