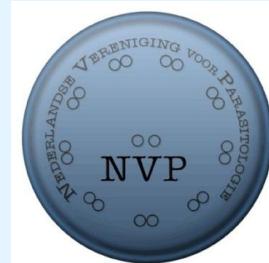


# Faecesonderzoek op parasieten

## overzicht 2013

Titia Kortbeek

Theo Mank



- overzicht resultaten 2013
- transitie CCKL praktijkrichtlijn naar ISO 15189-2012
- “stof tot nadenken”

- overzicht resultaten 2013
- transitie CCKL praktijkrichtlijn naar ISO 15189-2012
- “stof tot nadenken”

- Protozoa
  - *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*
  - *Diphyllobothrium* sp
  - *Enterobius vermicularis*
  - *Fasciola hepatica*
  - *Hymenolepis nana*
  - *Hymenolepis diminuta*
  - Mijnworm
  - *Schistosoma* sp
  - *Strongyloides stercoralis*
  - *Trichuris trichiura*
  - *Taenia* sp

- Protozoa
  - *Cryptosporidium* sp
  - *Cyclospora cayetanensis*
  - *Cystoisospora belli*
  - *Dientamoeba fragilis*
  - *Entamoeba histolytica*
  - *Giardia lamblia*
  - Microsporidium sp
  - *Blastocystis hominis*
  - *Chilomastix mesnili*
  - *Endolimax nana*
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  - *Hymenolepis nana*
  - *Hymenolepis diminuta*
  - Mijnworm
  - *Schistosoma* sp
  - *Strongyloides stercoralis*
  - *Trichuris trichiura*
  - *Taenia* sp

# Rondzending darmparasieten (microscopie)

Coördinatie en verzending Havenziekenhuis / Erasmus MC te Rotterdam

SAF gefixeerde feces

-beoordeling door referenten

- Havenziekenhuis / Erasmus MC te Rotterdam

- LUMC te Leiden

- RIVM te Bilthoven

- Radboud MC te Nijmegen

- Streeklab Microbiologie Twente te Enschede

- Streeklab Volksgezondheid te Haarlem

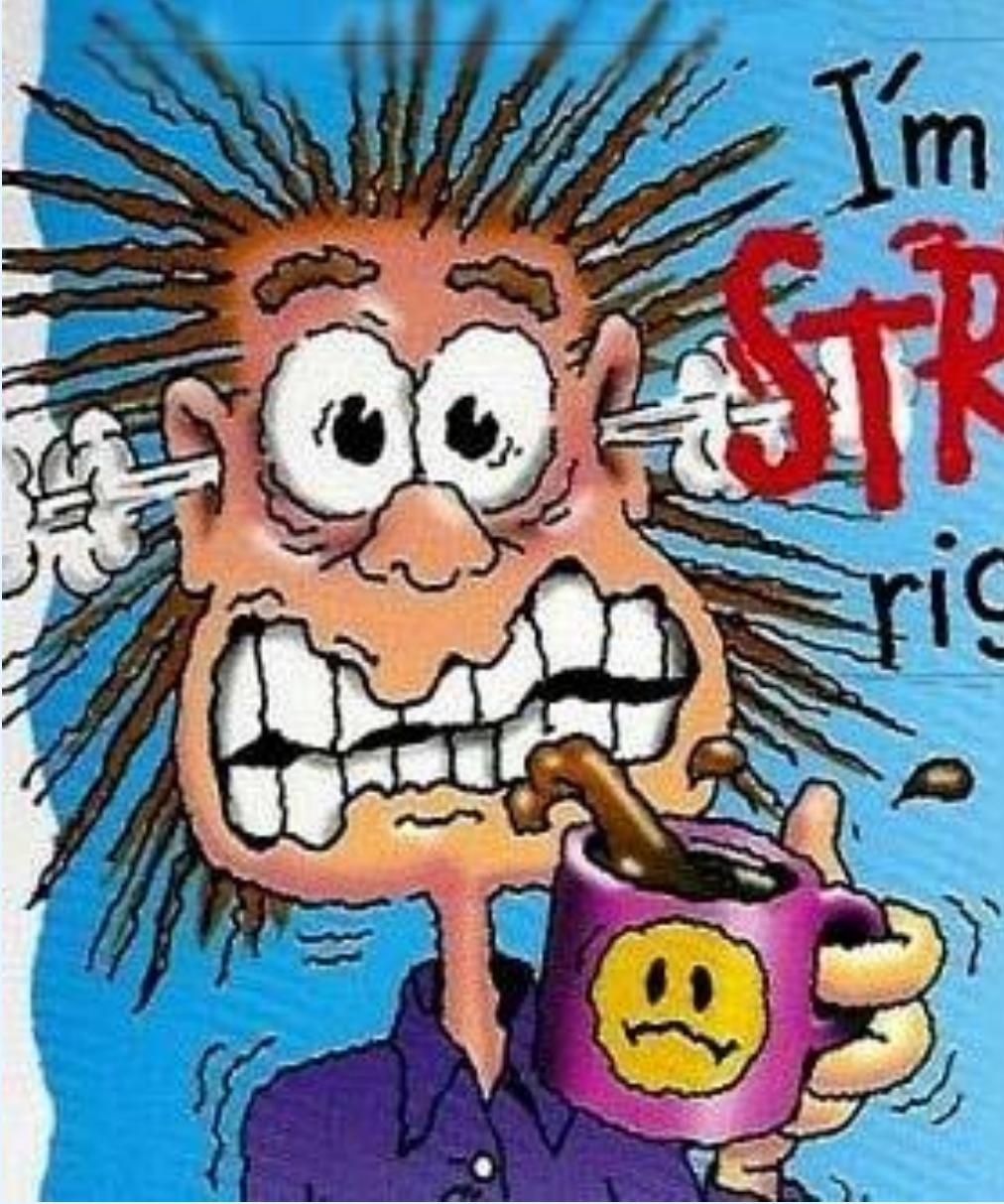
-consensus + selectie rond te zenden materiaal

-formuleren casus beschrijving + puntenbeoordeling

-formuleren verdiepingsvragen

-evaluatie resultaten



A cartoon illustration of a man with a very stressed expression. He has wild, brown hair that is spiky and erupting upwards from his head. His eyes are wide and bulging, looking directly at the viewer. He has a large, open mouth showing white teeth, with a black horizontal bar across them, suggesting he is shouting or gritting his teeth. He is wearing a purple long-sleeved shirt. In his right hand, he holds a purple coffee cup with a yellow smiley face sticker on it. The background is a light blue gradient.

I'm a little

**STRESSED**

right now...

# 2013-1

- **Monster C**
  - *Giardia lamblia* (cysten en trofozoieten)  
58 vd 59 deelnemers rapporteerden *G lamblia* (98,3%)  
Foutief:
    - *Cyclospora cayetanensis*, *Chilomastix mesnili*
    - Mijnworm eieren
- **Monster D en E**
  - Ongekleurde fecesuitstrijken  
Vraagstelling: onderzoek op coccidiën  
D: negatief E: Cryptosporidium +++  
  
D: 4 van de 55 deelnemers toch Cryptosporidium + ( correct: 92,7%)  
E: 52 van de 55 correct (94,5%)  
Foutief:
    - *Giardia lamblia*, *Cyclospora cayetanensis*, niets gevonden, *S stercoralis*

# Sporozoa / Coccidia

Cryptosporidium

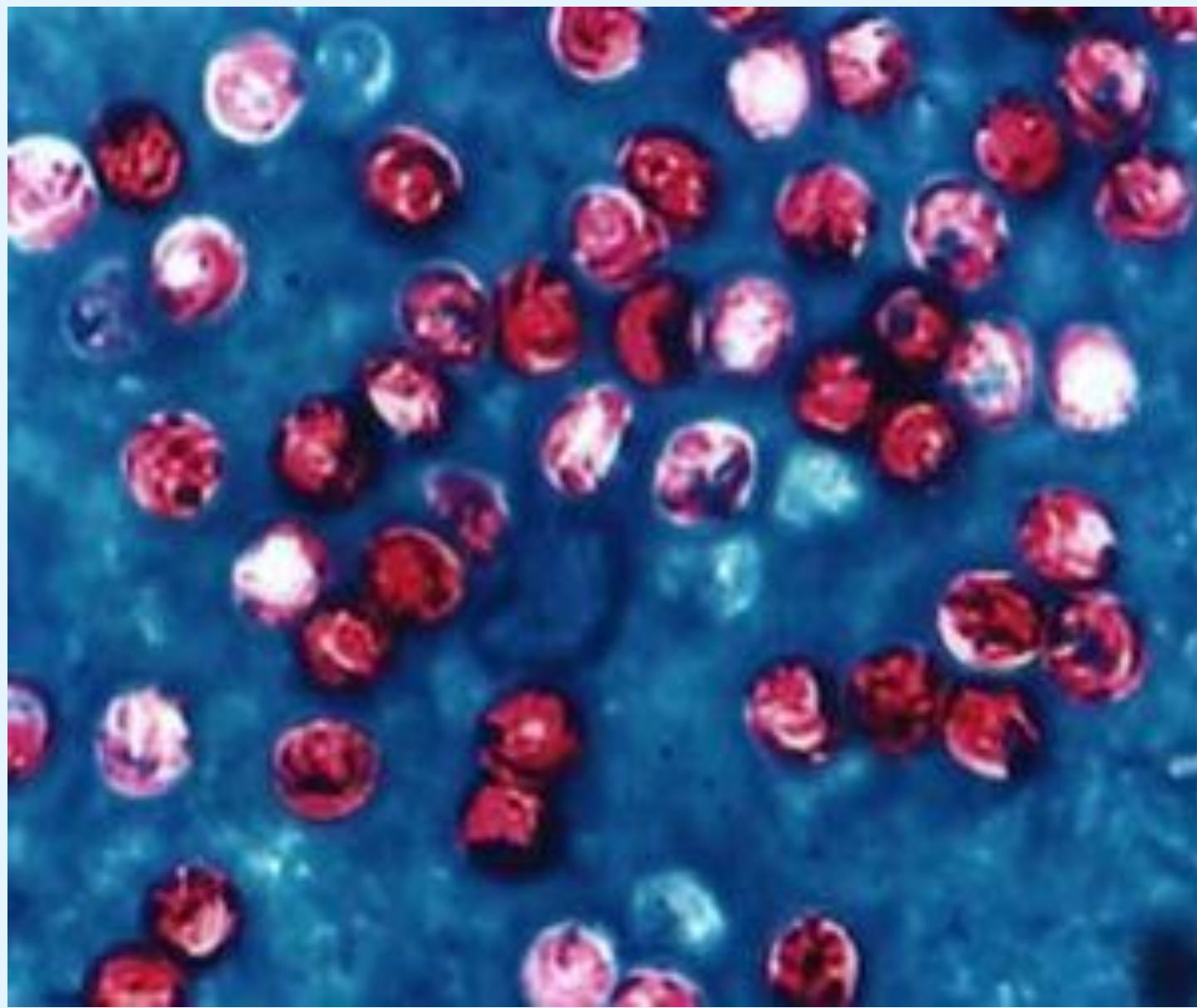
Cystoisospora belli

Cyclospora cayetanensis

(Sarcocystis hominis)

# Laboratorium diagnose

- Grootte, vorm, morfologie
- Zuurvast kleuring
  - Mod ZN, Kinyoun, IHK
  - Ridley sediment
- Auramine kleuring
- Autofluorescentie
- IFA
- ELISA
- PCR



# Coccidia

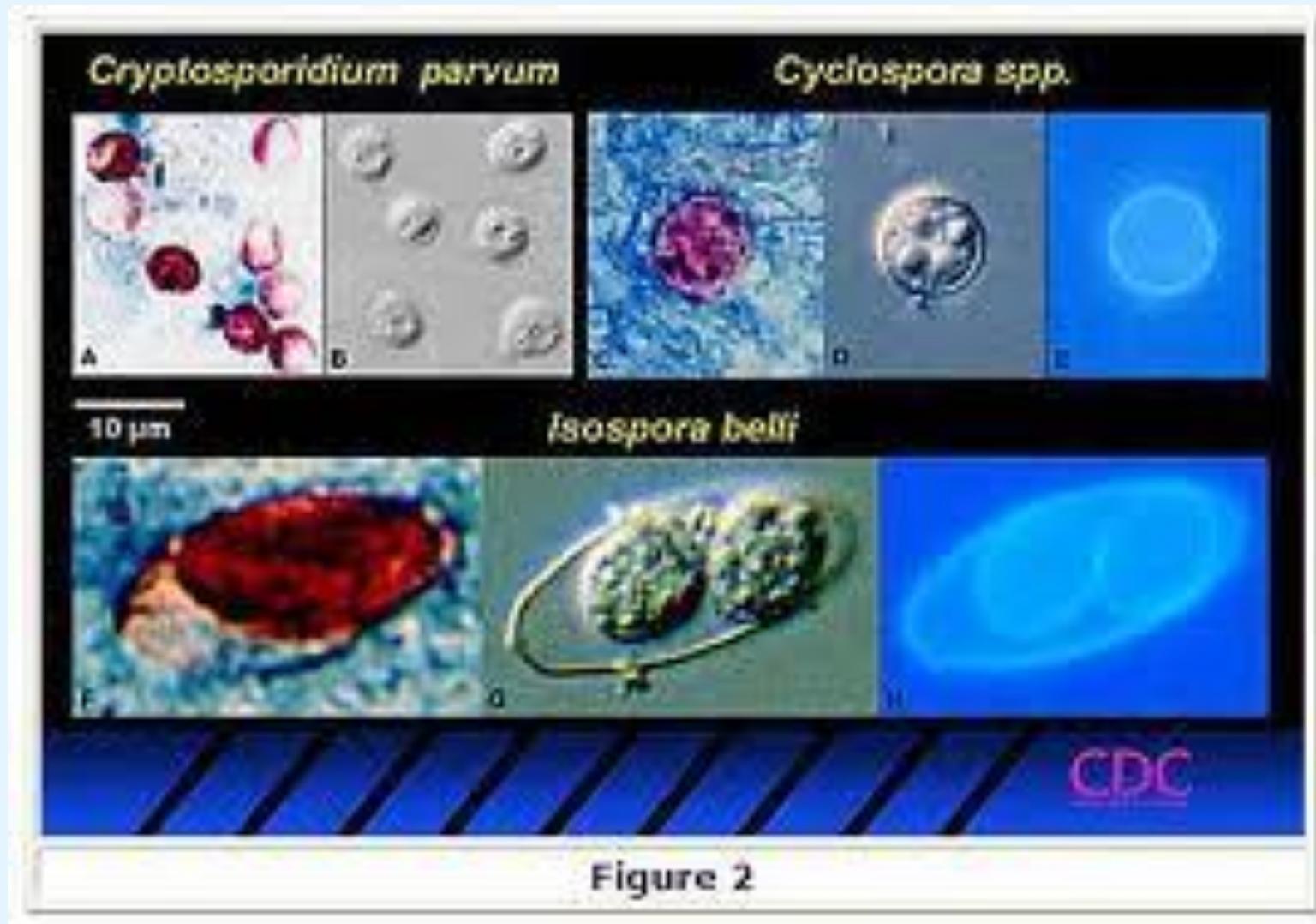
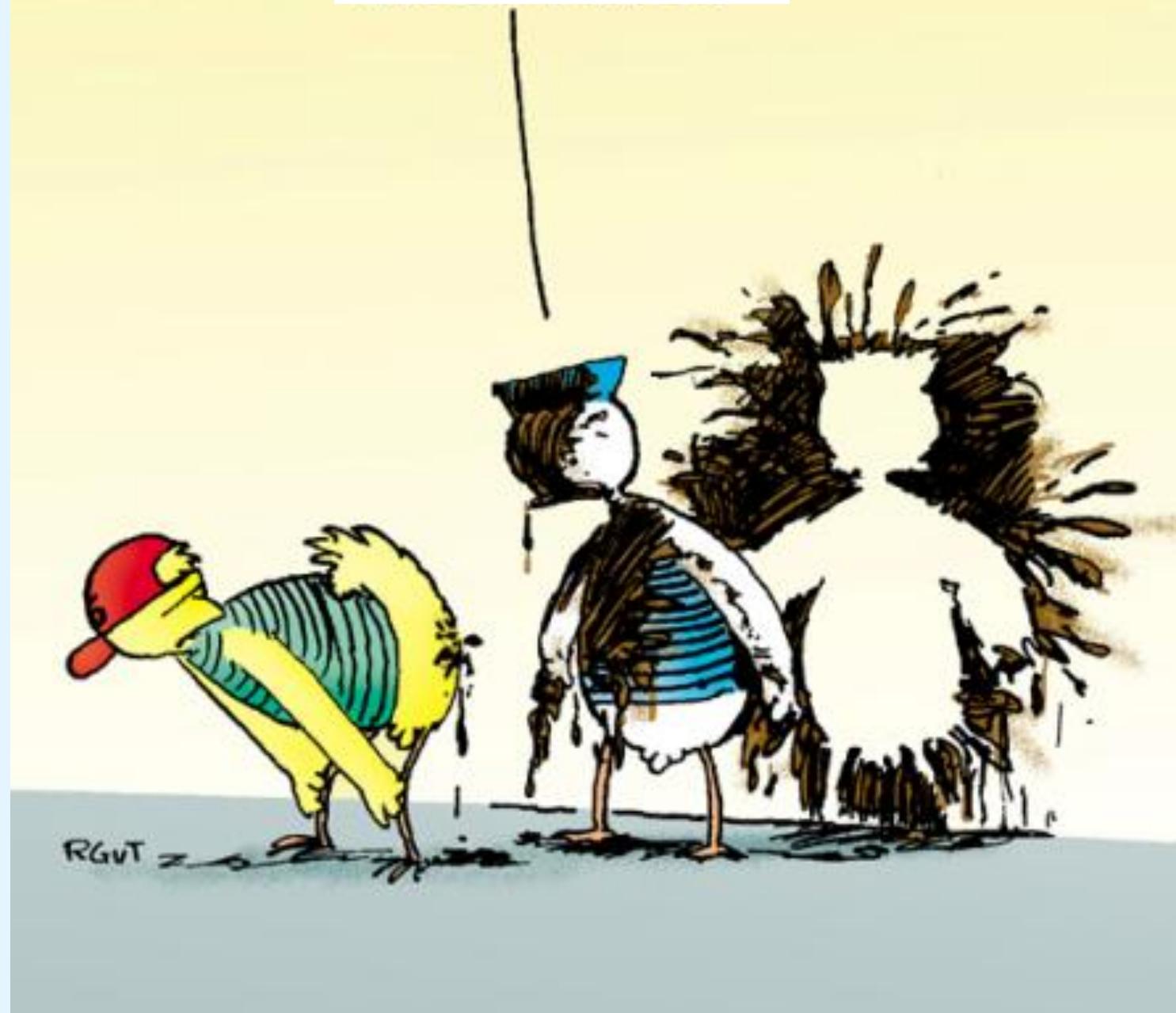


Figure 2

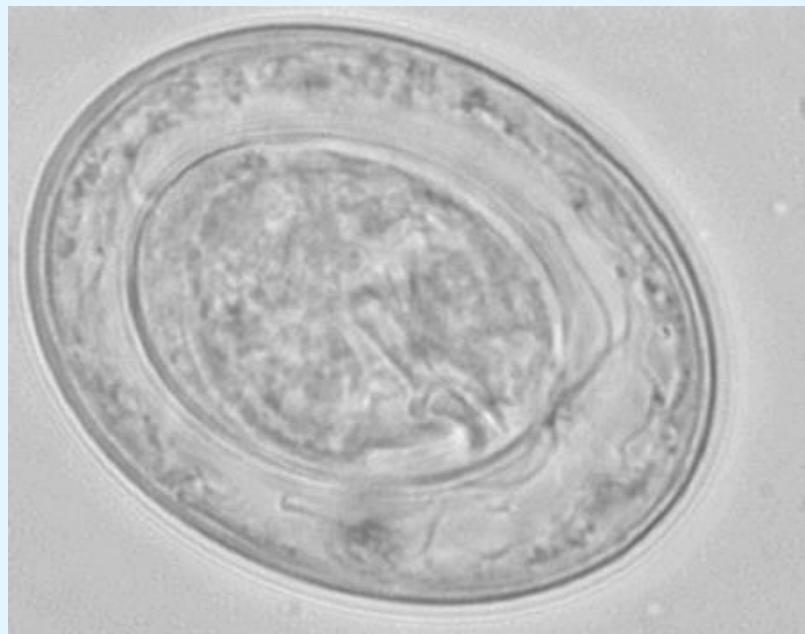
Diarrhoea I presume

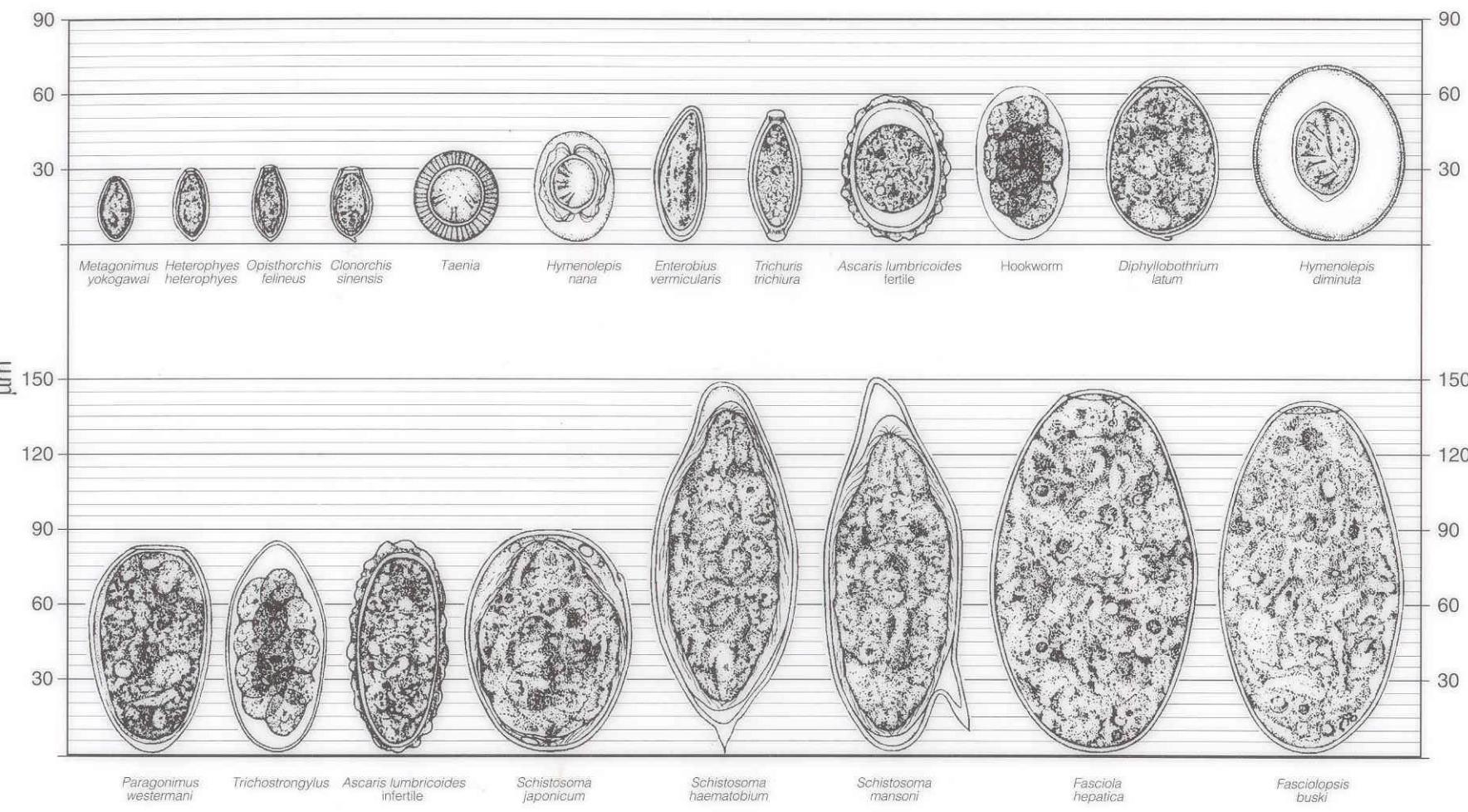


- Outbreaks Cryptosporidium / Cyclospora
- *Cryptosporidium parvum / hominis*
- RIVM studie (case / control huisartsen)

# 2013-2

- **Monster C**
  - *Hymenolepis nana* + *Giardia lamblia* (spor)  
*63 vd 63 inzenders correct (100%)*





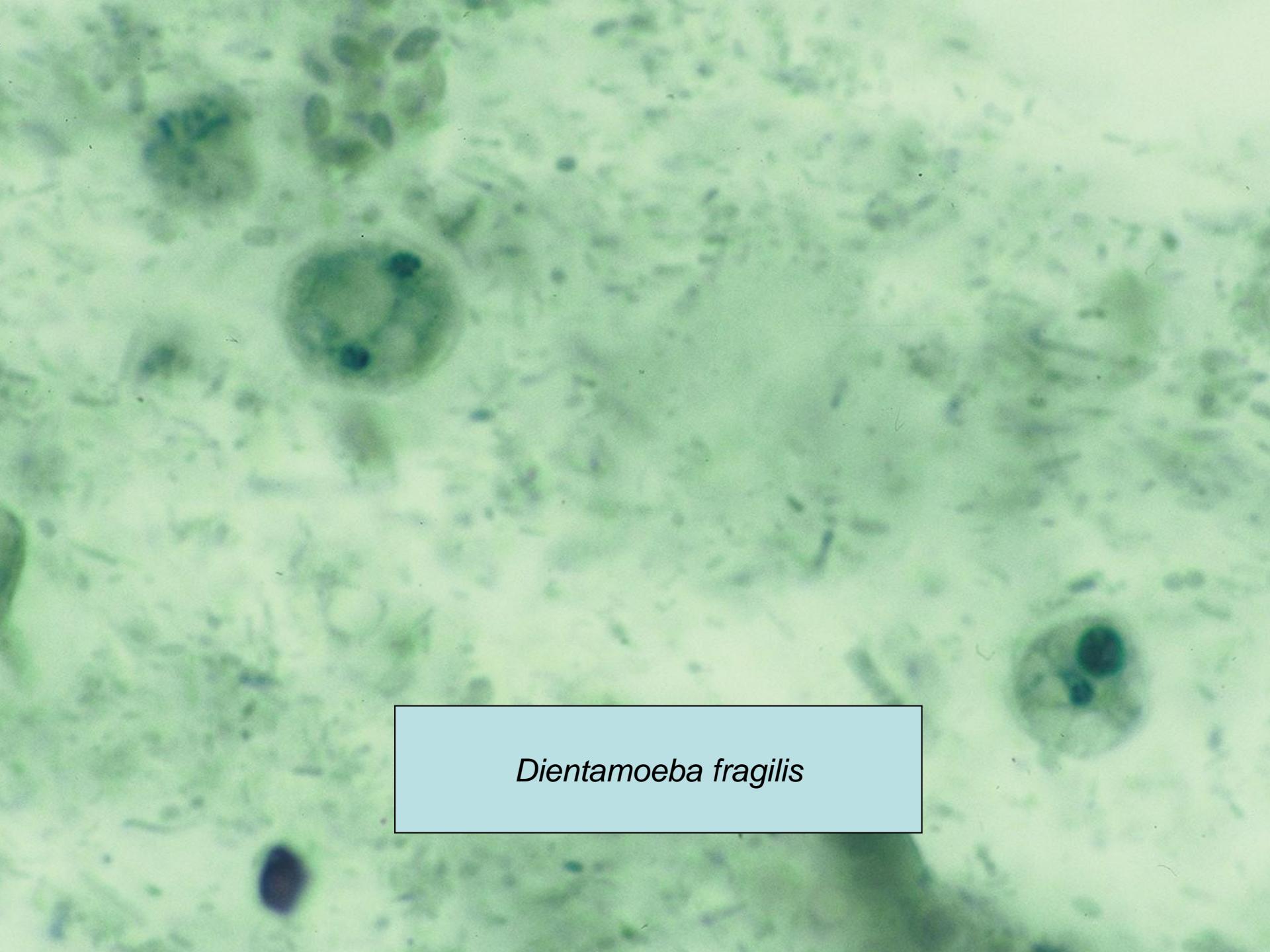
# 2013-2

- **Monster D**
  - *Dientamoeba fragilis*

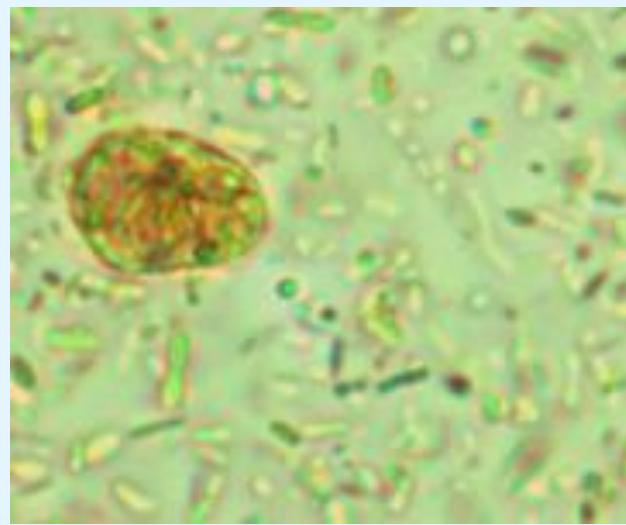
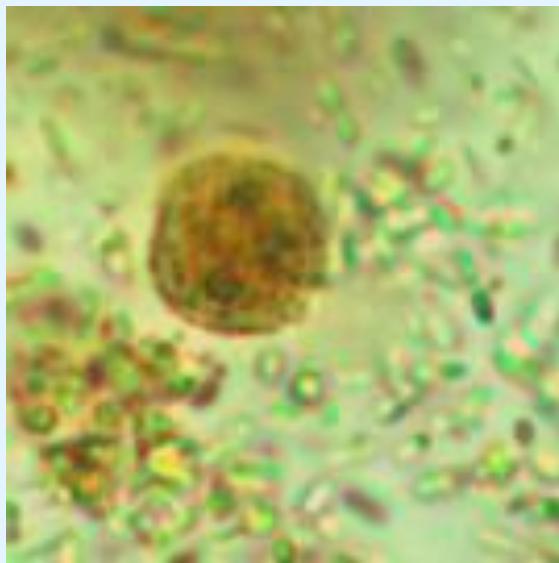
46 van de 59 deelnemers correct *D fragilis* (78.0%)

Foutief

    - *C. cayetanensis, E nana, I butschlii, E coli, E his/dis, G lamblia*
    - *Niets gevonden*

A light micrograph showing several dark, oval-shaped parasites of varying sizes scattered across a pale, granular background. These parasites are characteristic of the genus *Dientamoeba*.

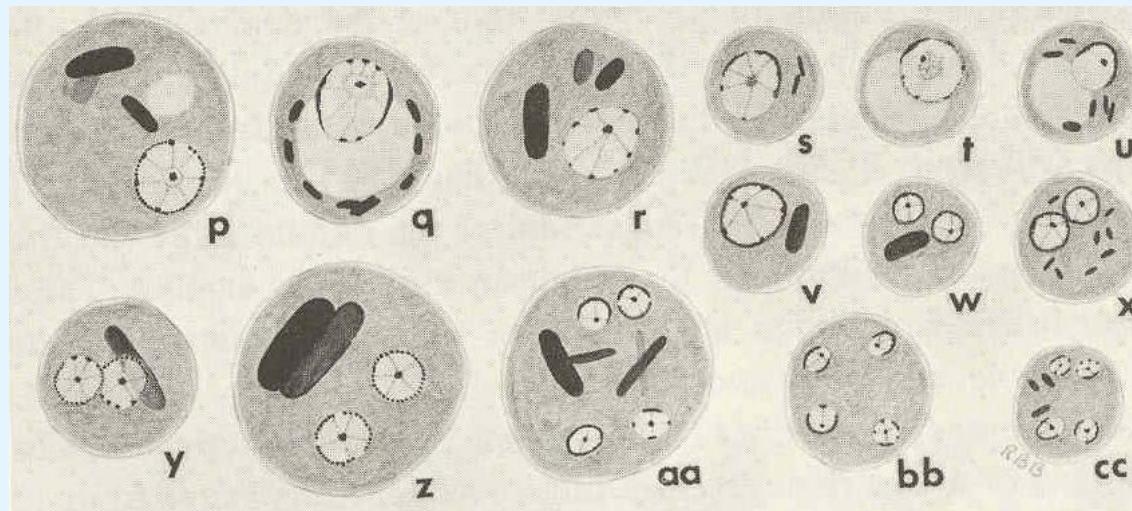
*Dientamoeba fragilis*

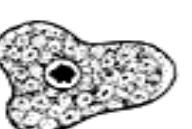


# Microscopic diagnosis of the parasites of man

by Robert B. Burrows 1965

"Probably the most difficult phase of human diagnostic parasitology for the technician to master is the differentiation of the species of amebae."



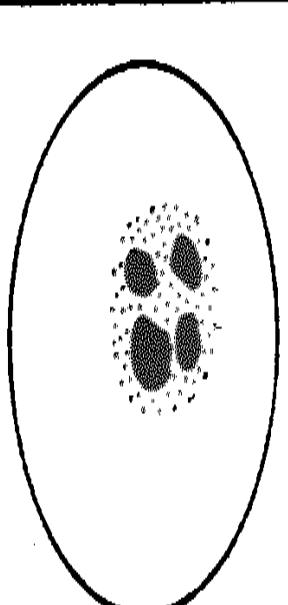
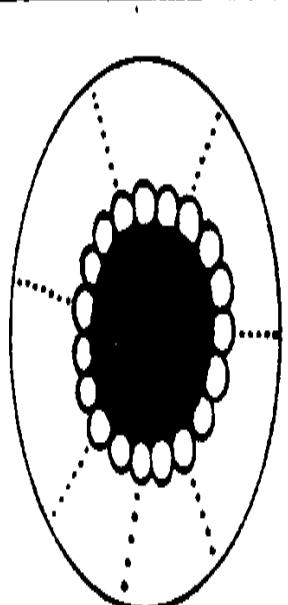
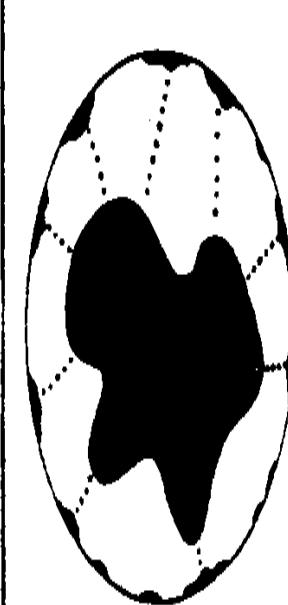
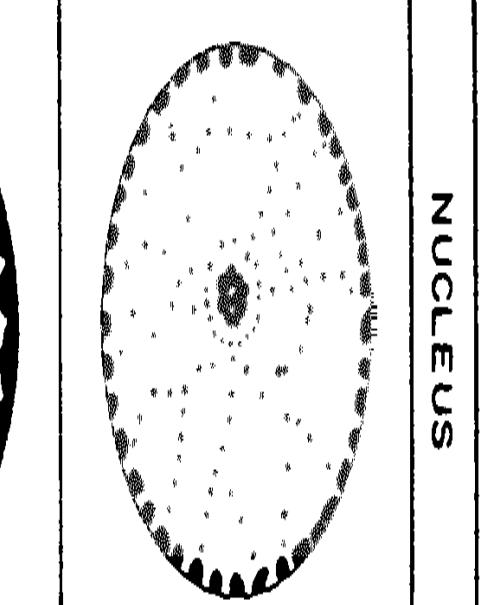
AMEBAE						
	<i>Entamoeba histolytica</i>	<i>Entamoeba hartmanni</i>	<i>Entamoeba coli</i>	<i>Entamoeba polecki</i> <sup>1</sup>	<i>Endolimax nana</i>	<i>Iodamoeba bütschlii</i>
Trophozoite						
Cyst						

<sup>1</sup>Rare, probably of animal origin

<sup>2</sup>Flagellate

Scale: 0      5      10  $\mu m$

Adapted from Brook

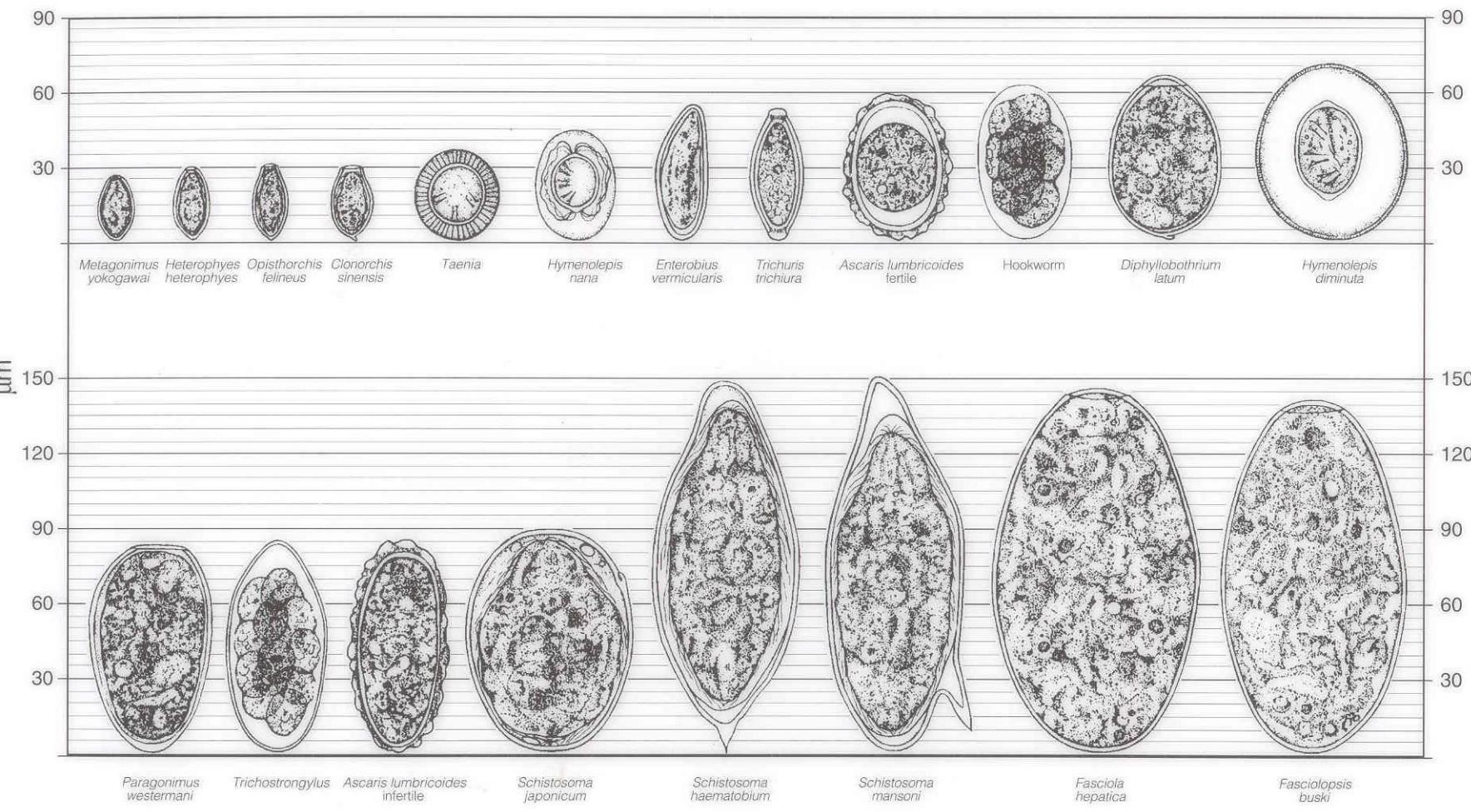
DIENTAMOEBA FRAGILIS	IODAMOEBA BÜTSCHLII	ENDOLIMAX NANA	ENTAMOEBA COLI	ENTAMOEBA HISTOLYTICA	
					NUCLEUS

# 2013-3

- **Monster C**
  - *Fasciola hepatica* + *Giardia lamblia*  
51 vd 62 inzenders correct (82,3 %)  
Foutief
    - *Entamoeba his/dispar*
    - Alleen *G lamblia* of *F hepatica*
    - *Ascaris lumbricoides*
- **Monster D**
  - *Cyclospora cayetanensis*  
58 vd 63 inzenders correct (92,1%)  
Foutief
    - *E hartmanni*, niets gevonden

# 2012-4

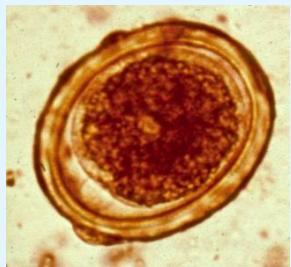
- **Monster C**
  - *Hymenolepis diminuta*  
*51 vd 63 inzenders correct (81 %)*  
*Foutief*
    - *H. nana + H. diminuta, H. nana*
- **Monster D**
  - *Ascaris lumbricoides*  
*53 vd 63 inzenders correct (84,1%)*  
*Foutief*
    - *Niet gevonden*



- overzicht resultaten 2013
- transitie CCKL praktijkrichtlijn naar ISO 15189-2012
- “stof tot nadenken”

- Vanaf 1 januari 2015 alle herbeoordelingen tegen ISO 15189-2012
- Kwaliteitsrondzendingen ! (bepalen ondermeer 2H)
  - eigen norm stellen bij afwijkingen PVA
  - indien gedurende 3 jaar norm gehaald...2H
- Eerste lijns controle
  - interne controle beleid, procescontroles
- Vakbekwaamheid personeel
  - nascholing / intern onderwijscurriculum / periodiek interne “rondzending”

- overzicht resultaten 2013
- transitie CCKL praktijkrichtlijn naar ISO 15189-2012
- “stof tot nadenken”



1

Ascaris



2

C. cayetanensis



3

G. lamblia



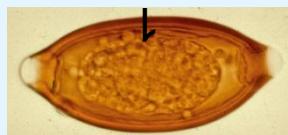
4

S. stercoralis



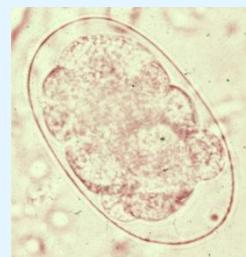
5

D. fragilis



6

T. trichiura

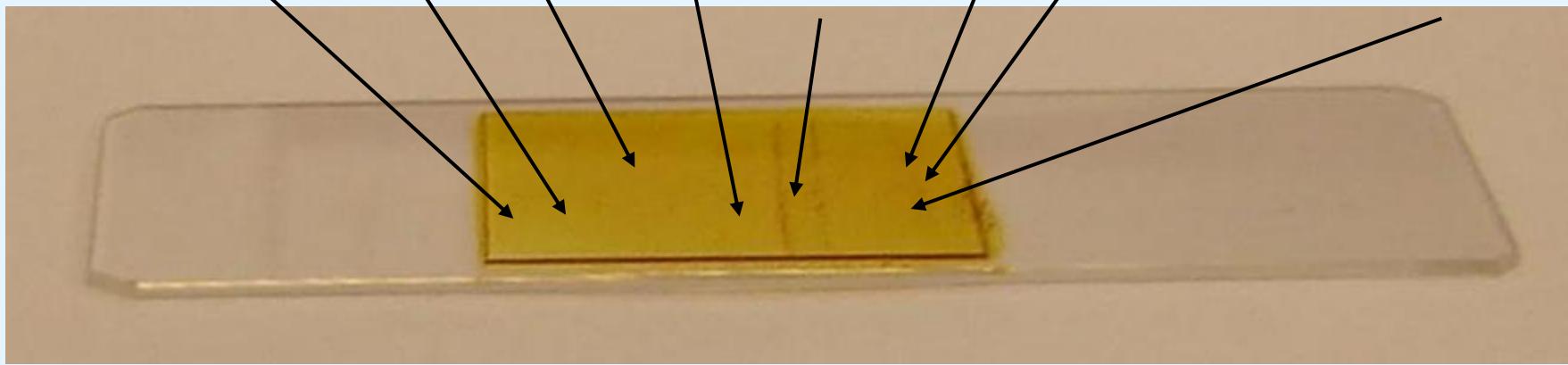


7

hookworm



8

E. histolytica/  
dispar

# Parasitologisch fecesonderzoek

- Vers, TFT, DFT
- PCR (*G. lamblia*, *E. histolytica*, *Cryptosporidium* sp, *D. fragilis*)
- Confirmatie onderzoek?
- Algorithme?
  - screeningsonderzoek?
  - Multiplex PCR
  - Microscopie op basis anamnese?
  - Meertraps raket?

# Parasitologisch fecesonderzoek

- Consequenties voor expertise microscopisten?
- Consequenties voor uitslag (hoe rapporteren?)
- Richtlijn / aanbevelingen parasitologische fecesdiagnostiek naar analogie met richtlijn malaria diagnostiek  
Truus Derkx / Theo Mank

