

bucket of sea water dashed over them before going in. Once in the water, and thoroughly wet, one need only keep moving, occasionally going under a wave, as long as the water is agreeable, and there is no sense of chilliness.

THE ORIGIN OF TETANUS.

The *Brain*, for January, 1880, contains an article by Surgeon Major J. J. L. Ratton, in which he enunciates the proposition that tetanus is a single disease; that it begins in persistent peripheral nerve irritation, and ends in organic molecular and functional disturbance of the medulla. The peripheral nerve irritation may or may not be traumatic, but is invariably the cause of the disease; so that the term idiopathic tetanus should be disused. The above conclusion is arrived at after exhaustive arguments have been adduced in proof of the five following points: 1. Peripheral nerve irritation is a cause of tetanus. 2. Peripheral nerve irritation is present in all cases of the disease. 3. It produces eventually the group of symptoms known as tetanus. 4. It explains the facts of the morbid anatomy of the disease. 5. It guides the treatment of the disease, and is proved by its success. The great bulk of cases of so-called idiopathic tetanus are either puerperal, menstrual, or the result of worms. That case of idiopathic tetanus in which peripheral nerve irritation could be excluded as the cause must be absolutely free from disease; the author cannot imagine that such a case ever existed. His view of the pathology of tetanus is that in the first stage of the disease (that of continued nerve irritation reacting upon the medulla and originating tonic spasms), up to a certain point there is no morbid change in the cord, and consequently there would be no evidence of disease. At this period division of the afferent nerve, by cutting off the source of irritation, arrests the symptoms. Afterward, continued irritation, exciting the reflex function to an inordinate degree, causes hyperæmia with molecular changes, and frequently inflammation. Here there may or may not be visible changes, but these will be hidden by molecular changes. Pathological facts fit in exactly with these views. Sometimes no changes are found, sometimes microscopical changes, and sometimes evidences of inflammation of the medulla and upper part of the cord. The treatment by amputation, or section of the afferent nerve is only efficient up to a certain point; when molecular changes have taken place in the medulla it is useless. Division of the nerve in the second stage may help, but does not cure the disease. Something more is wanted—some powerful wrench to the nervous system that will alter the morbid molecular arrangement of the parts, or act as a revulsive or counter-irritant. Stretching a large nerve trunk (e.g., the sciatic), and making traction on the cord, have been tried and followed by marked success. The drugs used, and which

have justified their use in this disease, are just those which are known to diminish the reflex irritability of the cord. The ice bag to the spine leeches, blisters, and plasters, to the same, all testify to the universal opinion acted upon, if not avowed. The tetanus is a disturbance disease of the reflex unctio nfe of the cord.

BILIOUS HEADACHES.

When patients are very bilious, and a conjunctiva yellow a good cholagogue purgative will excite the action of the liver, and drain away a copious quantity of bile. Form:

R. Hydr. subchlorid; gr. iij
Pil. colic. co., gr. vj
Ext. hyoscyami, gr. ij

Misce et divide in pilulas ij. To be taken at bed-time occasionally.

A mixture of soda and bismuth with sal volatile will be useful to relieve flatulency and acidity.

Form:

R. Sodæ bicarb.,
Bismuth subcarb.,
Pulv. acaciæ, aa 3j
Spt. amm. arom., 3ij
Syr. zingib., 3ij
Aquæ puræ, ad., 3 viij

Misce. Two tablespoonful three times a day, half hour before food.

If the headache is accompanied with atonic dyspepsia, and there is a clean tongue with weight and oppression at the epigastrium, the nitromuriatic acid will be found serviceable, before meals or three times a day. Form:

R. Tinc. nuc. vom., 3j
Acid. nitr. dil., 3j
Acid. hydrochl. dil., 3ij
Tinc. aurant., 3vj
Aquæ puræ, ad., 3 vj

Misce. A tablespoonful in a wineglassful of water three times a day.

If flatulence is very troublesome, bismuth with nux vomica, and, if there is constipation, a morning pill of aloes, nux vomica, and belladonna, or one consisting of aloes, capsicum, quinine, and ipecacuanha, are indicated. Forms:

R. Ext. aloes. barb., gr. ¼
Pulv. ipecac., gr. j
Pil. rhei comp., gr. iij

Misce et fiat pilula. To be taken daily before dinner.

R. Quinæ sulph.,
Ext. aloes aquos., aa gr. xij
Pulv. capsici,
Pulv. ipecac., aa gr. vj
Glycerini, q. s.

Ut fiant pilulæ xij. One to be taken daily before food at midday.

—Dr. Day on Headaches.