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Rhythms in the rate of reproduction of Amœba bigemma.

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A specimen of *Amœba bigemma* (Schæffer) was isolated December 7, 1921, and eight lines of its descendants have been bred in pedigree cultures to the 100th generation (May 15, 1922). The cultures have been carried on standard beef extract[1] and kept at a temperature varying from 20° to 24° C. Vegetative division has been uninterrupted by spore or gamete formation. The data obtained by the daily isolation method show that the rate of division of the organism under the conditions of the experiment fluctuates considerably. At intervals during the pedigree there were daily divisions, or frequently one division every other day for a short time. Occasionally two fissions occurred in one day, while in a single instance an *Amœba* divided three times during twenty-four hours. Periods of inactivity when no fissions took place were common, and varied in length from one to twelve days; but whereas the absence of division for one or two days was of frequent occurrence, that of over three days was rare. An average of the daily divisions in eight lines for a period of ninety days showed the rate to be slightly above one division in two days.

In contrast to this daily irregularity there was a general periodicity in the fission rate which was revealed only by an examination of the data covering longer intervals of time. By averaging the number of divisions in a single line for five-day periods, a rhythmic character of the fission rate was apparent in the form of alternating periods of high and low reproductive activity; one low point to the next comprising about twenty days. Whether these rhythms are of the same nature as those in the Infusoria[1] can be determined only after more study of this and other *Amœbæ* in pedigree cultures.

[1] Woodruff and Baitsell, *Journ. Exper. Zoölogy*, 1911, Vol. 11.