one case five—and are in a worse condition than they were before their operations. Moreover, operation is not without its danger to life and limb, and many fatal results have been reported. In seventeen years that I have been doing injections I have had no fatality nor lost a limb. Injection therapy is so simple and safe that scarifying the intima, as described by Mr. Riddock, seems to be unnecessary and even barbarous, though it may give excellent results when performed by his skilled hands. Nor is it necessary to pass a long catheter down a vein to enable a sclerosing fluid to reach its furthest point. If the injection is made into the highest part of the vein, simple massage will drive a wave of fluid down the main trunk, its branches, and also into the communicating veins. In this way the complete internal saphenous system can be soundly and lastingly sclerosed from the groin to the ankle.

But I will admit that in a small minority of cases injections seem to have little or no effect. These unfortunate people must submit to operation or wear stockings for the rest of their lives.—I am, etc.,

London, S.W.7.

R. SIMPSON HARVEY.

Balantidiasis

SIR,—I have read with considerable interest Dr. M. Shun-Shin's article on "Balantidial Dysentery in Rodriguez and its Treatment with Mercury Binioidide" (Sept. 13, p. 417). I should like to associate myself with the suggestion of Dr. Shun-Shin, and the following case report would not be out of place.

A Hindu male aged 40 consulted me on Oct. 9, 1947, for an attack of intractable diarrhoea of three months' duration, the number of motions being 20–30 per day. Stool examination revealed *Balantidium coli* and giardia cysts. He was put on emetine injections 1 gr. (65 mg.) daily, methylene blue 2 gr. (0.13 g.) in capsules twice a day, and mepacrine tablets, one tablet thrice daily for five days. With this treatment, though the giardia cysts disappeared, the balantidia continued to be present in highly motile forms. Then on the suggestion of Dr. Shun-Shin I gave an intramuscular injection of 1/6 gr. (11 mg.) of binioidide of mercury, and stool examination four days later revealed complete absence of the ciliates. In spite of negative stool findings another injection was repeated, and two subsequent stool examinations on different dates failed to show the balantidia. The patient at the time of reporting had been passing 2–3 normal motions per day and was feeling very well.

The application of hydrarg. binioidide in the treatment of balantidiasis has opened up new prospects of cure and eradication of an otherwise very intractable and persistent infection, and further reports in support from members of the profession would be welcome.—I am, etc.,

Santipur, West Bengal.

S. PRAMANIK.

Anticoagulants in Coronary Thrombosis

SIR,—The annotation on dicoumarol (Oct. 25, p. 662) and Dr. John T. MacLachlan's letter on heparin for coronary thrombosis (Nov. 1, p. 709) will, I fear, raise hopes which are doomed to bitter disillusionment. I have nothing but praise for the action of dicoumarol in peripheral phlebotrombosis and thrombophlebitis. Not one of my cases has developed an embolism, and I have a strong impression that the local manifestations subside more rapidly. Although there has been an alarming drop in the prothrombin index in one or two cases, there have been no untoward results.

With this experience of dicoumarol it was with high hopes that I commenced to use it in cases of coronary thrombosis a few months ago. The first two cases in which I used it had each had more than one lung infarct before treatment was started, and each had phlebotrombosis in one leg. Despite a satisfactory drop in the prothrombin index both patients developed further lung infarcts. One occurred when the index was 54%, the second while the index was rising over a period of three days from 43% to 74%. In each case the illness ran a particularly stormy course, and occasioned greater anxiety than the average patient with coronary thrombosis and lung infarction. In addition to these two cases two patients with hypertensive heart failure and lung infarct were given dicoumarol. One of them had two further infarcts during the treatment, the first on the day when his prothrombin index stood at 76%, the other with a prothrombin index of 43%. The second patient had an extension of thrombophlebitis during an intermission in her treatment, and had another lung infarct after the treatment was resumed.

The fifth patient to receive this drug completed my discomfiture and disillusionment. A woman aged 57 who suffered from hypertension with angina of effort was admitted to the ward for thiocyanate treatment. On the fourth day, when her blood pressure had fallen

from 220/110 to 180/94, she developed a severe attack of coronary thrombosis. Within half an hour of the onset of her pain she had profuse haemoptysis, attributed at the time to pulmonary infarction, though necropsy subsequently showed that it was due to pulmonary congestion. Thiocyanate was immediately discontinued and dicoumarol was started two days later. On the eighth day after her attack (sixth day of dicoumarol treatment) she seemed to be progressing satisfactorily, and her prothrombin index stood at 38%, when she suddenly had another attack of coronary thrombosis and died after a few hours. Necropsy showed the original thrombus in a coronary artery with widespread recent extension, which, according to the pathologist, had taken place a few hours before death.

This last case makes it clear that the blood coagulability is not the only factor which influences extension of a coronary thrombosis, perhaps not even the most important factor. Figures which I hope to publish in due course, from a series of 242 cases, indicate that the mortality from all causes within the first three months is closely related to the degree of shock accompanying the attack itself. In 154 cases there was no shock, though pain in many was severe; the mortality in the first month was nil and in the first three months was only 2.4%. In 88 cases with shock the mortality was 27% in the first month (29% at ages below 50, 19% at age 50 to 59, and 48% at ages over 60).

It would seem, therefore, that the most hopeful line of attack lies in the early and effective treatment of the initial shock. I am experimenting along these lines, making use of a slow intravenous glucose-saline drip to which an ampoule of "cardophyllin" (0.48 g.) is added by injection into the rubber tubing. Treatment has so far been confined to seriously shocked patients, and they have been given morphine when required for pain. While it is too early as yet to make any claims, the results so far are highly encouraging. There have been two dramatic recoveries in patients whom I regarded as moribund, and a third striking recovery in one whom I thought seriously ill though not hopeless. One of these three patients later developed an embolism at bifurcation of abdominal aorta.—I am, etc.,

Glasgow.

ALBERT A. FITZGERALD PEEL.

Knee-jerk Examination

SIR,—I have been using a simple method of eliciting the knee-jerk during the last few years. Recently other colleagues to whom I have demonstrated it have shown interest. Their interest has prompted me to describe it. In this method no percussion hammer is required.

The middle finger of the left hand is placed carefully over the patella tendon, and then the middle finger of the opposite hand is brought sharply down on to the dorsum of the left middle finger as in percussion elsewhere. A positive response is felt by a tightening of the tendon under the examining finger.—I am, etc.,

London, W.5.

J. J. SHIPMAN.

Yeast Extracts and Fat Absorption in Sprue

SIR,—I was interested to see the conclusions of Drs. D. A. K. Black and L. P. R. Fourman (Oct. 25, p. 645) regarding the effect of yeast extracts on fat absorption in sprue. Cases such as they referred to were in the Sprue Research Unit at Poona, where their fat balances and treatment were carried out under my direction. The biochemical estimations were performed by Drs. Black and Fourman as described by them. In a group of cases treated by yeast extract, examined statistically by Mr. Dilwater, the period of treatment was shown to coincide with improvement in fat absorption. These cases had been previously treated by parenteral liver extract in large doses, parenteral nicotinic acid, and riboflavin shortly before yeast extract was used. In my view this finding showed that the whole pattern of therapy may have decreased fat excretion, not the yeast extract alone, as has been concluded. For example, the possible necessity for previous or coincidental liver therapy for the reduction of fat excretion on yeast extract is not considered by them in their article.

The issue could be easily settled by the use of yeast extract alone. I would like to ask if Drs. Black and Fourman have investigated cases other than those on the Sprue Research Unit, as yeast extract alone was never used on these cases. I think it