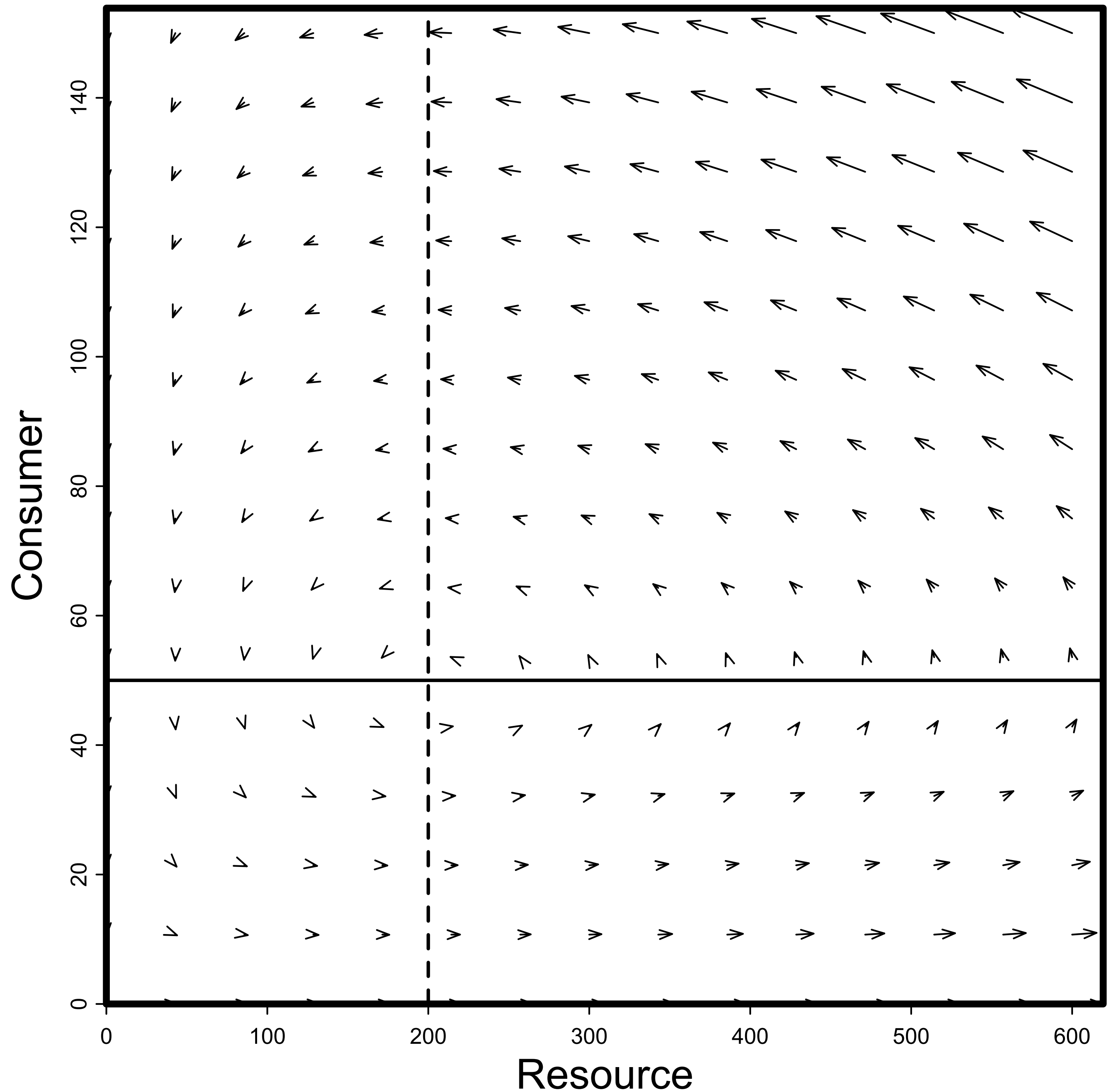
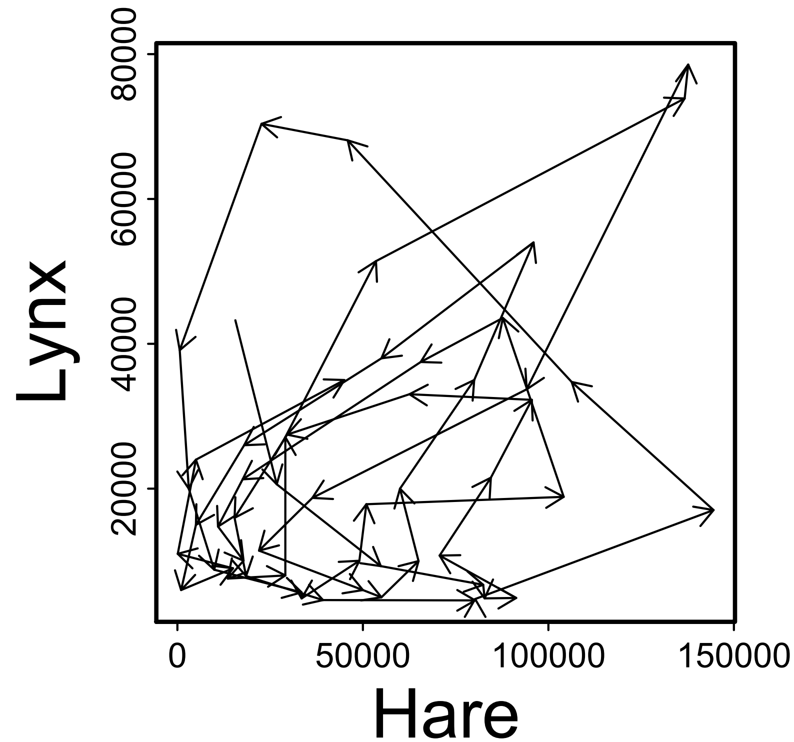
LV-Consumer-Resource

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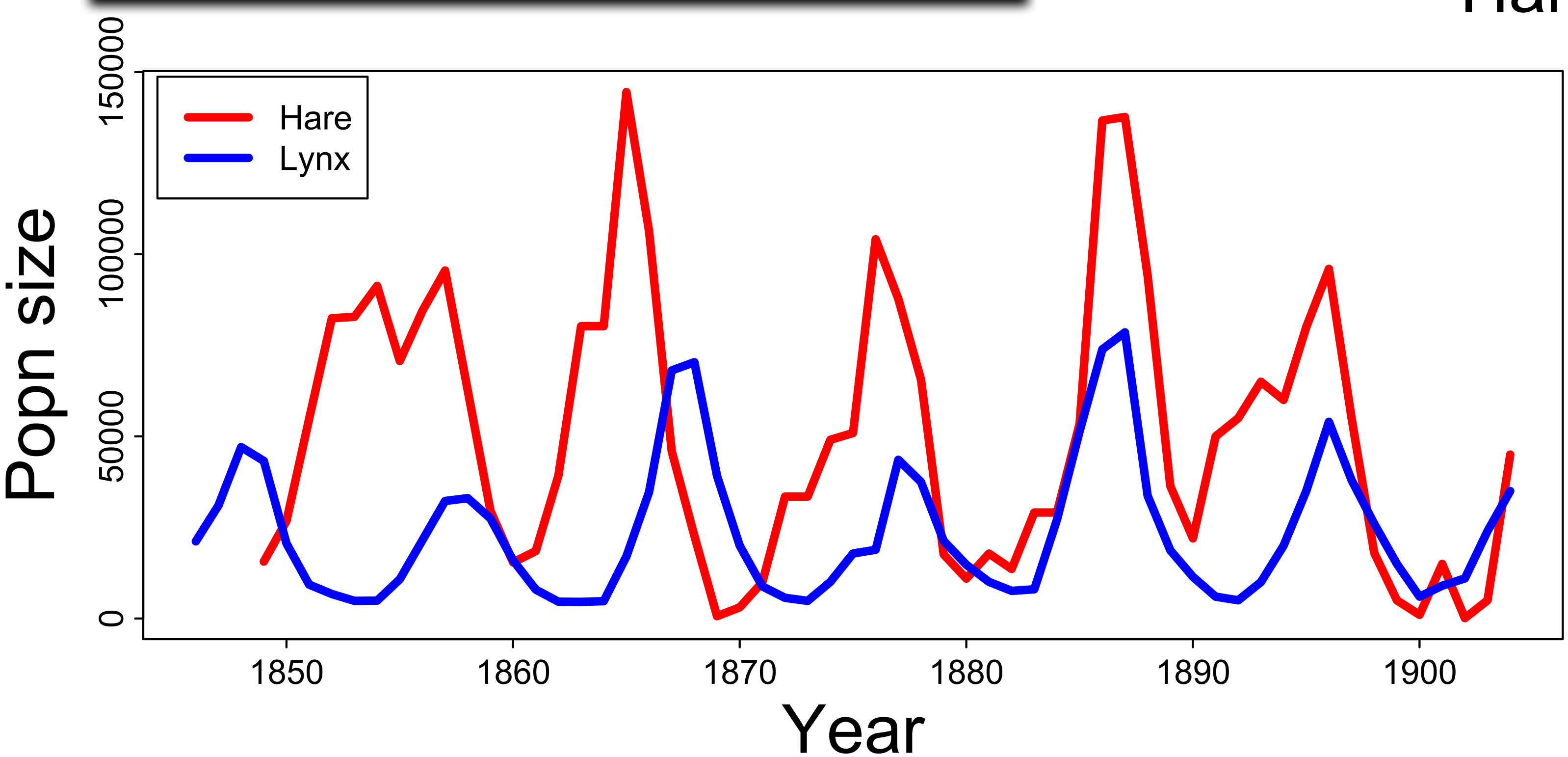
Hare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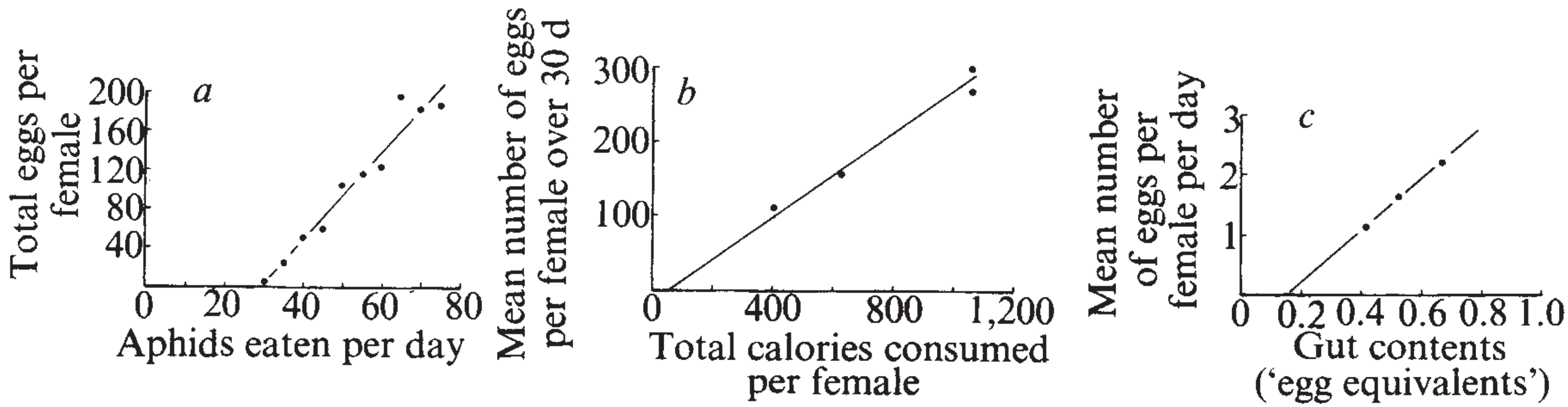


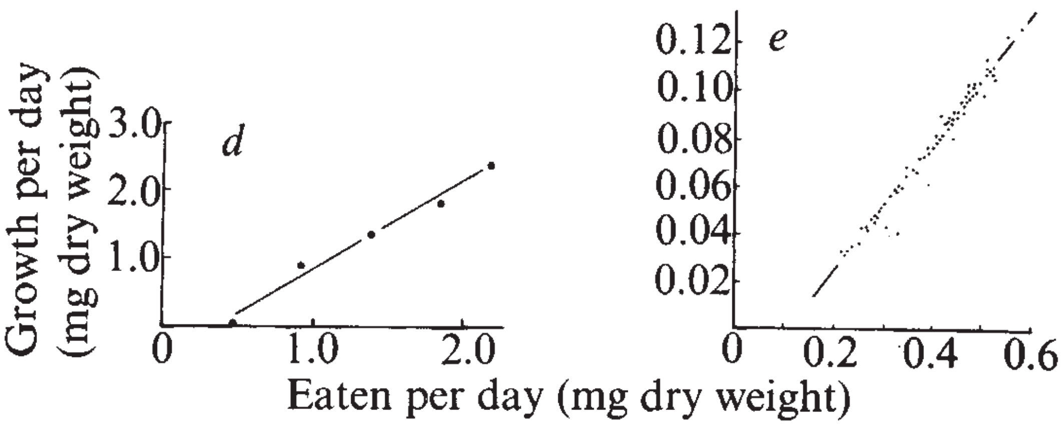
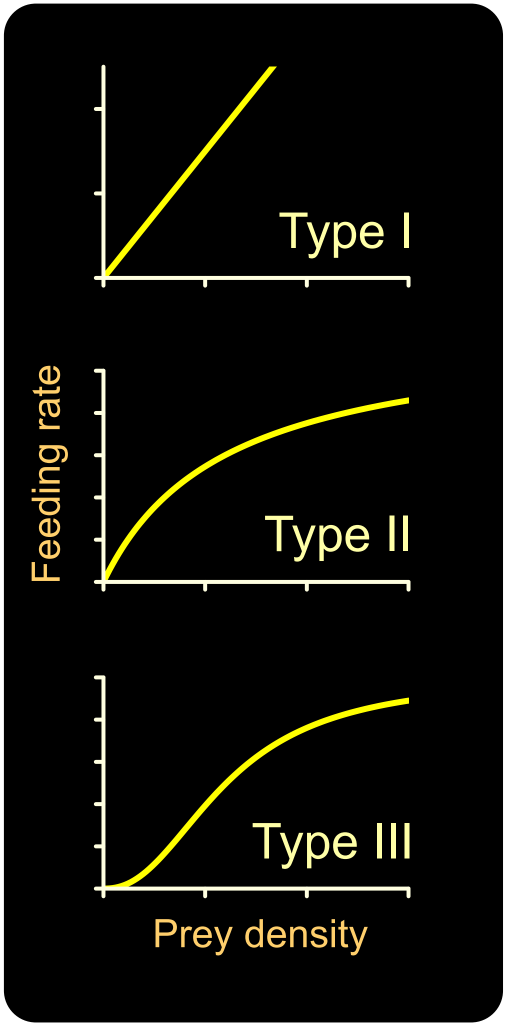


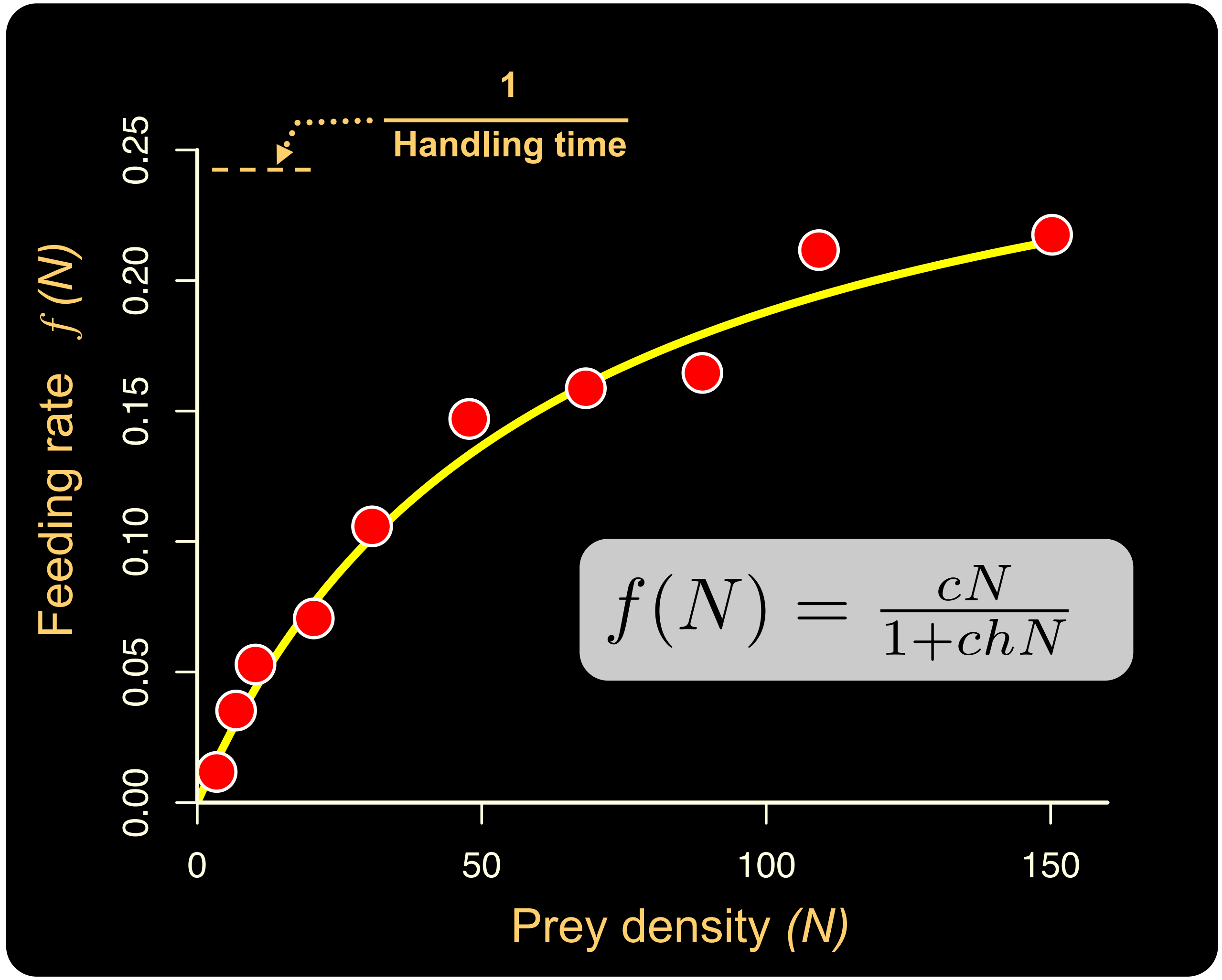
Fig. 1 Relationships between feeding rate and predator fecundity (*a–c*) or predator growth rate (*d*, *e*). Data are for (*a*) a coccinellid[12] (*Coccinella undecimpunctata aegyptiaca* Reiche), (*b*) an hemipteran[14] (*Podisus maculiventris* (Say)), (*c*) a mite[16] (*Typhlodromus occidentalis* Nesbitt), (*d*) an hemipteran[17] (*Notonecta undulata* Say) and (*e*) a spider[13] (*Linyphia triangularis* Clerck). The relationships all seem to be linear and of the form specified by equations (3) and (4).

Lawton, Hassell & Beddington, 1975

Predator Functional Responses

How does a predator respond to changes in prey abundance?



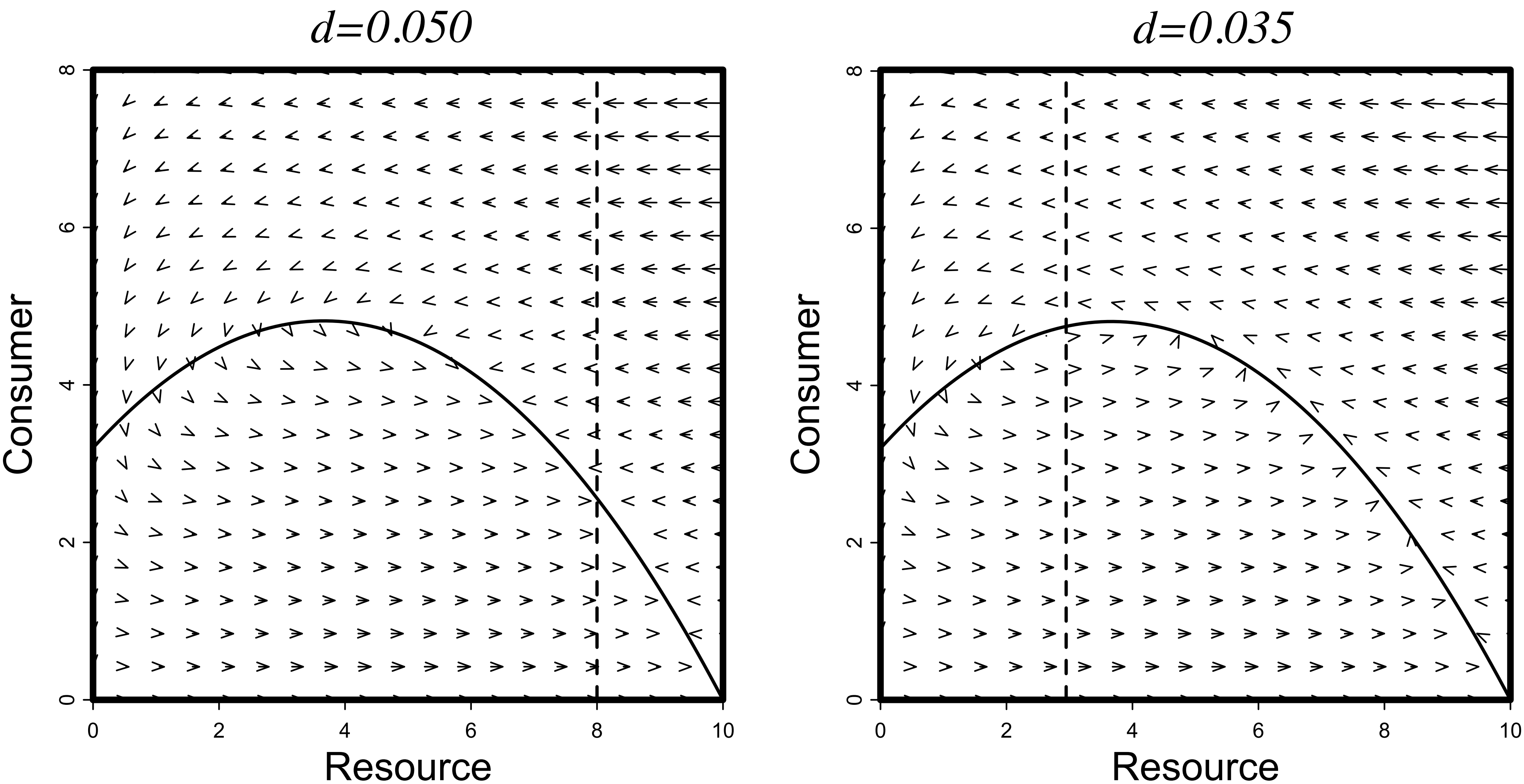


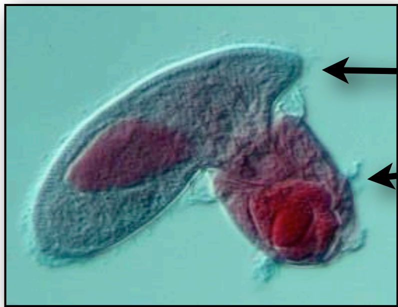
Most predators exhibit Type II functional responses

Murdoch & Oaten '75, Hassell et al '76, Jeschke et al. '04

MacArthur-Rosenzweig model

b=0.8, α=0.1, a=0.25, e=0.1, h<-1.5





COEXISTENCE IN LABORATORY POPULATIONS OF *PARAMECIUM AURELIA* AND ITS PREDATOR *DIDINIUM NASUTUM*[1]

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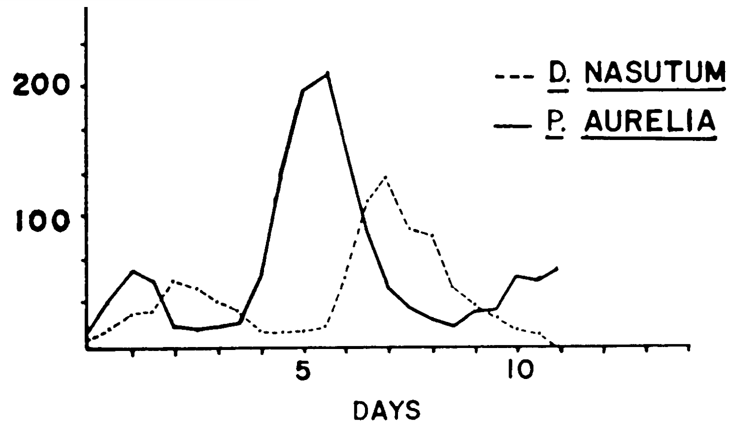

FIG. 3. System (a) shows the interaction of predator and prey in a less viscous mixture of experimental medium, while in (c), *Paramecium* and *Didinium* interact in a larger volume of medium, 10 ml, but at standard viscosity. System (b) serves as control, with standard viscosity and 6 ml volume of experimental medium.

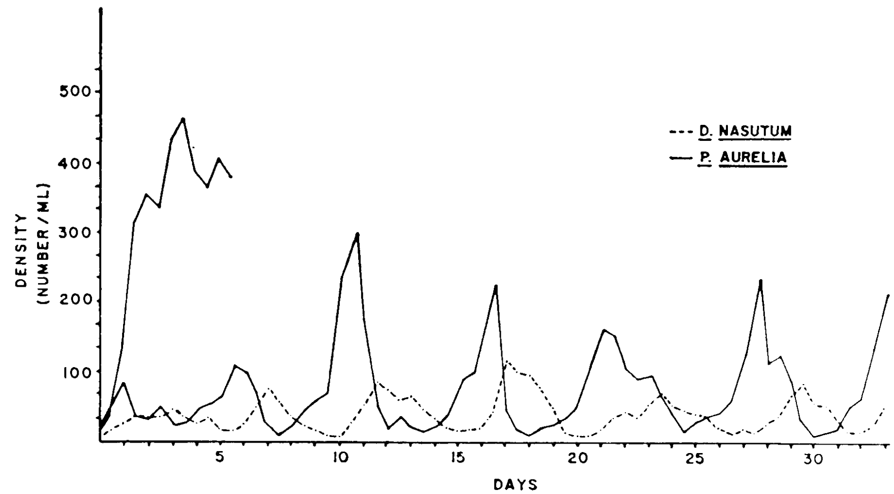

FIG. 5. Increasing oscillations are stabilized and extinction is prevented by prey. Transplants of this system were made on days 1.5, 3.0, 4.5, 6.0, 7.5, 9.0, 11.5, 13.5, 15.5, 18.5, 19.5, 22.0, 24.0, 26.0, 28.0, 30.0, and 32.0. The control for this experiment, at upper left, shows the increase in *Paramecium* in the absence of *Didinium*. No transplants of this system were made.