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## NEW SPECIES AND RECORDS OF NEOTROPICAL TERMITOPHILOUS STAPHYLINIDAE I. SUBTRIBE TIMEPARTHENINA

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### ABSTRACT

*Additional species, records, and redescrptions of termitophilous Staphylinidae of the subtribe Timeparthenina are presented. Two new species, Timeparthenus silvestrii and T. seeversi are described from material collected in Brazil from the nests of Armitermes festivellus Silvestri and Procornitermes striatus (Hagen). New host and locality records are given for Timeparthenus oglobini. Silvestri and Termitozophilus laetus Silvestri. The monotypic genus Autuoria Silvestri, type species elegantulum Silvestri, is placed in synonymy with Timeparthenus Silvestri, type species regius Silvestri. The species Timeparthenus oglobini and T. elegantulum are redescrbed.*

*A key is presented to distinguish all known genera and species of Timeparthenina.*

During a six month period in 1969 and 1970 I participated in a scientific exchange program conducted by the National Research Council of Canada and the Conselho Nacional de Pesquisas of Brasil. All of the new records and species upon which this study is based were collected by my wife and me during this period.

This paper is the first of a series in which I plan to describe a number of new species and cite locality and host records for neotropical termitophilous Staphylinidae. The classification followed is that of Seevers' (1957) monograph of the termitophilous Staphylinidae of the world. Seevers' paper should be consulted for diagnoses of the generic and suprageneric taxa.

A complete collection (except *Timeparthenus seeversi*) of all species included in this paper has been deposited in the Museu de Zoologia da Universidade de São Paulo, the Canadian National Collection, Ottawa, Ontario, and when the length of the series permits, the Field Museum of Chicago, Illinois.

### **Termitozophilus laetus Silvestri**

*Termitozophilus laetus* Silvestri, 1901: 8; Silvestri, 1903: 193, figs. 252, 255, 256; Bruch, 1931: 388, fig. 2; Seevers, 1957: 66, figs. 14c, d.

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This species was described by Silvestri (1901) from material collected at Tacurupucu, Paraguay and Coxipó, Mato Grosso. Brasil from nests of *Cornitermes similis* (Hagen) (= *C. cumulans* Kollar). Bruch (1931) reported the species from Posadas, Misiones, Argentina from the same host. Subsequently Seevers (1957) reported *T. laetus* from various localities near São Paulo, Brasil, from nests of *Cornitermes cumulans* Kollar, *C. snyderi* Emerson, and *C. bequaerti* Emerson and from Passa Quatro, Minas Gerais, Brasil, from nests of *Cornitermes cumulans* Kollar.

We collected 120 specimens of this species from the following localities:

Brasil: *Distrito Federal*: 2km. W Brasília, 6.XII, and 8.XII.1969, no. 70-114 and no. 70-116, ex nest of *Cornitermes* n. sp. near *villosus* (11); 20 km. E. Brasília, 4.III.1970, 1000 m, no. 70-85 and no. 70-86, ex nest of *Cornitermes* n. sp. near *villosus* (26); Parque Nacional, 26.II and 3.III.1970, 1100 m, no. 70-87, no. 70-92, and no. 70-93, ex nests of *Cornitermes* n. sp. near *villosus* (74). *Pará*: Fazenda Pirelli, Belém, 24.III. & 30.III.1970, no. 70-2 and no. 70-18, ex nests of *Cornitermes incisus* (4). *São Paulo*: Fazenda Campininha, Mogi Guaçu, 31.XII.1969, no. 70-16, ex nests of *Cornitermes cumulans* (5).

The two samples from the Fazenda Pirelli, Belém, Pará represent the first records of this species from the Amazonian region. Also, this is the first record of this species from the termite host *Cornitermes incisus* Emerson. All specimens of this species from the Distrito Federal of Brasil were taken from the nests of a termite identified by R. L. Araújo as probably a new species near *Cornitermes villosus* Emerson.

### **Timeparthenus Silvestri**

*Timeparthenus* Silvestri, 1901: 10; Silvestri, 1903: 196; Fenyés, 1918: 75; Silvestri, 1946: 299; Seevers, 1957: 69 (type species *Timeparthenus regius* Silvestri, by monotypy).

*Autuoria* Silvestri, 1946: 309; Seevers, 1957: 68 (type species *Autuoria elegantulum* Silvestri, by monotypy). *New synonymy*.

Silvestri (1946) described the monotypic genus *Autuoria* to include a new species, *elegantulum* from material collected near São Paulo, Brasil. Subsequently Seevers (1957) redescribed the species and clarified the position of *Autuoria* in the subtribe Timeparthenina. Both Silvestri and Seevers distinguished specimens of the genus from those of *Timeparthenus* primarily on the basis of their having a tarsal formula 4-5-5. However, after closely examining several specimens of *A. elegantulum* from the Seevers and Borgmeier collections of termitophiles, I find that the formula is actually 4-4-5 as in specimens of *Timeparthenus*. Adults of *elegantulum* differ from those of other species of *Timeparthenus* in lacking vertexal setae and in having the antenna somewhat thicker. These differences are not of sufficient magnitude to warrant keeping *A. elegantulum* generically distinct from *Timeparthenus*; therefore I consider *Autuoria* a synonym of the latter genus.

**Timeparthenus oglobini** Silvestri

*Timeparthenus oglobini* Silvestri, 1946: 303, fig. III; Seevers, 1957: 69.

This species was described by Silvestri (1946) from a specimen collected from a nest of *Anoplotermes bequaerti* Snyder & Emerson from Loreto, Misiones, Argentina. The species was unknown to Seevers.

I have a large series of specimens at hand which I have determined as *oglobini*. These specimens closely match Silvestri's description and illustrations and differ only in having the physogastric abdomen dorsally covering both the head and pronotum and the pronotal disc lacking a median lateral seta (see Silvestri, Fig. III, 7).

The following description used in conjunction with Silvestri's illustrations should readily distinguish adults of this species from those of other species of the genus *Timeparthenus*.

Head, pronotum, pterothorax, coxae, femora, and middle of sternites dark brown; antennae, tergites, paratergites, outer part of sternites, tibiae, and tarsi light brown. Abdomen greatly inflated, membranous, dorsally completely covering head and pronotum. Head, excluding eyes, slightly longer than wide (index 25/21); eyes very small and widely separated, length more than half that of temples (index 10/16); vertex with two pairs of setae (location similar to that of *seeversi*, Fig. 2a); maxillary palpus similar to that of *silvestrii* (Fig. 1e); antenna with ten segments, relative lengths of segments one through ten as follows: 14: 10: 7: 6: 5: 7: 7: 8: 17, basal segment of antenna distinctly wider than second segment with outer margin convex, segments four through ten each becoming slightly wider approaching apex, apical segment with one pair of polytrichous sensilla at apex and another pair near middle (both pairs readily visible with 64X dissecting microscope); antennal insertion adjacent to anterior inner margin of eye.

Pronotum with length subequal to greatest width (index 35/36); sides constricted in basal fourth, sinuately widened to apex; apical angles broadly rounded; apex slightly concave; base slightly convex. Pronotal disc with 14 setae arranged as follows: each side of anterior margin with three setae, each side with one seta just behind middle, two pairs of discal setae, and one pair of anterior sublateral setae.

Elytra oriented anteriorly over pronotum due to enlargement of second abdominal segment; each elytron with approximately 14 setae arranged as in Silvestri's figure III, 8 (p. 304). Wings not present.

Abdomen greatly inflated, membranous; membranous areas moderately sparsely but distinctly setaceous; shape very broadly oval dorsally widest at fourth segment; somewhat flattened dorso-ventrally. Second tergite very slightly sclerotized, obscured dorsally by inflation of second segment; tergites three through six broadly H-shaped, each with a row of four setae along anterior margin and a pair of setae near midline of posterior margin;

seventh tergite with a row of four coarse setae along posterior margin and another seta near middle of each side. Inner paratergites of segments three through seven very narrow and lightly sclerotized, each with 2 and occasionally 3 coarse and 1 smaller seta; outer paratergites of same segments small and lightly sclerotized, each with 2 or 3 coarse macrosetae and from 1 to 3 small, fine setae. Sternites three through seven each with a row of four coarse setae along posterior margin and another seta on each side just anterior and laterad of posterior setal row; sternites each with numerous finer setae in posterior half.

Length 2.5-3.1 mm.

We collected 60 specimens of this species from the following localities:

Brasil: *Distrito Federal*: 4 km. W. Brasília, 24.II.1970, 1100 m, no. 70-100, ex nest of *Procornitermes striatus* (4); same data, no. 70-120-F-A (3); same locality and collectors, 13.III.1970, no. 70-126-F-B, ex nest of *Armitermes festivellus* (1); same data, no. 70-45-F-A (16); 15 km N. Brasília, 5.III.1970, 1250 m., no. 70-95-F-B, ex mixed nest of *Armitermes festivellus* and *Procornitermes striatus* (4); 15 km. SW Brasília, 1000 m, 6.III.1970, no. 70-74-F-B, ex mixed nest of *Procornitermes striatus* and *Armitermes festivellus* (31); 20 km, E. Brasília, 1100 m, 4.III.1970, no. 70-83-F, ex nest of *Procornitermes striatus* (1).

*Remarks.* On two occasions, specimens of *T. oglobini* were taken from the same termite nests (70-45, 70-74, and 70-95) as those of the new species *T. silvestrii*. Adults of both species were taken in mixed nests of *Armitermes festivellus* Silvestri and *Procornitermes striatus* (Hagen), but those of *oglobini* taken only in pure nests of both *Armitermes festivellus* and *Procornitermes striatus*. Silvestri recorded the species in Argentina from the nests of *Anoplotermes bequaerti*.

Based on the extreme physogastric development of the abdomen which dorsally completely covers the head and pronotum, adults of *oglobini* are very similar to those of *regius* Silvestri. They differ from those of *regius* in having the third through the sixth abdominal tergites broadly H-shaped rather than transverse or arcuate, in having only 14 or 16 pronotal setae rather than 20, and in having the size smaller. Based on its chaetotaxy, adults of *oglobini* are very similar to those *silvestrii*. They may be easily distinguished by the characters discussed under *silvestrii*.

### **Timeparthenus silvestrii, sp. n.**

(Figs. 1a-e)

Head, pronotum, sternites, coxae, trochanters, and femora dark reddish-brown; antennae, palpi, elytra, tergites, tibiae and tarsi pale brown.

Head with length  $1 \frac{1}{3}$  times greater than width excluding eyes (index 34/26); eyes moderately small and widely separated, length distinctly less than length of temples (index 10/16); vertex with two pairs of setae (Fig. 1a); maxillary palpus (Fig. 1e) with penultimate segment distinctly wider than preceding segment, last

segment conical, much narrower than penultimate segment; antenna (Fig. 1d) with ten segments, relative lengths of segments one through ten as follows: 13: 10: 8: 6: 6: 6: 6: 6: 13, basal segment enlarged with outer margin sinuate, segments three through ten each gradually becoming wider approaching apex, apical segment with one pair of subapical polytrichous sensilla and a second pair near middle (both pairs visible only with 200X compound microscope); antennal insertion adjacent to anterior inner margin of eye.

Pronotum slightly longer than greatest width (index 32/29); sides almost evenly widened from basal angles to anterior fourth then broadly convex to apex; apex broadly concave, base slightly convex. Pronotal disc with setae arranged as follows (Fig. 1a): anterior margin with six setae, each side with two setae, two pairs of discal setae, and one pair of sublateral setae.

Elytra oriented vertically due to enlargement of second abdominal tergite; disc with numerous long setae arranged as in figure 1c. Wings not present.

Abdomen greatly inflated, membranous; membranous areas glabrous; shape broadly elongate-oval dorsally; second segment produced more dorsally than segments three through seven. Tergites two through nine with setae arranged as figure 1a; third through sixth tergites broadly H-shaped. Inner paratergites of segment three through seven with 8 to 10, 7 or 8, 7 or 8, and 6 or 7 setae respectively; outer paratergites of same segments with 10 or 11, 10, 9 or 10, and 9 setae respectively. Sternites three through seven each with one row of four coarse setae arranged across posterior margin; sternites four through seven with an additional coarse seta arranged on each side just anterior and laterad of posterior setal row.

Length 2.4 mm.

*Types.* Holotype with labels as follows: Brazil, 4 km, W. Brasília, D. F., 13.III.1970, 1100 m, JM & BA Campbell/ 70-45-F-A/ ex mixed nest of *Procornitermes striatus* and *Armitermes festivellus*/ Holotype *Timeparthenus silvestrii* J. M. Campbell 1972. The specimen is in the collection of the Museu de Zoologia da Universidade de São Paulo.

Paratypes, four deposited in the Canadian National Collection (CNC No. 12912) and Museu de Zoologia.

Brazil: *Distrito Federal*: Same data as holotype (1); 15 km N. Brasília, 5.III.1970, 1250 m, JM & BA Campbell, 70-95-F-B, ex mixed nest of *Armitermes festivellus* and *Procornitermes striatus* (1); 15 km. S W. Brasília, 6.III.1970, 1000 m, JM & BA Campbell, 70-74-F-B, ex mixed nest of *Armitermes festivellus* and *Procornitermes striatus* (1); Parque Nacional, 9.III.1970, JM & BA Campbell, 70-63-B (1).

*Remarks.* Adults of this species are very similar to those of *T. oglobini* Silvestri. They differ by having the elytra visible dorsally rather than obscured by the second abdominal segment, by having the outer margin of the basal antennal segment expanded and sinuate rather than straight, by having the sixth antennal segment subequal in length to the fifth segment rather than longer, by having the membranous areas of the abdomen glabrous, and by being somewhat smaller in size (length 2.4 mm versus 2.7 mm for adults of *oglobini*.)

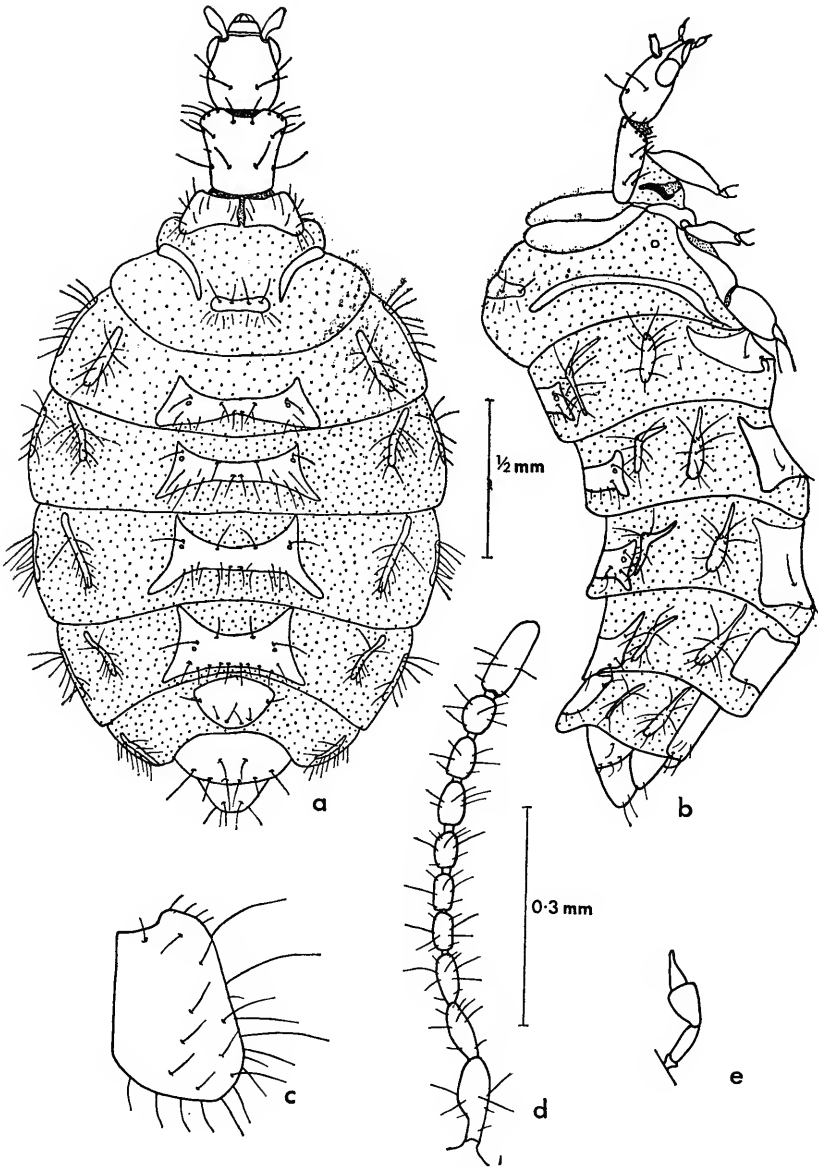


Fig. 1. *Timeparthenus silvestrii*: a, dorsal view; b, lateral view; c, right elytron; d, antenna; e, maxillary palpus

Adults of *silvestrii* can be distinguished from those of *regius* by their H-shaped third through sixth tergites. These tergites are more arcuate in specimens of *regius* (based on Silvestri's illustrations).

***Timeparthenus seeversi*, sp. n.**

(Figs. 2a-d)

All sclerotized areas light to very pale brown. Head, excluding eyes, slightly longer than wide (index 27/24); eyes very small and widely separated, length less than half that of temples (index 7/16); vertex with two pairs of setae (Fig. 2a); maxillary palpus similar to that of *T. silvestrii* (Fig. 1e); antenna (Fig. 2d) with ten segments, relative lengths of segments one through ten as follows: 10: 8: 10: 7: 6: 6: 6: 6: 6: 12, apical segment with one pair of subapical polytrichous sensilla (visible only with 200X compound microscope), median pair of sensilla absent, basal segment only slightly wider than second segment with outer margin slightly curved, segments five through ten becoming very slightly wider approaching apex; antennal insertion adjacent to anterior inner margin of eye.

Pronotum (Fig. 2a) with greatest width distinctly more than length (index 27/21); sides convex, sinuate in basal fourth, broadly convex in anterior fourth; apex broadly and shallowly concave; base slightly convex. Pronotal disc with four setae on anterior margin and two setae on each side.

Elytra inclined vertically as in *T. silvestrii*; disc with numerous long setae arranged as in figure 2c. Wings not present.

Abdomen greatly inflated, most of surface membranous; membranous areas glabrous; narrowly elongate-oval with basal two segments much broader and more elevated than following segments. Second segment without sclerotized plates. Tergites three through nine with setae arranged as in figure 2a; third through sixth tergites transverse. Inner paratergites of segments three through seven with 7, 5, 5 or 6, 5, and 4 or 5 setae respectively; outer paratergites of same segments with 7 or 8, 7, 6, 7 and 7 setae respectively. Third sternite with two large setae on each side; sternites four through seven each with eight coarse setae along posterior margin and an additional row of finer setae along anterior margin.

Length 2.2 mm.

*Types.* Holotype, with labels as follows: Brazil, DF, 1100 m, Parque Nacional, 3.III.1970, JM & BA Campbell/ 70-94-F/ ex mixed nest of unidentified species of *Procornitermes* and *Armitermes*/ Holotype *Timeparthenus seeversi* J. M. Campbell 1972. The specimen is in the collection of the Museu de Zoologia da Universidade de São Paulo.

*Remarks.* Adults of *seeversi* are similar to those of *regius*; but based on Silvestri's (1946: 301) description of *regius*, adults of *seeversi* differ by having the pronotum transverse instead of slightly longer than wide, by having 4 pairs of setae arranged only around the margin instead of 8 pairs arranged on disc and around the margin, and by having the physogastry of the basal two abdominal segments much more developed than on the following segments

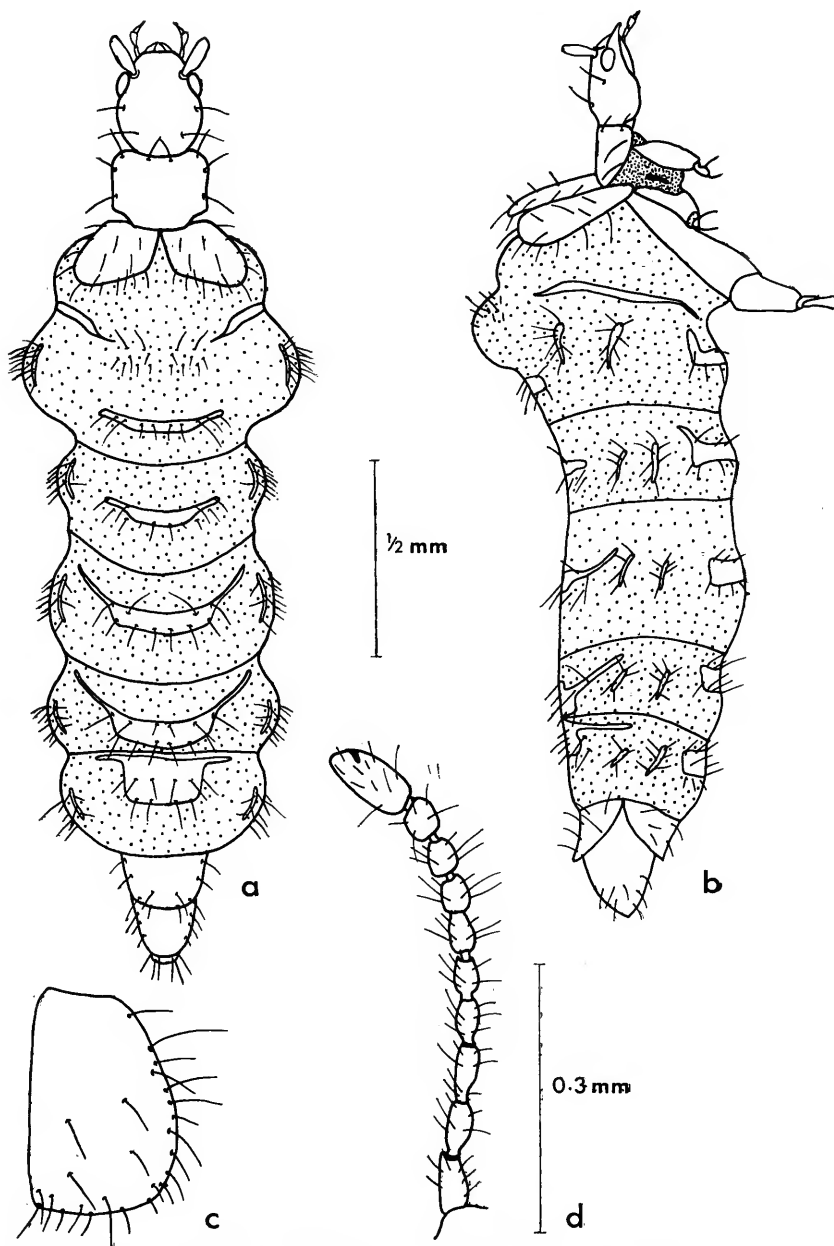


Fig. 2. *Timeparthenus seeversi*: a, dorsal view; b, lateral view; c, right elytron; d, antenna.



as compared with adults of *regius* in which the physogastry is uniform for each segment.

Adults of *seeversi* may be distinguished from those of both *oglobini* and *silvestrii* by the transverse shape of their abdominal tergites, by their lack of a sclerotized second tergite, and by the transverse shape and distinctive chaetotaxy of their pronota.

***Timeparthenus elegantulum* (Silvestri), comb. n.**

*Autuoria elegantulum* Silvestri, 1946: 310, fig. V; Seevers, 1957: 68, fig. 146.

Silvestri's (1946) original description and illustrations of *Autuoria* and its type species *elegantulum* are quite detailed and accurate. Unfortunately, Seevers' redescription of *elegantulum* was apparently based on specimens belonging to some other species. The following brief description of *elegantulum* should readily distinguish adults of this species from those of all other species of *Timeparthenina*.

Head lacking vertexal setae. Pronotum much wider than long (index 50/34); pronotal disc with ten macrosetae arranged as follows: anterior margin with one pair near middle, one seta medially on each side of midline, one pair on disc near anterior angles, and two pairs on sides, one near anterior margin and the other near middle (for illustration see Silvestri, 1946: 311, fig. V, 9). Each elytron with at least twelve large macrosetae. Abdomen with tergites three through six each a row of four coarse setae near anterior margin, a pair of coarse setae on posterior margin near middle and five smaller setae on lateral portions of each side: tergite 7 with a coarse seta on each side of midline near posterior margin, a coarse seta in middle of each side, and a coarse seta near each anterior angle. Inner paratergites of segments three through seven each with 6 or 7, 6, 6, 5 or 6, and 5 setae respectively; outer paratergites of segments three through seven each with 7 or 8, 8, 7, 6 or 7, and 7 or 8 setae respectively. Antenna (for illustration see Silvestri, 1946: 311, fig. V, 4) with basal segment angulate on outer side near apex; segments 3-9 incrassate and pedicellate with length of each (excluding pedicel) subequal or slightly longer than width; the relative lengths of the ten antennal segments are as follows: 21: 9: 9: 8: 8: 11: 11: 12: 10: 19.

Length 2.9 mm.

The specimens upon which this redescription was based were identified by Seevers as *Autuoria elegantulum* Silvestri and they match perfectly (except for the tarsal formula) Silvestri's original description and illustrations. However, Seevers' published redescription of this species must have been based on specimens of some other species and mistakenly called *elegantulum* because none of the characters described by Seevers agrees with either the specimens at hand or with Silvestri's description and illustrations.

Adults of *elegantulum* are particularly similar to those of the new species *seeversi*. Adults of both species have the pronotum transverse rather than elongate and have similar setal arrangements on the abdominal tergites and paratergites. Adults may be dis-

tinguished from those of *seeveri* by their much larger size, by their lack of vertexal setae, by their thicker antennae, and by their much longer basal antennal segment.

KEY TO KNOWN GENERA AND SPECIES OF TIMEPARTHENINA

1. Tarsal formula 5-5-5; antenna with 11 segments ..... 2  
Tarsal formula 4-4-5; antenna with 10 segments ..... 4
2. Elytra glabrous; paratergites greatly reduced and separated by unsclerotized membrane ..... *Termituncula gracilipes* Borgmeier  
Elytra setaceous; paratergites large and, in physogastric individuals, connected by secondarily sclerotized membrane ..... *Termitozophilus* spp. .... 3
3. Head with two setae behind and slightly medial to each eye; inner paratergites of abdomen with no more than four setae on any segment; length less than 2.5 mm if abdomen extended ..... *T. mirandus* Mann  
Head with only one seta medial to each eye; inner paratergites of abdomen with more than four setae on each segment; length greater than 2.5 mm if abdomen extended ..... *T. laetus* Silvestri
4. Antennal insertions adjacent to anterior inner margins of eyes ..... *Timeparthenus* spp. .... 5  
Antennal insertions more approximate, each separated from inner margin of eye by distance equal to diameter of insertion ..... *Ptochellus mimus* Silvestri
5. Vertex with two pairs of setae; basal antennal segment less than twice as long as second segment ..... 6  
Vertex lacking setae; basal antennal segment more than twice as long as second segment ..... *T. elegantulum* (Silvestri)
6. Pronotum with eight pairs of setae arranged both on disc and around anterior and lateral margins pronotum as long as or slightly longer than wide ..... 7  
Pronotum with four pairs of setae arranged on only the anterior and lateral margins; pronotum distinctly wider than long ..... *T. seeveri* Campbell
7. Third through sixth abdominal tergites each transverse or arcuate ..... *T. regius* Silvestri  
Third through sixth abdominal tergites each broadly H-shaped. .... 8
8. Basal antennal segment enlarged, distinctly wider than second segment, with outer margin obtusely sinuate; sixth antennal segment equal in length to fifth segment .....  
Basal antennal segment only slightly wider than second segment, with outer margin straight; sixth antennal segment slightly longer than fifth segment .... *T. oglobini* Silvestri

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#### RESUMO

São apresentados neste trabalho espécies novas, novos dados de distribuição, assim como redescritões de Staphylinidae termitófilos da subtribo Timeparthenina. *Timeparthenus silvestrii* e *T. seEVERSI* são descritas como espécies novas do Brasil, coletadas em ninhos de *Armitermes festivellus* Silvestri e *Procornitermes striatus* (Hagen). Novos dados de localidade e hospedeiro são apresentados para *Timeparthenus oglobini* Silvestri e *Termitozophilus laetes* Silvestri. *Autuoria* Silvestri, espécie-tipo *elegantulum* Silvestri, gênero monotípico, é sinonimizado com *Timeparthenus* Silvestri, espécie tipo *regius* Silvestri. *Timeparthenus oglobini* e *T. elegantulum* são redescritas. O trabalho inclui uma chave para a distinção de todos os gêneros e espécies da subtribo.

#### REFERENCES

BRUCH, CARLOS

1931. Algunos Mirmecofilos y Termitofilos nuevos y poco conocidos de la Argentina. *Rev. Ent.* 1: 386-395, 1 pl.

FENYES, A.

- 1918-1921 (1918). Coleoptera. Family Staphylinidae, subfamily Aleocharinae. *Genera Insectorum 173A-C*: 1-453, 7 pls.

SEEVERS, C. H.

1957. A monograph on the termitophilous Staphylinidae (Coleoptera). *Fieldiana: Zoology* 40: 1-334.

SILVESTRI, F.

1901. Descrizione di nuovi Termitofili e relazioni di essi con gli positi: III, IV, V, VI. *Boll. Mus. Zool. Torino* 16 (398): 1-24.
1903. Contribuzione alla conoscenza dei Termitidi e Termitofili dell' America meridionale. *Redia* 1: 1-234, 6 pls.
1946. Descrizioni e notizie de Staphylinidae termitofili sud-americana. *Comm. Pont. Acad. Sci.* 10: 299-334, 13 figs.

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