NEW RECORDS OF CHEWING LICE (MALLOPHAGA: BOOPIDAE AND TRICHODECTIDAE) FROM NATIVE MAMMALS IN TEXAS

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ABSTRACT

Thirty new locality records are given for 13 species of chewing lice (Mallophaga: Boopidae and Trichodectidae) from native mammals in Texas. Species recorded and their hosts were: Heterodoxus spiniger (Enderlein) from Canis latrans, Eutrichophilus setosus (Giebel) from Erethizon dorsatum (new state record), Geomydoecus ewingi Price & Emerson from Geomys bursarius, G. expansus (Dugés) from Pappogeomys castanops, Neotrichodectes arizonae Werneck from Conepatus mesoleucus (new state record), N. interruptofasciatus (Kellogg & Ferris) from Taxidea taxus, N. mephitidis (Packard) from Mephitis mephitis, N. thoracicus (Osborn) from Bassariscus astutus, Suricatoecus quadraticeps (Chapman) from Urocyon cinereoargenteus, Trichodectes canis (De Geer) from C. latrans x C. rufus, T. octomaculatus Paine from Procyon lotor, and Trichotipeurus tipeuroides (Megnin) and T. parallelus (Osborn) from Odocoileus virginianus. Previous records for each of these species in the state are reviewed and other species recorded from native mammals in Texas are listed.

RESUMEN

Se dan treinta nuevas localidades donde aparecen registradas trece especies de malófagos (Mallophaga: Boopidae y Trichodectidae) halladas en mamíferos indígenas de Tejas. Las especies registradas y sus anfitriones son: Heterodoxus spiniger (Enderlein) de Canis latrans, Eutrichophilus setosus (Giebel) de Erethizon dorsatum (nuevamente registrado en el estado), Geomydoecus ewingi Price y Emerson de Geomys bursarius, G. expansus (Dugés) de Pappogeomys castanops, Neotrichodectes arizonae Werneck de Conepatus mesoleucus (nuevamente registrado en el estado), N. interruptofasciatus (Kellogg y Ferris) de Taxidea taxus, N. mephitidis (Packard) de Mephitis mephitis, N. thoracicus (Osborn) de Bassariscus astutus, Suricatoecus quadraticeps (Chapman) de Urocyon cinereoargenteus, Trichodectes canis (De Geer) de C. latrans x C. rufus, T. octomaculatus Paine de Procyon lotor, y Trichotipeurus tipeuroides (Megnin) y T. parallelus (Osborn) de Odocoileus virginianus. Se revisan los registros previos del estado para cada una de estas especies y se registran otras especies encontradas en mamíferos indígenas de Tejas.

INTRODUCTION

Chewing lice are relatively host specific obligatory external parasites of birds and mammals. With few exceptions, their distribution is determined by

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the distribution of the host as the same species of Mallophaga is found on a particular host species throughout its range. Those occurring on wild mammals are less often collected and reported than their counterparts on wild birds. This may be because they occur on only a few species of mammals, many of which are not easily collected and examined. Consequently, many species have not positively been recorded from areas where they are expected to occur.

We have had the opportunity to study 32 lots of chewing lice from native mammals in Texas. This material was collected mostly from mammals found dead on the road. It included 13 species of Mallophaga; 2 of these were previously unreported from the state and several others were known on the basis of very few records.

Wiseman (1959), in his dissertation on Mallophaga of Texas, listed county records for several species from mammals. These were of a general nature and did not take into account much of the earlier literature for the state. Some most certainly had been previously published and we have not referred to them in our discussion under the species. He listed the occurrence of 1 species in the state which otherwise has not been noted in the scientific literature. It is included in the list of other species from native mammals at the end of the paper.

All material is retained by Wilson except for 1 collection in the Fort Worth Museum of Science and History (FWM), examined through the courtesy of W. J. Voss. Under records, the collector is indicated only when it is someone other than Oliver. The county has been added in parentheses the first time, for those localities in which it was not given in the original article.

DISCUSSION OF TAXA

BOOPIDAE

Heterodoxus spiniger (Enderlein)

Record. Canis latrans Say. Starr Co., La Reforma, 0.6 km N and W: 1 ♀, 1 N, 4.I.1976.

The Domestic Dog, Canis familiaris Linnaeus, is the type host and host most frequently recorded; however, recent evidence indicates the species to be a louse of kangaroos (see Kéler 1971). It became established on the dog and was carried to most of the warmer parts of the world between the 40th parallels. There are records from a variety of other hosts, mostly in the family Canidae. Many of those from non-canid hosts need confirmation.

There are records from several southern states. In Texas it has been recorded from the Coyote from Crowell (Foard Co.) (Eads 1948), Laredo (Webb Co.) and Uvalde (Uvalde Co.) (Werneck 1948), and Denton and Hopkins Cos. (Gier et al. 1978). Eads (1948) also listed it from the Red Wolf, Canis rufus (Audubon & Bachman), from Marlin (Falls Co.). The latter host was overlooked by Kéler (1971), Emerson (1972), and Emerson and Price (1975); all have recently discussed and/or summarized the host relationships of this species.

TRICHODECTIDAE

Eutrichophilus setosus (Giebel)

Records. Erethizon dorsatum (Linnaeus). Brewster Co., Marathon, 47 km S, 6 km E (870 m elev.): 6 ♂♂, 4 ♀♀, 2 NN, 25.II.1976. Sutton Co., Sonora, 0.8 km N, 3 km E (700 m elev.): 16 ♂♂, 6 ♀♀, 14 NN, 16.IX.1976.

The only louse found on the Porcupine in North America has been recorded from several localities in the United States and Canada; this is the first record from Texas.

Geomydoecus ewingi Price & Emerson

Records. Geomys bursarius (Shaw). Nacogdoches Co., Melrose, 6 km SE: 13 ♂♂, 21 ♀♀, 44 NN; 6 ♂♂, 7 ♀♀, 24 NN, 31.XII.1964, J. R. Preston et al.

The genus Geomydoecus occurs exclusively on pocket gophers. Price and Emerson (1971), in a major revision of the genus, described 31 new species and redescribed the 11 previously known ones. An additional 12 species have been described by Price and Emerson (1972), Price (1974, 1975), Price and Hellenthal (1975a, b, 1976), and Timm and Price (1979). As a result of this work most of the older records in the literature need to be reexamined.

Price and Emerson (1971) examined 3 collections from the Plains Pocket Gopher from Texas without giving additional data. The material listed by Werneck (1945) as G. geomydis (Osborn) from Kirbyville (Jasper Co.) should be this species.

Geomydoecus expansus (Dugés)

Record. Pappogeomys castanops (Baird). Brewster Co., Marathon, 85 km SSE (Black Gap Wildlife Management Area, 500 m elev.): 9 ♂♂, 10 ♀♀, 10 NN, 28.II.1976.

This is the most frequently collected of the 2 species of Geomydoecus found on the Yellow-faced Pocket Gopher in Texas.

Price and Hellenthal (1975a) listed records from Claude, Armstrong Co., Alpine and Terlinqua (sic Terlingua), Brewster Co., El Paso, El Paso Co., Gruver, Hansford Co., Fort Davis and Valentine, Jeff Davis Co., Fort Stockton, Pecos Co., Presidio, Presidio Co., Pecos, Reeves Co., and Dryden and Sanderson, Terrel Co. Material from this host identified as G. geomydis by Eads and Hightower (1950) and Werneck (1950) from Terrell Co. and Alpine, respectively, should be G. expansus.

Neotrichodectes arizonae Werneck

Records. Conepatus mesoleucus (Lichtenstein). Bandera Co., Pipecreek: 16 ♂♂, 19 ♀♀, 8 NN, 8.I.1977. Llano Co., Kingsland, 16 km S, 7 km E: 1 ♂, 5 ♀♀, 16 NN, 6.VII.1978; Llano, 5 km S, 9 km E: 2 ♂♂, 1 ♀, 3 NN, 31.V.1976; 2 NN, 15.VIII.1976; 29 km S (395 m elev.): 3 ♂♂, 10 ♀♀, 15 NN, 10.VII.1977.

The type host is the Hog-nosed Skunk; it also has been recorded from the Eastern Hog-nosed Skunk, Conepatus leuconotus (Lichtenstein). Published records are not numerous and these are the first from Texas.

Neotrichodectes interruptofasciatus (Kellogg & Ferris)

Record. Taxidea taxus (Schreber). Jim Hogg Co., Hebbronville, 4 km S, 2 km E: 31 ♂♂, 42 ♀♀, 22 NN, 4.I.1976.

The species is found throughout the range of the Badger, the type host; however, records are not numerous.

Werneck (1948) examined material from skunk from Uvalde. He questioned the validity of this record and the few others from hosts other than the Badger. Our record confirms its occurrence in the state.

Neotrichodectes mephitidis (Packard)

Records. Mephitis mephitis (Schreber). Anderson Co., Long Lake: 4 ♂♂, 19 ♀♀, 4 NN, 22.XI.1975. Burnet Co., Briggs, 4 km N, 7 km W: 1 ♂, 1 ♀, 1 N, 19.VIII.1977. Cass Co., Atlanta, 2 km S, 1 km W: 1 ♂, 1 ♀, 2 NN, 22.XI.1976. Hidalgo Co., San Manuel, 1 km N, 4 km W: 24 ♂♂, 14 ♀♀, 10 NN, 4.I.1976. Leon Co., Jewett, 2 km N and E: 16 ♂♂, 18 ♀♀, 20 NN, 22.XI.1975. Sutton Co., Sonora, 2 km S, 32 km E: 2 ♀♀, 1 N, 24.II.1976. Wilson Co., DeWees, 2 km N, 14 km W: 1 ♀, 14.II.1976.

There are numerous published records from the Striped Skunk, the type host. Hightower et al. (1953) recorded it from this host in Kleberg Co. It also occurs on the Hooded Skunk, Mephitis macroura Lichtenstein.

Neotrichodectes thoracicus (Osborn)

Records. Bassariscus astutus (Lichtenstein). Tom Green Co., Christoval, 4 km S, 2 km W: 3 ♂♂, 1 ♀, 2 NN, 1.IV.1979. Uvalde Co., Concan, 3 km N, 1 km W (440 m elev.): 12 ♂♂, 7 ♀♀, 17 NN, 1.IV.1979.

Custer and Pence (1979) reported 8 of 14 Ringtails infested, from 4 central and west Texas counties, and also mentioned a record from Bexar Co.

Suricatoecus quadraticeps (Chapman)

Records. Urocyon cinereoargenteus (Schreber). Blanco Co., Johnson City, 8 km S, 12 km E (355 m elev.): 7 NN, 10.VII.1977. Tarrant Co., Fort Worth: 4 ♂♂, 4 ♀♀, 1 N, 16.II.1963, W. A. Talbot & C. Doerwald.

The Gray Fox is the type host and published records are few; however, Emerson and Price (1975) state it is common on this host. Emerson (1972) also listed the Kit Fox, Vulpes macrotis Merriam, as a host. There is insufficient information as to what species of lice occur on the other species of North American foxes.

Eads and Menzies (1950) have recorded it from the type host from Freestone Co.

Trichodectes canis (De Geer)

Record. Canis latrans x Canis rufus. Rusk Co., Tatum, 7 km S, 11 km W: 4 ♀♀, 29.XI.1975.

There are many records from the Domestic Dog, the type host, from throughout the world. It has also been recorded from several wild species of Canis.

Eads (1948) listed it from the Coyote at Victoria (Victoria Co.). Our specimens are from a Coyote-Red Wolf hybrid. The Red Wolf has never been listed as a host.

Trichodectes octomaculatus Paine

Records. Procyon lotor (Linnaeus). Hays Co., Dripping Springs, 12 km W (425 m elev.): 1 ♂, 1 ♀, 3 NN, 8.VI.1978. Llano Co., Kingsland, 14 km S, 1 km E: 1 ♀, 31.V.1976; Llano, 13 km S, 4 km W: 1 ♂, 7 ♀♀, 19.VI.1976. Tarrant Co., Fort Worth: 2 ♀♀, 1 N, 18.I.1968, R. Pratt (FWM). Travis Co., Oak Hill, 1 km S, 9 km W: 2 ♂♂, 4 ♀♀, 21 NN, 19.V.1979.

The Raccoon is the type and only host for this species and there are many published records for North America. Randolph and Eads (1946) collected the species in Lavaca Co. and Werneck (1948) listed specimens from Victoria and Texas, without specific locality.

The material reported as this species under Mephitis mesomelas (= mephitis) from Lavaca Co. by Randolph and Eads (1946) is probably N. mephitidis.

Tricholipeurus lipeuroides (Megnin)

Records. Odocoileus virginianus (Zimmermann). Gonzales Co., Gonzales, 0.2 km N, 5 km W: 1 ♀, 13.II.1977. Refugio Co., Austwell, 8 km S, 10 km W: 1 ♂, 3 ♀♀, 5.II.1978.

Two species of Tricholipeurus parasitize Odocoileus in North America and there are many published records of this species and the following one from White-tailed Deer and Mule Deer, O. hemionus (Rafinesque). Both species of lice have the same geographical distribution and may be found on the same animal. Studies by Watson and Anderson (1975) indicated they had a temporal separation in abundance on the host.

Peters (1930) recorded this species, as T. virginianus, from the above host from Maverick Co. and Sonora, and Hightower et al. (1953) found it on the same host in Kleberg Co. Van Volkenberg and Nicholson (1943) collected it from deer (= O. virginianus) in Blanco Co. and Werneck (1950) examined specimens from deer in Texas, without further locality.

Tricholipeurus parallelus (Osborn)

Record. Odocoileus virginianus. San Saba Co., Bend, 5 km S, 1 km E (415 m elev.): 38 ♂♂, 67 ♀♀, 12.VII.1978.

Samuel and Trainer (1971) collected only this species in their detailed study of chewing lice of White-tailed Deer on the Welder Wildlife Refuge (San Patricio Co.). It also was recorded under the name T. odocoilei McGregor from deer in Kerr Co. (Werneck 1950).

OTHER SPECIES FROM NATIVE MAMMALS

In addition to the 13 species discussed above, the following 11 species and subspecies have been recorded from Texas. The record of G. g. geomydis from G. bursarius major Davis is considered an error by Price (pers. comm., 1979) and therefore is not listed. We question the record of F. subrostratus from the Bobcat; it is a parasite of the Domestic Cat, Felis catus Linnaeus, and occurs on this host in Texas.

Felicola felis (Werneck) (25)[1/]
  Felis rufus (Schreber) (Bobcat)

Felicola subrostratus (Burmeister) (25)
  Felis rufus

Geomydoecus dalgleishi Timm & Price (21)
  Geomys personatus fuscus Davis

Geomydoecus geomydis subgeomydis Price & Emerson (14)
  Geomys bursarius brazensis Davis

Geomydoecus oklahomensis Price & Emerson (14)
  Geomys bursarius attwateri Merriam
  Geomys bursarius brazensis
  Geomys bursarius major

Geomydoecus quadridentatus Price & Emerson (14)
  Geomys arenarius arenarius Merriam (Desert Pocket Gopher)

Geomydoecus texanus texanus Ewing (7, 17, 21)
  Geomys personatus fallax Merriam
  Geomys personatus maritimus Davis
  Geomys personatus megapotamus Davis
  Geomys personatus personatus True (Texas Pocket Gopher)

Geomydoecus truncatus Werneck (14)
  Geomys personatus streckeri Davis

Geomydoecus ustulati clarkii Price & Hellenthal (17)
  Pappogeomys castanops clarkii (Baird)
  Pappogeomys castanops torridus Russell

1/ Reference in Literature Cited which is the source of this record.

Geomydoecus ustulati ustulati Price & Hellenthal (17)
Pappogeomys castanops angusticeps (Nelson & Goldman)

Neotrichodectes osborni Kéler (27)
Spilogale putorius (Rafinesque) (Eastern Spotted Skunk)

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