

# Interacción entre interacciones

- Polinización y herbivoría
- Polinización y depredación de polinizadores

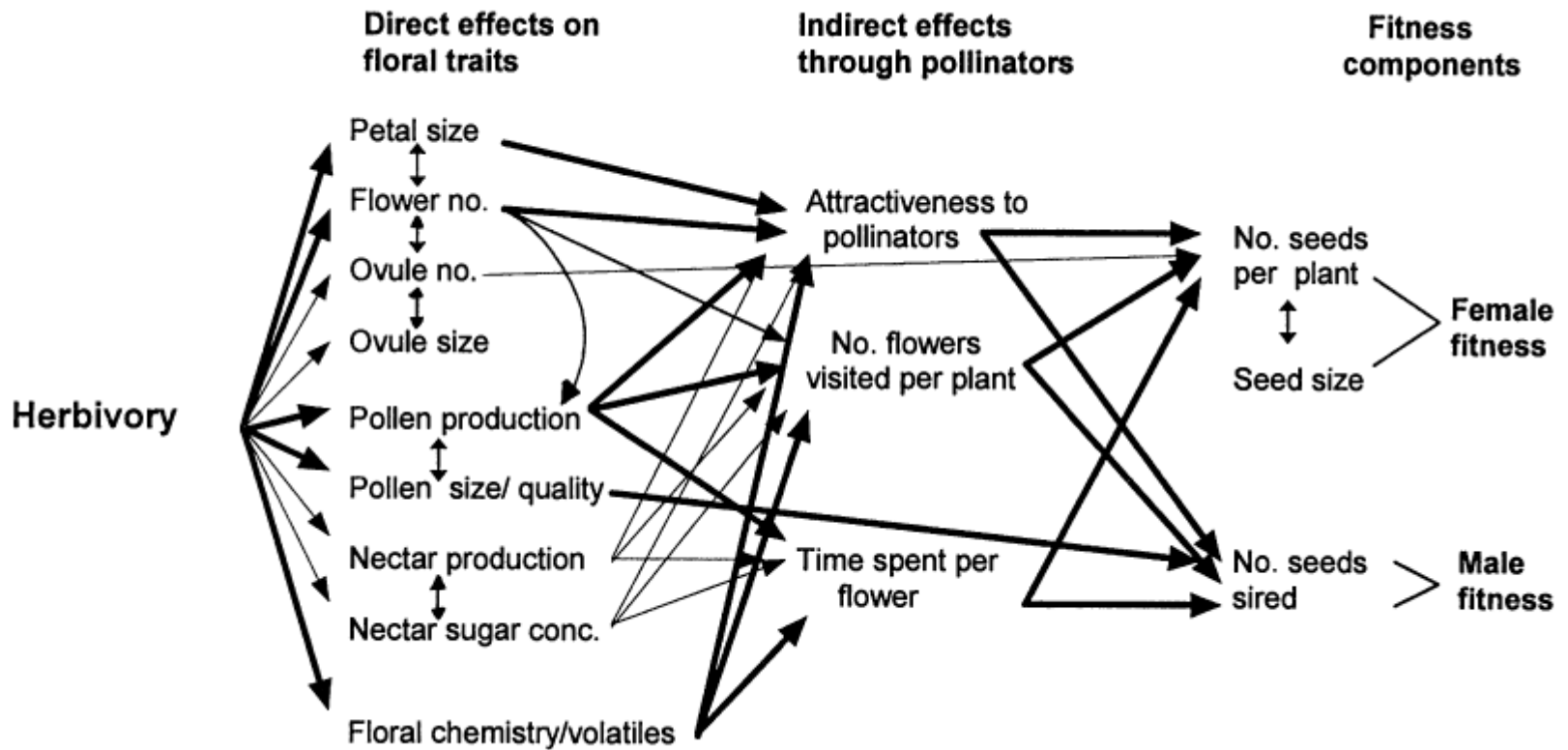


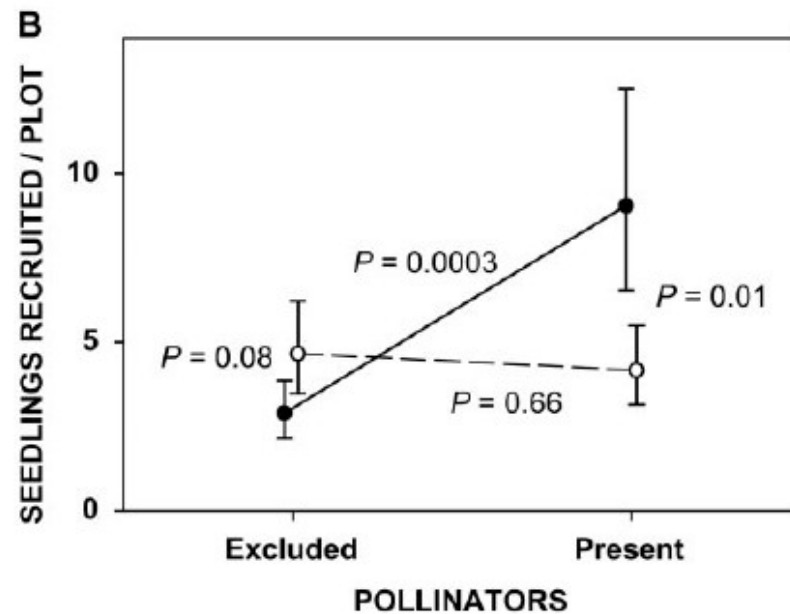
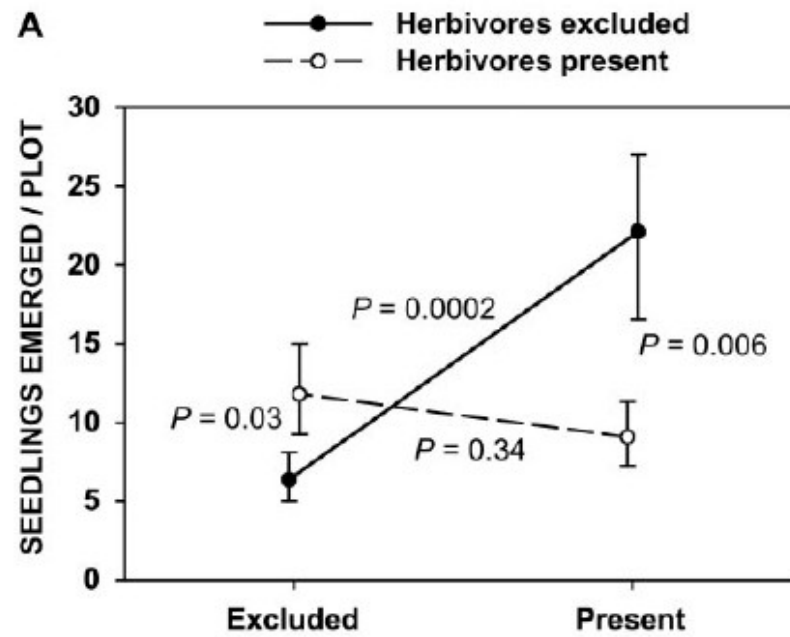
TABLE 1. Effect of leaf damage on the number of flowers per plant. (A) Least-squares means  $\pm$  1 SE for the number of flowers on control and partially defoliated branches of *Cucurbita texana*. (B) Mixed-effect model analysis of variance (SAS Institute 1990: GLM procedure) using plant as a random effect and treatment as a fixed effect, for each of the effects of partial defoliation on flower production in *Cucurbita texana*.

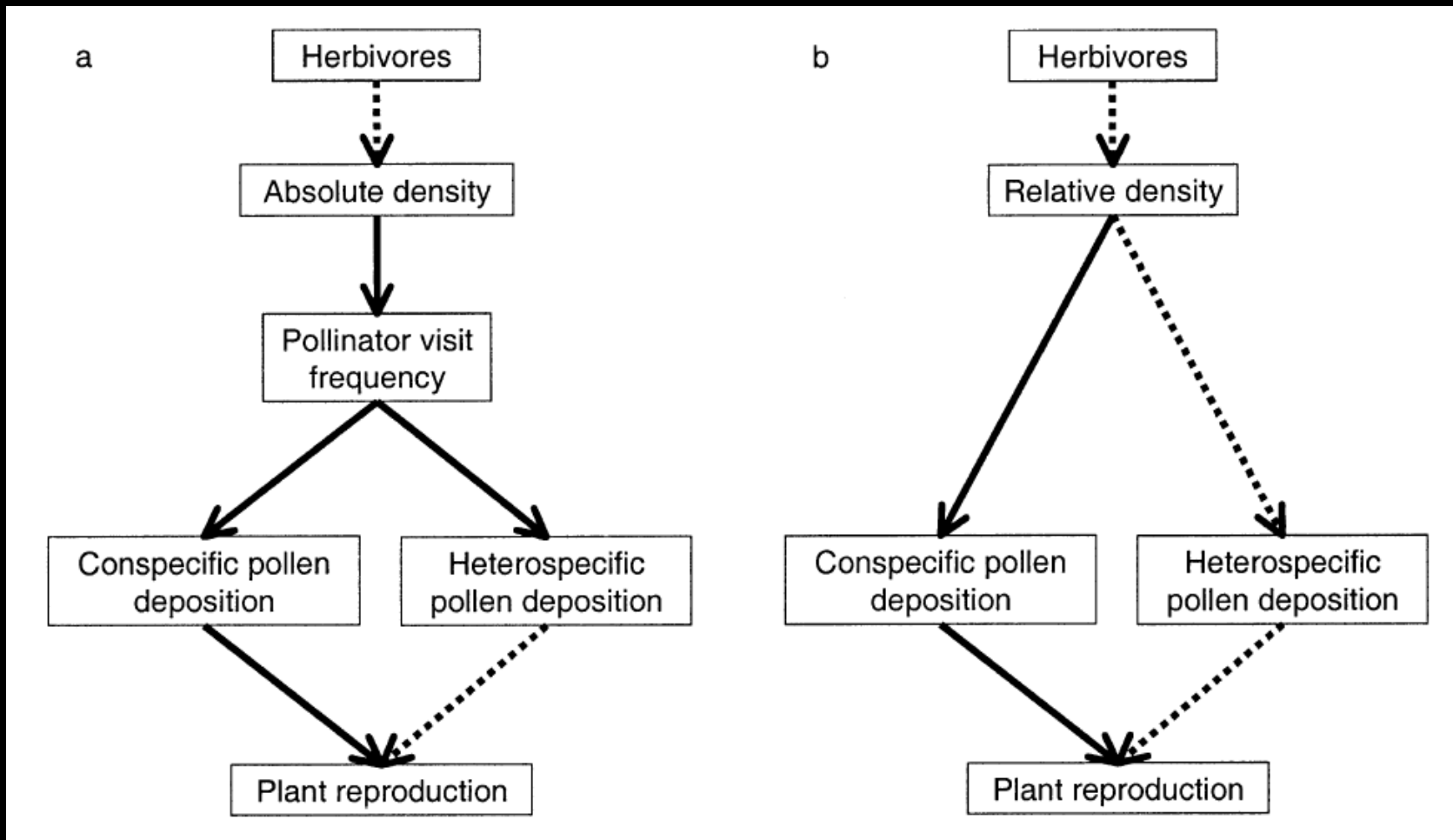
(A)					
Treatment (Branches)	Staminate flowers	Pistillate flowers	Total		
Control	21 $\pm$ 1.6	4 $\pm$ 0.6	25 $\pm$ 1.6		
Defoliated	17 $\pm$ 1.6	2 $\pm$ 0.6	19 $\pm$ 1.6		
(B)					
Dependent variable	Source of variation	df	Type III MS	F	P
Staminate flowers	Plant	8	37.1	1.58	0.26
	Treatment	1	93.4	3.99	0.08
	Error	8	23.4		
Pistillate flowers	Plant	8	3.3	1.20	0.40
	Treatment	1	18	6.55	0.03
	Error	8	2.8		
Total number of flowers	Plant	8	43.2	1.76	0.22
	Treatment	1	193.4	7.85	0.02
	Error	8	24.6		

TABLE 2. Effect of leaf damage on the number and size of pollen grains. (A) Least-squares means  $\pm$  1 SE for the number of pollen grains per flower and pollen grain diameter for staminate flowers on control and partially defoliated branches of *Cucurbita texana*. (B) Mixed-effect model analysis of variance (SAS Institute 1990: GLM with MANOVA procedure\*) using plant as a random effect and treatment as a fixed effect, for the effect of partial defoliation on pollen production per flower and pollen grain diameter of *Cucurbita texana*.

(A)						
Treatment (Branches)	Number of pollen grains per flower	Pollen grain diameter				
Control	28 030 $\pm$ 1034	133.0 $\pm$ 0.7				
Defoliated	24 444 $\pm$ 1136	131.7 $\pm$ 0.7				
(B)						
Dependent variable	Source of variation	df	Type III MS	F	P	
Number of pollen grains per flower	Plant	8	56 163 135.3	1.41	0.21	
	Treatment	1	219 662 897.9	5.50	0.02	
	Error	64	39 940 086.2			
Pollen grain diameter	Plant	8	18.4	1.35	0.24	
	Treatment	1	21.1	1.55	0.21	
	Error	64	13.7			

\* Wilks' lambda = 0.90,  $F_{2,63} = 3.48$ ,  $P < 0.04$ .





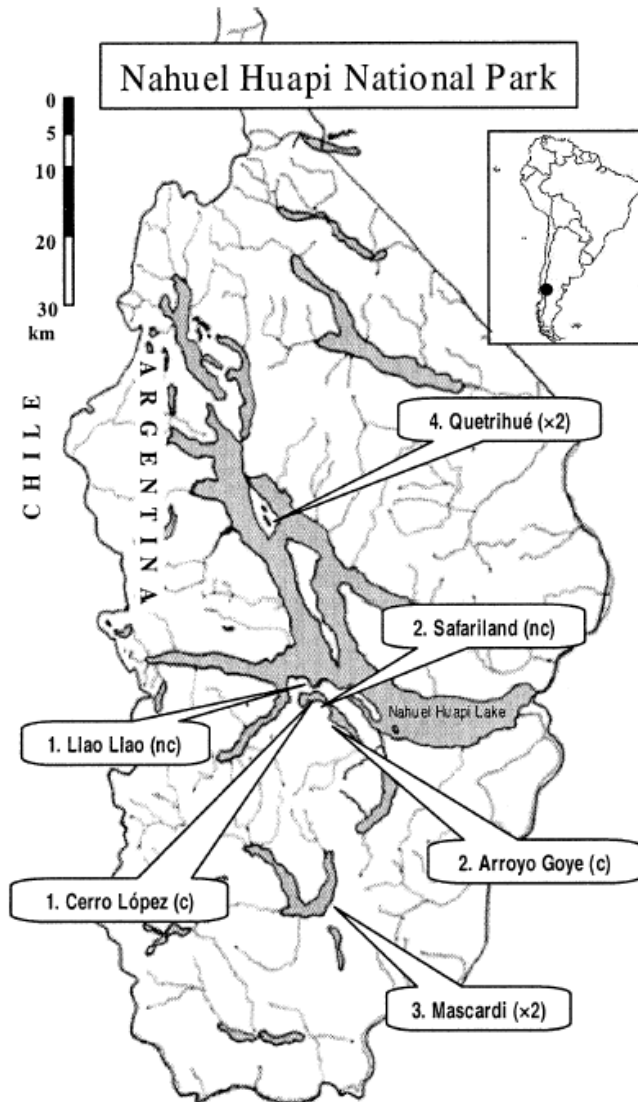
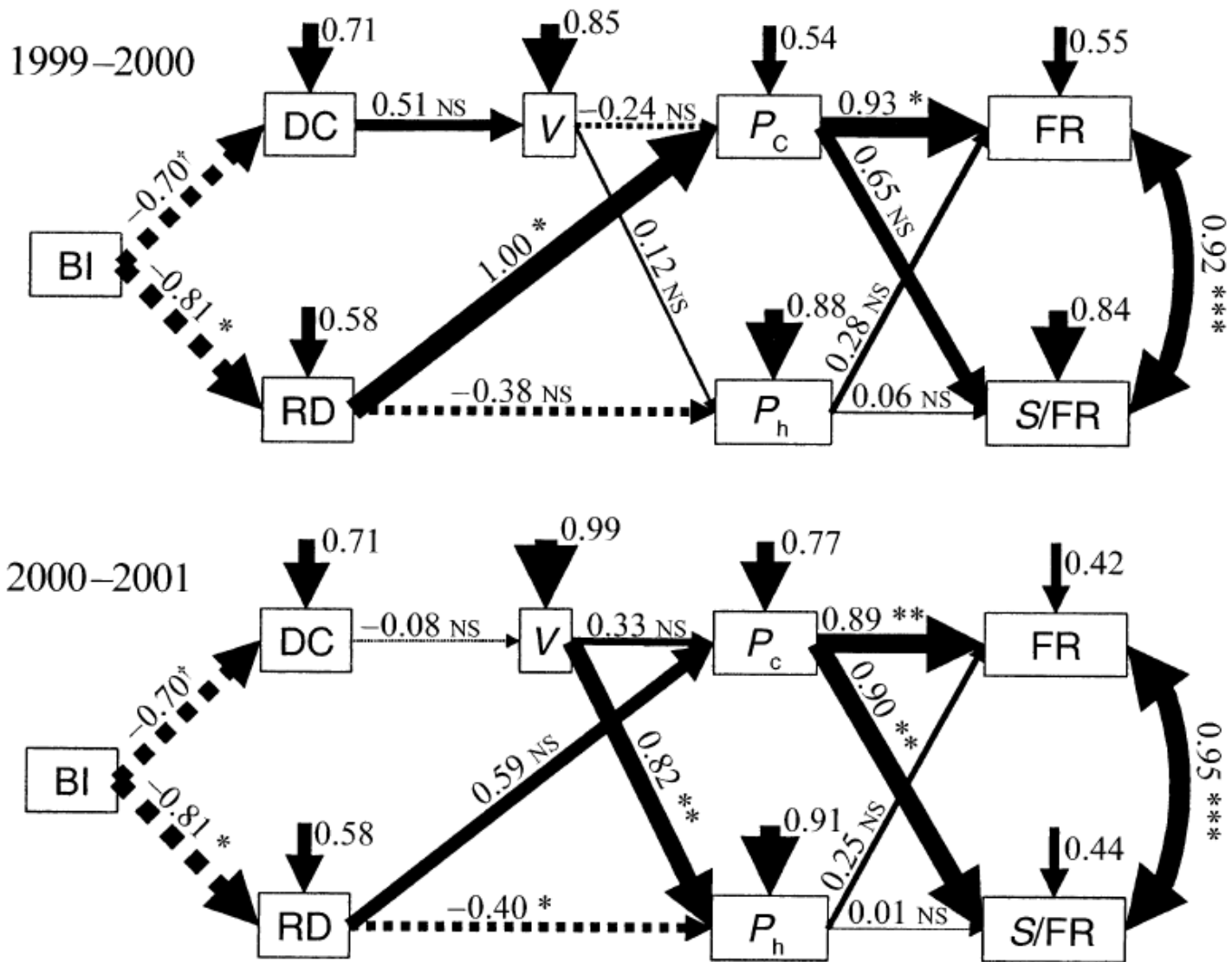


FIG. 2. Four pairs of sites: (1) Liao Liao (without cattle, nc) and Cerro López (with cattle, c); (2) Safariland (nc) and Arroyo Goye (c); (3) Lago Mascardi (nc) and Lago Mascardi (c); (4) Península Quetrihué (nc) and Península Quetrihué (c). Paired sites in pairs 1 and 2 were separated by a few kilometers; sites in pairs 3 and 4 were contiguous (indicated as "x2"). Gray shading indicates lakes.



Fuente: Vázquez DP, Simberloff D (2004) *Ecological Monographs* 74:281-308

- Polinización y depredación de polinizadores





PLATE 1. The crab spider *Misumenops argenteus* preying on a tephritid fly (*Trupanea* sp.) on the plant *Trichogoniopsis adenantha* (Asteraceae). Photo credit: João Vasconcellos-Neto.

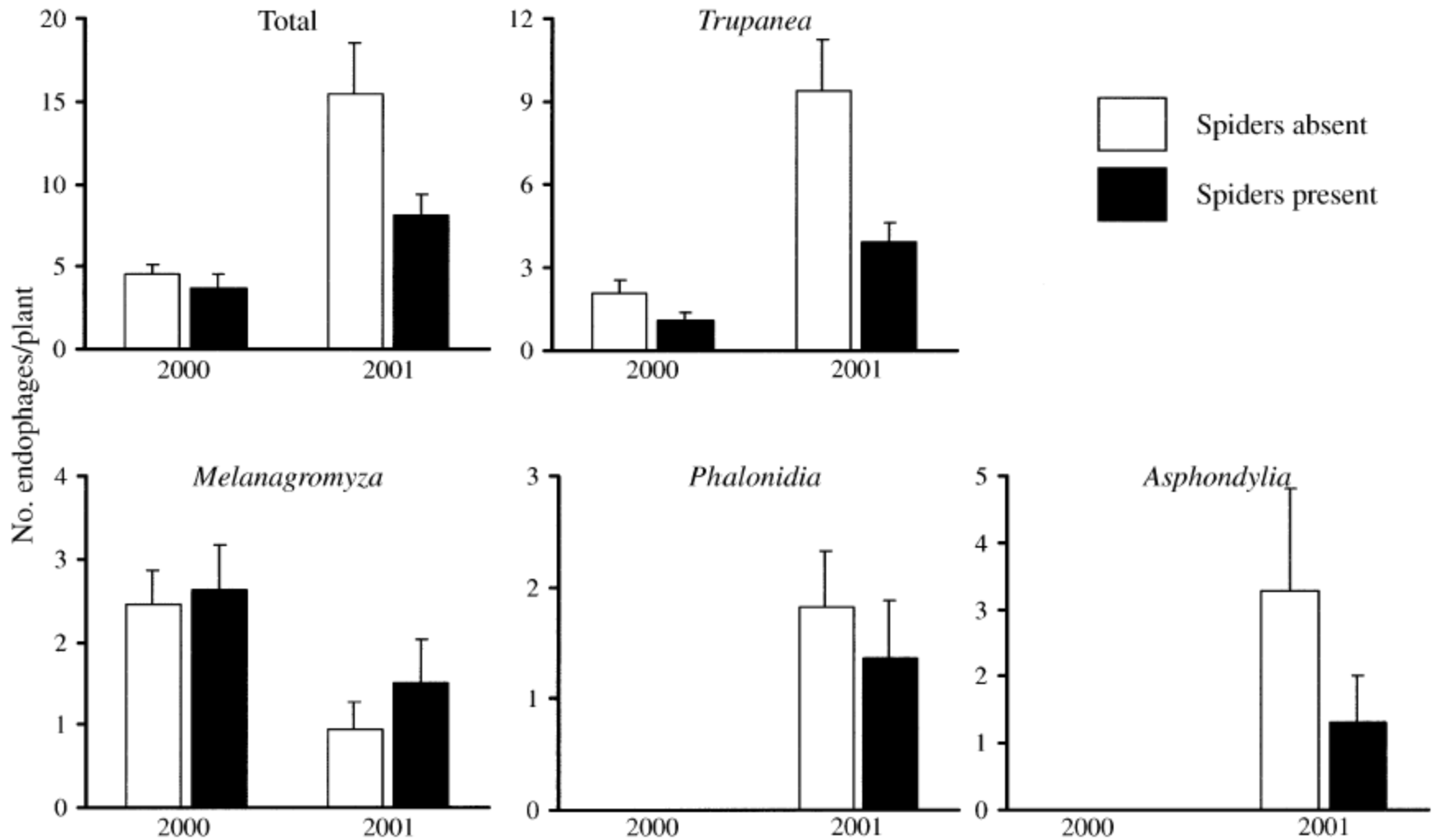


FIG. 1. Total number of endophages and number of *Trupanea* sp., *Melanagromyza* sp., *Phalonidia unguifera*, and *Asphondylia* sp. in capitula of *Trichogoniopsis adenantha* in the absence (open bars) and presence (solid bars) of the crab spider, in 2000 and 2001. *P. unguifera* and *Asphondylia* sp. did not occur in 2000. Error bars indicate +1 SE.

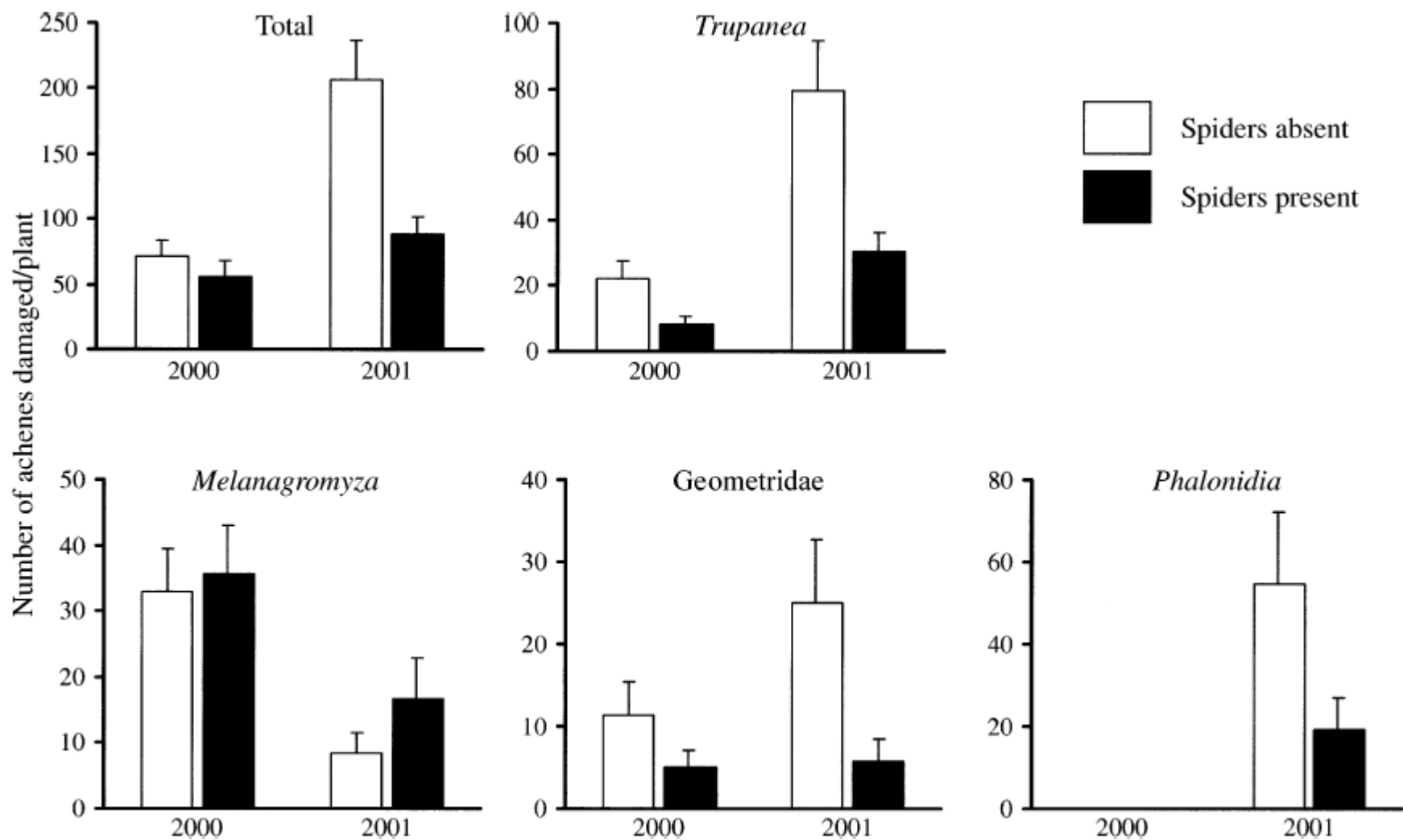
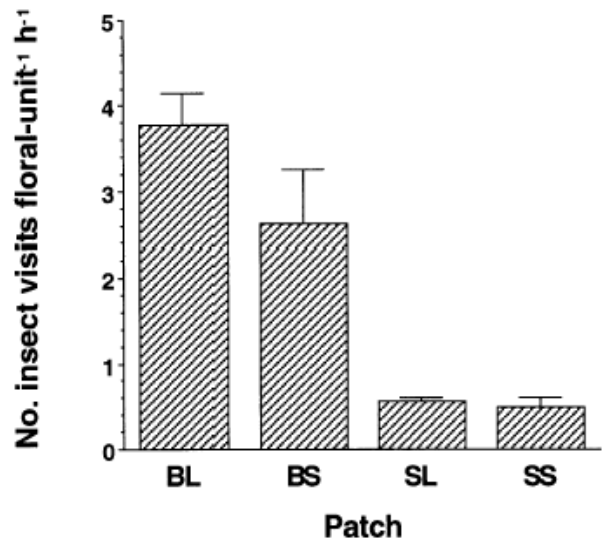
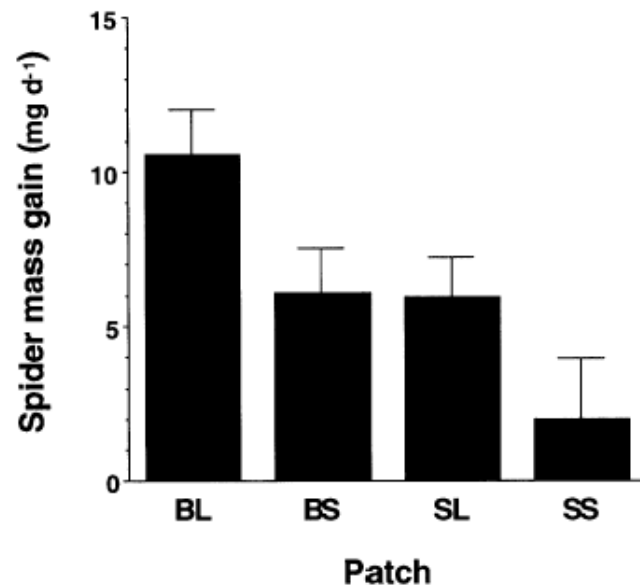


FIG. 3. Total number of *T. adenantha* achenes damaged and the number of achenes damaged by each herbivore species on plants with spiders absent (open bars) and present (solid bars), in 2000 and 2001. *P. unguifera* did not occur in 2000. Achenes of capitula with interspecific co-occurrence were considered only in the analysis of the total number of achenes damaged (see *Methods*). Error bars indicate +1 SE.



**Fig. 1** Insect visitation rates (number of visits floral unit<sup>-1</sup> h<sup>-1</sup>) to the experimental patches. Raw data are presented. *Error bars* are  $\pm 1$  SE. *BL* large *Bidens* patch, *BS* small *Bidens* patch, *SL* large *Solidago* patch, *SS* small *Solidago* patch



**Fig. 3** Spider rates of mass gain (mg day<sup>-1</sup>) in the experimental patches. Raw data are presented. *Error bars* are  $\pm 1$  SE