

violent and uncoordinated streaming movements, extends and retracts numerous pseudopods, without accomplishing any appreciable change of position or resuming the normal method of endoplasmic streaming or locomotion. It eventually rounds up completely, and streaming ceases, while the anterior portion may still be behaving quite normally.

3. If the nucleus and a negligible amount of ectoplasm be excised, the enucleated ameba behaves very much like the nucleate portion above. This eliminates the possibility that differentiation of the anterior cytoplasm is the factor which distinguishes its behavior from that of the posterior end.

4. If the nucleus be dislocated by pressure on the anterior end, it commences to travel posteriorly in the peripheral stream. After a moment the streaming is arrested. Then suddenly the ectoplasm bulges at the point where the nucleus has stopped, the endoplasm flows into the new pseudopod, and the ameba with the nucleus in its tip, travels away in the direction of the new pseudopod.

The nucleus seems in some way to play a rôle in directing endoplasmic streaming, presumably by its ability to slightly liquefy the ectoplasmic gel, lowering its resistance at certain points to the force of the endoplasmic stream.

79 (2311)

The synergistic toxicity of local and general anesthetics.

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The author has had occasion to determine the lethal dosages of cocain and alypin for cats by intravenous injection. Solutions of the drugs, generally 1 to 1000, were injected into the femoral vein at regular intervals and the lethal dose of each drug per kilo weight of cat was determined. It was found that the toxicity of both cocain and alypin was very much increased or potentiated when the animals were kept under complete gen-

eral anesthesia. Thus it was found that whereas the lethal dose of cocain per kilo weight of cat when injected intravenously under very light anesthesia was from 30 to 40 mg., the fatal dose for cats under complete general anesthesia was about 25 mg. per kilo weight and under deep ether anesthesia it was as low as 15 mg. per kilo weight. In the case of alypin it was found that when injected in cats practically under no ether anesthesia, the lethal dose varied from 30 to 24 mg. per kilo weight; under complete but light ether anesthesia the lethal dose was from 18 to 24 mg. per kilo weight, while under deep anesthesia the fatal dose was as low as 6 to 7 mg. Similar toxic synergism in cocain and alypin on the one hand and general chlorbutanol anesthesia was also noted. The above experiments were performed several years ago but have been repeated recently with the same results and are deemed to be worthy of mention in connection with the present renewal of interest in the toxicity of local anesthetics. In the experience of the author a combination of local and general anesthetics is dangerous and this fact should be borne in mind by surgeons who may desire to switch from a local anesthetic to a general one.

80 (2312)

Note on the weight of the adrenals in crosses between the albino and the wild Norway rat (*Mus norvegicus*.)

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When the weight of the adrenal glands is compared with either the body weight or the body length, the wild pigmented rat is found to have much heavier glands than the domesticated albino. The females in both groups have heavier glands than the males, but the difference in weight between the glands of the two sexes is less in the wild gray form.¹

¹ Hatai, S., *Anat. Record*, 1914, viii, 511.