

brain, by tumors of the membranes, aneurism of the vertebral artery and by disease of the bones forming the jugular foramen ; in their course in the neck or chest by trauma, tumors or enlarged glands. The sensory branches (the only ones with which we are at present concerned, as they are the ones which can affect the centre) are distributed as follows : the glosso-pharyngeal to the mucous membrane of the back of the tongue, the soft palate, tonsils, eustachian tube, middle ear and upper part of the pharynx. The pneumogastric, with the medullar part of the spinal accessory to the mucous membrane of external auditory meatus, the lower part of pharynx, the larynx, esophagus and stomach. Any disease of these mucous membranes may produce croup, but by far the most common source of the irritation is in the larynx. This is what might be expected, as the larynx is the most sensitive of mucous membranes. By this I mean that a slight irritation will produce more reflex action than in any other part of the body. The normal reflex action is cough, which effects the removal of the irritant. Croup is not the product of a normal reflex action, since it does not tend toward the preservation of the organism. It would appear then, that in croup, there is a lack of control of the higher centres over the respiratory centre

Treatment may be directed to any part of the nervous system involved in the reflex action, *i.e.*, mucous membrane, afferent nerve centre, higher centre, efferent nerve or muscle.

Speaking generally, we may say that it is the mucous membrane and the higher nervous centres that are at fault, and treatment will be most often directed to them—in the mucous membrane to removing the irritant, as foreign body in the ear, adenoids of pharynx, enlarged tonsils, or to laryngeal catarrh by means of sprays, etc., or the immediate application of hot or cold compresses, or to the stomach by giving emetics, or to the intestines by giving laxatives.

When the higher centres are at fault, treatment will be directed to the toning of the body in general, by the use of tonics, and particularly of the quality and quantity of the food.

The nerve trunks may be treated by removal of tumors or enlarged glands, and exceptionally by galvanism.

The muscles, by drugs which depress muscle, such as ipecac, or by the application of heat or cold.

As there are usually two elements in croup, the neurotic and the inflammatory, we may place it in a list of diseases bearing some indefinite relation to each other—with the purely neurotic at one end and the purely inflammatory at the other. These are epilepsy, hysteria, migraine, erythema, purpura, rheumatism, tonsillitis, croup, asthma, whooping cough, laryngitis, bronchitis, and pneumonia. To understand the relation of these diseases to each other would be to understand medicine.