

Glacial Geology of the Hanover Quadrangle

Addition to Report of D. P. Stewart

Paul MacClintock 1966

Glacial Episodes. The detailed study of till exposures, several of which have been made during new highway construction, has demonstrated the presence of two tills, an older one from the northwest overlain by a younger one from the northeast:-

- (1) One mile west of Hartford a big highway bank in the small valley exposes about 100 feet of blue-gray calcareous till which has a till fabric vector mean direction of N.22°W.
- (2) A mile to the southwest of this locality, and on the south side of White River a large excavation for Interstate Highway 89, exposes a two-till cut. At the top I measured about 20 feet of buff sandy non-calcareous ^aoblation till with a till fabric vector mean direction of N.42°E. This shows it to be Shelbourne. In the lower part of the excavation, maybe 50-75 feet below the top, excavation exposed a bank about 10 feet high of dense calcareous blue-gray basal till whose fabric vector mean direction is N.40°W. which shows it to be Bennington till.
- (3) At West Lebanon, New Hampshire, the Tri-State gravel pit

exposed till in its eastern part. This till number is 40 - 50 feet thick, is very calcareous and contains a noticeable number of well-rounded stones. It has a strong N.W. fabric; Vector Mean of N. 33°W. showing it to have been deposited by the Bennington ice sheet. Where it is well-exposed in the big gravel pit it is seen to lie on horizontally bedded non-calcareous uniform-sized fluvial gravel.. Since the ^{ones} ~~stones~~ in the gravel are about the same size and shape as the ones in the overlying till, it seems logical to propose that as the Bennington ice crossed the Connecticut River Valley it acquired fluvial gravel pebbles and deposited them in its own calcareous till.

(4) A mile southeast of West Lebanon a big new cut for Interstate 90 exposes about 75 feet of dense blue-gray basal till with fabric Vector Mean N. 33°W., However, between the gravel pit and the Interstate Highway exposures, a gravel pit displays till on top of gravel and this till has northeast fabric. (N. 30°E. Vector Mean) of the Shelbourne glaciation.

(5) At Meridan, ^{also} in southeast corner of the quadrangle two tills are seen in the exposure a mile south of town. The upper till is buff ~~abl~~ation till with N. E. Fabric (N. 19°E. Vector Mean) whereas the lower till is blue-gray basal till with northeast fabric (N.30°W. Vector Mean)

(6) And lastly, at the West Central margin of the quadrangle, a mile southwest of Taftsville, the hilltop excavation for a new house exposes 3-4 feet of sandy ~~abl~~ation till with fabric maximum at N. 17°E. These various exposures scattered over the quadrangle show that it was overruⁿ first by the Bennington ice from the northwest and later by the Shelbourne ice from the northeast.