

Additions to slides

Slide 22 :suggested transmission of viruses from bats to other animals and then to humans.

The Covid-9 (SARS Cov-2) is thought to have been from bat to pangolin.

Slide 23:proteases used during Covid-19(SARSCov-2) entry into host cell. These proteases can be targeted by drugs

Slide 31:map of interactions near epithelium of lung cells.Virus(RSV) enters and stimulates immune system via DC (dendritic cells or antigen presenting cell in next slide 32) .

Slide 47 *Schistosoma mansoni* worms discovered in Egypt 1851 by Bilharz and much controversy as to how it reached the human body.Loos stated on authority, that water organisms penetrated the human skin. No other carrier (vector) was needed.(1906-1913).His great reputation had sent many scientists up a blind alley!

The Special Commission (1914) had Leiper and Atchison go to China and Japan.Japanese scientists showed miracidia entering snails and cercaria penetrating human skin with adult worm development.

The Brazilian Piraja da Silva found similar worms in Brazil.Who discovered the life cycle first?

- **Slide 66. Shedding patterns of cercariae have evolved to coincide with living habits of mammalian host**

Slide 69 Eggs from female worm cause pathology due to inflammation in the human in gut and liver.

- **Slide 73 and 74.Some life cycles are extraordinarily complex(*Haematoloechus* in snail , dragon-fly, frog)**

- Slide 80. Stages of swelling of limb in which lymph vessels are blocked by filarial worms. Manson studied this disease (elephantiasis) and found it was transmitted by mosquitos
- Slide 95, Cryptosporidium
- Slide 107 model of variant glycoprotein (VSG) found in coat of trypanosome
- Slide 108. VSG fitting into membrane of trypanosome
- Slide 111. Annette McLeod with her Wright medal. Her lab showed that skin forms of trypanosomes were crucial for transmission by tsetse flies
- Slide 117 John Kusel as baby. and following slides show work on surface membrane and egg structure in Sudan and Brazil
- Slide 130. Tim Jenkins: scientist in Cambridge /Denmark showed microbiome diversity increased in humans with parasites.
- Slide 131. Hookworm was shown to decrease lesions during multiple sclerosis. It is thought the hookworm produces a compound which changes immune response. See later ES-62 of *Acanthocheilonema*
- Slide 159. Illustrating the wonders of parasite coordination with the host, the spade-foot toad is heavily infected with a lung fluke which depends for transmission on just a 24 hr window of opportunity during rains in the Arizona desert.
- Slide 163. The fluke *Diplostomum* penetrates and migrates to the eye of the fish and the fish swims close to surface to be readily eaten by the final host

- **Slide 167. The lancet fluke enters an ant which alters its behaviour and climbs to the tip of grass to be eaten by the final host (cow)**