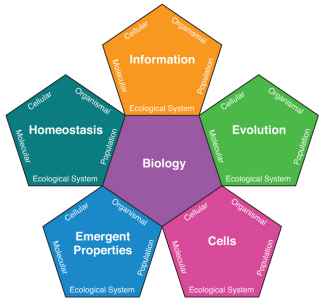
Integrating Concepts in Biology



PowerPoint Slides for Chapter 16: Variation and Population Genetics

Section 16.1: What causes individual variation?

by A. Malcolm Campbell, Laurie J. Heyer, & Christopher Paradise

Section 16.1: What causes individual variation?

Biology Learning Objectives

- Evaluate the processes by which variation is generated in organisms and how this affects information at the population level and natural selection.
- Differentiate between independent assortment and crossing over.

Zinc contamination and pH in soils surrounding a smelting operation in Pennsylvania

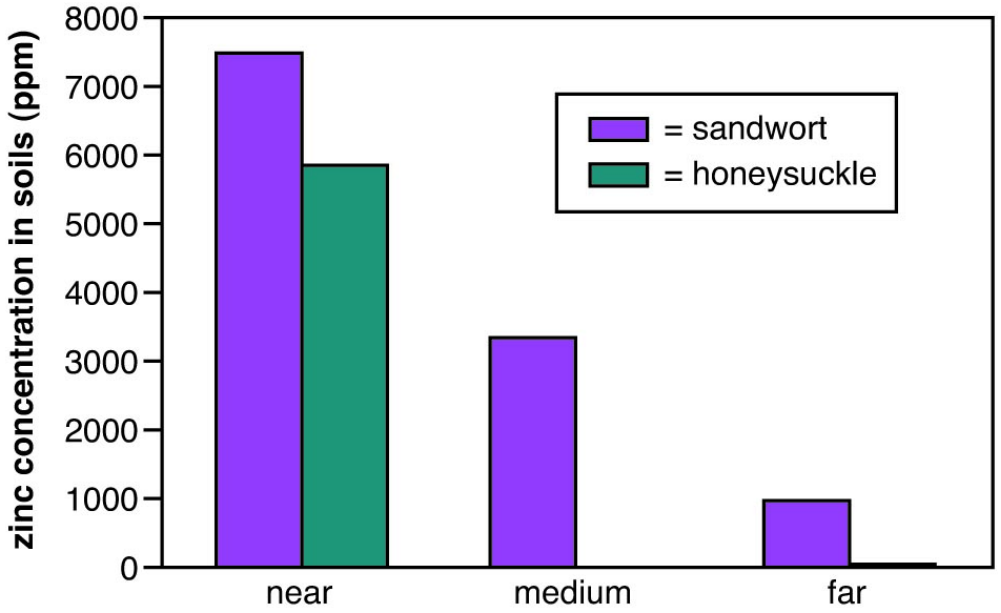
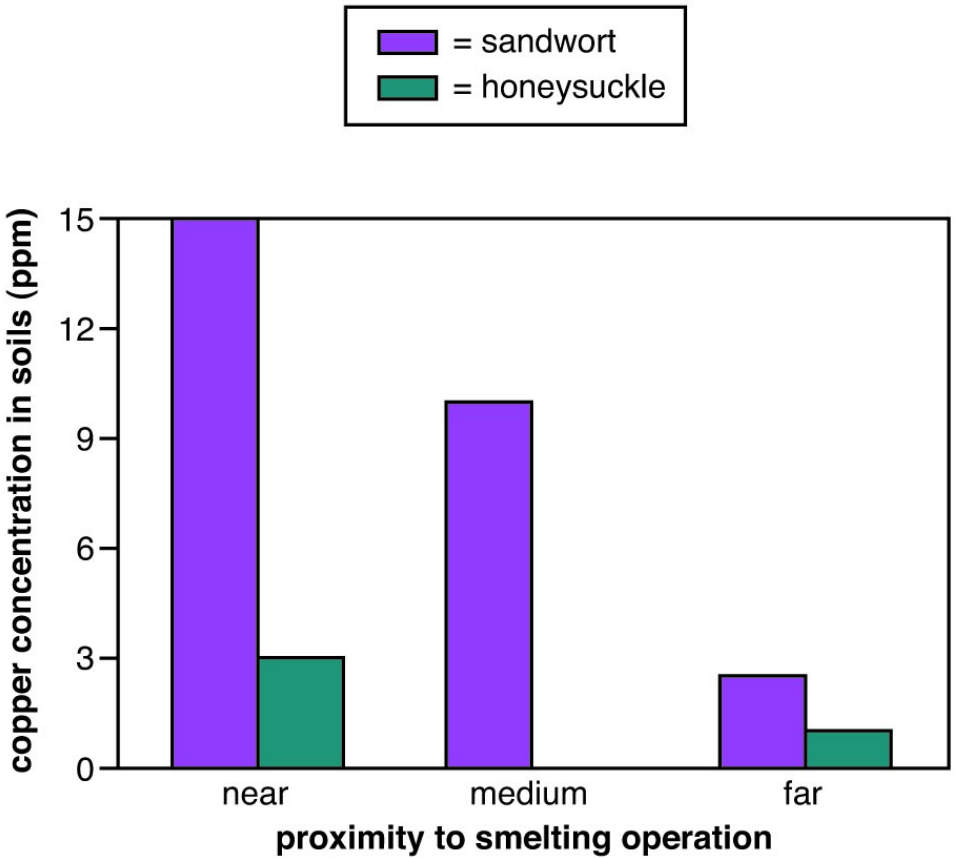


Figure 16.6

Data from Caiazza & Quinn, 1980, Table 1.

Copper contamination and pH in soils surrounding a smelting operation in Pennsylvania



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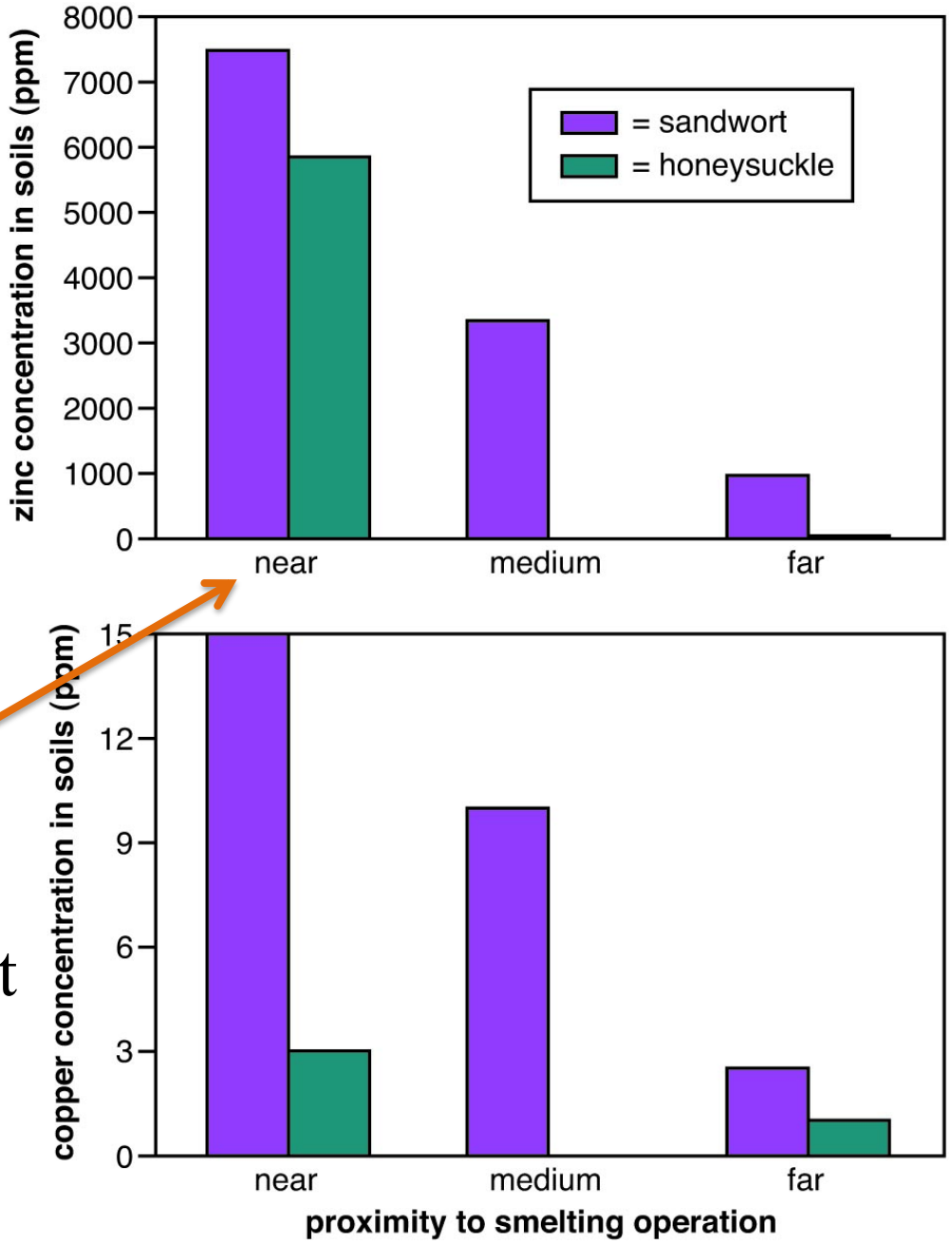
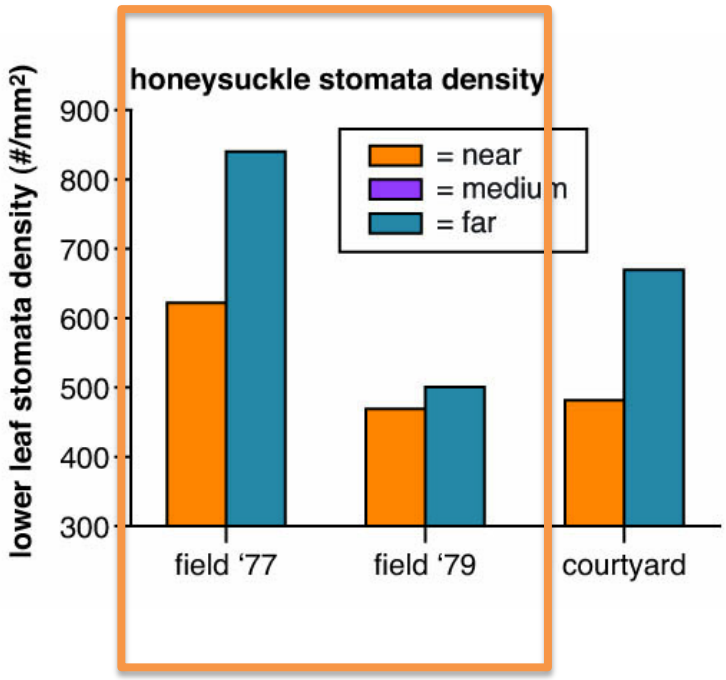


distance from smelter that plants were collected

Figure 16.6

Data from Caiazza & Quinn, 1980, Table 1.

Stomata and hair densities of honeysuckle collected at two times and grown in controlled conditions

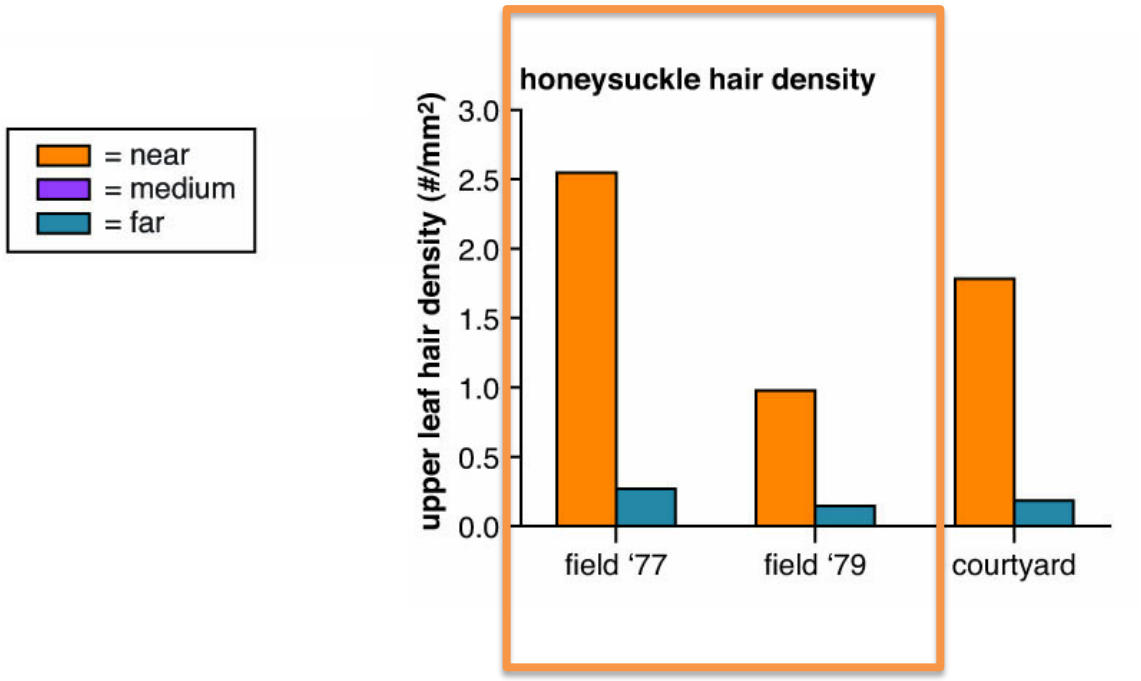


What is the effect of distance to smelter on stomata density?

Figure 16.7

Data from Caiazza & Quinn, 1980, Table 2 and 3.

Stomata and hair densities of honeysuckle collected at two times and grown in controlled conditions



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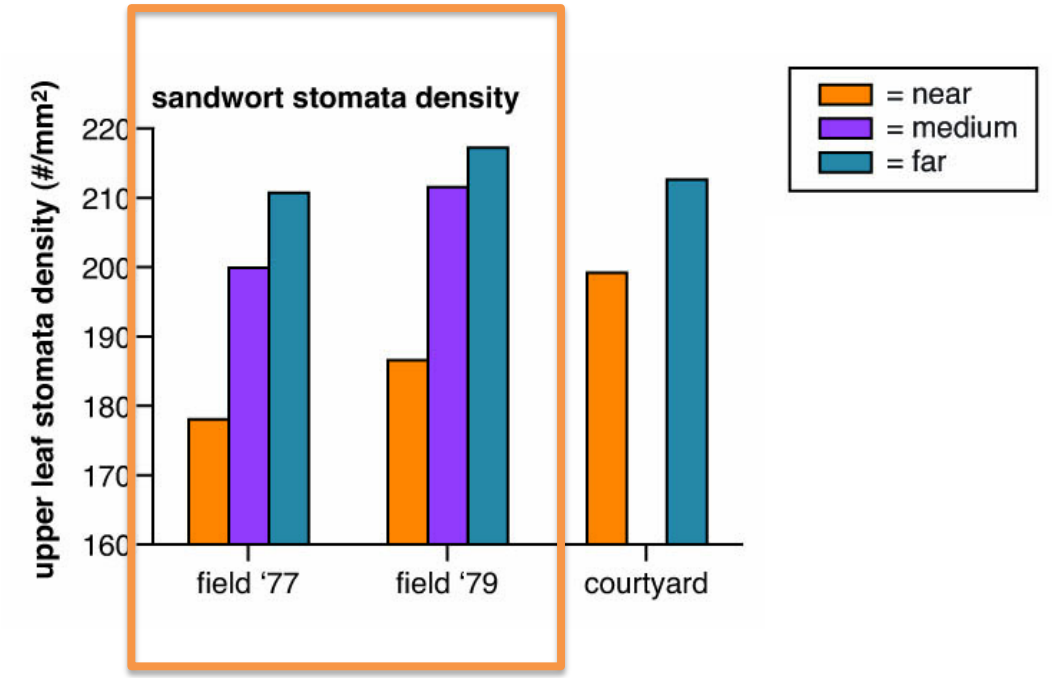
Stomata and hair densities of sandwort collected at two times and grown in controlled conditions



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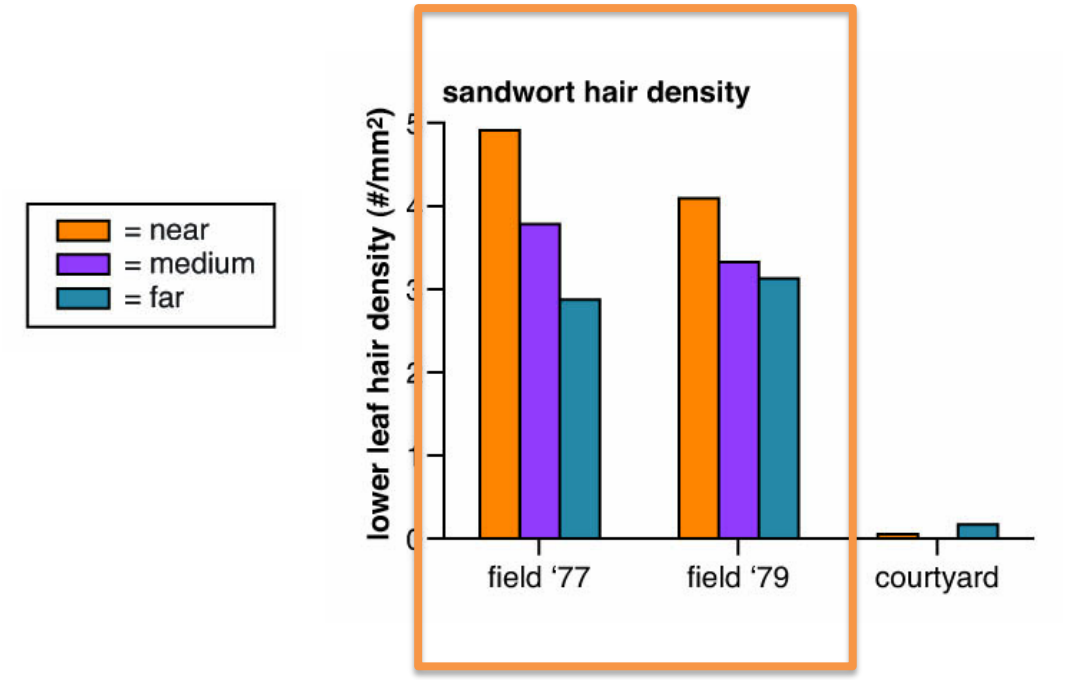

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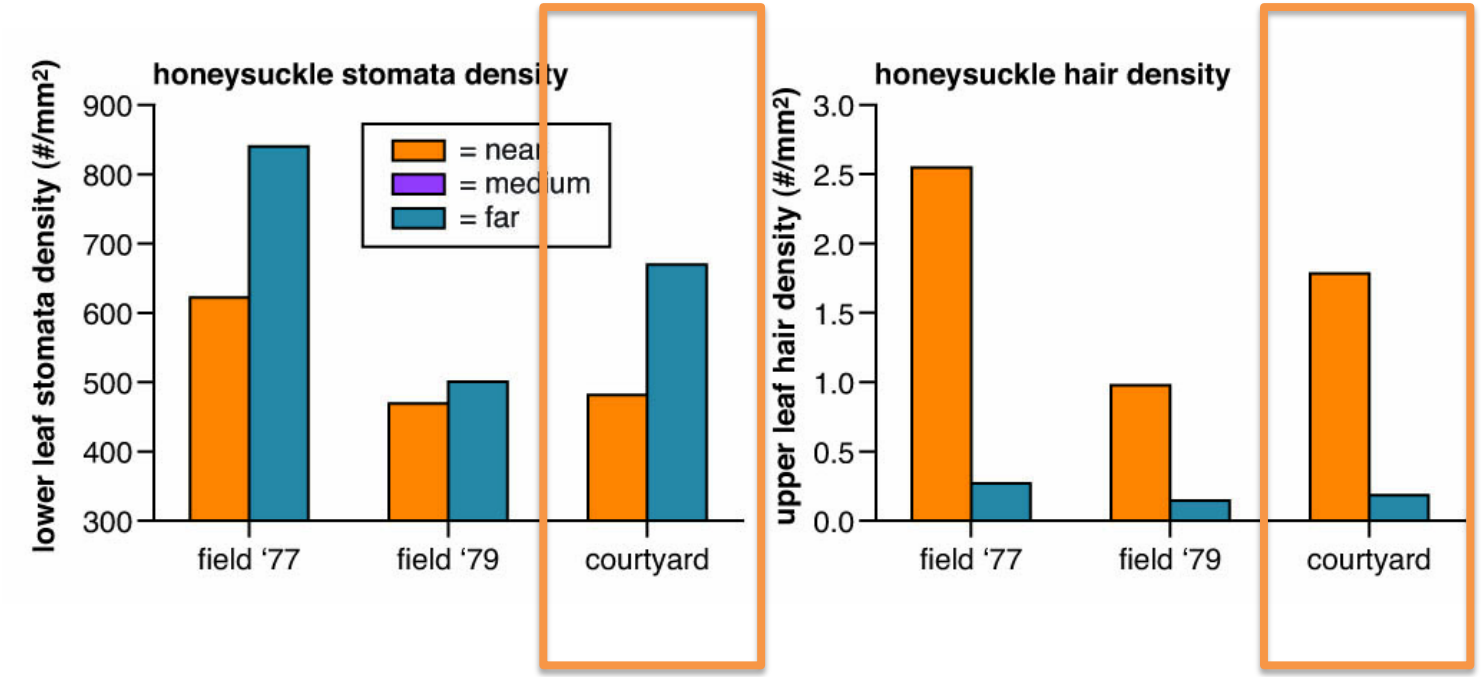

What do the results of the common garden experiment show?

Figure 16.7

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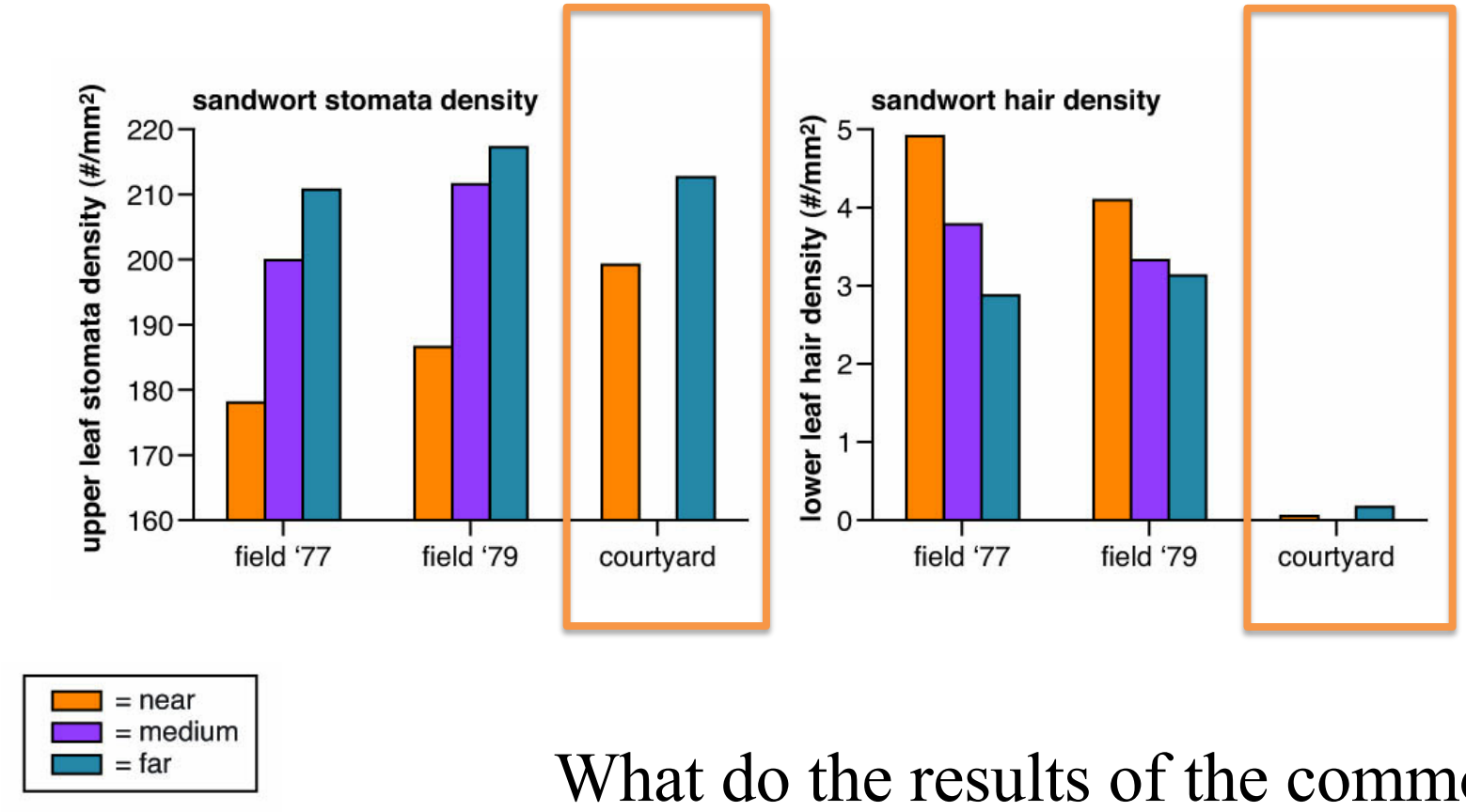

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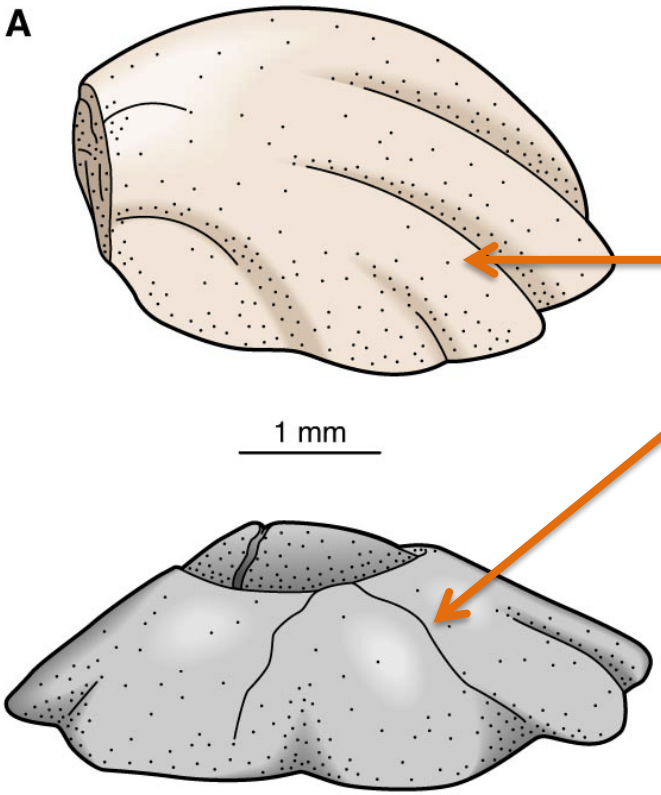
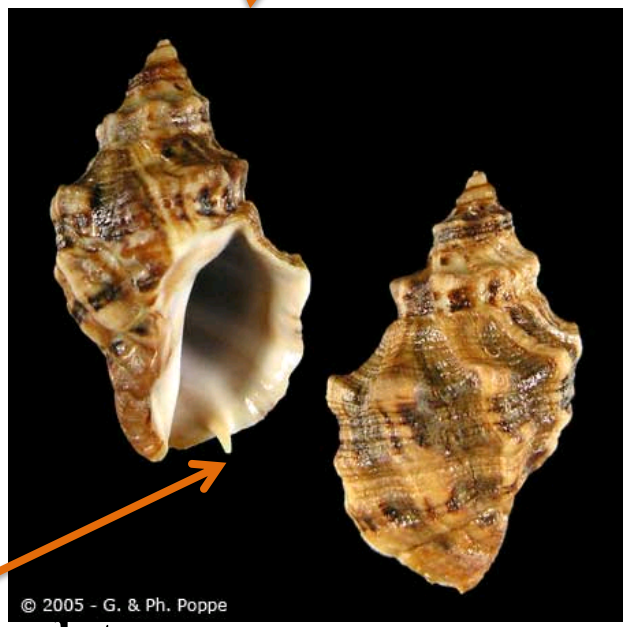
Responses of the acorn barnacle (*Chthamalus anisopoma*) to the snail predator (*Acanthina*).



bent and cone shell shapes

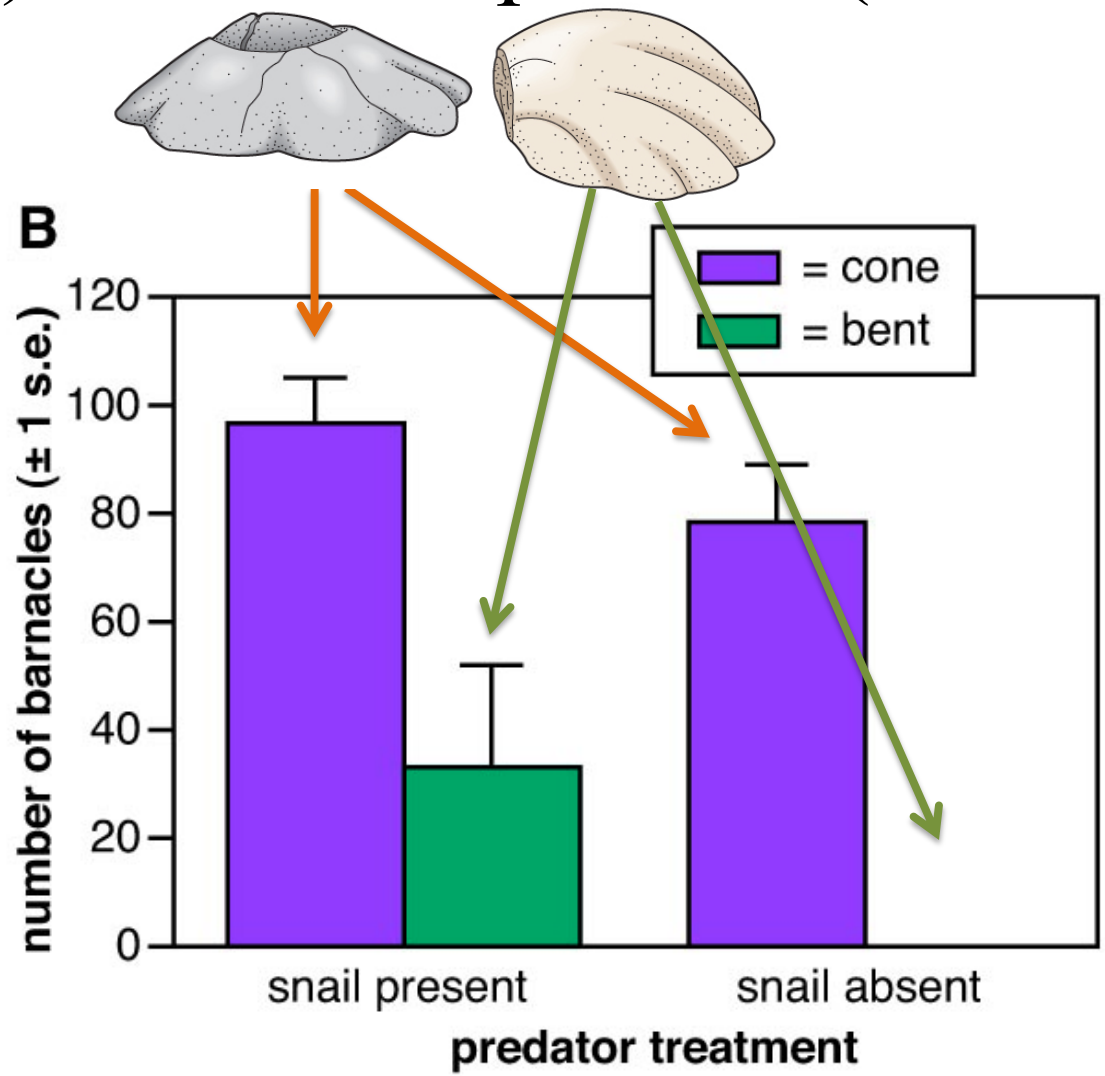


Spine used to pry barnacles

Figure 16.8

Responses of the acorn barnacle (*Chthamalus anisopoma*) to the snail predator (*Acanthina*).

results of predator exclusion experiment



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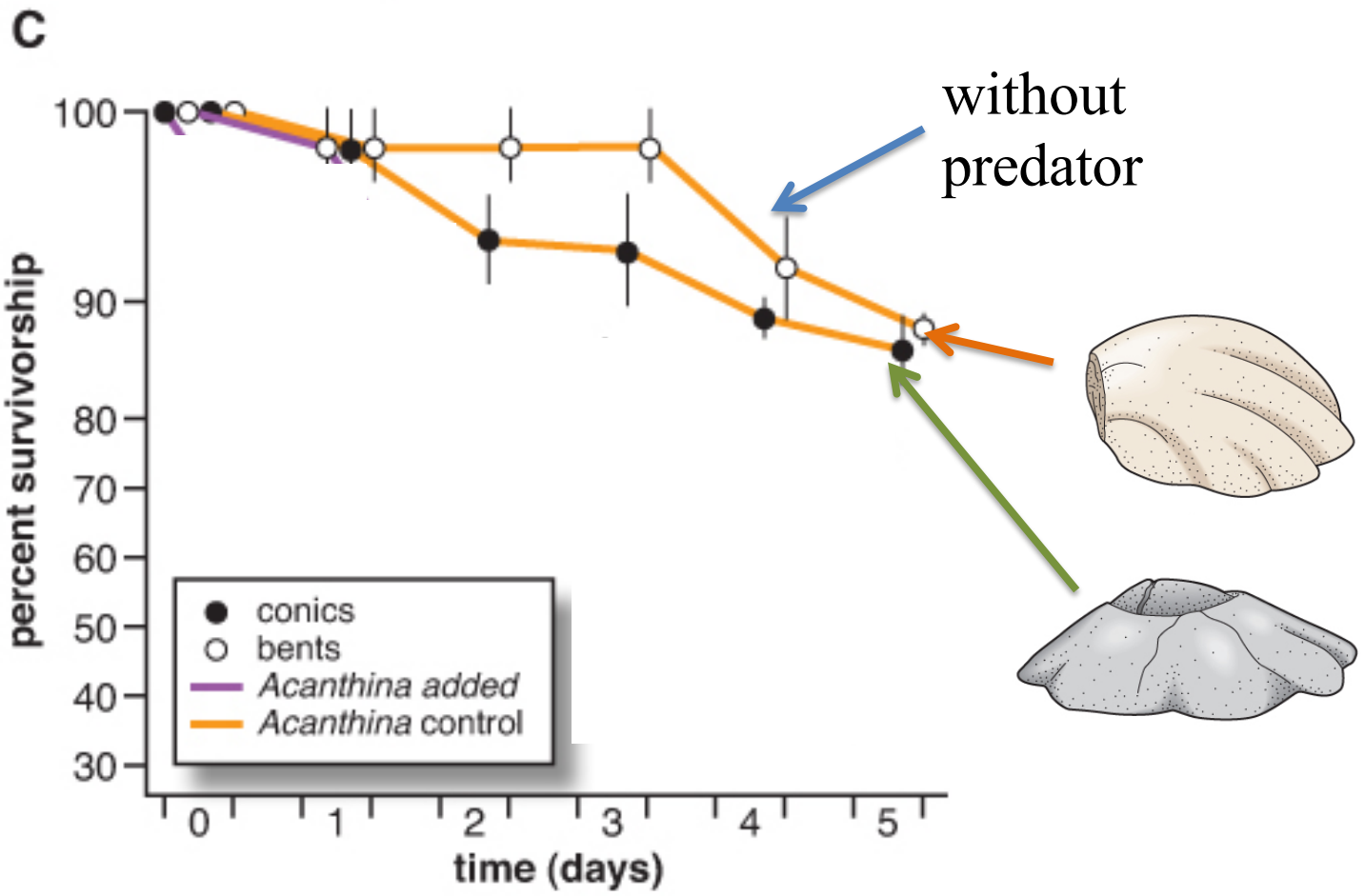
Survival of barnacles



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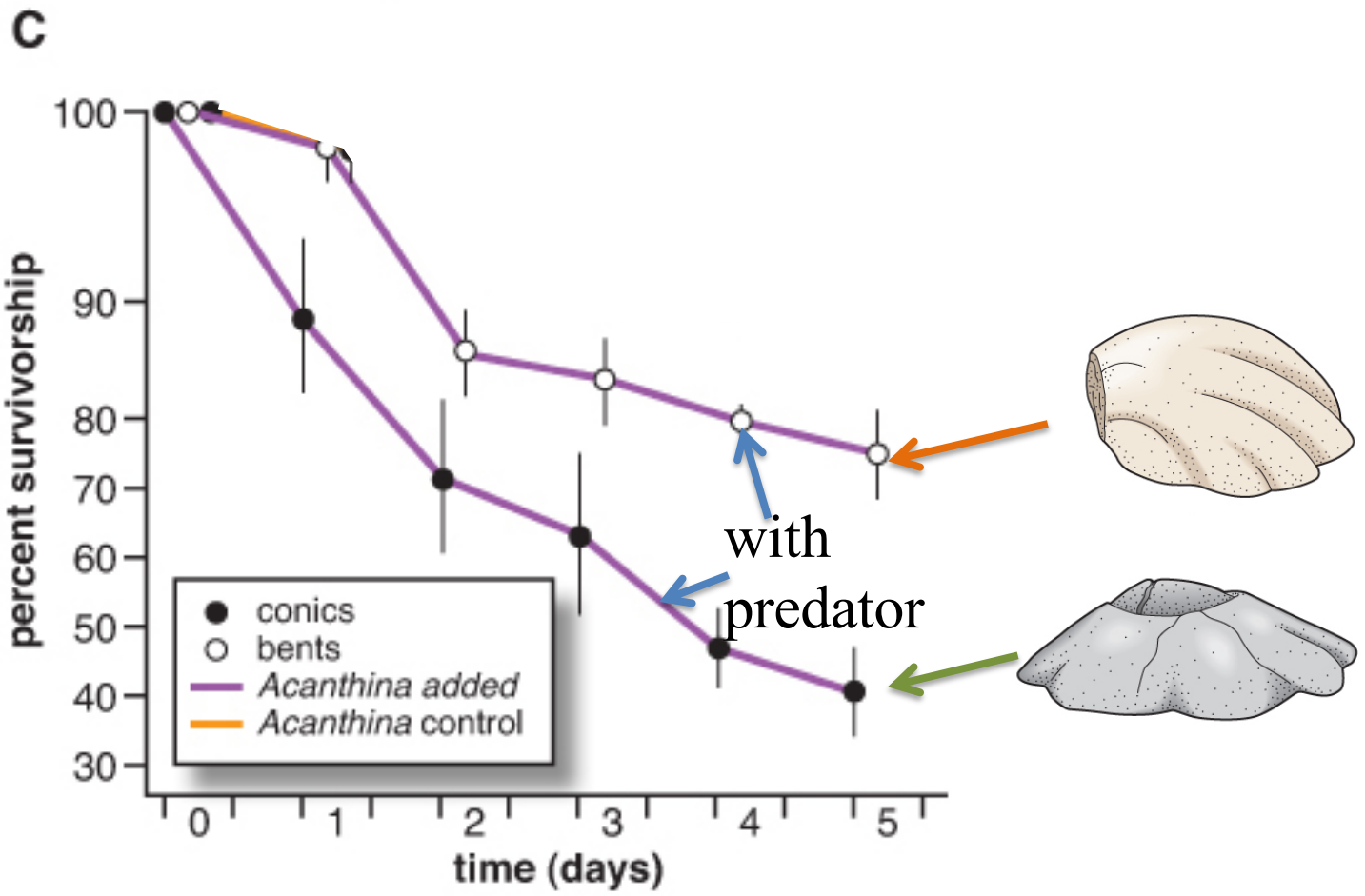

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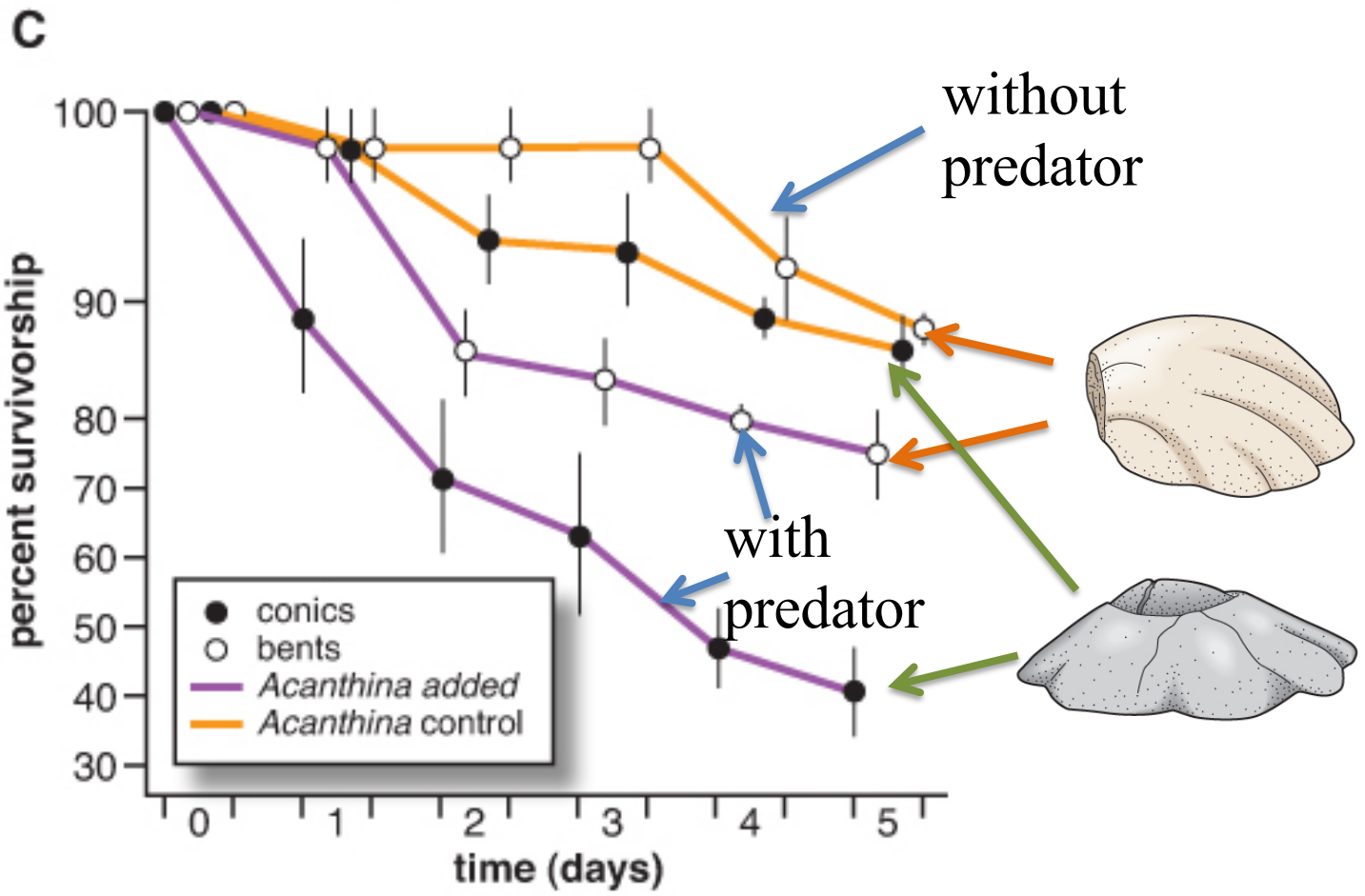

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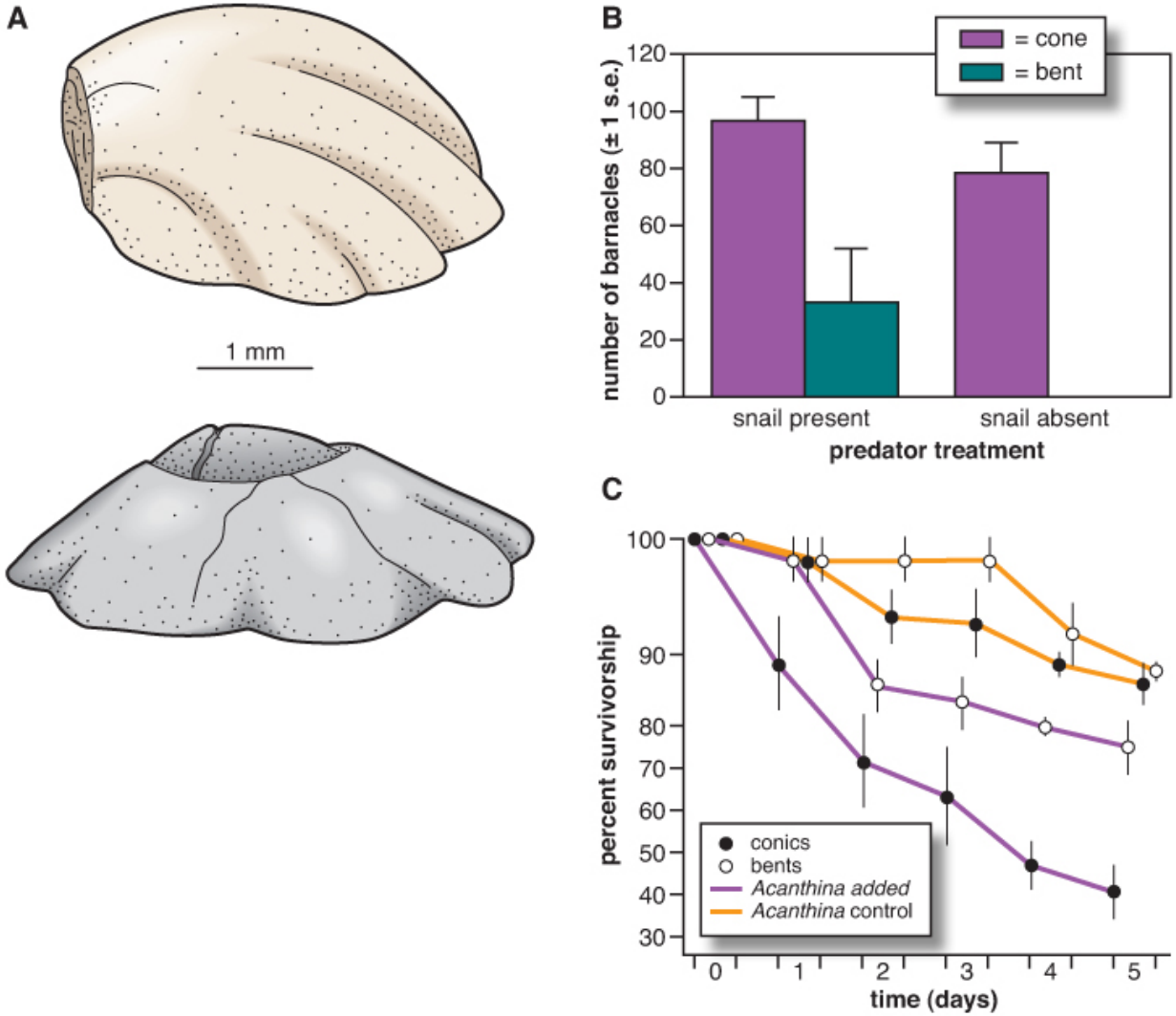

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