FURTHER NOTES ON THE FLEAS OF BRITISH COLUMBIA

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Section A. New Species.

In the Proceedings of our Society for 1935, published Feb. 1936, I gave a list of 61 spp. of Fleas, compiled from all records but mainly from Rothschild and Jordan's lists and from the collections at the University and at Kamloops, which were identified for me by Dr. Wagner of Belgrade; two species in the list were new.

Since that time, Dr. J. Wagner has published a couple of papers on our fleas.

In the Canadian Entomologist, Vol. **68** p. 193 for September 1936, he gave full notes on 61 sp. of fleas of British Columbia and described 4 new species and one new variety, as follows:

In my list.—

Megarthroglossus similis Wag.
M. spenceri Wag.
M. pygmaeus Wag.

Not in my list.—

Thrassis spenceri Wag.
Megarthroglossus longispinus Baker var **exsecatus** Wag. var. nov

There has just come to hand another publication, "Neue Nordamerikänische Floharten" in Zeitschrift fur Parasiten Kunde, 8 Band, 6 Heft, 26 Sept. 1936, in which he again mentions **Thrassis spenceri** but describes four more new species from my collections at the University, as follows:

Ceratophyllus petrochelidoni Wag.
which I took off eave swallows in the Chilcotin and at Kamloops.

Megarthroglossus adversus Wag.
from a white-footed mouse (**Peromysus**) collected at the University.

Neopsylla scapani Wag.
from Schaffer's Mole, Vancouver.

Nycteridopsylla vancouverensis.

from silver-haired bat taken at the University.

Of all these 9 new species, the types of five have been deposited in the Canadian National collection and the other four will soon be sent there. Paratypes, when indicated, are at the University.

I am extremely indebted to Dr. Wagner for naming this material for me and for his generosity in returning to me all the types and so much of my material. In fact, it is only where species are represented by an abundance of material, that he has kept any specimens for his own collection.

Section B. Note on Fleas in Vancouver Residences.

During the past year, I have received many more records of cat and dog (chiefly cat) fleas infesting residences in the city. In nearly every case, the fleas were associated with sawdust used for fuel. In some cases, cats or dogs, or both were present; in others, no animals were present at all and in my own house, where an outbreak occurred, there was no sawdust and the cats were there for only the month of June.

Except for one case, where the bathroom was concerned, and where flea larvae were common on the floor especially under the bathtub, the outbreaks have all occurred in basements and have spread from there to the living rooms.

I have at last got definite proof—for which I have been looking for two years—that the fleas have actually been brought into a previously uninfested house, in the sawdust. They appeared within a few hours of the sawdust being brought in. This means that the fuel must have been infested in the warehouses or mill heaps.

During the past three years, I have carefully watched eight cats and one dog in sawdust-burning homes and in no case do the animals bed down in the sawdust. They play over it and use it as a toilet, but they never lie in it. It is in the margins of the heaps that fleas flourish, so their eggs must drop off the hosts as they play in the sawdust, or spread from the animals' beds.

The summer climate of Vancouver seems especially suitable for fleas and they can flourish in any home where a little dust accumulates, provided it is sufficiently damp. In fact, they can flourish in any basement and it becomes necessary to consider the possibility of an outbreak in any home, especially if domestic animals are present. The presence of sawdust provides the necessary dampness.

Suggested Control Measures.

Last year I mentioned aids to control—freeing animals of their

fleas with a little fresh derris powder, cleaning up and burning all dust from animals' beds and the floor all around, and treating the edges of sawdust heaps with a thin sprinkling of derris powder.

At this time, I would recommend two new control measures: 1. Spraying the basement thoroughly with any fly spray and then sprinkling a thin layer of fresh cedar sawdust all over the basement floor and around the sawdust bin. There are several cedar mills in Vancouver, but cedar sawdust is so bulky that is is not used for fuel, although its heat value is equal to that of the best fir sawdust. A few sacks of cedar sawdust can readily be obtained or can be ordered from a mill at the same time as the other fuel.

2. Fleas flourish best in closed-up damp basements. They invariably form a plague when houses have been shut up all summer and have become damp. Where fleas occur, people have a tendency to shut their basements closely and use the upper part of the house. Just the reverse should be done—open the doors and windows and let the basement dry out as far as possible—let the wind sweep through it.

When people go away for summer holidays, it would pay to open windows at opposite ends of the basement, nail heavy fox-wire netting or close chicken wire netting of ½ inch mesh across the frame, and a second barrier of common wire mosquito netting. The heavy wire will keep out all animals and the mosquito netting, all insects, and the current of dry summer air through the basement will dry out the floor and the edges of the sawdust bin and will go a long way to killing off all fleas (and sowbugs) and preventing their breeding.