

COMPARATIVE NOTES ON SOME SPECIES OF *COSMOCLOPIUS* STÅL, 1866 AND REDESCRIPTION OF *C. PALLIDUS* BERG, 1879 (HETEROPTERA: REDUVIIDAE: HARPACTORINAE)

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RESUMEN: Notas comparativas de algunas especies de *Cosmoclopius* Stål, 1866 y redescipción de *C. pallidus* Berg, 1879 (Heteroptera: Reduviidae: Harpactorinae).

Se revisa el género neotropical *Cosmoclopius* Stål, 1866 y se dan nuevos caracteres para distinguir a sus especies. Se redescribe *C. pallidus* Berg, 1879. Los caracteres que la distinguen de las especies estudiadas en este trabajo son la ausencia de bandas oscuras en las antenas y las patas, el connexivo uniforme y marrón claro y la coloración pálida de todo el cuerpo. Se realiza un cuadro comparativo entre *C. annulosus* Stål, 1872; *C. curacavensis* Cobben & Wygodzinsky, 1975; *C. nigroannulatus* (Stål, 1860); *C. pallidus* Berg, 1879 y *C. poecilus* (Herrick-Schaeffer, 1848).

Palabras clave: Heteroptera, Reduviidae, *Cosmoclopius*, *C. pallidus*, redescipción.

SUMMARY: Comparative notes on some species of *Cosmoclopius* Stål, 1866 and redescription of *C. pallidus* Berg, 1879 (Heteroptera: Reduviidae: Harpactorinae).

The neotropical genus *Cosmoclopius* Stål, 1866 is revised, and new characters to identify the species are given. *C. pallidus* Berg, 1879 is redescribed, the main characters that distinguish this species from the others studied in this paper are the absence of dark bands on the antennae and legs, the pale brown unmarked connexivum, and the pale coloration of the entire body. A comparative chart of *C. annulosus* Stål, 1872; *C. curacavensis* Cobben & Wygodzinsky, 1975; *C. nigroannulatus* (Stål, 1860); *C. pallidus* Berg, 1879; and *C. poecilus* (Herrick-Schaeffer, 1848) is made.

Key words: Heteroptera, Reduviidae, *Cosmoclopius*, *C. pallidus*, redescription.

INTRODUCTION

The genus *Cosmoclopius* Stål, 1866 comprises 7 species, *C. annulipes* Fallou, 1887; *C. annulosus* Stål, 1872; *C. curacavensis* Cobben & Wygodzinsky, 1975; *C. intermedius* Berg, 1884; *C. nigroannulatus* (Stål, 1860); *C. pallidus* Berg, 1879; and *C. poecilus* (Herrick-Schaeffer, 1848) (Maldonado Capriles, 1990). They are widely distributed in the Neotropical region, from Brazil to Argentina, including Curaçao. Cobben & Wygodzinsky (1975) discussed the relationships among *C. annulosus*, *C. curacavensis* and *C. nigroannulatus*, based mainly on the male genitalia. In the present paper, we redescribe *C. pallidus* because Berg's original Latin description lacks important characters, which are used to identify the species of this genus. We also compare it with *C. annulosus*, *C. curacavensis*, *C. nigroannulatus*, and *C. poecilus*.

MATERIALS AND METHODS

Specimens of *C. poecilus* and *C. nigroannulatus* were collected on *Acacia caven* Molina (Leguminosae, Mimosoideae) by beating in Colonia C. Pellegrini, Iberá Reserve, (28° 32' S, 57° 11' W), 120 km NE of Mercedes, Corrientes, Argentina. According to Cabrera & Willink (1973) this area belongs to the Chaqueño Domain, Espinal Province, Nandubay District, and is characterized by a warm and humid climate, mean annual precipitation of 304.5 mm, and the average yearly temperature 13-27°C (Carnevali, 1994). The dominant vegetation is a lower xerophile forest, palms, grass steppes and halophile steppes. Additional material was collected on tobacco (*Nicotiana tabacum* Linné (Solanaceae)), at the Agricultural Experimental Station Cerro Azul (INTA), L. N. Alem (27° 36' S, 55° 20' W), Misiones, Argentina. In addition to the material col-

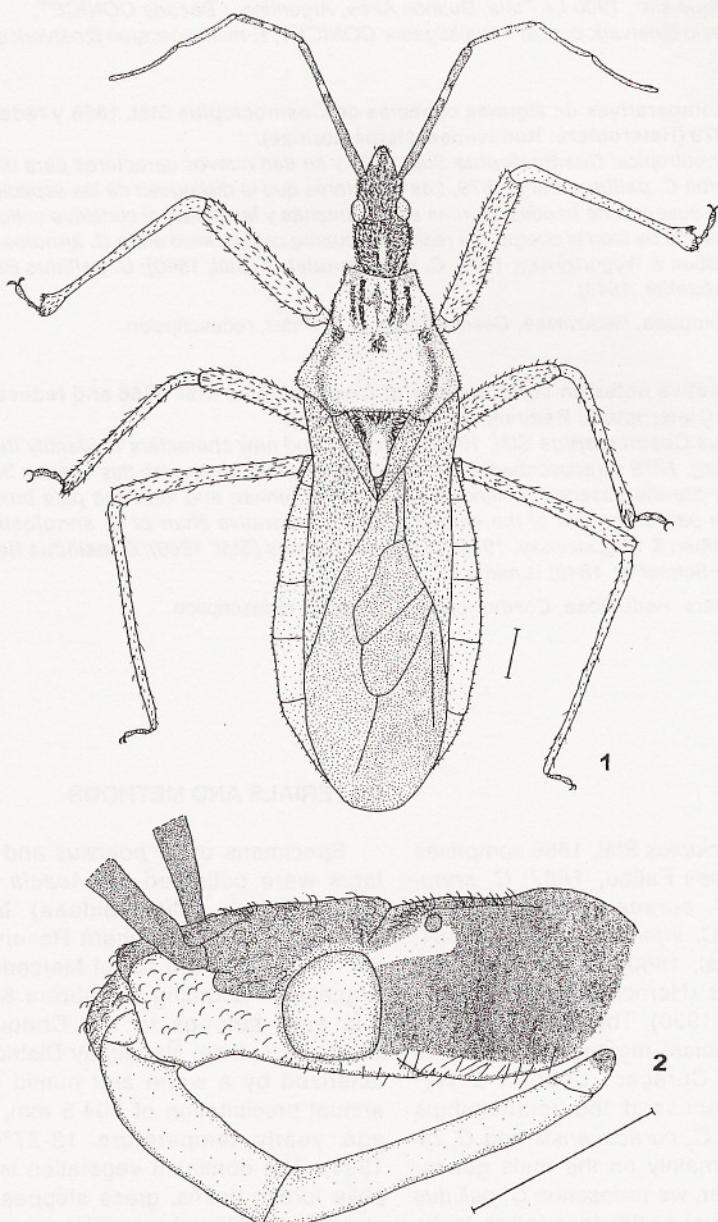
lected in the field, we examined the holotype of *C. pallidus* deposited in the Museo de Ciencias Naturales de La Plata (MLP), Argentina and 70 specimens from the collections of MLP and Museo Argentino de Ciencias Naturales "Bernardino Rivadavia" (MACN), Argentina. Because we had no access to *C. curacavensis* specimens, we used the original description and figures to compare with the other species studied. Measurements are given in millimeters.

RESULTS

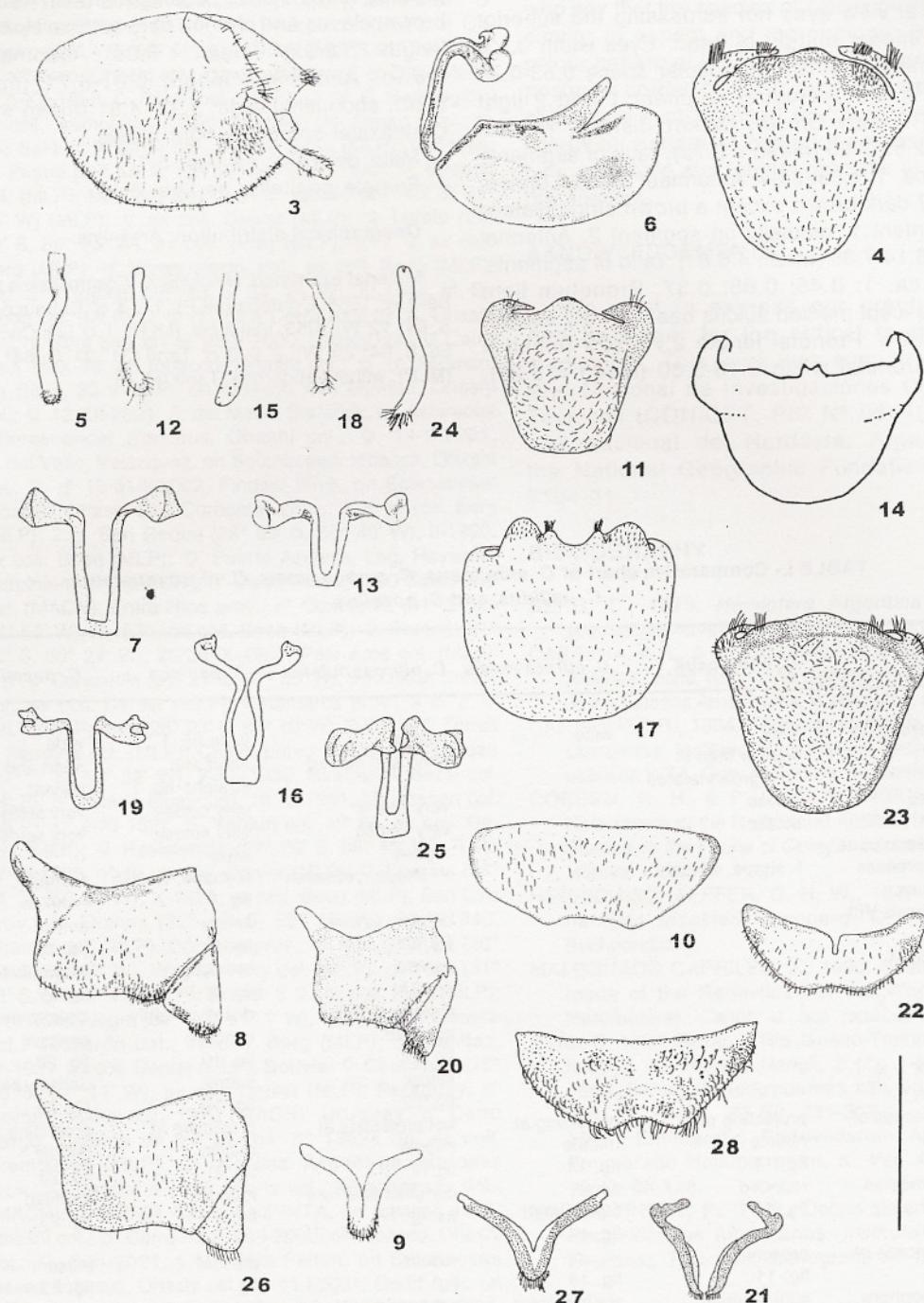
Cosmoclopius pallidus Berg (Figs. 1- 10)

Cosmoclopius pallidus Berg, 1879: 149; Wygodzinsky, 1949: 37; Maldonado Capriles, 1990: 188.

General aspect as seen in fig. 1. Total length 12.40-14.05 (mean = 13.01). Head elongate and very pilose, dark brown except middle longitudi-



Figs. 1-2.- *Cosmoclopius pallidus*. 1: General aspect; 2: head, lateral view.



Figs. 3-10.- *Cosmoclopius pallidus*. 3-7: Male genitalia. 3: Pygophore, lateral view; 4: pygophore, posterior view; 5: left paramere, external view; 6: phallus, lateral view; 7: phallus, dorsal view. 8-10: Female genitalia. 8: VIII Gonocoxite and gonapophysis; 9: IX gonocoxite; 10: IX + X tergites. 11-13: *C. annulosus*, male genitalia. 11: Pygophore, posterior view; 12: left paramere, external view; 13: articulatory apparatus. 14-16: *C. curacavensis*, male genitalia. 14: Pygophore, posterior view; 15: paramere; 16: articulatory apparatus. 17-22: *C. nigroannulatus*. 17-19: Male genitalia. 17: Pygophore, posterior view; 18: left paramere, external view; 19: articulatory apparatus. 20-22: Female genitalia. 20: VIII Gonocoxite and gonapophysis; 21: IX gonocoxite; 22: IX + X tergites. 23-28: *C. poecilus*. 23-25: Male genitalia. 23: Pygophore, posterior view; 24: left paramere, external view; 25: articulatory apparatus. 26-28: Female genitalia. 26: VIII Gonocoxite and gonapophysis; 27: IX gonocoxite; 28: IX + X tergites.

nal line and behind the eyes, and laterally as shown in fig. 2. Length of head 2.34-2.53 (mean = 2.46), width of head 1.01-1.20 (mean = 1.10). In lateral view eyes not surpassing the superior or the inferior margin of head. Eyes width 0.13-0.25 (mean = 0.18). Interocular space 0.63-0.76 (mean = 0.68). Rostral segment 1 and 2 light brown, 3 dark brown, darker distally. Rostral length 2.59-3.30 (mean = 2.79), ratio of segments length ca. 1: 1.38: 0.34. Antennae: 3 and 4 brown, 1 and 2 dark brown except a brown stripe distally on segment 1, medially on segment 2. Antennal length 6.14-7.65 (mean = 6.81), ratio of segments' length ca. 1: 0.45: 0.65: 0.37. Pronotum light brown except median sulcus basally, very setose, light brown. Pronotal length 2.78-3.29 (mean = 3.04), pronotal width 3.16-3.60 (mean = 3.24).

Posterior pronotal lobe expanded. Scutellum dark brown except a yellowish stripe in the posterior process and the disc. Legs light brown. Hemelytra brown, clavus and chorion very setose. Hemelytral length 7.72-8.61 (mean = 8.06). Abdomen light brown. Abdominal length 6.01-6.71 (mean = 6.24), abdominal width 3.92-4.81 (mean = 4.16). Connexival segments light brown.

Male genitalia: as figs. 3-7.

Female genitalia: as figs. 8-10.

Geographical distribution: Argentina.

Material examined: Holotype ♀ *Cosmoclopius pallidus* Berg, nº 1556, Córdoba (MLP), 1 ♀ 1 ♂ El Sauce (31° 6' S, 64° 12' W), 1/53, Viana col. (MLP); 1 ♀ Los Cocos (30° 55' S, 64° 20' W), 2 ♀ 3 ♂ Tanti (31° 21' S, 64° 27' W) (MLP); without abdomen, Tanti (MLP).

TABLE I.- Comparative chart of *C. annulosus*, *C. curacavensis*, *C. nigroannulatus*, *C. pallidus*, and *C. poecilus*.

Species Character	<i>C. annulosus</i>	<i>C. curacavensis</i>	<i>C. nigroannulatus</i>	<i>C. pallidus</i>	<i>C. poecilus</i>
Postocular region	wide	wide	narrow	wide fig. 1	wide
Head	shorter than in <i>C. nigroannulatus</i>	-	short and curved	short and straight, fig. 1	short and curved
Head setae	setose	-	very setose	very setose	very setose
Pronotum	setose	-	very setose	very setose	very setose
Pronotum sculpture	-	-	rugose	waxy	-
Posterior process of scutellum	I- shape, whitish	-	Y- shape, yellowish	I- shape, whitish fig. 1	I- shape, whitish
Gonapophysis VIII	-	-	densely setose fig. 20	setose fig. 8	setose fig. 26
Gonocoxite IX	-	-	curved fig. 21	curved fig. 9	very curved fig. 27
Tergites IX + X	-	-	distally slightly concave fig. 22	distally slightly concave fig. 10	distally very concave fig. 28
Tergites IX + X chatotaxy	-	-	setose fig. 22	setose fig. 10	densely setose fig. 28
Median process of pygophore	projecting at middle fig. 11	projecting at middle fig. 14	not projecting at middle fig. 17	projecting at middle fig. 4	projecting at middle fig. 23
Shape of median process of pygophore	rounded fig. 11	small, bipunctated fig. 14	complex structure as fig. 17	rounded fig. 4	rounded fig. 23
Median process of pygophore	present fig. 11	-	reduced fig. 17	present fig. 4	present fig. 23
Shape pygophore	subtriangular fig. 11	subtriangular fig. 14	subquadriangular fig. 17	subtriangular fig. 4	subtriangular fig. 23
Parameres setae	long setae fig. 12	sparse setae fig. 15	median setae fig. 18	short setae fig. 5	dense long setae fig. 24
Articulatory apparatus	short fig. 13	long fig. 16	short fig. 19	long fig. 7	short fig. 25
Basal plate bridge	separate fig. 13	separate fig. 16	separate fig. 19	separate fig. 7	in contact fig. 25

-: without material.

Material examined: *C. nigroannulatus*. Argentina: Jujuy prov.: ♂ 2 ♀ habitación, IX-1975 (MLP); without abdomen (MLP); ♂ ♀ Yala (24° 6' S, 65° 21' W), 12-III-1939, Biraben & Scott leg. (MLP); Salta prov.: ♂ Cafayate (26° 4' S, 65° 41' W), Biraben col. (MLP); ♀ Cafayate (26° 4' S, 65° 41' W), III-1944 (MLP); ♀ 17-X-2000, on tobacco, Ohashi col.; Tucumán prov.: 2 ♂ 2 ♀ (MLP); ♀ 5-XII-1898, C. Bruch col. (MLP); ♀ M. S. Pennington, ex coll. Tremoleras (MLP); Santiago del Estero prov.: ♀ Río Salado, Wagner col., ex coll. Bosq (MLP); Formosa: ♀ Pirané (25° 45' S, 58° 50' W), 15-XI-1942, M. Biraben col. (MLP); Misiones prov.: ♂ ♀ Iguazú (25° 43' S, 54° 24' W) (MLP); ♀ ex coll. Denier (MLP); ♀ Loreto (27° 20' S, 55° 23' W), ex coll. Bosq (MLP); ♂ 2 ♀ ex coll. Berg (MLP); ♂ Wygodzinsky det., ex coll. Bosq (MLP); 6 ♂ 2 ♀ Iguazú (25° 43' S, 54° 24' W), XI-1944, M. Biraben col. (MLP); 2 ♀ ♂, EEA Cerro Azul INTA, Ohashi col.; ♂ Silva San Javier, 25-V-2000, Ohashi col.; ♀ Cerro Azul 15-X-96, on tobacco, Ohashi col.; ♀ ♂ Taranco, Da Silva, 23-V-2000, on tobacco with Miridae, Ohashi col.; ♀ 12-XII-2001, A. del Medio Stefañuk, on Asteracea inflorescence: *Sonchus*, Ohashi col.; ♀ 14-II-2001, A. del Valle, Velazquez, on Solanaceae: tobacco, Ohashi col.; ♀ ♂ 13-31/II/2002, Pindaití Siruk, on Solanaceae: tobacco, Ohashi col.; Corrientes prov.: 2 ♂ ex coll. Berg (MLP); 2 ♂ San Roque (28° 33' S, 58° 40' W), II-1920, ex coll. Bosq (MLP); ♀ Puerto Azcurra, Leg. Hayward, Carpintero det. (MACN); ♂ Manantiales, 1960 Carpintero det. (MACN); Entre Ríos prov.: ♂ Concordia (31° 21' S, 57° 55' W), II-1930, ex coll. Bosq (MLP); ♀ Paraná (31° 42' S, 60° 24' W), 20/25-IX-1967, Pilar Arce col. (MLP); 2 ♂ ♀ Concordia (31° 21' S, 57° 55' W), 9-X-1929, Breyer col., ex coll. Denier (MLP); Catamarca prov.: 2 ♂ 2 ♀ (MLP); ♂ Pomán (28° 23' S, 66° 10' W), 8-III-1962, Torres & Ferreyra col. (MLP); Chaco prov.: ♀ Pte. de la Plaza (27° 1' S, 59° 32' W), 7-XII-1939, Biraben & Bezzi col. (MLP); ♂ Picada Guaycurú, 18-XI-1941, M. Biraben col. (MLP); ♂ 2-XI-1897, S. Venturi col., n° 84, ex coll. Denier (MLP); ♀ Resistencia (27° 29' S, 58° 56' W), R.M., 27-XI-1936, n° 10, ex coll. Denier (MLP); ♀ Charata (27° 14' S, 60° 57' W), X-1924, ex coll. Bosq (MLP); San Luis prov.: ♀ Quines (32° 12' S, 65° 45' W), 18-II-1940, Biraben col. (MLP); Córdoba prov.: ♂ Mar Chiquita (30° 49' S, 62° 37' W), Wygodzinsky det. (MLP); ♂ Tanti (31° 21' S, 64° 27' W) (MLP); Brasil: 2 ♀, ex coll. Berg (MLP); 3 ♂ Porto Alegre (30° 4' S, 51° 1' W), 10-II-1991, Fallavera col., Coscarón det., ex coll. Berg (MLP); ♂ Benitez, IV-1931, ex coll. Denier (MLP); Bolivia: ♀ Chulumani (16° 26' S, 67° 11' W), ex coll. Denier (MLP); Paraguay: ♂ Cororó, Viana col., 1979 (MACN); Uruguay: ♂ Cerro Largo, Cañada de los Burros, n° 13624 36, ex coll. Tremoleras (MLP). *C. poecilus*. Argentina: Misiones prov.: ♀ Loreto, II-1945, Viana col., Wygodzinsky det., (MACN); 3 ♀ EEA Cerro Azul INTA, on tobacco 1997, Ohashi col.; ♂ Cerro Azul, 25-I-2000, on tobacco, Ohashi col.; ♀ 6-XI-2001, L.N. Alem Feltan, on Solanaceae leaves: tobacco, Ohashi col.; ♀ 11-I-2001, Cerro Azul, on Solanaceae leaves: tobacco, Ohashi col.; ♂ 12-XII-2001, A. del Medio Stefañuk, on Solanaceae leaves: tobacco, Ohashi col.; 2 ♀ 12-XII-2001, A. del Medio Stefañuk, on Solanaceae: tobacco, Ohashi col.; Formosa prov.: ♀ Palosanto, V-1941, H. Hepper (MACN). *C. annulosus*: Argentina: Corrientes prov.: 4 ♂ Ituzaingó, IV-1979, Viana col., Carpintero det. (MACN).

CONCLUSIONS

We agree with Cobben & Wygodzinsky (1975) who say that the species of *Cosmoclopius* are very similar in aspect and morphology. Besides the colour pattern of the body and the structure of the posterior border of the pygophore, we add more characters such as head sculpture, head pilosity, coloration pattern of posterior process of scutellum, and male and female genitalia to distinguish the species.

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