Echidnophaga gallinacea (Siphonaptera: Pulicidae) recorded in Canada for the first time

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Echidnophaga gallinacea (Westwood, 1875) is a cosmopolitan sticktight flea which parasitizes a wide variety of birds and mammals. In North America, this ectoparasite is found primarily in the southern United States. This species is reported here from a Brown-headed Cowbird, *Molothrus ater* (Boddaert), from the University Field Station at Delta Marsh, Manitoba, and this is its first record in Canada.

INTRODUCTION

The genus *Echidnophaga* Olliff, 1886 includes 21 species all of which are distributed in the Palaearctic, Ethiopian and Autralasian Regions (Lewis 1998), except for the hen flea, *Echidnophaga gallinacea* (Westwood, 1875). This species is now cosmopolitan, and the only species in the genus found in North America, a result of accidental introduction by humans along with their domestic animals (Lewis 1998). Females of these sticktight fleas attach and feed at one site on their hosts for prolonged periods (4-19 days), during which time the surrounding tissue becomes swollen and ulcerated. Males feed for shorter periods, interspersed with mate-seeking behaviour (Harwood and James 1979; Parman 1923). Mating and oviposition occur on the host (Parman 1923). *Echidnophaga gallinacea* has an extremely wide host range, including many species of mammals and birds. It may be a serious pest of poultry and cause irritation to cats, dogs, rabbits, horses and humans (Harwood and James 1979). It frequently parasitizes insectivores and rodents (Lewis 1972).

Holland (1985) listed 10 species and subspecies of Pulicidae for Canada, Alaska and Greenland, and it appears that he did not expect that additional species in this family would be found in Canada (Holland 1979). This is not surprising, since there are only scattered records for other pulicids anywhere close to the Canadian border. *Echidnophaga gallinacea* has not been found in Washington (Lewis *et al.* 1988), though there is a record for Wasco County in northern Oregon (Hubbard 1947). It has not been recorded from Montana (Jellison 1943), North Dakota (Larson 1997) or

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South Dakota (Easton 1982). Benton (1980) provided detailed records of *E. gallinacea* in the United States east of the Mississippi River, the vast majority of which fall south of the northern borders of Tennessee and North Carolina. However, he did report a few isolated records for New York, New Jersey, Pennsylvania, Delaware, and southeastern Michigan. Of relevance to Manitoba, the nearest published record for *E. gallinacea* is a specimen from a Norway rat, *Rattus norvegicus* (Berkenhout), from Ramsey County in southern Minnesota (Fox 1940, Benton and Timm 1980).

NEW CANADIAN RECORD

When a female Brown-headed Cowbird, *Molothrus ater* (Boddaert), was examined by Andrea Andruschak as part of a research project on brood parasitism, a tiny flea was seen attached near the eye of the bird. This specimen was later determined to be a female of *E. gallinacea*, the first of this species recorded in Canada. This record should not be totally unexpected, given the prolonged period of attachment and feeding characteristic of the females of these fleas, and given the dispersal capacity of migrating birds. However, this specimen was collected well beyond the known range of *E. gallinacea*.

Details of the collection data for this specimen are as follows: CANADA: Manitoba, University Field Station, Delta Marsh (50° 11' N, 98° 23' W), 1_,16 May, 2000, *ex* Brown-headed Cowbird, *Molothrus ater*, coll. A. Andruschak.

Since *E. gallinacea* was not included by Holland (1985) in his monograph, it does not appear in the key to species he provided. The following is a supplement to the key to the genera and subgenera of fleas known or suspected to occur in Canada, Alaska and Greenland, provided by Holland (1985: 29; references to figure numbers are those in Holland 1985), beginning with couplet 5:

5(4) Mesothorax lacking pleural ridge (Fig. 8) 5a

Mesothorax with pleural ridge (Fig.11) 6

5a(5) Frons strongly angulate; labial palps soft, membranous ..... *Echidnophaga*

Frons rounded; labial palps stiff, sclerotized ..... *Pulex*

Since *E. gallinacea* is the only species in the genus known to occur in North America, this couplet in the key can be used to identify it. For a description and additional figures of *E. gallinacea*, refer to Hopkins and Rothschild (1953). There may be additional records for *E. gallinacea* in the future in Canada, most likely from migratory birds. It will be interesting to see if the range of *E. gallinacea* expands northwards in North America. These fleas are extremely small, and may remain firmly attached to hosts being examined. Careful examination and a sharp eye are required to collect this interesting flea.

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