

Latreille, but the pronotum is larger; the eyes are smaller than in *K. schwarzi* Banks; the ocellus is smaller but the eye is larger than in the dark colored *K. minor* Hagen; the eyes, ocelli and pronotum are smaller than in *K. jouteli* Banks; the eyes and ocelli are smaller than in *K. banksi* Snyder.

Described from a single dealated adult collected by H. S. Barber in a dead bald cypress tree on the steep back slope of the high sand dunes (the desert) on April 7, 1923. A soldier collected at the same locality by T. E. Snyder on December 15, 1923, has been compared with the type from Ortega, Fla.

A COLLECTION OF FLEAS FROM THE ISLAND OF HAWAII.

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Because of the paucity of the mammalian and terrestrial avian fauna of the Hawaiian Islands but few fleas have been taken there. Hence any records from these islands are of considerable interest from the standpoint of zoogeography. Also much economic importance attaches to the occurrence of fleas in these islands. The great influx of Asiatics into the territory and the geographical position of the Hawaiian Group in regard to the commerce of the Pacific exposes them to the constant menace of flea-borne diseases.

Recently the writer has received for determination a collection of fleas made on the Island of Hawaii during the years of 1922 and 1923 by C. E. Pemberton. The collection was sent in by O. H. Swezey, Entomologist of the Experiment Station of the Hawaiian Sugar Planters' Association. Five species are included which were taken from six different hosts. All of these fleas evidently have been introduced, and all are of economic importance, four of them being among the most injurious species of the whole order. The list is here given:

Order SIPHONAPTERA.

HUMAN FLEA (*Pulex irritans* Linnaeus).

HONOKAA.

From dog, *Canis familiaris* Linnaeus; 14 specimens collected Dec. 17, 1922.

ORIENTAL RAT FLEA (*Xenopsylla cheopis* Rothschild).

HONOKAA.

From *Rattus rattus* (variety?); 1 specimen collected Feb. 22, 1923.

From roof rat, *Rattus rattus alexandrinus* (Geoffroy); 1 specimen collected Nov. 21, 1922.

From brown rat, *Rattus norvegicus* (Erxleben); 2 specimens collected Nov. 23, 1922; 1 specimen collected Dec. 11, 1922; 2 specimens collected Feb. 22, 1923; 1 specimen collected Mar. 1, 1923.

CAT FLEA (*Ctenocephalus felis* (Bouché)).

HONOKAA.

From dog, *Canis familiaris* Linnaeus; 2 specimens collected Aug. 29, 1922;
1 specimen collected Dec. 17, 1922.

From mongoose, *Herpestes birmanicus* Thomas; 3 specimens collected Dec.
11, 1922; 1 specimen collected Jan. 22, 1923.

WAIPIO.

From cat, *Felis domestica* Linnaeus; 2 specimens collected at an elevation of
3800 ft. on Nov. 28, 1922.

MOUSE FLEA (*Ctenopsyllus musculi* (Dugés)).

HONOKAA.

From brown rat, *Rattus norvegicus* (Erxleben); 1 specimen collected Feb. 1,
1923.

From house mouse, *Mus musculus musculus* Linnaeus; 1 specimen collected
Nov. 1, 1922; 4 specimens collected Nov. 23, 1922.

STICKTIGHT (*Echidnophaga gallinacea* (Westwood)).

HONOKAA.

From mongoose, *Herpestes birmanicus* Thomas; 1 specimen collected Dec. 11,
1922.

From dog, *Canis familiaris* Linnaeus; 3 specimens collected Mar. 10, 1923.

In this list it is interesting to note the presence of *Ctenocephalus felis* (Bouché) but the absence of *Ctenocephalus canis* (Curtis), also the presence of *Xenopsylla cheopis* Rothschild but the absence of *Ceratophyllus fasciatus* Bosc. The cat flea, *Ctenocephalus felis* (Bouché), is stated as occurring in many places in Eastern Asia and also in Polynesia while in most of this range the dog flea, *Ctenocephalus canis* (Curtis), is absent. Along the eastern seaboard of the United States the cat flea is found to predominate very greatly in the north central area and to be the only flea found in most sections in peninsular Florida, while in the central area, as represented by the states of Maryland and Virginia, it is the dog flea that occurs almost exclusively.

Jordan and Rothschild in their comprehensive paper on *Ceratophyllus fasciatus* and allied species, published in "Ectoparasites," 1921, give the world distribution of this rat flea including records for Yokohama and Tokio, for India and for Australia but none for the Hawaiian Islands. These authors described several new species from the Oriental Region which were closely related to *Ceratophyllus fasciatus*.

Mr. Swezey has consented to have the United States National Museum retain some of the slides he sent. The writer has picked out one of each species to be retained by the Museum. Three of these are lot duplicates and the other two, *Ctenopsyllus musculi* Dugés and *Echidnophaga gallinacea* (Westwood), are locality duplicates, though not lot duplicates.



Ewing, H. E. 1924. "A collection of fleas from the islands of Hawaii."
Proceedings of the Entomological Society of Washington 26, 209–210.

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