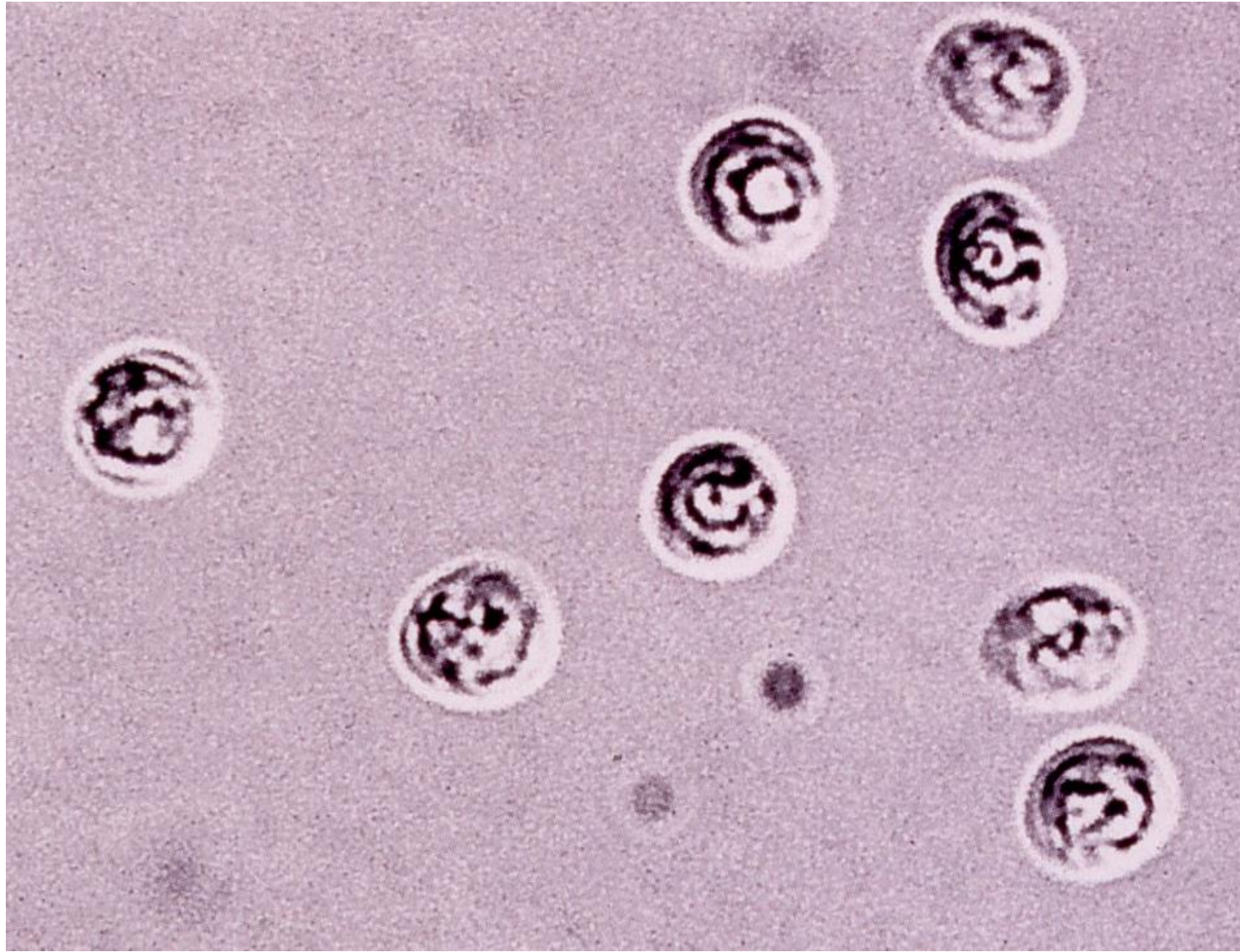


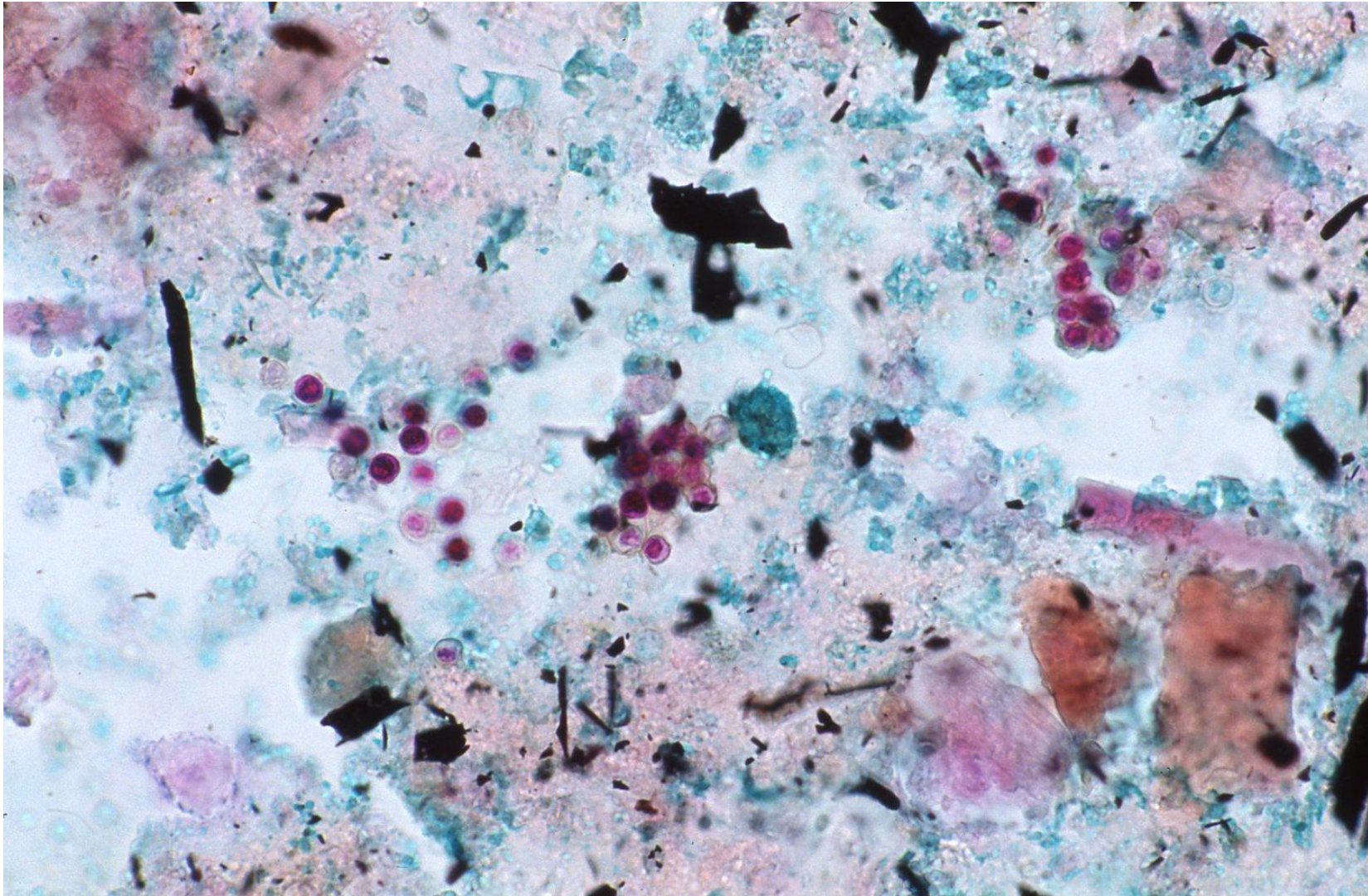
Cryptosporidiosis (*Cryptosporidium parvum* infection)

Symptoms of *Cryptosporidium parvum* infection are acute, watery and non-bloody diarrhea. Cryptosporidiosis is of particular concern in immunocompromised patients. Infection is caused by ingestion of sporulated oocysts transmitted by the fecal-oral route. No intermediate hosts are needed. The median infective dose is as few as 132 oocysts, and contamination in tap water may cause endemic infection. Infection is self-limiting in immunocompetent people, while in AIDS patients, cryptosporidiosis is usually fatal. Acid-fast staining of diarrheal fluid is effective to detect small-sized (3-7 μm in diameter) oocysts. The protozoa infects the microvilli of the intestinal epithelial cells, particularly of the ileum and cecum.

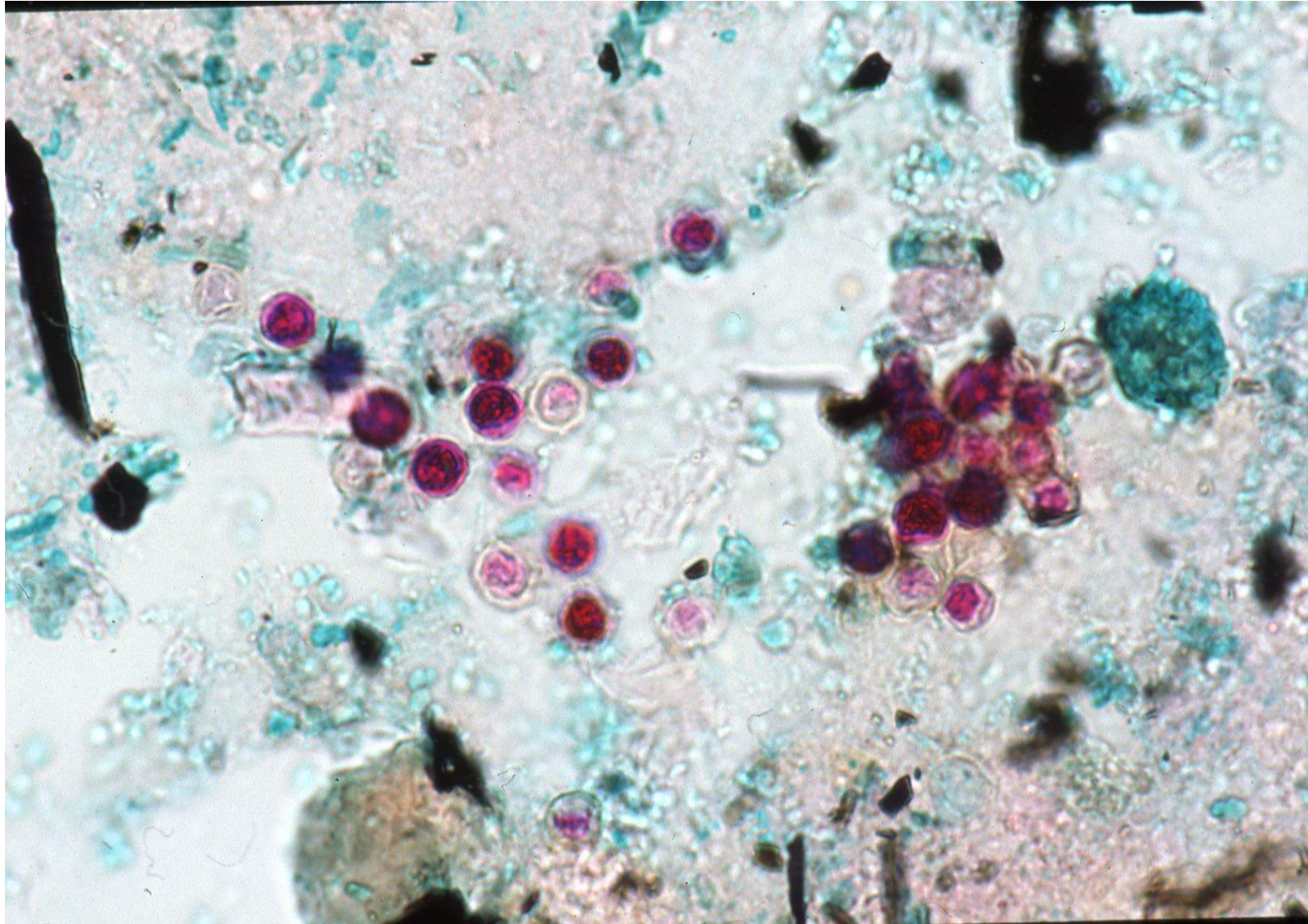
Ref.: Vanathy K, et al. Cryptosporidiosis: a mini review. Trop Parasitol 2017; 7(2): 72-80. doi: 10.4103/tp.TP_25_17



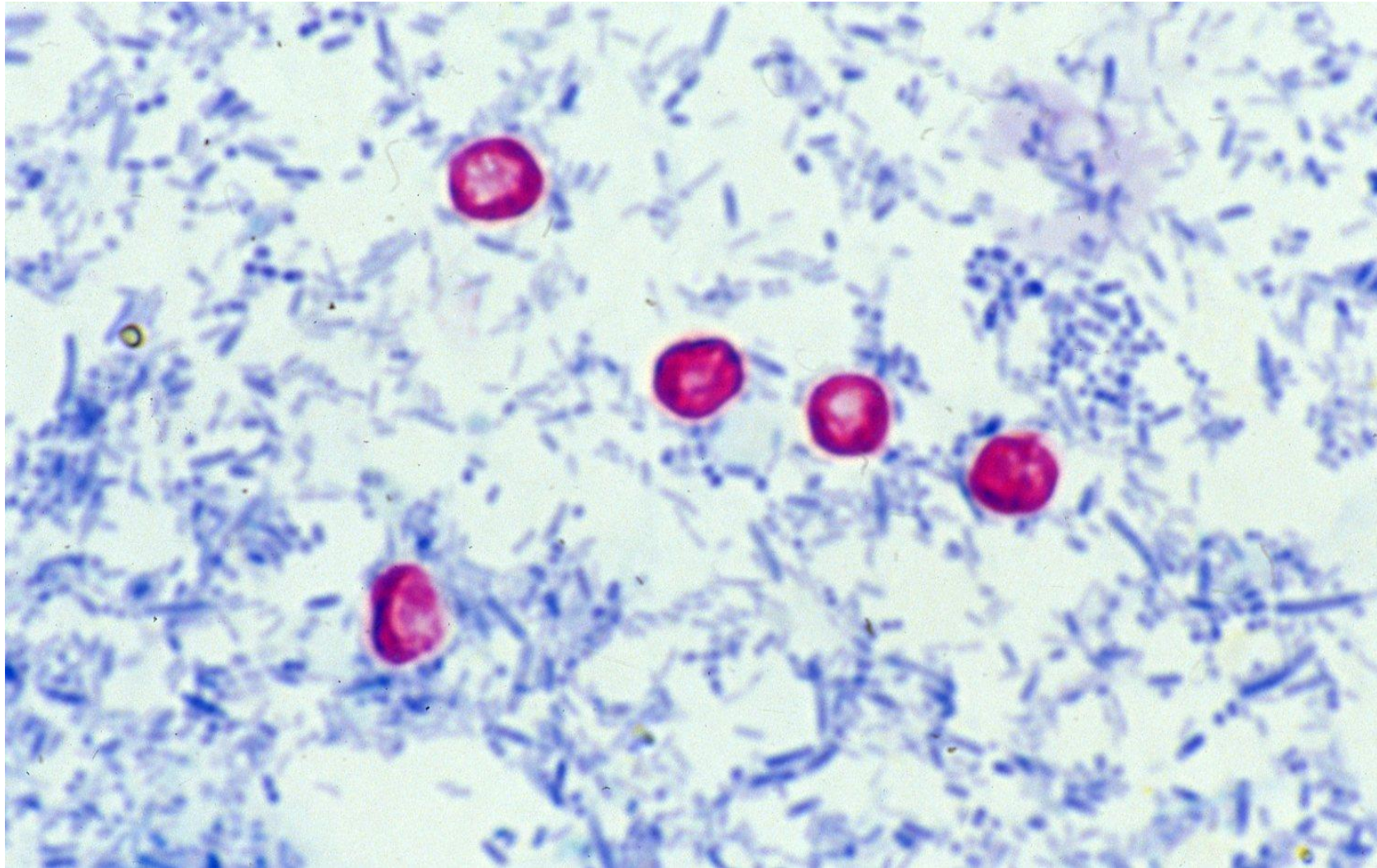
Oocysts of *Cryptosporidium parvum*. Observation with Nomarski differential interference microscopy



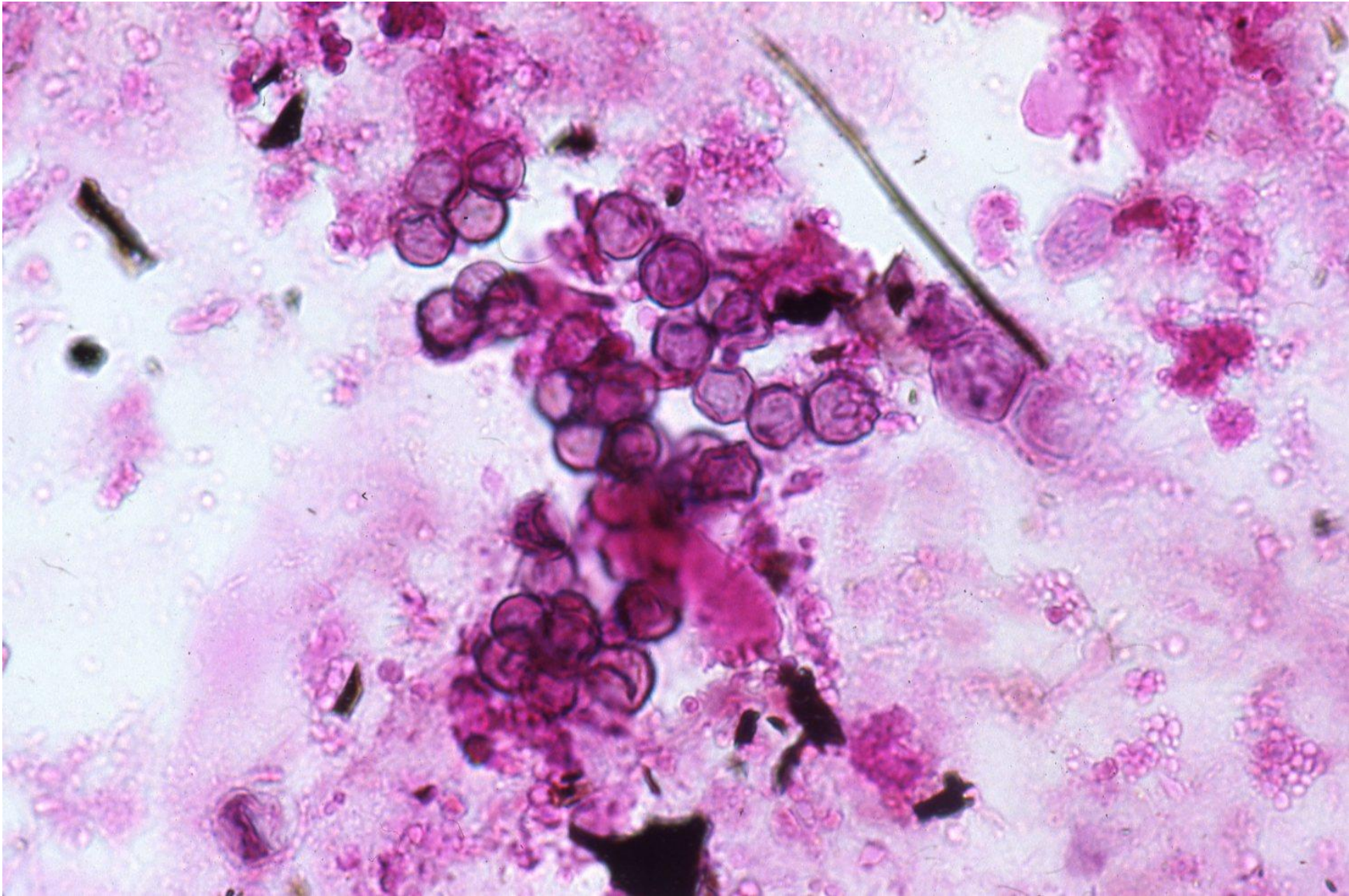
Oocysts of *Cryptosporidium parvum* in diarrheal fluid. Acid-fast staining (Ziehl-Neelsen's staining) demonstrates small-sized round-shaped oocysts of *C. parvum*.



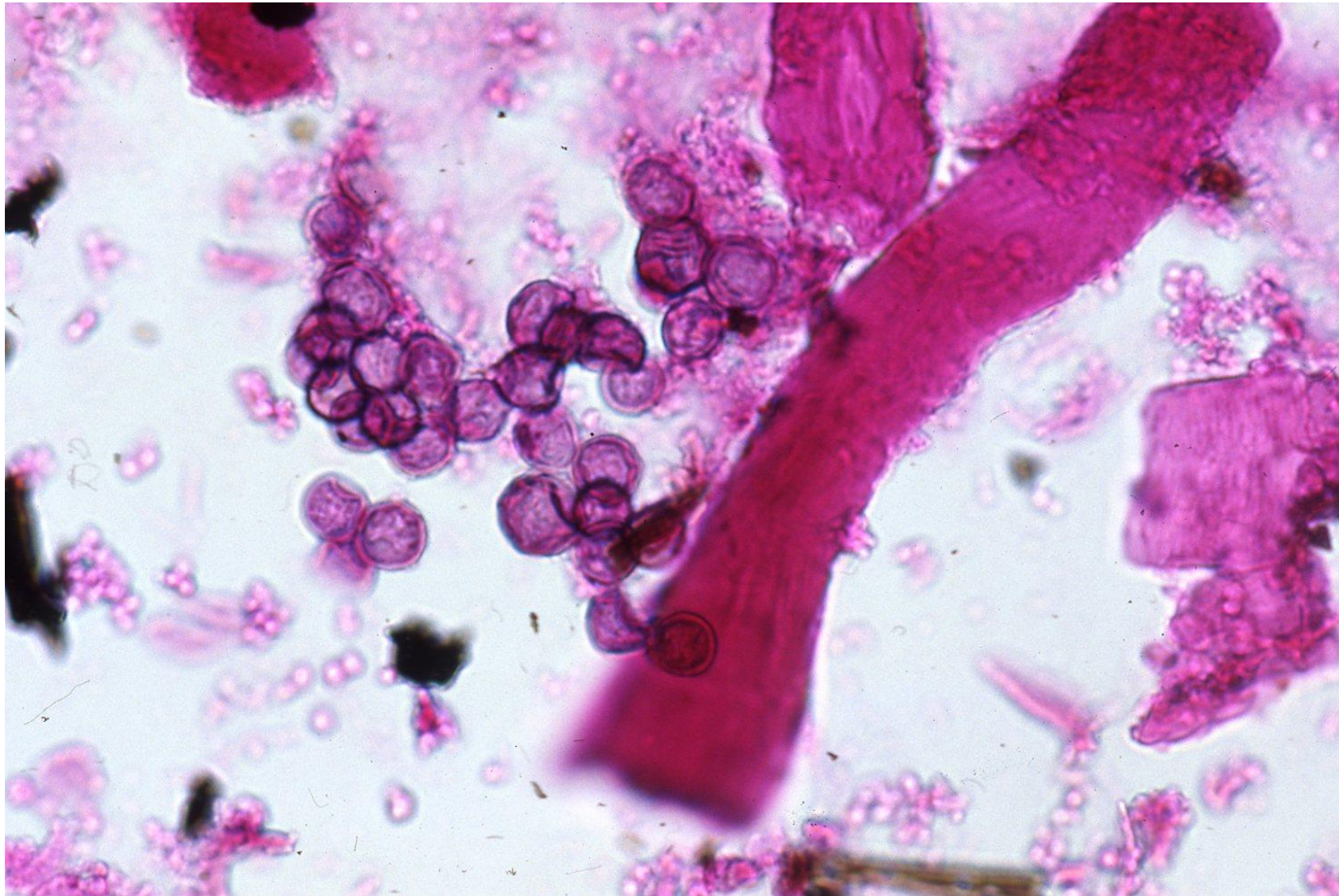
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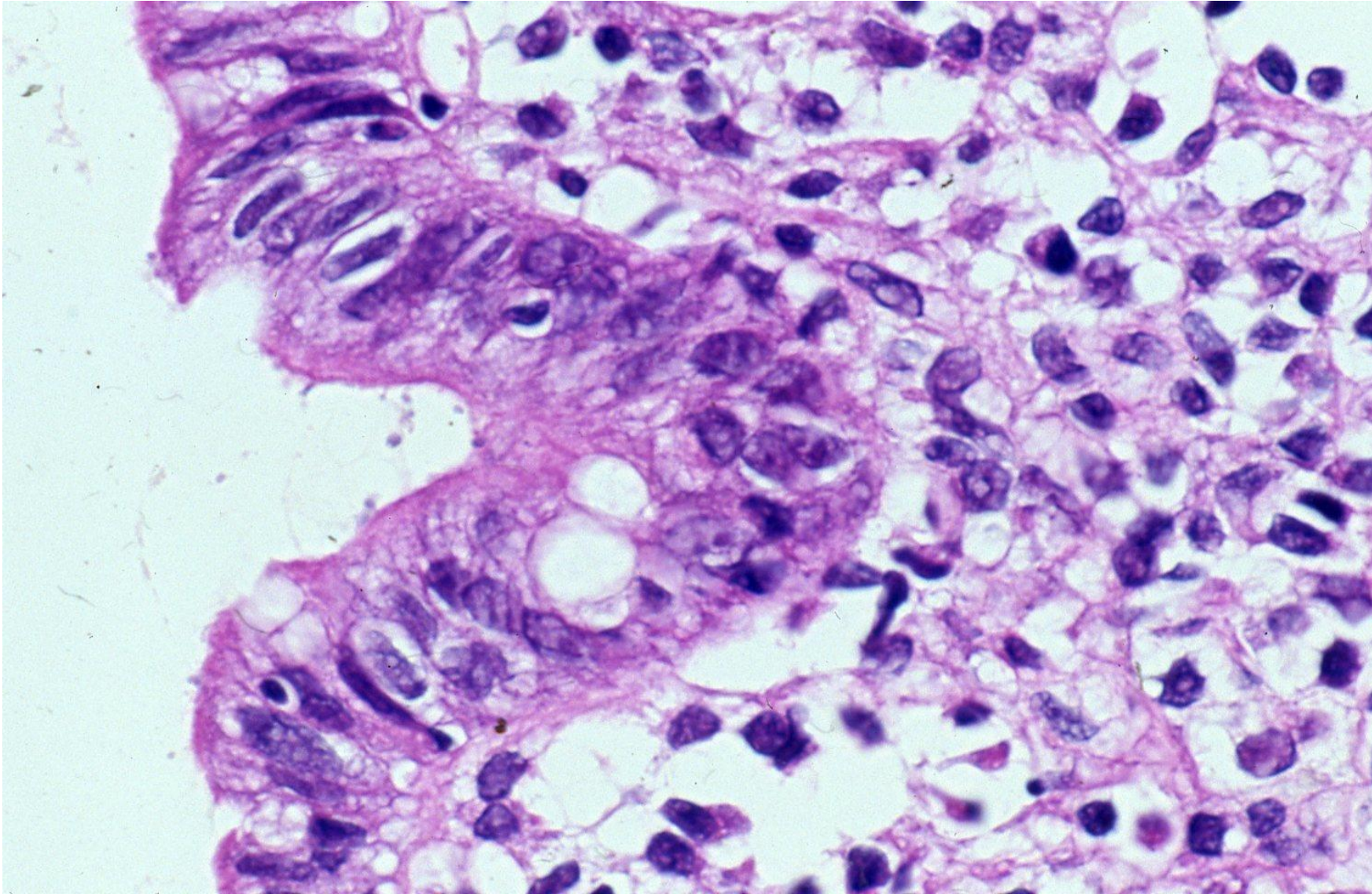
Oocysts of *Cryptosporidium parvum* in diarrheal fluid. Acid-fast staining (Ziehl-Neelsen's staining) demonstrates small-sized round-shaped oocysts of *C. parvum*.



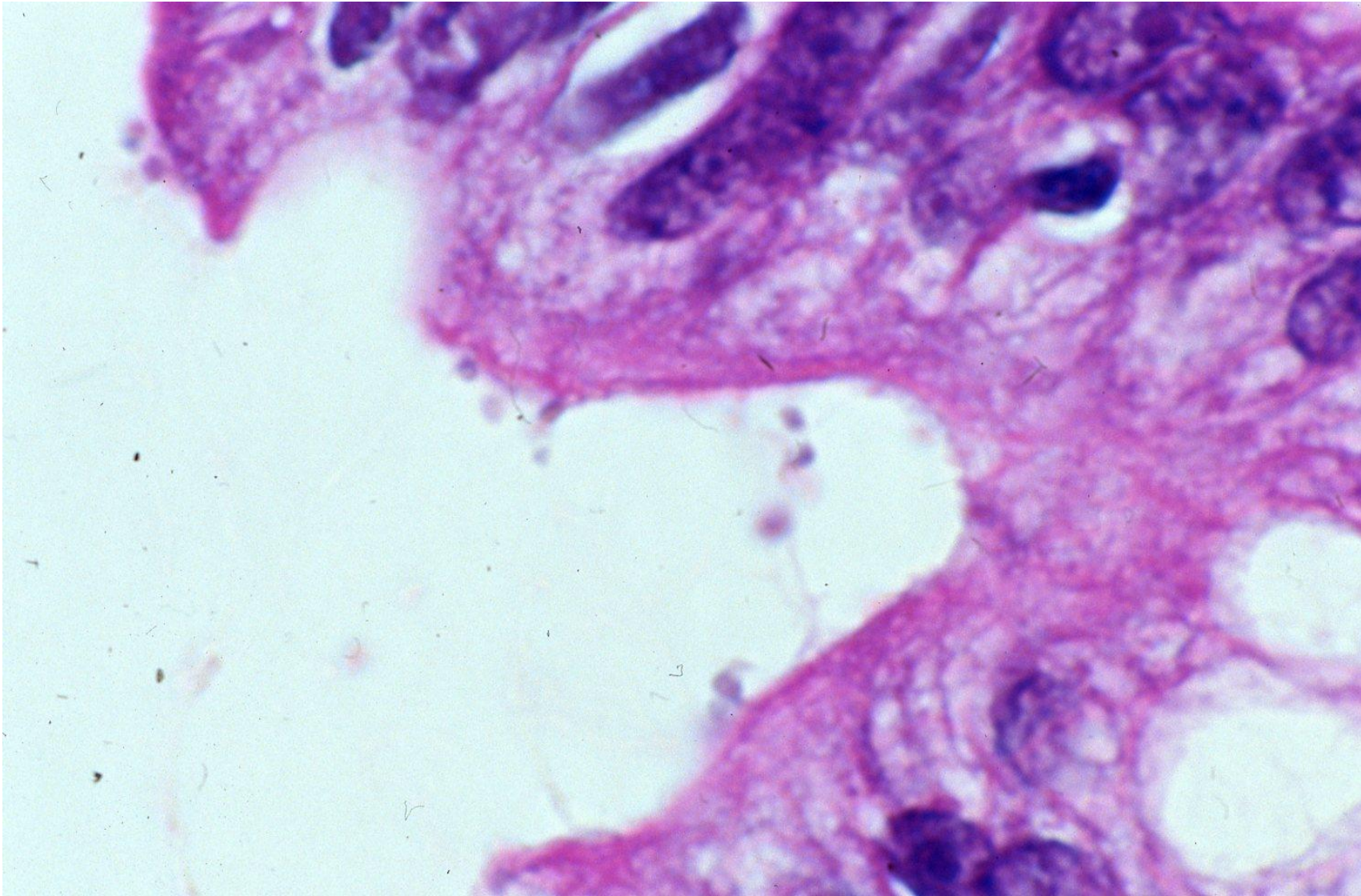
Oocysts of *Cryptosporidium parvum* in diarrheal fluid. Small-sized round-shaped oocysts of *C. parvum* are shown by H&E staining.



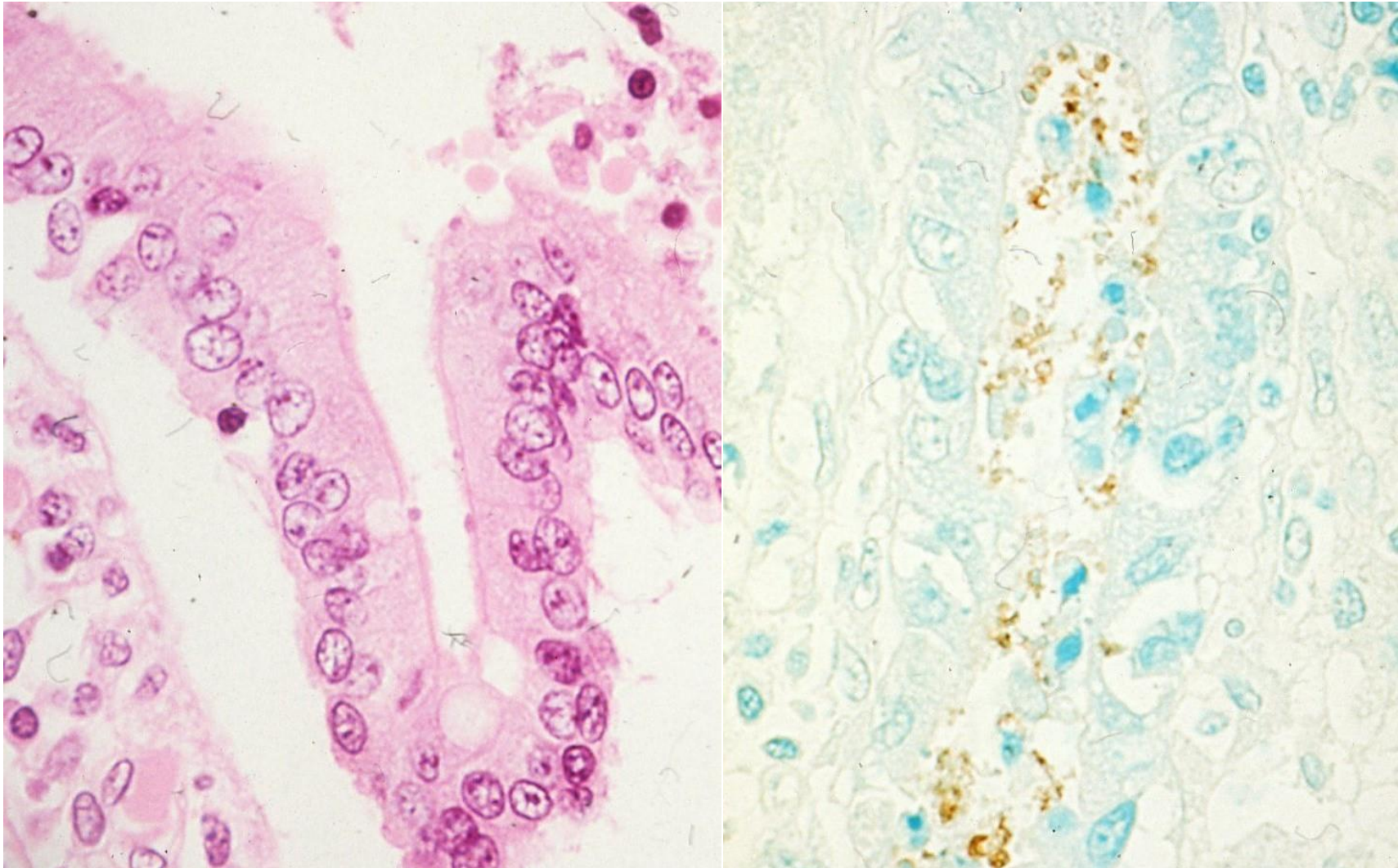
Oocysts of *Cryptosporidium parvum* in diarrheal fluid. Small-sized round-shaped oocysts of *C. parvum* are shown by H&E staining.



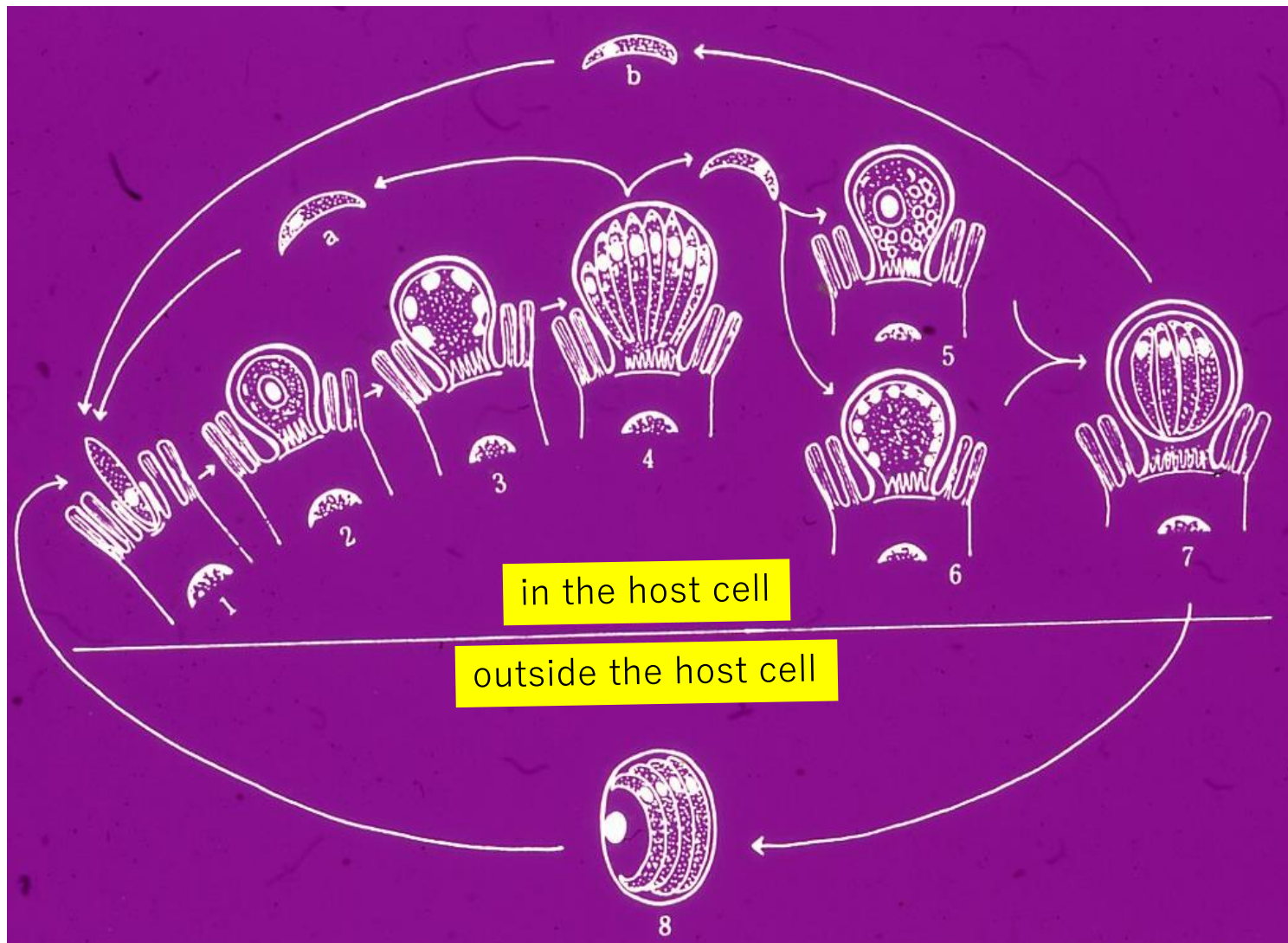
Cryptosporidiosis in a 15-year-old boy transmitted from a cow. Biopsy from the terminal ileal mucosa reveal infection of dot-like *Cryptosporidium parvum* in microvilli. H&E-1



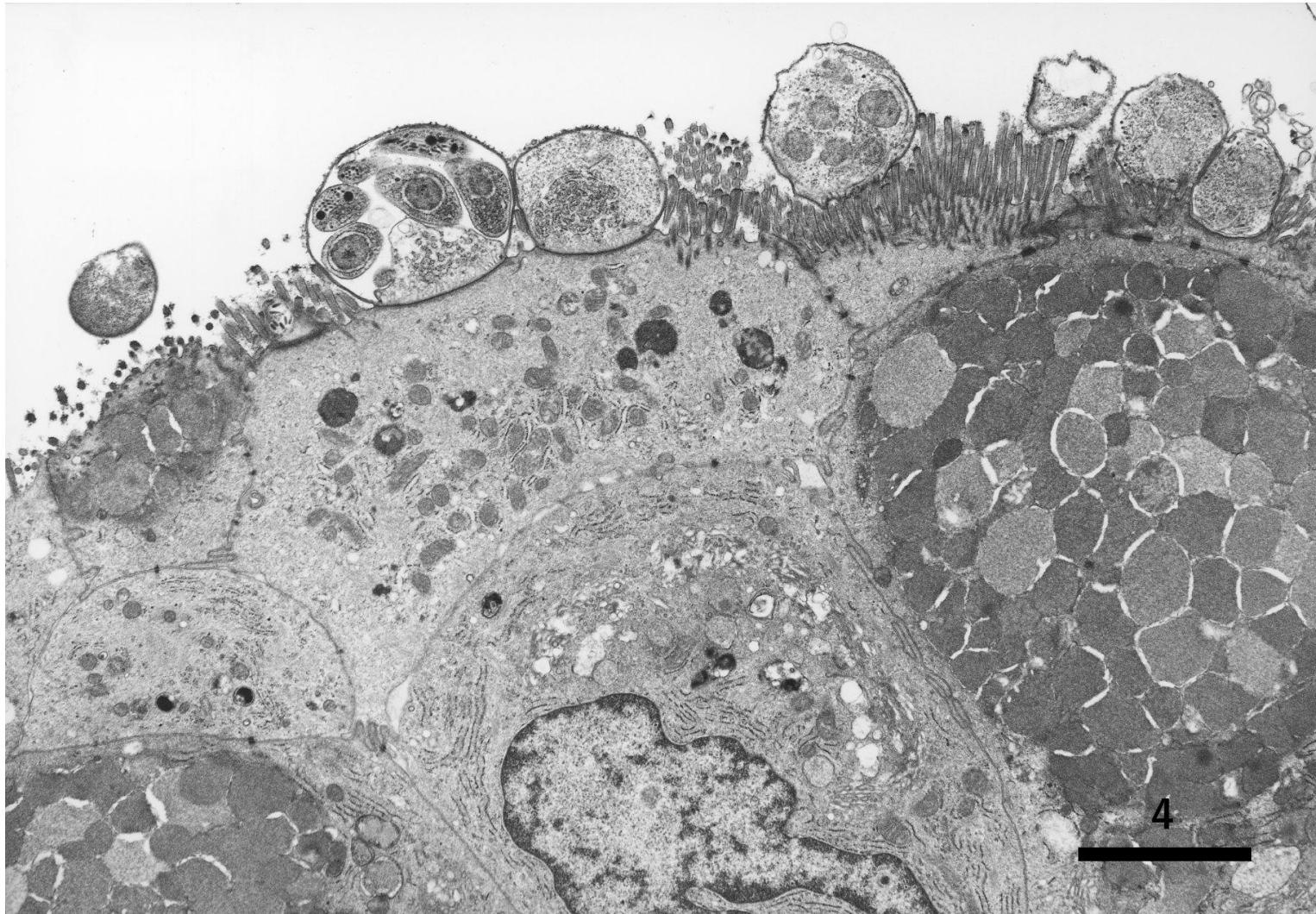
Cryptosporidiosis in a 15-year-old boy transmitted from a cow. Biopsy from the terminal ileal mucosa reveal infection of dot-like *Cryptosporidium parvum* in microvilli. H&E-2 (oil immersion)



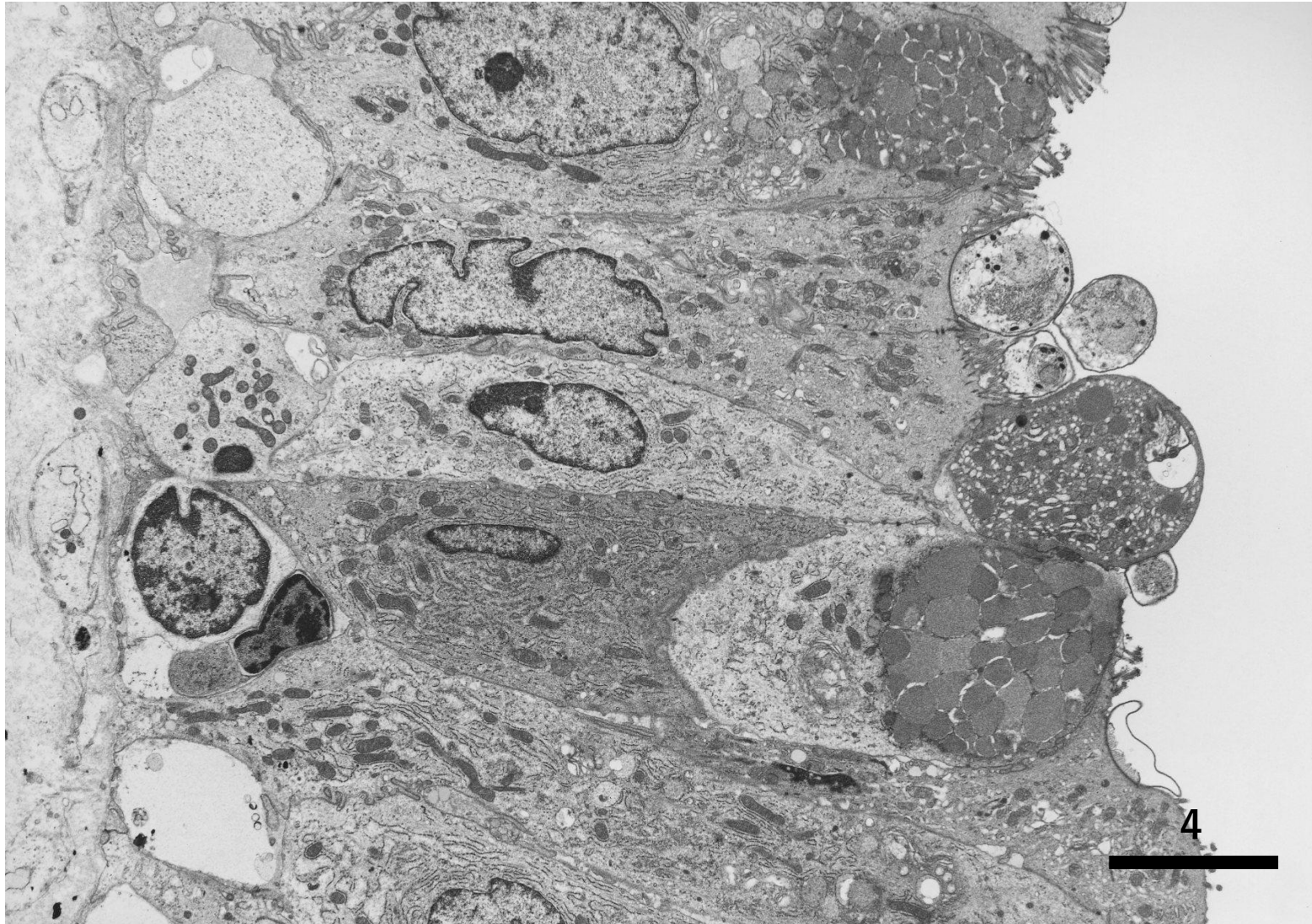
Cryptosporidiosis in the small bowel of an autopsy male case of AIDS. Tiny oocysts are infected in the microvilli of the absorptive epithelial cells (left: H&E). The oocysts are visualized by the 1:500 diluted human serum from another healthy patient with cryptosporidiosis complaining of watery diarrhea (right).



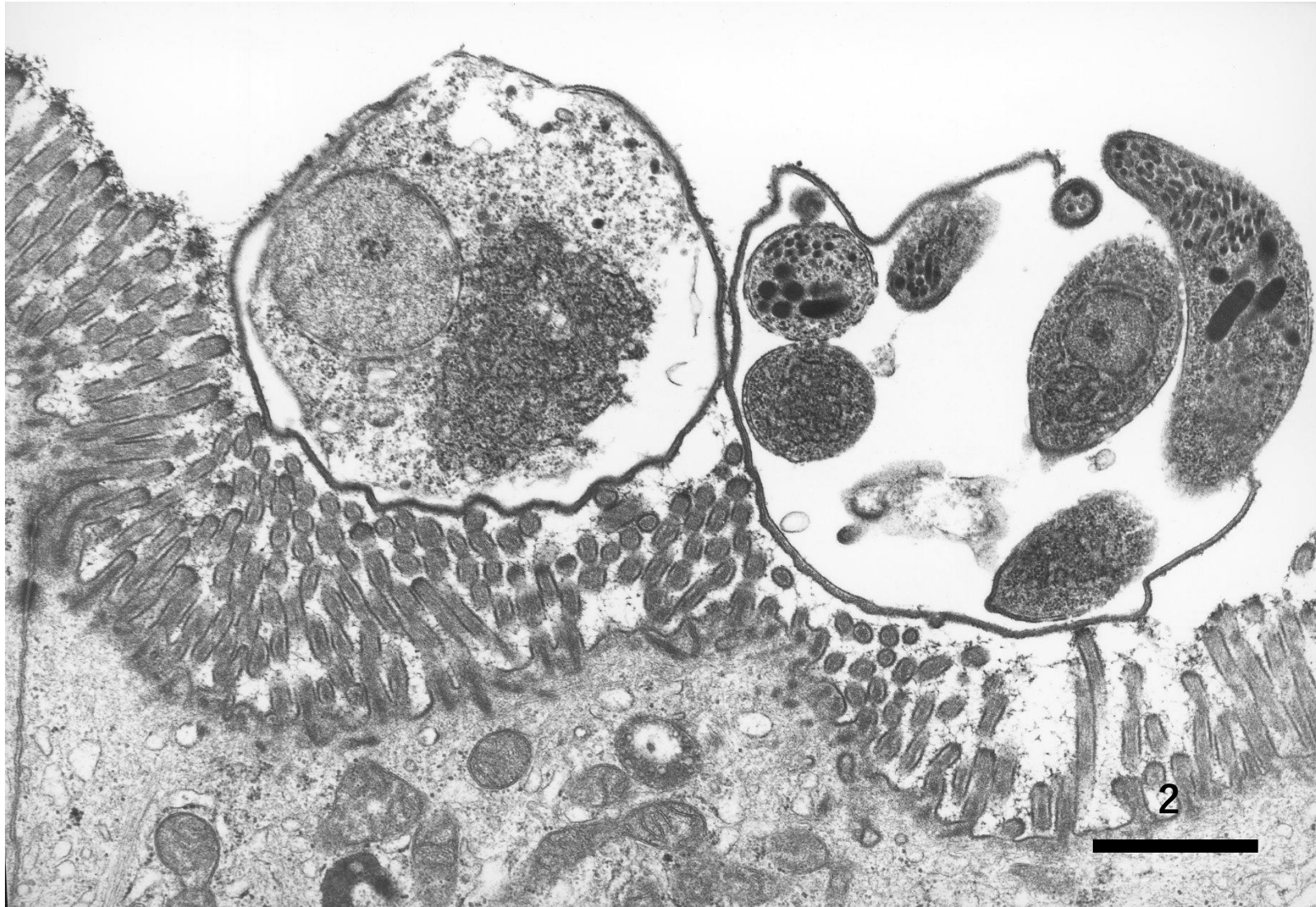
Life cycle of *Cryptosporidium parvum*. 1-4: asexual reproduction (agamogenesis)
 1: Infection of merozoite or sporozoite to microvilli, 2: trophozoite in microvilli,
 3: schizonts in mitosis, 4: mature schizont, 5&6: sexual reproduction (gametogony),
 7: mature oocyst, 8: oocyst in feces, a: merozoite released from mature schizont,
 b: sporozoite released from mature oocyst



Ultrastructure of cryptosporidiosis. Trophozoites and schizonts (containing merozoites) are infected in microvilli of the small bowel absorptive epithelial cells. EM-1



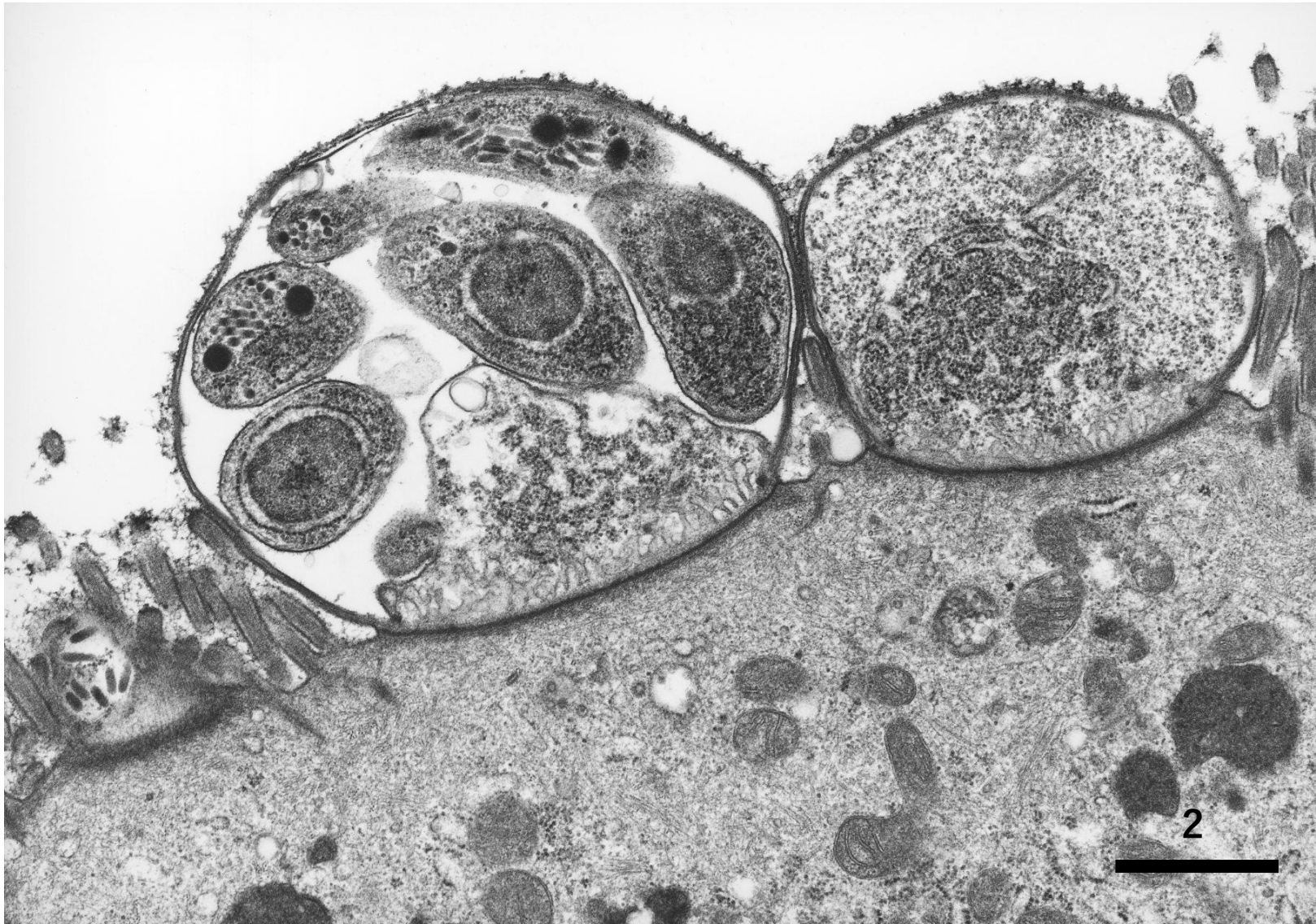
Ultrastructure of cryptosporidiosis. Trophozoites and a gametocyte are infected in microvilli of the small bowel absorptive epithelial cells. EM-2



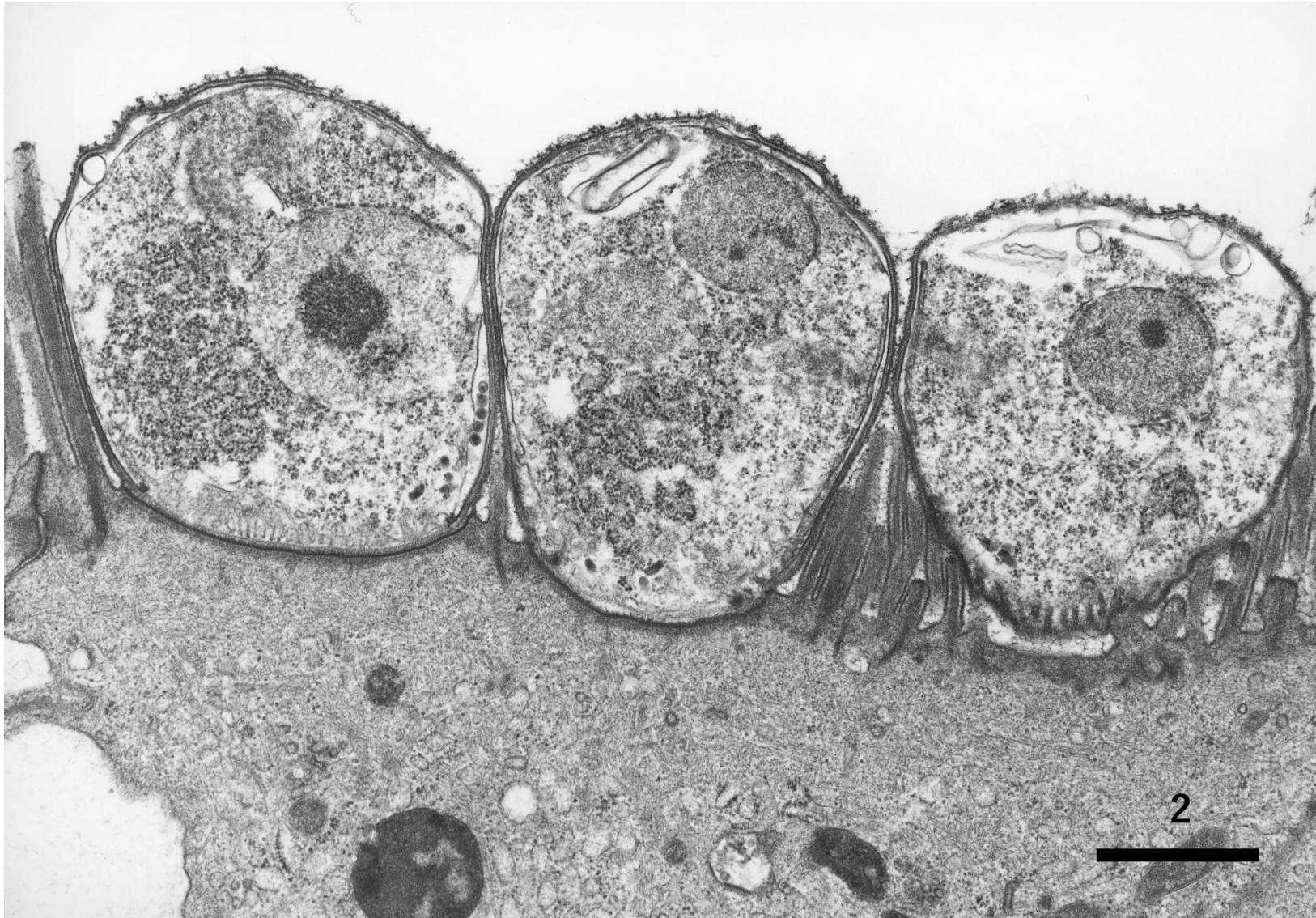
Ultrastructure of cryptosporidiosis. Trophozoite and schizont (containing merozoites) are infected in microvilli of the small bowel absorptive epithelial cells. EM-3



Ultrastructure of cryptosporidiosis. Trophozoite and schizont (containing merozoites) are infected in microvilli of the small bowel absorptive epithelial cells. EM-4



Ultrastructure of cryptosporidiosis. Trophozoite and schizont (containing merozoites) are infected in microvilli of the small bowel absorptive epithelial cells. EM-5



Ultrastructure of cryptosporidiosis. Trophozoites are infected in microvilli of the small bowel absorptive epithelial cells. EM-6