COLORS OF GLASS INSULATORS

The basic material of glass is quartz sand. To melt this sand at a lower temperature than would otherwise be required, a variety of "fluxing" materials is used in combination with the sand. Both borax and soda ash are used to lower the point of melting, while other ingredients are added to stablize the glass that may be exposed to extremes in temperature upon installation. A glass product, in its natural state, is green in color due to the iron content in the quartz sand used in its manufacture. Various decolorizing agents can be added to the batch to remove the impurities and the green color in the glass.

Prior to World War I, manganese was readily available and used as the agent to clear the glass. Some "clear" end-product insulators manufactured using the manganese agent turned to a light purple color following manufacture or when exposed to sunlight over a period of time. These chemical phenomena should not be confused with the insulators that were purposefully manufactured with enough manganese so as to initally color the glass purple. Selenium used as the agent would turn a straw or a yellow color.

Another commodity necessary for the production of insulators or any other glass product is broken glass (cullet). In a letter received from Mr. N.R. Woodward, author of *The Glass Insulator in America, 1988 Report*, regarding insulator colors, he shared the following:

"I think collectors often do not really comprehend the process of glass manufacture on the commercial scale that was used to produce the insulators. All glass is composed of raw materials with sand as the primary ingredient, and cullet. All glass manufacture requires some cullet. Or (and this is important) it can be all cullet. It cannot be all raw materials without cullet. Thus we have our recycling efforts in many cities, where bottles are taken in and sorted by color--clear, brown and green.

Back when the colored insulators were made, especially prior to World War I, little attention was paid to color. The various manufacturers used different methods. In one of their advertisments, Hemingray emphasized that glass should be made with "not too much cullet." This was no doubt a slap at Brookfield, McLaughlin and others who largely used cullet.

Natural glass color depends on the grade of sand used. The greater the iron content the darker the aqua colors. If not a great deal of cullet is used or if it is clear glass, the color will remain fairly constant as long as the sand source is not changed. As the cullet is increased, the colors will be affected; and when a dark colored bottle was ground up and not completely mixed with other glass, it would make a streak in the insulator. During the early years of the century, we find amber streaks in some of the Hemingray insulators that are generally of a uniform aqua color. Going back farther, the Covington production varied from some runs made with a high grade silica sand and of uniform light tint, to others that seem to have been largely cullet and come in every imaginable color.

Brookfield used tremendous amounts of cullet at the Old Bridge plant and we find not only dark green and brown streaks, but also pieces that were made with a uniform mix of different colors and came out yellow-green, dark olive, etc.

At times in every operation there were undoubtedly large amounts of a single color of cullet brought in. A large number of clear bottles would lead to a light purple and smoke glass so prized by collectors. At one time years ago when I showed William McLaughlin one of his very dark green insulators, he said, "Yes, we brought a truck load of green ginger ale bottles from a defunct bottling works."

Thus it can be seen that for the most part, the colors were unintentional, and there is no limit to their variety. In more recent times where the buyers became more particular, cullet was carefully controlled and decolorizing formulae were used to produce essentially clear glass. But as collectors know, there are occasional streaks of color even in late production.

Other factors affecting color were, of course, the intentional blues and ambers at Hemingray resulting from the addition of the proper minerals to the mix; also the yellow and purples that resulted from attempts at decolorizer formulae."

Naming a color is an extremely difficult task, for no two collectors perceive color in the same way. The insulators pictured on the following pages are meant to serve as a reference, not as the "last word" on the name of a certain color. You will also note that some of the insulators pictured are out of proportion relative to other insulators pictured. We are only concerned with presenting color and not size.

LIGHT
BLUE AQUA

BLUE AQUA

DARK
BLUE AQUA

SNOWY
BLUE AQUA

LIGHT AQUA

AQUA

DARK AQUA

BUBBLY AQUA

LIGHT
GREEN AQUA

GREEN AQUA

DARK
GREEN AQUA

LIGHT GREEN AQUA
WITH AMBER

JADE
GREEN MILK

JADE
AQUA MILK

JADE
BLUE MILK

BUBBLY
JADE MILK

LIGHT PEACOCK BLUE

PEACOCK BLUE

DARK PEACOCK BLUE

MILKY PEACOCK BLUE

COBALT BLUE (GREEN)

COBALT BLUE (BLUE)

INK BLUE

ICE BLUE

ELECTRIC BLUE

DARK ELECTRIC BLUE

MIDNIGHT BLUE

TEAL BLUE

HEMINGRAY BLUE

BROOKE'S BLUE

LIGHT SAPPHIRE BLUE

SAPPHIRE BLUE

LIGHT BLUE

BLUE

DARK BLUE

BUBBLY BLUE

STEEL BLUE

CORNFLOWER BLUE

DARK MILKY CORNFLOWER BLUE

BLUE GRAY

MILKY ICE GREEN

APPLE GREEN

LIGHT EMERALD GREEN

EMERALD GREEN

CHRISTMAS TREE GREEN

LIME GREEN

YELLOW OLIVE GREEN

DARK YELLOW OLIVE GREEN