

similar to that conventionally present in certain human infections (the streptococcoses especially) which have prominently in their background the phenomena of hypersensitiveness. In the pathogenesis of the latter a primary endothelial damage making for increased permeability appears to be of significance.

Histamine, the substance par excellence from which one might expect such effects, produces it only in relatively high concentrations; and only in the unbuffered form. As far as we are aware such vascular changes have not been described for protein cleavage products of relatively simple constitution; particularly in rather high dilution and of a neutral pH. In a physiological sense the allylamine is to be looked on as histamine-like, at least in its vascular effects. But it is decidedly more active in this respect, even under pH conditions prevailing in the host where histamine has exhibited no effect as far as the studies have progressed.

### 8264 C

#### A Sex Difference in Gonad-Stimulating Potency of Young Gonadectomized Rats.

KATHRYN F. STEIN. (Introduced by A. E. Adams.)

*From the Zoology Department, Mount Holyoke College.*

Clark<sup>1</sup> recently reported that in rats gonadectomized at 1 or 2 days of age and assayed 16 to 18 days later the gonad-stimulating potency of the pituitaries was approximately the same in both sexes. Since in normal control animals of that age (17 to 20 days) the sex-stimulating potency of the female pituitary exceeds that of the male, she concluded that castration at 1 or 2 days produced a relatively greater increase in gonadotropic potency than spaying. The following series of preliminary experiments indicates that if gonadectomy is delayed for a week the pituitary of the castrated male does not gain as much in gonadotropic potency as that of the spayed female in the same period of time.

Littermate male and female rats 7 to 9 days of age were gonadectomized and after 17 to 19 days their pituitaries were injected into immature female rats 23 to 26 days of age. Normal males and females, littermates of the gonadectomized series, served as control donors. A host series consisted of 4 littermate females. Three

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<sup>1</sup> Clark, H. M., *Anat. Rec.*, 1935, **61**, 193.

donor glands were weighed, minced, and injected by means of a fine glass pipette, according to the method of Smith and Engle,<sup>2</sup> into the leg muscle of each host. The hosts, and usually a control littermate, were killed 4 days after injection and the ovaries weighed and fixed. Various factors intervened to prevent obtaining complete results for all series. Donors often were not born in adequate numbers of both sexes, maternal cannibalism caused blanks in several series, and in a few cases fatalities occurred among prospective or actual hosts. Out of 14 series, full results were obtained in only 4, and the present report is limited to these with the exception of case 14 for which the hosts, although not littermates, were of the same age and very uniform in body weight. Table I gives the data for the 5 series. The inclusion of all fragmentary series with the present data would not change the general results.

TABLE I.

No.	Wt. of injected pituitaries in mg.				Actual wt. of host ovaries in mg.				Wt. of host ovaries in mg. / Body wt. in gm. × 100					
	♂	♀	♂*	♀†	Control	♂	♀	♂*	♀†	Control	♂	♀	♂*	♀†
4	6.6	6.8	9.8	8.8	14.3	9.5	10.4	28.8	44.2	27.5	20.2	21.2	63.6	86.7
11	5.6	6.8	7.5	9.4	10.0	15.4	14.3	9.4	41.2	40.0	44.0	37.6	30.3	125.0
14	5.6	7.0	8.4	9.2	12.2	14.0	14.0	30.2	77.2	22.2	26.6	25.7	50.3	138.0
17	5.0	6.0	9.2	9.0	14.0	16.2	23.4	17.2	30.6	25.9	29.3	43.3	31.3	61.2
19	5.3	6.0	8.4	8.0		14.8	15.6	14.0	48.8		29.6	29.7	34.1	90.4
Av.	5.6	6.5	8.7	8.9	12.6	13.98	15.5	19.9	48.5	28.9	29.9	31.5	42.9	100.7

\*Castrated. †Spayed.

Both in percent of body weight and in actual weight the ovaries of animals injected with pituitaries of spayed females were heavier than those injected with glands of castrated males. This is true for each individual series as well as for the average of all series. The averages also show greater potency in glands of normal females than in those of normal males. The ovaries of animals injected with normal male glands are on the average 90.2% as heavy as those of animals receiving normal female glands. As a figure for donors of 25 to 27 days this is comparable to one of 88.3% similarly obtained from Clark's<sup>3</sup> data for 20- to 25-day donors.

Clark<sup>1</sup> suggests that castration of the male at 1 to 2 days of age withdraws a much larger amount of sex hormone from the animal than spaying of a female of the same age. In the male, gonadectomy then removes a more powerful influence and allows the pituitary to

<sup>2</sup> Smith, P. E., and Engle, E. T., *Am. J. Anat.*, 1927, **40**, 159.

<sup>3</sup> Clark, H. M., *Anat. Rec.*, 1935, **61**, 175.

show a greater increase in potency relative to that exhibited by the spayed female. The apparent reversal of this condition if gonadectomy is delayed for one week may perhaps indicate that during the first week of postnatal life the testis exerts upon the pituitary a definitive influence the effects of which are not eradicated by a 17- to 19-day absence of the gonad. In a recent abstract Pfeiffer<sup>4</sup> reports a sex differentiation in the hypophysis which is not present at birth but which once established cannot readily be altered. Perhaps a critical stage in the period of differentiation is the first week after birth. Histological work and further experiments are planned for a study of this problem.

## 8265 C

### Amount of Progestin in Corpora Lutea of Cows.

GIMBO G. KIMURA. (Introduced by George W. Corner.)

*From the Department of Anatomy, The University of Rochester, School of Medicine and Dentistry, Rochester, N. Y.*

Practically all work dealing with the corpus luteum hormone, progestin, has been done with material derived from the pig, and most of the determinations of yield which give us information as to the amount of hormone in the raw material have been made on that species. A few investigators however have used corpora lutea of the cow and this source appears to be more convenient in some parts of the world. It may be of interest, therefore, to report the result of a brief study of the amounts of progestin found in cows' corpora lutea.

Three different collections of fresh cows' corpora lutea were made at different times: 2 from the local slaughter houses and one from the Wilson Laboratories of Chicago. In selecting the corpora lutea from the freshly slaughtered cattle, only the active glands of pregnant and non-pregnant cows were used, including the first stage in which the color is pale and stained with blood, and later stages marked by a cream color changing to bright yellow, and finally to reddish orange. Glands showing signs of retrogression, "corpora rubra," identified as being bright red to brown in color, and toughened by the presence of much connective tissue, were all discarded.

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<sup>4</sup> Pfeiffer, C. A., Advance Abstract Sheet, Wist. Inst. Bibl. Ser.; July 15, 1935, 6.