phatase by fluorides. When serum of a case of chronic fluorine intoxication was mixed with a very active blood sample obtained from a case of metastatic osteoplastic carcinoma (64.6 Bodansky units per 100 cc.) the resulting serum phosphatase activity was not lower than calculated. Fluoride in concentrations as high as 0.01 molar does not significantly inhibit the phosphatase activity of normal or Paget serum[14] *in vitro*. "Alkaline" bone phosphatase activity is similarly not appreciably inhibited by fluorides *in vitro*, according to most investigators.[12, 15, 16, 17] Fluorides do inhibit "acid" phosphatases, which may play a rôle in bone formation,[15, 17, 18] but how this affects the level of "alkaline" serum phosphatase activity is not now clear.

A practical point worth emphasizing is that chronic fluorine intoxication should be considered as a possible cause of obscure generalized osteosclerosis, particularly if associated with normal serum phosphatase activity.

9578

Excretion of Inulin, Creatinine, Xylose and Urea in the Sheep.

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We are presenting a summary of observations on the renal excretion of inulin, creatinine, xylose, and urea in a single normal sheep. These observations were made in 1934 and since the results were concordant with similar observations on the dog,[1] further investiga-

TABLE I.
Summary of Observations on Sheep (Weight, 30.0 kg.).

	Experiments	No. of Observations	Mean
Inulin clearance	3	10	58.5 cc./min.
Creatinine/inulin clearance ratio	3	10	1.03
Xylose/inulin clearance ratio	1	2	.73
Urea/inulin clearance ratio	2	6	.52

14 Gutman, A. B., and Gutman, E. B., unpublished data.

15 Robison, R., and Rosenheim, A. H., *Biochem. J.*, 1934, **28**, 684.

16 Folley, S. J., and Kay, H. D., *Erg. Enzymforsch.*, 1936, **5**, 159.

17 Gutman, E. B., Sproul, E. E., and Gutman, A. B., *Am. J. Cancer*, 1936, **28**, 485. For contrary opinion, see 13 and 16.

18 Phillips, P. H., and Hart, E. B., *J. Biol. Chem.*, 1935, **109**, 657.

1 Shannon, James A., *Am. J. Physiol.*, 1935, **112**, 405.

tion seemed unnecessary. The observations were made on an unanesthetized animal, restrained upon an animal board. The experimental procedure and chemical methods were similar to those used in observations on dogs.[1] The urine flow at which these observations were made varied from 0.82 to 2.20 cc. per minute.

9579 P

Application of Vital Dyes to the Study of Sheath Cell Origin.

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That the spinal ganglion cells and sheath cells of Schwann have a common origin in the neural crest, his been accepted generally since Harrison's original experiments in 1904.[1] When the dorsal portion of spinal cords of anuran embryos were removed (elimination of the ganglionic crest), the larvae lacked spinal ganglia and sensory nerves, and the motor nerves present were devoid of sheath cells. Recently Raven[2, 3] employing a different experimental approach assigns a cord origin to the sheath cells and claims that Harrison's conclusions were not justified, since in eliminating the neural crest he also destroyed the dorsal part of the spinal cord, thus not only removing such presumptive sheath cells as may originate there, but obstructing by deformation of the cord the dorsal migration of these elements which are supposed to lie in the ventral portion of this structure. Raven also concludes from his experimental results that sympathetic elements arise from both neural crest cells and from the ventral portion of the spinal cord. His findings do not support those of Müller and Ingvar[4, 5] and Van Campenhout[6] who claim a neural crest origin exclusively for sympathetic ganglion cells, but they do support in part those of Kuntz and Batson,[7] and Kuntz,[8]

1 Harrison, R. G., *Sitz. Ber. Niederrh. Ges. Natur. u. Heilkunde*, 1904, Bonn (*v.* also Harrison, R. G., *J. Comp. Neur.*, 1924, **37**, 123).

2 Raven, Chr. P., *Arch. f. Entw.-mech.*, 1936, **134**, 122.

3 Raven, Chr. P., *J. Comp. Neur.*, 1937, **67**, 221.

4 Müller, E., and Ingvar, S., *Upsala Läkaförenings förhandlingar Ny följd*, 1921, **26**.

5 Müller, E., and Ingvar, S., *Arch. f. mikr. Anat. u. Entw.-mech.*, 1923, **99**, 650.

6 Van Campenhout, E., *J. Exp. Zool.*, 1930, **56**, 295.

7 Kuntz, A., and Batson, O. V., *J. Comp. Neur.*, 1920, **32**, 335.

8 Kuntz, A., *J. Comp. Neur.*, 1922, **34**, 1.