Bugs at Bethany Station

What Connects Bethany Station to Jellybeans, Parasite Beetles, Bakelite Radio Knobs, and Buttons?

Did we mention VOA Bethany Station was bugged back in the day? Yes, the secretion from millions of beetles insulated the electrical power lines entering Bethany Station.

In the photo to the right, which is located inside the Collins cage, a red arow points to an electrical insulator used at the station and was made by the Electrose Mfg. in Brooklyn, NY.

These insulators are made from hot molded shellac which is the resin secretion from the female Laccifer lacca beetle. The bug is found across Thailand and India who drinks sap from fig trees before secreting onto the twigs and branches of other trees. They release resin which is waxy in nature and processed into lac and shellac.

The resin is used for various purposes such as dyes, cosmetics, wood finishing varnishes, polishes and hot molded to form electrical insulators.

Candy lovers beware: The hard shiny shells on Junior Mints, Red Hots, Lemonhead, and Boston Baked Beans candies are glazed with secretions from lac bugs.

Nearly 100,000 bugs die to produce one pound of shellac flakes, which are combined with alcohol to make a confectioner's glaze.

For many years the candy of Jellybeans used glaze from secretions of the lac bugs.

During the first years of the twentieth century, the demand for shellac outstripped the supply. It wasn't because people developed a sudden penchant for shiny furniture. Electricity was starting to take the world by storm and electrification required the use of insulating materials and shellac was a very effective insulator! However, it was hard to come by.

A Belgian chemist, Leo Baekland, who had emigrated to America, was aware of this problem and sought a solution. He had already put Kodak on the map with his invention of Velox photographic paper which was the first paper that could be printed with artificial light.

Wanting to reproduce the chemical secretions of an Asian lac bug, Baekland modified a procedure invented by a German chemist, Adolf von Baeyer.

He altered the process for using coal tar, which reacted with formaldehyde to form a resin. He called this first truly synthetic plastic, Bakelite. It turned out to be an excellent electrical insulator, but that was only the beginning. Bakelite could be formulated into buttons, knife handles, billiard balls, radios cabinets, telephones, and records.

The synthetic plastic industry was born, and all because Leo Baekland wanted to reproduce the chemical secretions of an Asian bug.

His original "Baekelizer," a relic of great historical importance, is now located at the Smithsonian Museum in Washington.

Leland L. Hite

03/14/2024

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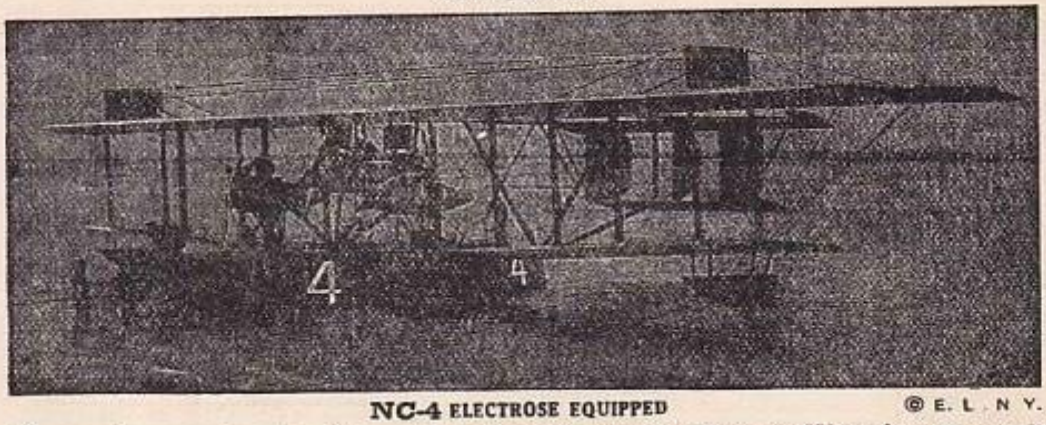

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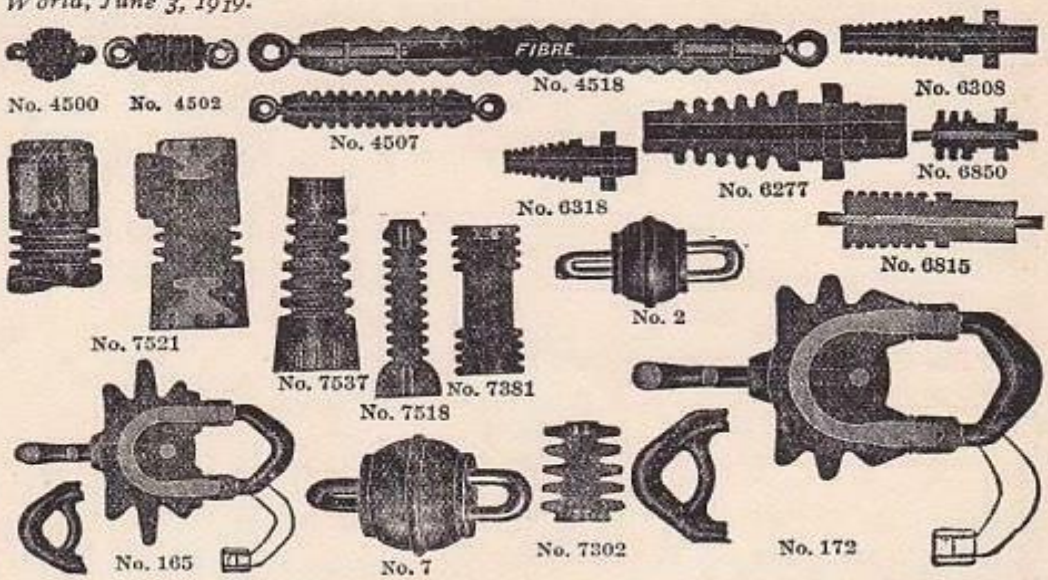
"By courier, coach and sail-boat, it took days for the news of Waterloo to reach London. During Lieut. Commander Read's flight to Halifax, Assistant Secretary Roosevelt in Washington sent a radio message to NC-4, of whose position in air he had no knowledge. In three minutes he had a reply."—*Extract from New York World, June 3, 1919.*



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