the mucous cells. Since none of the human evidence permits quantitative comparison of total and regional gastric secretion, it is premature to say whether gastric concentration and secretion of ^{99m}Tc is accomplished by a single mechanism or by two separate mechanisms. Until further evidence is available, the hypothesis that the parietal cells alone are involved seems to be debatable, at least in dogs and man, and the possible role of mucus-secreting cells in handling ^{99m}Tc should also be considered. Further studies are needed to pinpoint the exact cellular location of ^{99m}Tc in the stomachs of different species.

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SPLENIC UPTAKE OF ^{111}In

The statement by Merrick, et al (*1*) concerning ^{111}In uptake by the normal spleen deserves further comment. We were motivated by their assertion that "indium is always taken up by the normal spleen," which at first glance would appear to be at variance with our experience and that of other authors.

After intravenous injection of $^{111}InCl_3$ at acid pH, whole-body imaging at 24–72 hr normally displays the bone marrow and liver. The normal spleen is, in our experience, not visualized. Staub (*2*) reported similar experience; his additional data supported splenic localization of ^{111}In as evidence of extramedullary erythropoiesis.

Touya (*3*) has suggested that metabolically indium behaves like iron from the nonhemoglobin-oriented binding site. It would then be expected to follow the metabolic fate of such iron and be taken up by the liver and spleen. Organ distribution studies revealed 29% in the liver, 20% in bones, 14% in the skin, 14% in muscles, 5% in kidneys, and 3% in the spleen. Farrer (*4*) noted splenic uptake of indium to be significantly less than with technetium–sulfur colloid.

The observation by these authors of a low but definite uptake of ^{111}In by the spleen, in our judg-

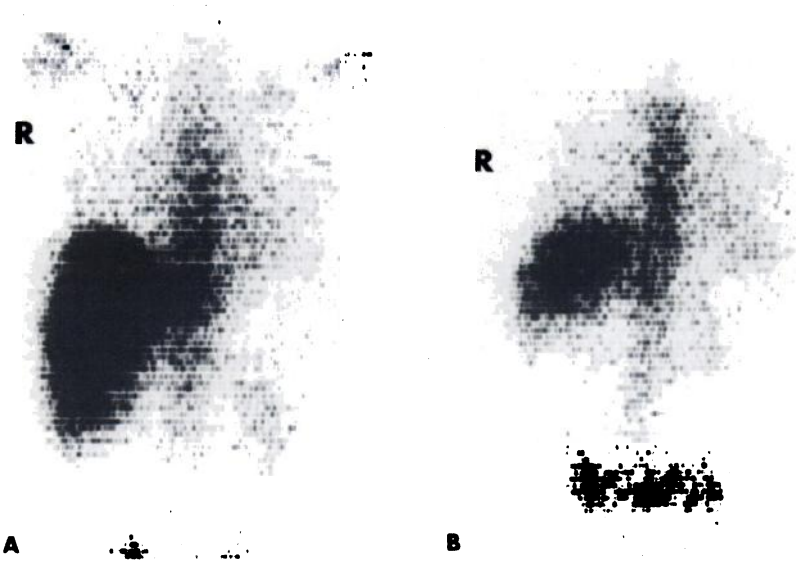

FIG. 1. Indium-111 posterior whole-body images. Imaging performed 24 hr after intravenous injection of 2 mCi of $^{111}InCl_3$ at acid pH. (A) Man (57 years old) with lymphosarcoma, 5 years postsplenectomy. Study felt to be normal except for hepatomegaly. (B) Woman (52 years old), control.

ment, reconciles the seemingly contradictory experiences we have referred to. Apparently, indium is taken up by the normal spleen but to an extent that does not allow visualization of this organ during whole-body imaging as usually performed. Figure 1 presents $^{111}InCl_3$ posterior whole-body images in two different patients: a control patient of normal health (studied as part of ongoing research), and a patient 5 years postsplenectomy. No significant difference in the amount of activity in the splenic area is visible.

Definite splenic visualization is probably an abnormal finding. However, the lack of correlation between the amount of indium in the spleen assessed scintigraphically and the presence of erythropoietic elements assessed histologically, noted by McNeil (*5*), as well as the lack of correlation between the ^{52}Fe and ^{111}In whole-body images in patients with red cell aplasia, noted by Merrick himself (*1*), indicate that the ultimate significance of ^{111}In splenic uptake remains to be established.

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THE AUTHORS' REPLY

In reply to the point made by Dr. Vieras, our experience in rats (*1*), mice, and humans (unpublished data) is that the specific activity of indium in the spleen is not significantly different from that found in the liver. We agree that it is not always possible to visualize the spleen as clearly as the liver, but factors such as levels of activity in the blood and the size of the patient are undoubtedly contributory factors.

We note that in the cases illustrated by Dr. Vieras, the kidneys are clearly demonstrated. In our experience this occurs only when the serum transferrin is almost fully saturated. Differences in the iron saturation of different groups of patients may therefore be a further factor contributing to the discrepancies noted between the two medical centers.

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PERFORMANCE OF SCINTILLATION CAMERAS

At the Society of Nuclear Medicine 22nd Annual Meeting in Philadelphia June 17–20 many people witnessed the most splendid nuclear medicine technical exhibit ever. However, it was not possible to see how well these most attractive-looking instruments actually perform, and during several sessions many practitioners expressed an interest in the performance specifications and in methods of checking the quality of instruments presently in the field.

We have been interested in the performance of nuclear instrumentation for some time, and prior to the meeting we contacted all manufacturers of scintillation cameras and asked them for their performance data. Because of the great interest in this kind of information expressed during the Philadelphia meeting, we think it should be made generally available to the nuclear medicine community. In addition to some standard information Table 1 gives the intrinsic resolution of each scintillation camera—that is, its spatial resolution without a collimator—as the width of the lead bars that can still be resolved and also as the full width at half-maximum (FWHM) of the line spread function. The spectral energy resolution refers to the FWHM of the photopeak. The methods for measuring the deadtime are still under investigation. The data submitted by some manufacturers refer to the detector proper while others refer to the complete system. A particular data stor-