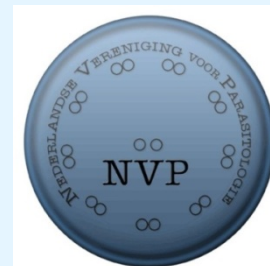


Fecesonderzoek op darmparasieten

overzicht 2020

Titia Kortbeek

Theo Mank



2020

- 7 x gefixeerde feces
- 1 x punctaat levercyste

- Protozoa

- *Balantidium coli*
- *Cryptosporidium* sp
- *Cyclospora cayetanensis*
- *Cystoisospora belli*
- *Dientamoeba fragilis*
- *Entamoeba histolytica*
- *Giardia lamblia*
- *Microsporidium* sp

- *Blastocystis hominis*

- *Chilomastix mesnili*
- *Endolimax nana*
- *Entamoeba coli*
- *Entamoeba dispar*
- *Entamoeba hartmanni*
- *Iodamoeba bütschlii*

- Wormen

- *Ascaris lumbricoides*
- *Diphyllobotrium* sp
- *Enterobius vermicularis*
- *Fasciola hepatica*
- *Hymenolepis nana*
- *Hymenolepis diminuta*
- Mijnworm
- *Schistosoma* sp
- *Strongyloides stercoralis*
- *Trichuris trichiura*
- *Taenia* sp

- *Echinococcus granulosus*

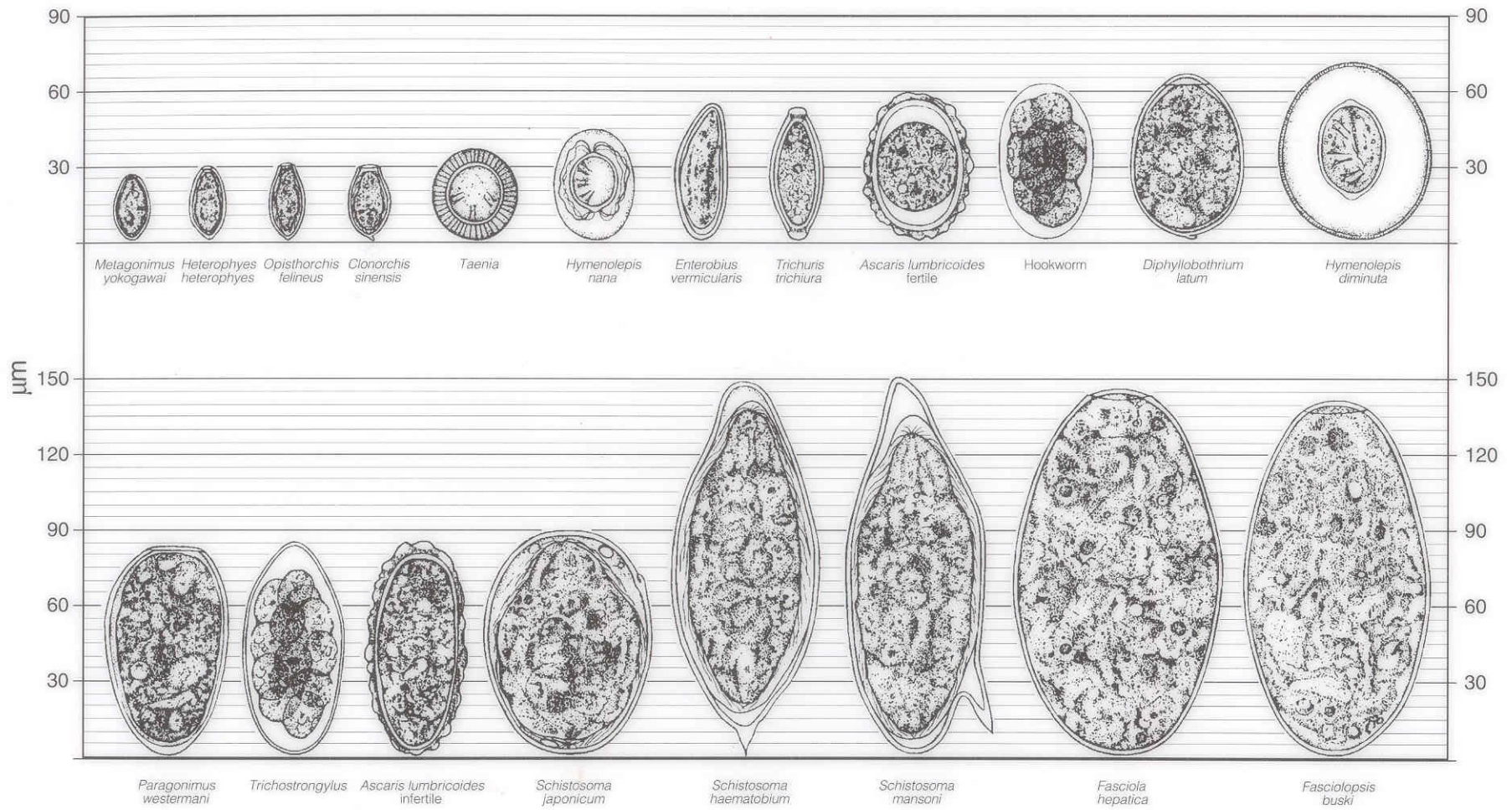
- Protozoa

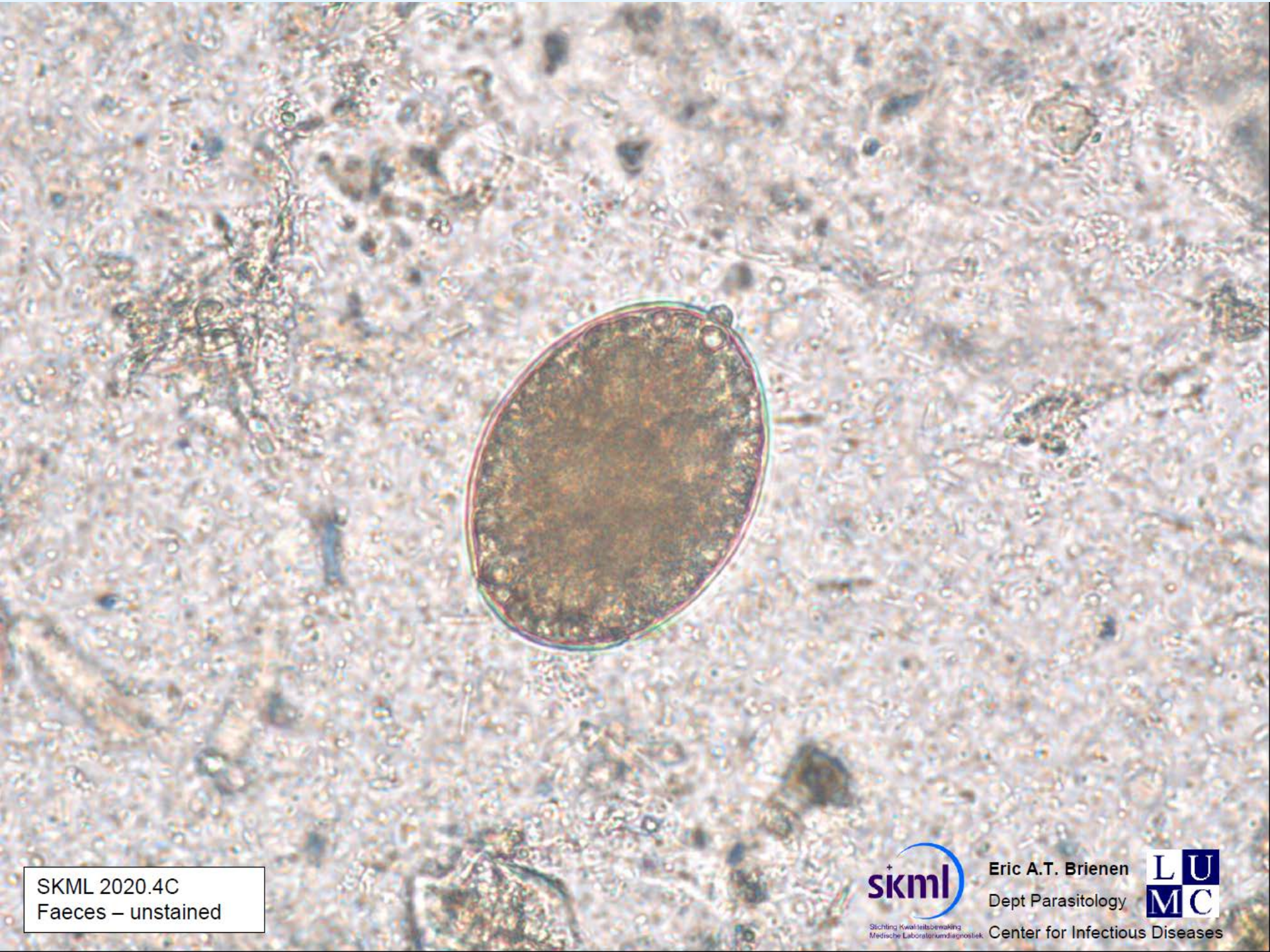
- *Balantidium coli*
- *Cryptosporidium* sp
- *Cyclospora cayetanensis*
- *Cystoisospora belli*
- *Dientamoeba fragilis*
- *Entamoeba histolytica*
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- *Schistosoma* sp
- *Strongyloides stercoralis*
- *Trichuris trichiura*
- *Taenia* sp
- *Echinococcus granulosus*

species	correct
<i>G. lamblia, D. fragilis, E. coli, C. mesnili</i>	95,8%
<i>Schistosoma mansoni</i>	65,2%
<i>Echinococcus granulosus</i>	100%
Ascaris sp.	100%
Mijnworm	69,4%
<i>Hymenolepis diminuta</i>	83,3%
Diphyllobotrium sp.	89,6%
<i>Giardia lamblia</i>	97,8%





SKML 2020.4C
Faeces – unstained



Stichting Kwaliteitsbewaking
Medische Laboratoriumdiagnostiek

Eric A.T. Brienen
Dept Parasitology



Center for Infectious Diseases

Diphyllobotrium sp.

- ca 65 x 45 μm
- gedekseld
- terminaal knopje
- niet-geëmbyoneerd

- cestode
- brede lintworm (vissen)
- Linnaeus (1758): *Taenia lata*



Diphyllobotrium sp.

- Vele species beschreven
D. latum, *D. nihonkaynensis*, *D. pacificum* en
D. dendriticum
- Op basis van morfologisch (worm) en moleculair onderzoek: re-classificatie van de Diphyllbothriiden (Diphyllbothriidea en Bothriocephalidea)
- *Diphyllobotrium latum* = *Dibothriocephalus latus*
- *D. nihonkaynensis* = *Dibothriocephalus nihonkaynensis*
- *Diphyllobotrium* sp \neq *Dibothriocephalus* sp
- SKML: *Diphyllobotrium* / *Dibothriocephalus* sp



Available online at www.sciencedirect.com



International Journal for Parasitology 36 (2006) 1535–1541



www.elsevier.com/locate/ijpara

Paraphyly of the Pseudophyllidea (Platyhelminthes: Cestoda): Circumscription of monophyletic clades based on phylogenetic analysis of ribosomal RNA [☆]

J. Brabec, R. Kuchta, T. Scholz ^{*}

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Available online at www.sciencedirect.com



International Journal for Parasitology 38 (2008) 49–55



www.elsevier.com/locate/ijpara

Rapid Communication

Suppression of the tapeworm order Pseudophyllidea (Platyhelminthes: Eucestoda) and the proposal of two new orders, Bothriocephalidea and Diphylobothriidea

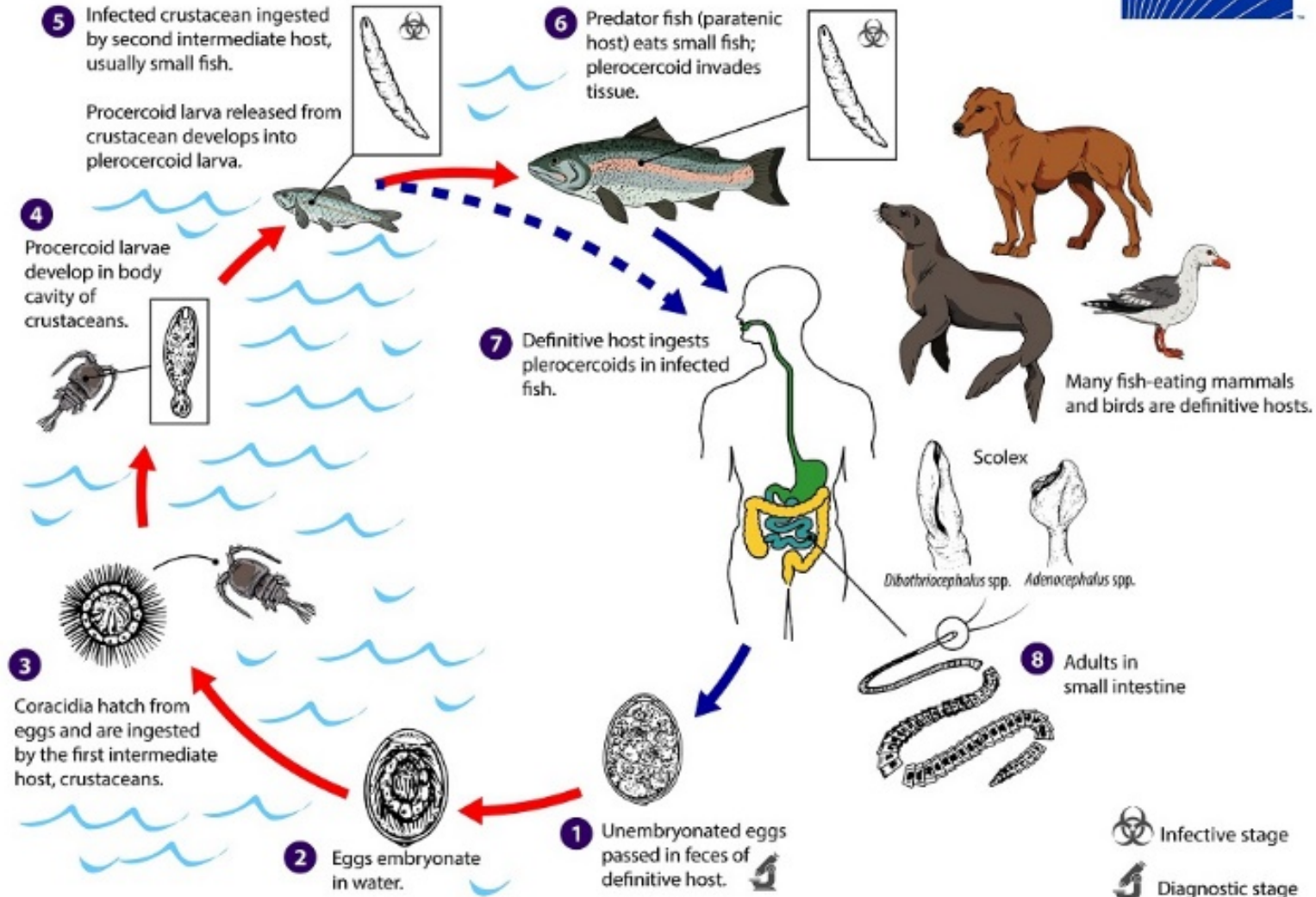
R. Kuchta ^a, T. Scholz ^{a,*}, J. Brabec ^a, R.A. Bray ^b

^a *Institute of Parasitology, Biology Centre of the Czech Academy of Sciences, and Faculty of Science, University of South Bohemia, Branišovská 31, 370 05 České Budějovice, Czech Republic*

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Diphyllobothriid Tapeworms

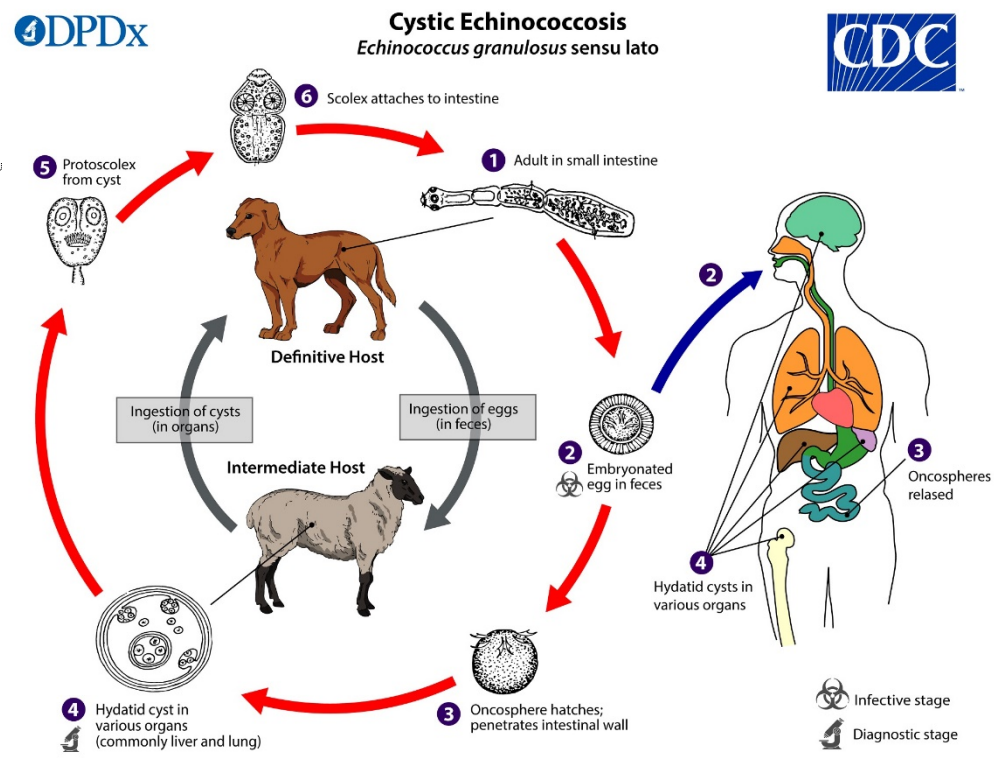
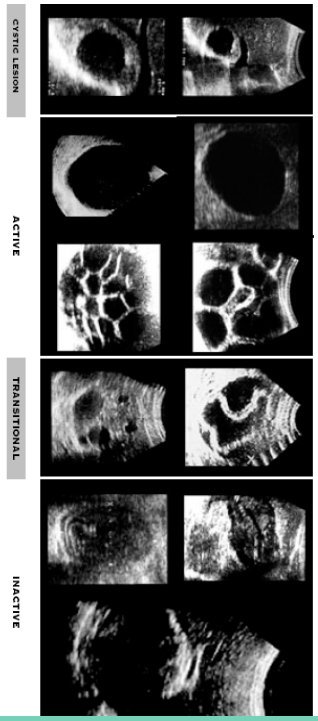


- Mondiaal ca 20 miljoen cases
- Worm: tot 4000 proglottiden; 3 – 10 meter; 1 miljoen eieren per dag
- Dunne darm
- Buikpijn, gewichtsverlies, anorexie, anemie (Vit B12 def)
- Praziquantel 1^{ste} keuze / Nicosamide



Echinococcus granulosus = een zoönose

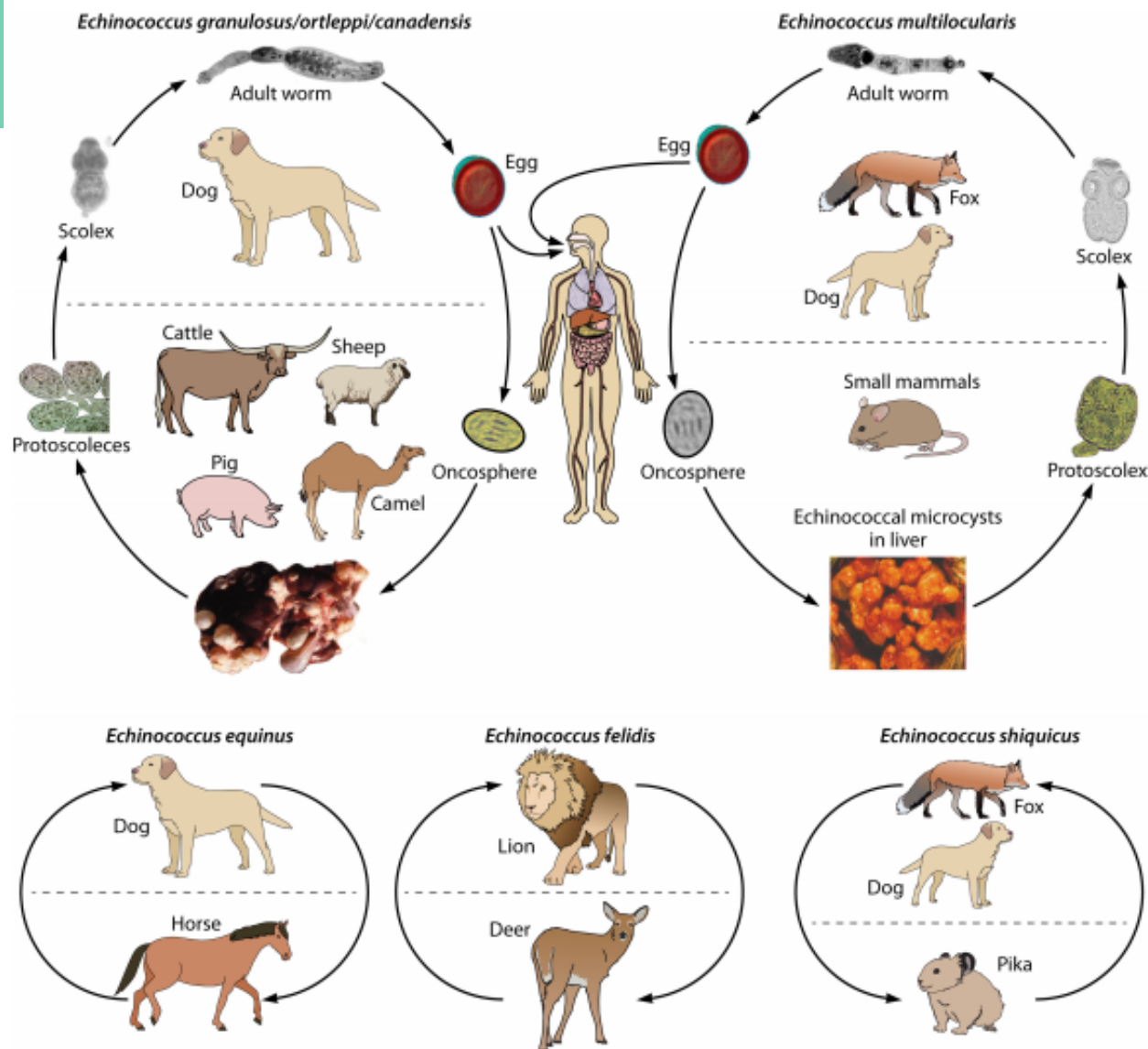
- hondenlintworm
- Intestinale parasiet
- Zoonotisch





Echinococcus granulosus (s.l.) : bij de mens

- Primaire lesie: meestal in de lever;
 - Long, botten, andere organen
- Cysten
 - Cysteuze structuur met vocht gevuld met schotten en dochtercysten
 - Dikke wand
 - Verkalkingen
- In cystevocht haken en protoscolices
- Aparte ICD code: ICD-10-CM Diagnosis Code **B67.0**
 - **! *E.granulosus* op meerdere locaties is geen *E.multilocularis*!**



Wen H, Vuitton L, Tuxun T, Li J, Vuitton DA, Zhang W, McManus DP. 2019. Echinococcosis: advances in the 21st century. Clin Microbiol Rev 32:e00075-18. <https://doi.org/10.1128/CMR.00075-18>

FIG 1 Life cycles of *Echinococcus* spp. Species responsible for human infection (*E. granulosus sensu stricto*, *E. ortleppi*, and *E. canadensis* [belonging to *E. granulosus sensu lato*] and *E. multilocularis*) are shown at the top. Species at the bottom (*E. shiquicus*, a species close to *E. multilocularis*, and *E. equinus* and *E. felidis*, belonging to *E. granulosus sensu lato*) are not known to cause disease in humans. Only the most common definitive and intermediate hosts which play a major role in life cycle/transmission are shown; other hosts may be encountered (especially wildlife hosts for *E. granulosus sensu lato* and domestic hosts for *E. multilocularis*). *E. vogeli* and *E. oligarthra*, which are responsible for polycystic echinococcosis in humans in Central and South America, are not represented in the figure.

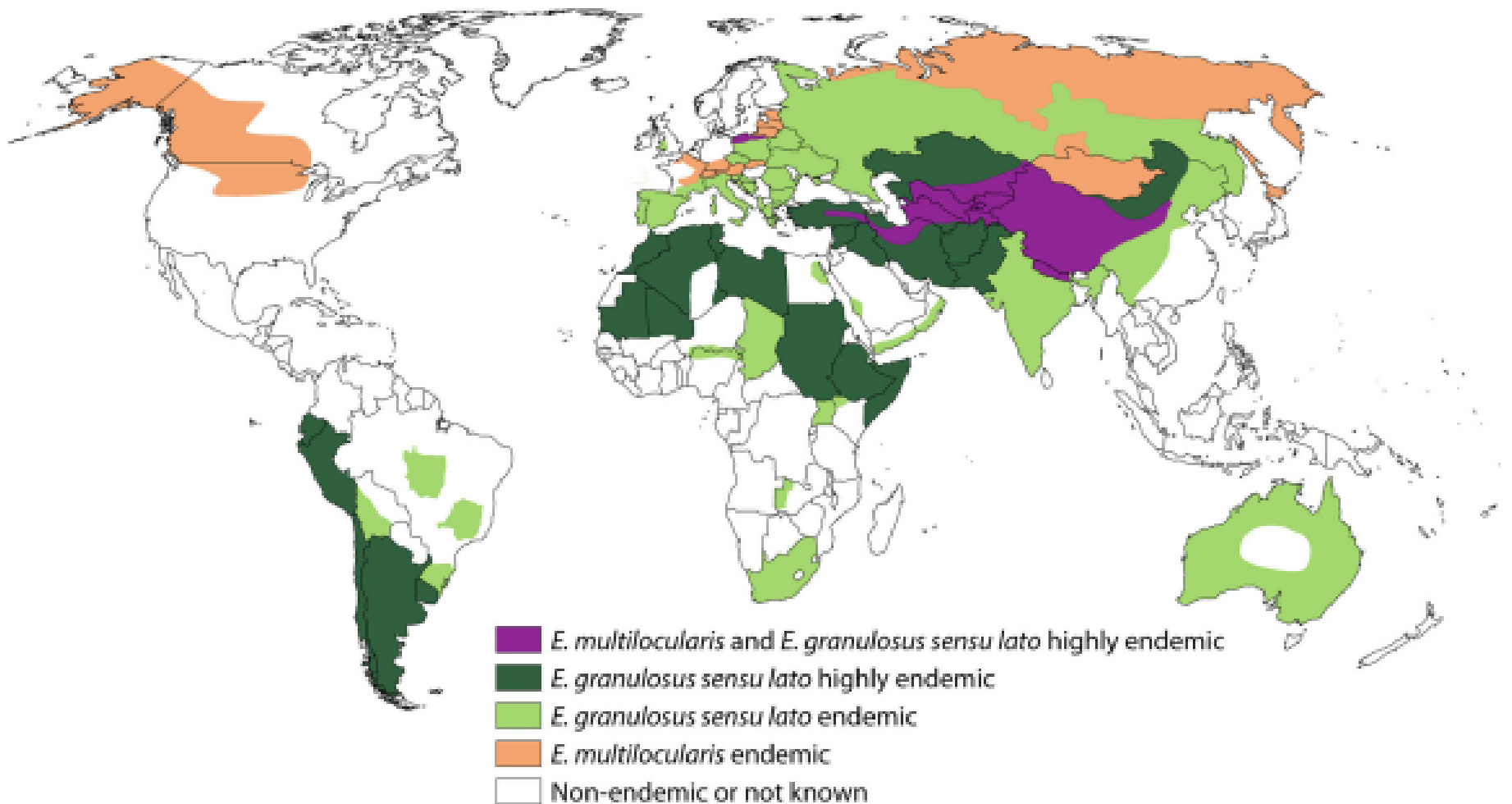


FIG 3 Global distribution of *Echinococcus granulosus sensu lato*, responsible for cystic echinococcosis (CE), and *Echinococcus multilocularis*, responsible for alveolar echinococcosis (AE). The map is based on recent epidemiological studies (1, 13, 19, 247) as far as the current situation has been studied in a given area. The different colors represent a proxy for human prevalence and infection in animal hosts in a given area (to take autochthonous human cases into account only). For AE, the represented disease density is based mainly on the presence of autochthonous AE cases in humans, *E. multilocularis* metacestodes in small mammals, and *E. multilocularis* adult worms in foxes and dogs. For CE, the represented disease density is based mainly on the presence of autochthonous human cases of CE and of *E. granulosus sensu lato* metacestodes (irrespective of species or genotype) in intermediate hosts, including sheep, cattle, equids, and camels. For more accurate and detailed data and maps, see a recent comprehensive review paper by Deplazes et al. (13).



Table 1
Pathogenic organisms causing cystic echinococcosis in humans and animals.

Species ^a	Distribution	Definitive hosts	Intermediate hosts	Human infections	Strains used previously (genotypes)
<i>Echinococcus granulosus sensu stricto</i>	Worldwide	Dog	Sheep, goat, buffalo, various ungulates, macropodids	Commonest	Sheep strain (G1, G2 and G3)
<i>Echinococcus canadensis</i> ^b <i>E. canadensis</i> G6/G7	Worldwide (regional)	Dog, wolf	Camel, pig, cattle goat, reindeer, sheep	Common	Camel and pig strains (G6 and G7)
<i>E. canadensis</i> G8	Holarctic zone	Wolf	Moose, wapiti, muskox	Uncommon	Cervid strain (G8)
<i>E. canadensis</i> G10	Holarctic zone	Wolf, dog	Reindeer, wapiti, moose	Uncommon	Cervid strain (G10)
<i>Echinococcus ortleppi</i>	Worldwide (sporadic)	Dog	Cattle	Less common	Cattle strain (G5)
<i>Echinococcus equinus</i>	Worldwide (sporadic)	Dog, lion ^c	Equines	Unknown	Horse strain (G4)
<i>Echinococcus felidis</i>	Africa (regional)	Lion, spotted hyena	Warthog	Unknown	Lion strain

^a All of the species listed had been treated as a single species, *E. granulosus*.

^b The species were divided into three intraspecific groups according to genotypes.

^c Wassermann et al. (2014).

A. Ito et al. Cystic echinococcosis: Future perspectives of molecular epidemiology
<http://dx.doi.org/10.1016/j.actatropica.2016.05.013>

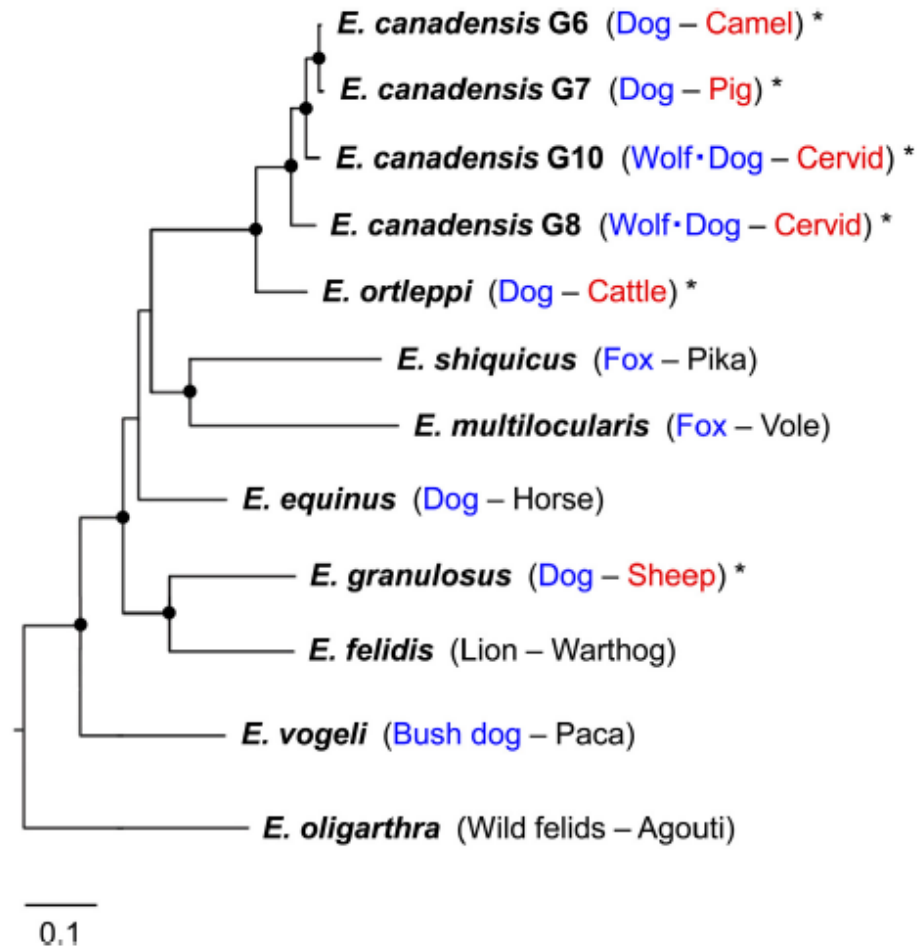


Fig. 1. A phylogeny of *Echinococcus* species (Nakao et al., 2013b). The maximum likelihood tree was generated using DNA sequences of all protein-coding genes from mitochondrial genomes (10098 nucleotide sites). An outgroup taxon (*Versteria mustelae*) was omitted from the tree. Closed circles indicate reliable nodes showing more than 90% bootstrap values. Scale bar represents the estimated number of substitutions per site. Definitive and intermediate hosts are shown in parentheses. Hosts in blue and red mean the family Canidae and the order Artiodactyla, respectively. Asterisks indicate species causing human cystic echinococcosis. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

