every 3 weeks. Sterile nematodes have to date been maintained without loss through 14 transfers or approximately 50 generations. With the methods previously used it was necessary to add certain accessory growth factors in order to maintain the cultures longer than 21 to 32 generations.[5] The nematodes have also been cultured in Erlenmeyer flasks containing 0.5% NaCl solution to a depth of 3 to 4 mm in which are placed pieces of sterile rabbit kidney, and in liquid media containing kidney extracts devoid of particulate matter.

On agar slants containing rabbit kidney the number of nematodes found after incubation for 18 days is approximately 150,000. When grown on Petri dishes, 5.5 cm in diameter, containing 2% dextrose agar and living yeast, the yield was about 40,000. Contamination of the rabbit kidney causes a marked reduction, and in some cases an absence, of growth.

In view of the fact that this parasitic nematode can be grown on both liquid and solid media free from bacteria it will be possible to study its nutritional and other requirements and to test the effects of various vitamins and hormones.

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Effect of Desoxycorticosterone on Plasma Volume in Intestinal Obstruction.

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Adrenal cortical hormone restores the reduced blood volume in Addison's disease[1, 2] and prevents the drop in plasma volume said to occur during ether anesthesia.[3, 4] This communication reports some experimental observations on the effect of desoxycorticosterone

5 Glaser, R. W., *J. Exp. Zool.*, in press.

1 Thorn, G. W., Howard R. P., and Emerson, K., Jr., *J. Clin. Invest.*, 1939, **18**, 449.

2 Loeb, R. F., Atchley, O. W., Ferrebee, J. W., and Ragen, C., *Trans. Assn. Am. Phys.*, 1939, **54**, 285.

3 McAllister, F., and Thorn, G. W., PROC. SOC. EXP. BIOL. AND MED., 1937, **36**, 736.

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acetate* on the fall in plasma volume which occurs in acute intestinal obstruction in dogs.[5]

The dose of hormone used was arbitrarily determined. One or 1½ mg per day is necessary to sustain an adrenalectomized dog.[6] Since we were dealing with a rapidly exhausting state in our experiments we injected 5 mg at the beginning of the experiment and repeated the dose once or twice at 4-hour intervals.

Results. In Table I it will be observed that in dogs not receiving hormone the longer the distention of the small intestine continued, the greater was the loss of plasma. This averaged 35% after 4-6 hours and 55% after 18-23 hours. The detailed data of these experiments, already published,[5] show no great disparity between individual measurements and the average figure.

Of the 4 dogs which received desoxycorticosterone the first lost 38% of the plasma in the first 6 hours. There was, however, no significant change in the following 6 hours. The final measurement showed an actual return of a large part of the lost plasma to the circulating blood—an observation never observed in continuously distended dogs not receiving hormone. The first dose of hormone in this dog was given intramuscularly, while all other doses in this and the other 3 dogs were given intravenously. In the second dog of this group there was an increase in the loss of plasma from 9%

TABLE I.
Distention of Small Intestine.
% Change in Plasma Volume.

	After 4-6 hr	8-12 hr	18-23 hr
D	—36 (9)	—43 (2)	—55 (5)
D (Hormone)	—38	—40	—16
	— 9	—21	—
	—	+49	+24
	— 5	+ 5	—
C	— 8 (7)	—	—12 (7)

D—Distended dogs.
D (Hormone)—Distended dogs receiving desoxycorticosterone.
C—Control dogs without distention or with distention of other hollow organs.
Figures in parentheses represent the number of separate observations, the results of which were averaged to obtain the accompanying figures. The data of the D (Distended) dogs has already been published[5] (Table I, Group 3). The individual results are sufficiently close to justify using the average result. The data of the C (Control) dogs is partly from the same published data[5] (Table I, Groups 1 and 2) and from data to be published, in which the individual results are likewise sufficiently uniform to permit use of the average result. The hollow organs distended without marked loss of plasma were the colon and the gall bladder.

* We are indebted to Ciba & Co. who supplied this material.

5 Gendel, S., and Fine, J., *Annals Surg.*, 1939, **110**, 25.

6 Thorn, G. W., Engel, L. L., and Eisenberg, H., *Bull. J. H. H.*, 1939, **64**, 155.

after the first 6 hours to 21% after 12 hours. These figures are of a much lower magnitude than was observed in the dogs not receiving hormone and to this extent the hormone may be considered to have exerted a protective influence. In the third dog an astonishing increase in plasma above normal was noted in the 8-12-hour period of distention, and though not sustained in the subsequent interval before death occurred, a substantial positive effect seems to have been maintained by the hormone. The measurements of plasma loss in the fourth dog also show the capacity of the hormone to prevent a loss of plasma. The effect of desoxycorticosterone is therefore one of counterbalancing the action of the agent responsible for the loss of plasma.

The possible influence of other factors on the plasma volume changes are excluded by the results of a group of 7 control experiments which included 2 intact dogs under nembutal anesthesia, 2 dogs with obstruction but no distention, 1 dog with distention of the gall bladder, and 2 with distention of the colon. None of these animals showed any marked loss of plasma at any time. The observations in the last 3 dogs of this series, which suggest that the plasma loss from distention of a hollow viscus is more or less specific for the small intestine, will be published elsewhere in more detail.

The apparently favorable response to the trauma of distention in the 4 dogs receiving hormone applies, so far as our data permit a judgment, only to the plasma volume. There was no prolongation of life by the hormone. This may be due to the undesirable effects of overdosage.[2]

Conclusion. The marked fall in plasma volume observed in dogs subjected to continuous distention of the small intestine is at least partly prevented by the intravenous administration of desoxycorticosterone.