



## A revision of the South American genus *Metecia* Snellen (Lepidoptera, Noctuidae, Noctuinae)

FERNANDO R. NAVARRO<sup>1</sup>, M. JOSE BARRIONUEVO<sup>1</sup> & GERMAN SAN BLAS<sup>2</sup>

<sup>1</sup>Consejo Nacional de Investigaciones Científicas y Técnicas—Instituto Superior de Entomología “Dr. Abraham Willink”, Miguel Lillo 205, 4000 San Miguel de Tucumán, Tucumán, Argentina. E-mail: mariajosebarrionuevo@gmail.com

<sup>2</sup>Pabellón de Biología, Dpto. de Cs. Naturales, Fac. de Cs. Ex. y Nat., UNLPam, Campo de Enseñanza, Ruta Nacional n°35 km335, CP: 6300, Santa Rosa, La Pampa, Argentina. E-mail: gsanblas@exactas.unlpam.edu.ar

### Abstract

The genus *Metecia* Snellen (Noctuidae, Noctuinae) from Southern Argentina and Chile is redescribed and three species are recognized: *M. cornifrons* Snellen, *M. lacustris* (Köhler) n. comb., and *M. hypothetica* (Köhler) n. comb. In addition, *Euxoa pampeana* Köhler is synonymized with *Metecia cornifrons*. Adults and male and female genitalia are described and illustrated for the first time, and a key to the species is provided.

**Key words:** systematics, genitalia, distribution, Argentina, Chile

### Introduction

Snellen (1879) erected the genus *Metecia* for a single South American species, *M. cornifrons*, defined by longitudinally striate forewings and a prominent vertical ridge on the frons. Köhler (1945) described *Euxoa pampeana* and *Euxoa p. blanchardi*, from La Pampa and Córdoba, respectively. Subsequently, Köhler (1967) raised *E. p. blanchardi* to species status, transferred both species to the genus *Pareuxoina* Köhler, and described *Pareuxoina hypothetica* and *P. lacustris* as new from Neuquén (Argentina). Poole (1989) reassigned Köhler's species to *Pareuxoa* Forbes when he synonymized *Pareuxoina* with *Pareuxoa*. Most recently, Nye (see Beccaloni *et al.* 2003) proposed that *Metecia cornifrons* was probably the senior synonym of *Pareuxoina pampeana blanchardi* (Köhler).

From our research of these taxa we have drawn three conclusions. First, the four nominal Köhler species belong to neither *Pareuxoa* nor *Pareuxoina*. Second, these species are closely related to the type-species of *Metecia* and with it constitute a monophyletic unit. Third, *Metecia cornifrons* is the senior synonym of *Pareuxoina pampeana blanchardi*, as Nye suggested. Herein we redefine and revise the genus *Metecia* using morphological characteristics.

### Methods

Institutional acronyms are as follows: Instituto y Fundación Miguel Lillo, Tucumán (IFML); Instituto Argentino de Investigaciones de las Zonas Áridas, Mendoza (IADIZA); British Museum of Natural History, London (BMNH); Naturalis Biodiversity Centre (formerly Rijksmuseum van Natuurlijke Historie), Netherlands (RMNH); and Zoologische Sammlung des Bayerischen Staates, München (ZSM).

Genitalic dissections were conducted as described in Lafontaine (2004). Terminology follows Lafontaine (2004), male genitalia clasper terminology follows Pogue (2002).

Adult images were taken with a Panasonic LZ8 digital camera. Genitalic images were taken with a Leica S6E stereoscopic microscope using a Canon Powershot S50 digital camera, stacked using COMBINEZP (Hadley 2015) and enhanced with image editing software. Distribution maps were made using Simplemapp (Shorthouse 2010).

The identification key was constructed with each entrance comprising external morphological characters at the beginning, for a rapid identification, followed by male and female genitalia characters for accurate identification or for poorly preserved specimens. As a result, it is possible to identify scaleless specimens, those with missing parts of the body, and female specimens too.

## ***Metecia* Snellen, 1879**

*Metecia* Snellen, 1879: 94; Nye, 1975: 310; Poole, 1989: 655.

Type species: *Metecia cornifrons* Snellen (1879), by monotypy.

**Diagnosis.** Species of *Metecia* may be recognized by the following combination of characters: distinctive forewing pattern with two dark streaks present and transversal lines and maculation absent; male genitalia with laterally sclerotized anellus covered with short stout spines, and valve with digitus present and corona absent; female genitalia with ductus bursae sclerotized, with dorsal and ventral membranous clefts. The genus includes three species: *M. cornifrons*, *M. lacustris*, and *M. hypothetica*.

**Redescription.** Adults (Figs 1–14). Antenna of male bipectinate (in *lacustris*) (Fig. 8) or biserrate (in *cornifrons* and *hypothetica*) (Fig. 7), doubly bifasciculate; antenna of female simple, with thin ventral hairs; a loose tuft of hairlike scales from occiput hanging between the bases of antennae; vertex and frons covered with bushy long hairlike scales; eyes naked, not lashed; labial palpus unmodified, segments with ventral fringe of scales.

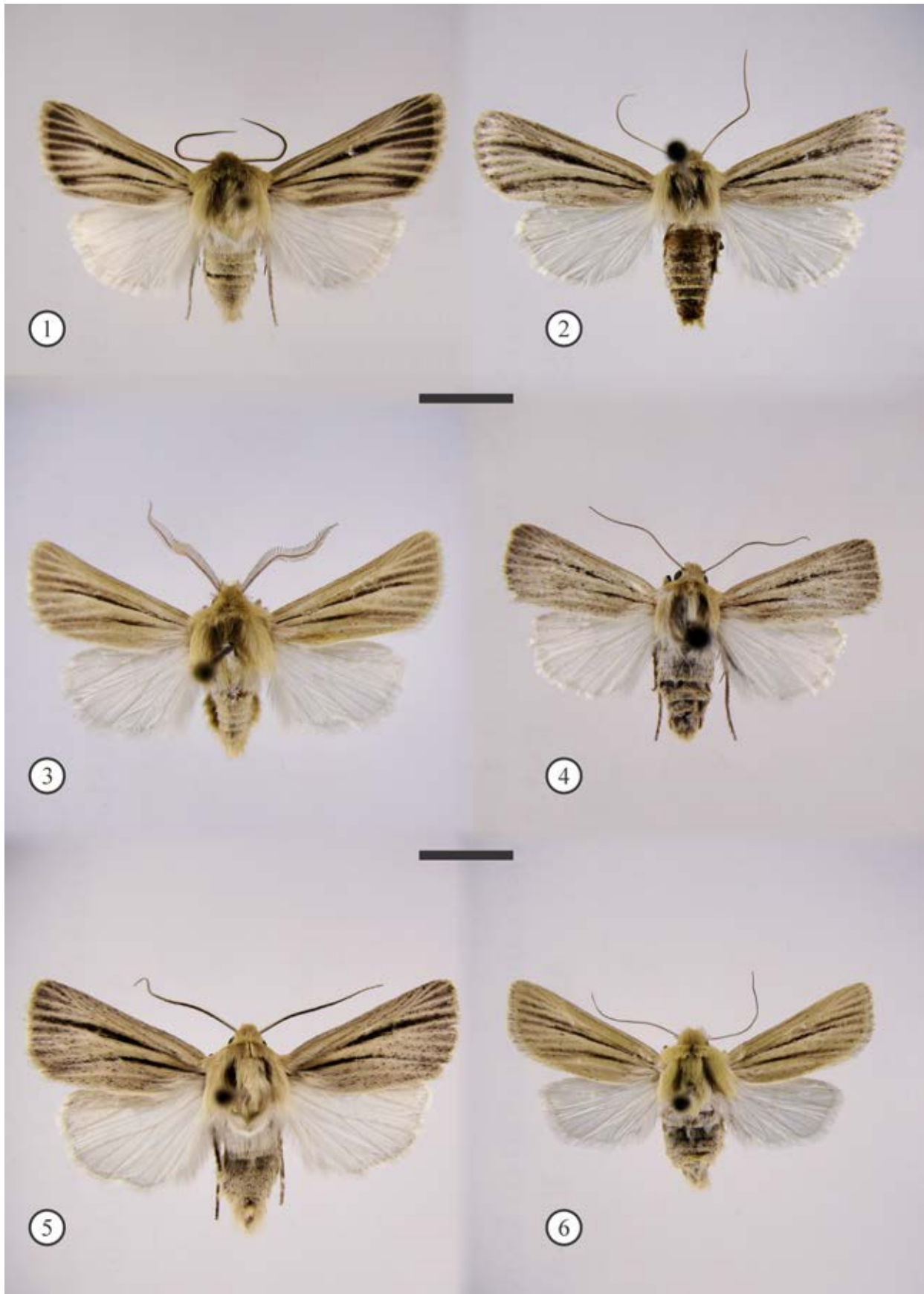
**Thorax** coated with long hairlike scales; tegula pale brown with longitudinal apical dark brown streak. Prothoracic leg with femur bearing a lateral fringe of hairlike scales; tibia with complete row of spinelike setae laterally on both margins; first tarsal segment as long as tibia or shorter. Mesothoracic and metathoracic legs with ventral margin of femur bearing a fringe of hairs; tibia with tuft of hairs on proximal half; tarsi with three row of setae ventrally and a partial fourth row of setae on the outer margin of the first segment.

Forewing length males 11.8–18.5 mm; females, 12.1–17.1 mm; with two dark brown longitudinal streaks, transversal lines and maculation absent. Underside pale brown, veins and area posterior to Cu vein whitish. Hindwing iridescent. Underside iridescent with costal margin diffuse pale brown.

**Abdomen** (Figs 15, 16) pale brown, covered with scales but with no noticeable tuft. Tergite VIII a roughly square sclerite, with a weakly sclerotized central section. Sternite VIII a roughly trapezoidal sclerite (Fig. 15), centrally membranous in *lacustris* (Fig. 16).

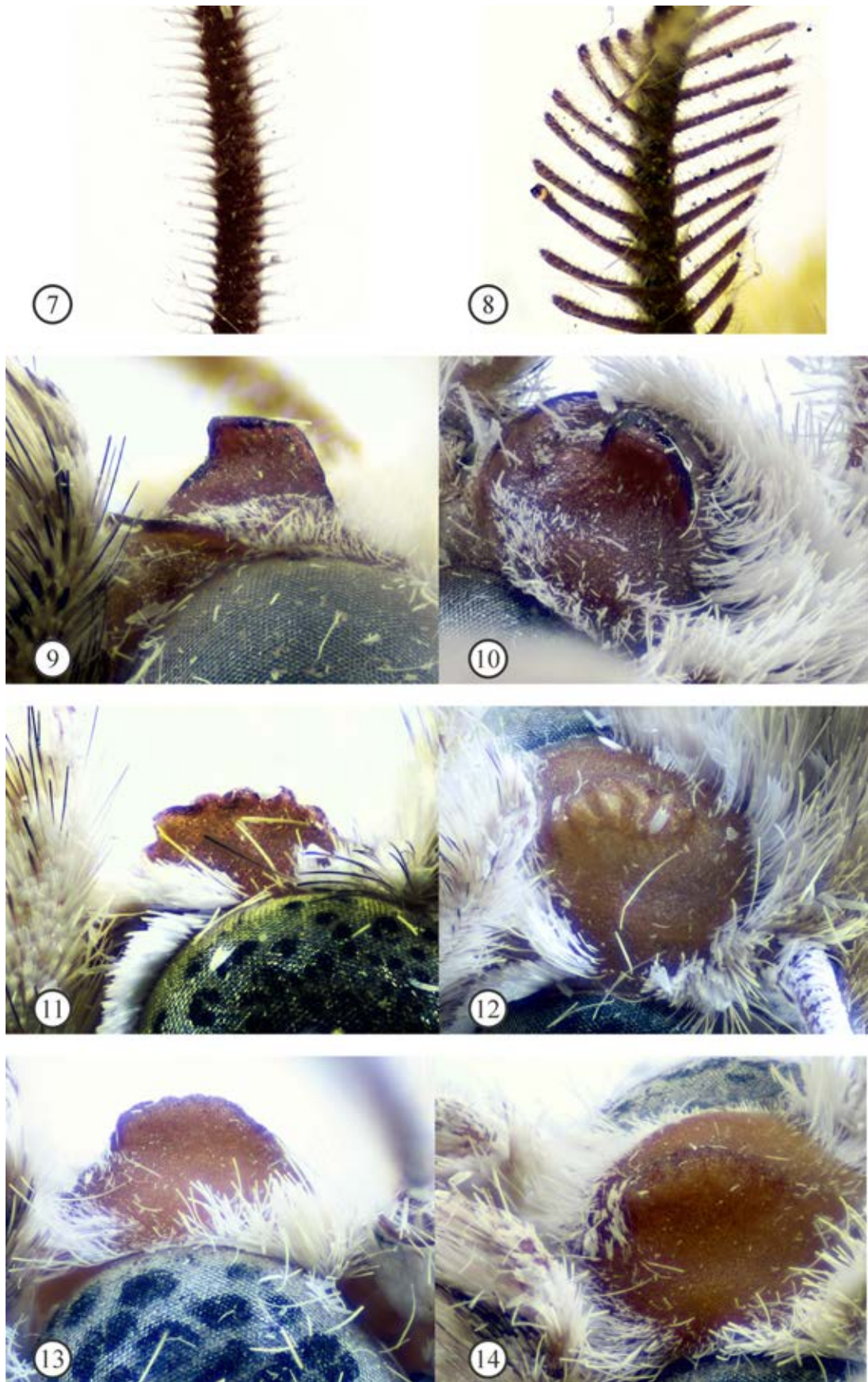
**Male genitalia** (Figs 17–29) with uncus elongate and slender, covered by hairlike setae on basal 2/3, apical 1/3 with long spine-like setae, apex curved upwards and densely covered dorsally with strong small spines (Figs 17, 18). Valve elongate, slightly concave near middle, apex drawn to a blunt point; sacculus expanded to costal margin of valve, 0.6X as long as valve; costa heavily sclerotized, thickened on basal half; corona absent; costal margin of cucullus with several rows of spinelike setae. Clasper vestigial in *cornifrons* (Fig. 19), absent, restricted to basal sclerite in *lacustris* and *hypothetica* (Figs 24, 27). Ampulla moderate, S-shaped, with pointed apex. Costa sclerotized and continuous with the digitus. Clavus absent. Tegumen and peniculus unmodified. Anellus with two broad, well developed, sclerotized, tongue-shaped plates, dorsal half covered by short stout spines on outer margin, stronger on anterior margin and gradually thinner toward posterior margin (Figs 19, 24, 27). Juxta shield shaped, without ornamentation, ventral margin with central section produced triangularly and dorsal margin variably produced into two lateral bars (Figs 19, 27) and one central horn present in *lacustris* (Fig. 24). Aedeagus membranous posteriorly, with a dorsal right sclerotized bar and a ventral sclerotized plate. Vesica approximately as long as aedeagus, with basal, subbasal, and apical diverticula (apical diverticulum absent in *cornifrons* and *lacustris*), one strong cornuti on basal diverticulum and one small cornuti on subbasal diverticulum in *lacustris* and *hypothetica* (Figs 25, 26, 28, 29), *cornifrons* with sclerotized plate ventrally and close to aedeagus (Figs 20, 21) and subbasal diverticulum partially covered with small cornuti (Figs 20, 22), strong cornuti absent.

**Female genitalia** (Figs 30–35) with flattened anal papillae, covered with setae. Abdominal segment VIII produced into two lateral lobes directed toward the ostium bursae. Anterior apophyses much shorter than posterior ones. Ductus bursae sclerotized, with two membranous clefts on dorsal and ventral margins. Corpus bursae elongate, ovate; signa absent; appendix bursae differentiated, as large as corpus bursae, originating from distal left side of corpus bursae; ductus seminalis originating from appendix bursae apex.

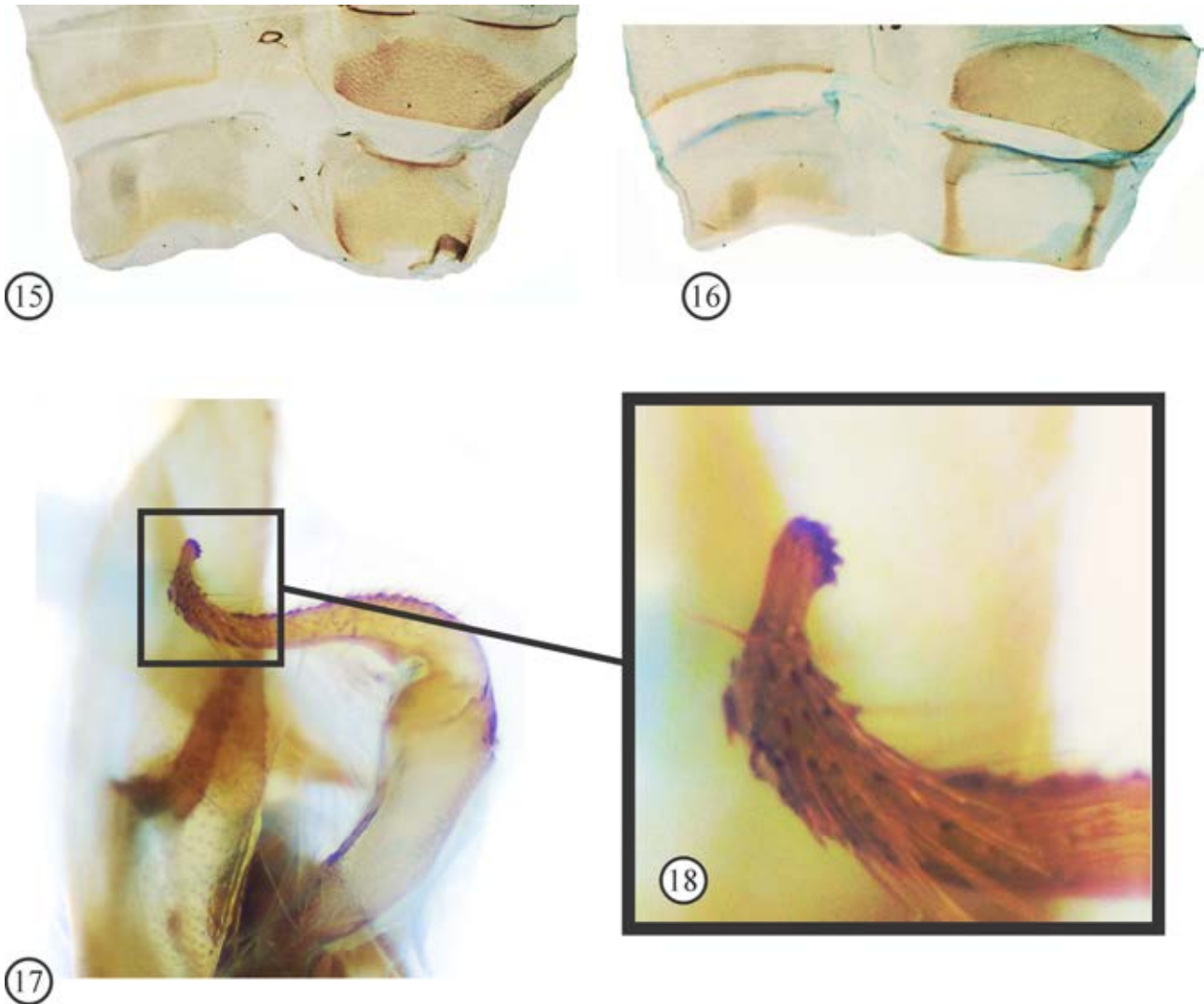


**FIGURES 1–6.** Male and female of *Metecia*. 1, *M. cornifrons*, male. 2, *M. cornifrons*, female. 3, *M. lacustris*, male. 4, *M. lacustris*, female. 5, *M. hypothetica*, male. 6, *M. hypothetica*, female. Scale lines: 10 mm.





**FIGURES 7–14.** 7–8, male antenna. 7, biserrate, doubly bifasciculate (*Metecia hypothetica*). 8, deeply bipectinate (*M. lacustris*). 9–14, Frons projections. 9, *M. cornifrons* (lateral view). 10, *M. cornifrons* (anterolateral view). 11, *M. lacustris* (lateral view). 12, *M. lacustris* (anterolateral view). 13, *M. hypothetica* (lateral view). 14, *M. hypothetica* (anterolateral view).



**FIGURES 15–18.** 15–16, male abdominal segment VIII. 15, *Metecia cornifrons*. 16, *M. lacustris*. 17–18, *M. lacustris* male genitalia, uncus (lateral view). 17, uncus apex curved upwards. 18, close up of uncus apex showing dorsal strong small spines.

**Remarks.** Species associated in this work with *Metecia* have alternatively been placed in either *Pareuxoa* or *Pareuxoina* (= *Pareuxoa*). Differences between these two genera are as follows. (1) *Metecia* with laterally sclerotized anellus covered with short stout spines; the anellus in *Pareuxoa* is unmodified. (2) *Metecia* with uncus apex upwardly curved and dorsally densely covered with strong small spines; in *Pareuxoa* uncus slightly upwardly curved and lacking dorsal spines. (3) Vesica of *Metecia* with single, long basal cornutus and subbasal small cornutus, each on different diverticula (*M. cornifrons* with basal plate and numerous small cornuti on subbasal diverticulum); in *Pareuxoa* vesica with four slender basal cornuti arranged in a row and, distally to them, a single strong and thorn-like cornutus with its base swollen and striate. (4) Appendix bursae of *Metecia* as large as the corpus bursae; in *Pareuxoa* appendix bursae elongate and thin but never as large as the corpus bursae.

**Bionomics and distribution.** Nothing is known of the biology or the immature stages. *Metecia* occurs in Argentina between 30° and 53° south latitude in the provinces of Buenos Aires, Chubut, Córdoba, La Pampa, Neuquén, Río Negro, and Santa Cruz; and Chile between 36° and 38° south latitude from regions VII (Region del Maule) and VIII (Region del Bio–Bio) (Fig. 36).

### Key to species of the genus *Metecia*

1. Forewing streaks extending both from wing base and reaching apical margin (Figs 1, 2). Head frons with central prominent projection of circular/oval cut and raised edge (Figs 9, 10). Male genitalia with digitus heavily sclerotized (Fig. 19). Vesica

- ventrally and close to aedeagus with a sclerotized plate (Figs 20, 21) and left margin of the subbasal diverticulum covered by numerous small cornuti (Figs 20, 22). Female genitalia with corpus and appendix bursae fused along posterior 2/3 of their length (Figs 30, 31) . . . . . *Metecia cornifrons*
- 1'. Either of the forewing streaks can extend fully from wing base to apical margin, but never both (Figs 3–6). Head frons with central projection wart-like, without raised edge (Figs 11–14). Male genitalia with digitus weakly sclerotized (Figs 24, 27). Vesica sclerotized ventral plate absent, basal and subbasal diverticula with one apical cornutus (Figs 25, 26, 28, 29). Female genitalia with corpus and appendix bursae fused along posterior 1/2 of their length (Figs 32–35) . . . . . 2
2. Male antenna bipectinate (Fig. 8). Forewing streaks from wing base toward terminal area, never reaching apical margin (Figs 3, 4). Head frons projection small, with strongly crenate anterior margin (Figs 11, 12). Male genitalia uncus with apical dorsal smooth projection (Figs 17, 18); juxta dorsal margin with central horn; digitus apex reaching posterior margin of valve but not extending beyond it (Fig. 24). Vesica basal diverticulum twisted in 1/4 of a spin, with big cornutus, 16X longer than wide (Figs 25, 26). Female genitalia corpus bursae with posterior dorsal sclerotized plate, oval shaped, and one small left diverticulum of compact membrane on posterior 1/3 (Figs 32, 33) . . . . . *Metecia lacustris*
- 2'. Male antenna biserrate (Fig. 7). Forewing anterior streak from cell to wing apical margin (less often originates from wing basal margin), posterior streak from wing base to middle of wing, if reaching termen then faded on apical half (Figs 5, 6). Head frons projection wide, with rugose anterior margin (Figs 13, 14). Male genitalia uncus with apical dorsal projection absent; juxta dorsal margin produced into two long triangular bars not connected to anellus sclerotized plates, central horn absent; digitus apex extending beyond posterior margin of valve (Fig. 27). Vesica basal diverticulum not twisted, with large cornutus, 6X longer than wide (Figs 28, 29). Female genitalia with anterior 1/3 of ductus bursae membranous, with ventral right diverticulum of compact membrane (Figs 34, 35) . . . . . *Metecia hypothetica*

***Metecia cornifrons* Snellen, 1879**

Figs 1, 2, 9, 10, 15, 19–23, 30, 31, 36.

*Metecia cornifrons* Snellen, 1879: 96, pl. I, figs a–d; Poole, 1989: 655. Holotype: male Argentina, Cordova (sic.) (RMNH).  
*Euxoa pampeana* Köhler, 1945: 87, fig. 6e. Syntypes: 1 male [Argentina], La Pampa, Loventuel (IFML); 1 male (MACN); 2 males (ZSM). Examined. New synonymy.  
*Euxoa pampeana blanchardi* Köhler, 1945: 88. Holotype: female [Argentina], Córdoba, Los Cocos, iii.1930 (Blanchard) (IFML). Examined.  
*Pareuxoia pampeana* (Köhler): Köhler, 1961: 78 (new combination); Köhler, 1967: 314, fig. 197 (checklist, illustration).  
*Pareuxoia blanchardi* (Köhler): Köhler, 1961: 78 (rise to species status, new combination); Köhler, 1967: 298, fig. 198 (checklist, holotype illustration)  
*Pareuxoia pampeana* (Köhler): Poole, 1989: 779 (catalogue, new combination).  
*Pareuxoia pampeana blanchardi* (Köhler): Poole, 1989: 779 (synonymized with *E. pampeana* Köhler, new combination).

**Diagnosis.** *Metecia cornifrons* can be identified by the following characters: 1) forewing streaks both extending from wing base and reaching apical margin; 2) head frons with central prominent projection of circular/oval cut with raised edge; 3) male genitalia with juxta dorsal margin produced into two long triangular bars connected to anellus sclerotized plates, central sclerotized horn absent; 4) subbasal diverticulum of vesica with left margin covered by numerous small cornuti; and 5) female genitalia with corpus and appendix bursae fused along posterior 2/3 of their length.

**Redescription.** Male (Fig. 1). Head frons pale brown, with central prominent projection of circular or oval cut and raised edge (Figs 9, 10); labial palpus whitish with reddish traces and long hairlike scales; antennae biserrate.

Prothoracic collar pale brown with dark brown tufts extending to the eyes.

Forewing length 15.1–16.5 mm, dark brown; costa and veins whitish; streaks from base of wing toward terminal area, anterior streak wider on middle of cell, not contiguous with cubitus, posterior streak reaching termen, along Cu vein.

Genitalia (Fig. 19) with apical dorsal projection of uncus absent. Juxta dorsal margin laterally produced into two long triangular bars connected to anellus sclerotized plates, central sclerotized horn absent. Valve 5X longer than wide; ampulla slender, strongly S-shaped, 0.2X as long as valve; clasper vestigial, as a small triangular extension of the basal sclerite; digitus heavily sclerotized medially, apical half inner curved, strongly narrowed, and heavily sclerotized, free from inner surface of valve for most of its length, apex pointed, not reaching valve posterior margin. Vesica ventrally and close to aedeagus with a sclerotized plate anteriorly covered with strong cornuti (Figs 20, 21); basal diverticulum ventral and large; subbasal diverticulum long, 2X as long as wide, left margin covered by numerous small cornuti (Figs 20, 22, 23); apical diverticulum absent.



**Female** (Fig. 2) as in male except for: forewing length 16.2–17.9 mm and antenna filiform. Genitalia (Figs 30, 31) with posterior apophysis 4X as long as anterior apophysis. Neither ductus nor corpus bursae with diverticulum, sclerotized plate of the corpus bursae absent. Corpus slightly longer than appendix bursae, both fused along posterior 2/3 of their length.

**Bionomics and distribution.** Adults have been collected from January to April. Distribution restricted to Argentina (Buenos Aires, Chubut, Córdoba, La Pampa, Neuquén, and Río Negro) (Fig. 36).

**Remarks.** Nye (see Beccaloni *et al.* 2003) suggested that *Metecia cornifrons* was probably the senior synonym of *Pareuxoia pampeana blanchardi*, perhaps because of their external similarity and both were described from the same province in Argentina. Founded on the resemblance of *P. pampeana* with *P. blanchardi* and of those with the description and drawings of *M. cornifrons*, mainly on forewing pattern and frons projection similarities, these species are herein considered as junior synonymies of *M. cornifrons*.

**Material examined.** (42 males, 17 females). ARGENTINA: Buenos Aires. Bahía Blanca, 1 female iii.1946 (Köhler) (IFML). Chubut. Comodoro Rivadavia, 1 male 25.ii.1938 (V. Oort) (IFML). La Pampa. General Pico, 1 female (Williamson), genitalia slide N° 2103FN (IFML). Neuquén. Bajada Marucho, 870m, 1 female 21.iii.1974 (M. Gentili) (IADIZA), 850m, 2 females 24.iii.1981 (M. Gentili) (IADIZA); C. Curá, Carro Quebrado, 780m, 3 males 19.iii.1996 (M. Gentili) (IADIZA); C. Curá, Rincón León, 650m, 13 males 1 female 15.iii.1997 (M. Gentili) (IADIZA); C. Lil, S. Isabel, 900m, 1 male 24.iii.1973 (M. Gentili) (IADIZA); Coloradas–Antenas, 1000m, 18 males 2.iii.1990 (M. y P. Gentili) (IADIZA), 6 males 27.ii.1993 (M. Gentili) (IADIZA); Ea. Llamuco, 1100m, 6 females 18.iii.1974 (M. Gentili) (IADIZA); P. Pinos, Haichol, 1500m, 1 female 20.iii.1974 (M. Gentili) (IADIZA); Piedra del Aguila, 580m, 1 female 2.iv.1972 (M. Gentili) (IADIZA); Planicie Banderita, 410m, 1 female 2.iv.1975 (M. Gentili) (IADIZA); Quilquihue, 750m, 1 female 21.iii.1983 (M. y P. Gentili) (IADIZA). Río Negro. Arroyito, 325m, 1 female 16.iii.1973 (M. Gentili) (IADIZA).

### ***Metecia lacustris* (Köhler, 1961) new combination**

Figs 3, 4, 8, 11, 12, 16–18, 24–26, 32, 33, 36.

*Pareuxoia lacustris* Köhler, 1961: 78, pl I, fig. 7; Köhler, 1967: 308, fig. 201 (checklist); Dapoto *et al.*, 2003: 71 (checklist).

Holotype: male [Argentina], Neuquén, Laguna Blanca, 8.iii.1959 (M. Gentili) (IFML). Genitalia slide N° 998 (P. Köhler coll.). Examined.

*Pareuxoa lacustris*: Poole, 1989: 779 (catalogue, new combination).

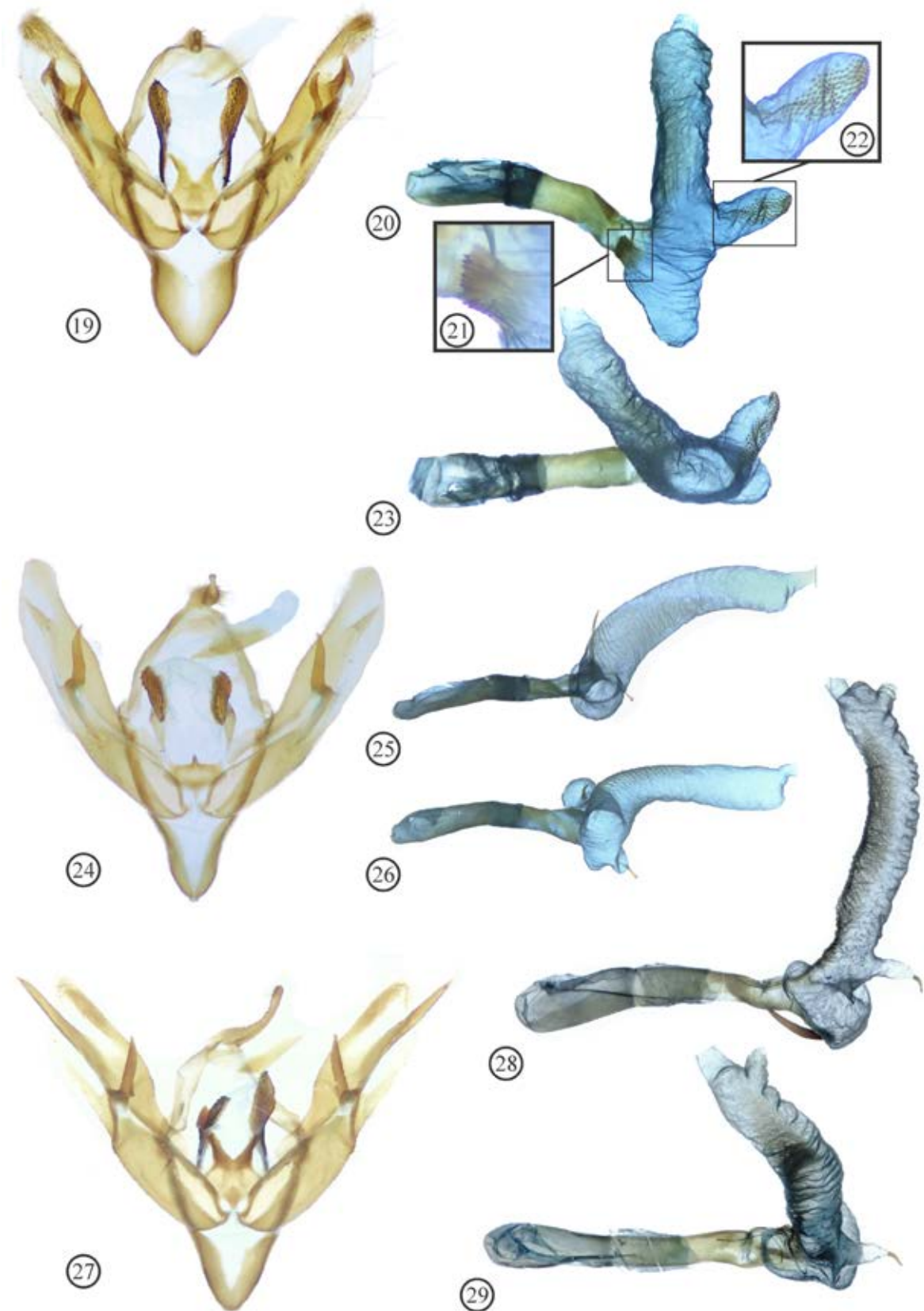
**Diagnosis.** *Metecia lacustris* can be identified by the following characters: 1) male antenna deeply bipectinate; 2) forewing streaks from wing base toward terminal area, never reaching apical margin; 3) head frons projection wart like with strongly crenate anterior margin; 4) juxta of the male genitalia with central horn on dorsal margin; 5) vesica basal diverticulum twisted in 1/4 of a spin, with big cornutus, 16X longer than wide; 6) corpus bursae of the female genitalia with sclerotized posterior dorsal plate, oval shaped; and 7) corpus bursae with one small left diverticulum of compact membrane on posterior 1/3.

**Redescription.** **Male** (Fig. 3). Head frons pale brown, with central small wart-like projection of strongly crenate anterior margin, without raised edge (Figs 11, 12); labial palpus whitish with reddish traces and with long hairlike scales; antennae deeply bipectinate (Fig. 8).

Prothoracic collar pale brown with one dark brown line extending from head vertex blurring toward collar dorsal margin.

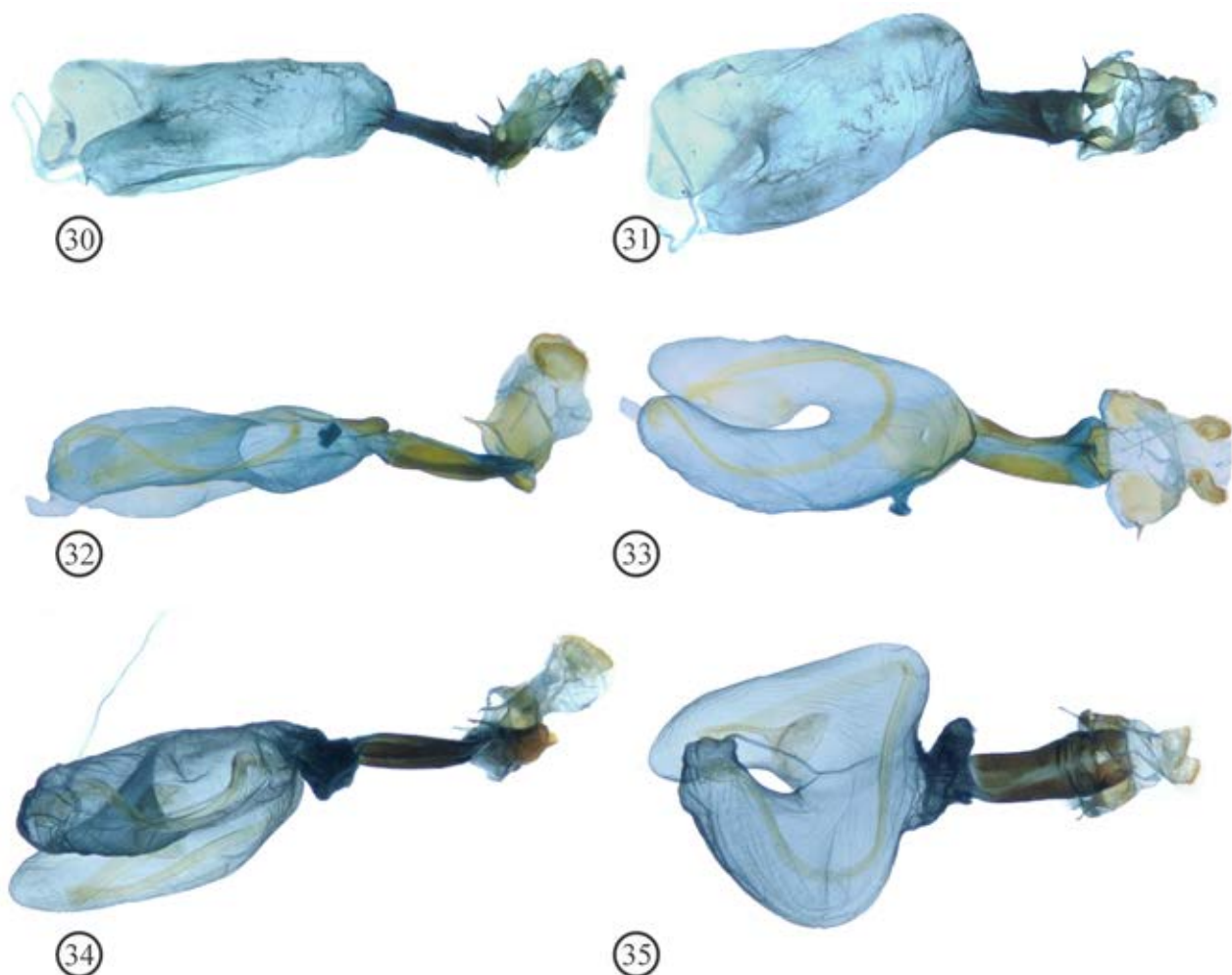
Forewing length 12.9–18.5 mm, brown; costa and veins pale brown; streaks from base of wing toward terminal area, anterior streak not reaching wing apical margin and not contiguous with cubitus, posterior streak along Cu vein, not reaching termen.

Genitalia (Figs 17, 18, 24–26) uncus with small apical dorsal projection, smooth (Figs 17, 18), densely covered dorsally with strong small spines (Fig. 18). Juxta dorsal margin produced into two minute triangular bars not connected to anellus sclerotized plates and one central heavily sclerotized horn, posteriorly directed (Fig. 24). Valve 5X longer than wide; ampulla slender, weakly S-shaped, 0.2X as long as valve; clasper proper absent; digitus weakly sclerotized, free from inner surface of valve on apical 1/3, apex pointed and reaching valve posterior margin (Fig. 24). Vesica (Figs 25, 26) without ventral plate; basal diverticulum ventral, large, twisted in 1/4 of a spin, with apical strong cornuti, 16X longer than wide; subbasal diverticulum short, as long as wide, with apical cornuti, 0.25X as long as basal cornuti; apical diverticulum small.



**FIGURES 19–29.** Male genitalia. 19–23, *Metecia cornifrons*. 19, male genitalia. 20, aedeagus (lateral view). 21, sclerotized plate (close up). 22, subbasal diverticulum left margin (close up). 23, aedeagus (dorsal view). 24–26, *M. lacustris*. 24, male genitalia. 25, aedeagus (lateral view). 26, aedeagus (dorsal view). 27–29, *M. hypothetica*. 27, male genitalia. 28, aedeagus (lateral view). 29, aedeagus (dorsal view).





**FIGURES 30–35.** Female genitalia. 30, *Metecia cornifrons* (lateral view). 31, *M. cornifrons* (dorsal view). 32, *M. lacustris* (lateral view). 33, *M. lacustris* (dorsal view). 34, *M. hypothetica* (lateral view). 35, *M. hypothetica* (dorsal view).

**Female** (Fig. 4) as in male except for: forewing length 12.1–15.5 mm and antenna filiform. Genitalia (Figs 32, 33) with posterior apophysis 4X as long as anterior apophysis. Corpus bursae with sclerotized posterior dorsal plate, oval shaped and one small left diverticulum of compact membrane on posterior 1/3 (Fig. 33). Corpus bursae as long as appendix bursae, both fused along posterior 1/2 of their length.

**Bionomics and distribution.** Besides two specimens collected in November and January, most specimens have been collected from mid–February to late March (late summer). Distribution restricted to Argentina (Chubut, Neuquén, Río Negro, and Santa Cruz) (Fig. 36).

**Material examined.** (296 males, 40 females). ARGENTINA: Chubut. Comodoro Rivadavia, 1 male 10.iii.1937 (V. Oort), genitalia slide N° 2104FN (IFML), 1 male 4.iii.1938 (V. Oort) (IFML), genitalia slide N° 701 (Köhler coll.); Esquel, La Hoya, 900m, 6 males 3 females 13.iii.1991 (M. y P. Gentili) (IADIZA); Esquel, Ruta 25, 750m, 13 males 14.iii.1991 (M. y P. Gentili) (IADIZA). Neuquén. Aeropuerto Chapelco, 780m, 12 males 2 females 14.ii.1988 (M. y P. Gentili) (IADIZA); C. Cura, Carro Quebrado, 780m, 2 males 19.iii.1993 (M. Gentili) (IADIZA); C. Cura, Rincón León, 650m, 3 males 15.iii.1997 (M. Gentili) (IADIZA); Catan–Lil, 2 males 24.ii.1958 (Schajovskoi) (BMNH); C. Lil, Chachil, 1250m, 2 males 3 females 19.ii.1974 (M. Gentili) (IADIZA); C. Lil, Cortader, 950m, 6 males 1 female 5.iii.1972 (M. Gentili) (IADIZA); Chenque Pehuén, 1800m, 1 female 13.ii.1984 (M. Gentili) (IADIZA), 1850m, 52 males 2.iii.1995 (M. Gentili) (IADIZA); Coloradas antena, 1000m, 12 males 17.ii.1988 (M. y P. Gentili) (IADIZA), 86 males 2 females 2.iii.1990 (M. y P. Gentili) (IADIZA), 17 males 1 female 27.ii.1993 (M. Gentili) (IADIZA); Confluencia Trafal, 1 male 2 females 13.ii.1956 (Fleiss) (ZSM), 700m, 1 male 17.ii.1982 (M. y P. Gentili) (IADIZA); Ea. Alicura, 650m, 1 female 20.iii.1972 (M. Gentili) (IADIZA); La Pintada, 650m, 1 male 1.iv.1972 (M. Gentili) (IADIZA); Lago Alumine, 1100m, 2 males 18.ii.1968 (M. Gentili)

(IADIZA); Laguna blanca, 3 males 8.iii.1959 (M. Gentili) (IADIZA), 1 male (BMNH), 1270m, 9 males 3.iii.1984 (M. y P. Gentili) (IADIZA), 1270m, 1 male 15.ii.1993 (M. Gentili) (IADIZA); Pampa Puttkamer, 975m, 25 males 1 female 14.ii.1988 (M. y P. Gentili) (IADIZA); Paso Rahue, 1500m, 1 male 1.ii.1972 (M. Gentili) (IADIZA); Piedra del Aguila, 580m, 1 male 21.ii.1972 (M. Gentili) (IADIZA); Quilquihue, 750m, 1 male 2 females 8.iii.1980 (M. Gentili) (IADIZA), 2 males 1 female 21.iii.1983 (M. y P. Gentili) (IADIZA); Sañico, 800m, 1 male 13.ii.1953 (Fleiss) (ZSM), 2 males 14.ii.1953 (Fleiss) (ZSM), 1 male 16.ii.1953 (Fleiss) (ZSM), 950m, 2 males 6 females 13.iii.1972 (M. Gentili) (IADIZA); Zapala, Catutos, 1 male 12.iii.1962 (M. Gentili) (IADIZA), 1 male 11.iii.1964 (M. Gentili) (IADIZA), 1 male 20.iii.1965 (M. Gentili) (IADIZA). Río Negro. Bariloche, 850m, 4 males 4 females 16.ii.1953 (Fleiss) (ZSM); Cipolletti, 1 male 13.xi.1965 (IFML), 1 female 25.iii.1958 (Fleiss) (ZSM); Ea. El Cóndor, 900m, 14 males 26.i.1992 (M. Gentili) (IADIZA); Norquinco, 1 male 17.ii.1961 (Gy. Topál) (ZSM), 1 female 18.ii.1961 (Gy. Topál) (ZSM), 1 male 19.ii.1961 (Gy. Topál) (ZSM). Santa Cruz. Guer – Aike, 25m, 1 male 8 females 2.ii.1976 (M. Gentili) (IADIZA); Punta Bandera, Lago Argentino, 1 male i.1963 (Margh.), genitalia slide N° 2105FN (IFML).

### ***Metecia hypothetica* (Köhler, 1961) new combination**

Figs 5–7, 13, 14, 27–29, 34–36.

*Pareuxoina hypothetica* Köhler, 1961: 78, pl I, fig. 6; Köhler, 1967: 306, fig. 199 (checklist); Dapoto *et al.*, 2003: 71 (checklist); Olivares *et al.*, 2009: 395 (redescription). Holotype: male [Argentina], Neuquén, Laguna blanca, 8.iii.1959 (M. Gentili) (Köhler) (IFML). Genitalia slide N° 998 (P. Köhler coll.). Examined. Allotype: female [Argentina], Neuquén (IFML). Genitalia slide N° 2100FN. Examined.

*Pareuxoa hypothetica* (Köhler): Poole, 1989: 779 (catalogue, new combination).

**Diagnosis.** *Metecia hypothetica* can be identified by the following characters: 1) prothoracic collar with transverse central whitish line; 2) head frons projection wide with rugous anterior margin; 3) juxta of the male genitalia with dorsal margin produced into two long triangular bars, not connected to anellus sclerotized plates, central horn absent; 4) digitus apex extending beyond posterior margin of valve; and 5) female genitalia with anterior 1/3 of ductus bursae membranous, with ventral right diverticulum of compact membrane.

**Redescription.** Male (Fig. 5). Head frons pale brown with lateral whitish bands close to eyes, with central wide wart-like projection of rugous anterior margin, not crenate, without raised edge (Figs 13, 14); labial palpus pale brown with brown traces on segments and ventral to second segment apex, third segment whitish continuing frons lateral bands, segments with long hairlike scales; antennae biserrate (Fig. 7).

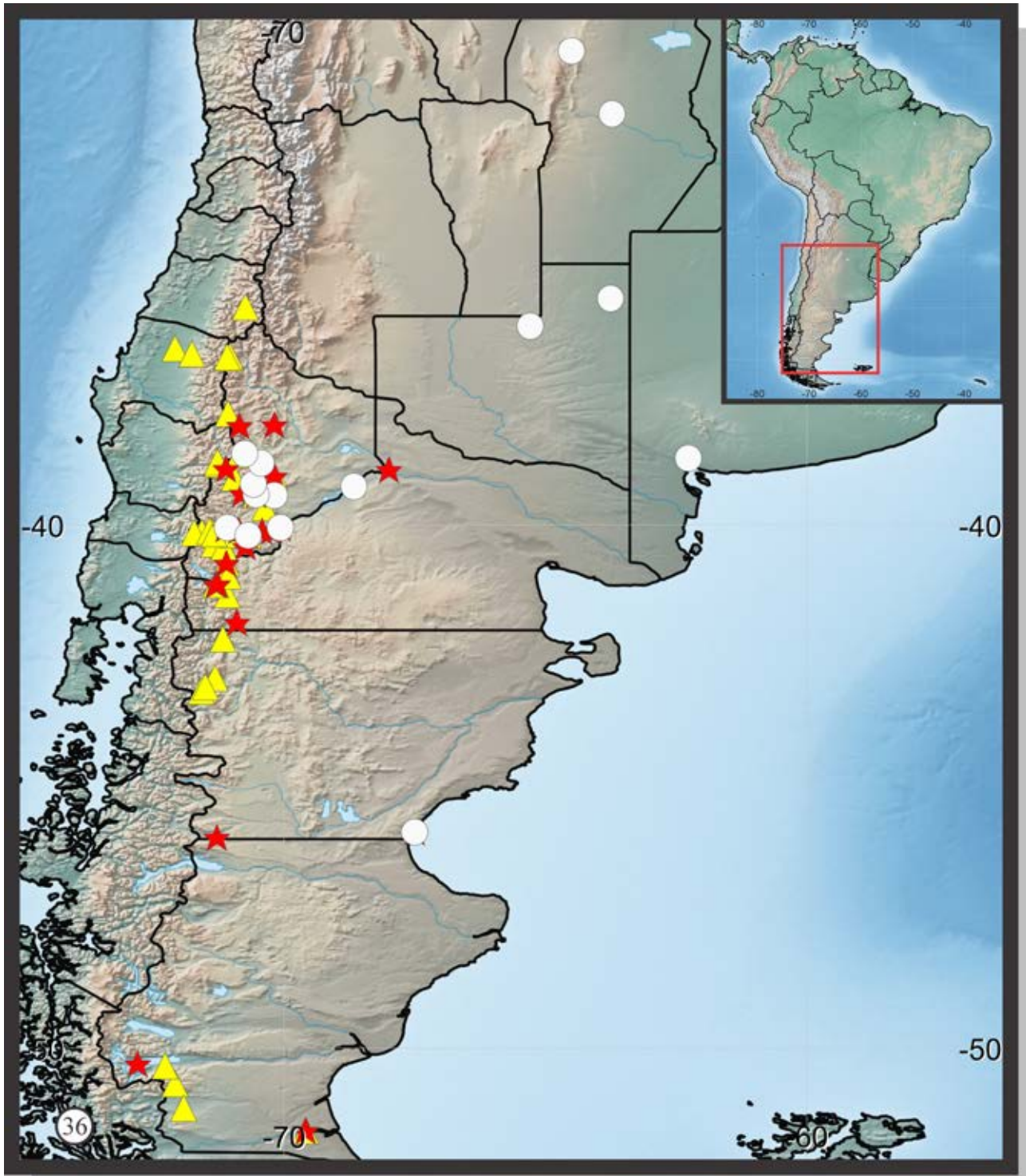
Prothoracic collar pale brown with whitish line extending from head vertex thickening toward collar dorsal margin.

Forewing length 14.9–16.5 mm, from pale brown to brown; costa and veins pale brown; anterior streak from cell to wing apical margin (less often originates from wing basal margin), not contiguous with cubitus, posterior streak along Cu vein, from base to middle of the wing, if reaching termen then faded on apical half of the wing.

Genitalia (Fig. 27) with apical dorsal projection of uncus absent. Juxta dorsal margin laterally produced into two long triangular bars not connected to anellus sclerotized plates, central sclerotized horn absent (Fig. 27). Valve 4X longer than wide; ampulla slender, faintly S-shaped, 0.25X as long as valve; clasper proper absent; digitus weakly sclerotized, free from inner surface of valve on apical 2/3, apex pointed and extending beyond valve posterior margin (Fig. 27). Vesica (Figs 28, 29) without ventral plate, basal diverticulum ventral and right, large, not twisted, with ventral anterior strong cornuti, 6X longer than wide; subbasal diverticulum short, 2.5X as long as wide, with apical cornuti, 0.3X as long as basal cornuti (Fig. 28); apical diverticulum well differentiated.

Female (Fig. 6) as in male except for: forewing length 14.2–16.1 mm and antenna filiform. Genitalia (Figs 34, 35) with posterior apophysis 2.6X as long as anterior apophysis. Anterior 1/3 of ductus bursae membranous, with ventral right diverticulum of compact membrane (Fig. 35). Corpus bursae without sclerotized plate, as long as appendix bursae, both fused along posterior 1/2 of their length.

**Bionomics and distribution.** Adults have been collected from January to March. Argentina (Chubut, Neuquén, Río Negro, and Santa Cruz) and Chile (Regions VII and VIII) (Fig. 36).



**FIGURE 36.** Distribution map of *Metecia* species. White circles = *M. cornifrons*, red stars = *M. lacustris*, yellow triangles = *M. hypothetica*.

**Material examined.** (298 males, 80 females). ARGENTINA: Chubut. Bajo Palangana, 150m, 1 female 28.iii.1970 (M. Gentili) (IADIZA); El Maitén, 700m, 8 males 1 female 16.i.1986 (M. y P. Gentili) (IADIZA); Esquel, 1 female 8.i.1960, genitalia slide N° 2102FN (IFML); Los Cipreses, 650m, 1 female 13.ii.1982 (M. y P. Gentili) (IADIZA); Trevelin, 1 male 13.ii.1982 (Gentili) (IADIZA). Neuquén. Aeropuerto Chapelco, 780m, 8 males 14.ii.1988 (M. y P. Gentili) (IADIZA); C. Cura, Carro quemado, 840m, 8 males 1 female 6.ii.1995 (M. Gentili) (IADIZA); C. Cura, Rincón León, 650m, 1 male 15.iii.1997 (M. Gentili) (IADIZA); Catan Lil, 892m, 1 male 18.i.1984 (M. y P. Gentili) (IADIZA); Caviahue, 1650m, 1 male 17.i.1980 (M. Gentili) (IADIZA); Chapelco,

Lenga, 1700m, 3 males 1 female 11.i.1983 (M. y P. Gentili) (IADIZA), 1650m, 1 male 3.i.1984 (M. y P. Gentili) (IADIZA); Chapelco, Techos, 1400m, 1 male 1.i.1982 (M. y P. Gentili) (IADIZA), 1 male 2 females 21.i.1982 (M. y P. Gentili) (IADIZA), 1 female 26.i.1982 (M. y P. Gentili) (IADIZA), 1 male 30.i.1982 (M. y P. Gentili) (IADIZA), 2 males 3.i.1984 (M. y P. Gentili) (IADIZA), 1 male 21.i.1984 (M. y P. Gentili) (IADIZA); Coloradas, Antena, 1000m, 23 males 3 females 25.i.1988 (M. y P. Gentili) (IADIZA), 13 males 5 females 17.ii.1988 (M. y P. Gentili) (IADIZA), 10 males 4 females 2.iii.1990 (M. y P. Gentili) (IADIZA), 1 male 1 female 27.ii.1993 (M. Gentili) (IADIZA); Confluen. Traful, 700m, 14 males 3 females 17.ii.1982 (M. y P. Gentili) (IADIZA); Cordón Chapelco, 1750m, 1 male 14.i.1982 (M. y P. Gentili) (IADIZA), 1700m, 1 male 21.i.1982 (M. y P. Gentili) (IADIZA); Ea El Condor, 6 males 26.i.92 (M. Gentili) (IADIZA); Ea. Meliquina, 1 female 10.ii.1965 (M. Gentili) (IADIZA); El turbio, 1 male 20.i.76 (M. Gentili) (IADIZA); L. Lacar, Trompul, 1000m, 7 males 6.i.1983 (M. y P. Gentili) (IADIZA); Lacar, Quechuquina, 900m, 14 males 8 females 14.i.1983 (M. y P. Gentili) (IADIZA); Lago Queñi, 875m, 1 male 13.i.1984 (M. y P. Gentili) (IADIZA); Laguna blanca, 1270m, 1 male 3.iii.1984 (M. y P. Gentili) (IADIZA); Lagunas, Campament., 1350m, 12 males 8.i.1989 (M. y P. Gentili) (IADIZA); Lagunas Lumabía, 1500m, 3 males 7.i.1989 (M. y P. Gentili) (IADIZA); Lagunas Rosahuer, 1450m, 1 male 6.i.1989 (M. y P. Gentili) (IADIZA); Moquehue Icalma, 1250m, 1 male 2.iii.1984 (M. y P. Gentili) (IADIZA); Neuquén, 1 male (paratype) (IFML); Pampa Curaco, 1150m, 6 males 6.i.1987 (M. y P. Gentili) (IADIZA); Pampa Puttkamer, 975m, 44 males 15 females 14.ii.1988 (M. y P. Gentili) (IADIZA); Paso Córdoba, 1300m, 2 males 21.i.1984 (M. y P. Gentili) (IADIZA), 4 males 7.i.1981 (M. Gentili) (IADIZA); Pino Hachado, 1750m, 1 male 30.i.1974 (M. Gentili) (IADIZA); Quemquemtreu, Cañada Camino, 850m, 8 males 3 females 2.ii.1979 (M. Gentili) (IADIZA); Quilahuintos, 1000m, 1 male 4.i.1981 (M. Gentili) (IADIZA); Quilquihue, 750m, 3 males 9 females 8.iii.1980 (M. Gentili) (IADIZA), 1 male 12.i.1981 (M. Gentili) (IADIZA), 5 males 6 females 21.iii.1983 (M. y P. Gentili) (IADIZA); R. Aluminé, L. Loan, 1100m, 1 male 16.i.1984 (M. y P. Gentili) (IADIZA); Remeco, 1250m, 12 males 17.i.1984 (M. y P. Gentili) (IADIZA); Rincón chico, 1 female 1.iii.1965 (M. Gentili) (IADIZA); San Martín de los Andes, 1 male 1 female 31.i.1959 (M. Gentili) (IADIZA), 1 male (M. Gentili) genitalia slide N° 2101FN (IFML), 1 female 15.i.1960 (M. Gentili) (IADIZA), 1 female 30.i.1963 (M. Gentili) (IADIZA); San Martín de los Andes, Parque Nacional Lanín, 1 female ii.1952 (Schajovskoi) (BMNH). Río Negro. A. Pichi Leufu, 1100m, 7 males 1 female 17.i.1986 (M. y P. Gentili) (IADIZA); Bariloche, 850m, 1 male (paratype) 16.ii.1953 (Fleiss) (IFML), genitalia slide N° 997 (Köhler coll.); Fragna, 1 male 14.i.1965 (A. Giai) (BMNH); Ea. El Cóndor, 900m, 38 males 6 females 26.i.1992 (M. Gentili) (IADIZA); La fragua, 1 male 14.i.1965 (L.G. Giai) (IADIZA). Santa Cruz. El Turbio, 200m, 2 males 20.i.1974 (M. Gentili) (IADIZA), 3 males 20.i.1976 (M. Gentili) (IADIZA), 2 males 22.i.1976 (M. Gentili) (IADIZA); Fuentes Coyle, 300m, 2 males 27.i.1976 (M. Gentili) (IADIZA); Guer Aike, 25m, 1 male 2.ii.1976 (M. Gentili) (IADIZA); Lago Argentino, El Calafate, 200m, 1 male 12.i.1979 (Misión Científica Danesa) (IADIZA).

**Data from bibliographical sources.** CHILE: VII Region (Maule). Sector La Mina, 26–27.ii.2002. VIII Region (Bio-Bio). Las Trancas, Chillán, 9.ii.2002; Las Trancas, Ñuble, 10–16.ii.2007; Laguna Icalma, 7.ii.1980 (Olivares *et al.* 2009).

## Acknowledgements

We thank FONCyT (PICT 12605) and CONICET (PIP 6502) for financial support. The Instituto Superior de Entomología “Dr. Abraham Willink” and the Facultad de Ciencias Exactas y Naturales (UNLPam) provided workspace and equipment. We thank D. J. Carter, M. R. Honey (BMNH), and Axel Hausmann (ZSM) for the provision of invaluable material for this paper. We are grateful to Patricia Gentili and Robert Poole for language corrections and to Adriana Chalup for helpful comments. Gottfried Behounek, Lawrence F. Gall, and Robert J. Borth offered many comments that substantially improved the manuscript.

## References

- Beccaloni, G.W., Scoble, M.J., Robinson, G.S. & Pitkin, B. (Eds.) (2003) The Global Lepidoptera Names Index (LepIndex). Available from: <http://www.nhm.ac.uk/research-curation/research/projects/lepindex/> (accessed 14 July 2015)
- Dapoto, G., Giganti, H., Gentili, M. & Bondoni, M. (2003) Lepidópteros de los bosques nativos del Departamento Aluminé



- (Neuquén-Argentina). II Contribución. *Bosque (Valdivia)*, 24, 95–112.  
<http://dx.doi.org/10.4067/S0717-92002003000100008>
- Hadley, A. (2015) CombineZP. Available from: <http://www.hadleyweb.pwp.blueyonder.co.uk/CZP/News.htm> (accessed 14 July 2015)
- Köhler, P.E. (1945) Las Noctuidae Argentinas. Subfamilia Agrotinae. *Acta Zoologica Lilloana*, 3, 59–134.
- Köhler, P.E. (1961) Noctuidarum Miscellanea. III. *Anales de la Sociedad Científica Argentina*, 172, 69–94.
- Köhler, P.E. (1967) Index de los géneros de las Noctuinae argentinas (Agrotinae sensu Hampson, Lep. Het.). *Acta Zoologica Lilloana*, 21, 253–342.
- Lafontaine, J.D. (2004) Noctuoidea: Noctuidae (part), Agrotinae. In: Hodges RW (Ed.), *The Moths of North America*. The Wedge Entomological Research Foundation, Washington, pp. 1–394.
- Nye, I.W.B. (1975) Noctuoidea (part). Noctuidae, Agaristidae, and Nolidae. In: Nye, I.W.B. (Ed.), *The generic names of moths of the world. Vol. 1*. British Museum (Natural History), London, pp. 1–586.
- Olivares, T.S., Angulo, A.O. & Moreno, G. (2009) Diversidad de los Noctuidae en el corredor biológico Nevados de Chillán–Laguna del Laja (VIII Región, Chile) (Lepidoptera: Noctuidae). *SHILAP Revista lepidopterologica*, 37, 389–404.
- Pogue, M.G. (2002) A world revision of the genus *Spodoptera* Guenee (Lepidoptera: Noctuidae). *Memoirs of the American Entomological Society*, 43, 1–202.
- Poole, R.W. (1989) *Lepidopterorum Catalogus (new series). Fascicle 118. Noctuidae. Part 1–3*. E. J. Brill / Flora & Fauna Publications, Leiden, New York, Kobenhavn, Köln, 1314 pp.
- Shorthouse, D.P. (2010) SimpleMappr, an online tool to produce publication-quality point maps. Available from: <http://www.simplemappr.net>. (accessed 14 July 2015)
- Snellen, P.C.T. (1879) Description d'un nouvelle genre et d'une nouvelle espèce de la famille de Noctuérites provenant de la République Argentine. *Boletín de la Academia Nacional de Ciencias de la República Argentina (Córdoba)*, 3, 93–96.