NOTES ON THE GENUS GEOMYLICHUS FAIN, 1970 (ASTIGMATA: LISTROPHORIDAE) AND DESCRIPTIONS OF SIX NEW SPECIES

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----- ABSTRACT — Six new species are described in the genus Geomylichus Fain, 1970: G. texanus sp. n., G. brevispinosus sp. n., G. inaequalis sp. n., G. thomomyus sp. n., G. nectomyus sp. n. and G. neacomys sp. n. The species G. geomydis Coffman & McDaniel is placed in synonymy with G. floridanus (Radford, 1949). A key to the genus is given. -----


Recently new series of mites belonging to this genus have been collected from several new hosts. Among them we have recognized 6 new species as described here. Moreover, through the courtesy of Mr. R. Smiley we were able to examine the type specimens of G. geomydis and we find them inseparable from G. floridanus.

Genus Geomylichus Fain, 1970

This genus differs from the other genera of Listrophoridae, in both sexes by the modified sc e seta, which forms a strong, short spine. Moreover in nearly all species there is a rather well-developed paired striated membrane on the coxae II (coxal membrane) serving for clasping the hair of the host. Males are distinguished by the shape of the posterior extremity being deeply incised into two well-developed lobes, the d 5 setae bear a triangular membrane and the l 5 setae are strongly developed.

Type species— Listrophorus dipodomius Radford, 1953.

KEY TO THE GENUS Geomylichus

(N.B. The adults of G. sylvilagus Fain and the male of G. mexicanus are unknown. The characters given for G. klebergi are those of the original description).

FEMALES

1. Posterior extremity with only very thin and short setae (maximum 35 µ long). Striated membranes of coxae II 50-60 µ long ................................................................. 2
   Posterior extremity with either one or two pairs of strong and long setae. Coxal membranes II variable ................................................................. 3

2. Prescapular shield subequal in length to postscapular shield (ratio l.06:1), the latter presenting transverse striations only in its anterior half and laterally. There are about 20 striations on the shield along a line joining the sc i and d l setae. Cuticle of hysteronotum with 10 transverse poorly distinct striations in the midline, .... G. dipodomius (Radford, 1953)

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Prescapular shield distinctly longer than postscapular shield (ratio 1.15-1.3:1), the latter completely striated with 29 to 37 striations along a line joining sc i and d l. Hysteronotum with 20 to 37 striations in midline. G. texanus sp. n.

3. Hysteronotum with a punctate median shield
   - Hysteronotum without a median shield


5. Postscapular shield with 45 to 60 striations along a line joining the sc i and d l setae. Striated membranes on coxae I-II with serrated edges. Striated membranes of coxae II 105-110μ long. G. neeomys sp. n.
   - Postscapular shield with not more than 25 striations along a line joining the sc i and d l setae. Striated membranes of coxae I-II without serration along their edges. Striated membranes of coxae II much shorter

6. Posterior extremity with 2 pairs of strong and long setae. G. nectomys sp. n.
   - Posterior extremity with 1 pair of strong and long setae

7. Striated membranes of coxae I-II with conspicuous serration along their edges. Setae sc e 26μ long and 7μ wide. Hysteronotum with 14 transverse striations. G. neeomys sp. n.
   - Striated membranes of coxae I-II with unconspicuous serrations along their edges. Sce 18μ long and 6μ wide. Hysteronotum with 42 transverse striations. G. mexicanus Fain. 1976.

8. Opisthogaster with transverse striations. Postscapular shield completely striated. Hysteronotum with 42-50 transverse striations. Striated membranes on coxae II 75μ long. Setae sc e 26μ long. Prescapular shield 105μ, postscapular shield 125μ long (in midline), the latter with 25 striations along a line joining sc e and d l... G. thomomys sp.
   - Opisthogaster with longitudinal striations. Postscapular shield only striated in its anterior half or not striated. Other characters variable

   - Setae sc e expanded in their basal half. Postscapular shield partly striated. Hysteronotum with striation poorly developed

10. Striated membranes on coxae II narrow, 30-35 μ long. Setae sc e 13-16 μ long, 3-4μ wide. Prescapular shield 116μ, postscapular shield 105μ long, the latter striated only in anterior half of its median part. Hysteronotum with rare superficial and incomplet striations. G. brevispinosus sp.
   - Striated membranes on coxae II wider, 60μ long. Setae sc e 27-30μ x 6-7μ. Prescapular shield 142μ, postscapular 135μ long, the latter striated in its anterior half. G. inaequalis sp. n.

**MALES**

1. Hysteronotal shield very long, extending forwards far beyond the d 2 setae
   - Hysteronotal shield much shorter, completely situated behind the d 2 setae
2. Postscapular shield 1.5 times longer (150µ) than prescapular shield (99µ). Internal region of coxae I-II with very thick longitudinal striations. Penis flanked by two narrow and long cuticular prolongations directed posteriorly. Seta sc e 15µ long ........................................... G. postscutatus Fain, 1976
Postscapular shield a little longer (117µ) than prescapular shield (114µ). Absence of thick striations on coxae I-II and of parapenial prolongations. Seta sc e 25µ long ........................................... G. floridanus (Radford, 1949) (=G. geomydis Coffman & McDaniel, 1975)

3. Striated membranes on coxae I-II with serrated edges. Penis flanked at both sides by a thick longitudinal sclerite as long as the penis. Postscapular shield 152-155µ long (in midline) and much longer than prescapular shield ........................................... 4
Striated membranes on coxae I-II not serrated. Penis not flanked by two lateral sclerites. Postscapular shield 90µ-123µ long (in midline) and either subequal or shorter than prescapular shield ........................................... 5

4. Seta sc e 12µ long and 5µ-6µ wide. Opisthosoma 140µ long and 75µ wide at base. There are approximately 50-60 poorly distinct striations on postscapular shield along a line joining sc i and d l setae ........................................... G. nectomys sp. n.
- Seta sc e 26µ long and 5, 5µ wide. Opisthosoma 120µ long and 90µ wide at base. Postscapular shield with approximately 50-55 distinct striations along a line joining sc i and d l setae ........................................... G. neacomys sp. n.

5. Lateral margins of hysteronotal shield with a strongly sclerotized longitudinal strip. Postscapular shield slightly shorter than prescapular shield ........................................... 6
- Lateral margins of hysteronotal shield without a strongly sclerotized strip. Lengths of anterior shields variable ........................................... 8

6. Seta sc e expanded in their apical half. Seta l 5 only slightly longer than foliate d 5 setae ........................................... G. kiebergi (McDaniel, 1965)
- Seta sc e expanded in their basal half. Seta l 5 much longer than d 5 setae. ............ 7

7. Postscapular shield not striated, hysteronotal shield with indistinct striations. Seta sc e 13µ x 3-4µ. Inflated base of l 5 setae 75µ long. Subapical seta of tarsi III 45µ long. Striated membranes on coxae II 25µ long ........................................... G. brevispinosus sp. n.
- Postscapular and hysteronotal shields striated, the striations are less distinct in postero-median part of the first shield. Seta sc e 30µ x 6µ. Inflated base of l 5 setae 120µ long. Subapical seta of tarsi III 75µ long. Striated membranes on coxae II 50µ long ........................................... G. inaequalis sp. n.

8. Foliate setae (d 5) 25µ wide and overlapping in the midline. Hysteronotal shield short, beginning at 39µ behind d 2 setae. Postscapular shield completely striated and longer (102µ) than prescapular shield (90µ) ........................................... G. thomomys sp. n.
- Foliate setae (d 5) narrower (maximum 12µ wide), not overlapping in the midline. Hysteronotal shield longer, arriving at 15µ from the d 2 setae. Postscapular shield shorter than prescapular shield ........................................... 9

9. Postscapular shield completely striated transversally and much shorter (100µ) than prescapular shield (129µ long) (in the midline) ........................................... G. texanus sp. n.
- Postscapular shield slightly shorter (123µ) than prescapular shield (132µ) and bearing short striations only along the lateral margins of the shield ...... G. dipodomius (Radford, 1953)

L. Geomylichus dipodomius (Radford, 1953)
Listrophorus dipodomiusRadford, 1953: 214
Geomylichus dipodomius, Fain, 1970: 282; Fain & Hyland, 1974: 52

The type host of this species is Dipodomys spectabilis, from Santa Fe, New Mexico. Fain and Hyland (1974) have given new drawings of the type female from Dipodomys spectabilis
Geomylichus dipodomius (Radford, 1953): Fig. 1. lectotype female; Fig. 2. paralectotype male; Geomylichus
the typical host and of a male collected in Santa Fe but from *Dipodomys ordii* (fig. 1).

Recently the senior author had opportunity to examine a male of the typical series collected on *D. spectabilis* from Santa Fe. This male resembles more closely the typical female figured by Fain and Hyland than the male from *Dipodomys ordii*, in having the same structure of the postscapular shield which is lined only in its lateral parts. As Radford did not select a holotype for this species we designate as lectotype the female specimen figured by Fain and Hyland (1974) and we give here a figure of the paralectotype male of that species from the typical host (fig. 2).

The male specimen from *Dipodomys ordii* that Fain and Hyland (1974, fig. 55) have figured as belonging to *G. dipodomius* is actually a new species *G. texanus* that we describe below.


2. *Geomylichus floridanus* (Radford, 1949)  
*Listrophorus floridanus* Radford, 1949: 936  
*Geomylichus floridanus*, Fain & Hyland, 1974: 54  

We have examined the holotype male and the allotype female of *G. geomydis*. These specimens agree in all characteristics with the types of *G. floridanus* redescribed by Fain and Hyland (1974) and we consider these species as synonyms.

Tarsi III and IV in the female and the tarsi III in the male of *G. geomydis* bear a very thin and long (60-75μ) seta. These setae are also present in the specimens of *G. floridanus* from the typical host (these are incomplete in the type female in poor condition). In both sexes the anterior region of hysterontotum bears a median shield as in *G. floridanus*. These shields have been overlooked by Coffman and McDaniel. In the male of *G. geomydis* the chaetotaxy is the same as in *G. floridanus*. In both species the pilicolous striated membranes on coxae II are 70-72μ long in the females and 69-70μ in the males.

The typical host of *G. geomydis* (=*G. floridanus*) is *Geomys b. bursarius* from South Dakota. This species was also recorded by Coffman and McDaniel in two other species or subspecies of *Geomys* (see below) as well as in *Thomomys umbrinus agricolaris* from California. We think that the specimens from this last host do not belong to *G. floridanus* but to a new species, *G. thomomys*, that we describe herein. The scanning electron microscope photographs given by the authors of these specimens show clearly the long postscapular shield and in the male the very broad and overlapping foliate setae d5 which are characteristic of that species.


*Listrophorus klebergi* McDaniel, 1965: 706  
*Geomylichus klebergi*, Fain & Hyland, 1974: 56

We were not able to locate the types of *G. klebergi*. There are no representatives of that species in the following Institutions where types were presumably deposited: U. S. National
Geomylichus brevispinosus sp. n.: Fig. 5, holotype female; Fig. 6, allotype male; Geomylichus inaequalis sp. n.:
*Geomylicius thomomys* sp. n.: Fig. 9, holotype female; Fig. 10-11, allotype male laterally (10) and opisthogaster (11).
According to the original description and drawings this species presents the following characteristics: in both sexes setae $sc_e$ are inflated in their apical half and there is no punctate shield in the anterior part of hysteronotum; female has one pair of very long terminal setae ($l_5$) and the postscapular shield is apparently not striated; in the male the setae $l_5$ are only slightly longer than the foliate setae ($d_5$) and the hysteronotal shield is edged at each side by a strongly sclerotized strip. The measurements of these specimens were omitted by McDaniel. The host is *Sigmodon hispidus texianus*, from Texas.

By this combination of characters *G. klebergi* is clearly distinguished from the other known species of *Geomylichus* as well as from the new species described herein.

One of us (F. L.) has collected from the typical host *Sigmodon hispidus* in Venezuela, one larva which probably belongs to *G. klebergi*. In this larva the striated pilicolous membranes on coxae II are very long and their edges are distinctly serrated as in the nymphs of *G. sylvilagus* and in the adults of *G. neacomys* and *G. nectomys*.

### 4. Geomylichus texanus spec. nov.

**FEMALE** (fig. 3)—Idiosoma in the holotype 530μ long and 129μ wide in lateral view. Prescapular and postscapular shields 135μ and 105μ long respectively (in midline), the latter being completely striated, with 29-34 striations along a line joining the setae $sc_i$ and $d_l$. Striated membranes of coxae II 55μ long. Hysterosoma soft, without punctate shield, and with 18 striations in the midline. All setae of posterior extremity very thin, not longer than 30μ. The $sc_e$ setae are curved and 30μ long and 5μ wide, with pointed apex. The $sc_i$ and $h$ setae are very thin and 35μ and 40μ long respectively. Tarsi III and IV 30μ long, with setae not longer than 40μ long. In specimens from *Dipodomys merriami* from Van Horn, Texas, the postscapular shield is shorter (123μ), the striations of postscapular shield are more numerous (36-38) and there are 30-32 cuticular striations on the hysteronotum. Specimens from this host but from Nevada are intermediate between those from the typical host and the latter.

**MALE** (fig. 4)—Idiosoma in the allotype 525μ long and 123μ wide in lateral view. Prescapular and postscapular shields 129μ and 100μ long respectively (in midline), the latter being completely striated and bearing 23 striations along a line joining $sc_i$ and $d_l$ setae. Striated membranes of coxae II 54μ long. Posterior region of hysteronotum with a punctate shield beginning at 15μ behind the $d_2$ setae, and not edged laterally by sclerotized strips. The $l_5$ is 125μ long, its basal inflated part is 75μ long.

**HOST AND LOCALITY** — (1) *Dipodomys ordii*, Winkler Co. 10 m. E. Kermit, Texas. 20 June 1976 (Jow 9792) (holotype and 1 paratype female, allotype and one paratype male, three paratype nymphs. (Coll. J. Whitaker). From the same host but from Santa Fe, New Mexico, n° 1320 (1 male of the Radford collection and labelled "Listrophorus dipodomius" Radford. Coll. H. B. Morlan n° 274). (2) *Dipodomys merriami*, Culberson Co. 8 m. N. Van Horn, Texas. 19 June 1976 (Jow 9782 and 9779) 4 females, 3 males, 1 nymphs, all paratypes (Coll. J. Whitaker); other specimens (2 females, 1 male and 1 nymph, paratypes) were found on the same host from Ash Meadow, Nevada (4 March 1891) (Coll. F. Lukoschus). (3) *Perognathus penicillatus*, Arizona. Animal in Leiden Museum. 1 male and 1 female paratypes (Coll. F. Lukoschus).


### 5. Geomylichus brevispinosus spec. nov.

**FEMALE** (fig. 5)—Idiosoma in holotype 510μ long and 138μ wide (in lateral view). Prescapular and postscapular shields 116μ and 105μ long respectively (in midline), the latter striated
*Geomyl churches* nectomys sp.n.: Fig. 12-13, holotype female; Fig. 14-15, allotype male.
only in the anterior half of its median third. The \( se \) seta is 16\( \mu \) long and 4\( \mu \) wide. The \( sc \), \( d \) and \( h \) setae are short (less than 20\( \mu \)). Hysteronomous without shield but with a few irregular and incomplete superficial striations. Striated pilicolous membranes on coxae II narrow, 30-35\( \mu \) long. The \( l \) and \( d \) setae 240\( \mu \) long, the \( l \) very thin, about 25\( \mu \) long; other perianal setae very short and thin. Legs rather thin. Tarsi III-IV 25\( \mu \) long and 10-12\( \mu \) wide, with a preapical seta not longer than 20\( \mu \).

**MALE** (fig. 6)—Idiosoma 509\( \mu \) long 120\( \mu \) wide in ventral view. Prescapular and postscapular shields 100\( \mu \) and 90\( \mu \) long respectively (in midline), the latter completely devoid of striations. Seta \( se \) is 13\( \mu \) long and 3-4\( \mu \) wide. Hysteronomous with a posterior shield reinforced laterally by two longitudinal sclerotized strips. This shield begins 12\( \mu \) behind the \( d \) setae, it bears in its posterior part a few very indistinct and incomplete striations. Striated membranes on coxae II 25\( \mu \) long. Penis 36\( \mu \) long. Setae \( d \) foliate, 57\( \mu \) long and 12\( \mu \) wide. Setae \( l \) and \( 5 \) approximately 200\( \mu \) long, with a basal part, 75\( \mu \) long, distinctly enlarged.


6. *Geomylichus inaequalis* spec. nov.

**FEMALE** (fig. 7)—Idiosoma 600\( \mu \) long and 135\( \mu \) wide (in lateral view). Prescapular and postscapular shields 142\( \mu \) and 135\( \mu \) long respectively (in midline), the latter completely devoid of striations. Seta \( se \) is 27\( \mu \) long and 6\( \mu \) wide (in basal third). Hysteronomous striations poorly developed. Striated pilicolous membranes on coxae II wider and longer (60\( \mu \) long) than in *G. brevispinosus*. The \( l \) and \( d \) setae are 300\( \mu \) long, \( l \) and \( d \) setae very thin and 25\( \mu \) long, other perianal setae very short and thin. Tarsi III-IV 30\( \mu \) long, bearing a subapical seta 60\( \mu \) long.

**MALE** (fig. 8)—Idiosoma 625\( \mu \) long and 143\( \mu \) wide. Prescapular and postscapular shields 134\( \mu \) and 120\( \mu \) long respectively (in midline), the latter with numerous transverse striations, which are better marked in the anterior part of the shield. Striated membranes of coxae II 50\( \mu \) long. Seta \( se \) is 30\( \mu \) x 6\( \mu \). Hysteronomous with one posterior distinctly striated shield, which is edged by two longitudinal sclerotized strips. Penis 45\( \mu \) long. Setae \( d \) and \( 5 \) 75\( \mu \) long with a foliate internal triangular lobe 20\( \mu \) wide. The setae \( l \) and \( 5 \) are 300\( \mu \) long, their basal part, 120\( \mu \) long, inflated.


7. *Geomylichus thomomys* spec. nov.

**FEMALE** (fig. 9)—Holotype 570\( \mu \) long and 140\( \mu \) wide (laterally). Prescapular and postscapular shields 105\( \mu \) and 126\( \mu \) long respectively (in midline), the latter with about 25 striations along a line joining the \( d \) and \( sc \) setae. Hysteronomous devoid of a shield but with approximately 50 narrow striations on the midline. Opisthogaster striated transversely. In all the other species of the genus the opisthogaster is striated longitudinally. The \( sc \) seta is 25-27\( \mu \) long and 4.5\( \mu \) wide in basal third. Striated membranes on coxae II well developed and 75\( \mu \) long. Setae \( sc \), \( d \), \( l \), \( d \) and \( h \) 35-40\( \mu \) long. Setae \( l \) and \( 5 \) are 60\( \mu \) and 270\( \mu \) long respectively. Tarsi III-IV 30\( \mu \) long, with a fine and long (60\( \mu \)) subapical seta, and a large sucker.
*Geomylchus neacomys* sp. n.: Fig. 16-17. allotype male; Fig. 18-19. holotype female.
MALE (fig. 10-11)—Allotype, 486 μ long and 120 μ wide (in ventral view). Prescapular and postscapular shields 90 μ and 102 μ long respectively, the latter with 18 striations along a line joining \( d \) and \( sc \). Setae \( sc e \) 21 μ long and 4 μ wide. Striated membranes on coxae II 69 μ long. Hysteronotum with a posteriorly partly striated shield which begins at 39 μ behind the \( d \) setae. Penis 36 μ long. Foliate setae \( d5 \) and \( se \) 21 μ long and 4 μ wide. Striated membranes on coxae II 69 μ long. Hysteronotum with a posterior partly striated shield which begins at 39 μ behind the \( d \) setae. Penis 36 μ long. Foliate setae \( d5 \) are 39 μ long and with an internal triangular membrane 25 μ wide. Seta 15 is 300 μ long. Tarsi III shorter (30 μ) than tarsi IV (41 μ), both bearing a very large sucker, tarsi III bear a subapical thin seta 45-50 μ long.


8. Geomylichus nectomys spec. nov.

FEMALE (fig. 12-13)—Idiosoma in holotype 660 μ long and 150 μ wide (in ventral view). Prescapular and postscapular shields partly fused, 135 μ and 155 μ long respectively (in midline), the latter with very numerous and poorly distinct striations (approxomately 50-60). Hysteronotum without shield, bearing irregular striations. Striated pilicolous membranes on coxa I and II with serrated edges and 129 μ and 110 μ long respectively. Posterior extremity with two pairs of strong and subequal setae (\( I5 = 200 μ \) and \( I4 = 170 μ \)). Setae \( sc e \) 15 μ long and 6 μ wide.

MALE (fig. 14-15)—Idiosoma in allotype 579 μ long and 135 μ wide in ventral view. Prescapular and postscapular shields partly fused and 120 μ and 155 μ long respectively (in midline); the latter with numerous striations as in the female. Posterior half of hysteronotum with punctate shield with anterior margin deeply incised. Striated membranes on coxae I and II with serrated edges and 129 μ and 108 μ long respectively. Penis 40 μ long, flanked with two sclerotized longitudinal parallel bands. Setae \( sc e \) 12 μ long and 5-6 μ wide. The \( d5 \) are 60 μ long with a very narrow membrane on inner edge. The \( I4 \) are 70 μ long. Setae \( se \) 26 μ long and 7 μ wide.


9. Geomylichus neacomys spec. n

FEMALE (fig. 18-19)—Idiosoma in holotype 615 μ long and 165 μ wide (in ventral view). Prescapular and postscapular shields 125 μ and 152 μ long respectively (in midline), the latter with 50-60 very fine transverse striations along a line joining \( sc i \) and \( dl \) setae. Hysteronotum with 14 transverse striations and devoid of a shield. Coxal membranes I and II with serrated edges, the membranes of coxae II are 105-110 μ long. Posterior extremity with one pair (\( I5 \)) of long and strong setae 300 μ long. The \( I4 \) are 70 μ long. Setae \( sc e \) 26 μ long and 7 μ wide.

MALE (fig. 16-17)—Idiosoma in allotype 549 μ long and 164 μ wide. Prescapular and postscapular shields 129 μ and 152 μ long respectively (in midline), the latter with 50-55 striations along a line joining \( sc i \) and \( dl \) setae. Coxal membranes I-II with serrated edges. The membranes of coxae II are 105 μ long. Opisthosoma 120 μ long and 90 μ wide at its base. Setae \( sc e \) 26 μ long and 5.5 μ wide. Genital sclerite 45 μ long flanked with two parallel longitudinal sclerite. The \( I5 \) are very progressively attenuated apically and 300 μ long.

### Hosts of Geomylichus Species

(N.B. * = type host of the parasite; (?) specimens from this host have not been seen by the authors)

<table>
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<th>Order, superfamily, family and subfamily of host</th>
<th>Parasitic mite</th>
<th>Locality</th>
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<td>G. postscutatus Fain, 1976</td>
<td>Nebraska</td>
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<td>* Dipodomys spectabilis Merriam</td>
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<td>Dipodomys merriami Means</td>
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<td>G. floridanus (Radford, 1949)</td>
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<td>Thomomys sp.</td>
<td></td>
<td>G. thomomys sp. n.</td>
<td>Albany, California</td>
</tr>
<tr>
<td>? Thomomys unbrimus Richardson</td>
<td></td>
<td>G. thomomys sp. n.</td>
<td>Arizona</td>
</tr>
<tr>
<td>Grinnel</td>
<td></td>
<td>G. thomomys sp. n.</td>
<td>California</td>
</tr>
<tr>
<td>?* Sigmodon hispidus texianus Audubon &amp; Bachman</td>
<td></td>
<td>G. kleberget McDaniel, 1965</td>
<td>Kingsville, Texas</td>
</tr>
<tr>
<td>* Nectomys sp.</td>
<td></td>
<td>G. neacomys sp. n.</td>
<td>Palmar Sur, Costa Rica</td>
</tr>
<tr>
<td>* Neacomys temeipes Thomas</td>
<td></td>
<td>G. neacomys sp. n.</td>
<td>Antioquia, Colombia</td>
</tr>
<tr>
<td>* Teanopus phenax Merriam</td>
<td></td>
<td>G. mexicanus Fain, 1976</td>
<td>Camoa, Rio Mayo Mexico</td>
</tr>
<tr>
<td>* Sylvilagus floridanus yucatanensis (Miller)</td>
<td></td>
<td>G. sylvilagus Fain, 1973</td>
<td>Yucatan, Mexico</td>
</tr>
</tbody>
</table>
The twelve species known so far in the genus *Geomylichus* are endemic for the New World. Amongst them, one was found on a rabbit (order Lagomorpha), all the others were collected on rodents (order Rodentia). It is possible that the parasitism of the rabbit was accidental and that the true host of that species was also a rodent.

Amongst the species from Rodentia 7 live on Geomyoidea (5 in Heteromyidae and 2 in Geomyidae) and 4 on Muroidea, only Cricetidae, Hesperomyinae.

The specificity at the family level is strict, each species parasitizing only one family of rodents. The specificity is also well marked at the genus level: the 4 species living on Cricetidae, 3 species from Heteromyidae and 1 species from Geomyidae have been found on only one genus of host. Only 3 species (2 from Heteromyidae and 1 from Geomyidae) have been found on 2 different host-genera. One may consider therefore that the specificity of the species is well marked.

Fain (1972) assumed that in the Listrophoroidea the most primitive species are those with the most fully developed body shields. If we accept this view the 2 most primitive species in *Geomylichus* are *G. floridanus*, from Geomyidae and *G. postscutatus* from Heteromyidae.

The genus *Geomylichus* is more primitive than the New World genus *Prolistrophorus* and the cosmopolitan genus *Listrophorus*, both parasitic on various rodents in the New World, mainly Cricetidae (Cricetinae) and Microtidae.

**REFERENCES**


