TABLE I. Distribution of Epinephrine and Norepinephrine in Human Plasma Fractions.

Plasma fractions	Epinephrine (μg/l of plasma) Chemical method Exp. 1*	Exp. 2†	Bioassay Exp. 3‡	Norepinephrine (μg/l of plasma) Chemical method Exp. 1§	Bioassay Exp. 2‡
Plasma control	2.1		Incr. contr.	5.4	Incr. contr.
Precipitate I	.2	.1	Inactive	.1	Inactive
II + III	.2	.2	"	.2	"
IV-1	.2	.2	"	.2	"
IV-4	.2	.6	"	.16	"
V	.9	1.0	.62 .8	.85	9.4 2.0‖
Supernatant fluid V	.16		Trace	1.2	2.38

* Resin-collected plasma (6 donors). ‖ Determined by chemical method.
† ACD- " " (10 ").
‡ Resin- " " (9 ").
§ ACD- " " (5 ") one wk old.

hydrolysis suggests the presence of a conjugated form, binding to albumin, which is released by acid hydrolysis.

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Device for Simultaneous Microscopic Observation of Peripheral and Visceral Circulation.* (23633)

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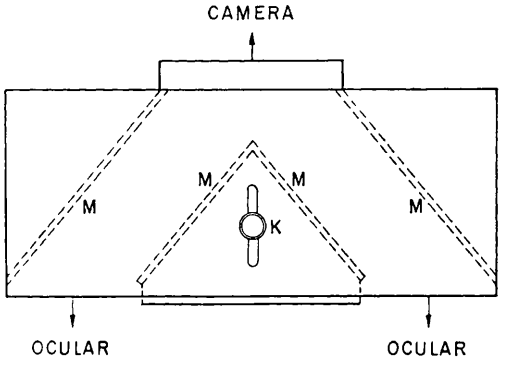
A method has been developed for simultaneous comparison and photographic recording of peripheral and visceral vascular areas in the same experimental animal.

Methods. The apparatus consists of a field-splitting device† (Fig. 1) which is placed over the oculars of 2 microscopes so adapted that the interocular distance is equal to the average distance between the cheek pouch and mesocecum of the hamster. The cheek pouch is pinned over a small transparent lucite block and prepared as a single membrane(1). The method for exposing and spanning the meso-



M = FRONT SURFACE MIRROR.
K = SET KNOB. CENTER PAIR OF MIRRORS MAY BE ADJUSTED UP OR DOWN.

FIG. 1. Field-splitting device.

* Aided by contract from Air Force Office of Scientific Research.

† Made to author's specifications by Mr. John B. Sanroma, Mass. Inst. Tech.

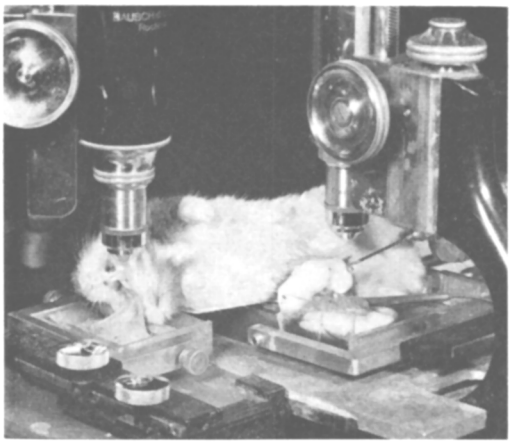


FIG. 2. Cheek pouch and mesoappendix preparation.

cecum is a modification of that introduced by Zweifach(2). Both vascular areas are manipulated by separate mechanical stages so that any adjustment of either field has no effect on the other (Fig. 2). Continuous temperature measurements of a thermoregulated mammalian Ringer irrigating solution are made by

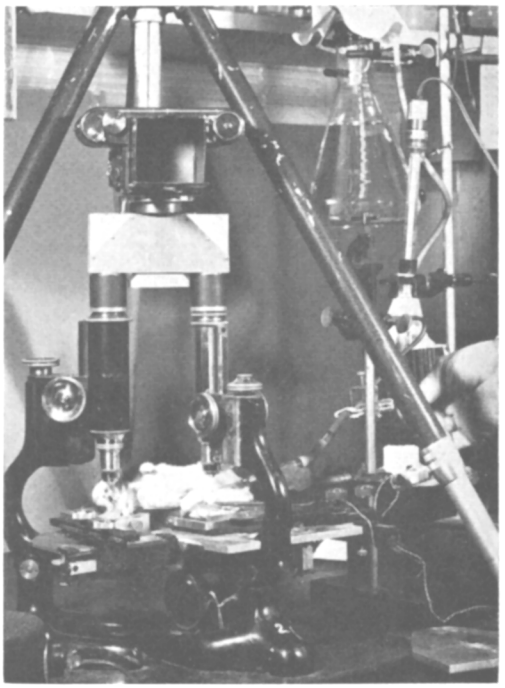


FIG. 3. Field-splitter and reflex camera set-up for photomicrography.

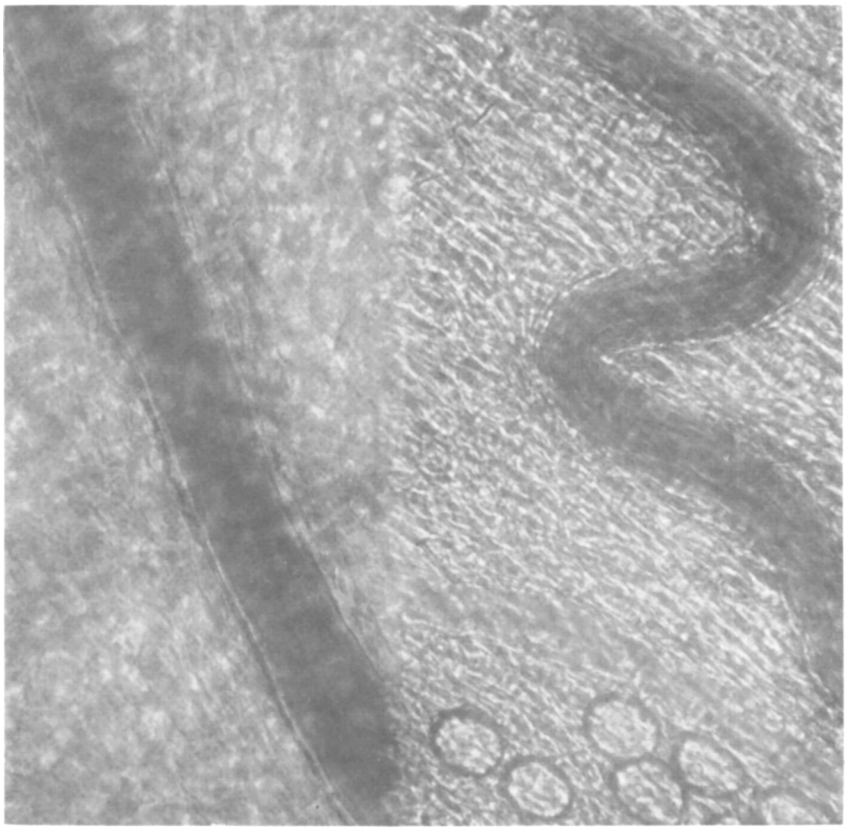


FIG. 4. Photomicrograph (147×). Check pouch vessel shown at left; mesenteric circulation at right.

placing a thermistor at the edge of the mesentery. Direct readings in degrees centigrade are indicated on a control box meter.‡

Still or cinephotomicrography is accomplished by placing a reflex camera above the field-splitter (Fig. 3). Images of both vascular beds are projected onto a ground glass screen from which observations are made and on which the photograph is composed before exposure. Fig. 4 is an example of the type of micrograph obtained.

For observations which need not be recorded photographically, the field-splitter is removed and a boom-mounted viewing box is centered above the microscope oculars. Two large, circular fields are thus projected side by side upon an opal glass screen. A mirror mounted above the screen at a 45 degree angle reflects the images so the observer may remain seated while viewing.

This method is currently being employed in a comparative study of vascular responses to shock and other stresses.

‡ Thermistor recording unit designed and built by Mr. John Degelman, Boston Univ.

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Quantification of Anaphylaxis in Mice. (23634)

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It has been previously shown that a marked hematocrit rise occurs more frequently than mortality during anaphylaxis in mice(1); hence, in all probability many sub-lethal reactions were recognized. It was the purpose of the present investigation to determine if the degree of hemoconcentration in anaphylaxis is a continuous quantitative function of challenge antigen concentration.

Methods. In this study 2 different sensitizing-challenge procedures were utilized. Typical signs of anaphylaxis as previously described(1,2) were observed in both procedures. In the first procedure female Swiss-Webster mice weighing 22-27 g were sensitized with 2 IP injections (given 4 days apart) of 0.25 ml alum precipitated bovine albumin* with *Hemophilus pertussis* vaccine† (containing 1.0 mg bovine albumin, 10^9 to 10^{10} pertussis vaccine cells, and 2.5% alum). Eight days after the second sensitizing injection, challenge was effected by a rapid IV injection into the caudal vein of a 0.25 ml aliquot containing graded quantities of bovine albumin and pertussis vaccine cells. Controls included mice treated as shown in Table I. In the second procedure, mice of the same strain, sex, and weight as above were sensitized with a 0.2 ml aliquot of bovine albumin—Freund's adjuvant‡ mixture (1 part bovine albumin in saline : 1 part Freund's adjuvant), 0.1 ml of which was injected subcutaneously into each inguinal region. The total sensitizing dose contained 0.1 mg bovine albumin. Twenty-one days later, challenge was effected by injecting 0.2 ml of varying concentrations of bovine albumin in saline into the caudal vein. Controls are indicated in Table II. Hematocrits were determined as previously described(1). Blood samples were drawn from the tails of mice 5 minutes before, and 5, 10, and 15 minutes after challenge. Hematocrit change was defined from the following formula:

$$\frac{\text{Avg post-challenge} - \text{Avg pre-challenge}}{\text{Avg pre-challenge}} \times 100 = \% \text{ hematocrit change.}$$

* Bovine serum albumin, 30% sterile, for use as diluent in Rh testing. Armour Labs.

† Pertussis vaccine (Whooping Cough bacterin), Wyeth Labs., Inc. 9 protective units/ml.

‡ Bacto adjuvant, complete (Freund), Difco Labs.