3081

Further studies of arterial hypertension.

JAMES R. CASH.

[*From the Department of Pathology, Peking Union Medical College, Peking, China.*]

In a previous paper[1] the results of experiments were reported which showed that, in dogs, a marked rise of arterial blood pressure followed reductions of renal substance varying from 50 to 85 per cent. The injury to the kidney was, in most cases, caused by ligation of one renal artery alone, or combined with ligation of one or more branches of the opposite renal artery. When, however, the corresponding reduction of renal tissue was accomplished by unilateral nephrectomy, no rise in blood pressure occurred. In none of these experiments could evidence of renal insufficiency be obtained by examination of the blood for retention of urinary constituents; nor was there any striking alteration of the ability of the remaining functioning kidney-tissue to excrete phenolsulphonphthalein.

The suggestion, therefore, rises that the rise in blood pressure was occasioned by damaged renal tissue left within the body and,, if this is true, it becomes necessary to determine whether this pressor action is characteristic for renal tissue alone under these conditions or is common to all tissue undergoing similar degeneration.

The following five groups of experiments summarized in tabular form were performed in the attempt to throw light upon these two points.

The blood pressure was taken without anesthesia by the auscultotory method, using a regular Bowle's stethoscope and the specially constructed cuff of the Koll's apparatus.[2] This method does not appear as satisfactory as that devised by Kolls, but as the table shows, it seems to be relatively accurate. The Kolls method has so far been impracticable in China because of the deleterious effect of the climate on the thin rubber bulb.

From 10 to 30 blood pressure determinations were made before

[1] Cash, J. R., *J. H. H. Bull.*, 1924, xxxv, 168.

[2] Kolls, A. C., *J. Pharm. Exp. Ther.*, 1920, xv, 443.

TABLE I—SUMMARY.

Type of experiment.	No. exp'ts	Average blood pressure.		
		Before op'n	After operation.	
		Indirect	Indirect	Direct.
Bilateral ligation of renal arteries	5	140/70	200/136	162
Bilateral nephrectomy	2	126/70	138/64	93
Bilateral ligation of renal artery, vein, and ureter	*2	140/70	123/65	95
	**1	175/80	240/160	186
Splenic infarction	3	127/68	128/75	108
Splenic infarction combined with bilateral nephrectomy	4	135/70	125/68	72

*Renal capsules intact.
**One renal capsule torn. Escape of autolyzed kidney into peritoneal cavity.

any experimental procedures were undertaken. The blood pressure was measured both indirectly and directly, 24 to 48 hours after the operations were performed. There could be no question as to the accuracy of the direct determinations, which were done by cannulating the femoral artery and making a continuous graphic record for 5 minutes. Most of the dogs were too ill to take any notice of this procedure, and in those where only splenic infarction was done 1 per cent novocaine was used in isolating the artery.

After bilateral ligation of the renal arteries, there occurred in each of the five dogs a rise of systolic pressure, varying from 60 to 75 mm., and of diastolic pressure varying from 40 to 85 mm. of mercury.

In the second group of experiments it was found that no rise in pressure followed bilateral nephrectomy.

Complete isolation and destruction of both kidneys by separate ligation of artery, vein and ureter followed by stripping away the peritoneum covering of the kidney and mass-ligature of the renal pedicle caused no elevation of blood pressure. In one experiment where the capsule of one kidney was torn and the autolyzed renal tissue allowed to escape into the peritoneal cavity, a marked rise of both systolic and diastolic pressure occurred.

Infarction of the spleen by ligation of its arteries and by injection of insoluble starch in nephrectomized and non-nephrectomized dogs caused no rise of blood pressure.

These experiments seem to indicate clearly that renal tissue undergoing destruction within the body contains a substance which causes marked elevation of both systolic and diastolic pressures if allowed to escape into the general circulation. This pressor substance cannot be demonstrated in the spleen under the same conditions and thus far is apparently specific for the kidney.

3082

The development of flagellates in Chinese sandflies (phlebotomus) fed on hamsters infected with Leishmania donovani.

CHARLES W. YOUNG and MARSHALL HERTIG.

[*From the Department of Medicine, Peking Union Medical College, Peking, China.**]

Sandflies (Phlebotomus) have assumed a particularly important position in the study of the leishmaniases since Knowles, Napier and Smith[1] reported the appearance of herpetomonad flagellates in a large proportion of *Phlebotomus argentipes* fed on kala azar patients in Calcutta.

The present paper is a report of certain phases of studies undertaken on the sandflies of North China as possible transmitting agents of kala azar. Three species of Phlebotomus are known to us, namely, *Phlebotomus major* var. *chinensis* Newstead, and two unidentified species which we have designated *Phlebotomus "B"* and *"C"*. *Phlebotomus "B"* is apparently the unnamed species mentioned by Newstead.[2] These three species occur in markedly variable proportions in several regions near Peking and Hsüchowfu, Kiangsu.

In these studies (1) sandflies captured in houses of kala azar patients and elsewhere have been examined for flagellates. (2)

* Assisted by grants from the China Medical Board of the Rockefeller Foundation.

[1] Knowles, R., Napier, L. E., and Smith, R. O. A., *Ind. Med. Gaz.*, 1924, lix, 593.

[2] Newstead, R., *Bull. Ent. Res.*, 1916-17, vii, 191.