

the same species collected at Bermuda these cells were found to resemble those of all species of *Valonia* so far studied in exercising selective accumulation of potassium, and resisting the entry of sodium.

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Growth and Bone Changes in Rats Injected With Alkaline Anterior Pituitary Extracts.*

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(Introduced by E. M. K. Geiling.)

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Some 175 rats, ranging in weight from 30 to 350 gm. were employed in testing the potency of alkaline anterior pituitary lobe extracts over short periods of time. The method of preparing the extract as described by Evans and Simpson¹ was adopted. In rats weighing between 30 and 100 gm. the presence of the growth hormone could not be detected. However, in animals weighing from 175 to 300 gm., growth stimulating powers were observed. With animals 200 to 225 gm. in weight, after 12 days of injection (the dose being 1 cc. daily intraperitoneally) the experimental rats gained at an average of 2.1 gm. *per diem* over the control rats. After 14 days of treatment with 1 cc. doses intraperitoneally daily, injected animals weighing between 250 and 300 gm. gained remarkably in weight, averaging 2.7 gm. daily over the control animals.

Periosteal bone growth studies of rats were made by including madder in the diet. Madder was shown by Kölliker to be deposited only in zones of osteoblastic activity, staining newly growing bone red. The skulls and mandibles were used as test bones. In young animals periosteal activity was so great that after feeding madder for 2 weeks the bones were diffusely stained pink and made comparative studies impossible. However, in rats over 175 gm., periosteal bone formation was found to be limited to discrete zones of ossification when madder was fed throughout the experiment. The

* After the completion of this work there appeared a communication in this journal by Evans and his associates, Vol. xxvii, Nov., 1929, employing rats weighing between 250-270 gm. His growth results are in accord with ours of the same group.

¹ Evans, H. M., and Simpson, M. E., *J. Am. Med. Assn.*, 1928, xci, 1337.

older the animal, the smaller and more discrete became the ossification zones and the less intensely did they stain. Rats which had received the alkaline extract for 2 weeks showed in the same areas as in the controls a greater activity in periosteal bone formation evidenced by a laying down of more madder. The bones of the freshly autopsied animals appeared redder in contradistinction to the lighter pink color in those of the control animals. Furthermore, the ossification centers in several of the bones had increased in size as demonstrated by a greater area of coloration. The reaction of the bones to anterior lobe administration consisted of an intensification of the activity of the normal periosteal ossification zones. There was no evidence of abnormal zones being created or stimulated.

On comparing the weight and bone changes in the same animals, it was observed that the amount of madder deposited was roughly parallel to the weight increments, that is, those individuals that gained most weight after anterior lobe administration showed the most intensely stained bones and *vice versa*.

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Parthenogenetic Development of Eggs in the Ovary of the Guinea Pig.

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In 1905 I described,¹ in the ovary of the guinea pig, unusual structures which at first I interpreted as peculiar types of follicular atresia. Further experience, however, convinced me that these structures originated from parthenogenetically developing ova.² Since then, long continued study of the ovary of the guinea pig and its various structures has strengthened my conviction that my interpretation was correct.³ However, a paper by Kampmeier⁴ recently expressed the opinion that the structures described by me are not

¹ Loeb, Leo, *Arch. f. mikrosk. Anatomie u. Entwicklungsgesch.*, 1905, lxxv, 3.

² Loeb, Leo, *Z. f. Krebsforschung*, 1912, xi, 1. *Arch. f. Entwicklgsmech*, 1911, xxxii, 662.

³ Loeb, Leo, *Science*, 1923, lviii, 35.

⁴ Kampmeier, Otto F., *Am. J. Anat.*, 1929, xliiii, 45.