

# NOTES ON AMERICAN PHYMATIDAE, WITH DESCRIPTION OF A NEW SPECIES OF *PHYMATA* LATREILLE.

NICHOLAS A. KORMILEV\*

## ABSTRACT

One new species of *Phymata* Latreille collected in Mexico is described. Key is given to species of *Macrocephalus* Swederus. *Macrocephalus vesiculosus* Handlirsch, 1897, is transferred to *Lophoscutus* Kormilev.

Key words: Taxonomy, Hemiptera, Phymatidae, *Phymata*, New species.

## RESUMEN

Se describe una especie nueva de *Phymata* Latreille recolectada en México (Chiapas). Se incluye una clave para separar las especies conocidas de *Macrocephalus* Swederus. *Macrocephalus vesiculosus* Handlirsch, 1897, es transferido a *Lophoscutus* Kormilev.

Palabras clave: Taxonomía, Hemiptera, Phymatidae, *Phymata*, Especie Nueva.

## KEY TO THE GENERA OF PHYMATINAE

*Phymata* was described in 1802 by Latreille and until 1876 was a single genus in the Phymatinae. In 1876 Stål established the second genus *Anthylla*, but Handlirsch put it into synonymy of *Phymata* in 1897. In 1951 I reinstated *Anthylla* as a genus and later described three new genera, which may be separated by the following key:

1. Middle and hind tibiae with the upper side carinate laterally and sulcate medially ..... 2
  - Middle and hind tibiae convex on upper side, neither carinate nor sulcate ..... 3
2. Fore femora subtriangular, more or less swollen ..... *Phymata* Latreille, 1802
  - Fore femora elongately ovate, constricted in the middle, and with a ringshaped carina on exterior side ..... *Paraphymata* Kormilev, 1962
3. First labial segment (visible) twice as long as the second; sutures between sterna II to V indistinct ..... *Kelainocoris* Kormilev, 1963
  - First labial segment at most as long as the second; sutures between sterna II and III at most indistinct 4
4. Fore femora subtriangular, swollen and scabrous; suture between sterna II and III clearly visible ..... *Anthylla* Stål, 1876
  - Fore femora elongately ovate, completely flat and glossy exteriorly, as if polished; suture between sterna II and III indistinct ..... *Neonanthylla* Kormilev, 1951

\* 5924 Gulfport Blvd. So., St. Petersburg, Florida, 33707, U.S.A.

## CLAVE PARA LA DETERMINACIÓN DE LOS GÉNEROS DE PHYMATINAE

1. Tibias medianas y posteriores con la superficie dorsal carenada lateralmente y surcada en el medio ..... 2  
 — Tibias medianas y posteriores convexas en la superficie dorsal, sin carenas y surco ..... 3
2. Femorales anteriores subtriangulados, más o menos hinchados ..... *Phymata* Latreille  
 — Femorales anteriores elongado-ovalados, constreñidos en el medio y con una carena circular externa ..... *Paraphymata* Kormilev, 1962
3. El primer segmento labial (visible) dos veces más largo que el segundo; suturas entre sterna II y V indistintas ..... *Kelainocoris* Kormilev, 1963  
 — El primer segmento labial subigual al segundo de largo; suturas entre sterna II y III indistintas solamente ..... 4
4. Femorales anteriores subtriangulares, hinchados y escabrosos; suturas entre sterna II y III visibles claramente ..... *Anthylla* Stål, 1876  
 — Femorales anteriores elongado-ovalados, planos completamente y brillantes exteriormente, como pulidos; suturas entre sterna II y III indistintas ..... *Neonanthylla* Kormilev, 1951

## KEY TO THE GENERA OF THE AMERICAN MACROCEPHALINAE

*Macrocephalus* Swederus is the oldest genus of the Phymatidae and for 152 years was the only genus in the American Macrocephalinae. In 1939 Barber described the second genus *Extraneza*, which has a curious, archaic character of fore tarsi with three segments; other Macrocephalinae have no fore tarsi. In 1951 I split *Macrocephalus* into two genera: *Macrocephalus* s. str. and *Lophoscutus*.

1. Fore tibiae with tarsi of three segments; inner border of fore tibiae and corresponding border of fore femur without minute teeth ..... *Extraneza* Barber, 1939  
 — Fore tibiae without tarsi; inner border of fore tibiae and corresponding border of fore femur with minute teeth ..... 2
2. Scutellum with a simple, straight carina, reaching hind border of scutellum; parameres simple in a shape of a hook ..... *Lophoscutus* Kormilev, 1951  
 — Scutellum with median carina flattened and enlarged at basal half in the form of a lance or trident, enlargement not reaching hind border of scutellum; parameres with a subapical branch ..... *Macrocephalus* Swederus, 1787

## CLAVE PARA LA DETERMINACIÓN DE LOS GÉNEROS AMERICANOS DE MACROCEPHALINAE

1. Tibias anteriores con los tarsos de tres segmentos; el borde interior de las tibias anteriores y el correspondiente borde de los fémures anteriores sin los dientes ..... *Extraneza* Barber, 1939  
 — Tibias anteriores sin los tarsos; el borde interior de las tibias anteriores y el correspondiente borde de los fémures anteriores con los dientes diminutos ..... 2
2. Escudete con la carena mediana simple, alcanzando al borde posterior del escudete; los parámetros simples en forma de gancho ..... *Lophoscutus* Kormilev, 1951  
 — Escudete con una carena mediana emplastada y ensanchada sobre la mitad anterior del escudete en la forma de una lanceta o tridente; el ensanche no alcanzado al borde posterior del escudete ..... *Macrocephalus* Swederus, 1787.

**PHYMATA LATREILLE**

*Phymata brailovskyi* Kormilev, sp. nov.

(Fig. 1)

*Male*. Elongate ovate; head, fore lobe of *pronotum* entirely, hind lobe partially,

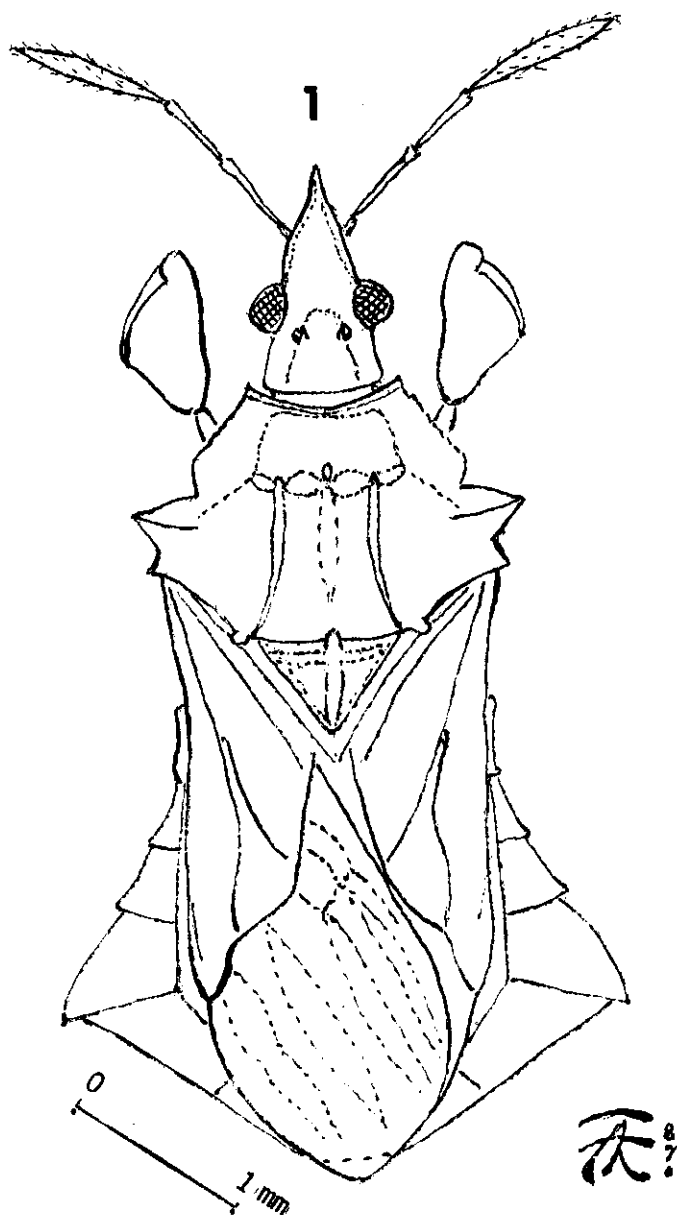


Fig. 1. *Phymata brailovskyi*, Kormilev, sp. nov, dorsal aspect.

and *connexivum* partially, with very fine, white granulation; *scutellum* and *corium* with tougher granulation; hind lobe of pronotum roughly punctured medially. *Head* longer on median line than its width across eyes, 30:20. *Juga* fused together into triangular plate, narrowed and blunt anteriorly and slightly depressed medially; eyes placed behind middle of head; *ocelli* placed between posterior halves of eyes, less distant between themselves than from hind border of head. *Antennae* thin,  $2\frac{1}{2} \times$  as long as width of head across eyes, 49:20; relative lengths of antennal segments I to IV are: 5:12:10:22. Relative lengths of *labial* segments I to III are: 8:5:5. *Pronotum* hexagonal, shorter on median line than its width across lateral angles, 30:52; Width between lateral angles is greater than between posterolateral angles, 52:47. Anterior border sinuate and granulate; between anterior angles extends a curved carina; anterior angles rectangular and somewhat raised; lateral borders of fore lobe rounded and crenulate; lateral angles acute and obliquely raised; notch between lateral and posterolateral angles angular; posterolateral borders truncate. Fore lobe flat; hind lobe deeply depressed medially, less so sublaterally; *carinae* parallel at basal half, then curved and diverging, reaching hind border of *pronotum* laterad of *scutellum*. *Scutellum* small, shorter than its basal width, 12.5:18, with cross shaped median ridge. *Hemelytra* slightly produced beyond tip of abdomen; *corium* reaching  $\frac{1}{2}$  of *connexivum* IV. *Membranae* with two closed basal cells, formed by Cu, PCu and Al, then with dense longitudinal veins, some of them branching before tip. *Abdomen* shorter than its maximum width across lateral angles, 65:75. Anterolateral borders sinuate from II to IV, convex on V (maximum width); lateral angles acute; posterior exterior angles of *connexiva* protruding on II to V, not protruding on VI. *Pleura*. Fore border of *propleuron* serrate; meso and *metapleuron* finely crenulate on borders. *Legs*. Fore *femora* longer than their maximum width, 21:13. *Color*: head orange with brown lateral borders and postocular portion; *pronotum*: fore lobe orange medially, pale yellow laterally, with 2 (1 + 1) blackish spots posterolaterally; hind lobe whitish anterolaterally, brown elsewhere, lateral angles blackish; *scutellum* light brown, with pale yellow median ridge; *corium* orange on basal half, pale yellow before tip, brown on tip; membrane brown; abdomen pale yellow with brown transverse band across segments V and VI. Ventral side of the body and legs pale yellow to orange, brown at lateral angles; *propleura* brown anteroinferiorly and at lateral angles.

*Measurements*: total length 5.48 mm; width of *pronotum* 2.08 mm; width of abdomen 3.00 mm.

**Holotype**: ♂, MÉXICO; CHIAPAS; Boca Lacantun, Usumacinta; 25.V.1984; A. Ibarra coll.; deposited at the Departamento de Zoología, UNAM, México.

It is a pleasure to dedicate this interesting species to Dr. Harry Brailovsky by whose kind offices I got an opportunity to study this specimen.

*Phymata brailovskyi*, sp. nov., runs in my key to *Phymata* species (1962:308) to *Phymata oxycephala* Dudich, 1922, from Perú, but may be separated from it by its pronotum being deeply notched laterally and by the acute lateral angles of the pronotum and abdomen.

#### KEY TO *MACROCEPHALUS* SPECIES

During the last 35 years many species assigned to *Macrocephalus* have been transferred to *Lophoscutus*; what is left in *Macrocephalus* may be separated by the following key.

|                                                                                                                                                    |    |
|----------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 1. Lateral angles of <i>pronotum</i> not or barely incised .....                                                                                   | 2  |
| — Lateral angles of <i>pronotum</i> distinctly incised .....                                                                                       | 5  |
| 2. Lateral angles of <i>pronotum</i> not incised .....                                                                                             | 3  |
| — Lateral angles of <i>pronotum</i> barely incised .....                                                                                           | 4  |
| 3. Larger, ♂ 8.00 mm, scutellar spot longer, reaching hind border of <i>connexivum</i> V .....                                                     |    |
| ..... <i>M. aspersus</i> Champion, 1898, (Nicaragua)                                                                                               |    |
| — Smaller, ♂ less than 7.00 mm, scutellar spot short, reaching only to hind border of <i>connexivum</i> III .....                                  |    |
| ..... <i>M. dissolutus</i> Kormilev, 1984, (Patria ignota)                                                                                         |    |
| 4. Large species, over 10.00 mm; scutellar spot reaching middle of <i>connexivum</i> VI .....                                                      |    |
| ..... <i>M. dollingi</i> Kormilev, 1984, (Costa Rica)                                                                                              |    |
| — Smaller species, less than 7.00 mm; scutellar spot reaching only hind border of <i>connexivum</i> IV .....                                       |    |
| ..... <i>M. panamensis</i> Champion, 1898, (Panama)                                                                                                |    |
| 5. Scutellar carina linear without enlargement at base ... <i>M. arizonicus</i> Cockerell, 1900, (U.S.A.)                                          |    |
| — Scutellar carina enlarged at base .....                                                                                                          | 6  |
| 6. Scutellar spot short, reaching hind border of <i>connexivum</i> IV .....                                                                        | 7  |
| — Scutellar spot longer, reaching hind border of <i>connexivum</i> V or VI .....                                                                   | 9  |
| 7. Scutellar spot almost triangular with hind border almost transverse, or rhomboid with hind border angular and lateral border also angular ..... |    |
| ..... <i>M. costaricensis</i> Kormilev, 1962, (Costa Rica)                                                                                         |    |
| — Scutellar spot with lateral borders rounded .....                                                                                                | 8  |
| 8. Antennal segment IV short, barely longer than II + III together (♂-6:8:15) .....                                                                |    |
| ..... <i>M. crassus</i> Handlirsch, 1897, (Brasil)                                                                                                 |    |
| — Antennal segment IV longer than II + III together (♂-7:7:22, ♀-7:8:18) .....                                                                     |    |
| ..... <i>M. notatus</i> Westwood, 1843, (Colombia)                                                                                                 |    |
| 9. Scutellar spot long, reaching hind border of <i>connexivum</i> VI or VII .....                                                                  | 10 |
| — Scutellar spot shorter, reaching only hind border of <i>connexivum</i> V .....                                                                   | 13 |
| 10. Scutellar spot long and narrow, its maximum width about 1/3 of scutellar width at that level ...                                               |    |
| ..... <i>M. manicatus</i> (F.), 1803, (U.S.A.)                                                                                                     |    |
| — Scutellar spot always wider .....                                                                                                                | 11 |
| 11. Antennal segment IV only slightly longer than II + III together (♀-7:10:19) .....                                                              |    |
| ..... <i>M. vorax</i> Hussey, 1953, (Honduras)                                                                                                     |    |
| — Antennal segment IV at least $1\frac{1}{2} \times$ as long as II + III together .....                                                            | 12 |
| 12. Antennal segment IV $1\frac{1}{2} \times$ as long as II + III together (♂-6:7:20, ♀-6:8:19) .....                                              |    |
| ..... <i>M. incisus</i> Stål, 1862, (Mexico)                                                                                                       |    |
| — Antennal segment IV longer, twice as long as II + III together <i>M. peruvianus</i> Dudich, 1922, (Peru)                                         |    |
| 13. Pronotal carinae with tubercle on basal half .....                                                                                             | 14 |
| — Pronotal carinae without tubercle .....                                                                                                          | 16 |
| 14. Larger, ♀-8.4 mm., scutellar spot lance-shaped .....                                                                                           | 15 |
| — Smaller, ♀-7.4 mm., scutellar spot arrow-shaped .....                                                                                            |    |
| ..... <i>M. barberi</i> Evans, 1931, (U.S.A.)                                                                                                      |    |
| 15. Antennal segment IV twice as long as II + III together .....                                                                                   |    |
| ..... <i>M. reuteri</i> Handlirsch, 1897, (Venezuela)                                                                                              |    |
| — Antennal segment IV about $1\frac{1}{2} \times$ as long as II + III together .....                                                               |    |
| ..... <i>M. argentinus</i> Kormilev, 1950, (Argentina)                                                                                             |    |
| 16. Scutellar spot arrow-shaped .....                                                                                                              |    |
| ..... <i>M. dorannae</i> Evans, 1931, (U.S.A.)                                                                                                     |    |
| — Scutellar spot lance-shaped .....                                                                                                                | 17 |
| 17. <i>Antennae</i> relatively longer, about $1.95 \times$ as long as width of head across eyes; <i>connexivum</i> with red tinge .....            |    |
| ..... <i>M. cimicoides</i> Swederus, 1787, (U.S.A.)                                                                                                |    |
| — <i>Antennae</i> shorter, about $1.7 \times$ as long as width of head across eyes .....                                                           |    |
| ..... <i>M. tuberosus</i> Westwood, 1843, (Brazil)                                                                                                 |    |

CLAVE PARA LA SEPARACIÓN DE LAS ESPECIES DE *MACROCEPHALUS* SWEDERUS.

|                                                               |   |
|---------------------------------------------------------------|---|
| 1. Ángulos laterales del pronoto, no o apenas escotados ..... | 2 |
| — Ángulos laterales del pronoto distintamente escotados ..... | 5 |
| 2. Ángulos laterales del pronoto no escotados .....           | 3 |

- Ángulos laterales del pronoto apenas escotados ..... 4
- 3. Más grande,  $\sigma$ -8.00 mm. La mancha escutelar más larga alcanzando el borde posterior del conexivo V ..... *M. aspersus* Champion, 1898, (Nicaragua)
- Más pequeño,  $\sigma$ -menos de 7.00 mm; la mancha escutelar corta alcanzando el borde posterior del conexivo III solamente ..... *M. dissolutus* Kormilev, 1984, (*Patria ignota*)
- 4. Especie grande, más de 10.00 mm.; la mancha escutelar alcanzando el medio del conexivo VI ..... *M. dollingi* Kormilev, 1984, (Costa Rica)
- Especie más pequeña, menos de 7.00 mm.; la mancha escutelar alcanzando el borde posterior del conexivo IV solamente ..... *M. panamensis* Champion, 1898, (Panamá)
- 5. Carena escutelar linear, sin ensanchadura sobre la mitad basal del escudete ..... *M. arizonicus* Cockerell, 1900, (E.U.A.)
- Carena escutelar siempre ensanchada a la mitad basal del escudete ..... 6
- 6. La mancha escutelar corta, alcanzando hasta el borde posterior del conexivo IV ..... 7
- La mancha escutelar más larga, alcanzando hasta el borde posterior del conexivo V o VI ..... 9
- 7. La mancha escutelar casi triangulada, con el borde posterior casi transverso o romboide, con el borde posterior angulado y el borde lateral también angulado ..... *M. costaricensis* Kormilev, 1962, (Costa Rica)
- La mancha escutelar con los bordes laterales redondeados ..... 8
- 8. Segmento antenal IV casi más largo que II+III juntos ( $\sigma$ -6:8:15) ..... *M. crassus* Handlirsch, 1897, (Brasil)
- Segmento antenal IV distantemente más largo que II+III juntos ( $\sigma$ -7:7:22,  $\sigma$ -7:8:18) ..... *M. notatus* Westwood, 1843, (Colombia)
- 9. La mancha escutelar larga, alcanzando el borde posterior del conexivo VI o VII ..... 10
- La mancha escutelar más corta, alcanzando el borde posterior del conexivo V solamente ..... 13
- 10. La mancha escutelar larga y angosta con latitud máxima alrededor de 1/3 de la latitud del escudete al mismo nivel ..... *M. manicatus* (F.), 1803, (E.U.A.)
- La mancha escutelar siempre más ancha ..... 11
- 11. Segmento antenal IV un poco más largo que II+III juntos ( $\sigma$ -7:10:19) ..... *M. vorax* Hussey, 1953, (Honduras)
- Segmento antenal IV por lo menos  $1\frac{1}{2}$  x más largo que II+III juntos ..... 12
- 12. Segmento antenal IV es  $1\frac{1}{2}$  x más largo que II+III juntos ( $\sigma$ -6:7:20,  $\sigma$ -6:8:19) ..... *M. incisus* Stål, 1862, México
- Segmento antenal IV es dos veces más largo que II+III juntos ..... *M. peruvianus* Dudich, 1922, (Perú)
- 13. Carenas del pronoto con el tubérculo sobre la mitad basal ..... 14
- Carenas del pronoto sin tubérculos ..... 16
- 14. Más grande, 8.4 mm.; la mancha escutelar en la forma de lanceta ..... 15
- Más pequeña, 7.4 mm.; la mancha escutelar en la forma de flecha ..... *M. barberi* Evans, 1931, (E.U.A.)
- 15. Segmento antenal IV dos veces más largo que II+III juntos ..... *M. reuteri* Handlirsch, 1897, (Venezuela)
- Segmento antenal IV alrededor de  $1\frac{1}{2}$  x tan largo que II+III juntos ..... *M. argentinus* Kormilev, 1950, (Argentina)
- 16. La mancha escutelar en forma de flecha ..... *M. dorannae* Evans, 1931, (E.U.A.)
- La mancha escutelar en la forma de lanceta ..... 17
- 17. Antenas relativamente más largas, alrededor de  $1.95$  x tan largas como el ancho de la cabeza a través de los ojos; el conexivo con un reflejo rojizo ..... *M. cimicoides* Swederus, 1787, (E.U.A.)
- Antenas relativamente más cortas, alrededor de  $1.7$  x tan largas como el ancho de la cabeza a través de los ojos ..... *M. tuberosus* Westwood, 1843, (Brasil)

***Macrocephalus peruvianus* Dudich**

*Macrocephalus peruvianus* Dudich, 1922, Ann. Mus. Nat. Hung., 19: 171. New record. 1 ♂, PERU; HUANACO DEPT.: Tingo Maria National Park, Tingo Maria, 660 m., 11-17.IV.1987, J.E.Eger coll.

***Macrocephalus vesiculosus* Handlirsch**  
***Lophoscutus vesiculosus* (Handlirsch), comb. nov.**

*Macrocephalus vesiculosus* Handlirsch, 1897, Ann. Naturh. Hofmus., Wien, 12: 192. 1 ♂, type of Handlirsch, VENEZUELA, LA GUAYRA (Collection Signoret) Naturhistorisches Museum, Wien.

**ACKNOWLEDGEMENT**

I am greatly indebted to Dr. Harry Brailovsky A., Chairman Departamento de Zoología, Instituto de Biología UNAM, México for sending the material described in this paper. I am also grateful to Dr. Ulrike Aspöck, Naturhistorisches Museum, Wien, for lending me the type of *Macrocephalus vesiculosus* Handlirsch and Dr. J.E. Eger for sending *Macrocephalus peruvianus* Dudich.

**LITERATURE CITED**

- BARBER, H.G. 1939. Insects of Porto Rico & Virgin Islands. *Sci. Surv. of Porto Rico & Virgin Islands*, 14 (3): 373-381.
- CHAMPION, G.C. 1898. Rhynchoita, Phymatidae. *Biol. Centr. Amer., London; Heteroptera, Phymatidae*. 2: 49-64, table IV.
- COCKERELL, T.D.A. 1900. New insects from Arizona. *The Entomol.*, 33:61:66.
- DUDICH, E. 1922. Die Phymatiden des Ungarischen National-Museum. *Ann. Mus. Nat. Hung.*, 19: 162-181.
- EVANS J.H. 1931. A preliminary revision of the Ambush bugs of North America. Hem. Phymatidae. *Ann. Ent. Soc. Am.*, 24: 711-736, 2 tables.
- FABRICIUS J.C. 1803. *Systema Rhyngotorum, Brunsvigae*, 121-124.
- HANDLIRSCH, A. 1897. Monographie der Phymatiden. *Ann. Naturh. Hofmus., Wien*. 12: 127-230, 6 tables.
- HUSSEY, R.F. 1953. New American Hemiptera, fam. Phymatidae. *Occ. Papers Mus. Zool. Univ. Michigan*, 510: 1-12.
- KORMILEV, N.A. 1950. Notes on Neotropical Phymatidae, Diagnosis of New Spec. *Rev. Entomologia*, 21: 581-591.
- \_\_\_\_\_. 1951. Phymatidae Argentinas (Hemipt.). *Rev. Inst. Nac. Invest. Cien. Nat.*, 2 (2): 45-110, 14 tables.
- \_\_\_\_\_. 1962. Notes on American Phymatidae II (Hemipt., Reduvioidae). *Jour. New York. Ent. Soc.*, 70: 47-58.
- \_\_\_\_\_. 1960 (1962). Revision of Phymatinae, (Hemipt., Phymatidae). *The Philipp. Jour. Sc.*, 89 (3-4): 281-486, 19 tables.
- \_\_\_\_\_. 1963. Notes on American Phymatidae III. *Proc. Ent. Soc. Washington*, 65 (3): 215-226.
- \_\_\_\_\_. 1984. Keys to the genera and description of new taxa of Macrocephaline bugs (Hemipt., Phymatidae). *Jour. Nat. Hist.*, 18: 623-637.
- LATREILLE, P.A. 1802, *Hist. Nat. Crust. Ins., Paris*, 3: 246-247.

- STÅL, C. 1862. Hemiptera Mexicana enumeravit species novas descripsit. *Stett. Ent. Zeit.*, 23: 439-441.
- \_\_\_\_\_. 1876. *Enumeratio Hemipterorum* V. 131-136.
- SWEDERUS, N.S. 1787. Et nytt genus och femtio nya species af insectoe bescrifne. *Kung. Svenska Vet.-Ak. Handl.*, 8: 182-301.
- WESTWOOD, J.O. 1841-43. Observations upon the hemipterous insects composing the genus *Syrtis* of Fabricius, or the family Phymatites of Laporte with monograph of the genus *Macrocephalus*. *Trans. Entom. Soc., London (1)* III: 18-31, table II.