into New York (or Manhattan) Island. The limestone, which is everywhere crystalline, or is a marble, contains abundantly the same accessory minerals in southern Massachusetts and Connecticut, as in Westchester County and New York Island; namely, tremolite and white pyroxene. In this respect the Taconic limestone is widely different from the Archæan limestones of the protaxis in Massachusetts, and of outcrops in the Kent-Cornwall Ridge, west of Kent, these being *chondroditic* (p. 67).

Two of the Westchester belts, near Peekskill, extend northward up the Archæan Highlands of Putnam County. They lie in what were originally valley-depressions in the Archæan, although not valleys now. Their beds are much upturned, although confined so closely by the Archæan; and they are metamorphic, but of the lighter kind characterizing the corresponding beds on the north border of Peekskill. To produce the upturning, the inclosing Archæan rocks must have been thrust forward either along fractures, or molecularly. The metamorphism apparently indicates that the beds once had great thickness over this part of the Highlands.

The Taconic series of rocks, and series of upturnings, appear therefore to extend all the way from the St. Lawrence valley to New York City. They are situated mostly to the west of the Archæan protaxis; but, in Canaan, the more eastern branch, described above, passes to the *eastward* of it, leaving part of the Archæan area on the west; and it is this eastern branch that continues on through Westchester County. The east and west positions of part of the limestone belts of Westchester County, just south of the Archæan of Putnam County, indicate that, in the upturning, the schists and other Taconic rocks were forced up against the essentially stable Archæan area. The T-shaped symbols on the map indicate the strike and dip of the rocks, and show that the limestone and schists, referred to the Taconic series, are conformable in strike.

The Taconic upturning is known to have occurred not later than the close of the Lower Silurian era from the fact that Upper Silurian rocks are not present in the series, but actually overlie the Lower unconformably in some localities; as at Becrafts Mountain, near Hudson, N.Y.; on St. Helens Island and Belœil Mountain, near Montreal, where the Lower Helderberg beds cover unconformably Lower Silurian slates; and near Lake Memphremagog, where the Niagara limestone occurs with its characteristic fossils, and also beds of Devonian Corals. Again, on the eastern side of the Green Mountains, in the Connecticut valley, there are unconformable Devonian beds at Bernardston, Mass., and Upper Silurian at Littleton, N.H. The earlier of the formations of the *Upper* Silurian are very thin in the *eastern* part of the state of New York, and this is apparently owing to the previous emergence of the Green Mountain area, shallowing the waters to the eastward. The schists, which are argillyte and hydromica schist in Vermont, are mica schist, chlorite schist, and gneiss in Massachusetts, and coarser mica schist and gneiss in Westchester County.

The probability that the upturning was continued southward through