

A study of the population growth characteristics of three geographically distinct strains of the rotifer Brachionus plicatilis

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Three geographically distinct strains of the rotifer Brachionus plicatilis, from America, Austria and Scotland, were available for study. Approximately twenty individuals from each strain were reared in individual culture chambers at 15°C, 20°C, and 25°C on a diet of Dunaliella sp. The life length of each animal was determined, and the laying and hatching of each egg was recorded. Simultaneously, the population growth rates of each strain were measured under similar experimental conditions.

Fig. 1 suggests that the population growth rates of the American and Scottish strains of B. plicatilis were essentially similar. In contrast, the Austrian strain appeared to reproduce at a much slower rate, particularly at the lower experimental temperatures. The reason for this seemed to lie in the lower rate of egg laying and higher egg mortality recorded for the Austrian strain, compared to the American and Scottish strains.

The data collected has also been used in the development of a mathematical model to describe the growth of rotifer populations from data collected by the study of individuals. Preliminary results (Fig. 2) have been very encouraging and the development of this model is continuing. Further details of this model will be presented in the next report.

Fig. 1 A comparison of the growth rates of three strains of *Brachionus plicatilis* in laboratory culture at three different temperatures

— American strain
 - - - - Scottish strain
 Austrian strain

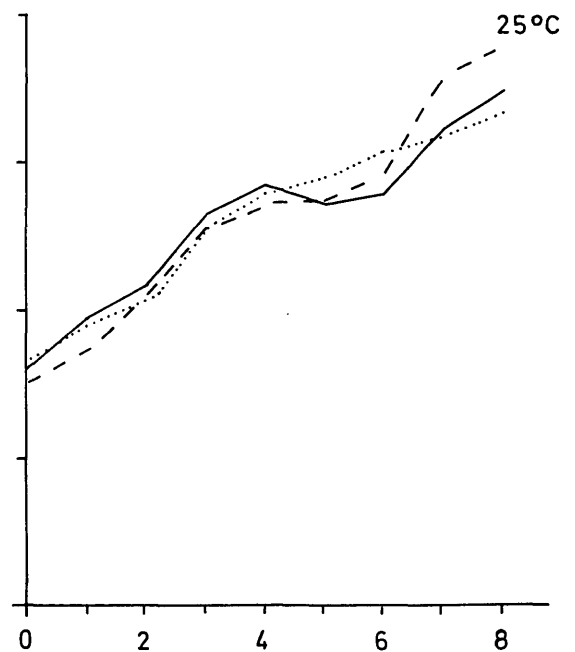
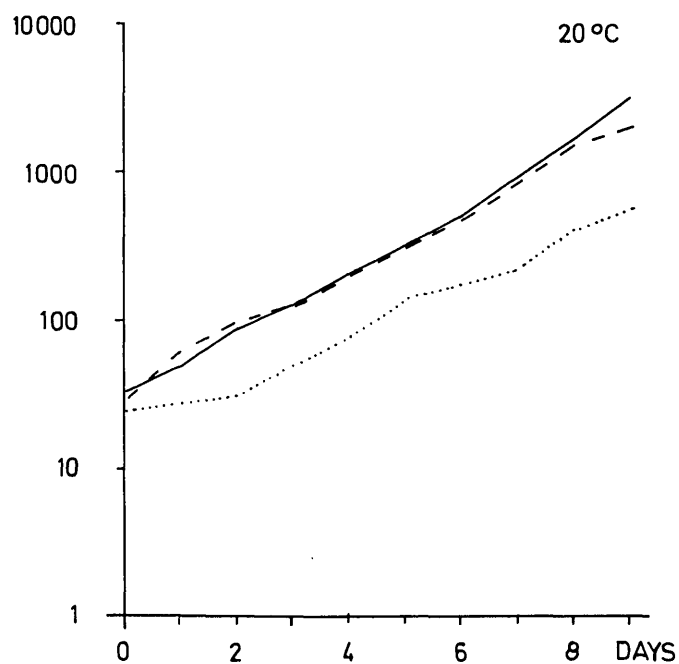
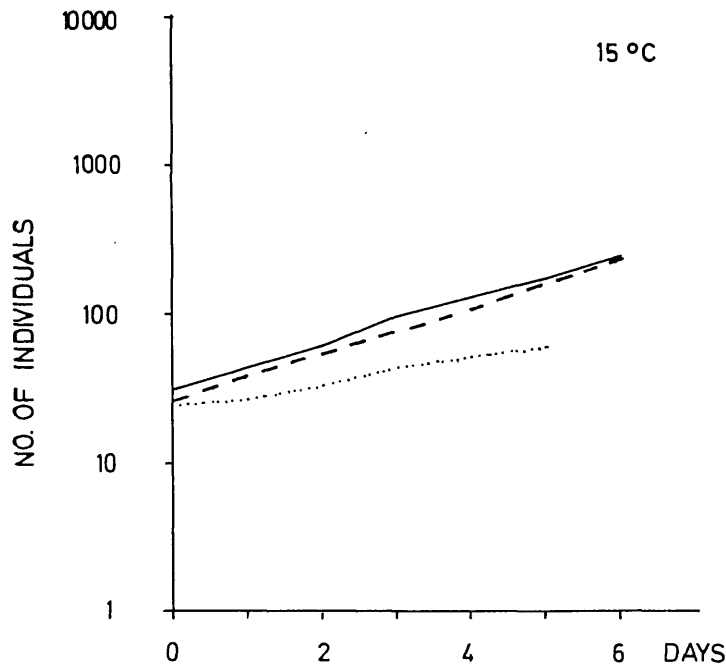
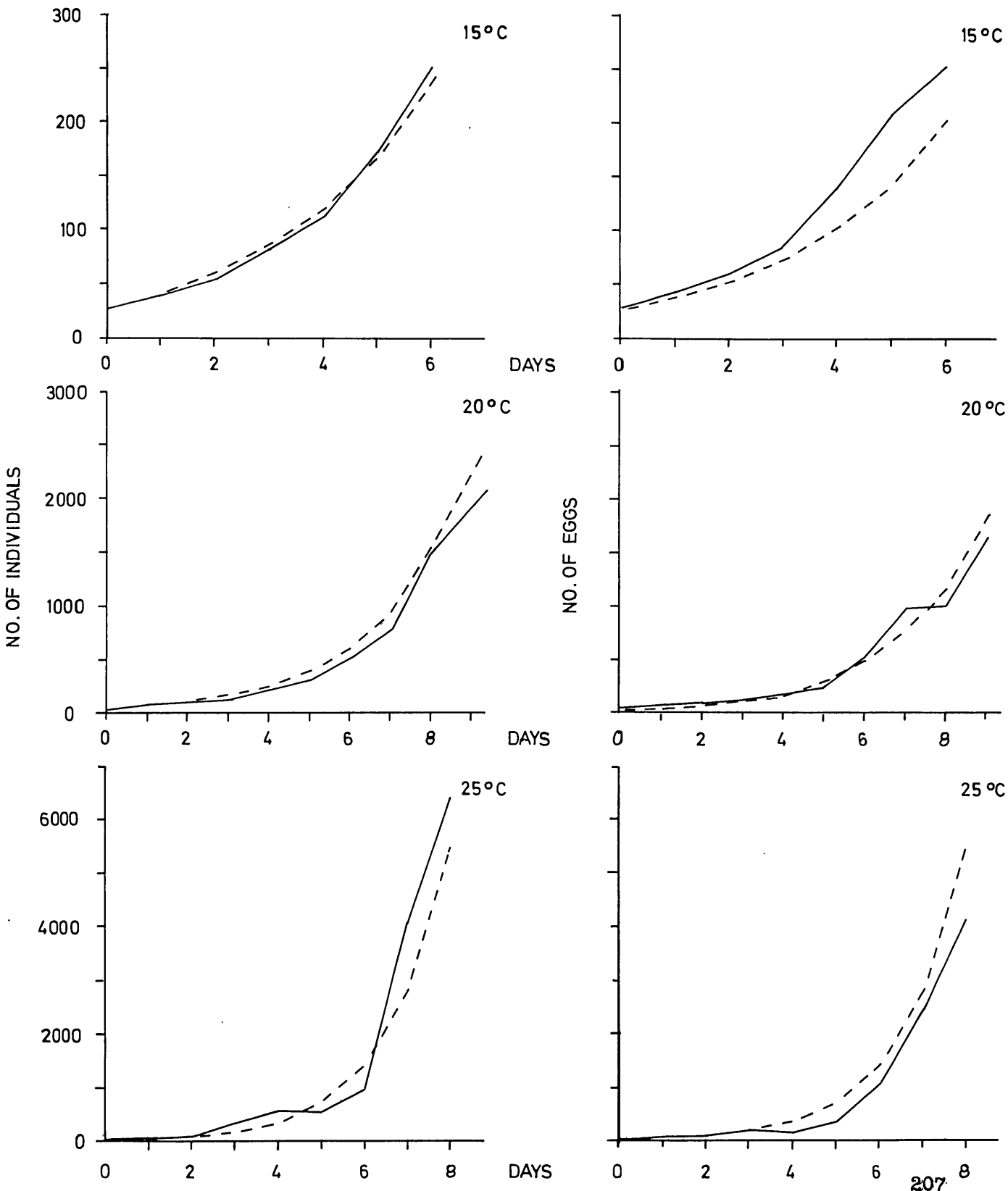


Fig. 2 A comparison of the observed growth of laboratory populations of *Brachionus plicatilis* (American strain) with that predicted by the model, at three different temperatures

—— observed
----- predicted



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Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Jahresbericht der Biologischen Station Lunz](#)

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