## Biomedical Parasitology

Theme: Clinical Parasitology
Lecture: Coprology


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1

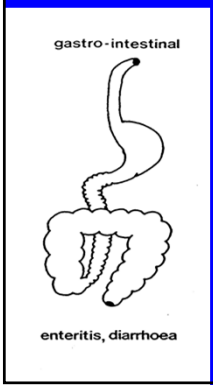
## Parasitology re-defined!

I am a COPROLOGIST
proud to study ..IT.
Not Information Technology
nor International Trade
More like Internal Trafficking
of digesta previously made.

I revel in the baseness,
the beauty of the beasts,
the cunning little parasites
indulging in my feasts.

2

## Site of infection and symptomatology




| structure | function |
|---|---|
| •stomach | produce molecular soup |
| •small intestines | absorb nutrients |
| •large intestine | retain water |

excessive evacuation of too fluid faeces
(frequency + volume + consistency)

3

## Diarrhoea

Five main types
- secretory
- osmotic
- exudative
- malabsorptive
- deranged motility

scours

4

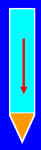
## Coprological techniques

| | |
|---|---|
| Clinical score | (volume/composition) |
| Stained smear | (low sensitivity) |
| Concentration | (increased sensitivity) |
| - sedimentation | (worm eggs) (soil) |
| - floatation | (protozoan cysts) (fat) |
| - filtration | (worm larvae) (f-l) |
| Immunodiagnosis | (? specificity) |
| - immuno-label | (IMS) |
| - copro-Ab±Ag | (IgA; parasite extracts) |
| Molecular diagnosis | (? specificity) |
| - PCR amplification | (parasite DNA/RNA) |

5

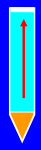
## Concentration techniques

sedimentation



water — eggs/cysts sink

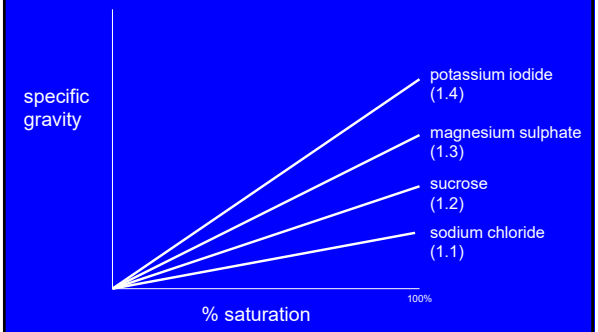
floatation



salt/sugar solution (high specific gravity) — eggs/cysts float

6

## Floatation media

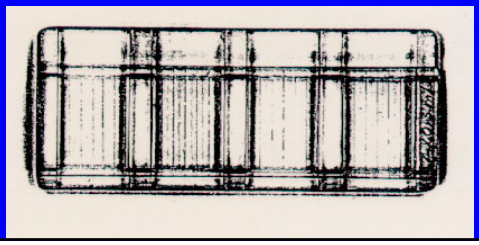



7

## Quantitative counts

**McMaster chambers**

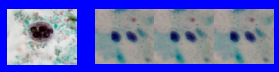
- count number of worm eggs in known volume of diluted faecal material
- extrapolate to eggs per gram (epg)



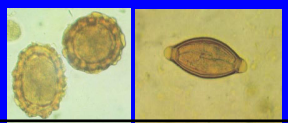
8

## GI-PARASITES

- protozoa small multiplicative acute



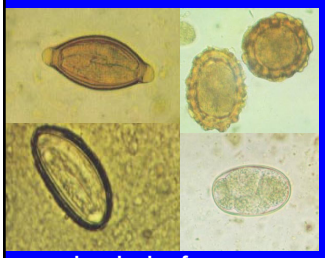
- worms big cumulative chronic



9

## DIAGNOSTICS

worm eggs | protozoa cysts | bacteria



hundreds of µm | tens of µm | µm

10