

## Chapter 20 Community Ecology

### Table of Contents

Section 1 Species Interactions

Section 2 Patterns in Communities



Chapter menu

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## Chapter 20 Section 1 Species Interactions

### Objectives

- **Identify** two types of predator adaptations and two types of prey adaptations.
- **Identify** possible causes and results of interspecific competition.
- **Compare** parasitism, mutualism, and commensalism, and give one example of each.



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### Predation

- **Predation** is an interaction in which one organism (the predator) captures and eats all or part of another individual organism (the prey).



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## Chapter 20 Section 1 Species Interactions

### Predation, *continued*

- **Predator Adaptations**
  - Predators have adaptations to efficiently capture prey, whereas prey species have adaptations to avoid capture.



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### Predation, *continued*

- **Adaptations in Animal Prey**
  - *Mimicry* is an adaptation in which a species gains an advantage by resembling another species or object.



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### Predation, *continued*

- **Adaptations in Plant Prey**
  - Many plants produce *secondary compounds* as a chemical defense.



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Section 1 Species Interactions

## Chapter 20

### Competition

- **Competitive Exclusion**
  - **Competition** may cause competitive exclusion, the elimination of one species in a community.

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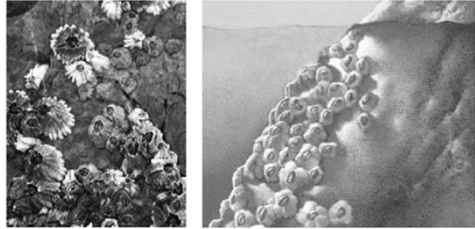
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Section 1 Species Interactions

## Chapter 20

### Effect of Competition on Two Species of Barnacles



The realized niche of *Chthamalus* is smaller than its fundamental niche because of competition from the faster-growing *Semibalanus*.

- *Chthamalus stellatus*
- *Semibalanus balanoides*

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Section 1 Species Interactions

## Chapter 20

### Competition, *continued*

- **Character Displacement**
  - Competition may drive the evolution of niche differences among competitors. This evolution of differences in a characteristic due to competition is called *character displacement*.

End of Slide

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### Symbiosis

- **Parasitism**
  - In **parasitism**, one species (the parasite) feeds on, but does not always kill, another species (the host).

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Section 1 Species Interactions

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### Symbiosis, *continued*

- **Mutualism**
  - In **mutualism**, both interacting species benefit.

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Section 1 Species Interactions

## Chapter 20

### Symbiosis, *continued*

- **Commensalism**
  - In **commensalism**, one species benefits, and the other is not affected.

End of Slide

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