

THE RESPONSE OF SPRUE ANEMIA TO LIVER EXTRACT

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Since Minot's demonstration of the efficacy of liver and liver extracts in treating pernicious anemia the only available criterion for testing the potency of liver extracts has been the response of pernicious anemia patients to the extracts. Ashford has shown that certain sprue anemias respond to the liver extracts much as cases of pernicious anemias do.

We have been trying for some time to isolate the substance in liver responsible for the effects observed, and during the past summer an attempt was made to utilize the sprue anemias in the Presbyterian Hospital in San Juan, Porto Rico for testing various liver extracts. The patients, when clinical conditions permitted, were given trial extracts for ten-day periods and then fed to the known potent extract made under the direction of the Harvard Committee on Pernicious Anemia.

It had previously been shown that the material in liver active in pernicious anemia was soluble in water and in 70 per cent alcohol, and insoluble in absolute alcohol and ether. It is not precipitated by basic lead acetate, by saturated ammonium sulphate, nor by alkaline silver solutions, but is precipitated by phosphotungstic acid. During the past summer in San Juan it was possible to demonstrate that the active material is probably destroyed by mercury salts, that it is soluble in 90 per cent, and that it gives no biuret reaction. It is presumably an organic base and contains nitrogen.

Seven cases of sprue anemia treated with known potent liver extract gave very interesting responses. Three cases with red blood cell counts of about one million responded with a large and rapid formation of reticulocytes (young red blood cells) as cases of pernicious anemia do. The remaining four cases with red blood cell counts ranging from 1,700,000 to 2,300,000 gave either very weak responses or none at all. One of these cases was an extremely emaciated woman.

It appears then that not all cases of sprue respond to liver ex-

tract with a rise in reticulocytes. Practically all cases of pernicious anemia do.

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