

NOTE

PHORESY INVOLVING A NYMPH OF *HAEMATOPINUS EURYSTERNUS* (NITZSCH) AND *HAEMATOBIA IRRITANS EXIGUA* DE MEIJERE

P. G. ALLINGHAM

Division of Tropical Animal Science, CSIRO, Long Pocket Laboratories, Private Bag No. 3, Indooroopilly, Qld 4068.

Abstract

The first record of the louse *Haematopinus eurysternus* being present on a buffalo fly *Haematobia irritans exigua* is reported from the Northern Territory, Australia.

Phoretic relationships between lice and other insects have been reported on a number of occasions (Mitzmain 1912; Worth and Paterson 1960; Kierans 1975a,b; Bay 1977). A phoretic association between the louse *Haematopinus tuberculatus* (Burmeister) (as *H. bituberculatus* Nitzsch) and the buffalo fly *Haematobia irritans exigua* De Meijere (as *Lyperosia* sp.) was reported by Mitzmain (1912) in the Philippines; in collections made over 5 days 620 nymphs of the louse were recovered from 1800 buffalo flies. Lice were not found on other species of biting flies in the area. An apparent phoretic association between a related species of louse *Haematopinus eurysternus* (Nitzsch) and the buffalo fly is reported for the first time from the Northern Territory.

A modified miniature CDC light trap was operated on 20 June 1984 at Popham Bay (131°50'E 11°16'S), Cobourg Peninsula. The collection site was on the edge of a swamp consisting predominantly of *Melaleuca* spp. In the collection, 1 of 8 buffalo flies was found to have a first instar nymph of *H. eurysternus* attached to the femur of a middle leg (Fig. 1). This must be considered an accidental association until more substantial evidence is recorded. The existence of a congeneric louse phoretic on the same species of fly in the Philippines and the similar mode of attachment (Fig. 1) suggests that *H. eurysternus* may also show phoretic behaviour. The relative population densities of the 2 species would be an important factor influencing the detection and prevalence of phoretic behaviour.

Buffalo flies survive only in close association with their hosts, normally cattle and buffalo, leaving them to oviposit in their fresh dung or to transfer to a new host (Seddon 1967; Pont 1973). *H. eurysternus* is a louse specific to *Bos* spp. cattle. Bali cattle (*Bos javanicus* d'Alton) and feral buffalo (*Bubalus bubalis* (L.)) have been present in the Cobourg Peninsula for many years (Calaby and Keith 1974). Buffalo were observed in the

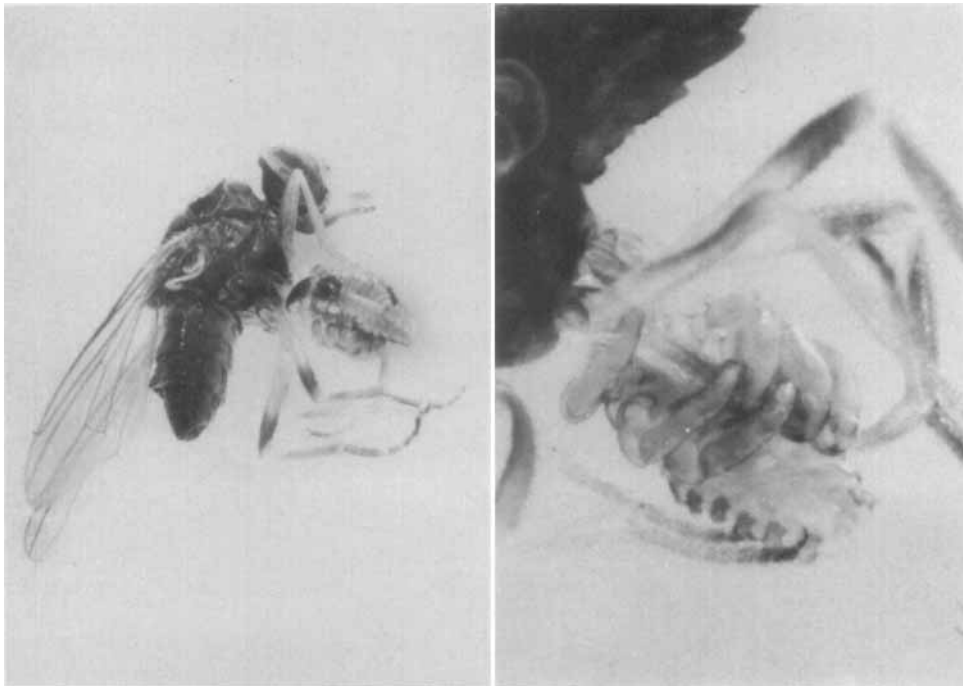


FIG. 1—A nymph of *H. eurysternus* attached to the femur of an adult buffalo fly.

vicinity of the trap site (G. Hall pers. comm.) and their presence would have enhanced the collection of buffalo flies which are not collected frequently in the type of trap used. If a phoretic association did exist between these insects then dispersal of *H. eurysternus* other than by normal host-to-host contact could occur. Dispersal would be restricted to a local population of cattle due to the dependence of these species of ectoparasites on their common host.

Acknowledgments

I thank Mr M. D. Murray, Division of Tropical Animal Science, CSIRO, for the identification of the louse, Mr Graham Hall, Division of Entomology, CSIRO, for making the collection, and Mr E. J. Harris for the photography.

References

- BAY, D. E. (1977)—Cattle biting louse, *Bovicola bovis* (Mallophaga: Trichodectidae), phoretic on the horn fly, *Haematobia irritans* (Diptera: Muscidae). *J. med. Ent.* **13**: 628.
- CALABY, J. H. and KEITH, K. (1974)—Mammals. In Frith, H. J. and Calaby, J. H. (Eds). *Fauna Survey of the Port Essington District, Cobourg Peninsula, Northern Territory of Australia. Tech. Pap. Div. Wildl. Res. CSIRO Aust.* No. 28: 179-208.
- KIERANS, J. E. (1975a)—A review of the phoretic relationship between Mallophaga (Phthiraptera: Insecta) and Hippoboscidae (Diptera: Insecta). *J. med. Ent.* **12**: 71-76.
- KIERANS, J. E. (1975b)—Records of phoretic attachment of Mallophaga (Insecta: Phthiraptera) on insects other than Hippoboscidae. *J. med. Ent.* **12**: 476.
- MITZMAIN, M. B. (1912)—Collected notes on insect transmission of Surra in carabaos. *Philipp. agric. Rev. (Vet.)* **5**: 670-681.
- PONT, A. C. (1973)—Studies on Australian Muscidae (Diptera). IV. A revision of the sub-families Muscinae and Stomoxiinae. *Aust. J. Zool. Suppl. Ser.* **21**: 264-274.
- SEDDON, H. R. (1967)—Diseases of domestic animals in Australia. *Serv. Publs Dep. Hlth Aust. vet. Hyg. No.* **6**: 13-31.
- WORTH, C. B. and PATERSON, H. E. (1960)—Phoresy of sucking lice (Siphunculata: Linognathidae) by a mosquito (Diptera: Culicidae). *J. ent Soc. sth. Afr.* **23**: 228-230.

[Manuscript received 31 July 1986. Revised 7 November 1986.]