

this might have upon the rhythm of the heart. The node was destroyed by a hot instrument, serial sections being made later to determine whether the entire muscle bundle was destroyed. The experiments were successful in 8 cats and 6 dogs, but total destruction of the Keith-Flack node failed to give rise to any arrhythmia of the heart. Jäger therefore concludes that the results obtained by Hering after cutting the venoauricular junction, namely, cessation of the beat of the auricle, was not due to injury to the node, and that such injuries do not give rise in dogs and cats at least to a disturbance in rhythm of the heart.

**The Substitution of Strontium for Calcium in Bones.**—LEHNERDT (*Ziegler's Beiträge*, 1909, xlv, 468; 1910, xlvii, 213) in a series of interesting experiments has fed pregnant rabbits strontium phosphate. Usually calcium was eliminated from the diet, but in a few experiments strontium phosphate was simply added to the animal's ordinary food. He has found that by this means profound changes are brought about in the bones of the young of the pregnant rabbits. These consist in deformities, principally of the long bones, and resemble to a certain extent the pathological lesions of rickets. They are, however, not exactly the same, and should be termed pseudorickets. The action of strontium is that of a formative stimulus to the bones, and the absorption of large quantities of this salt by the foetus in the absence of calcium gives rise to spongy osteoid formations at the ends of the bones, with rapid union and great decrease in the absorption of bone. When calcium is fed in small amounts together with strontium, the spongy outgrowths show some calcification, but with an increase in the amount of calcium the abnormal changes in the bone diminish. In a second communication Lehnerdt describes some further experiments carried out under the same conditions with newborn puppies. The results here were much the same as in the first series of experiments, and the changes occurring in the bones were those of a pseudorickets, consisting in diminished resorption of bone with exaggerated apposition in bones which were of normal length. When fractures occurred they healed with the formation of an excess of callous; when calcium was added to the food the spongy osteoid growths became calcified. The action of strontium appears in many ways like that of phosphorus, though there are certain differences in the effects of the two drugs. Lehnerdt finally suggests that strontium may be of therapeutic value in osteomalacia, in such conditions as osteoporosis when there is an increased resorption of bone, and in conditions in which callous formation is delayed and slight.

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