Cross-sections of the Taconic slate belt near Granville, NY

The two major geological units yielding quarried slate are colored on these vertical cross-sections:

- Indian River Slate (Red)
- Middle Granville Slate (Purple)

Note that the slates, along with all the other strata of the Taconic thrust sheets, are disposed in folds. The deformation of essentially horizontal sedimentary strata into these crumpled forms was what created the slates and their rock cleavage from shales, as part of an episode of mountain building about 450 million years ago.

The scale of these sections is exaggerated two times in the vertical direction relative to the horizontal scale. This makes the topographic profile look rougher than it is in reality. It also makes the inclination of geological structures somewhat steeper than they actually are. For location, see the geological map.