Arsenic Encyclopedia Article

Arsenic

The following sections of this BookRags Literature Study Guide is offprint from Gale's For Students Series: Presenting Analysis, Context, and Criticism on Commonly Studied Works: Introduction, Author Biography, Plot Summary, Characters, Themes, Style, Historical Context, Critical Overview, Criticism and Critical Essays, Media Adaptations, Topics for Further Study, Compare & Contrast, What Do I Read Next?, For Further Study, and Sources.

(c)1998-2002; (c)2002 by Gale. Gale is an imprint of The Gale Group, Inc., a division of Thomson Learning, Inc. Gale and Design and Thomson Learning are trademarks used herein under license.

The following sections, if they exist, are offprint from Beacham's Encyclopedia of Popular Fiction: "Social Concerns", "Thematic Overview", "Techniques", "Literary Precedents", "Key Questions", "Related Titles", "Adaptations", "Related Web Sites". (c)1994-2005, by Walton Beacham.

The following sections, if they exist, are offprint from Beacham's Guide to Literature for Young Adults: "About the Author", "Overview", "Setting", "Literary Qualities", "Social Sensitivity", "Topics for Discussion", "Ideas for Reports and Papers". (c)1994-2005, by Walton Beacham.

All other sections in this Literature Study Guide are owned and copyrighted by BookRags, Inc.

Contents

Arsenic Encyclopedia Article.....1

Contents.....2

Arsenic.....3

Arsenic

Arsenic is an element having an atomic number of 33 and an atomic weight of 74.9216 that is listed by the U.S. **Environmental Protection Agency** (EPA) as a hazardous substance (**Hazardous waste** numbers P010, P012) and as a **carcinogen**. *The Merck Index* states that the symptoms of acute **poisoning** following arsenic ingestion are irritation of the gastrointestinal tract, nausea, vomiting, and diarrhea that can progress to shock and death. According to the 2001 Update Board on Environmental Studies and Toxicology, such toxic presentations generally require weeks to months of exposure to arsenic at high doses, as much as 0.04mg/kg/day (0.02mg/lb/day). Furthermore, long-term, or chronic poisoning can result in skin thickening, exfoliation, and hyperpigmentation. Continuing exposure also has been associated with development of herpes, peripheral neurological manifestations, and degeneration of the liver and kidneys. Of primary importance, however, is the association of chronic arsenic exposure with increased risk of developing high blood pressure, cardiovascular disease, and skin **cancer**, diseases that are increasing public health concerns.

Variations of arsenic were used in everyday life. In the early nineteenth century, it was discovered that a fungus, *Scopulariopsis brevicaulis*, was eating away at the starches found in certain forms of wallpaper. The fungus also altered the arsenate dyes, changing them into trimethylarsine oxide, which is further converted to the extremely toxic trimethylarsine gas. The gas was then released into the room, killing the people who spent long amounts of time there, usually sleeping. This process was discovered in 1897 but the gas itself was not discovered and named until 1945.

Safe drinking water standards are regulated by the EPA in the United States. In February 2002, the EPA revised the former standard for acceptable levels of arsenic in drinking water. The revision of the **Safe Drinking Water Act** reduced the standard from 50 **parts per billion** (ppb) to 10 ppb of arsenic as the acceptable level for drinking water. The regulation requires that all states must comply with the new standard by January 2006. Sources of arsenic contamination of drinking water include **erosion** of natural deposits and run-off of waste from glassmaking and electronics industries. Also, arsenic is used in insecticides and rodenticides, although much less widely than it once was due to new information regarding its toxicity.