In plasma diluted 1 : 2 the cells live practically as long (5 to 10 days without transfer), as in pure plasma, and show a similar accumulation of fat.

In a 1 : 5 dilution the fat content is slightly diminished; there is little or no effect on the length of life or on the morphology of the cells.

In a 1 : 10 dilution the fat content of the cells is definitely reduced; the cells appear smaller and are stained more deeply, and the duration of life is shortened (3 to 5 days).

In higher dilutions (1 : 15 and 1 : 20) the accumulation of fat is reduced to a minimum, a majority of the cells showing at the end of two days a complete absence of fat granules. The cells which do contain fat show, as a rule, a single rather large droplet instead of a number of small droplets, as in the controls in undiluted plasma. Two to three days represents, as a rule, the limit of activity of the preparation. When stained the cells in cultures of high dilution exhibit a rather striking contrast to those in pure plasma cultures: they are smaller, more irregular in shape, and take a deeper stain in both nucleus and cytoplasm.

In all experiments observations upon the living cells were confirmed by a study of stained and fixed preparations. Diluted preparations and controls were, of course, fixed atthe same moment.

The results of these studies which show, in brief, that the amount of fat accumulated by cells in cultures varies directly with the fat content of the plasma medium, afford further evidence in favor of the view that these fatty accumulations are not degenerative in origin, but are the result of some disturbance in the metabolism of the cells.

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The rate of absorption of water by the skin of the frog, in relation M. H. Fischer's theory of edema.

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Fischer observed swelling of amputated frog's legs, in water. The question arises: is this a phenomenon of osmosis due to the osmotic pressure of cellular and intercellular fluids?

A frog's leg was tied tightly and amputated above the ligature. The second leg of the same frog was skinned and the skin filled with a 0.7 per cent. NaCl solution and tied at the same level as the first leg. The two legs were weighed, placed in water, and weighed at intervals to determine the water absorbed. The leg filled with NaCl solution absorbed water more rapidly than the other leg.

An amputated and ligatured leg was placed in 0.7 per cent. NaCl. Its weight remained constant.

The ratio of the skin areas of a whole frog except the head, to the hind legs below the knees, was found to be about 3.5. Two frogs of the same size were selected. The hind legs of one were tied just above the knees and amputated above the ligatures and placed in water. The other frog was put in a harness that kept the head out of water, and a canula with rubber bag attached was inserted into the cloaca. This experiment was repeated a large number of times. The water absorbed by the whole frog within 6 hours was always more than 3.5 times as much as that absorbed by the two hind legs. The water absorption for longer periods of time is being studied.

Conclusion.—The swelling of frog's legs, in which the circulation of the blood is stopped, may be accounted for by osmotic pressure.

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The dynamics of a model of cell division.

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A low beaker is half filled with distilled water and a funnel inserted so that the stem extends to the bottom. A saturated solution of NaCl is slowly poured into the funnel and forms a layer beneath the pure water. About 1 c.c. of a mixture of 2 parts chloroform and 3 parts rancid olive oil is sucked up into a pipette and injected into the beaker so that it forms a drop suspended between the NaCl solution and the pure water. Two pipettes with capillary openings are filled with 1/10 normal NaOH solution and inserted into the beaker. The NaOH solution is