

Interpreting each nervous system by the symptoms which characteristically arise from it, let us consider for a moment exactly what we would obtain if we had a pure nerve poison acting upon the nervous system complex.

1st. It is a well recognized fact that a nerve poison acting on any nervous system, first stimulates, then depresses, then kills.

2nd. The more specialized a nervous system is, the more sensitive it will be, i.e., the more easily it will be stimulated, depressed and killed.

3rd. The order of specialization of the various nervous systems are :

#### MOST SPECIALIZED.

Special Senses.  
Central Nervous System.  
Sympathetic Nervous System  
Autonomic Nervous System.  
Spinal Cord.

#### LEAST SPECIALIZED.

Are not all these stages and symptoms of nerve cell poisoning simply those of anaesthesia as quoted by text books, and if so, are these typical of anaesthesia proper? I would emphatically say no. They do not in any way fulfil the requirements of our definition, for the blocking of sensory nerve impulses is not taken into consideration, and the very basis of our teaching has, at least, been incorrect. We have been safeguarding the toxicity of ether and have been neglecting the shock of the operation. Nerve cell poisoning it must be remembered, is simply an additive factor to this shock.

#### ANAESTHETIC POWER AND VARIATIONS OCCURRING IN SAMPLES OF ETHER

Three years ago statistics affecting 150 abdominal cases of administration of a certain commercial ether were compared with another 150 cases where another make had been given. With the one ether (after induction) 4-8 ozs. were required per hour, and with the other 6-12 ozs. This was the first real record that an ether could vary from another, although by the aldehyde research it had appeared likely. The more powerful ether contained traces of gases as well as more alcohol. Increasing of the alcoholic content was tried in 10 cases with the weaker ether. The alcohol lowered the freezing point of exhaled moisture and prevented mask frosting and therefore retained ether and ether products on the mask longer, but the anaesthetic power was not varied. It was therefore reasonable to believe that there were some other factors besides alcohol that varied the anaesthetic power of an ether.

Research was then undertaken for the obtaining of absolute ether from commercial ethers already on the market. At that time the commercial ethers were in a far more impure state than they are now, as the fusel oil groups were always detectable. After one and one-half years of hard study and work, a product was obtained sufficiently chemically pure to make it desirable to try it on patients. It demonstrated a much milder odor than what we were accustomed to and in fact would have formed the basis for any perfume. On administration, what was our surprise and chagrin to find that it was not a good anaesthetic. A noted anaesthetist, Dr. Samuel Johnston, of Toronto, reported to me that he had used 15 ozs. of it without producing proper anaesthesia. The patient, a man middle-aged, was congested to blueness but no mucous was produced. There was a severe struggling stage with muscular rigidity and sensory reflex persisted and could not be got rid of. After using all on hand, viz 15 ozs. a few drops of Squibbs ether were administered, and the patient sank into a quiet anaesthesia without sensory reflex. Very little more Squibbs was required during the whole of the operation. Exces-