without any significant reaction. These particles occur in such small numbers that it is the opinion of Dr. Leroy Gardner and ourselves that they are insufficient to account for the marked enlargement of the spleen.

Summary. The injection of fine silicious particles directly into the splenic vein in the amounts described will produce a progressive cirrhosis of the liver. Secondary to this a state of splenic vein hypertension has been produced with a concomitant congestive splenomegaly.

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Reduction of Experimental Renal Hypertension by Pexis of Spleen or Omentum to the Kidney.

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The effect of the pexis between kidney and the spleen or omentum upon the blood pressure of dogs rendered hypertensive by Goldblatt's[1] method of renal constriction has been studied in this laboratory since 1936. Sixty-five dogs have been employed in the development of 2 suitable technics for establishing organ pexis to such ischemic kidneys. Seven animals survived the various surgical procedures for producing carotid loop,[2] hypertension[1] and the union of the organs.

Only 2 died as the result of the latter operation. Fifty-six dogs died or were discarded because of hemorrhage from the carotid loop employed for blood pressure determination, anesthetic deaths, uremia from infarction of the kidneys, distemper, and operative infection. Postoperative shock was insignificant following the pexis which was performed one to 3 months after the hypertension was established. Control operations in which the omentum and spleen were manipulated did not result in a significant prolonged fall in blood pressure.

The blood pressure of all of the 7 animals was lowered within 4 days following the union. Three of these, following the pexis of

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1 Goldblatt, Harry, *Experimental Hypertension Induced by Renal Ischemia,* The Harvey Lectures, 1937-38, Williams and Wilkins Co., Baltimore, 1938.

2 Van Leersum, E. C., *Arch. Ges. Physiol.,* 1911, **142**, 377.

TABLE I.
Effect of Pexis of Omentum or Spleen to Kidney on Blood Pressure of Hypertensive Dogs.

Type of Pexis and Dog No.	Blood Pressure, mm/Hg			Duration of Fall, weeks
	Initial	Following Constriction of Renal Arteries	Following Pexis	
Spleen-Kidney				
72	150	250-255	180	23*
75	145-150	230-245	135-190	6*
95	160-200	220-285	165-185	8†
116	130-150	220-250	155-175	5†
Omentum-Kidney				
37	155-140	240-280	175-185	5‡
41	165-170	230-250	165-180	4‡
74	170	220-240	170-180	1‡

*Sacrificed.
† Still living.
‡Blood pressure subsequently reached hypertensive level.

decapsulated renal surface with omentum, had temporary reversal of hypertension lasting 6-38 days. (Table I.) The other 4 animals in which the longitudinal cut surface of the spleen was attached to the renal surface or imbedded (Animals Nos. 95 and 116) in an incision through the long axis of the kidney down to the pelvis, showed a continuous decline in blood pressure toward normal, persisting 5 weeks to 6 months. (Table I.)

To verify the existence of a collateral circulation, India ink was injected into the splenic artery of an excised preparation consisting of an adherent kidney and spleen. Both renal arteries had been constricted for 2 months and the spleen joined to the kidney for one month. Ink particles were visible in the capillaries about the convoluted tubules but not in those of the glomeruli. In 2 other dogs, Nos. 72 and 74, there was direct communication between the capillaries of the renal parenchyma and the sinusoids in the connective tissue of the adhesions.

These data suggest that the hypertension produced by constriction of the renal arteries is lowered by pexis between the kidney and the omentum or the spleen. The reduction in blood pressure with the omental union was only temporary whereas the reduction with the splenic pexis was sustained. This difference may reflect the degree of effective collateral circulation.