

IRIDESCENT QUARTZ FROM NEW YORK CITY

GEORGE S. SCOTT

New York City

IN connection with sewer excavations in the upper part of Manhattan Island considerable rock is being removed and allowed to remain in heaps for periods of a year or more. While examining a pile of such material at Pelham Parkway and 185th Street, Mr. W. A. Clay, of this city, recently found some quartz of rather unusual character. The material consists of slabs of gray massive quartz such as is common in the feldspathic mica schists of this part of Manhattan, with the partings covered with minute secondary quartz crystals in patches, within any one of which all the individuals lie in parallel position. Many of these patches of crystals, which may attain a diameter of an inch or so, show on the exposed faces of the tiny crystals a remarkably brilliant coloration, somewhat suggestive of labradorite, but with an even greater variety of hues than usually exhibited by the latter. On more freshly exposed surfaces blue and green colors predominate, but perhaps the most striking of all is the bright pink shown by the more weathered portions of the rock. Even to the naked eye the specimens are showy and attractive, but as microscopic mounts, examined with a low power objective, they are especially beautiful.

The exact nature and cause of these color phenomena are at first sight somewhat difficult to explain. Specimens were submitted to Mr. Frank J. Keeley, the well-known microscopist of Philadelphia, and he states as his opinion, after careful microscopic examination, that the appearance is due to a combination of "schiller" effect due to facetting resulting from etching, and possibly in part from secondary crystallization, together with colors produced by thin films of some sort on the surface of the quartz. These films probably consist of limonite or hematite, and owe their colors to their extreme thinness. It may be noted that on moistening a surface the colors disappear, but on drying again their brilliance is restored. Strong hydrochloric acid seems to attack the films somewhat, but only removes them with extreme slowness.