

Oh Excellent Air Bag: Under the Influence of Nitrous Oxide, 1799–1920. Edited by Adam Green. Cambridge, United Kingdom, PDR Press, 2016. Pages: 144. Price: \$14.00.

Oh Excellent Air Bag presents a curated collection of 12 scientific and popular works about nitrous oxide, spanning 1799 to 1920. Voyeuristic readers will enjoy reading the frequently explicit experiences of inhaling nobles. Readers who prefer a coherent history with a focus on characters, causes, and effects may be less satisfied. That reader will savor the historian Mike Jay's engaging introduction, but will be disappointed that each work does not have its own commentary.

The story of nitrous oxide began when English chemist and political agitator Joseph Priestly (1733 to 1804), discovered “dephlogisticated nitrous air” and described it in Volume I of *Experiments and Observations on Different Kinds of Air* in 1774.¹ A dephlogisticated substance meant that it had undergone combustion and had released an imaginary substance called phlogiston.

In 1798, English chemist and polymath Sir Humphry Davy (1778 to 1829) started working at the Pneumatic Institution founded by English physician Thomas Beddoes (1760 to 1808). Davy's research led to the 580-page monograph, *Researches, Chemical and Philosophical: Chiefly Concerning Nitrous Oxide, or Dephlogisticated Nitrous Air, and its Respiration*, published in 1880.² Although *Oh Excellent Air Bag* includes well-chosen content from the monograph, the enthusiast may want to explore the rich corpus.

At the end of the day at the Pneumatic Institution, patients, friends, and colleagues would pass around the green silk bag of nitrous oxide. The book has monograph excerpts in which Davy's “crew” described their experiences with nitrous oxide. Glitterati included Robert Southey, Poet Laureate of the United Kingdom from 1813 to 1843; the author Samuel Taylor Coleridge; and Peter Roget, British physician and author of the eponymous thesaurus. These experiences quickly led to ubiquitous “laughing gas parties” and traveling laughing gas shows.

An excerpt of Benjamin Paul Blood's 37-page pamphlet published in 1874, *The Anesthetic Revelation and the Gist of Philosophy*,³ displays a spiritually elevated use of nitrous oxide. Blood “felt a powerful conviction that the secret of life had been briefly and tantalizingly laid bare under the influence.” Reminiscent of psychologist and LSD advocate Timothy Leary, Blood extols the depth of philosophical understanding available only in an altered state.

Written in 1914 after a personal experience, the short one-act play “OM! OM! OM! OM! OM! OM! OM!” describes a surgeon's experience of having a nitrous oxide anesthetic for surgery. It offers an accurate description of contemporary anesthetic practice, including the use of the patient's finger movement to monitor anesthetic depth, the anesthetist's finger on the pulse to monitor the circulation, the surgeon opining on anesthetic techniques, and the harms of a poor machine check. Production pressure is seen through the surgeon muttering about the delay while the anesthetist resuscitates the patient. The reader trying to diagnose the anesthetic problems will appreciate the imprecision of the available physiologic data.

Published in 1920, “The Chair of Metaphysics” is a sublime treatise on the metaphysics of anesthesia, the doctor-patient relationship, and the view of a romantic about the anesthetic progress of using local anesthetic instead of nitrous oxide for tooth removal.

Larger themes are expressed in the book. A section from Davy's monograph faithfully describes his addictive behavior from his self-experimentation with nitrous oxide. Acknowledging that he inhaled nitrous oxide three to five times a week to produce “a highly pleasurable thrilling,” Davy characterized his failing health due to the “constant labor of experimenting.” He went away for 33 days and was abstinent, but reunited with nitrous oxide upon his return.

The history of ethically complex self-experimentation includes researchers who infected themselves to study diseases and researchers who took study drugs to assess their effects. Addiction from self-experimentation is well known in medicine, most famously in the American surgeon William Halsted, who became addicted to cocaine after self-experimentation, and then addicted to the morphine used to treat his cocaine addiction.

Readers may wonder why nitrous oxide was not used for anesthetic purposes for many years, especially because Davy suggested in the monograph that nitrous oxide could be used to relieve the pain of surgery. Understanding this delay may help readers participate in more recent interplays of society and medicine, such a stem cell use, physician aid-in-dying, and xenotransplantation. For those interested, David A. E. Shephard, anesthesia historian and author of the fine book *From Craft to Specialty: A Medical and Social History of Anesthesia and Its Changing Role in Health Care*, analyzed why the social and medical climates were not right for the concept of surgical anesthesia.⁴

In the end, this well-chosen collection explores the charm of nitrous oxide with vibrancy, clarity, and honesty. For readers who want to learn more about the societal and medical roles of nitrous oxide, I suggest starting with the mendacious industry of painless dental extractions. Charlatans administered 100% nitrous oxide to capture this lucrative business,

even after it became clear that its use caused hypoxic brain damage leading to “insanity.”⁵

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(Accepted for publication December 5, 2017.)