the congestive heart failure patient the presence of edema when the sodium was injected made similar calculations impossible. (d) The Na^{22} was 50% excreted by the control subject in 12 days and had disappeared in 10 weeks. In the congestive heart failure only 45% had been excreted in 10 weeks.

Discussion. The urine concentration of sodium is somewhat dependent upon the blood concentration at the time the urine is being formed. The exact relationship is unknown. Sodium clearances were employed to express this relationship. It must be remembered, however, that the term "clearance" cannot be used in the strict sense for sodium since the blood is less than 1% cleared of sodium during a single passage through the kidney. These patients formed urine of similar maximal concentration throughout the experiment. In the control this was equal to the blood concentration. In the congestive heart failure case it was lower but approached the blood level as the latter declined. It appears that the sodium concentrating ability in the congestive heart failure patient is fixed and not related to the blood level, whereas marked variations were possible in the normal.

Summary. The use of a radioactive tracer, Na^{22}, on an apparently normal control and a congestive heart failure patient showed a marked difference in respect to the behavior of this substance. (1) The control patient excreted an average of 90 times as much sodium as the congestive heart failure patient when both were given salt *ad lib.* (2) A mercurial diuretic resulted in an increase in sodium excretion of 75-fold when the congestive heart failure patient was receiving salt *ad lib.* (3) A reduction of salt excretion occurred in both when salt intake was restricted. However, the use of the diuretic still resulted in a 7-fold increase in the output of sodium in the congestive heart failure patient. (4) Other significant findings are presented.

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Effect of Glycine Feeding on Renal Hemodynamics of the Rat.*

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The feeding of excess protein or its constituent amino acids has been found generally to increase the urea clearance in man[1,2] and in dog.[3,4] However, other than the studies of Van Slyke *et al.*,[3] little is known about the effect of these substances on the renal blood flow. Moreover, some investigators[5,6] have observed that the creatinine clearance did not rise after the ingestion of excess amino acids. It seemed important then, to study the effect of the common amino acid, glycine on the renal hemodynamics of the rat. This amino acid was employed because most investigators[2,4] are agreed that whatever effect protein does have on renal function, resides in its amino acid content which in turn almost invariably con-

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tains glycine.

Methods. Seventeen male, adult albino rats, approximately 6 months of age and previously subsisting on Purina Dog Chow were used for this study. Creatinine and hippurate clearances were done to ascertain the control rates of glomerular filtration and renal plasma flow respectively. Approximately one week later, each rat received 50 mg of glycine per 100 g of body weight by stomach tube and the clearance studies were repeated immediately afterwards. The methods and calculations used in determining the clearances have been reported in a previous study.[7] All clearances have been expressed in cc per hour per 100 g of body weight.

TABLE I.
The Effect of Glycine on Creatinine and Hippurate Clearance of the Rat.

	Before Glycine			After Glycine		
Rat	U.V.*	C.C.†	H.C.‡	U.V.	C.C.	H.C.
27	1.75	30.4	180	2.9	41.5	101
25	3.60	40.8	212	4.4	36.2	149
93	4.95	39.0	90	5.2	41.5	144
72	3.70	39.4	139	2.0	28.0	182
92	5.0	48.8	175	3.5	39.2	157
57	4.0	39.5	202	4.7	40.0	146
10	0.60	18.6	91	4.75	44.0	185
12	2.4	34.8	146	3.55	38.6	89
98	2.3	34.6	108	2.80	28.6	119
35	3.6	34.4	158	2.40	40.8	142
29	4.9	28.5	115	0.90	20.8	64
88	3.9	43.7	160	2.10	24.7	108
21	3.6	38.7	134	3.30	19.8	122
09	3.5	38.8	128	2.75	39.7	128
20	4.6	32.5	73	2.25	45.7	81
77	4.6	37.0	138	2.85	36.8	191
93	4.55	50.5	152	3.05	42.8	138
Av.	3.62	37.1	141	3.14	35.8	132

* U.V. equals urine volume in cc per hour.
† C.C. equals creatinine clearance in cc per 100 g per hr.
‡ H.C. equals hippurate clearance in cc per 100 g per hour.

Results. Inspection of Table I indicates that no significant change occurred in either the creatinine or hippurate clearance of the rat following the ingestion of glycine. Thus the average creatinine clearance was 37.1 cc per hour before and 35.8 cc per hour after the ingestion of glycine. Likewise, the average hippurate clearance was 141 cc per hour before and 132 cc per hour after glycine had been given. The average urine volume per hour was 3.62 cc before and 3.14 cc after ingestion of glycine. This average decrease of 13% is perhaps of questionable significance.

It should be noted that Pitts[5] also found no increase in the creatinine clearance of dogs after heavy glycine feeding, nor could Beyer *et al.*[6] observe an increase in the dog's creatinine clearance after feeding of such essential amino acids as tryptophane, leucine, isoleucine or valine. Finally it should be emphasized that the results of this present study only indicate that *excess* feeding of glycine appears to have no effect on renal hemodynamics. It is conceivable that were glycine to be reduced abnormally in the blood, changes in renal hemodynamics might occur.

Conclusion. The administration of glycine to the rat had no demonstrable effect on either its rate of glomerular filtration or its renal blood flow.

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Differentiation of Soy Bean Antitryptic Factors.

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In a preliminary report, the author called attention to a water-soluble antitryptic fraction of navy beans which can be readily precipitated with alcohol. Although a large