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CLADISTICS OF THE *NAUPACTUS LEUCOLOMA* SPECIES GROUP, *ATRICHONOTUS*, AND *EURYMETOPUS* (COLEOPTERA: CURCULIONIDAE)

LANTERI, Analía A.* and Juan J. MORRONE**

ABSTRACT. The *Naupactus leucoloma* species group, *Atrichonotus* Buchanan (= *Floresianellus* Lanteri and *Floresianus* Hustache), and *Eurymetopus* Schoenherr, form a clade within the *Pantomorus-Naupactus* complex (Naupactini). This clade includes 19 species native to northern and central Argentina, Uruguay, Bolivia, Paraguay, central Chile, and southern Brazil. Based on the single cladogram obtained, species assigned to the *Naupactus leucoloma* species group and *Atrichonotus* form two successive grades relative to *Eurymetopus*. The cladistic sequence is as follows: *Naupactus albolateralis* Hustache, *N. tucumanensis* Hustache, *N. leucoloma* Boheman plus *N. minor* (Buchanan), *N. peregrinus* (Buchanan), *Atrichonotus pacificus* Kuschel, *A. taeniatulus* (Berg) plus *A. obscurus* (Hustache), *A. marginatus* (Hustache), *A. convexifrons* (Hustache), *A. sordidus* (Hustache), *A. whiteheadi* Lanteri new species, *Eurymetopus oblongus* (Hustache), *E. globosus* Lanteri, *E. fallax* Boheman, *E. birabeni* Kuschel, *E. vittatus* Kuschel, *E. bucki* Kuschel, and *E. unicolor* (Hustache). This paper includes a discussion on the cladogram obtained and its implications for the natural classification of the group, a generic key, keys for species of *Atrichonotus* and *Eurymetopus*, a description of the new species *A. whiteheadi*, and a redescription of *E. unicolor*.

RESUMEN. Análisis cladístico del grupo de especies de *Naupactus leucoloma*, *Atrichonotus* y *Eurymetopus* (Coleoptera: Curculionidae). El grupo de especies de *Naupactus leucoloma* y los géneros *Atrichonotus* Buchanan (sinónimo de *Floresianellus* Lanteri y *Floresianus* Hustache) y *Eurymetopus* Schoenherr, forman un clado dentro del complejo *Pantomorus-Naupactus* (Naupactini). Este clado incluye 19 especies nativas del norte y centro de la Argentina, Uruguay, Bolivia, Paraguay, centro de Chile y sur del Brasil. El único cladograma resultante del presente análisis indica que las especies asignadas al grupo de *Naupactus leucoloma* y a *Atrichonotus* forman dos grados sucesivos con respecto a *Eurymetopus*. La secuencia filogenética es la siguiente: *Naupactus albolateralis* Hustache, *N. tucumanensis* Hustache, grupo *N. leucoloma* Boheman - *N. minor* (Buchanan), *N. peregrinus* (Buchanan), *Atrichonotus pacificus* Kuschel, grupo *A. taeniatulus* (Berg) - *A. obscurus* (Hustache), *A. marginatus* (Hustache), *A. convexifrons* (Hustache), *A. sordidus* (Hustache), *A. whiteheadi* Lanteri sp. nov., *Eurymetopus oblongus* (Hustache), *E. globosus* Lanteri, *E. fallax* Boheman, *E. birabeni* Kuschel, *E. vittatus* Kuschel, *E. bucki* Kuschel y *E. unicolor* (Hustache). El presente trabajo incluye una discusión sobre el cladograma resultante y sus implicancias

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para la clasificación, una clave de los tres géneros tratados, claves de las especies de *Atrichonotus* y *Eurymetopus*, la descripción de la nueva especie *A. whiteheadi* y una redescripción de *E. unicolor*.

INTRODUCTION

The *Pantomorus-Naupactus* complex (Buchanan, 1939; Lanteri & O'Brien, 1990) ranges from the Great Plains of the USA to the Argentine Pampas, throughout Central and South America, and has its highest diversity in Amazonia. This complex includes about 250 species assigned to *Naupactus* Dejean, *Pantomorus* Schoenherr, and other 20 genera, that have been considered synonyms or subgenera of the latter, *e.g.*, *Aramigus* Horn (Lanteri & Díaz, 1994), *Asynonychus* Crotch (Lanteri *et al.*, 1989), *Atrichonotus* Buchanan (Lanteri & O'Brien, 1990), and *Phacepholis* Horn (Lanteri, 1990).

We propose that most generic names associated with the *Pantomorus-Naupactus* complex are lineages of the paraphyletic genus *Naupactus*, that have accumulated a large number of apomorphic characters (Lanteri & O'Brien, 1990; Lanteri & Díaz, 1994). Herein we attempt to demonstrate this hypothesis, through a cladistic analysis of a lineage that includes a species group of *Naupactus* and the species assigned to *Atrichonotus* and *Eurymetopus* Schoenherr. Moreover, we contribute to the taxonomy of the group under study providing a key to identify *Naupactus*, *Atrichonotus*, and *Eurymetopus*, and updating previous revisions of the latter two genera (Lanteri, 1984; Lanteri & O'Brien, 1990) with the description of the new species *A. whiteheadi*, the redescription of *E. unicolor*, and keys for the species of both genera.

MATERIAL AND METHODS

Material. Most studied material is listed in previous papers by Lanteri (1984), Lanteri & O'Brien (1990), and Lanteri & Marvaldi (in press). Specimens of *A. whiteheadi* and *E. unicolor* were loaned from the following entomological collections: Carlos Bordón, private collection, Maracay, Venezuela (CBPC); Museo Argentino de Ciencias Naturales «Bernardino Rivadavia», Buenos Aires, Argentina (MACN); Museo de La Plata, La Plata, Argentina (MLP); and National Museum of Natural History, Washington, D.C., USA (NMNH).

Taxa. The group under study includes 19 terminal species, five belong to the *Naupactus leucoloma* species group (Lanteri & Marvaldi, in press), seven species to *Atrichonotus* (Lanteri & O'Brien, 1990, with the addition of *A. whiteheadi*), and seven species to *Eurymetopus* (Lanteri, 1984). Table I lists the species, with their geographical distributions.

Characters. Characters were taken from body vestiture, external morphology, and female genitalia (for further details and illustrations see Lanteri, 1981, 1984, and Lanteri & O'Brien, 1990). The following autapomorphies were excluded from the analysis: pronotum with anteapical impression (*A. sordidus*), rostral groove absent (*A. whiteheadi*), pronotum truncate-conical (*E. oblongus*), even elytral intervals with dark brown vittae (*E. vittatus*), and pronotum punctuated (*E. unicolor*).

1. Antennal vestiture: scape and funicle setose (0); scape squamose and funicle setose (1); scape and funicle squamose (2).
2. Setae on posterior half of pronotum: apically directed (0); basally directed (1).
3. Scutellar vestiture: present (0); absent (1).
4. Elytral scales: lanceolate (0); elliptical (1); round-oval (2); round (3).
5. Elytral scales: slightly striate (0); moderately striate (1); strongly striate (2).

6. Elytral scales: moderately overlapping (0); not to slightly overlapping (1); imbricate (2).
7. Elytral setae: erect to suberect (0); recumbent (1).
8. Elytral setae: long to moderatly long (0); short (1).
9. Elytral setae: fine (0); coarse (1).
10. Elytral punctures: lacking scales (0); each puncture with a round-oval to round scale (1).
11. Lateral, brown stripes of pronotum: absent (0); present (1).
12. Scutellar color: gray or pale brown (0); white (1).
13. Central, brown macula of elytral interval 3: absent (0); present (1).
14. Lateral, white stripe of elytra: indistinct (0); distinct (1).
15. Pterygia: absent (0); present (1).
16. Rostral dorsum: not to slightly impressed (0); strongly impressed (1).
17. Rostral lateral carinae: strong (0); weak (1); absent (2).
18. Rostral groove: reaching hind margin of eye (0); exceeding hind margin of eye (1).
19. Rostral groove: not to slightly expanded at apex (0); strongly expanded at apex (1).
20. Rostral groove: lacking carina (0); with carina (1).
21. Scape: slender (0); moderately broad (1); robust (2).
22. Funicular article 2: longer than article 1 (0); about as long as article 1 (1); slightly shorter than article 1 (2).
23. Funicular article 7: elongate (0); transverse (1).
24. Club: oval (0); broadly oval (1).
25. Eyes: convex (0); slightly convex (1); flat (2).
26. Postocular constriction: slight (0); absent (1); strong (2).
27. Pronotum: slightly to moderately transverse (0); strongly transverse (1).
28. Pronotal apex: straight (0); slightly bisinuate (1).
29. Pronotal integument: granulose (0); slightly granulose to smooth (1).
30. Pronotal groove: absent (0); narrow (1); wide (2).
31. Elytral base: slightly bisinuate (0); straight (1).
32. Elytral humeri: well developed (0); slightly developed (1); indistinct (2).
33. Elytral apex: slightly acute (0); rounded (1).
34. Denticles of fore tibiae: present (0); absent (1).
35. Mucro: present on fore tibiae (0); present on fore and middle tibiae (1); present on all tibiae (2).
36. Corbel plate of hind tibiae: absent (0); present (1).
37. Tarsomere 2: longer than wide (0); about as long as wide (1); shorter than wide (2).
38. Sternum 8 of female: subrhomboidal (0); subcircular (1); suboval (2); subpentagonal (3).
39. Distal margin of sternum 8: not sclerotized (0); sclerotized (1).
40. Baculi of ovipositor: straight (0); curved (1).
41. Setae of ovipositor: present (0); absent (1).
42. Hemisternites: moderately sclerotized (0); strongly sclerotized (1).
43. Styli of ovipositor: present (0); absent (1).
44. Nodulus of spermatheca: indistinct (0); distinct (1).
45. Spermathecal duct: not widened near proximal end (0); widened near proximal end (1).

Data analysis. Multistate characters were treated as additive (1, 4, 5, 17, 21, 22, 25, 30, 32, 35, and 37) and nonadditive (6, 26, and 38). The data matrix (Table II) was analyzed using Hennig86 version 1.5 (Farris, 1988), applying the implicit enumera-

Table I. List of species of the *Naupactus leucoloma* species group, *Atrichonotus*, and *Eurymetopus*, with their distributions.

Species	Distribution
N. albolateralis Hustache	Northern Argentina
N. tucumanensis Hustache	Central and northern Argentina, Bolivia, and Paraguay
N. leucoloma Boheman	Central and northern Argentina, southern Brazil, and Uruguay; introduced into Chile, Peru, Australia, New Zealand, South Africa, and the USA
N. minor (Buchanan)	Central Argentina and Uruguay; introduced into the USA
N. peregrinus (Buchanan)	Northern Argentina and Paraguay; introduced into the USA
A. pacificus Kuschel	Central Chile
A. taeniatulus (Berg)	Central and northern Argentina, and Uruguay; introduced into Chile, the USA, Australia, and New Zealand
A. obscurus (Hustache)	Central Argentina and Uruguay
A. marginatus (Hustache)	Central Argentina and Uruguay
A. convexifrons (Hustache)	Central and northern Argentina, and Uruguay
A. sordidus (Hustache)	Central Argentina, southern Brazil, and Uruguay; introduced into Australia and New Zealand
A. whitcheadi new species	Central Argentina
E. oblongus (Hustache)	Central Argentina
E. globosus Lanteri	Central Argentina
E. fallax Boheman	Central and northern Argentina, southern Brazil, and Uruguay
E. birabeni Kuschel	Central Argentina and Uruguay; introduced into Australia
E. vittatus Kuschel	Uruguay
E. bucki Kuschel	Southern Brazil
E. unicolor (Hustache)	Uruguay

tion option (ie*) and the successive weighting procedure for calculating minimum length trees. The cladogram was rooted using *Naupactus chordinus* Boheman.

CLADISTICS

The cladistic analysis using equal weights yielded 12 equally parsimonious cladograms, each with 104 steps, a consistency index of 0.58, and a retention index of 0.85. When successive weighting was applied, one minimum-length cladogram resulted after the second round of weighting, with length 459, a consistency index of 0.83, and a retention index of 0.96 (Fig. 1). Synapomorphies and homoplasies are listed in Table III.

The cladogram obtained shows that the *Naupactus leucoloma* species group and *Atrichonotus* are successive grades relative to *Eurymetopus*, and the new species *A.*

Table II. Data matrix of 20 terminal units (species of *N. leucoloma* species group, *Atrichonotus, Eurymetopus,* and the outgroup).

N. chordinus	0000000000	0000000000	0000000000	0000000000	00000
N. albolateralis	0001000000	0101000000	0000000000	0000010000	00010
N. tucumanensis	0003000000	0101001000	0000000010	0000010000	00000
N. leucoloma	0002000000	0101000011	0000110010	1100010000	00000
N. minor	0002000000	0101000011	0000210010	1100110000	00000
N. peregrinus	0103000000	0101001000	0000010010	1100110000	00000
A. pacificus	0103100000	1000002000	0100010010	1100110000	10011
A. taeniatulus	0012111110	0?00001000	0100010010	1200010000	10011
A. obscurus	0111110010	0?00002000	0100010010	1101010000	10011
A. marginatus	0110200000	0?01002000	0210010010	1101010000	10011
A. convexifrons	0113220000	0?10002000	1210010010	1101111101	11011
A. sordidus	1113220010	1?10002100	1211020010	1100202201	11111
A. whiteheadi	1103221110	1010002000	1211210010	1201002101	11010
E. oblongus	2103221110	1011112000	2211211011	1201002311	11110
E. globosus	2103221110	1010102000	2201011011	1201002311	11111
E. fallax	2103221110	1011102000	2201011011	1201002311	11110
E. birabeni	2103221111	1010102000	2201011011	1101002311	11111
E. vittatus	2103221111	1010112000	2201011111	1111002???	?????
E. bucki	2103221111	1010102110	2201011112	1211002311	11110
E. unicolor	2103221111	1000102110	2201011112	1211002311	11110

whiteheadi is the sister taxon to the latter. The *N. leucoloma* species group is distinguished from *N. chordinus* and other species of *Naupactus* by the synapomorphies of the white scutellum (12.1) and the distinct white stripe of the elytra (14.1) (node 1). These synapomorphies are lost in most *Atrichonotus* (12.0 and 14.0, node 5), and reappear in *A. marginatus, E. oblongus,* and *E. fallax. Naupactus leucoloma, N. minor,* and *N. peregrinus* are separated from *N. albolateralis* and *N. tucumanensis* by the absent postocular constriction, the straight elytral base, and the indistinct elytral humeri (synapomorphies 26.1, 31.1, and 32.2, node 3). The absence of well-developed humeri was one of the characters that led Buchanan (1939, 1942, 1947) to assign *N. leucoloma, N. minor,* and *N. peregrinus* to *Graphognathus.* Lanteri & Marvaldi (in press) considered that this character is insufficient to separate genera. *Atrichonotus* plus *Eurymetopus* form a clade separated from *Naupactus* by the following synapomorphies: rostral lateral carinae absent, funicular article 2 about as long as article 1, rows of setae of ovipositor absent, nodulus of spermatheca distinct, and spermathecal duct not widened near proximal end (17.2, 22.1, 41.1, 44.1, 45.1, node 5). Some of these synapomorphies evolve to other apomorphic states, or they reverse. Within *Atrichonotus* the sequence of species is: *A. pacificus, A. taeniatulus* plus *A. obscurus, A. marginatus, A. convexifrons, A. sordidus,* and *A. whiteheadi.* Most changes occur at the base of the last three species (nodes 8-10 of the cladogram) and mainly involve characters of the female genitalia. The numerous synapomorphies at the base of *A. convexifrons* and *A. sordidus* (nodes 8 and 9, see Table III) led Lanteri (1980) to treat these species under *Floresianellus* Lanteri and *Floresianus* Hustache. *Atrichonotus whiteheadi* and *Eurymetopus* share the color pattern and some synapomorphies, e.g., scutellar vestiture present, elytral setae recumbent and short (3.0, 7.1, 8.1, node 10); however, since other characters do not correspond to this genus, and sternum 8 and the ovipositor are similar to those of *A. convexifrons,* we prefer to assign the species to *Atrichonotus.* The intermediate phylogenetic position of *A. whiteheadi* clearly demonstrates the relationship between *Atrichonotus* and *Eurymetopus,* previously

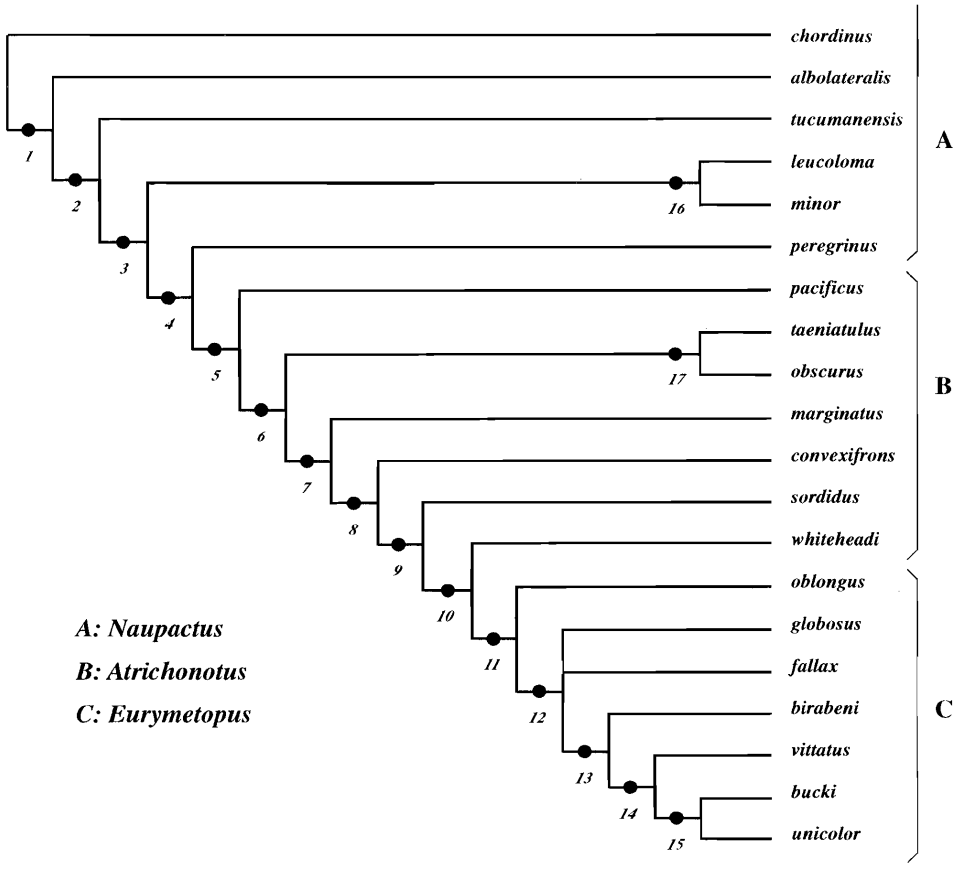


Fig. 1. Most parsimonious cladogram of species of the *N. leucoloma* species group, *Atrichonotus*, and *Eurymetopus*. Numbers correspond to nodes; synapomorphies and homoplasies of each node are listed in Table III.

doubted by Lanteri & O'Brien (1990). *Eurymetopus* is distinguished from *Atrichonotus* based on the following synapomorphies of node 11: scape and funicle squamose (1.2), pterygia present (15.1), scape robust (21.2), pronotum strongly transverse (27.1), pronotal groove narrow (30.1) (with further evolution into 30.2, pronotal groove wide), sternum 8 subpentagonal (38.3), distal margin of sternum 8 sclerotized (39.1), and styli of ovipositor absent (43.1). This genus is quite homogeneous, especially in the characters of vestiture, antennae and female genitalia, therefore the relationships of the species are supported by few synapomorphies. *Eurymetopus oblongus* is basal within the clade. There is a trichotomy of *E. globosus*, *E. fallax*, and the group formed by *E. birabeni*, *E. vittatus*, *E. bucki*, and *E. unicolor* in phylogenetic sequence.

Based on the cladogram obtained, it is possible to demonstrate that two apparently not closely related genera, such as *Naupactus* and *Eurymetopus*, are connected through a phylogenetic sequence of species. Along this sequence, most characters commonly used to separate genera of Naupactini evolve from plesiomorphic states present in *Naupactus* to the most apomorphic states present in *Eurymetopus*, passing through intermediate apomorphic states in *Atrichonotus*. For example, antennae long, setose, with funicular article 2 longer than article 1, and club fusiform, evolve to antennae squamose, with funicular article 2 slightly shorter than article 1, and club broadly oval.

Table III. Synapomorphies and homoplasies (*) of the nodes and species of the cladogram (Fig. 1).

Node 1	4.1, 12.1, 14.1, 36.1
Node 2	4.2, 29.1
Node 3	26.1, 31.1, 32.2
Node 4	2.1, 4.3*, 17.1*, 35.1
Node 5 (= *Atrichonotus*)	12.0*, 14.0*, 17.2, 22.1, 41.1, 44.1*, 45.1
Node 6	3.1, 4.2, 35.0*
Node 7	22.2, 23.1, 34.1
Node 8	4.3*, 5.2, 6.2, 13.1, 21.1, 35.1*, 37.1, 38.1, 40.1, 42.1
Node 9	1.1, 9.1*, 11.1*, 24.1, 36.0*, 37.2
Node 10	3.0*, 7.1*, 8.1*, 32.2*, 35.0*, 45.0*
Node 11 (= *Eurymetopus*)	1.2, 15.1*, 212, 27.1, 30.1, 38.3, 39.1, 43.1*
Node 12	23.0*
Node 13	10.1, 32.1*
Node 14	28.1, 33.1
Node 15	18.1*, 19.1*, 30.2, 32.2*
Node 16	19.1*, 20.1, 25.1
Node 17	6.1, 9.1*
N. albolateralis	44.1*
N. tucumanensis	4.3*, 17.1
N. leucoloma	—
N. minor	25.2*, 35.1*
N. peregrinus	—
N. pacificus	5.1, 11.1*
A. taeniatulus	2.0*, 7.1*, 8.1*, 17.1*, 32.2*
A. obscurus	4.1*, 34.1*
A. marginatus	4.0*, 14.1*
A. convexifrons	—
A. sordidus	15.1*, 18.1*, 26.2, 34.0*, 35.2, 38.2, 43.1*
A. whiteheadi	25.2*
E. oblongus	14.1*, 16.1*, 25.2*
E. globosus	45.1*
E. fallax	14.1*
E. birabeni	45.1*
E. vittatus	16.1*
E. bucki	—
E. unicolor	13.0*

Ovipositor long, with parallel baculi, flanked by rows of setae, hemisternites slightly sclerotized, and styli present, evolve to ovipositor short, with curved baculi, lacking rows of setae, with strongly sclerotized hemisternites, and lacking styli. The hypothesized sequence involves two successive paraphyletic genera (*Naupactus* and *Atrichonotus*) and the monophyletic genus *Eurymetopus*. In order to agree with the cladistic principle of monophyly these genera should be treated under a single generic name, *Naupactus* (according to nomenclatural priority). To be consistent with this decision, other lineages that have evolved from *Naupactus* and received different generic names (e.g., *Pantomorus* Schoenherr, *Aramigus* Horn, *Asynonychus* Crotch, and *Phacepholis* Horn) also should be considered as its synonyms. We believe that the description of a large, very heterogeneous, and difficult to define genus, is impracti-

cal and might create confusion. In consequence, and until the systematics and cladistics of the *Pantomorus-Naupactus* complex is better known, we prefer to avoid nomen-clatural changes, and to maintain *Atrichonotus* and *Eurymetopus* as valid genera.

SYSTEMATICS

Key to *Naupactus*, *Atrichonotus*, and *Eurymetopus*

1. Species medium-sized to large (*ca.* 10-20 mm); antennae long, setose; funicular article 2 longer than article 1; club fusiform; elytral humeri and metathoracic wings usually well-developed; ovipositor long, with rows of setae beside baculi ..... *Naupactus*

   Species usually small (*ca.* 5-10 mm); antennae short, setose or squamose; funicular article 2 about as long as, to slightly shorter than article 1; club oval to broadly oval; elytral humeri and metathoracic wings reduced or indistinct; ovipositor usually short, lacking rows of setae beside baculi 2

2. Rostrum lacking pterygia (Fig. 3); scape slender to moderately broad (Fig. 4); pronotum slightly to moderately transverse, lacking central groove (Fig. 5); female sternum 8 usually subrhomboidal, lacking sclerotized apex (Fig. 7) ..... *Atrichonotus*

   Rostrum with pterygia (Fig. 10); scape robust (Fig. 11); pronotum strongly transverse, with central groove (Fig. 12); female sternum 8 subpentagonal, with sclerotized apex (Fig. 14) ..... *Eurymetopus*

Naupactus Dejean

Type species *Curculio rivulosus* Olivier, 1790 (designated by Champion, 1911).

Naupactus Dejean, 1821: 94; Lanteri, 1981: 263 (description of genitalia); Wibmer & O'Brien, 1986: 57 (checklist).

Archopactus Heller, 1921: 20 (type species *Curculio rivulosus* Olivier, by original designation); Dalla Torre *et al.*, 1936: 16 (= *Naupactus*).

Graphognathus Buchanan, 1939: 11 (subgenus of *Pantomorus* Schoenherr); Lanteri & Marvaldi, in press (= *Naupactus*).

Archiopactus Monrós, 1944: 181 (lapsus).

Geographical distribution. *Naupactus* ranges from Mexico to Argentina.

Species. ***Naupactus*** includes about 170 species (O'Brien & Wibmer, 1982, 1984; Wibmer & O'Brien, 1986). The *N. leucoloma* species group (Lanteri & Marvaldi, in press) has five species, three of them previously treated as *Graphognathus.* Redescriptions and a key for these species are given in Lanteri & Marvaldi (in press).

Atrichonotus Buchanan

Type species *Naupactus taeniatulus* Berg, 1881 (by original designation).

Atrichonotus Buchanan, 1939: 15 (subgenus of *Pantomorus);* Kuschel, 1958: 788 (new species); Wibmer & O'Brien, 1986: 66 (checklist); Lanteri & O'Brien, 1990: 699 (revision).

Floresianus Hustache, 1939: 39 (type species *F. sordidus,* by original designation); Hustache, 1947: 23 (citation); Wibmer & O'Brien, 1986: 66 (checklist); Lanteri &

O'Brien, 1990: 699 (= *Atrichonotus*).

Floresianellus Hustache, 1939: 41 (unavailable, type species not designated), 1947: 23 (as subgenus of *Floresianus*).

Floresianellus Lanteri, 1981: 266 (type species *F. convexifrons* Hustache, by original designation); Kuschel, 1986: 66 (= *Atrichonotus*).

Geographical distribution. *Atrichonotus* ranges in central and northern Argentina, southern Brazil, Uruguay, and central Chile. *Atrichonotus taeniatulus* was introduced into Chile, the USA, Australia, and New Zealand; and *A. sordidus* was introduced into Australia.

Species. *Atrichonotus* includes seven species, six of them were redescribed by Lanteri & O'Brien (1990), and *A. whiteheadi* is a new species. These species were assigned to *Atrichonotus* and its synonyms *Floresianus* and *Floresianellus*, according to different authors (see Fig. 2).

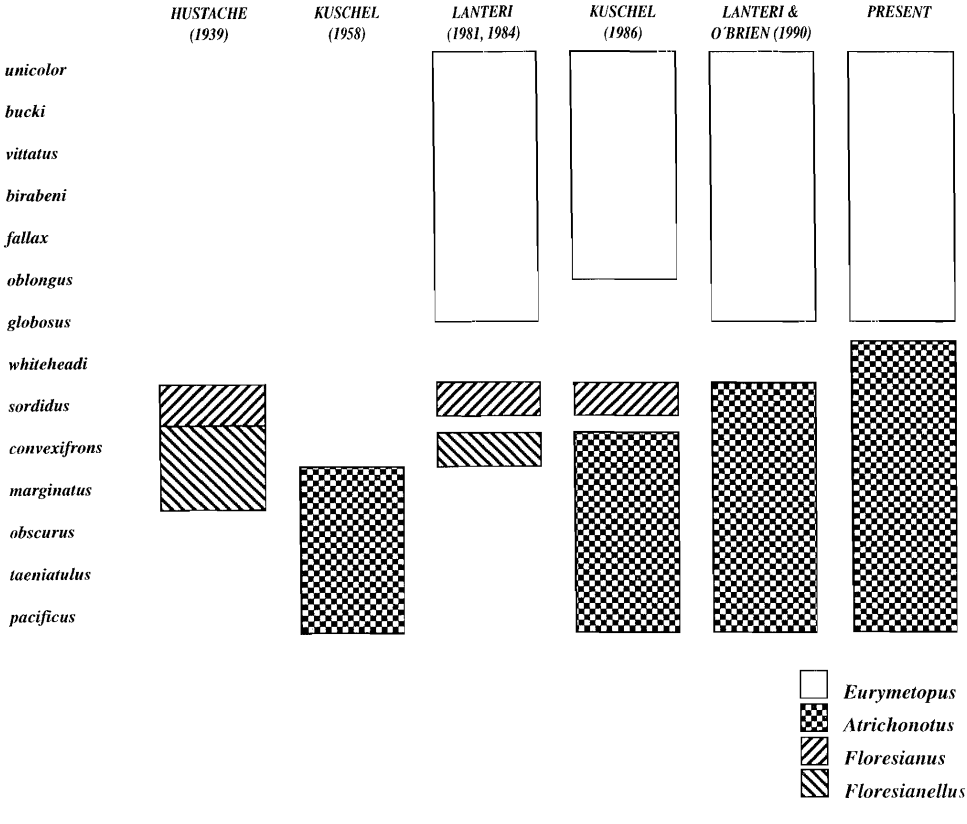


Fig. 2. Species assigned to *Eurymetopus*, *Atrichonotus*, *Floresianus*, and *Floresianellus*, according to different authors.

Key to species of *Atrichonotus*

1. Central brown macula of elytra present, scales imbricate and striate; funicular article 2 slightly shorter than article 1; tarsomere 2 about as long as, to shorter than wide; female sternum 8 subcircular or suboval; ovipositor with curved baculi and strongly sclerotized hemisternites 2
   Central brown macula of elytra absent, scales not to slightly overlapping; funicular article 2 about as long as article 1 (except *A. marginatus*); tarsomere 2 longer than wide; female sternum 8 subrhomboidal; ovipositor with straight baculi and sclerotized hemisternites 4

2. Elytral setae short, recumbent; rostral groove absent; eyes flat; scutellum with vestiture; mucro present on fore tibiae ..... *A. whiteheadi* Lanteri new species
   Elytral setae long, suberect; rostral groove present; eyes convex; scutellum lacking vestiture; mucro present on fore and middle tibiae, or on all tibiae 3

3. Elytral setae fine; postocular constriction absent; all tibiae lacking denticles, fore and middle tibiae with mucro; corbel plate of hind tibiae present; female sternum 8 subcircular; ovipositor with styli ..... *A. convexifrons* (Hustache)
   Elytral setae coarse; postocular constriction present; fore tibiae with denticles, all tibiae with mucro; corbel plate of hind tibiae absent; female sternum 8 suboval; ovipositor lacking styli ..... *A. sordidus* (Hustache)

4. Elytral scales round or round-oval; fore tibiae with denticles 5
   Elytral scales elliptical or lanceolate; for tibiae lacking denticles 6

5. Elytral setae short, recumbent; pronotal setae apically directed; lateral brown stripes of pronotum absent; scutellum lacking vestiture ..... *A. taeniatulus* (Berg)
   Elytral setae moderatly long, suberect; pronotal setae basally directed; lateral brown stripes of pronotum present; scutellum with vestiture ..... *A. pacificus* Kuschel

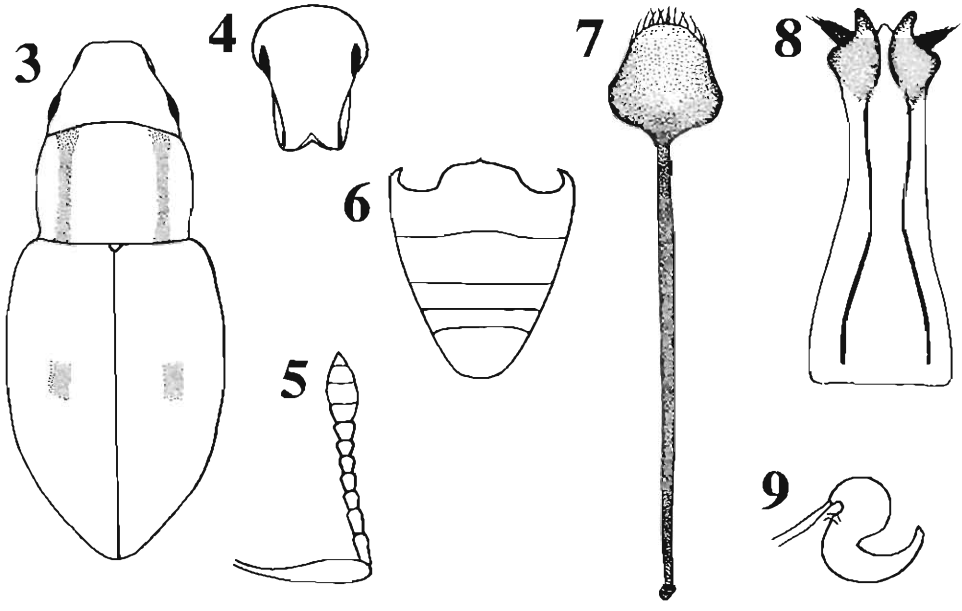
6. Elytral scales elliptical; elytral setae coarse, recumbent; lateral, white stripe of elytra indistinct; funicular article 7 longitudinal; spermathecal nodulus short ..... *A. obscurus* (Hustache)
   Elytral scales lanceolate; elytral setae fine, suberect; lateral, white stripe of elytra distinct; funicular article 7 transverse; spermathecal nodulus of medium length ..... *A. marginatus* (Hustache)

Atrichonotus whiteheadi Lanteri, new species

Type material. Holotype female: Argentina, San Luis, 1 km E La Esquina, 8-XII-1991, B. B. and R. D. Normark coll., 897 (MLP).

Diagnosis. Pronotum with pair of lateral brown stripes; elytra with central brown macula on interval 3; scutellum with vestiture; elytral setae recumbent, short, coarse; rostral groove indistinct; eyes flat; female sternum 8 subcircular, with long apodeme; ovipositor with curved baculi, hemisternites strongly sclerotized, and styli present; spermathecal duct not widened near proximal end.

Description. Female (Fig. 3). Small (4.5 mm long). Vestiture pale brown; pronotum with pair of lateral brown stripes; scutellum with vestiture; elytra with central, brown macula on interval 3; elytral scales round-oval, strongly striate, imbricate; elytral setae recumbent, short, coarse. Rostrum (Fig. 4) lacking lateral carinae; groove indistinct. Eyes flat. Antennae (Fig. 5). Scape covered with coarse scales; fu-



Figs. 3-9. *Atrichonotus whiteheadi*, female. 3, head, pronotum, and elytra, dorsal view; 4, rostrum and head, frontal view; 5, antenna; 6, venter; 7, sternum 8; 8, ovipositor, ventral view; 9, spermatheca and spermathecal duct.

nicular article 2 slightly shorter than article 1; funicular article 7 transverse; club broadly oval. Pronotum (Fig. 3) moderately transverse (WP/LP 1.25); setae on posterior half, basally directed. Scutellum glabrous. Elytra (Fig. 3) with humeri indistinct. Legs. Fore tibiae with mucro and lacking denticles; middle and hind tibiae lacking mucro and denticles; corbel plate of hind tibiae absent; tarsomere 2 shorter than wide. Venter as in figure 6. Genitalia. Sternum 8 (Fig. 7) subcircular, apex with long setae, apodeme 3.7 x longer than plate. Ovipositor (Fig. 8) with curved baculi, hemisternites strongly sclerotized and styli present. Spermatheca as in figure 9, spermathecal duct not widened near proximal end.

Etymology. This species is named after the late specialist Donald Whitehead (1938-1990), in recognition of his invaluable contributions to weevil systematics.

Remarks. *Atrichonotus whiteheadi* was assigned to *Atrichonotus*, mostly based on characters of the female genitalia (sternum 8 and ovipositor), that resembles those of *A. convexifrons*; the vestiture and color pattern, however, are typical of *Eurymetopus*. It is distinguished by the absence of rostral groove, the flat eyes, and the spermathecal duct not widened near proximal end.

Eurymetopus Schoenherr

Type species *E. fallax* Boheman, 1840 (by original designation).

Eurymetopus Schoenherr, 1840: 112; Kuschel, 1945: 127 (new species); Hustache, 1947: 15 (in key); Lanteri, 1980: 263 (redescription), 1984: 260 (revision); Wibmer & O'Brien, 1986: 67 (checklist).

Metoponeurys Gemminger, 1871: 2188 (unjustified replacement name); Hustache, 1938: 16 (new species).

Eumetopus Bosq, 1935: 330 (lapsus).

Geographical distribution. *Eurymetopus* ranges in central and northern Argentina, southern Brazil, and Uruguay; *E. birabeni* was introduced into Australia.

Species. *Eurymetopus* includes seven species, except *E. unicolor* all were revised by Lanteri (1984).

Key to species of *Eurymetopus*

1. Eyes flat; funicular article 7 transverse; pronotum truncate-conical ..... *E. oblongus* (Hustache)
   Eyes convex; funicular article 7 elongate; pronotum subcylindrical 2
2. Rostrum long, strongly impressed; uneven elytral intervals with dark brown vittae ..... *E. vittatus* Kuschel
   Rostrum medium length, slightly impressed; uneven elytral intervals lacking dark brown vittae 3
3. Rostral groove expanded at apex, exceeding hind margin of eyes; pronotal groove wide 4
   Rostral groove not to slightly expanded at apex, reaching hind margin of eye; pronotal groove narrow 5
4. Pronotum strongly punctuated; central brown macula of elytral interval 3 absent; total length more than 10 mm ..... *E. unicolor* (Hustache)
   Pronotum not to slightly punctuated; central brown macula of elytral interval 3 present; total length less than 9.5 mm ..... *E. bucki* Kuschel
5. Elytral punctures with basal round scale; humeri reduced ..... *E. birabeni* Kuschel
   Elytral punctures lacking basal round scale; humeri indistinct 13
6. Lateral, white stripe of elytra distinct; spermathecal duct not widened near proximal end ..... *E. fallax* Boheman
   Lateral white stripe of elytra indistinct; spermathecal duct widened near proximal end ..... *E. globosus* Lanteri

Eurymetopus unicolor (Hustache)

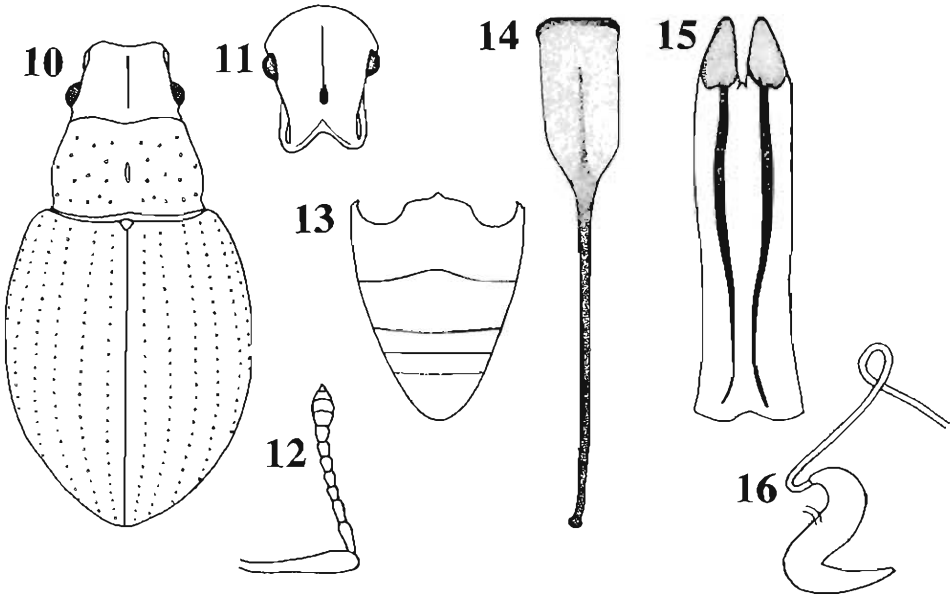
Metoponeurys unicolor Hustache, 1938: 16.

Eurymetopus unicolor; Kuschel, 1945: 130 (citation); Blackwelder, 1947: 796 (checklist); Hustache, 1947: 146 (citation); Lanteri, 1984: 260 (citation); Wibmer & O'Brien, 1986: 67 (checklist).

Type material. Two syntypes: Uruguay, Montevideo, Minas, 25-I-1932, and Canelones, 13-IV-1933, Tremoleras coll. (MNHN).

Diagnosis. Species larger than other congeners; brown macula of elytral interval 3 absent; rostral groove strongly expanded at apex and exceeding hind margin of eyes; pronotum strongly punctuated, with wide central groove; punctures of elytral striae with oval, basal scale.

Redescription. Female (Fig. 10). Medium-sized (11 mm long). Vestiture gray or pale brown; lateral, white stripe of elytra indistinct; central, brown macula of interval 3 indistinct. Rostrum (Fig. 11) slightly impressed; groove strongly expanded at apex and exceeding hind margin of eyes. Eyes convex. Antennae (Fig. 12) with funicular article 7 elongate. Pronotum (Fig. 10) with apex slightly bisinuate; dorsum strongly punctuated; central groove wide. Elytra (Fig. 10) with humeri indistinct; apical declivity abrupt; apex rounded; punctures of striae with oval, basal scale. Venter as



Figs. 10-16. *Eurymetopus unicolor*, female. 10, head, pronotum, and elytra, dorsal view; 11, rostrum and head, frontal view; 12, antenna; 13, venter; 14, sternum 8; 15, ovipositor, ventral view; 16, spermatheca and spermathecal duct.

in figure 13. Genitalia. Sternum 8 and ovipositor (Figs. 14, 15) typical of *Eurymetopus*. Spermatheca as in figure 16, spermathecal duct not widened near proximal end.

Material examined. Uruguay, Montevideo, 3-XII-1943, 10-VII-1943, 21-IV-1943, 20-XII-1943, 23-III-1944, Berry coll. (5 NMNH, 2 CPCB); without precise data (1 MACN).

Remarks. *Eurymetopus unicolor* is closely related to *E. bucki*.

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