

ABSOLUTE AMOUNTS (μ GM.) OF ADRENALINE AND NORADRENALINE IN ANIMAL TISSUES

Species	Age	No. of expts.	Suprarenals		Retro-peritoneal tissue	
			Adrenaline	Noradrenaline	Adrenaline	Noradrenaline
Rabbit	<i>In utero</i>	6	0	4	0	4
	1 hr.	8	4	5	0	12
	1 day	4	0	7	0	5
	2 days	10	5	5	0	5
	4 days	6	10	2	0	2
	Adult	8	92	0	0	0
Dog	1 day	1	10	10	0	15
	6 days	1	45	20	0	12
	9 days	1	50	25	0	10
	Adult	1	560	260	0	0
Cat	<i>In utero</i>	4	3	10	0	3
	12 hr.	4	16	70	0	25
	1 day	2	20	70	0	10
	3 days	2	40	60	0	5
	Adult	10	120	80	0	0
Guinea pig	<i>In utero</i>	2	0	5	0	10
	1 hr.	2	5	5	0	10
	2 days	4	20	5	0	3
	Adult	8	71	0	0	0

this amount exceeds that found in the suprarenal glands. These additional chromaffin structures must therefore perform some autonomic function early in life—perhaps the maintenance of blood pressure. As the animal grows older and the suprarenal medulla matures, so the amine content of this accessory tissue declines. On the other hand, extracts of the carotid bodies and of the aortic bodies of rabbits, cats and guinea pigs did not yield any sympathomimetic material. This may not be so surprising, since chromaffin tissue is not necessary for the production of adrenaline and noradrenaline. Precursors of noradrenaline, such as hydroxytyramine and dihydroxyphenylalanine, were not detected in any of the above extracts.

D. M. SHEPHERD
G. B. WEST

Department of Pharmacology and Therapeutics,
University of St. Andrews Medical School,
Dundee.
Dec. 20.

- ¹ Fulk, M. E., and Macleod, J. J. R., *Amer. J. Physiol.*, **40**, 21 (1916).
² Wislocki, G. B., *Bull. Johns Hopkins Hosp.*, **33**, 359 (1922).
³ Mulon, P., *Arch. gen. med.*, **2**, 3265 (1904).
⁴ West, G. B., Shepherd, D. M., and Hunter, R. B., *Lancet*, ii, 966 (1951).

encephalogram was taken (lead 2) and their plasma and blood volumes were determined after a fast of 12 hr., using Evans blue according to the method of Wang and Hegsted².

The mean blood pressure of the controls was 119 ± 3.5 mm. mercury at the beginning of the experiment; after twelve days the value was practically unchanged (121 ± 4 mm. mercury). In the cortisone-treated rats the blood pressure increased from the initial value of 115 ± 3 mm. mercury to 140 ± 5 mm. after twelve days of treatment. The difference is statistically significant ($P < 0.01$). No definite modification of the electroencephalogram was found, except a significant increase of the heart-rate in the cortisone group (440 ± 15 beats per min. against 340 ± 11 in the controls).

At the end of the experiment, plasma and blood volumes were respectively 3.6 ± 0.2 c.c. and 6.8 ± 0.3 c.c. in the controls and 3.5 ± 0.4 c.c. and 6.6 ± 0.8 c.c. in the cortisone-treated animals (values referred to 100 gm. final weight). The weight of the heart and of the kidney was increased in the cortisone group, when referred to 100 gm. final body-weight, but remained unchanged when referred to 100 gm. initial body-weight. Histological examinations failed to show arterial lesions in the kidneys and the heart in either of the two groups.

Our observations suggest that large doses of cortisone given to normal rats fed on a balanced diet and with a normal intake of sodium chloride have a hypertensive effect, which seems to be accompanied by an increase of the heart-rate. It is not associated with changes of the blood volumes or with vascular lesions in the kidney.

C. BERTAZZOLI
C. CAVALLERO
G. SALA

Institute of Anatomical Pathology
and the Medical Clinic,
University of Milan,
and
Farmitalia Research Laboratories,
Milan.
Jan. 12.

- ¹ Friedman, M., and Freed, S. C., *Proc. Soc. Exp. Biol. and Med.*, **70**, 670 (1949).
² Wang, C. F., and Hegsted, D. M., *Amer. J. Physiol.*, **156**, 227 (1949).

A Unit of Wave-number

A YEAR ago¹, names suggested for the unit 'cm.⁻¹' were permicron, Rydberg and Balmer. In a recent review² of "Modern Interferometers", Prof. W. F. Meggers advocates 'Kayser'. Where early workers used the reciprocal of the wave-length in air, H. Kayser recognized that in complex spectra the wave-length in vacuum is essential, and so gave to 'cm.⁻¹' its proper definition. Moreover, he compiled the tables still used in the conversion. These arguments are convincing; the more so as Rydberg is commemorated by a constant and Balmer by a series, while *K* is here a more convenient symbol than *R*.

C. CANDLER

Canyng Hall,
University, Bristol 8.
April 3.

- ¹ Bayliss, N. S., *Nature*, **167**, 367 (1951). Candler, C., *Nature*, **167**, 649 (1951). Bladergroen, W., *Nature*, **167**, 1075 (1951).
² Meggers, W. F., *J. Opt. Soc. Amer.*, **41**, 106 (1951).

Effect of Cortisone on the Blood Pressure of Normal Rats

THE importance of the adrenal cortex in the regulation of the blood pressure has recently been emphasized by several authors. The effect of prolonged treatment with high doses of cortisone on the rat's blood pressure was therefore investigated.

Seventy-two male white rats weighing 144 ± 3 gm. were fed on a synthetic diet containing 30 per cent proteins, 56 per cent carbohydrates, 10 per cent lipids, 4 per cent McCollum salt mixture and supplements of vitamins and lipotropic factors; water was allowed *ad libitum*. Forty-six rats were injected subcutaneously with 5 mgm. of cortisone acetate ('Cortone', Merck) daily for twelve days; 26 controls received injections of 0.9 per cent sodium chloride solution. The blood pressure was measured by the method of Friedman and Freed¹; in ten experimental animals and in ten controls the electro-