cular innervation supplied by the small portion of the nerve lying between the point of division and the spinal cord was sufficient to carry on respiration.

It was found, however, that when these dogs were subjected to a general anesthetic these muscles were inadequate to maintain sufficient respiration to keep the dogs alive.

Section of the spinal cord in the neck was tried, and it was found that cutting of the cord one vertebra below the lowest point which was fatal did not visibly affect the respiration of the animal. In this case, just as in the case already mentioned, the administration of a general anesthetic was followed by death.

These experiments are of special value in view of the recent popularization of the operation of phrenicotomy or, as Doctor Lemon prefers, "exeresis of the phrenic nerve," and appear to establish the operation as one in which the risk of unfavorable results (apart from the condition of the lungs presumably already diseased) is not great. Their publication will be awaited with great interest.

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Neurosurgery

Tic Douloureux—Harvey Cushing once wrote that of five individuals who consulted him because of trigeminal neuralgia, four were sent by former patients, and one by a physician. Nor is his experience unusual, as the records of any neurosurgeon will show. Why should such a large proportion of patients afflicted with one of the most painful of diseases be referred by those who have been cured, and not by the doctor? A consideration of the natural history of tic douloureux shows that part, at least, of the blame can be placed on the peculiarities of the disease.

The first attack of pain is almost invariably located in the superior maxillary or the mandibular division of the nerve, and the patient naturally thinks that a diseased tooth is at fault. He has teeth extracted without relief. The physician who sees him at this stage should remember that pain in a peripheral branch of the fifth nerve, caused by disease of some organ of the head, is constant, does not stop at night, and is not made worse by external stimuli; while the pain of tic douloureux comes in flashes, is brought on by motion of the face, and is absent at night. If the physician advises extraction of more teeth or operations on nasal sinuses for tic douloureux, he loses that patient's confidence when the pain continues. Until the diagnosis is made, one method of treatment after another is tried by a series of advisers, medical or otherwise. Sooner or later, because of the intermittent character of the disease, the pain suddenly stops, and the patient believes that he is cured. After an interval of weeks or months a second attack begins, and the treatment which cured the first attack is without effect. Other therapies are tried, and again there is an interval of freedom. Before long the patient loses faith in all advisers, and he may refuse the proper treatment when the diagnosis is finally made. But when he meets a person who has been cured, and finds that his disease is exactly the same thing, he goes with confidence to the surgeon who treated that patient.

There are only two effective methods of treatment. Injection of alcohol into the involved division of the nerve gives relief for a period that averages from twelve to eighteen months. The affected area increases with succeeding attacks, the attacks last longer and the free intervals get shorter, it becomes increasingly difficult to inject the nerves because of formation of scar tissue, and eventually all patients come to operation. Division of the sensory root proximal to the Gasserian ganglion gives permanent relief from the pain. The dangers of this procedure are frequently put to the incapacitated sufferer on the basis of the high mortality of the early days of the operation. Many surgeons now have large series of cases with a mortality of less than 5 per cent. Considering the advanced age of most of these patients, such a mortality is low for an operation which assures freedom from unbearable pain.

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Gastro-intestinal Disorders

Duodenal Regurgitation—The importance of duodenal regurgitation is now being grasped by clinicians, and as it is being more thoroughly understood it is providing important help in solving some of the so-called "functional disorders" of the stomach that have for years been so baffling.

Boas, Ewald, Pavlov, and other physiologists have taught that acids in the stomach were neutralized by a "special gastric secretion," thus diluting, neutralizing and diminishing its secretion. Boldereff, a pupil of Pavlov, has shown that this influence is confined entirely to dilution by a "thin mucus," and therefore a negligible factor. Boldereff [1] in a recently published article gives a series of animal experimentations which show conclusively that the acidity of the stomach is self-regulatory by means of regurgitation of the alkaline duodenal contents. Reading of the article is very much worth while by those interested in applied physiology of the gastro-intestinal tract.

The stomach is the favorite seat of symptoms that are often reflex from some distant abdominal point. This makes it "the spokesman" for many conditions. The clinician, and especially the gastroenterologist, is successful largely in proportion