IDENTIFICATION OF THE LARVAL STAGES OF TAENIID TAPEWORMS OF DOGS AND CATS IN THE UK

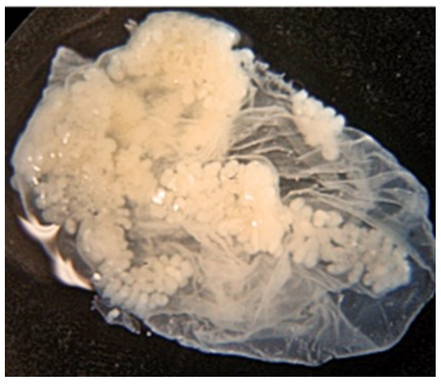
There are four types of taeniid metacestode: (i) the cysticercus, a fluid-filled bag containing a single, prominent protoscolex, the juvenile tapeworm head (ii) the coenurus which is similar to a cysticercus but contains numerous protoscolices (iii) the strobilocercus, having a protoscolex to which is attached a chain of asexual segments and (iv) the hydatid cyst which is fibrinous and lined with a germinal epithelium producing many free protoscolices.

Cysticercus tenuicolis removed from pig peritoneum. The arrow show the single white protoscolex. These cysts can be up to 8.0cm and may be found attached in the abdomen and liver of sheep and other livestock. The adult tapeworm in dogs is ***Taenia hydatigena.*** **Note**: Before taeniid life cycles were elucidated, the larval stages were given separate species names; these names are included here as they are still often used in meat inspection

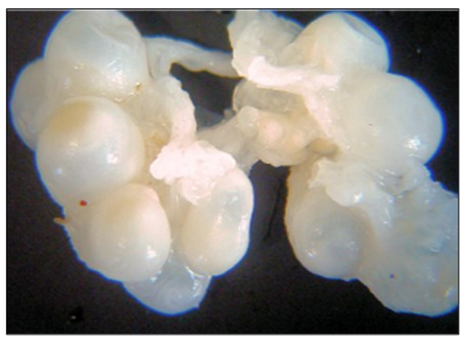
Strobilocercus fasciolaris in rat liver; each strobilocercus is located within a nodule partially embedded in the liver parenchyma. The adult tapeworm found in cats is ***Taenia taeniaeformis***

Coenurus serialis from the connective tissue of a rabbit. The numerous white protoscolices are arranged in lines, hence the species name *serialis.* The adult worm in dogs is ***Taenia serialis***

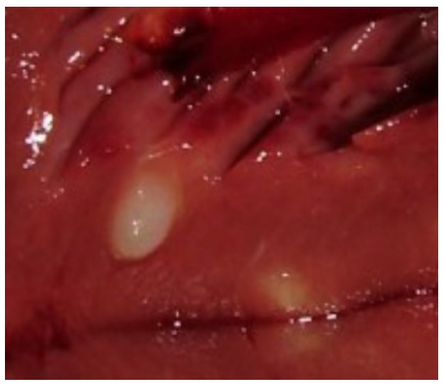
Coenurus cerebralis from the brain of a sheep. The multiple white protoscolices are arranged in small clusters, and the cyst may reach 5.0cm in size. The adult tapeworm in dogs is ***Taenia multiceps***



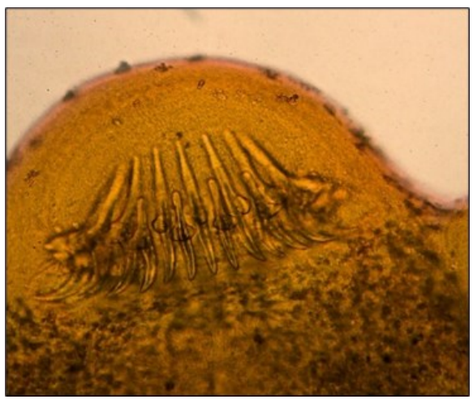
Cysticercus pisiformis dissected from the peritoneum of a rabbit. The cysts are pea-like. The adult worm in dogs is ***Taenia pisiformis.***



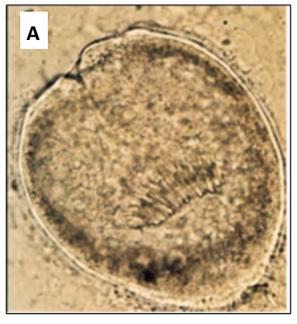
Cysticercus ovis in sheep muscle. The adult worm in dogs is ***Taenia ovis***



The presence of small hooks when a suspect tapeworm cyst is squashed between two microscope slides confirms a mature *Taenia* metacestode. The image below shows these for ***Cysticercus pisiformis***.



Hydatid cysts of ***Echinococcus granulosus*** in sheep liver. These slow growing cysts, which also develop In the lung and other organs, can be very large (up to 20cm)and are enclosed by thick host fibrinous tissue. Hydatidosis is a significant zoonotic disease in many areas of the World.



Section through a fertile hydatid cyst wall, showing the germinal epithelium from which continuously bud protoscolices. These structures bear rows of hooks and the structure may be inverted as in A or everted, as in B. The protoscolices may form a sediment in the fluid cyst, known as ‘hydatid sand’