slowly disappears. Some authors have described a prompt local reaction in the lesions—a focal reaction—but we have not observed such here. Even when consideration is given to the fact that if heavy particles are allowed to settle not all of the dried material is used in the vaccine, it is still obvious that one can administer much larger doses of these vaccines than of bacterial vaccines.

This note is concerned solely with the preparation of the vaccine itself and its method of use. Our therapeutic experience has been too limited as yet for us to judge results. But up to date our results have certainly not been brilliant.

CHAPARRO AMARGOSA IN THE TREATMENT OF AMEBIC DYSENTERY

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In former reports¹ I outlined the treatment of twelve cases of amebic dysentery by the use of chaparro amargosa. As reported in a footnote,² there was a recurrence in Case 9, and the patient has continued to have trouble from time to time. This patient, I believe, has not been sufficiently treated; I have communicated with him by mail, and find that he keeps a supply of chaparro amargosa on hand, and when his trouble begins he treats himself, leaving off the treatment when his symptoms have subsided. So far as can be determined, all the other patients, including the patient in Case 10, have remained well for from two to four years.

Other patients have been treated, and the results have been no less satisfactory. The present brief report has to do with the results obtained in a single case; it seems worth while to put this case on record in that emetin (alkaloid) administered hypodermically every day for five months had not altered the course of the disease. The emetin used was obtained from several different sources, and was prepared by two or three drug firms, so that its potency can be taken for granted. The effect of chaparro amargosa in this case was not so immediate or so magical as that brought about in most of the other cases, but the improvement has been sufficiently rapid to justify the belief that the excessively chronic and obdurate cases of amebic dysentery can be controlled by the use of chaparro amargosa.

REPORT OF CASE

History.—W. D., an unmarried man of 56 of previous good health, developed diarrhea in April, 1914, eighteen months before he was seen. A few weeks later dysentery with the passage of a great deal of blood and mucus began. The frequency of the bowel movements has varied from five to thirty times in twenty-four hours, and at no time since the onset have the bowels moved less than five times. Abdominal pain, tenesmus, vomiting, slight fever, weakness and general malaise have been accompanying symptoms. The appetite has been fair at times and again it has been very poor. The patient's weight has decreased from 205 to 148.

During the first year, various remedies were used. In March, 1915, emetin was begun and was given hypodermically in one-half grain doses every day till the latter part of July. From August 1 to October 1 other drugs, including quinin

by rectum, were tried. From October 1 to November 10, emetin was again used, 1 grain being given every other day. The patient came to me Nov. 11, 1915, the day after his last dose of emetin. At that time the bowels were moving from fifteen to twenty times a day.

Physical Examination.—The loss of weight was obvious. The skin was flabby and the mucous membranes pale. General examination was negative. In the left iliac fossa the sigmoid was palpable as a tender elongated mass. A stool passed in the office was practically pure mucus and blood, and contained many active organisms of *Endamoeba histolytica* and *Cercomonas intestinalis*. A striking characteristic of the stool was the extreme tenacity of the mucus; it was possible to raise the entire stool on an ordinary toothpick.

Treatment and Course.—After a preliminary dose of Epsom salt, a glass of fresh infusion of chaparro amargosa was given by mouth four times a day and a quart of the same infusion was introduced into the rectum in the knee-chest posture once a day. For three or four days improvement was only slight. At this time I noticed under the microscope that all unattached amebas in a particle of stool, to which the infusion had been added, were killed, while those embedded in the tenacious mucus were still active. With the idea of removing as much of this mucus as possible from the intestine, a preliminary rectal irrigation of sodium bicarbonate, 1 ounce to the quart, was used; after this was expelled the usual injection was made. Under this plan blood and mucus no longer passed, but the patient continued to have from three to five soft movements a day. Calomel, one-tenth grain, was given every hour for ten hours after the method of Freund, and continued for several days; the bowels moved from one to three times a day, assumed a semisolid consistency and no longer contained the cercomonas. At the end of ten days the patient felt quite well; his appetite was ravenous; he could eat anything; he was having from one to three semisolid bowel movements a day; he had gained 10 pounds in weight and had improved in every way. He was seen a month later and his improvement had continued, despite the development of a very large ischiorectal abscess; bowel movements were normal in frequency and consistency.

COMMENT

I appreciate that it would be easy to criticize the dosage and particularly the duration of emetin treatment in this case, and to suggest that no conjunctive amebicidal irrigations were used. The fact apparently is that this case would not have responded to emetin if its administration had been differently carried out. Obstinate cases have been reported; for instance, Low³ as late as November, 1915, wrote:

Though practically all cases of amebic dysentery respond quickly to emetin treatment, there is a small residuum—in which there has been no doubt of the correctness of the diagnosis—which does not, symptoms continuing and amebas, vegetative and cystic, being still found in the stools. Such cases require further careful study to explain this anomaly.

No one who knows how prone this disease is to recur would be willing to contend that in the case here reported the patient is permanently cured. All that one can say is that he is clinically cured and that no amebas, vegetative or cystic, can be found in the stools.

My own experience with emetin has been quite limited; in no case of amebic dysentery have I felt the need of it. Chaparro amargosa, on the contrary, I have used repeatedly, and its effect has been unfailing. At the present time when the price of drugs is almost prohibitive and with prospects for still greater increases, it is pertinent to state that the supply of chaparro amargosa is well nigh inexhaustible.

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1. Nixon, P. I.: Chaparro Amargosa in the Treatment of Amebic Dysentery, THE JOURNAL A. M. A., May 16, 1914, p. 1530; id., Am. Jour. Trop. Dis. and Prev. Med., 1915, ii, 572.

2. Nixon, P. I.: Chaparro Amargosa in the Treatment of Amebic Dysentery, Am. Jour., Trop. Dis. and Prev. Med., 1915, ii, 572.

3. Low, G. C.: The Treatment of Amebic Dysentery, Brit. Med. Jour., Nov. 13, 1915, p. 714.