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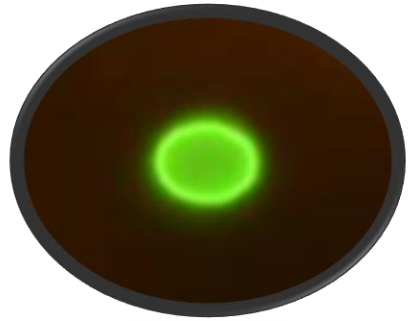
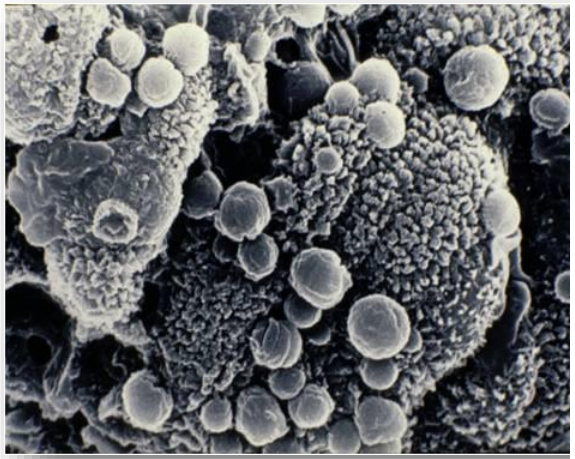
- Over 30 recognise
livestock, humans a
- *C. parvum* is a zoo
- Clinical signs of cr
immune status of th





COMMENT

ANDREW BIRAJ/REUTERS/CORBIS

In young children, the parasitic infection cryptosporidiosis is one of four leading causes of severe diarrhoea.

Time to tackle cryptosporidiosis

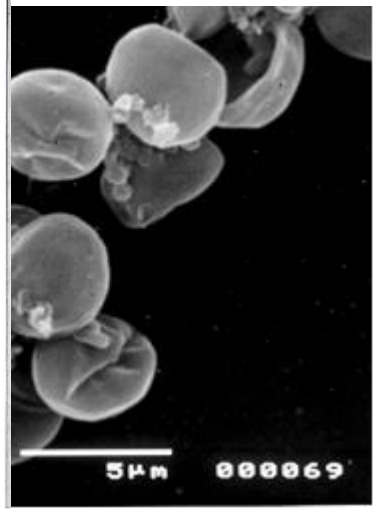
The little-studied parasite *Cryptosporidium* is a major threat to infants. **Boris Striepen** calls on microbiologists and funders to give it more attention.

Earlier this year, a massive clinical and epidemiological study[1] involving 22,500 children from Africa and Asia revealed — unexpectedly — that the protozoan parasite *Cryptosporidium* is one of four pathogens responsible for the lion's share of severe diarrhoea in infants and toddlers. According to the World Health Organization, diarrhoea accounts for 10.5% of the nearly 8 million yearly deaths of children under five years of age[2]. (For comparison, malaria causes 7% of such deaths, and HIV/AIDS, just 2%.)

Vaccines and treatments are already available or fast being developed for three of the four pathogens identified: rotavirus, *Shigella* bacteria and enterotoxigenic *Escherichia coli* (see 'Child killer'). But for 'crypto', there is no fully effective drug treatment or vaccine, and the basic research tools and infrastructure needed to discover, evaluate and develop such interventions are mostly lacking.

The technical challenges of working on crypto in the laboratory have led to the perception that the pathogen is an intriguing yet intractable problem. Crypto lab cultures last a few days at most, for instance, and some of the species that infect humans cannot be easily studied in standard model organisms such as mice. As a result, funders and biologists have tended to shy away from the parasite: a search on the biomedical research database PubMed suggests that in the past five years, about 20 times more articles have been published on malaria than on crypto.

I believe, however, that with the right tools, research approach and financial backing, the prevention of deaths caused ▶



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Cryptosporidium in drought: Effect on water quality

- Gathering of livestock and wildlife around water sources
- Competition and sharing of water sources with humans
- Developing countries – no or little treatment of water
- Concentration of pathogens as water volume reduces
- Intense precipitation often follows drought and exacerbates the problem

- Surface run-off brings pathogens ultimately destined for water catchments
- How do we protect the quality of water resources in times of drought?

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?? Discussion questions ??

a) What lessons have we learnt from recent experiences?

b) What lessons can we learn from our national and international counterparts?

c) How can we work more effectively across disciplines to enhance resilience?

d) How can communities support monitoring and adaptive management?

e) Identifying the ‘need’ for research– what, when, why and how?