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Plastics I

Lead: Reviled by some as artificial, suspected of structural weakness, and denigrated by purists, plastics, nevertheless, have fashioned one of the most important revolutions in the modern era.

Intro.: *A Moment in Time* with Dan Roberts.

Content: Quote from *The Graduate*

“Ben, I have just one word for you, one word,”

“What’s that?”

“Plastics.”

Before 1900 most “things” were fashioned from naturally occurring substances, wood, metal, stone, plant and animal produces. In 1907 that changed. Leo Hendrick Baekeland, a chemist who immigrated to the United States from Belgium in 1889, was mixing phenol and formaldehyde, trying to find a substitute for shellac. Instead he discovered a hard, moldable substance that soon took his name, Bakelite, the first completely synthetic substance. With superior nonconductive properties it was first used as an insulator. Until the 1950s, most telephones were made of Bakelite. It is a polymer, a molecule made of a string of smaller, often similar molecules. Cotton, silk and

DNA are polymers. Rubber is also a polymer, which was first put to practical use in the 1700s by chemist Joseph Priestly who discovered that it could rub pencil marks off paper, hence the name rubber.

Essayist John Steele Gordon notes that plastics, as in the case of many inventions, made their impact on modern life only after coming to the needs of the military. In World War I Germany needed a substitute for rubber for its war machine, but most of the sources of natural rubber came from plantations in Southeast Asia controlled by Britain and France. German chemists, among the best in the world at the time, made a synthetic rubber from acetone.

**Next time: Wallace Carothers
and the turn of a woman's ankle.**

**Technical assistance by Hill Scott,
at the University of Richmond, this is
Dan Roberts.**

Resources

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Meikle, Jeffrey L. *American Plastic: A Cultural History.* New Brunswick, NJ Rutgers University Press, 1995.

http://www.americanplasticscouncil.org/benefits/about_plastics/history.html

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