

ARE OPERATIONS UPON THE MAMMARY REGION SPECIALLY APT TO CAUSE RESPIRATORY FAILURE DURING ANÆSTHESIA?

An almost fatal ending to chloroform anæsthesia the other day set the writer thinking, as it usually does the man in whose case the cat hesitates as to which side of the fence to jump. The patient was a strong, well-developed young man, in whose case one would least expect trouble. The operation to be done was the excision of a small mammary tumor. The circumstances need not be noted except that though the conjunctival reflex was completely abolished, the patient winced perceptibly on the incision being made, but was not aware of having done so, when consciousness had returned, the knife being drawn outwards towards the axilla from a point $1\frac{1}{2}$ inches or so to the inner side of the nipple, past it for the same distance. Previously to this the heart had slowed too quickly and become somewhat irregular, but not alarmingly so. Now the respiration began to go wrong, each successive cycle being more shallow than the last, till it ceased altogether. Amyl nitrite, ether subcutaneously, depression of the head and vigorous artificial respiration induced the respiratory centre to resume its control of the situation in a few moments. Had the sensory impression made by the knife anything to do with the failure of respiration? The nervous mechanism involved is as follows:—The region of the incision is supplied in the male by the 4th intercostal nerve, with the 3rd and 5th, the nipple in the male being constantly in the 4th interspace. The twelve intercostal nerves communicate at the root of the ribs, on the inner or juxta-vertical end of the internal intercostal muscles, with the dorsal ganglia, usually twelve in number, of the sympathetic nervous system. These dorsal ganglia have two sets of branches in addition to that set, which strings them together into a chain, an external set communicating with the intercostal nerves, and an internal set. This internal set, usually twelve in number, is divided into two sets of six, the lower six going to form the three splanchnic nerves, and the upper six, which are very much smaller, going to communicate freely with the anterior and posterior pulmonary branches of the pneumo-gas-

trics, the two sets of interlacing fibres forming the anterior and posterior pulmonary plexuses. In particular, the internal branches from the 6th and 4th ganglia go to the posterior pulmonary plexus. The sympathetic ganglia reflexly affected by an incision at the nipple, would thus be the 3rd, 4th and 5th, probably all three, the pneumogastric nerves complete the nervous chain necessary for the transmission of impressions to the floor of the fourth ventricle, where the respiratory centre lies in close proximity to the pneumogastric nuclei, and between them. The vagi throughout their whole course contain both motor and sensory fibres, and though not essential to respiratory movements, have decided influence upon them through the nervous mechanism already indicated, as, for instance, is shown by the convulsive inspiratory effort produced by cold affusion of the abdominal or thoracic parietes (though it is reasonable to suppose that that reflex muscular act is partially due to impulses arising from motor ganglion cells other than those of the respiratory centre). I am of the impression that I have seen it stated as the result of clinical observation, that operations in the mammary region are specially liable to be reflexly injurious to the respiratory centre, as are those upon the rectum. The ordinary and well-understood danger of beginning an operation before anæsthesia is sufficiently profound, for fear of the paralysis of the vasomotor system which allows of "bleeding into the veins," is, of course, operative as well in mammary wounds as in any other, and all the more directly as filaments from some of the upper six sympathetic ganglia supply the thoracic aorta and its branches, which could very promptly and seriously affect arterial tension, especially in the vessels entering the neck, and so interfere to such an extent with the nutrition of the medullary centres as to leave them quite at the mercy of the poisonous anæsthetic.

THE SHURLY-GIBBES TREATMENT OF PHTHISIS.

The old search for the philosopher's stone was all in vain, and there are many pessimistic observers at the present day, who affirm that the search after a cure for tuberculosis will be equally in vain. As long, however, as this dire disease can