

6 TAPEWORM SCOLEX - w.m. Stained (65x)

This Microslide shows the scolex (head and "neck") of an adult tapeworm. Note the hooks (H) and suckers (S) with which it attaches itself inside the intestine of its human host. The rest of its body is like a flat ribbon (diagram) made of many proglottids (segments). It hangs freely in the hollow of the intestine soaking up the digested nutrients intended for the cells of the host.

Thus the tapeworm grows longer and longer, while its human host starves to death. Young proglottids steadily bud off at the neck region (N) and push the older segments further away from the head (arrow). As they move backwards, the proglottids gradually mature into sacs loaded with fertile eggs.



7 TAPEWORM CYST - w.m. Stained (15x)

Egg-filled proglottids break off from the end of the tapeworm and leave the host as it eliminates its feces. If any eggs are swallowed by the proper intermediate host (in this case, a beef animal), they hatch into tiny larvae that bore into the muscles, and encyst. Each larva becomes a bladderworm. One such bladderworm, dissected out of beef muscle, is shown on this Microslide. It consists

of a fluid-filled sac (S) with the head of the worm turned inward. *Can you explain why the sac appears crumpled?* When a person eats and digests beef muscle containing such a bladderworm, the worm's head emerges from the sac and attaches itself to the intestinal wall. An adult tapeworm gradually develops.

8 TICK LARVA - w.m. (40x)

This queer-looking creature with six legs is a larval wood tick. It must get several meals of blood from small mammals to develop into an adult. After each meal, the tick larva leaves its unwilling host, rests, and grows. Can you explain why the tick is called an ectoparasite?

When it becomes an eight-legged adult, it gets blood from larger mammals, including humans. Unfortunately, the tick may be the insect vector

of a very serious disease. While drawing blood from its human host, the tick may leave behind the dangerous germ of Rocky Mountain spotted fever or Lyme disease.

NOTE: While this Microslide set describes only animal parasites, it is important that we not forget the some of our most serious diseases are caused by parasites that originate from viruses, bacteria, and mold.

ANIMAL PARASITES OF HUMANS

INTRODUCTION

Animal parasites often have complicated life histories, as you will soon see. The immature parasites of larvae (singular: larva) may pass through several stages of development in different host animals before reaching the final stage. As you learn about each parasite, see if its life history suggests a practical way to avoid playing host to such an uninvited guest.

textbook may provide answers to some of your questions. Continue your inquiry in the library, in the laboratory, and in discussion with other students and teachers.

The magnification given, for example, Slide 1 (65x), means that the microscope was set at that power when the photograph was taken.

You will probably see in each Microslide much more than you can explain or understand. Your

1 TRICHINA WORMS - Stained (65x)

About 15% to 20% of the American population are said to be infected with Trichinosis, a condition caused by a tiny parasitic trichina worm. The Microslide shows a bit of meat heavily infected with Trichina worms (T). If a person eats such meat without cooking it thoroughly, his intestinal enzymes soon digest the meal and release the living larvae. Within one week, they mature into adults, and the males fertilize the females. The males soon die, but the females bore into the intestinal wall and begin to produce hundreds of larvae. A single female may live 5 to 6 weeks and produce 1,500 larvae. The larvae spread throughout the body. They may penetrate and damage any organ, but only those reaching the skeletal muscle (shown in the Microslide) can remain alive. These larvae

coil up into the spiral form seen at (T). The muscle fiber responds by surrounding the larvae with a connective tissue wall. Thus, each larval worm is enclosed in a cyst, where it rests, waiting for the muscle to be eaten by another animal. *How many worms are in the cyst at (Y)? How do you account for the appearance of the cysts labeled (X)?*

Because poorly cooked pork products are the greatest source of human infection, this parasite is sometimes called the porkworm. *Can you explain how pigs become infected? For further inquiry: Read the story "A Pig From Jersey" in the book Eleven Blue Men by Berton Roueché.*