from small to large vertebrates(8,9), could be expected to exhibit a broad chemotropic sensitivity. Many species of *Aedes, Anopheles,* and other genera which feed predominantly on large mammals(10,11) would respond only to relatively high concentrations of carbon dioxide.

The observation that carbon dioxide specifically attracted female mosquitoes may be further evidence that this chemotropism is closely allied to search for a blood source.

The significance of host body temperature as an attracting force appears to be eliminated. However, dry ice materially reduces temperature and increases relative humidity in the immediate area of the tests. Therefore, in future studies, some other source of gas such as a portable carbon dioxide generator should be used to obviate these objections.

It would be of interest to test the attractiveness of carbon dioxide in areas inhabited by species such as *Aedes varipalpus, Aedes triseriatus,* or *Aedes albopictus.* Males of these species are frequently observed in the vicinity of animal hosts supposedly for the purpose of coming in proximity to females for mating. Demonstration that these males are attracted by carbon dioxide could serve as further evidence of the specificity of this chemotropism.

Summary. Carbon dioxide alone was a mosquito attractant in disease vector studies. Large numbers of female mosquitoes of several species were attracted into a trap baited with carbon dioxide. It consistently attracted more mosquitoes than calf or chicken baits. This chemotropism may be a major factor in controlling host selection by various species of mosquitoes.

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Effect of ACTH and Cortisone on Homogenous Kidney Transplants. (18680)

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The reported efficacy of ACTH and cortisone in states of hypersensitivity(1) and in antigen-antibody reactions(2) has led to a reconsideration of the possibility of influencing the biological incompatibility of homogenous renal transplants(3-5) by the use of these agents.

Method. Sterile technic was employed. A donor kidney was obtained from a healthy heparinized dog. The pedicle was cleared of extravascular tissue and its vessels anastomosed to the common carotid artery and external jugular vein of the recipient dog by direct end-to-end union with continuous everting sutures, or by the use of vitallium tubes(6). Anastomosis by direct suture required 20-25 minutes; by the use of vitallium tubes, less than 10 minutes. After fixing the kidney to prevent rotation, the ureter was brought out through a stab wound in the opposite side of the neck with care to avoid kinking. Urine collection was facilitated by

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TABLE I. Comparative Analytic Data from Bladder and Transplant Urines.

Exp. No.	Anastomosis	Therapy	Day	Specific gravity B*	Specific gravity T*	pH B	pH T	Alb. B	Alb. T	Cells B	Cells T	Urea (mg %) B	Urea (mg %) T	Chlorides (mg %) B	Chlorides (mg %) T	Eosinophil count Pre-therapy	Eosinophil count During therapy
I	Direct	ACTH	1	1.014	1.016	7	6	0	0	—	—	418	202.4				
			2	1.020	1.020	6.5	5	0	+	—	—	750	693				
			5	1.012	1.010	7	7	0	+	—	RBC	73.7	114.4	750	665		
II	,,	ACTH	1	1.015	1.015	6	6	0	0	—	—	1364	299	150	315	1940	141
			2	1.020	1.022	6	7	0	0	—	—	1170	169	50	45		100
			4	1.026	1.024	5	6.5	0	+	—	RBC	1056	209	65	125		194
III	,,	Cortisone	1	1.014	1.012	7	6.5	0	+	—	RBC	—	—	—	—	1600	150
IV	Vit. tube	,,	1	1.012	1.016	7	6.5	0	0	—	—	—	—	—	—	2000	100
			2	1.014	1.012	7	7	0	0	—	—	325	410	80	75		134
V	,, ,,	,,	1	1.022	1.020	6	7	0	0	—	RBC	—	—	—	—	1800	120

* B—Bladder urine. T—Transplant urine.

placing into the exteriorized ureter a polyethylene catheter attached to a sterile condom from which urine samples were taken for analysis. Five animals were so prepared. All received 300,000 units of aqueous procaine penicillin once daily. Cortisone (75 mg) was given intramuscularly to three dogs three times a day. The other 2 dogs received 100 mg of ACTH intramuscularly daily for several days and then 50 mg daily. Eosinophil counts(7) were done once daily. Daily analytic results of urine obtained from the transplant were compared with those of urine taken simultaneously from the bladder by suprapubic aspiration with a sterile needle. When the transplanted kidney ceased excreting urine, it was removed for microscopic examination.

Results. Adequate response to the hormones was indicated by the marked eosinopenia observed in all instances (Table I).

All the transplanted kidneys functioned immediately upon completion of the anastomosis. A daily intravenous injection of 200 cc of 25% glucose in distilled water, or of 300-500 cc of 5% glucose in distilled water produced a marked diuresis from the transplanted kidney as well as from the recipient's own kidneys. During the first hour after each infusion 50-125 cc of urine was excreted by the transplanted kidney. Comparison of the urine analyses showed close correlation of specific gravity and pH, but not of urea or chloride content.

The appearance of albumin, and later of blood, in the urine from the transplanted ureter signified impending functional collapse of the transplant. When the transplant failed to respond to the infusion it was considered functionless, and was then removed. Functional survival of the transplants averaged 60 hours (range 24 to 132 hours). This was no better than that reported by other investigators without the use of ACTH or cortisone (3,4). At the time of excision of the transplant, the anastomoses were patent and free of clot or thrombus formation.

The excised transplanted kidney was always swollen. There was edema of the ureters,

7. Hume, D. M. Personal communication.

and the perirenal fat was indurated. There was no evidence of sepsis.

Sections of the transplant were fixed immediately after removal. In three of the transplants microscopy showed various stages of tubular degeneration. One showed definite necrosis of tubular epithelium and tubular casts. The others showed slight glomerular and peri-glomerular lymphocytic infiltration, but no tubular degeneration. The perirenal fat showed lymphocytic infiltration and red cell extravasation. The pelves showed subacute inflammation.

Conclusions. The length of survival or function of homogenous kidney transplants is not improved by the administration of ACTH or cortisone.

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Effect of Proteinuria on Localization of Radiomercury in Rat Kidney.* (18681)

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It was shown by the use of radiomercury-labeled diuretics that these compounds are selectively concentrated in the kidneys of patients(1) and in the kidneys of normal dogs(2). In our previous work(3) it was found that proteinuria, produced by the intraperitoneal administration of human albumin to rats prior to the intravenous administration of a mercurial diuretic, sharply reduced renal toxicity. This effect was attributed to an inhibition of mercurial absorption when the tubules were saturated with protein. At the same time it was found that the simultaneous administration of human albumin and the mercurial diuretic resulted in enhanced toxicity. The latter effect was attributed to more rapid mercurial absorption, concomitant with rapid absorption of protein during the tubular loading phase.

The present study was undertaken in order to determine whether proteinuria was associated with an actual reduction in the amount of mercury that localized in the kidney, thus diminishing the dose to which the renal epithelium was subjected. The use of radioactive mercury with the technic of radioautography offered the possibility of a simple, semi-quantitative evaluation of the localization phenomenon.

Methods and materials. This study was performed with 24 female rats of the Slonaker strain, each weighing about 150 g, with little variation. The radiomercury used was obtained from the Oak Ridge National Laboratory and was certified to be more than 99% Hg^{203}. The radiomercury was administered in the form of mercuric chloride, 10 mg Hg per ml distilled water, at pH 5.4. In the control group of 12 animals, each received 3 intraperitoneal injections of 16 ml 0.85% sodium chloride solution, the first at 9:30 A.M., and the second at 4:30 P.M. on the first day, and the third at 9:30 A.M. on the second day. In the experimental group, each animal received similar injections on the same schedule, but each injection was composed of 6% bovine albumin in 0.85% sodium chloride solution. From previous experiments(4) it is

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