Laboratories, Dr. Brian Scales), the usual therapeutic dose of 1.5 mg/kg, to our knowledge these are the highest values reported in man so far.

Possibly any beta-blocker may cause heart failure in a patient whose myocardial performance depends critically on sympathetic drive. However, practolol seems to be less dangerous than others in this respect, and in normal therapeutic doses causes only modest reduction of cardiac output. Practolol has been shown to possess some sympathomimetic activity. Its positive chronotropic activity may explain why the pulse rate fell relatively little and definite bradycardia did not occur in the case presented here. This may explain, partly at least, why the patient's heart condition did not deteriorate. Another possible explanation could be the less pronounced effect of practolol on myocardial contractility.

This case illustrates the low toxicity of practolol and its modest cardiodepressive effect which has proved valuable in the treatment of patients with supraventricular arrhythmias and rapid ventricular rates after myocardial infarction and cardiac surgery.

We are, etc.,

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1 Dr. J. Nimo and others, unpublished.

Intestinal Motility and Absorption

Sir,—I was interested in the study by Dr. J. Nimo and others (10 March, p. 587) demonstrating impaired absorption of paracetamol after the administration of propantheline and enhanced absorption after metoclopramide, especially as this apparently conflicts with a recent report from Helsinki where the absorption of digoxin is decreased by metoclopramide and increased by propantheline. Unfortunately the techniques of the two analyses are different and it is difficult to make valid comparisons. I am beginning to suspect that absorption from the gut of a normal person is decreased by drugs which either increase or decrease motility and that the individual's normal motility gives optimal absorption. In Dr. Nimo's study the highest plasma levels of paracetamol were in the convalescent volunteers. When they were given propantheline absorption of paracetamol decreased.

The second group of subjects was chosen because they were known to have abnormal and slow gastric emptying. When given metoclopramide intravenously absorption of paracetamol increased—I suspect because motility was returned towards normal.

In a study of the absorption of xylose in patients with normal gastrointestinal function and in patients with 20 mg of metoclopramide reduced absorption in eight out of 10 subjects, the mean decrease in xylose excretion in the urine being 15.9% (P < 0.0125). After an intravenous injection of 0.6 mg of atropine into 12 subjects who had a decreased absorption, the mean decrease in xylose excreted in the urine being 18.7% (P < 0.001). These studies, though crude and simple, tend to confirm that normal motility gives optimal absorption. Other results suggest, however, that in disease states these drugs, if they alter motility towards normal, enhance absorption. In one group of 11 myxoedematous patients the absorption of xylose was increased by metoclopramide, and in one patient with carcinoid syndrome 15 mg of propantheline given intramuscularly increased the xylose excretion in the urine from 0.86 to 1.35 g—I am, etc.,

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F. Harris
Children's Hospital, Sheffield

Ultrasonic Detection of Deep Vein Thrombosis

Sir,—As experienced users of the ultrasonic Doppler technique for the detection of deep vein thrombosis, who have performed tests on over 650 patients in the past 2½ years, we would like to make some comments on the paper by Mr. O. B. Williams and others (3 March, p. 517).

(1) The authors state that the high frequency (10 MHz) focused ultrasonic beam of the Parks Model 802 or 806 instrument has several advantages over "other models used in similar studies." Our experience of both the Park Model 806 and the Sonicaid Model D205 have led us to believe that the broad beam and lower frequency (2 MHz) of the Sonicaid is the more useful. Inclusion of the relevant vein in the broad beam is almost automatic if the Doppler signal from the adjacent artery is located. The test thus becomes much easier to perform for even the comparatively inexperienced user and false positive results arising from failure to include the vein in the beam are avoided. The greater penetration of the lower frequency of the ultrasound beam also enables the test to be performed routinely up to the level of the iliac veins.

(2) The results reported appear to contradict the author's own statement that "The experienced observer using the 806 directional machine can diagnose thrombotic lesions of the calf veins." It is our opinion that the existence of the presence of veins in the calf results in reflector blood through collateral pathways when individual veins in the calf are thrombosed. Consequently the flow at the level of the popliteal or femoral vein may be so sluggish an squeeze will not usually be affected by a single occluded calf vein. Only widespread occlusion of the calf veins or occlusion at the level of the popliteal vein can be detected with any certainty.—We are, etc.,

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1 Srinivasa, K. R., and Namakrayam, P. R., Indian Journal of Medical Research, 1971, 59, 1385.

Injury on the Football Field

Sir,—The present laws of rugby football permit the use of replacements in matches in which a national representative side is playing, "only when, in the opinion of a medical practitioner, the player is so injured that he should not continue playing in the match." Even at international level the emphasis seems to be whether the player can return, rather than whether it is advisable in the immediate and ultimate interest of the same player. In recent weeks, I have seen several match incidents in which players have returned to play and faced the likelihood of more grievous injury because substitutes are not yet permitted in country championship and other richly competitive games. The pressure is always on the injured player—self-applied, maybe, but inculcated by long tradition—to return to the field of play, given half a chance by medical