Blowpipe Encyclopedia Article

Blowpipe

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

Blowpipe Encyclopedia Article.....1

Contents.....2

Blowpipe.....3

Blowpipe

It is a generally known fact that fire can be made to burn hotter by fanning the flames with air. This is important in metallurgy, where extremely high temperatures are required to convert metals to their molten state. The blowpipe, which consists of a small tapered tube, is used to direct a stream of compressed air at a heat source. There are seven different types of blowtypes, and are usually made of metal, brass or silver commonly. It has played a significant role discovering at least fifteen elements and the composition of numerous minerals from the end of the eighteeth century to about 1860. Blowpipes were also used in smithies.

Blowpipes were probably invented by the ancient Egyptians, for a depiction can be found in tomb walling paintings dating from 2,400 B.C.. Blowpipes were used by metal artisans and glass blowers. Swedish mineralogist Axel Fredrik Cronstedt (1722-1765) was the first to use the blowpipe, which was operated by mouth or with a bellows, during metallurgical experiments, specifically mineral analysis, in 1738. Metals display different identifying characteristics when placed under high heat, including fusibility, the color of the metal, the color of the flame, the types of vapors emitted, and the general nature of the metal itself. Cronstedt was able to use these characteristics to systematize his analysis of metals. He was also able to isolate a previously unknown element--nickel--all with the aid of his blowpipe.

Another Swede, Johan Gottlieb Gahn (1745-1818), made proficient use of the blowpipe in the late 1700s, particularly in the isolation of manganese in 1774. In 1801, Robert Hare (1781-1858), a chemist from Pennsylvania, invented the oxyhydrogen blowpipe, which incorporates both oxygen and hydrogen at the blowpipe tip. It is the most efficient type of blowpipe, producing the hottest flame possible. Blowpipes were used primarily until the 1860s and 1870s when other apparatus and methodologies replaced them in identifying metals. However, blowpipes are still used commercially in welding and metal cutting.