nected with a device for arterial respiration, the rat was pithed and decerebrated. A cord, passed around the neck under the skin and trachea, was drawn tight crushing the cervical spine and ligating the carotid and vertebral vessels. Through a thoracic laminectomy a wire with a beaded tip was passed up and down the spinal canal. In this way the central nervous system can be destroyed quickly and with little blood-loss, and the preparation, without artificial warming, will last for 5 hours. The blood pressure remains constant during the first half hour, falling slowly thereafter. We followed the pressure during the period from 2 to 30 min. after pithing and decerebration in 10 normal and in 10 hypertensive male rats. The control level in the former was 117.6 mm. Hg average, varying from 85 to 136 mm.; in the latter the preoperative range was 151 to 209 mm., average 176.4 mm. After destroying the central nervous system the average level in the normals was 55.3 mm. Hg., range 42 to 66 mm., while the hypertensive group averaged 54.5 mm., range 45 to 66 mm. In the animals with destruction of the nervous system epinephrine and pituitrin, given intraperitoneally, caused a marked but transient rise in pressure. We therefore conclude that whatever pressor substance may be present in the plasma of rats with renal hypertension has no vasoconstrictor effect but acts through the vasomotor center. In some instances the initial pressure determinations after pithing were made within 2 minutes after beginning the denervation, and the fall of pressure was immediate and not gradual as would have been the case from cutting off the inflow of such pressor substances as epinephrine or pituitrin.

7687 P

Influence of Intermedin on Growth of Mouse Melanoma.

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It has been reported[1] that repeated injections of aqueous extracts prepared from fresh whole pituitary glands (sheep and cattle) or from fresh anterior lobes, had a slight but distinct stimulating effect upon the growth of the Passey mouse melanoma. With the Flexner-Jobling rat carcinoma, the Bashford mouse carcinoma 63, and the Rous chicken sarcoma, no stimulating action was observed.

[1] Sugiura, K., and Benedict, S. R., *Am. J. Cancer*, 1933, **18**, 583.

It was further shown in this institution that the aqueous extracts of the Passey mouse melanoma gave a distinct intermedin reaction on a small fish, called the Elritze (*Phoxinus laevis*).* On the other hand, aqueous extracts of the Flexner-Jobling rat carcinoma, the Sugiura rat sarcoma, the Heiman rat fibroadenoma 308, and the Rous chicken sarcoma gave either a negative or a very weak color reaction.

These experiments suggest that the melanoma-stimulating substance found in pituitary extracts and the intermedin-like substance present in melanoma tissue might be identical.

Since in preparing the extracts of the pituitary, both the anterior and middle lobes were used, there is a good reason to suppose that the hormone of the intermediary lobe of the hypophysis may possess much greater melanoma-stimulating action than that of the anterior pituitary. The following experiments were carried out with the object of testing this supposition.

Twenty young adult albino mice bearing 7-day-old Passey mouse melanoma were each injected subcutaneously with 0.05, 0.1, 0.2, or 0.3 cc. of intermedin† 3 times a week, over a period of 78 days. Each cubic centimeter contained from 2000 to 2500 fish units. The intermedin injections seemed to have no ill effect on the general health of these animals.

The results showed that the repeated injections of intermedin had no regressing influence upon the growth of transplanted melanomas. However, it had a slight but distinct stimulating effect upon the growth of this tumor. This action was most noticeable in the case of tumor-bearing animals receiving a daily dose of 0.1 cc. of intermedin.

The preceding experiment was repeated with 12 mice bearing 7-day-old melanoma. The intermedin injection was repeated every second day with a dose of 0.1 cc. for a period of 69 days.

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* When intermedin is injected into the fish at a time other than the spawning period, the Elritze develops an intensive red coloration on the ventral skin. The testing of the tumor tissue extracts for intermedin was done by Miss G. Hildebrandt, to whom the author wishes to express his appreciation.

† An aqueous extract was prepared by Dr. H. R. Downes from the acetone-extracted dried anterior and middle lobes of the beef hypophysis according to the method of Zondek.[2] One cubic centimeter of this solution represents about 0.4 gm. of dried tissue. According to Zondek, the extracts prepared by his method, oxytocin and vasopressin are almost completely removed. However, we have not verified the above statement. The activity of the preparation was assayed according to the Zondek procedure.

[2] Zondek, B., and Krohn, H., *Klin. Woch.*, 1932, **11**, 405, 849, 1293.

The results of the experiment showed that the increased rate of tumor growth in the treated animals was practically the same as that of the preceding experiment. These results are shown in Fig. 1.

It may be stated that the stimulating action of intermedin upon the growth of the Passey mouse melanoma was no greater than that produced by the aqueous extracts of the pituitary.[1] In our earlier study extracts of both the anterior and middle lobes were used, whereas in this experiment only the extract of the middle lobe has been used. Therefore it is possible to state that the stimulating action is due solely to the hormone of the intermediary lobe.

Tumor metastases in the viscera of the treated and untreated animals did not occur but there was a marked phagocytosis of melanotic pigment in the liver, the spleen and the axillary lymph

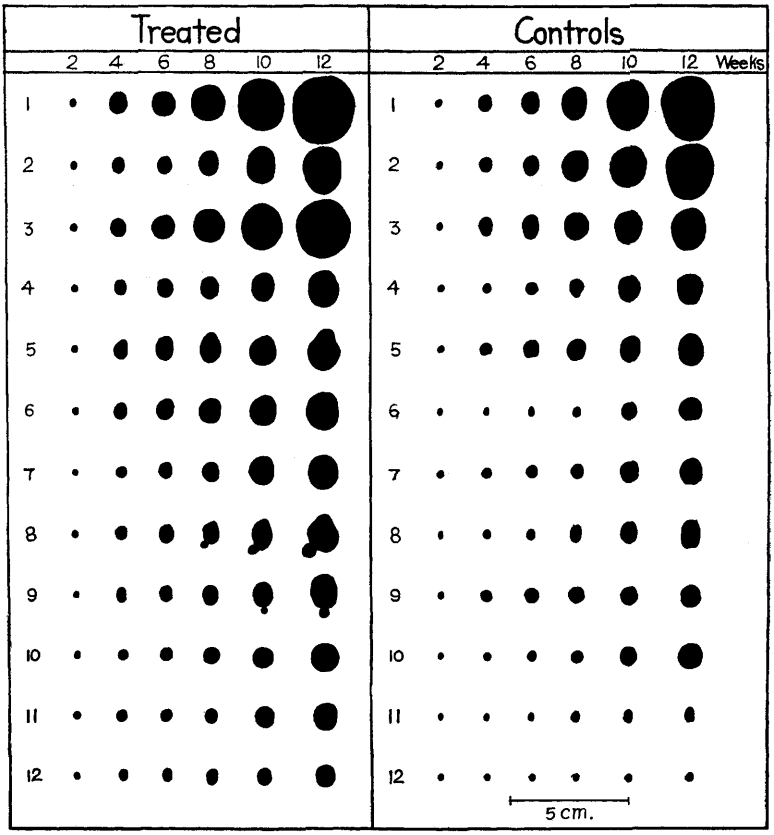

FIG. 1.
Showing stimulating effect of repeated injections of intermedin upon the growth of mouse melanoma.

nodes histologically examined when the tumors were approximately 180 days old. Very little melanotic pigment was found in the lungs and none in the kidney, heart and brain.

The author wishes to acknowledge his indebtedness to Dr. R. S. Ferguson for his suggestion of this problem.

7688 C

Effect of Divinyl Oxide on Isolated Intestinal Muscle.

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In the careful studies of Miller[1] on the effects of general anesthesia on the muscular activity of the gastro-enteric tract, it was shown that the relatively light anesthesia usually maintained with ethylene causes no marked changes in the tone or amplitude of contraction of intestinal muscles. On the other hand during the surgical stage of anesthesia with ether there is marked loss of tonus and almost complete inhibition of rhythmic and peristaltic contractions in stomach, small intestine, and colon. Divinyl oxide has been shown to have pharmacological properties resembling ethylene and ether, to which it is related chemically.[2] Its general physiological effects are less severe than those of ether, although it is a more powerful anesthetic agent. Since the action of divinyl oxide on intestinal movement has not yet been reported upon, it became of interest to determine what its relation might be to ether and ethylene in this regard.

Segments about 2 cm. long from the jejunum of a freshly killed rabbit were suspended by the Magnus method from a muscle lever, in oxygenated Locke's solution at 37.5° C. The drugs were added to the solution to saturation. Repeated trials were made with each drug in varying sequences of application on intestinal segments of 8 different rabbits.

Ether was always found to cause an immediate and marked loss of tone and inhibition of movement of such a muscle preparation

* Merck Fellow in Pharmacology.

[1] Miller, G. H., *J. Pharm. Exp. Therap.*, 1926, **27**, 41.

[2] Leake, C. D., Knoefel, P. K., and Guedel, A. E., *J. Pharm. Exp. Therap.*, 1933, **47**, 5.