Fig. 2. View near the summit of Natapoc Mountain showing the 20 to 30 ft of flat-lying volcanic sediments capping the mountain. Note large boulders, which are mostly of andesite, protruding from the sediments. The bouldery debris at the base of the cliff has weathered from the loosely cemented beds. This debris is confined to the upper slopes of the mountain, except where it has been washed into and down canyons, and comprises the till-like deposits.

boulders are loosely cemented in the volcanic beds. Capping the volcanics are the 100 ft of deposits that Parrott and Hougland identified as till (Fig. 2).

Within the till-like deposits and on the summit of the mountain are many large boulders of andesite, and at first glance a casual observer would certainly assume them to be erratics of glacial origin. At several places along the summit ridge, however, the bedrock, which consists of large andesite boulders cemented in a dark gray matrix of finer volcanic material, is exposed. Except for limited exposures, the loose bouldery debris almost completely hides the summit bedrock from view.

The fact that bedrock is found at the summit of the mountain indicates that the till-like deposits do not form a thick layer as heretofore suspected but, instead, are actually a thin veneer of debris derived from the disintegration of the underlying volcanic beds. The volcanic beds, therefore, must be 100 to 150 ft thick, extending upward from the unconformity to the summit of the mountain.

Deep gulleys and ravines have scored the slopes of the mountain, exposing accumulations of water-worn pebbles and boulders which are mostly of andesite. In general, the rock types on the surface of the ground have moderately rough surfaces, usually reddish-stained, but exposures reveal only moderate oxidation, the material being almost identical in appearance to the rocks in the volcanic beds. No facets or striations of probable glacial origin could be found anywhere in these accumulations or in the bouldery debris capping the mountain.

In addition, the till-like deposits contain fragments of rock that are closely similar to the fragments of rock in the volcanic beds in grain size and types and percentage of rock.

If the andesite rocks can be used as an indicator, there is no discernible difference in grain size, quantity, and weathering between the andesite rocks in the volcanic beds and the andesite rocks in the till-like deposits. From the foregoing discussion, it can be inferred that a glacial, or transported, origin for the deposits is improbable. The till-like deposits on Natapoc Mountain, therefore, are residual, having resulted from the weathering and disintegration of the flat-lying volcanic beds capping the mountain.

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Distribution of Y^{90} in Ascites Tumor Mice Following Intraperitoneal Administration of Yttrium Chloride*

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It has been previously reported from this laboratory that lanthanum chloride containing La^{140}, when injected *intraperitoneally* into normal and ascites tumor-bearing mice, is localized mainly in the peritoneal cavity (*1*). Autoradiograms demonstrated the deposition of La^{140} on the surface of the liver and of other intra-abdominal organs. Furthermore, inhibition of growth of ascites tumor following the intraperitoneal administration of $La^{140}Cl_3$-containing carrier was demonstrated (*2*).

The favorable radiation characteristics of the yttrium isotope Y^{90}, a pure β-emitter of 2.2 Mev with a 60-hr half-life, as well as the similarity of chemical behavior of yttrium to lanthanum and other rare-earth elements, suggested the study of Y^{90} under conditions similar to those carried out with lanthanum. The choice of yttrium for intracavitary application

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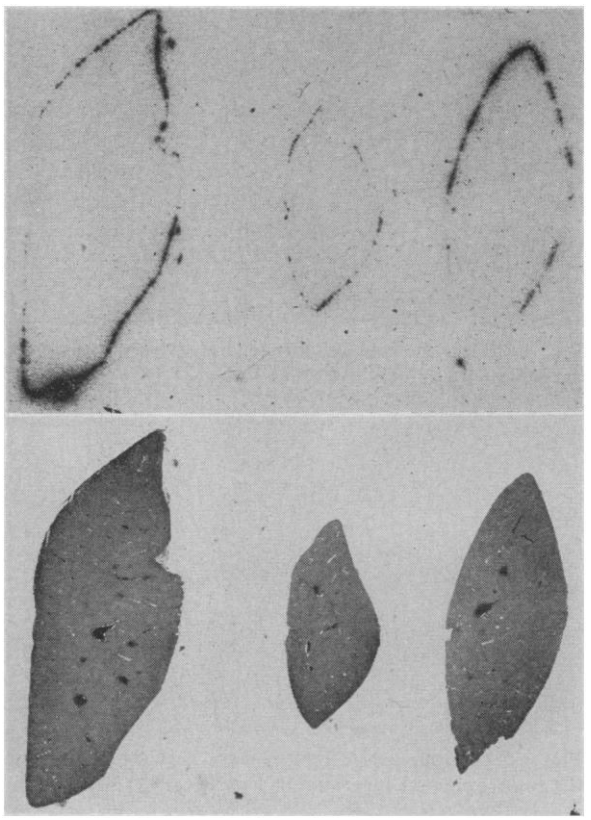

Fig. 1. Photomicrograph of sections and autoradiograms of liver of a mouse bearing ascites tumor following the intraperitoneal injection of 1.5 mg yttrium chloride containing 50 μc Y^{90}. The animal was sacrified 4 days after the injection.

was further indicated by virtue of its poor absorption after intraperitoneal injection (*3*).

Representative data on tissue distribution of intraperitoneally injected YCl_3 (*4*) are presented in Table 1. This table also demonstrates the influence of the carrier content on the distribution of Y^{90}. When the carrier content was 0.08 mg Y^{+++}, 1.4 percent of the administered Y^{90} was found in the skeleton 4 days after the injection. The skeletal uptake of Y^{90} was even less (0.02 percent of the administered Y^{90}) when the amount of yttrium carrier was 4.0 mg Y^{+++}. Autoradiograms of liver sections from animals injected with 1.5 mg of carrier yttrium show deposition of the radioisotope on the capsular surface of the liver only (Fig. 1), whereas diffuse uptake of Y^{90} by the liver is observed following the intraperitoneal injection of Y^{90} with a carrier content of 0.08 mg Y^{+++}. Thus, the autoradiograms further illustrate the influence of the added carrier upon the localization of intraperitoneally injected *ionized* Y^{90}.

Table 1. Distribution of yttrium following intraperitoneal injection of YCl_3 into Ehrlich ascites tumor mice. Activity: 50 μc Y^{90}. Y^{+++} in group A, 0.08 mg; in group B, 4.0 mg. The animals were inoculated with 0.1 ml ascites fluid. The yttrium chloride was injected 3 days later. The animals were sacrificed 4 days after the injection of Y^{90}.

Tissue	Percentage of injected dose per organ		Microcuries of Y^{90} per organ		Micrograms of Y per organ	
	A	B	A	B	A	B
Heart	0.082	0.014	0.04	0.007	0.066	0.56
Lung	.59	.053	.29	.027	.47	2.1
Muscle*	1.3	.091	.65	.046	1.04	3.6
Bone†	1.4	.018	.7	.009	1.1	0.72

* Muscle calculated as 45 percent of body weight.
† Bone calculated as 6 percent of body weight.

Distribution studies employing Y^{90} were also carried out in terminal cancer patients with pleural or peritoneal effusions. In the presence of added carrier, preferential localization of this isotope in the injected cavity has been demonstrated similar to that observed in ascites tumor mice. These data, as well as experiments on the localization of Y^{90}, when injected in unionized form, have been presented elsewhere (*5*).

References and Notes

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Succinic Dehydrogenase Inhibition in Gall-Bladder Epithelium and in Liver Cells of Pregnant Mouse

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Succinic dehydrogenase activity of gall-bladder epithelium has escaped any notice in previously published studies regarding the histochemical distribution of this essential enzyme of Krebs cycle in animals (*1–4*). Employing neotetrazolium as a histochemical indicator, I have demonstrated a fairly intense activity of succinic dehydrogenase in the gall-bladder epithelium of mouse, guinea pig, and man. The present investigation shows that succinic dehydrogenase activity is depressed in the gall-bladder epithelium and in the liver cells of the pregnant mouse.

Fifteen pregnant albino mice whose fetuses weighed 850 to 1175 mg and 15 nonpregnant littermates of them were used. Ten animals of both groups were killed after a 24-hr fasting period, and five after being fed half an hour before the decapitation. The gall bladder with a surrounding piece of liver from each pregnant animal was sectioned simultaneously with a corresponding control specimen with a freezing micro-