

**CONTRIBUTIONS TO
PRACTICAL MEDICINE
AND SURGERY**

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Contributions to practical medicine and surgery by James Arnott

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JAMES ARNOTT

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TO

PRACTICAL MEDICINE AND SURGERY.

BY

JAMES ARNOTT, M.D.,

LATE SUPERINTENDING SURGEON AT ST. HELENA.

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P R E F A C E .

THE purpose of the following observations is to remove certain misapprehensions that exist and to correct certain misstatements that have been published respecting the therapeutical subjects treated of. To render these subjects intelligible, a slight sketch of each is given, but for details the reader will be referred to the works originally giving an account of them. The opportunity, however, has been embraced of adding some new illustrative facts, partly gathered from my own experience, and partly from that of others. That the latter should sometimes be the experience of plans of treatment essentially the same as those I have introduced, though they have been otherwise denominated and other origins assigned to them, is, as respects the interests of humanity, a matter of perfect indifference.

Cheltenham, May 17th, 1864.

SECTION I.

ON INTENSE COLD, OR CONGELATION, AS A MEANS OF PRODUCING INSENSIBILITY IN SURGICAL OPERATIONS.

We learn from the works of surgical and other writers, that attempts had been made in remote times and by various measures to produce insensibility in operations; but that although this object was fulfilled to a certain extent by some of these measures, they were accompanied with too much hazard to be retained. Two means have lately been introduced which promise greater stability, namely, the inhaling of narcotic vapours, and the application of intense cold.

The production of insensibility by the inhalation of narcotic or intoxicating gases and vapours, is an invention which we owe to the United States of America. It was known, indeed, a hundred years before, that dogs which had been rendered insensible by immersion in the carbonic acid gas contained in the Grotto del Cane, near Naples, were generally resuscitated by being brought again into the open air; and Dr. Hickman, an English physician, had brought ridicule on himself by recommending that patients about to be operated upon should be subjected to a similar process. Sir Humphrey Davy, also, had, about the beginning of the

century, suggested that nitrous oxide might be inhaled for the same purpose ; but the suggestion attracted no attention. The idea seemed preposterous that any one would expose himself to what appeared so dangerous a proceeding to prevent the fleeting pain of a surgical operation. At last, after a lapse of forty years, Mr. Horace Wells, an American dentist, extracted a tooth from a patient rendered insensible by the gas suggested by Davy, and the practice became quickly established ; the vapours of sulphuric ether and chloroform being, however, substituted for the gas originally employed, because they are more conveniently administered.

A great benefit was conferred on mankind by the discovery of etherisation, although, like most other benefits, it has been greatly abused. Before its introduction the dread of pain sometimes prevented patients from submitting to operations necessary for their recovery, or submitting at least before the diseases requiring them were too far advanced. The prevention of pain, under every circumstance, was a great good, but unhappily it is not unmixed with evil. Hundreds of sudden deaths have occurred during the administration of chloroform ; and if reliable and extensive statistics are to be received as evidence, a much greater number have died afterwards in consequence of its injurious influence on the severer kinds of operation wounds.

The mortality from certain operations, occurring at most of the large British hospitals, which had kept a record of the cases, has been ascertained, and the number of deaths proceeding from these before the introduction of chloroform has been compared with the number occurring from the same operations during a few years after its introduction. The tables show a great increase of mortality during the latter period, amounting, as respects the principal amputations,

to more than 10 per cent., or, in other words, out of every ten deaths from amputation, one is to be attributed solely to the use of chloroform. Lithotomy on the adult is a more dangerous operation, and, as might therefore have been expected, the mortality from it was in a much increased proportion. Every large hospital showed an increase, excepting that at Glasgow, and this solitary exception proved the rule, for it was ascertained that about the time that chloroform was introduced, other changes were made in the Glasgow hospital very favourable to the recovery of patients. A comparison between the mortality now occurring and that which preceded the use of chloroform would be fallacious, as the structure, ventilation, and general management of hospitals has been much improved of late years, as well as the treatment of patients after operations.

As the long-continued prostration and vomiting that so often succeed the administration of chloroform (and which may cause the patient more suffering than the knife would have done) must obviously have an unfavourable effect on the condition of patients operated upon, and decrease their chance of recovery, and as the number of sudden deaths from it shows its virulence, no one reflecting on these circumstances could have been surprised at the result of the inquiry into its effects on those operations, which, being very dangerous under the most favourable circumstances, are rendered fatal by a very slight additional cause of constitutional disturbance. When the operation is not in itself dangerous, we should expect no appreciable increase of mortality from it in consequence of the use of chloroform, and the justness of the expectation would, I have no doubt, be confirmed by statistics.*

* See a series of papers by the writer on the Effect of Chloroform on the Severer Operations, in the *Medical Times and Gazette* for 1856-57.

Although the mode of administering the anæsthetic gases and vapours may, perhaps, in the course of time, be improved, it is not probable that an agent which at once and suddenly takes away both consciousness and sensibility can ever be rendered perfectly safe, and this hazard ought never to be lost sight of when using it. In England, however, it has not only been used too frequently and indiscriminately, but in too large doses. In the hospitals of Paris patients are rarely put completely under the influence of chloroform,* and I am not aware that any death has happened there, as has been the case in this country, from its use in scarifying an infiltrated perineum, pulling out a nail, or cutting off a wart. French surgeons deem it better that the pain from operations should only be partially removed, and the memory of it prevented, than that their patients should be subjected to the additional danger arising from the larger dose of chloroform required for complete insensibility; and in respect to many operations, they are not often prevented by its use being a little more troublesome than that of chloroform from having recourse to the other and safer mode of producing insensibility—refrigeration.

The refrigeration or intense cold produced by the mixture of ice with various salts, congeals the fluids in the part to which it is applied, and within certain limits, causes a more complete insensibility than chloroform. It is a perfectly safe agent. When congelation was first proposed, the objections made were, that it might destroy the vitality of the tissues; and, if they escaped destruction, that the reaction excited by it would interfere injuriously with the healing of wounds. Experience has shown that both of these objections were

* *Lancet*, 2nd January, 1864.