The presence of the growth-promoting principle in the globulin group is in accord with the observation of Evans that alkaline extractives are most efficient. Further after the addition of twenty volumes of water to a paste of ground glands, the growth effect appears to be in the water-insoluble fraction which further suggests the adsorption with or identity of this substance with the globulin and water-insoluble group of proteins. It is interesting that the growth-promoting principle is destroyed by about the same temperature as that at which this group of proteins is denatured.

SUMMARY

(1) The growth-promoting principle of the anterior hypophysis may be salted out of the more crude extracts by means of sodium sulphate.

(2) Attempts to further fractionate the globulin group of proteins in which the growth-promoting principle comes down resulted in a division of the substances between the fractions.

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SPECIAL ARTICLES

THE FIRST SPECTRUM OF XENON[1]

A NEW list of estimated intensities and measured wave-lengths has been obtained for about 300 lines characterizing the first spectrum of xenon. The observed wave-lengths range from 3442.7A in the ultra-violet to 9923.10A in the infra-red. Spectral terms which account for practically all of these lines have been identified. The largest term is $^1S_0$ (p_0) representing the normal state of the neutral atom. The value of this term in xenon is 97835; from it the ionization potential of 12.078 volts is derived. In the notation introduced by Paschen in his analysis of neon the main atomic energy levels may be grouped as four *s*-terms, ten *p*-terms and twelve *d*-terms. These in turn are each separable into two subgroups coordinated to the two $^2P_{2,1}$ levels of the rare gas ion. The absolute values of the four *s*-terms and of the set of *p*-terms related to the lower level of the Xe^+ ion are as given.

Inner quantum numbers are shown in the first column while the last contains the separations of the levels; the large value between $1s_4$ and $1s_3$ is connected with the coordination of these levels to the $^2P_{2,1}$ levels of the Xe^+ ion which appear to be separated by 9621 cm^{-1}. The general features of the Xe I spectrum closely resemble those of the analogous spectra Ne I, A I, Kr I, and are in excellent accord with the theoretical expectations. Complete details of the wave-length measurements and analysis will appear in an early number of the Bureau of Standards *Journal of Research*.

2	$1s_5$	30766.90	
			977.64
1	$1s_4$	29789.26	
			8151.60
0	$1s_3$	21637.66	
			988.30
1	$1s_2$	20649.36	
1	$2p_{10}$	20565.23	
			850.58
2	$2p_9$	19714.65	
			283.24
3	$2p_8$	19431.41	
			552.98
1	$2p_7$	18878.43	
			256.48
2	$2p_6$	18621.95	
			906.47
0	$2p_5$	17715.48	

[1] Publication approved by the Director of the Bureau of Standards of the U. S. Department of Commerce.

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DEVELOPMENT OF THE MOUSE ADRENAL

BETWEEN the cortex and the medulla of the adrenal gland, a band of tissue which is free of adrenalin has been observed by Cramer[1] in mice which had received adrenalin injections. He describes this tissue as medullary tissue which is drained of its adrenalin and inhibited from producing more by a mechanism of secretory control which reacts to the presence of excess adrenalin in the circulation. He observes "essentially the same changes" after such various experimental treatments as injection of thyroid extract and exposure to heat.

The writer failed to find this reaction following adrenalin injections, but has observed similar appearances in experimentally untreated mice, in the course of the development of the adrenal.[2] It is suggested that this normal stage in development could account for Cramer's observations.

Adrenalin injections were made into adult male mice, following Cramer's procedure of the injection of 0.015 mg of adrenalin per mouse, and fixation of the adrenals after twenty minutes. The tissue was

[1] W. Cramer. *Brit. Jour. Exp. Path.*, 7: 88, 1926, quoted by G. N. Stewart, in Cowdry's "Special Cytology," 1: 636.

[2] E. Howard Miller. *Amer. Jour. Anat.*, 40: 251–298, 1927; and R. Deanesly, *Proc. Roy. Soc.*, B, 103: 523, 1928.