XVIII Phylum Myxozoa (MYXO = mucus) - Chapter 11

A. Parasites of invertebrates and fish

B. Morphological characteristics
   1. Structure of spores much different from all other protozoans
      a. Multicellular
      b. Spores covered by 1 to 3 VALVES
   2. POLAR FILAMENT
      a. Morphology
         (1) Located at one end of spore
         (2) Within a POLAR CAPSULE
         a. Structurally similar to nematocysts of cnidarians (sea anemones, jellyfish, corals)

   Picture Slide #1: Polar capsule with polar filaments

C. Life cycle
   1. Direct
   2. Stages
      a. Spore
         (1) Ingested by host
         (2) Polar filament discharges
         (3) Spore anchored to intestinal wall of host
      b. Motile trophozoite
         (1) Emerges from spore
         (2) Penetrates host epithelium
         (3) Migrates to host organ where final development occurs
         (4) Generative cells (= Gametes) form within trophozoite
      c. PANSPOROBLAST
         (1) Micro- & macrogametes fuse to form spore-forming stage, SPOROBLAST
         (2) In most species, sporoblasts form many spores and are called pansporoblasts.
         (3) Host forms membrane around pansporoblasts
            (a) Visible as cysts, if on skin or gills
            (b) Cysts break open when host eaten and spores released

   Picture Slide #2; Pansporoblasts in fish gills

D. Whirling Disease (pp. 188-189)
   1. Agent *Myxobolus cerebralis*
   2. Intermediate host = *Tubifex* worms (Oligochaeta)
   3. Significant problem for commercial salmon/trout farms and native salmonids in North America
      a. Fingerlings (= larval fish) swim in circles
      b. High mortality
   4. Classic example of risks associated with introduction of non-native species
      a. Brought into US in 1900 with release of rainbow trout from
b. Asymptomatic in natural hosts

Picture Slide #3: Life-cycle of *M. cerebralis*; Roberts & Janovy Fig. 11-5

Picture Slide #4: Deformities caused by *M. cerebralis*; Roberts & Janovy Fig. 11-13