was found; for light anesthesia 41 to 110 mg. per 100 cc. of blood. These patients had all had morphia 1/6 gr. and atropine 1/150 gr. preliminary to operation. Another group of patients who had received hyoscine as well as morphine before operation were sufficiently relaxed by concentrations of 39 to 100 mg. of ether per 100 cc. so that abdominal operations were satisfactory.

A few direct determinations of the ether in the alveolar air of patients gave results below 25 mm. tension.

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Quantitative experimental evidence on the acuity for hearing by bone transmission.

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The type of apparatus employed in this series of observations has been previously described in this journal. We submit some very general conclusions based on the observations made on individuals with known sensitivity for air-transmitted sound. A continuous tone scale was employed and the threshold approached from below as in the air tests.

Sensitivity for tone-transmission of sound varies a great deal more than that for air-transmitted sound, and is not definitely related to it. The sensitivity at any given frequency is not a criterion of the sensitivities at other pitches. We found about 500 v. p. s. the least variable. Areas of marked decrease in air acuity are similarly registered through the bone.

In normal ears the hearing is most acute at normal pressure for both air and bone transmitted sound. The development of plus and minus pressures in the air of the external auditory canal decreases acuity for both series of tests, and leads to the conclusion that the cranio-tympanic conception of sound transmission is probably the correct one.

In comparing the acuity for bone-transmitted sound, with external canals open, as opposed to external canals occluded, some rather disconcerting findings were made. The individual with

the greatest sensitivity through the bone with the ears open showed the least advantage on closing the external canals. It was also observed that the enhancement in bone transmission due to occlusion of canals becomes less pronounced as the pitch rises, and is most marked in the low part of the tone scale.

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Quantitative experimental data on the rôle of the sympathetic innervation in the tonus of the quadriceps femoris muscles.

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By the use of Spiegel's method of measuring the tonus of the *quadriceps femoris* in resting animals,[1] tonus curves of this muscle in cats and dogs were obtained before and after elimination of its sympathetic nerve supply, and before and after removal of the cerebellum. In some of the experiments tonus curves of the same muscle were obtained before and after extirpation of the sympathetic trunk in the lumbar region, in others tonus curves of both quadriceps muscles were obtained in animals which had previously been subjected to unilateral extirpation of the lumbar sympathetic trunk. Removal of the cerebellum was commonly carried out after the tonus curves of both quadriceps muscles were obtained in animals which had been previously subjected to unilateral extirpation of the lumbar sympathetic trunk. Then the tonus curves of both muscles were obtained once more.

These tonus curves are essentially the curves of passive extension of the quadriceps muscles. Those obtained for the same muscle before and after elimination of its sympathetic nerve supply are practically identical with the curves obtained for the muscle on the unoperated and operated sides respectively, following unilateral extirpation of the lumbar sympathetic trunk. The time interval between sympathectomy and the measurement of tonus is relatively unimportant.

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[1] Spiegel, E. A., *Ztschr. f. d. ges. Neur. u. Psych.*, 1923, lxxii, 517.