

ance, which with the morphine mixed with the *essence* of the vapour of the anaesthetic, produces a certain contraction of the stomach and causes vomiting, atropine has no effect. Although atropine materially lessens the nausea and vomiting due to the anaesthetic, it fails in a few cases, especially if repeated.

*Morphine-Scopolamine.* There can be no question that although morphine and atropine are commonly employed together, these drugs act better and more safely when combined with scopolamine. During the Franco-Prussian war this mixture was in extensive employment, but was discontinued, as the prognosis was bad owing to the frequency of respiratory collapse. This, however, was in the case of chloroform. The pharmacological law which recognizes that several drugs exert a synergic action in some directions, while they antagonize in others, holds with regard to these alkaloids. Thus, the respiratory centre, which is depressed by morphine is stimulated by the atropine bodies, while scopolamine acts concurrently with morphine in producing depression of the consciousness. Scopolamine is a dangerous drug when used by itself; its undesirable qualities are lessened or removed, however, when it is associated with morphine and atropine. The outstanding side-effects of these drugs are that they soothe the nervous system of the patient, and they lessen the amount of the general anaesthetic required. The disadvantages are that they disperse to some extent the stimulus of anaesthesia by interfering with pupillary afference, that prolonged induction of breathing is more shallow and the thoracic excursions are diminished, and they induce a prolonged and profound sleep consecutive to the operation, and thus, although highly beneficial to the patient, requires special and heedful watching, lest respiration of the head, falling back of the tongue, trickling of blood into, or accumulation of mucus about, the glottis, lead to interference with respiration. Their use presupposes that the patient has been carefully examined to ascertain if there is any contra-indication to the use of morphine. In local or spinal analgesia, the use of these drugs is obviously beneficial; but it needs caution in the case of the caudal injection, lest the action of the stovaine or novocain, travelling somewhat high, should interfere with the medullary centres already drugged by the morphine which has been injected.

*Omnipon.* The difficulty of standardizing the preparations of morphine has led to the adoption of a mixture of opium alkaloids with a morphine action, under the name of omnipon (pantopon). Dr. Salk has shown that the chlorides of these alkaloids are capable of being standardized, and so a definite dose with a known morphine effect can, it is asserted, be obtained. This substance is employed in a similar way to morphine, in association with other alkaloids.

The dangers of ether in the direction of pulmonary and renal sequelae, and those of chloroform in that of cardiac entrenchment, are diminished by using these alkaloids adjuvantly; and this is markedly so in the case of irritable heart conditions, such as different forms of tachycardia. The use of these alkaloids would increase the danger in all states in