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Observations on the cellular activity in a culture of amphibian liver tissue.

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On January 2, 1924, two, very large, ameboid cells appeared in a culture of liver tissue, obtained from an adult *Rana pipiens*. This culture had been made on November 25, 1923, some five and one-half weeks earlier, and no cells had previously migrated into the clot. The culture was one of a series of twenty-five, and in none of the others was any cellular activity ever observed. The unusual size and activity of these cells, as well as their migration into the clot after the long inactive period of the tissue immediately commanded attention, and careful observations were made during the succeeding five days in which they retained their activity.

Each of the cell bodies was very irregular and constantly changing in shape, due to a flowing movement of the cytoplasm strikingly similar to that in an ameba. As a result of the cytoplasmic flow, cell processes of various lengths were continually formed at various regions of the periphery. When first observed each of the cells measured about 0.33 mm. in length. Later a maximum length of over 0.5 mm. was attained by one of the cells. The cytoplasm contained many granules of various sizes which moved into or out of the processes with the cytoplasmic current. After five days of continual activity in the clot, both cells rounded off, and each formed a somewhat spherical cell body which measured about 0.15 mm. in diameter. No further movement occurred in either of these cells although the culture was opened and one of them was isolated and placed in fresh medium in a subculture.

The identity of these cells is not clear, and so far as I am aware similar metazoan cells have not been described either in tissue cultures or elsewhere. During the past few years I have observed over a thousand cultures of various adult amphibian tissues, in none of which have cells of this type been present.

Also a great many permanent histological preparations of various amphibian tissues have been studied with the same negative result. The possibility that they might be embryonic in type suggested itself and accordingly a large number of cultures of various tissues from the tadpole have been made and studied. In several of these, cells comparable in size and activity have been found. The experiments are still in progress.

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The blood platelets in rats on adequate and inadequate diets.

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In view of the fact that Bedson and Zilva[1] disagree with Cramer, Drew and Mottram[2] on the behavior of the blood-platelets in rats deficient in vitamin-A, it was found desirable, in the course of the study of the pathology of avitaminosis, to investigate this disputed question. Applying a method for platelet counting which has for its basic principles the minimum of manipulation and the absence of contact of the drawn blood with possible coagulant surfaces, we have found the blood-platelet content in normal albino rats on adequate diets to approximate 400,000 to 600,000 per cu. mm. We have not observed any significant variation from this average in rats subsisting on diets lacking vitamin-A and showing the typical symptoms of such a deficiency. These observations are essentially different from those of all the above mentioned workers in regard to the normal platelet content of white rats, and confirm Bedson and Zilva's contention that the platelet content is not affected by diets deficient in vitamin-A. The method employed, suggested by Dr. A. B. Dayton's practice on man, is as follows: after the freely pro-

[1] Bedson, S. P., and Zilva, S. S., *Brit. J. Exp. Path.*, 1923, iv, 5.

[2] Cramer, W., Drew, A. H., and Mottram, J. C., *Proc. Roy. Soc. B.*, 1922, xciii, 449.