

being a spasmodic disease, in what manner does strychnine bring relief? How does it act as an anti-spasmodic? The most probable theory of the spasmodic state is that there is, at the beginning of the paroxysm, a super-abundant discharge of nerve force through the pneumogastric nerves which throws the bronchial muscles into contraction. But whatever the intimate nature of this condition may be it is evidence of nerve degradation or nerve weakness, and strychnine, by elevating the tone of these nerves, increases the controlling power of the same.

A stimulant dose of strychnine will depend on the age of the patient, and the length of time during which the drug has been given, although asthmatics, as a rule, will bear larger doses of strychnine than most other patients. Begin, as a rule, with  $\frac{1}{30}$  of a grain subcutaneously once a day, and gradually increase to  $\frac{1}{20}$  or to  $\frac{1}{10}$  of a grain, or more, if necessary, to impress the system with its full stimulant effects. Do not waste your time with small doses. To these amounts of strychnine small doses of from  $\frac{1}{400}$  to  $\frac{1}{600}$  of a grain of atropine may be added. It is best to administer these drugs in the evening, because asthma is nocturnal in its attacks, and your patient should be protected at night so that he can sleep. Additionally to its hypodermic use, this drug may be given in the following combination:

R.—Phenacetini, . . . . . gr. lxiv.  
 Quinæ sulph., . . . . . gr. xxxii.  
 Ammon. muriat., . . . . . 3 iss.  
 Pulv. capsici., . . . . . gr. iv.  
 Strychninæ sulph., . . . . . gr. 1½.

M.—Ft. capsulas, No. xxxii.

Sig.—One capsule four times a day.

Or in the following:

R.—Strychninæ sulph., . . . . . gr. 1½.  
 Syr. acid. hydriodici, . . . . .  
 Syr. hypophosph., . . . . . aa 3 iss.

Sig.—One teaspoonful four times daily.

In fact, light cases of asthma require no hypodermic injections, and do well enough where the above-named preparations are given. In severe cases it is, of course, advisable to add morphine or nitro-glycerine to the strychnine and atropine treatment, especially at the beginning. This treatment will break up the paroxysms, but even after they are broken, many old asthmatics still remain in the most abject misery. They may be com-

pelled to sit up day and night, panting for breath, and still labor under the impression that they are suffering from asthma. This is a mistake, it is not asthma, but the natural state of exhaustion which follows asthma. The respiratory movements as well as the whole nervous system are almost completely paralyzed. It is the disorder and chaos following the flood. The dyspnoea is not paroxysmal as before, but is felt now on the slightest exertion. This stage of the disease is most important from a therapeutic standpoint. Nitro-glycerine, lobelia, and other narcotics are of no use. Rest is essential now; they must do absolutely nothing; lie down if they can, or sit still. I have known patients who were breathing comfortably, bring on a most severe exhaustion-dyspnoea by merely undertaking to write a letter. During the rest-treatment give food of the most nourishing character, such as freshly expressed beef juice, a cupful a day, beef powder, beef, mutton, milk, oysters, clams, etc. In this stage strychnine is also of the greatest value; massage is also to be used in desperate cases. Electricity is also of great service, so are rarefied air and calisthenic exercises, obtained in the pneumatic cabinet-treatment. To procure sleep at night morphine may be added to the hypodermic injection of strychnine.

Success in treating asthma depends as much on the proper management of the individual as it does on the administration of drugs in the proper doses, and at the proper time. Principles can only be carried out by paying attention to details, hence each patient must be under the complete control of his physician in regard to his food, medicines, exercise, and everything else. This pertains particularly to old asthmatics who are constant sufferers. If the instruction which is given this evening is closely followed, there are very few cases which will not yield to it; and, as an illustration of what may be done in desperate cases, I will conclude by relating the condensed histories of the two following cases, the second of which is still under occasional observation:

CASE I.—A, aged 46, a sufferer from asthma for thirty-five years—the attacks becoming more frequent and severe during the last three years. For four weeks before coming under observation, he had been unable to lie down on account of his disease. The injection of strychnine, gr.  $\frac{1}{20}$  and