

COTTON PROCESS ETHER AND ETHER ANALGESIA

JAMES H. COTTON, M.A., M.D.

TORONTO

Only a few years ago, it was customary for the anaesthetists to classify an ether good or bad according to its irritative properties. These were roughly estimated by the annoyance the anaesthetists had from the production of the mucons, and very little attention was paid to the amount of anaesthetic used. If a patient did not respond as rapidly as expected to its administration, he was blamed as being an alcoholic, or to be suffering from an immunity otherwise produced. Some few men still bore in mind the excessive secretions produced by the Clover-inhaler-closed-method and therefore believed that part of the mucons was produced by closing their methods of administration to too great an extent. Still others paid attention to the concentration of the vapour administered, and obtained better results by making this concentration as uniform as possible.

A series of analyses and administrations were undertaken relative to the establishment of a clear line of thought. The irritative impurities were divided into anterior nasal and due to alcohols or acetones; or naso-pharyngeal and due to aldehydes. Smells were for the most part due to the sulphur group.

It was found that in the same methods of administration the irritation to the mucous membrane did not, as first expected, vary with the amount of aldehyde present, but rather with the aldehyde percentage in the ether-vapour, air, mixture, which ether vapour concentration was necessary for maintenance of that patient in a state of anaesthesia. In other words, the actual irritation value of a said ether of standard aldehyde percentage will vary inversely with the anaesthetic power of that ether and directly with the immunity of the patient to ether anaesthesia.

In making these statements we are of course presupposing :

1. Patients do vary.
2. As also do anaesthetic powers of different ether cans.

In proof of the first, a large amount of ether was mixed and administered to different groups of patients. Five cases of a known alcoholic type were compared with five case (of similar weight) of a type which had not indulged. They were 30 to 35 years of age. The alcoholics required from 25% to 75% more ether than did the other variety. The age and weights propositions were considered to already have been sufficiently proved, although the variation is not exact.

In discussion of the second point, variation in anaesthetic powers of cans of ether, we enter upon a field of research which is almost unlimited, and come back again to our startling suggestion of a year ago—"the possibility of absolute ether not being an anaesthetic at all."

ANAESTHESIA

Before proceeding further we had better get down to an agreement concerning the state we are going to understand as anaesthesia. In my mind, anaesthesia may be defined as analgesia (blocking of sensory impulses from the periphery) plus narcosis (or sleep). When a patient shows a type of breathing, a certain amount of muscular relaxation and contracted and central pupils, is he surgically anaesthetized? How often has each one of us seen patients carried to this stage and still suffer from severe shock, and if such is the case, such patients are certainly not anaesthetized—they are narcotized. For years we have recognized anaesthesia, at least ether anaesthesia, by a series of symptoms and have neglected this fact.