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Stratigraphic Definition of the Piermont Allochthon, Sunday Mountain to
Albee Hill, New Hampshire

Robert H. Moench and Katrin Hafner-Douglass

(Trip cancelled 4-15-87, by necessity, with regrets)

The Piermont allochthon, whose existence was not expected prior to our 1985 field season, is a fault-bounded tract composed mainly of Silurian metasedimentary and metavolcanic rocks and probably associated mafic dike swarms that extend at least 100 km from Sunday Mountain, near Orfordville, to a few kilometers north of Groveton, New Hampshire, and possibly an additional 200 km northeast to northern Maine. In an area that was previously mapped almost entirely as the Albee Formation (Upper Cambrian? and Lower Ordovician) south to Groveton, the allochthon contains recognized equivalents of all the Silurian formations of the Rangeley-Phillips area of western Maine, in ascending order: Greenvale Cove, Rangeley (three members recognized), Perry Mountain (plus a volcanic-bearing member), Smalls Falls, and Madrid. Small remnants of the Quimby (Upper Ordovician?) and Littleton (Lower Devonian) are exposed as well. These formations are juxtaposed against an autochthonous sequence in which the Silurian is represented only by discontinuous lenses of Clough Quartzite, and locally by the Fitch Formation. Rocks of the allochthon are interpreted to have originated 15-25 km to the southeast near the Silurian tectonic hinge of western Maine and east-central New Hampshire, and to have been transported to their present position prior to about 400 Ma. This trip will examine the autochthonous and allochthonous sequences, the pertinent localities of isotopically dated rocks, and at least one exposure of the Foster Hill sole fault, which is the inferred base of the Piermont allochthon.