SPRUE TREATED BY EMETIN
HYDROCHLORID *

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In a report¹ to the Surgeon General of the Army dated Sept. 30, 1913, I noted six cases in which the patients were suffering from sprue, all of whom markedly improved under treatment by emetin hydrochlorid (alkaloid) given hypodermically in $\frac{1}{2}$ to 1 grain doses daily for five days. Since then I have observed two more cases and four have been reported to me by other medical officers, in which like results were obtained, making a total of twelve cases in which the patient's symptoms cleared up under the same treatment. One of these patients had concurrent entamebic dysentery. No case of sprue which has failed to respond to this treatment has come to my attention.

Permanent results were not observed because most of these patients returned to the United States shortly after receiving the treatment. In only one case have I been able to follow the course long enough to note permanent results.

The patient, a man, aged 40, had an unimportant previous history which was negative for lues. Wassermann and luetin reactions were negative. He was first taken ill in September, 1906, at which time he weighed 216 pounds. During the following seven years his bowels never acted normally, digestive disturbances were never absent, and vomiting was frequent and persistent. He was almost continually under treatment both in and out of hospital, usually improving slightly under hospital regimen only to relapse soon after leaving. He took various treatments, including yellow santonin, and diets of buttermilk, raw beef, strawberries, apples and bananas. In 1908, when his mouth became inflamed and tongue raw, his disease was for the first time positively diagnosed as sprue. At this time his sexual power began to wane and was completely lost two years later, and during the three years following he never had an erection or sexual intercourse. In 1912 he went to Spain where he took the strawberry-diet treatment. Then he went to the United States where he was further treated but without improvement, and on the advice of his family physician he returned to the Philippine Islands for the purpose of closing his business affairs, arriving here in May, 1913. At that time his weight was 106 pounds. He then took a course of treatment consisting of old yellow santonin (chromosantonin) in olive oil supplemented by buttermilk diet. There followed a period of slight improvement during which he gained 16 pounds, which was succeeded by a relapse in which he lost 5 pounds.

Sept. 18, 1913, the patient came under my care and the emetin treatment was begun. At this time he weighed 117 pounds, his face showed the bronzed patches on a pale skin so common in sprue. His body was emaciated and his feet were swollen, with slight pitting on pressure. His epigastrium was protuberant and he had a tight feeling of distress extending from the middle to the costal margins. His tongue was glazed, raw and beefy, with ulcers on the dorsum, edges and at the frenum. Emetin hydrochlorid in 1-grain doses was administered hypodermically once daily for five days. The day following the first injection improvement in the ulcers was noted and they continued to improve steadily until completely healed. While receiving the treatment he complained of the activity of his bowels, but one week after the first injection he said that he felt better than he had in a long time. Four months after treatment he weighed 156 pounds. His tongue was still raw but he said that it gave him no

subjective symptoms. His appetite and enjoyment of food were excellent. About this time his sexual power which had been lost for three years began to return. By the fifth month he had intercourse and by the sixth month he was normal sexually and has remained so. At the present time, the eleventh month after treatment, he is strong, presents a stout, muscular appearance, his complexion is clear, tongue clean, and there is no evidence of sprue remaining. Weight is 177 pounds. The consistent gain in weight and strength is the more remarkable because the patient under business pressure during the past ten months has been doing without luncheons and working steadily until late at night.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

CANTHARIDIN.—*Cantharidinum*.— $C_{10}H_{12}O_4$, the anhydride (lactone) of cantharidic acid.

Actions and Uses.—Preparations of cantharidin are used in place of corresponding preparations of cantharides and have the advantage of being cleanly and more uniform in strength. Cantharidin is recognized by the British, French and Swiss Pharmacopeias.

Dosage.—From 0.00025 to 0.0005 Gm. ($\frac{1}{240}$ to $\frac{1}{420}$ grain).

Cantharidin may be obtained from various species of *Cantharis* or of *Mylabris*. It may be prepared by digesting powdered cantharides with a mixture of concentrated sulphuric acid and acetic ether at ordinary temperature, then mixing with barium carbonate and exhausting the mixture with acetic ether. The solvent may be removed by distillation and the residue allowed then to stand for some time to allow the cantharidin to crystallize. The resulting crystals may be washed with petroleum benzin to remove the fat and then recrystallized from hot alcohol.

Cantharidin occurs as colorless glistening, inodorous crystals; 0.1 Gm. on incineration should leave no weighable residue. Cantharidin is very slightly soluble in water, petroleum benzin or alcohol (90 per cent.); more soluble in chloroform (1:65), in acetic ether (1:150), and in acetone (1:40), and is soluble also in fixed oils. A 0.1 per cent. solution in a fixed oil raises blisters when kept in contact with the skin. The melting point is from 210 to 212 C. Cantharidin slowly volatilizes at 100 C., more rapidly at higher temperatures. It is soluble in solution of sodium hydroxide, the solution depositing crystals of Cantharidin when acidified. Gently warmed with sulphuric acid it yields a colorless solution, from which it is separated unchanged when freely diluted with water.

BENZENE, MEDICINAL.—*Benzenum Medicinale*.—Medicinal Benzol.—Crystallizable Benzol.— C_6H_6 .—A liquid consisting almost entirely of benzene (cyclohexatriene).

Actions and Uses.—When swallowed, this drug usually produces a sensation of burning in the stomach. Benzene is a narcotic which, when swallowed or inhaled, produces vertigo, delirium and tonic convulsions followed by deep sleep; 30 c.c. (1 ounce) of nearly pure benzene has proved fatal. In some cases of chronic poisoning petechial spots, due to small hemorrhages, have been observed. These spots have been attributed to fatty degeneration of the blood-vessels. It produces leukocytosis followed by leukopenia with an occasional increased number of erythrocytes. Larger doses may produce an aplastic anemia. It has been stated that the aplastic anemia is due to a contamination of the drug with nitrobenzene or aniline. Benzene has been used occasionally on account of its narcotic properties and has also been used as an intestinal antiseptic. It is, however, rarely used for these purposes at the present time. It has been

* From the Board for the Study of Tropical Diseases, Manila, P. I.
1. Schmitter, Ferdinand: *Mil. Surg.*, April, 1914.