Scopolamine and Atropine Encyclopedia Article

Scopolamine and Atropine

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

Scopolamine and Atropine Encyclopedia Article.....1

Contents.....2

Scopolamine and Atropine.....3

Scopolamine and Atropine

Scopolamine (*d*-hyoscine) and attopine (*dl*-hyosycamine) is a tropane alkaloid found in the leaves and seeds of several plant species of the family Solanaceae, including deadly nightshade (*Atropa bella-donna*) and henbane (*Hyoscyamus niger*). Atropine, a major alkaloid in deadly nightshade, is also found in JIMSONWEED (*Datura stramonium*). In Europe, in centuries past, henbane was a component of socalled witches' brews or was applied as an ointment to mucous membranes. According to some folktales, the idea that witches fly on broomsticks was derived from the sensation of a flying experience after the use of such ointments.

Scopolamine and atropine have very similar actions. They act as competitive antagonists at both peripheral and central muscarinic cholinergic receptors. Scopolamine is still sometimes used clinically for the treatment of motion sickness. The compound also causes central nervous system depression, leading to drowsiness, amnesia, and fatigue. It also has some euphoric effects and abuse liability, but these are not considered to be of such magnitude to require control of the drug under the Controlled Substances Act. Attopine has fewer actions on the central nervous system than scopolamine. It is used to reduce actions at peripheral cholinergic structures—it produces decreased gastric and intestinal secretions as well as spasms and also results in pupillary dilation. It blocks the action of the vagus nerve that results in slowing of the heart. It is often used before operations to prevent unwanted reflex slowing of the heart beat.

High doses of either of these tropane alkaloids can cause confusion and delirium accompanied by decreased sweating, dry mouth, and dilated pupils.

Bibliography

BROWN, J. H., TAYLOR, P. (1996). Muscarinic receptor agonists and antagonists. In J. G. Hardman et al. (Eds.), *The pharmacological basis of therapeutics*, 9th ed. (141-160). New York: McGraw-Hill.

HOUGHTON, P. J., & BISSET, N. G. (1985). Drugs of ethno-origin. In D. C. Howell (Ed.), *Drugs in central nervous system disorders*. New York: Marcel Dekker.