We have had under observation a cystinuric whose daily cystine excretion (determined by the colorimetric method of Folin and Looney) varied from 1.0 to 1.8 gm., whose urine frequently contained large amounts of cystine crystals, and who occasionally passed cystine calculi. From this patient we collected by the use of pilocarpine and heat, 100 cc. of sweat in 50 minutes.* No cystine could be detected by the colorimetric method of Folin and Looney. 35 cc. of sweat were deproteinized by the use of heat and alumina cream and the filtrate was evaporated to dryness. The residue was extracted with dilute ammonium hydroxide and the extract treated with acetic acid. No cystine crystals were observed microscopically. Wollaston's test (formation of cystine hydrochloride crystals) was also negative.

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Factors in the Control of Ascites.

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Ascites associated with portal cirrhosis of the liver is ordinarily controlled in one of 3 ways: by parcentesis, by variations of the Talma-Morison operation, or by the diuretics. All 3 procedures were employed in this case-study—a man of 58 with a long alcoholic history; a slight jaundice, malaise and some edema of the legs during the past 7 months; and an ascites of 2 months' duration. Paracentesis was made 5 times in all in the 8 weeks previous to operation, from 9 to 14 liters of fluid being removed each time. Analyses were made of the fluid. Omentopexy was accomplished 10 weeks after the onset of the ascites. A large fan of the omentum was brought out through a mid-line incision in the upper abdomen, spread out and sewn in place in a prepared properitoneal bed. The peritoneum was closed about the omental stalk with wide-apart mattress sutures. Convalescence was uneventful. The diagnosis of portal cirrhosis was confirmed at operation.

The reaccumulation of fluid in the peritoneal cavity subsequent to various attempts to establish additional collaterals is a frequent ex-

* We are indebted to Dr. Robert Barney of the Department of Dermatology and Syphilology for the collection of the sample of sweat.

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perience. It occurred even in Morison's first case.[1] Thus paracentesis postoperatively may often be necessary. Here, however, we substituted the action of specific diuretics, especially novasurol (merbaphen) as investigated by Keith and Whelan,[2] in an attempt to solve this post-operative problem. A particular study of the action of the diuretics was made during a 17 day period commencing 23 days after the omentopexy.

The usual amount of phenolsulphonephthalein (6 mgm.) injected intraperitoneally at the time of a preoperative paracentesis was slowly excreted by the kidney, appearing in the urine during the second hour; but 13% being excreted in 4 hours. This was in accord with the small quantity of urine excreted in spite of a normal water intake.

During the 17 day period each specimen of urine was measured as voided and its chloride concentration determined. The rate of water and chloride excretion was calculated. During the entire period the patient was maintained on a low salt diet and limited fluid intake. Upon institution of this regimen there was a slight fall in the rate of chloride excretion, the water excretion remaining about the same. The preliminary injection of 0.5 cc. of novasurol resulted in a very slight increase in both rates. 1.2 cc. of novasurol the following day caused a definite but comparatively small increase in both rates. During this preliminary period the sodium chloride concentration of the urine varied between 0.75 and 1.2%.

Ammonium chloride, 2 gm. 4 times daily, over a period of 4 days resulted in a gradual rise of the chloride excretion and no marked change in the rate of water excretion. The sodium chloride concentration of the urine rose during this period from 0.65 to 1.63%. Novasurol, 2.0 cc., administered intravenously at the end of this 4 day period resulted in a striking increase of both water and chloride excretion.

Theophylline dethylenediamine (Euphyllin) administered intramuscularly or intravenously in 2.0 cc. doses had but little effect upon the rate of water and salt excretion, even when given during ammonium chloride administration. Increase of the dose to 3.0 cc. was likewise without marked action. Paracentesis in itself caused no increase in the rates; combined with Euphyllin there was a slight increase. Both the preoperative ascitic fluid and that following the diuretic study had a higher content of albuminous substance than that obtained during the period of ammonium chloride and diuretic

[1] Drummond and Morison, *Brit. Med. J.*, 1896, ii, 728.

[2] Keith and Whelan, *J. Clin. Invest.*, 1926, iii, 149.

administration. During the 17 day period the weight was reduced from 100.2 to 86.0 kg.

Upon cessation of the administration of the diuretics the ascites returned. It is questionable how great a collateral circulation was established by operation. However, the postoperative use of novasurol and ammonium chloride was found valuable as a substitute for the customary paracentesis.

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Vitamin Requirements of Nursing Young (Mus norvegicus albinus). V. Hypoglycemia in Nursing Young Suffering from Vitamin B Deficiency.*

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Recently Sure, Kik and Walker[1] have reported anhydremia associated with disturbance in hematopoietic function in nursing young of the albino rat suffering from vitamin B† deficiency. For the past six months we have been engaged in a study of the effect of a deficiency of the vitamin B complex† of the lactating mother on the total blood sugar content of the nursing young. Although the results of our work are not yet complete, we think it of interest at this time to report on one pathological litter compared with a control litter. The mother of the control litter received our vitamin B deficient ration No. 1009[2] and in addition a separate administration daily of 1000 mg. of Northwestern dehydrated yeast from the time the young were 5 days old. The maternal diet of the pathological litter consisted of the same ration No. 1009 but the mother received only 300 mgm. daily of the same yeast from the day the litter was born until the 21st day of lactation. At this time the first maintenance point of the litter was encountered. After several days slight growth followed, the daily dosage of yeast to the mother was

* Research Paper No. 67, Journal Series, University of Arkansas.

[1] Sure, B., Kik, M. C., and Walker, D. J., *Proc. Am. Soc. Biol. Chem.*, 1928, lxxviii, 18.

† The term "vitamin B" is used in this paper to signify the combination of the labile-antineuritic and the stable factors associated with the vitamin B complex, both of which are necessary for growth.

[2] Sure, B., *J. Biol. Chem.*, 1928, lxxvi, 676.