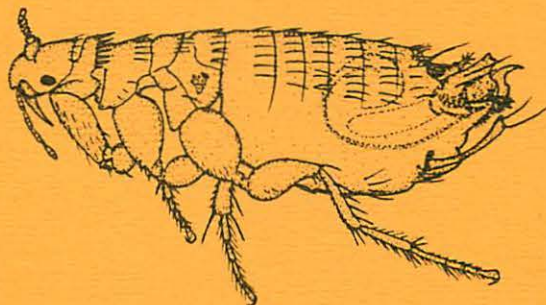


Curatorial Report Number 36

Nova Scotia Museum
1747 Summer St.
Halifax, Nova Scotia, Canada

Nova Scotian Fleas

By B. Wright
April/79

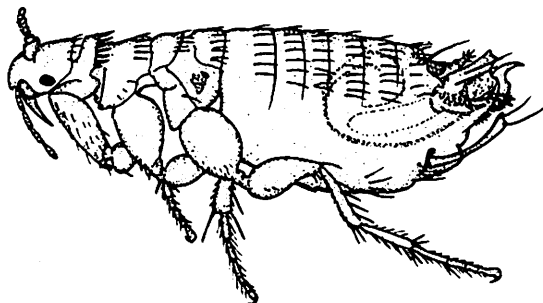


Curatorial Report Number 36

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NOVA SCOTIA MUSEUM

Curatorial Reports

The *Curatorial Reports* of the Nova Scotia Museum contain information on the collections and the preliminary results of research projects carried out under the program of the museum. The reports may be cited in publications but their manuscript status should be clearly indicated.

Abstract

Photographs and host records are given for eighteen species of fleas in the Nova Scotia Museum and Acadia University Museum collections. The only species previously recorded from Nova Scotia, *Ceratophyllus riparius* is not represented in these collections.

NOVA SCOTIAN FLEAS

The most recent and comprehensive publication on fleas of this part of North America is "The Siphonaptera of Canada" by Dr. George P. Holland, published in 1949. This work lists 121 species of fleas indigenous to Canada, including 89 from British Columbia, 29 from Ontario and one from Nova Scotia.

In 1971 a small-mammal survey was conducted by the staff of the Nova Scotia Museum Zoology Unit and ectoparasites were collected while processing the captured animals. There were 56 collections of fleas from this study. An additional 134 samples in the Acadia University Museum were collected by R. Yescott in 1965 while studying ticks and trapping small mammals in the Tobecoatic Game Sanctuary. The combined collections were sent to the Entomology Research Institute in Ottawa where the fleas were mounted on microscope slides and identified by Dr. Holland. The only species previously recorded from Nova Scotia, *Ceratophyllus riparius*, the Bank Swallow flea, was not present in these collections, but an additional 18 species were represented. The object of this paper is to illustrate these species and to record their hosts and distribution in this province.

This is still only a partial list since no effort has been made to conduct a thorough study of our flea fauna. In the present study fleas were taken directly from their hosts but the most productive method of obtaining fleas is by rearing them from the nests of birds and mammals. No collecting of this nature has been carried out to date, but it is anticipated that such a study could increase our list to 40 or more species.

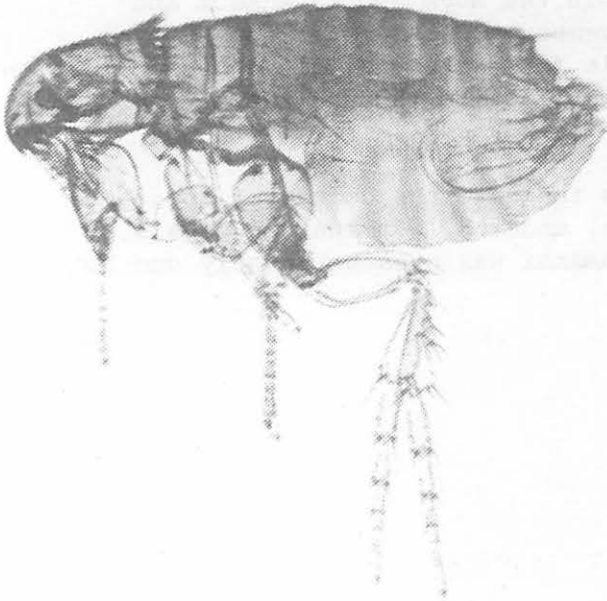
As in other insects with complete metamorphosis, the life history of the flea involves four stages: egg, larva, pupa and adult. The three early stages are found in the nests and runways of their hosts where the larvae feed on organic detritus.



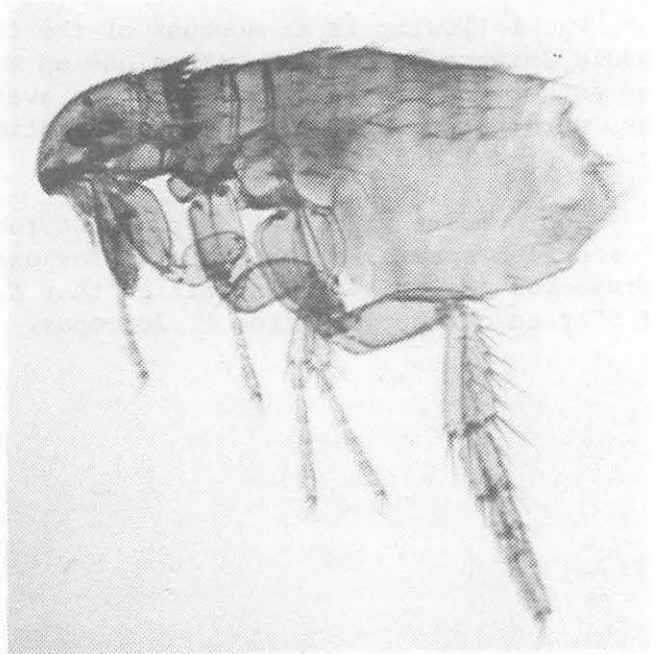
Flea larva from deermouse nest

The following is an account of the fleas in the Nova Scotia Museum and Acadia University Museum collections up to November 1973. Photographs are by the author. Where specimens were not available for photography in these collections, they were borrowed from the Canadian National Collection through the kindness of Dr. G. P. Holland.

The numbers which follow the host records indicate the degree of dominance of the flea species on that host. For example, under *E. wenmanni* on page 5, *Peromyscus leucopus* 1/57 signifies that *E. wenmanni* was present in only one out of 57 flea collections from *P. leucopus*.

Ctenocephalides felis (Bouché)

Male



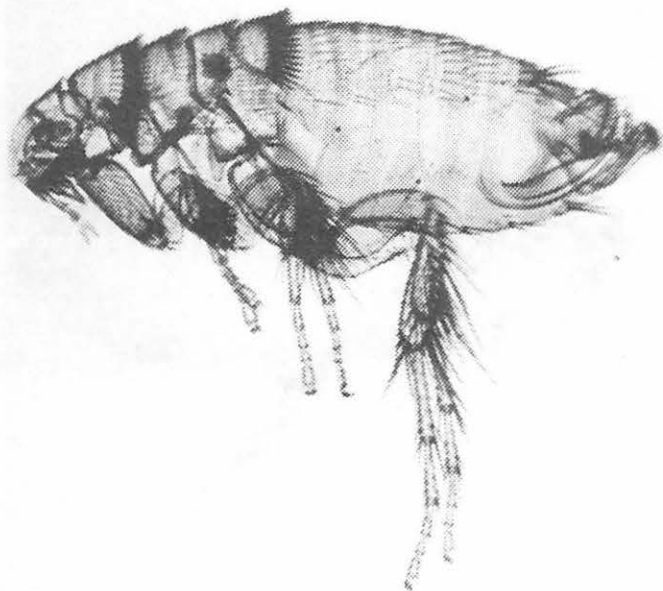
Female

This is the common cat flea. The closely related dog flea, *C. canis* is equally common in North America but there are no specimens in our collections. Both species can become established in houses and feed on cats, dogs and humans indiscriminately.

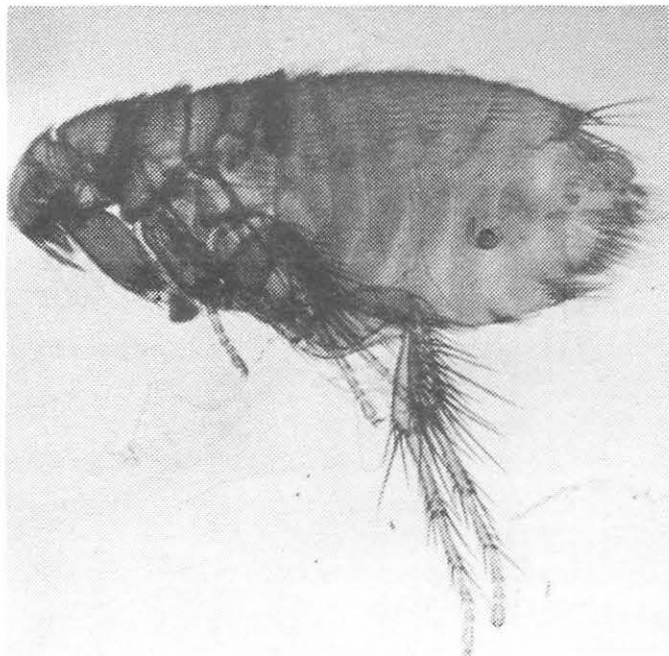
Host records:	infesting house	7/7
	infesting lawn	1/1

Distribution:	Halifax County
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Stenoponia americana (Baker)



Male

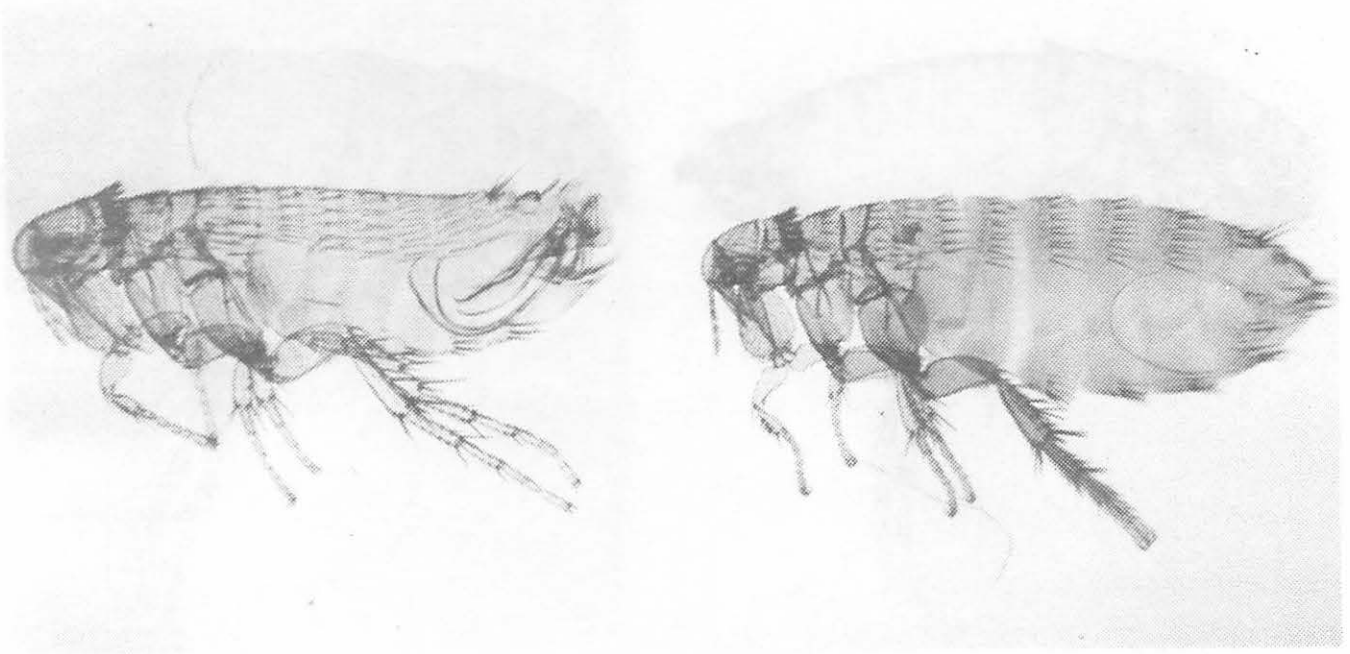


Female

A single specimen of this large and bristly flea was collected in this study. It occurs chiefly in eastern North America on a variety of small mammals but records are scarce.

Host record: *Napaeozapus insignis* 1/7

Distribution: Colchester County

Epitedia wenmanni (Rothschild)

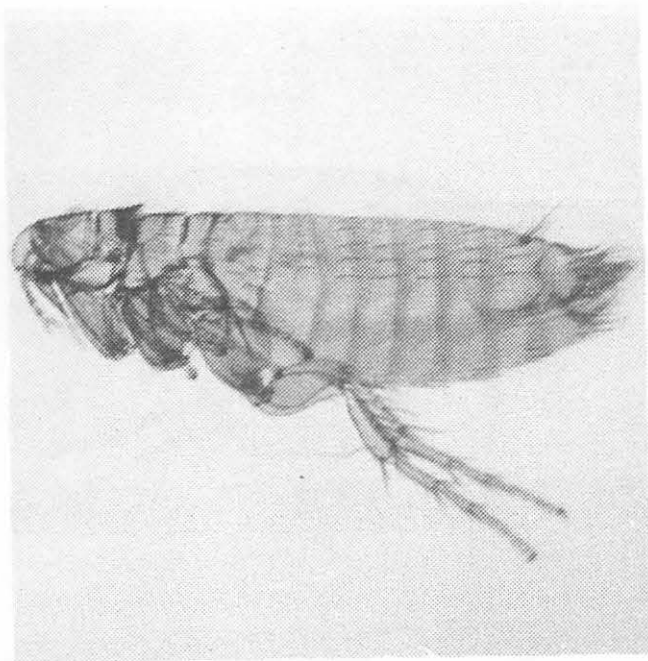
Male

Female

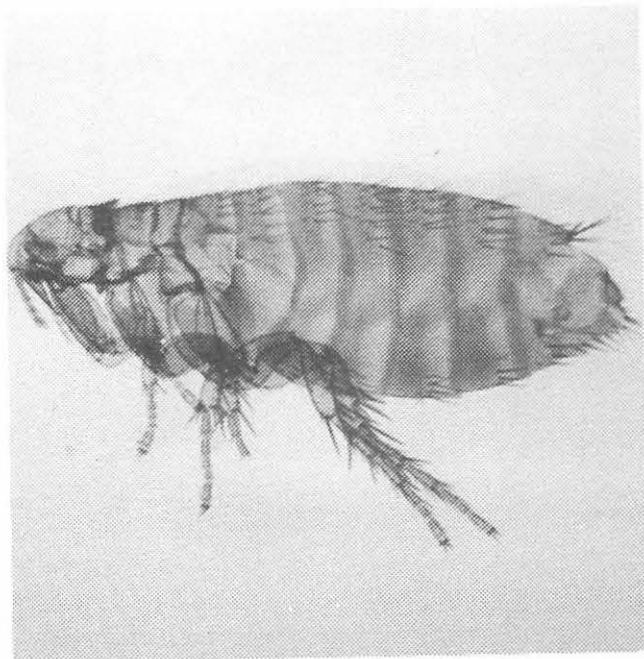
This flea is found from the Northwest Territories to New Mexico on a variety of hosts. It is not a common species in Nova Scotia, being present in only three of the 190 collections of fleas.

Host records: *Peromyscus leucopus* 1/57
 Microtus pennsylvanicus 1/30
 Condylura cristata 1/2

Distribution: Throughout mainland Nova Scotia

Ctenophthalmus pseudagyrtes Baker

Male



Female

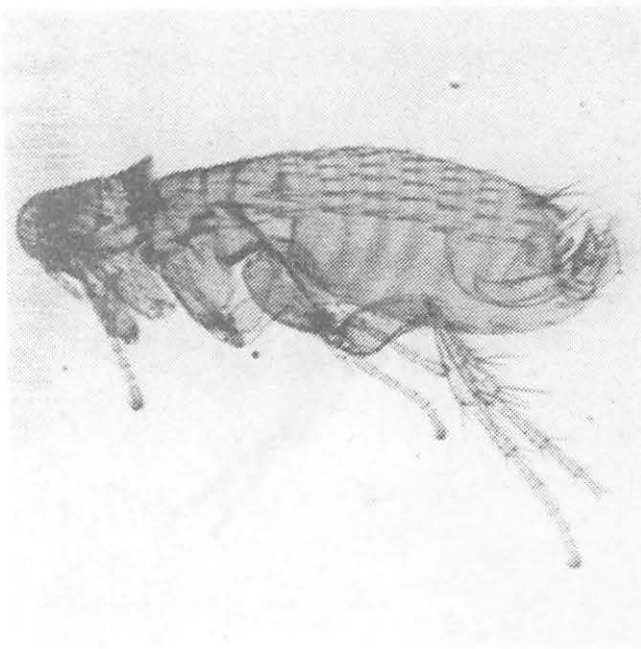
Distributed across southern Canada east of the Rockies, this is a common flea on a variety of small mammals. In Nova Scotia its principal hosts appear to be the red-backed mouse, short-tailed shrew and star-nosed mole.

Host records:

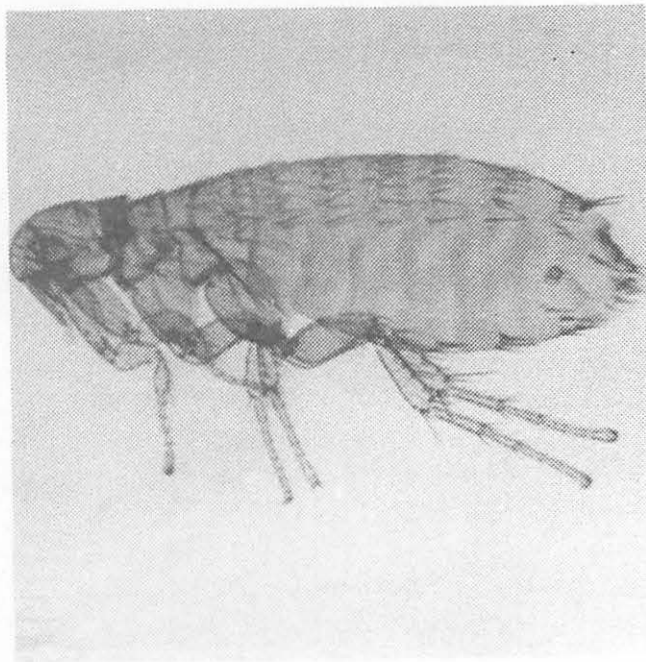
Blarina brevicauda 5/14
Tamias striatus 1/1
Clethrionomys gapperi 8/24
Microtus pennsylvanicus 2/30
Peromyscus leucopus 5/57
Napaeozapus insignis 1/7
Condylura cristata 2/2

Distribution:

Generally distributed throughout mainland Nova Scotia. Not recorded from Cape Breton Island.

Doratopsylla blarinae C. Fox

Male

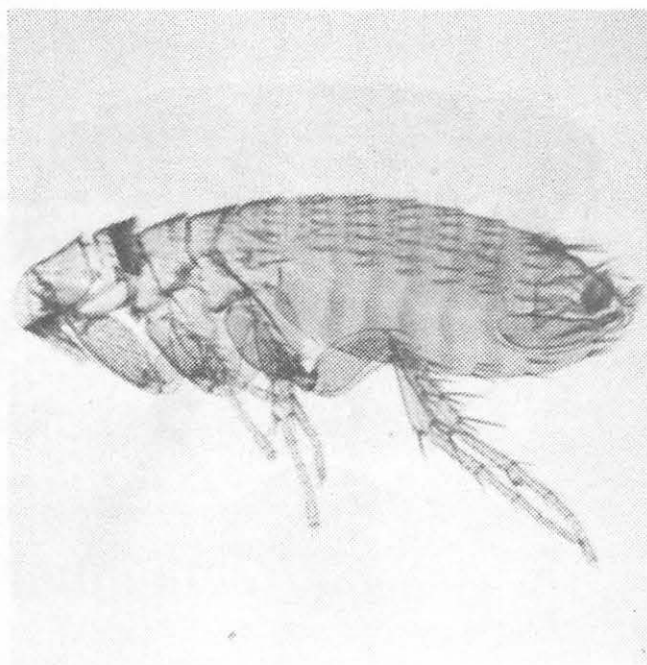


Female

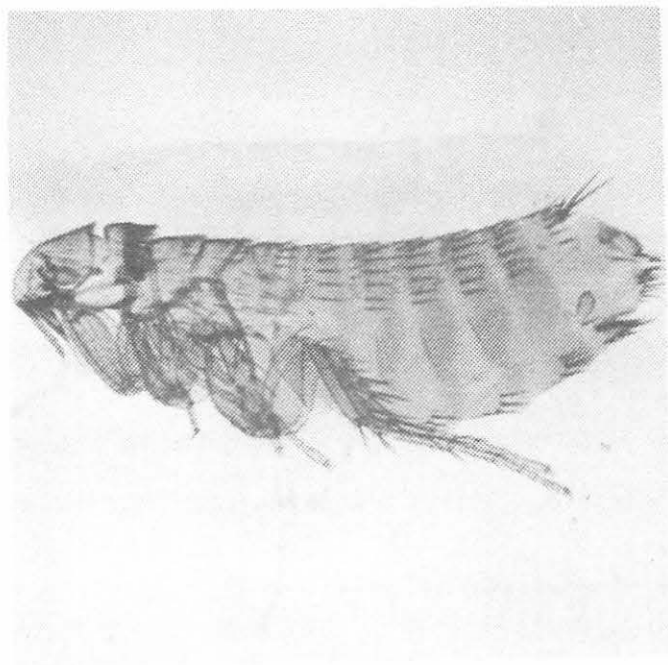
Named after its principal host, *Blarina brevicauda*, this species is confined to eastern North America. In Nova Scotia it is the dominant flea on this host.

Host records: *Blarina brevicauda* 4/14

Distribution: Throughout Nova Scotia

Corrodopsylla curvata (Rothschild)

Male



Female

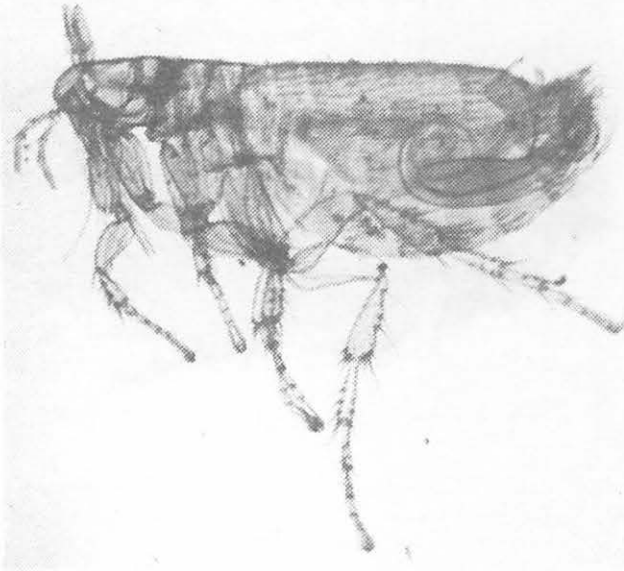
This shrew flea is widely distributed in North America and is usually associated with long-tailed shrews, *Sorex* spp.

Host records:

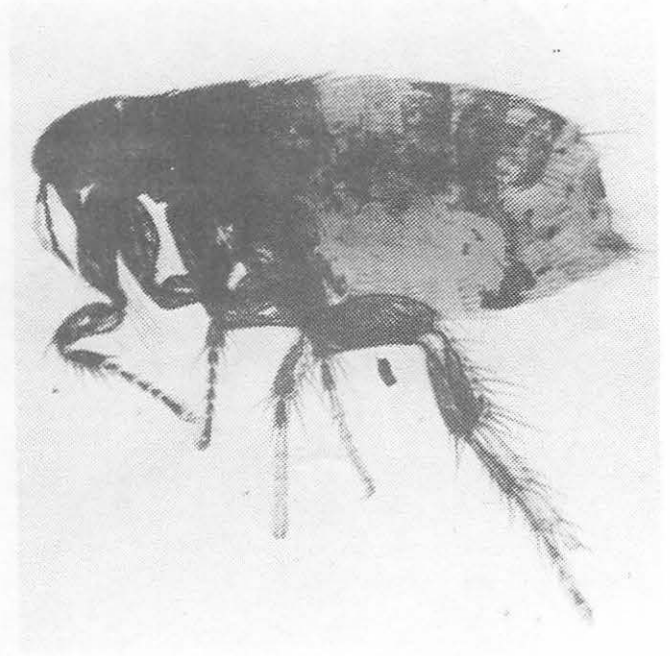
Blarina brevicauda 6/14*Sorex cinereus* 6/6*Sorex fumeus* 5/5*Sorex palustris* 4/4*Zapus hudsonius* 1/4

Distribution:

Mainland Nova Scotia

Oropsylla arctomys (Baker)

Male

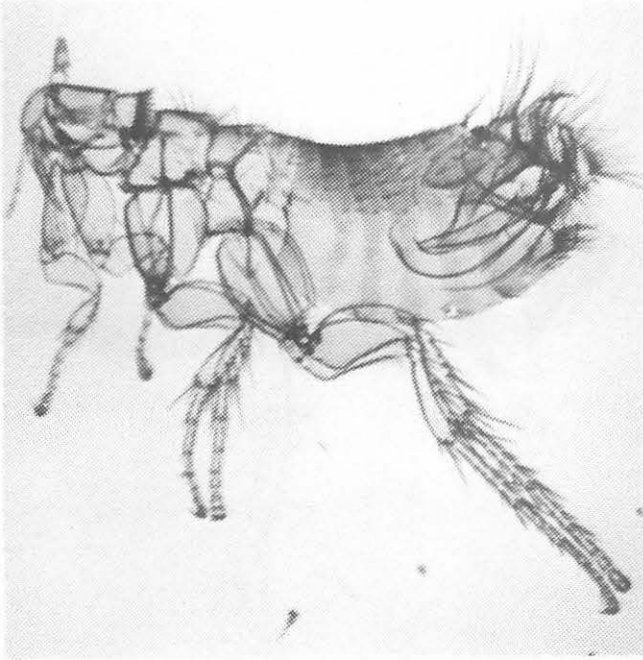


Female

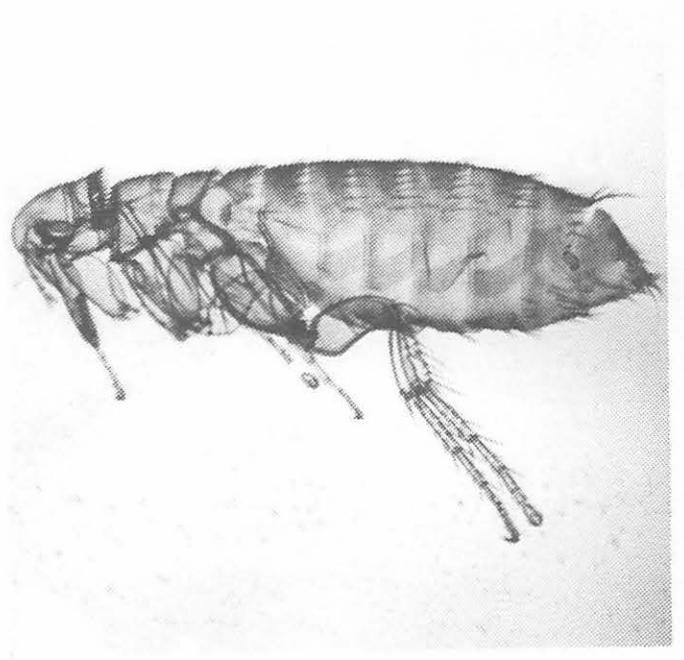
This species is the dominant flea on woodchucks across Canada. There is but a single record from Nova Scotia. The woodchuck is found only in agricultural areas of mainland Nova Scotia.

Host record: *Marmota monax* 1/1

Distribution: Pictou County

Opisodasys pseudarctomys (Baker)

Male

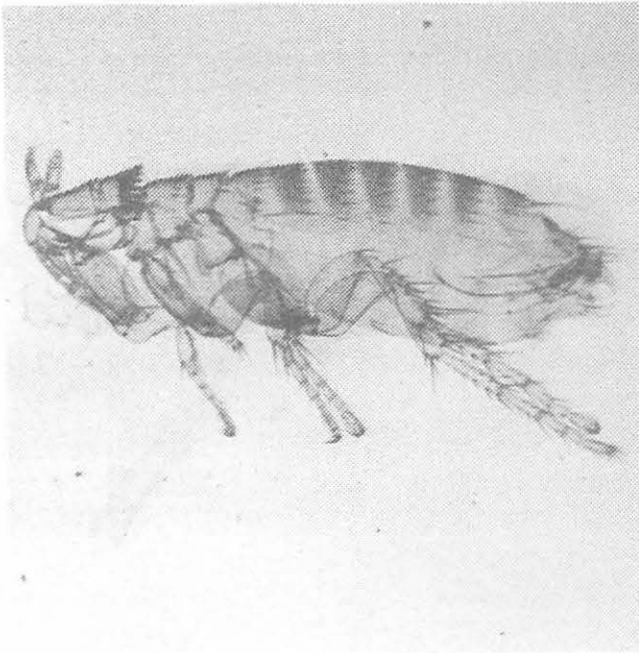


Female

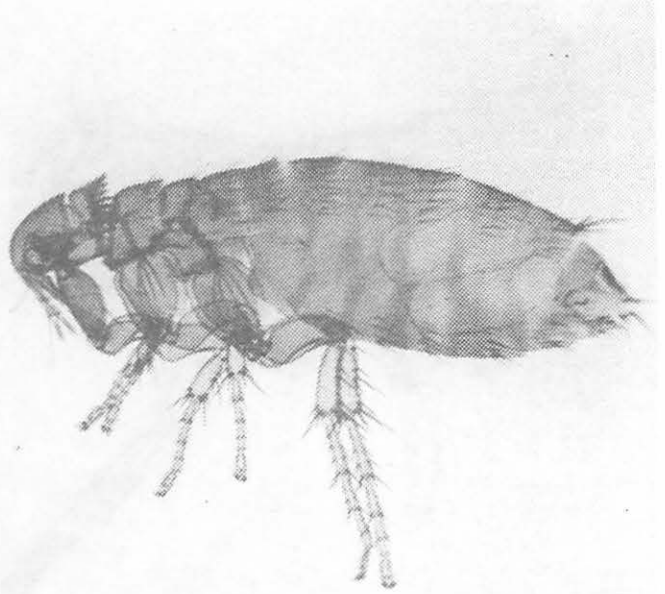
Across Canada the principal hosts of this species are flying squirrels. .
The single Nova Scotia record supports this conclusion.

Host record: *Glaucomys sabrinus* 1/2

Distribution: Wolfville, Kings County

Orchopeas caedens durus (Jordan)

Male

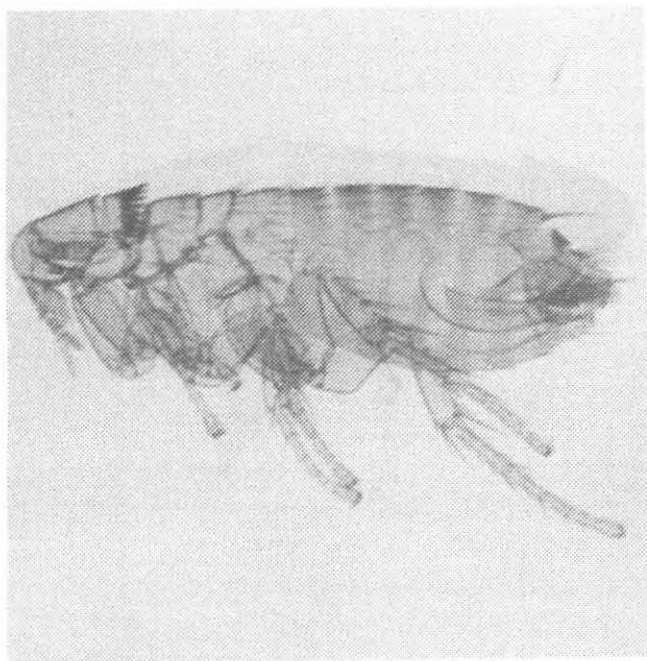


Female

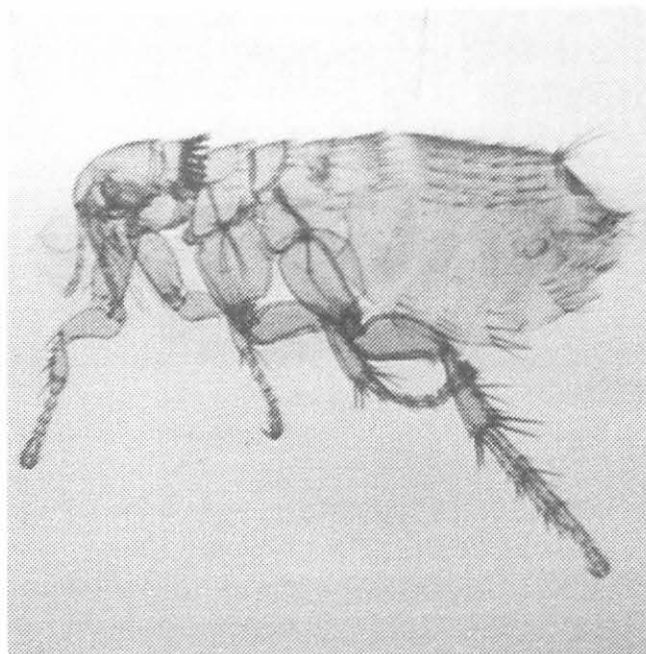
This is the dominant flea on squirrels across Canada and Nova Scotia is no exception with this species being present in four out of five collections.

Host records: *Tamiasciurus hudsonicus* 3/3
Peromyscus maniculatus 1/10
Glaucomys sabrinus 1/2

Distribution: Mainland Nova Scotia

Orchopeas leucopus (Baker)

Male

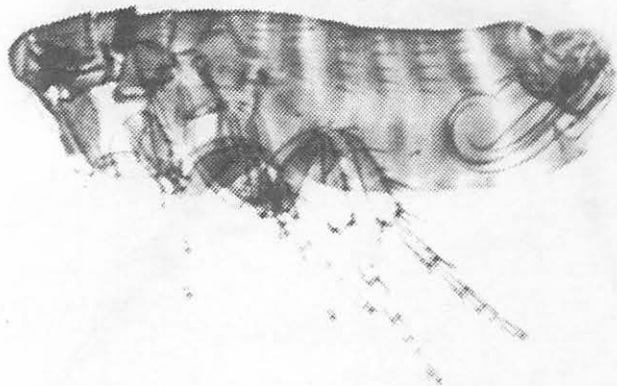


Female

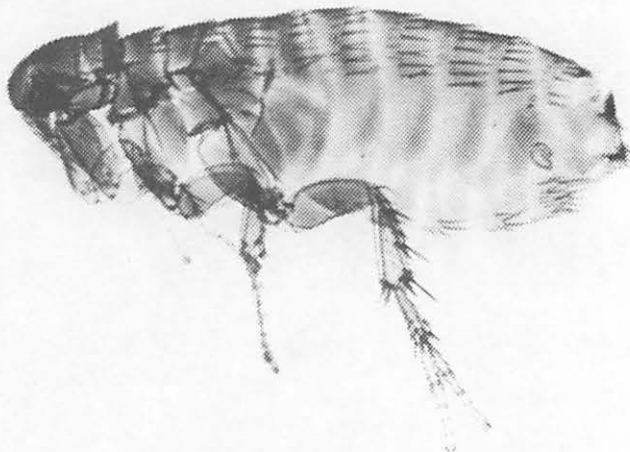
This species shares with *P. hesperomys* the dubious distinction of being the dominant flea on *Peromyscus* in eastern North America. Deer mice are good hosts; one mouse in this survey carried 18 fleas of four different species, another carried 22 fleas but only three species.

Host records: *Peromyscus maniculatus* 7/10
 Peromyscus leucopus 40/57
 Clethrionomys gapperi 4/24

Distribution: Common throughout the province

Ceratophyllus diffinis Jordan

Male



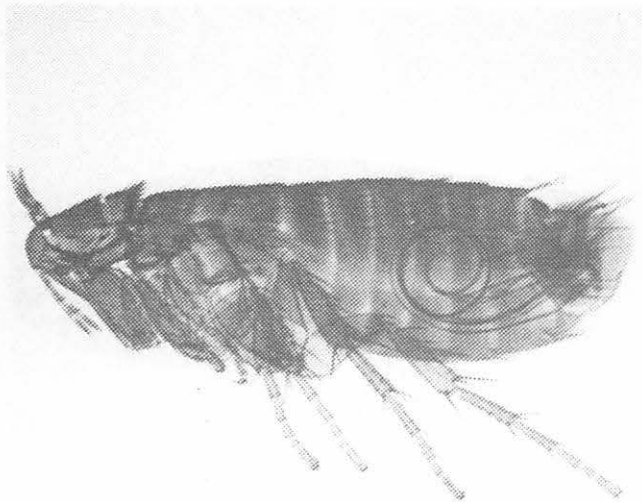
Female

This is the only bird flea in our collections although it occurs on a wide variety of birds across the continent. This record is of a male flea from an Ipswich sparrow caught on Sable Island.

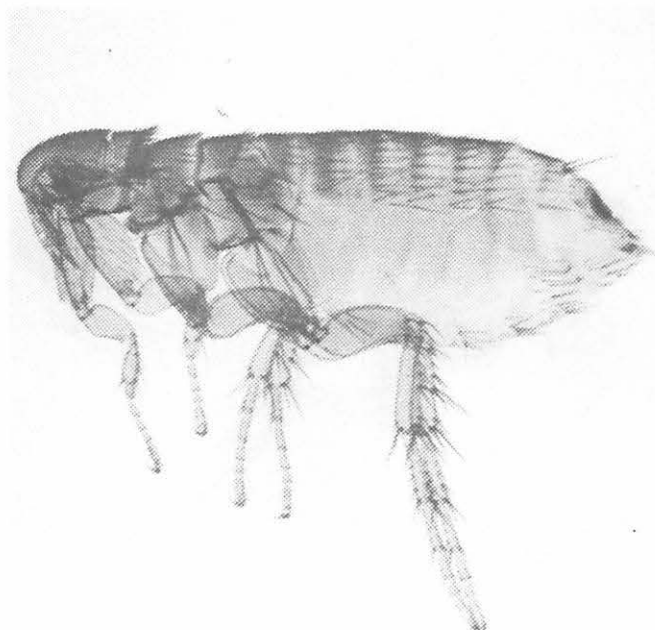
Host record: *Passerculus princeps* 1/1

Distribution: Sable Island

Ceratophyllus riparius Jordan and Rothschild, is the only flea recorded from Nova Scotia in "The Siphonaptera of Canada". A single female specimen was collected in a 'swallow box' at Lower Wedgeport. Its true host is the bank swallow *Riparia riparia*.

Megabothris a. asio (Baker)

Male

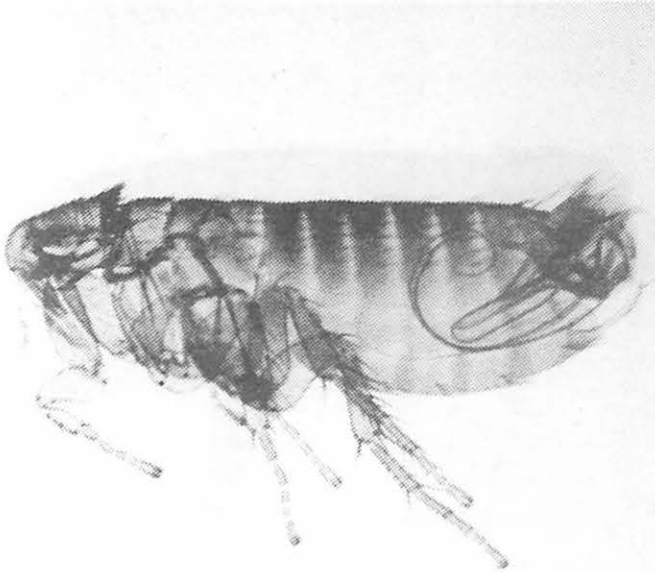


Female

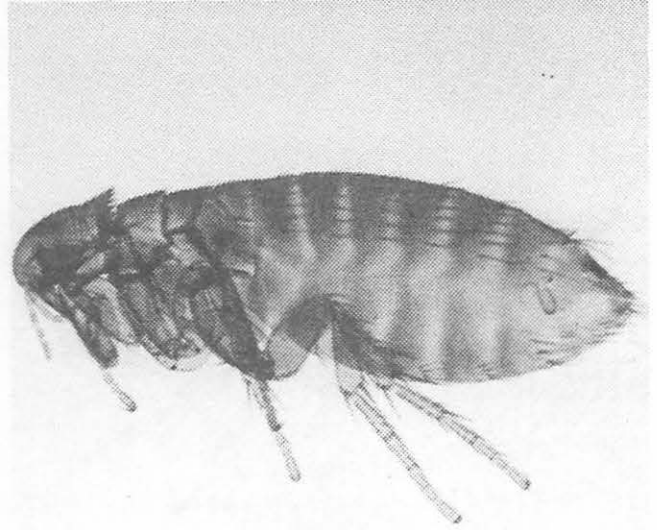
This species is usually associated with nests of meadow voles, and is the dominant flea on *M. pennsylvanicus* in this area.

Host records:	<i>Blarina brevicauda</i> 1/14
	<i>Microtus pennsylvanicus</i> 27/30
	<i>Napaeozapus insignis</i> 1/7
	<i>Synaptomys cooperi</i> 1/1
	<i>Condylura cristata</i> 1/2
	<i>Zapus hudsonius</i> 1/4

Distribution:	Throughout Nova Scotia
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Megabothris quirini (Rothschild)

Male



Female

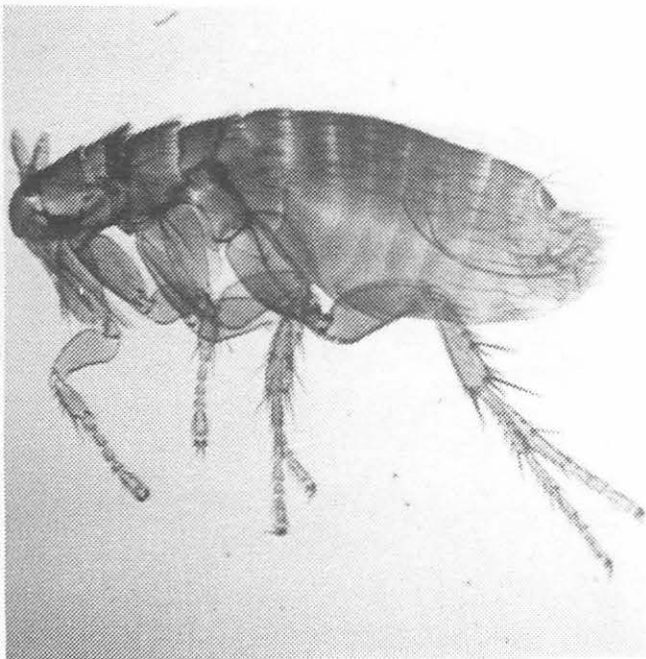
This mouse flea is widespread in North America and is the most common species so far recorded in this province. It is the dominant flea on jumping mice.

Host records:

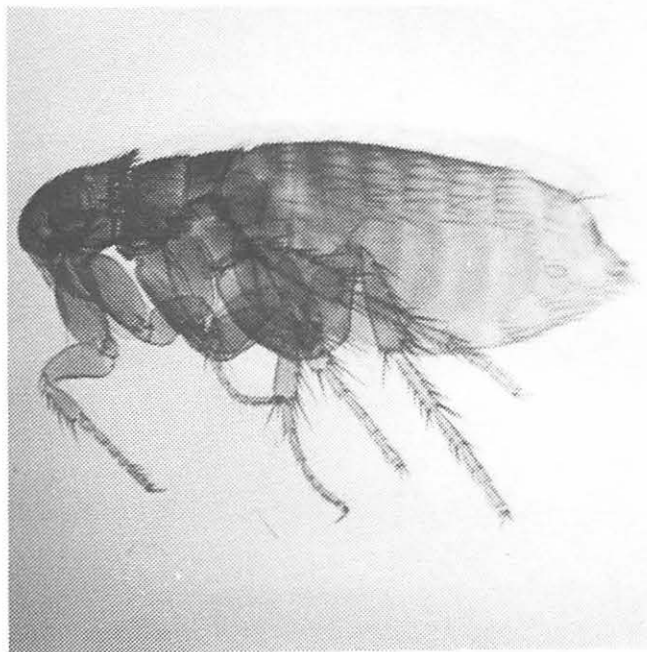
Blarina brevicauda 2/14
Clethrionomys gapperi 16/24
Peromyscus leucopus 16/57
Peromyscus maniculatus 2/10
Microtus pennsylvanicus 4/30
Zapus hudsonius 3/4
Napaeozapus insignis 5/7

Distribution:

Throughout mainland Nova Scotia, not recorded from Cape Breton Island.

Monopsyllus vison (Baker)

Male



Female

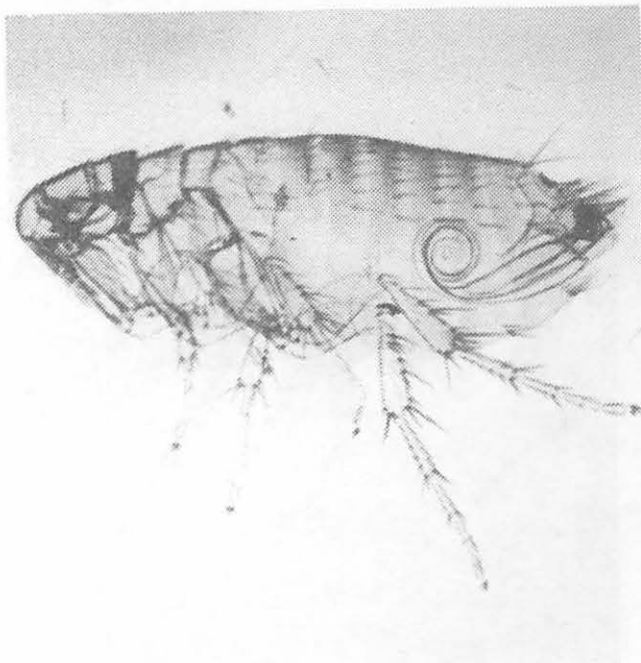
Named after mink, *Mustela vison*, this flea has been recorded mainly from mice in this province. In other parts of Canada the exclusive host is *Tamiasciurus hudsonicus*.

Host records:

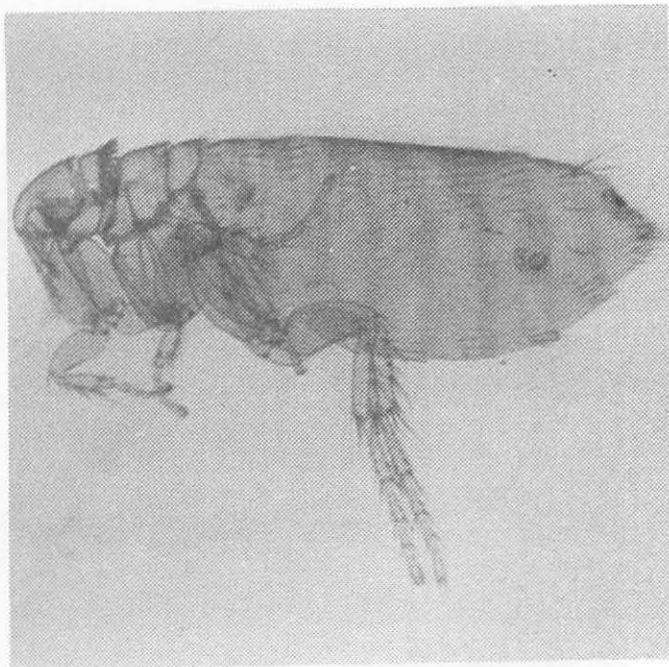
Tamiasciurus hudsonicus 1/3
Clethrionomys gapperi 1/24
Peromyscus leucopus 1/57
Peromyscus maniculatus 2/10
Procyon lotor 1/1

Distribution:

Tobeatic Game Sanctuary

Nosopsyllus fasciatus (Bosc d'Antic)

Male

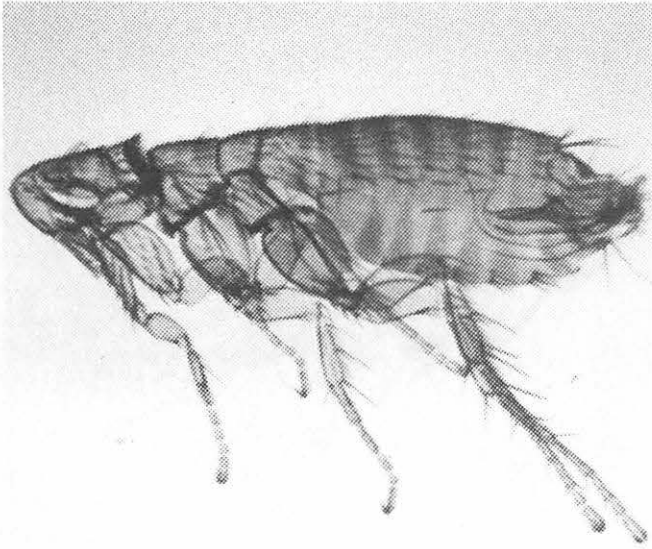


Female

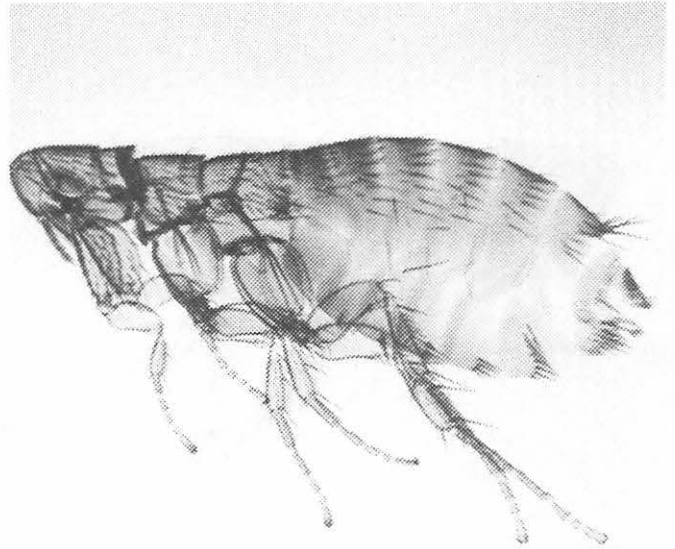
This species, the European rat flea, is widely distributed in North America along with its principal host *Rattus norvegicus*, both species having been introduced to this continent. Although it is undoubtedly common in this province only one collection has been made.

Host record: *Rattus norvegicus* 1/1

Distribution: Halifax

Peromyscopsylla catatina (Jordan)

Male



Female

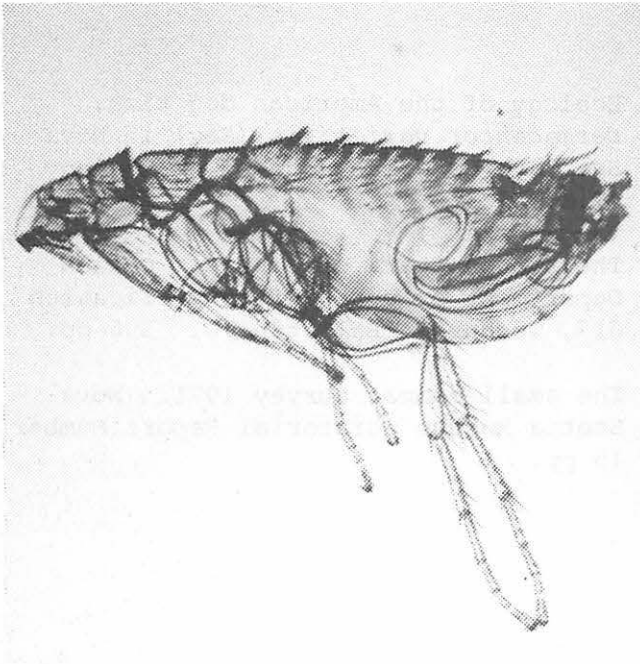
Recorded from a variety of small mammals in eastern North America this species has been taken only from *C. gapperi* in Nova Scotia. Apparently it does not readily desert a dead host since at least two of our records are from animals caught in snap traps.

Host records:

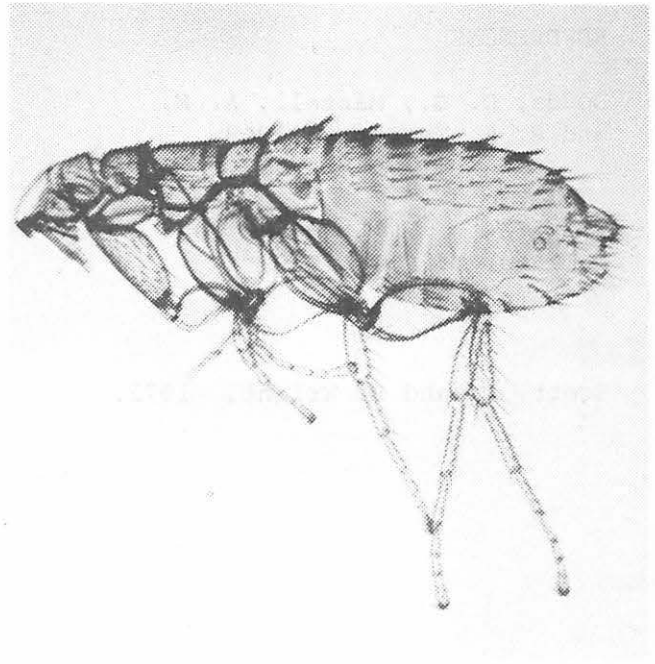
Clethrionomys gapperi 6/24

Distribution:

Mainland Nova Scotia

Myodopsylla insignis (Rothschild)

Male



Female

This is the commonest and most widely distributed of North American bat-fleas. In Nova Scotia it is the only species that has been collected from bats.

Host Records: *Myotis* spp. 8/8

Distribution: Tobatic Game Sanctuary, probably generally distributed throughout the province

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