of this excess is evident only in fatigued muscle. It seems unlikely that the effect is due to decreased viscosity resulting from the increased temperature which occurs in tetanus or that there is a more rapid regeneration of phosphagen during tetanus.

Work is in progress to ascertain the chemical nature of the mediator and to investigate fatigue phenomena in the single fiber preparation.

8566 C

Amino Nitrogen of Nephritic Transudates.

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It is obvious that low plasma protein is one of the factors contributing to the production of edema. Possible mechanisms responsible for the hypoproteinemia of nephritis must therefore be given careful consideration. Besides the factor of proteinuria, a leak of protein through capillary walls should seem significant. Determinations have, however, not shown a great increase in the protein content of edema fluid.

It seemed possible, though, that significant amounts of protein might be lost through capillaries and then rapidly broken down by extravascular proteolysis. This question was studied by making simultaneous determinations of amino nitrogen, by the method of Folin,[1] of serum and transudates of patients with nephritis. (These determinations were not made in the postab-

TABLE I.
Amino Acid Nitrogen, mg. % in Serum and Transudates.

Nephritic Peritoneal fluid				Nephritic Pleural fluid		Non-nephritic Transudates	
Serum	Fluid	Serum	Fluid	Serum	Fluid	Serum	Fluid
4.4	5.6	4.5	4.5	4.1	5.2	4.5	5.2
7.4	5.3	5.3	4.7	4.4	5.8	4.1	3.1
9.1	6.2	5.5	5.2	5.9	5.2	3.9	2.9
6.8	4.2	5.8	5.0	7.9	5.5	5.2	5.8
7.7	4.4	5.9	4.2	7.6	5.0	5.3	5.2
4.9	4.5	6.0	5.0			5.7	4.4
		6.2	4.6				
		Ave. 6.1	4.9	Ave. 6.0	5.3	Ave. 5.0	4.6

[1] Danielson, Irvin G., *J. Biol. Chem.*, 1933, **101**, 505.

sorptive state and therefore the serum amino nitrogen is probably higher than the average for the 24-hour period.)

It will be seen from Table 1. that there was no evidence of rapid extravascular proteolysis.

8567 C

Glycogen Content of Freshwater Mussels During Prolonged Starvation.

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In view of the high glycogen content of the hepatopancreas of freshwater mussels,[1] the glycogen contained in the hepatopancreas and in the pedal muscle ("foot"), of 206 mussels representing 20 species, was determined during periods of starvation ranging from 2 to 536 days, to ascertain whether the utilization of stored glycogen by these invertebrates during starvation is comparable to the utilization of stored glycogen by mammals during periods of inanition.[2]

The mussels in this series were collected in September and October before the water became cold, from beds where colonies of healthy mussels were thriving, so that each animal was started in these starvation tests after a summer of normal feeding, which had prepared the animal presumably for the winter period of reduced activity. The individual mussels, between 4 and 7 years of age, were isolated either in glass hatchery jars or metal hatchery tanks, through which well-aerated water from deep wells was flowing. This water, which had been found previously to constitute a satisfactory environment for mussels as regards inorganic salts, pH, and dissolved gasses, contained no plankton, organic detritus, or organic salts. The recording thermograph showed that the water temperature fell from 18°C. in October to 11°C. in February, rising slowly to 22°C. in August and dropping to 18°C. again by October, *i.e.*, the animals under observation were subjected to a slowly changing temperature cycle comparable to that of their natural habitat.

The analyses were made by a modification of the Sahyun-Alsberg technique, using tissue frozen in carbon dioxide snow immediately

1 Calvin, D. B., PROC. SOC. EXP. BIOL. AND MED., 1931, **29**, 96.

2 Cori, C. F., *Physiol. Rev.*, 1931, **11**, 143.