Segmented Worms

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• Describe the major features of the segmented worms.
• Compare flatworms, roundworms, and segmented worms.

Does an earthworm have a brain?
Just like you, earthworms do have a brain. Their brains are much simpler than yours, however. Earthworms’ brains allow them to sense and respond to light and touch.

Segmented Worms

When you think of worms, you probably picture earthworms. There are actually many types of worms, including flatworms, roundworms, and segmented worms. Earthworms are segmented worms.

Segmented worms are in the phylum Annelida, which has over 22,000 known species. These worms are known as the segmented worms because their bodies are segmented, or separated into repeating units. Besides the earthworm, the segmented worms also include leeches and some marine worms. Most segmented worms like the earthworm, feed on dead organic matter. Leeches (Figure 1.1), however, can live in fresh water and suck blood from their animal host. You may have noticed many earthworms in soil. Earthworms support terrestrial ecosystems both as prey and by aerating and enriching soil.

Features of Segmented Worms

Segmented worms have a number of characteristic features.
1. The basic form consists of multiple segments, each of which has the same sets of organs and, in most, a pair of **parapodia** that many species use for locomotion.
2. Segmented worms have a well-developed body cavity filled with fluid. This fluid-filled cavity serves as a **hydroskeleton**, a supportive structure that helps move the worm’s muscles. Only the most primitive worms (the flatworms) lack a body cavity.
3. Segmented worms also tend to have organ systems that are more developed than the roundworms’ or flatworms’. Earthworms, for example, have a complete digestive tract with two openings, as well as an esophagus and intestines. The circulatory system consists of paired hearts and blood vessels. Actually there are five pairs of hearts that pump blood along the two main vessels. And the nervous system consists of the brain and a ventral nerve cord.

### Comparison of Worms

The following table compares the three worm phyla (**Table 1.1**).

**Table 1.1**: Comparison of the Three Worm Phyla

<table>
<thead>
<tr>
<th>Phylum</th>
<th>Common Name</th>
<th>Body Cavity</th>
<th>Segmented</th>
<th>Digestive System</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platyhelminthes</td>
<td>Flatworm</td>
<td>No</td>
<td>No</td>
<td>Incomplete</td>
<td>Tapeworm</td>
</tr>
<tr>
<td>Nematoda</td>
<td>Roundworm</td>
<td>Yes</td>
<td>No</td>
<td>Complete</td>
<td>Heartworm</td>
</tr>
<tr>
<td>Annelida</td>
<td>Segmented worm</td>
<td>Yes</td>
<td>Yes</td>
<td>Complete</td>
<td>Earthworm</td>
</tr>
</tbody>
</table>

### Summary

- Segmented worms include the common earthworm and leeches.
- Segmented worms have a digestive system, nervous system, and circulatory system.

### Explore More

Use the resources below to answer the questions that follow.

**Explore More I**

1. What new realms did animals like Abarenicola open up for other animals?
2. Where are the eyes of feather duster worms (Sabellidae) located?
3. What effect do tube dwelling worms have on mudflat ecosystems?
4. How much can a giant tube dwelling worm from a hydrothermal vent grow in a year?
5. How do earthworms help breakdown leaf litter?

Review

1. What features distinguish Phylum Annelida from the other worms?
2. Describe the skeletal system of the segmented worms.
3. Describe the circulatory system and nervous system of the earthworm.

References

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