A slight increase in the total creatinine was observed in Periods III to V, the periods immediately following the addition of the beef heart to the basal diet. We believe this is to be ascribed to the response of the metabolism to the small amount of creatine (estimated at 60 mg.) present in the beef heart.

Since administration of arginine did not alter the urinary creatine or creatinine and since the administration of creatine was followed by an increased urinary elimination of both creatine and creatinine (maximum values, 494 and 380 mg. of creatine and creatinine respectively on the 6th day of Period XIV), no evidence was obtained that under our experimental conditions, exogenous arginine had any relationship to the urinary creatine or creatinine in the dog.

4698

The Growth-Promoting Power of Egg for Planarian Worms.

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It has been previously demonstrated by us[1] that an exclusive diet of egg albumin is not capable of promoting growth in *Planaria maculata.* Although the food is well taken, the worms show progressive decrease in size throughout the experimental period. Upon an exclusive diet of egg yolk the worms may maintain or increase their size for a period of 2 or 3 weeks, but after that time their length becomes progressively less.

We have confirmed these results repeatedly with the species of planarian worm *(Planaria agilis?)* which we are at present using, and have found in addition that a combination of egg yolk with egg albumin produces a diet decidedly superior to either substance used alone.

Each group in an experimental series consisted of 30 worms of equivalent size which were fed *ad lib.* twice a week on the experimental diets. The total length of the worms was found at the beginning of the experiment and at its conclusion and the proportional increase in length was determined. In one experiment of 2 weeks duration kept at room temperature, the group of 30 worms fed upon egg yolk made a gain in total length of 3.9%, while those fed upon a combination of equal parts of egg yolk and albumin gained 20.2%

[1] Wulzen, R., *Univ. of Calif. Publications in Physiology*, 1923, v, 175.

in total length. In another series incubated at a temperature of 27° C. over a 2 week period, egg yolk diet produced an increase in total length of 32%, while a diet of blended egg yolk and albumin in equal parts gave an increase in total length of 51.5%. In a third series pastes were made of 15% liver pulp and 45% starch paste (10%) with the addition of 40% egg yolk or egg albumin or a mixture of equal parts egg yolk and albumin. The starch and liver pulp were added for purposes not connected with this paper. The worms were fed over a 3 week period and were kept incubated at a temperature of 23° C. Only a few of those fed upon albumin were able to survive the experimental period. The group of worms fed upon egg yolk gained 16.8% in total length, while those fed a mixture of yolk and albumin gained 68.1%.

It will be noted that in the experiments cited which were of 2 weeks duration a yolk-albumin mixture exceeded yolk alone in growth-promoting power by 16.3% and 19.5% respectively. In the 3 week experiment, the mixture of egg yolk and albumin in equal parts exceeded yolk in growth-promoting power by 51.3%. When albumin is fed alone a negative growth is obtained.

4699

Body Fluid of the Mammalian Embryo as a Medium for Tissue Culture Work.

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The exudates in the peritoneal cavity of the frog and guinea pig have recently been used[1] as culture media for cultures *in vitro*. In the present experiments, various tissues of the albino rat have been successfully cultivated in the peritoneal cavity exudate of the same animal. However, the growth of certain tissues, which it was particularly desired to cultivate was not so vigorous as hoped for. Consequently an endeavor was made to find a culture medium better adapted for the cultivation *in vitro* of these tissues.

Attention was centered upon a medium containing embryonic tissue juice because of the favorable results obtained by various in-

[1] Baitsell, G. A., and Sherwood, M. B., PROC. SOC. EXP. BIOL. AND MED., 1925, xxiii, 96.