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"Herpetomonas mirabilis" und "Crithidia luciliae" in "Chrysomyia  
chloropyga"

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### Summary

Two species of monogeneric insect flagellates, *Herpetomonas muscarum* (“*H. mirabilis*” belongs to the same life cycle) and *Crithidia luciliae* were found in the blowfly *Chrysomya 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*” (cercoplasmatic 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*” (cercoplasmatic 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, mitochondrium) 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 *Chrysomya 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.