

Zeitschrift:	Acta Tropica
Herausgeber:	Schweizerisches Tropeninstitut (Basel)
Band:	31 (1974)
Heft:	3
Artikel:	Ultrastruktur und Zyklus von "Herpetomonas muscarum", "Herpetomonas mirabilis" und "Crithidia luciliae" in "Chrysomyia chloropyga"
Autor:	Brun, Reto
Bibliographie:	Literaturangaben
DOI:	https://doi.org/10.5169/seals-311961

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. [Mehr erfahren](#)

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. [En savoir plus](#)

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. [Find out more](#)

Download PDF: 20.08.2025

ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>

VIII. Literaturangaben

- ALEXEIEFF, A. (1913). Introduction à la révision de la famille Herpetomonadidae (= Trypanosomidae Doflein 1911). – Arch. Protistenk. 29, 313–341.
- ANDERSON, W. A. & ELLIS, R. A. (1965). Ultrastructure of *Trypanosoma lewisi*: flagellum, microtubules and kinetoplast. – J. Protozool. 12, 483–499.
- ANGELOPOULOS, E. (1970). Pellicular microtubules in the family Trypanosomatidae. – J. Protozool. 17, 39–51.
- BAILEY, C. H. & BROOKS, W. M. (1971). Transmission of the flagellate *Herpetomonas muscarum*, in laboratory cultures of the eye gnat *Hippelates pusio* (Diptera: Chloropidae). – Proc. IVth Int. Colloq. Insect Path. and Soc. Invertebr. Path., Maryland, 60–65.
- BAKER, J. R. (1963). Speculations on the evolution of the family Trypanosomatidae Doflein. – Exp. Parasit. 13, 219–233.
- BAKER, J. R. & BIRD, R. G. (1968). *Trypanosoma avium*: Fine structure of all developmental stages. – J. Protozool. 15, 298–308.
- BECKER, E. R. (1923 a). Observations on the morphology and life-history of *Herpetomonas muscae-domesticae* in North American muscoid flies. – J. Parasit. 9, 199–213.
- BECKER, E. R. (1923 b). Transmission experiments on the specificity of *Herpetomonas muscae-domesticae* in muscoid flies. – J. Parasit. 10, 25–34.
- BELLOSILLO, G. (1937). *Herpetomonas muscarum* Leidy in *Lucilia sericata* Meigen. – Philipp. J. Sci. 63, 285–305.
- BERLINER, E. (1909). Flagellaten-Studium. – Arch. Protistenk. 15, 297–324.
- BIANCHI, L., RONDANELLI, E. G., CAROSI, G. & GERNA, G. (1969). Endonuclear mitotic spindles in the leptomonad of *Leishmania tropica*. – J. Parasit. 55, 1091–1093.
- BRACK, C. (1968). Elektronenmikroskopische Untersuchungen zum Lebenszyklus von *Trypanosoma cruzi*. – Acta trop. 25, 289–356.
- BROOKER, B. E. (1970). Desmosomes and hemidesmosomes in the flagellate *Crithidia fasciculata*. – Z. Zellforsch. 105, 155–167.
- BROOKER, B. E. (1971 a). Flagellar adhesion of *Crithidia fasciculata* to millipore filters. – Protoplasma 72, 19–26.
- BROOKER, B. E. (1971 b). Flagellar attachment and detachment of *Crithidia fasciculata* to the gut wall of *Anopheles gambiae*. – Protoplasma 73, 191–202.
- BROWN, A. W. A. (1938). The nitrogen metabolism of an insect (*Lucilia sericata* MG.). – Biochem. J. 32, 895–911.
- BRUG, S. L. (1914). *Herpetomonas homalomyiae* n. sp. – Arch. Protistenk. 35, 119–126.
- BURTON, P. R. & DUSANIC, D. G. (1968). Fine structure and replication of the kinetoplast of *Trypanosoma lewisi*. – J. Cell Biol. 39, 318–331.
- CHATTON, E. & ALILAIRE, E. (1908). Coexistence d'un Leptomonas (Herpetomonas) et d'un Trypanosoma chez un muscide non vulnérant, *Drosophila confusa* Staeger. – C. R. Soc. Biol. 60, 1004–1006.
- CLARK, T. B. (1959). Comparative morphology of four genera of Trypanosomatidae. – J. Protozool. 6, 227–232.
- CLARK, T. B. & WALLACE, F. G. (1960). A comparative study of kinetoplast ultrastructure in the Trypanosomatidae. – J. Protozool. 7, 115–124.
- COHEN, S. S. (1970). Are/were mitochondria and chloroplasts microorganisms? – Amer. Scientist 58, 281–289.
- DELAIN, E. & RIOU, G. (1969). Ultrastructure du DNA du kinétoplaste de *Trypanosoma cruzi* cultivé *in vitro*. – C. R. Soc. Biol. 268, 1225–1227.

- DRBOHLAV, J. J. (1925). Studies on the relation of insect flagellates to Leishmaniasis. – Amer. J. Hyg. 5, 580–621.
- FANTHAM, H. B. & PORTER, A. (1915 a). Some experimental researches on induced Herpetomoniasis in birds. – Ann. trop. Med. Parasit. 9, 543–558.
- FANTHAM, H. B. & PORTER, A. (1915 b). Some insect flagellates introduced into vertebrates. – Proc. Cambridge phil. Soc. 18, 39–50.
- FANTHAM, H. B. & PORTER, A. (1915 c). Further experimental researches on insect flagellates introduced into vertebrates. – Proc. Cambridge phil. Soc. 18, 137–148.
- FANTHAM, H. B. & PORTER, A. (1916 a). On the natural occurrence of herpetomonads (leptomonads) in mice. – Parasitology 8, 128–132.
- FANTHAM, H. B. & PORTER, A. (1916 b). The significance of certain natural flagellates of insects in the evolution of diseases in vertebrates. – J. Parasit. 2, 149–166.
- FAWCETT, D. W. (1966). An atlas of fine structure. The cell, its organelles and inclusions. – Philadelphia & London: W. B. Saunders Co.
- FLU, P. C. (1911). Studien über die im Darm der Stubenfliege, *Musca domestica*, vorkommenden protozoären Gebilde. – Zbl. Bakt., I. Abt. Orig. 57, 522–535.
- FRANCHINI, G. (1922). Protozoaires de muscides divers capturés sur des euphorbes. – Bull. Soc. Path. exot. 15, 970–978.
- FRANCHINI, G. & MANTOVANI, M. (1915). Infection expérimentale du rat et de la souris par *Herpetomonas muscae-domesticae*. – Bull. Soc. Path. exot. 8, 109–111.
- FUGE, H. (1968). Zum Feinbau des Periplasten und der Geißel von *Trypanosoma brucei* und *Trypanosoma gambiense*. – Z. Zellforsch. 89, 201–211.
- FUGE, H. (1969). Electron microscopic studies on the intra-flagellar structure of trypanosomes. – J. Protozool. 16, 460–466.
- GEIGY, R., STEIGER, R. & HECKER, H. (1970). Beiträge zur Pinocytose von *Trypanosoma (Trypanozoon) brucei* Plimmer & Bradford, 1899. – Acta trop. 27, 271–277.
- GLASER, R. W. (1922). *Herpetomonas muscae-domesticae*, its behavior and effect in laboratory animals. – J. Parasit. 8, 99–108.
- GRIMSTONE, A. V. (1959). Cytoplasmic membranes and the nuclear membrane in the flagellate *Trichonympha*. – J. biophys. biochem. Cytol. 6, 369–378.
- GRIMSTONE, A. V. & KLUG, A. (1966). Observations on the substructure of flagellar fibres. – J. Cell Sci. 1, 351–362.
- GUTTERIDGE, W. E. & MACADAM, R. F. (1971). An electron microscopic study of the bipolar bodies in *Critchidia oncopelti*. – J. Protozool. 18, 637–640.
- HILL, G. C., BROWN, C. A. & CLARK, M. V. (1968). Structure and function of mitochondria in *Critchidia fasciculata*. – J. Protozool. 15, 102–109.
- HOARE, C. A. (1921). Some observations and experiments on insect flagellates, with special reference to artificial infection of vertebrates. – Parasitology 13, 67 pp.
- HOARE, C. A. (1924). A note on the specific name of the herpetomonad of the house fly. – Trans. roy. Soc. trop. Med. Hyg. 17, 403–406.
- HOARE, C. A. (1967). Evolutionary trends in mammalian trypanosomes. – Advanc. Parasit. 5, 47 pp.
- HOARE, C. A. & WALLACE, F. G. (1966). Developmental stages of trypanosomatid flagellates: a new terminology. – Nature 212, 1385–1386.
- INOKI, S., OZEKI, Y. & KAMBARA, H. (1971). Ultra-structural changes in the kinetoplast of *Trypanosoma cruzi* during transition of form *in vitro*. – Biken J. 14, 37–50.

- JOYON, L. & LOM, J. (1969). Etude cytologique, systématique et pathologique d'*Ichtyobodo necator* (Henneguy) Pinto (Zooflagellé). – J. Protozool. 16, 703–719.
- KLEINSCHMIDT, A. & SCHLEICH, F. (1951). Über den Feinbau von Trypanosomen. II. Geißeluntersuchungen. – Z. Tropenmed. Parasit. 3, 42–44.
- KUSEL, J. P., MOORE, E. K. & WEBER, M. M. (1967). The ultrastructure of *Critidium fasciculata* and morphological changes induced by growth in acriflavine. – J. Protozool. 14, 283–296.
- LAURENT, M. & STEINERT, M. (1970). Electron microscopy of kinetoplastid DNA from *Trypanosoma mega*. – Proc. Nat. Acad. Sci. 66, 419–424.
- LAVERAN, A. & FRANCHINI, G. (1913). Infections expérimentales de mammifères par des flagellés du tube digestif de *Ctenocephalus canis* et d'*Anopheles maculipennis*. – C. R. Acad. Sci. 157, 744–747.
- LAVERAN, A. & FRANCHINI, G. (1914). Infections de mammifères par des flagellés d'invertébrés. – Bull. Soc. Path. exot. 7, 605–612.
- LAVERAN, A. & FRANCHINI, G. (1920). Infections expérimentales de chiens et de cobayes à l'aide de cultures d'*Herpetomonas* d'insectes. – Bull. Soc. Path. exot. 13, 569–576.
- LÉGER, L. (1904). Sur les affinités de l'*Herpetomonas subulata* et la phylogénie des trypanosomes. – C. R. Soc. Biol. 56, 615–617.
- LINGARD, A. & JENNINGS, E. (1906). Some flagellate forms found in the intestinal tracts of Diptera and other genera. – London: Adlard and Son.
- MACKINNON, D. L. (1910). Herpetomonads from the alimentary tract of certain dung-flies. – Parasitology 3, 255–270.
- MEYER, H. (1968). The fine structure of the flagellum and kinetoplast-chondriome of *Trypanosoma (Schizotrypanum) cruzi* in tissue culture. – J. Protozool. 15, 614–621.
- MEYER, H. & PORTER, K. R. (1954). A study of *Trypanosoma cruzi* with the electron microscope. – Parasitology 44, 16–23.
- MILDER, R. & DEANE, M. P. (1967). Ultrastructure of *Trypanosoma conorhini* in the crithidial phase. – J. Protozool. 14, 65–72.
- MOLYNEUX, D. H. (1969). The fine-structure of the epimastigote forms of *Trypanosoma lewisi* in the rectum of the flea, *Nosopsyllus fasciatus*. – Parasitology 59, 55–66.
- MUEHLFORDT, H. (1963). Über die Bedeutung und Feinstruktur des Blepharoplasten bei parasitischen Flagellaten. – Z. Tropenmed. Parasit. 14, 357–398.
- MUEHLFORDT, H. (1964). Über den Kinetoplasten der Flagellaten. – Z. Tropenmed. Parasit. 15, 289–323.
- MUNJAL, D. & NICKERSON, P. A. (1973). Have mitochondria arisen from endosymbiotic microorganisms? – J. sci. indust. Res. 33, 70–77.
- NEWTON, B. A. (1958). Fine structure of the kinetoplast in a trypanosomid flagellate. – IV. Int. Kongr. Elektronenmikr. 2, 515–517.
- NEWTON, B. A. (1968). Biochemical peculiarities of trypanosomatid flagellates. – Ann. Rev. Microbiol. 22, 109–125.
- NEWTON, B. A. & HORNE, R. W. (1957). Intracellular structures in *Strigomonas oncopelti*. I. Cytoplasmic structures containing ribonucleoprotein. – Exp. Cell Res. 13, 563–574.
- NOGUCHI, H. & TILDEN, E. B. (1926). Comparative studies of Herpetomonads and Leishmanias. – J. exp. Med. 44, 307–337.
- NOVIKOFF, A. B. (1967). Enzyme localization and ultrastructure of neurons. – In: «The Neuron». Ed. by H. Hydén. Amsterdam, London, New York: Elsevier Publ. Co.

- NOVIKOFF, P. M., NOVIKOFF, A. B., QUINTANA, N. & HAUW, J.-J. (1971). Golgi apparatus, GERL, and lysosomes of neurons in rat dorsal root ganglia, studied by thick section and thin section cytochemistry. – *J. Cell Biol.* 50, 859–886.
- PATTON, W. S. (1909). The life cycle of a species of *Crithidia* parasitic in the intestinal tract of *Tabanus hilarius* and *Tabanus* spec. – *Arch. Protistenk.* 15, 333–362.
- PATTON, W. S. (1910). Experimental infection of the Madras bazaar fly, *Musca nebula* Fabr., with *Herpetomonas muscae-domesticae* (Burnett). – *Bull. Soc. Path. exot.* 3, 264–274.
- PATTON, W. S. (1921). Studies on the flagellates of the genera *Herpetomonas*, *Crithidia* and *Rhynchoidomonas*. No. 7. Some miscellaneous notes on insect flagellates. – *Indian J. med. Res.* 9, 230–239.
- PAULIN, J. J. (1969). Ultrastructural observations on the kinetosome cycle of *Crithidia fasciculata* and its significance to other members of the order Kinetoplastida. – *Trans. Amer. microsc. Soc.* 88, 400–410.
- PAULIN, J. J. & McGHEE, R. B. (1971). An ultrastructural study of the trypanosomatid, *Phytomonas elmassiani*, from the milkweed, *Asclepias syriaca*. – *J. Parasit.* 57, 1279–1287.
- PORTER, A. (1909). The life-cycle of *Herpetomonas jaculum* (Léger), parasitic in the alimentary tract of *Nepa cinerea*. – *Parasitology* 2, 367–391.
- PROWAZEK, S. (1904). Die Entwicklung von *Herpetomonas*, einem mit den Trypanosomen verwandten Flagellaten. – *Arb. Gesundh.-Amte* 20, 440–452.
- PROWAZEK, S. (1909). Kritische Bemerkungen zum Trypanosomenproblem. – *Arch. Schiffs. Tropenh.* 13, 301–308.
- RENGER, H. C. & WOLSTENHOLME, D. R. (1970). Kinetoplast DNA of the haemo-flagellate *Trypanosoma lewisi*. – *J. Cell Biol.* 47, 689 pp.
- RENGER, H. C. & WOLSTENHOLME, D. R. (1971). Kinetoplast and other satellite DNAs of kinetoplasic and dyskinetoplasic strains of trypanosomes. – *J. Cell Biol.* 50, 533–540.
- RENGER, H. C. & WOLSTENHOLME, D. R. (1972). The form and structure of kinetoplast DNA of *Crithidia*. – *J. Cell Biol.* 54, 346–364.
- REYNOLDS, E. S. (1963). The use of lead citrate at high pH as an electron opaque stain in electron microscopy. – *J. Cell Biol.* 17, 208–213.
- RHODIN, J. (1954). Correlation of ultrastructural organization and function in normal and experimentally controlled changes of proximal convoluted tubule cells of mouse kidney. – Dissertation, Karolinska Institute, Stockholm.
- RIOU, G. & DELAIN, E. (1969). Electron microscopy of the circular kinetoplasic DNA from *Trypanosoma cruzi*: occurrence of catenated forms. – *Proc. nat. Acad. Sci. U.S.A.* 62, 210–217.
- RIOU, G., LACOME, A., BRACK, C., DELAIN, E. & PAUTRIZEL, R. (1971). Importance de la méthode d'extraction dans l'isolement de l'ADN de kinétoplaste de trypanosomes. – *C. R. Acad. Sci.* 273, 2150–2153.
- ROSENBUSCH, F. (1910). Über eine neue Encystierung bei *Crithidia muscae domesticae*. – *Zbl. Bakt.*, I. Abt. Orig. 53, 387–393.
- ROUBAUD, E. (1908 a). Sur un nouveau flagellé, parasite de l'intestin des muscides, au Congo français. – *C. R. Soc. Biol.* 64, 1106–1108.
- ROUBAUD, E. (1908 b). *Leptomonas mesnili* n. sp.; nouveau flagellé à formes trypanosomes de l'intestin de muscides non piqueurs. – *C. R. Soc. Biol.* 65, 39–41.
- ROUBAUD, E. (1912). Expériences de transmission de flagellés divers chez les muscides africains du genre *Pycnosoma*. – *C. R. Soc. Biol.* 72, 508–510.

- RUDZINSKA, M. A., D'ALE SANDRO, P. A. & TRAGER, W. (1964). The fine structure of *Leishmania donovani* and the role of the kinetoplast in the leishmania-leptomonad transformation. – *J. Protozool.* 11, 166–191.
- SANABRIA, A. (1966). Ultrastructure of *Trypanosoma cruzi* in the rectum of *Rhodnius prolixus*. – *Exp. Parasit.* 19, 276–299.
- SANABRIA, A. (1970). Nuevos estudios acerca de la ultraestructura del *Trypanosoma cruzi* en el miocardio del raton. – *Acta cient. venez.* 21, 107–118.
- SIMPSON, L. (1972). The kinetoplast of haemoflagellates. – *Int. Rev. Cytol.* 139–207.
- STEIGER, R. F. (1973). On the ultrastructure of *Trypanosoma (Trypanozoon) brucei* in the course of its life cycle and some related aspects. – *Acta trop.* 30, 64–168.
- STEINERT, M. (1964). Le chondriome de *Trypanosoma mega*. Observations *in vivo* et par la réaction cytochimique de la NADH-diaphorase. – *J. Cell Biol.* 20, 92–97.
- STRICKLAND, C. (1911). Description of a *Herpetomonas* parasitic in the alimentary tract of the common green-bottle fly, *Lucilia* spec. – *Parasitology* 4, 222–236.
- STRICKLAND, C. & ROY, D. N. (1925). The infection of *Lucilia caesar* with *Herpetomonas*. – *Parasitology* 17, 168–169.
- SWELLENGREBEL, N. H. (1911). Note on the morphology of *Herpetomonas* and *Critidilia*, with some remarks on physiological degeneration. – *Parasitology* 4, 108–130.
- SWINGLE, L. D. (1911). The transmission of *Trypanosoma lewisi* by rat fleas (*Ceratophyllus* sp. and *Pulex* sp.) with short description of three new herpetomonads. – *J. Infect. Dis.* 8, 125–146.
- TAYLOR, A. E. R. & GODFREY, D. G. (1969). A new organelle of bloodstream salivarian trypanosomes. – *J. Protozool.* 16, 466–470.
- VICKERMAN, K. (1969 a). On the surface coat and flagellar adhesion in trypanosomes. – *J. Cell Sci.* 5, 163–194.
- VICKERMAN, K. (1969 b). The fine structure of *Trypanosoma congolense* in its bloodstream phase. – *J. Protozool.* 16, 54–69.
- VICKERMAN, K. (1971). Morphological and physiological considerations of extracellular blood protozoa. – In: «Ecology and physiology of parasites: a symposium.» Ed. by A. M. Fallis. – Toronto: University Press.
- VICKERMAN, K. (1973). The mode of attachment of *Trypanosoma vivax* in the proboscis of the tsetse fly *Glossina fuscipes*: an ultrastructural study of the epimastigote stage of the trypanosome. – *J. Protozool.* 20, 394–404.
- VICKERMAN, K. & PRESTON, T. M. (1970). Spindle microtubules in the dividing nuclei of trypanosomes. – *J. Cell Sci.* 6, 365–383.
- WALLACE, F. G. (1966). The trypanosomatid parasites of insects and arachnids. – *Exp. Parasit.* 18, 124–193.
- WALLACE, F. G. & CLARK, T. B. (1959). Flagellate parasites of the fly, *Phaenicia sericata* (Meigen). – *J. Protozool.* 6, 58–61.
- WALLACE, F. G. & TODD, S. R. (1964). *Leptomonas mirabilis* Roubaud 1908 in a Central American blowfly. – *J. Protozool.* 11, 502–505.
- WALLACE, F. G., TODD, S. R. & ROGERS, W. (1965). Flagellate parasites of water striders with a description of *Leptomonas costoris* n. sp. – *J. Protozool.* 12, 390–393.
- WALLACE, F. G. & HERTIG, M. (1968). Ultrastructural comparison of promastigote flagellates (Leptomonads) of wild-caught Panamian *Phlebotomus sanguinarius*. – *J. Parasit.* 54, 606–612.
- WENYON, C. M. (1910). Some observations on a flagellate of the genus *Cercomonas*. – *Quart. J. micr. Sci.* 55, 241–259.

- WENYON, C. M. (1911). Oriental sore in Bagdad, together with observations on a gregarine in *Stegomyia fasciata*, the haemogregarine of dogs and the flagellates of house flies. – Parasitology 4, 273–344.
- WENYON, C. M. (1913). Observations on *Herpetomonas muscae domesticae* and some allied flagellates. – Arch. Protistenk. 31, 1–34.
- WENYON, C. M. (1926). Protozoology, a manual. – London: Baillière, Tindall and Cox.

Summary

Two species of monogenetic insect flagellates, *Herpetomonas muscarum* ("H. mirabilis") belongs to the same life cycle) and *Crithidia luciliae* were found in the blowfly *Chrysomyia chloropyga* in East Africa. Infection rates have been determined.

Infective flagellated forms of *H. muscarum* and *C. luciliae* are extruded in the faeces on to the food substrate (meat) and remain there infective for at least 16 hours. Cysts could never be seen in the gut or in the faeces.

Midgutforms of *H. muscarum* as well as *C. luciliae* from the rectal ampoule turned out to be infective, whereas "H. mirabilis" from the pyloric region of the hindgut was not infective for clean flies.

H. muscarum and *C. luciliae* have been cultivated in a liquid medium. Feeding cultured *H. muscarum* to clean flies produces a "H. mirabilis" infection but never the expected *H. muscarum* infection. Hence it follows that "H. mirabilis" is part of the life cycle of *H. muscarum* and not a species of its own.

Infective forms of "H. mirabilis" have not been found. Possibilities for the development of a pyloric region infection are discussed.

The ultrastructure of *H. muscarum* (promastigote midgutform and culture form), "H. mirabilis" (cercoplasmonic and opisthomastigote form in the pyloric region) and *C. luciliae* (culture form) has been investigated.

Four different types of kinetoplasts differing in their DNA arrangement can be found in the cycle of *H. muscarum*/"H. mirabilis".

"H. mirabilis" (cercoplasmonic form) and *C. luciliae* are attached with their flagella to the gut epithelium. The flagellum is transformed, and material from the epithelium taken up by pinocytosis. In the cytoplasm of the midgutform of *H. muscarum* bacteria-like organisms can be found. They are associated with organelles (ER, mitochondrion) of the host cell.

Résumé

Deux espèces de Flagellés des Insectes, *Herpetomonas muscarum* («H. mirabilis» appartenant au même cycle) et *Crithidia luciliae* ont été étudiées chez la mouche *Chrysomyia chloropyga*. Les taux d'infection ont été déterminés.

Les formes infectueuses de *H. muscarum* et de *C. luciliae*, qui portent des flagelles, sont déposées avec les excréments sur la viande. Elles restent infectueuses pendant 16 heures au moins. On n'a trouvé de kystes ni dans l'intestin, ni dans les excréments.

Les formes «intestinales» de *H. muscarum* et de *C. luciliae* prélevées dans l'ampoule rectale sont infectueuses pour des mouches non infectées. Ce n'est pas le cas pour les «H. mirabilis» prélevés dans la région pylorique de l'intestin postérieur.