

Description of a new species of *Neralsia* Cameron with a wide distribution in the American continent: *N. incompleta* n. sp. (Hymenoptera: Figitidae: Figitinae)

Juli PUJADE-VILLAR, Jordi PARETAS-MARTÍNEZ & Mauricio JIMÉNEZ

Universitat de Barcelona, Facultat de Biologia, Departament de Biologia Animal, Avda, Diagonal 646, ES-08028-Barcelona, Spain

Abstract. In this study a new species of *Neralsia* is described, *N. incompleta* n. sp. The radial cell shape allows to distinguish it clearly from the rest of species of the genus. The distribution of *Neralsia incompleta* n. sp. is probably the entire American continent, having been collected from Canada to Paraguay. In spite of its abundance, the associated biology is unknown, although it should be related with parasitism of Diptera Cyclorrhapha.

Résumé. Description d'une nouvelle espèce de *Neralsia* Cameron avec une large distribution dans le continent américain : *N. incompleta* n. sp. (Hymenoptera : Figitidae : Figitinae). Dans ce travail, on décrit une nouvelle espèce de *Neralsia*, *N. incompleta* n. sp. La forme de la cellule radiale permet de distinguer clairement cette espèce de toutes les autres du genre. *Neralsia incompleta* n. sp. se distribue probablement dans le continent américain tout entier puisqu'elle y a été collectée depuis le Canada jusqu'au Paraguay. En dépit de son abondance, sa biologie est inconnue bien qu'elle puisse être en relation parasitaire de diptères cyclorhaphes.

Keywords: Hymenoptera, Cynipoidea, Figitidae, *Neralsia incompleta*, new species, America.

Neralsia Cameron 1883 is a figitid genus distributed in the American continent, comprising around 30 species. *Neralsia* is potentially important for the control of Diptera Cyclorrhapha. In particular, *Neralsia fossulata* (Kieffer 1909) (= *N. splendens* Borgmeier 1935), is a parasitoid of preimaginal states of dung Diptera: Sarcophagidae (Díaz 1990; Díaz & Gallardo 1995, 1996; Díaz *et al.* 2000; Marchiori *et al.* 2000, among others). The reason for studying the specific diversity of *Neralsia* is its biological potential in pests control. In spite of this potential, a study of the examined material from several institutions shows the limited knowledge we have on the *Neralsia* diversity (Jiménez *et al.*, 2005 a).

The genus *Neralsia* is being exhaustively studied by the latter author. Members of the Universitat de Barcelona (M. Jimenez, P. Ros-Farré & J. Pujade-Villar) and the Universidad de la Plata (N. B. Díaz & F. Gallardo) are studying the South American species. In a preceding study (Jiménez *et al.*, 2005 a), these authors emphasize those characters that are diagnostic and discuss the validity of others mentioned by other authors (Dalla Torre & Kieffer 1910; Kieffer 1909, 1910; Dettmer 1932; Borgmeier 1935; Weld

1930, 1952). In a second contribution Jiménez *et al.* (2005 b) make reference to the validity of the described species in South America. The knowledge acquired in both studies has allowed to make a third contribution (Jiménez *et al.*, 2005 c) in which eight new South American *Neralsia* species are described, those that possess a high scutellar carina. Now a fourth study is being finished (Jiménez *et al.*, *in press*) in which nine more species are described, those with the mentioned scutellar carina low. All these studies were necessary overlook the South American species of this genus, that comprises more than 25 South American species, instead of the eight described now.

The species described in this work, *N. incompleta* n. sp., unlike the rest of known species of *Neralsia*, is probably distributed in the entire American continent or nearly so. On the other hand, a peculiar characteristic of the radial cell makes it unmistakable from the other species.

Material and methods

The types of the following species have been studied: *Figites clavatus* Giraud 1860; *Solenaspis singularis* Ashmead 1896; *Solenaspis hyalinipennis* Ashmead 1887; *Xyalophora albipennis* Kieffer 1909; *Xyalophora acuminata* Dettmer 1932; *Xyalophora bogotensis* Kieffer 1909; *Xyalophora borgmeieri* Dettmer 1832; *Xyalophora claripennis* Dettmer 1932; *Xyalophora flavidipennis* Kieffer 1909; *Xyalosema fossulata* Kieffer 1909; *Xyalophora pilosa* Borgmeier 1935; *Xyalophora splendens* Borgmeier 1935; *Xyalophora striaticeps* Kieffer 1909; and *Xyalophora suffecta* Dettmer 1932.

E-mail: pujade@porthos.bio.ub.es

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The most part of the material cited in this study has been captured with Malaise trap (MT). The abbreviations of the institutions from where all the examined material comes and the name of the curators of the collections are listed below:

CNCI (Canadian National Collection of Insects, Ottawa, Canada; Dr. G. Gibson)

USNM (United States National Museum of Natural History, Smithsonian Institution, Washington DC, USA; Dr. D. Furth)

LACM (Los Angeles County Museum of Natural History; Los Angeles, California, USA; Dr. B. V. Brown)

UCR (Universidad de Costa Rica, San Pedro, Costa Rica; Dr. P. Hanson)

AMNH (American Museum of Natural History, New York, NY, USA; Dr. D. Grimaldi)

MEL (Museo Entomológico de León, León, Nicaragua; Dr. J. M. Maes).

Part of this material has been deposited in the J. P-V collection indicated as UB (Universitat de Barcelona, Barcelona, Spain; Dr. J. Pujade-Villar) and in MLP (Museo de la Plata, Argentina; Dr. N. B. Díaz).

The terminology of the morphological structures comes from Gibson (1985) and Ronquist & Nordlander (1989), and the sculpture terminology from Harris (1979). The used measures and abbreviations include: F1-F11, first and following flagellomeres; POC (postocellar distance) is the distance between the internal margins of the posterior ocelli; OOC (ocello-ocular distance) is the distance between the external margin of the lateral ocellus and the internal margin of the compound eye; COC (ocellar distance) is the distance between the lateral and frontal ocelli; the diameter of the lateral ocellus (OD) is its greater diameter; the transfacial line is the distance between the internal margin of the compound eyes measured at the level of the antennal sockets (toruli).

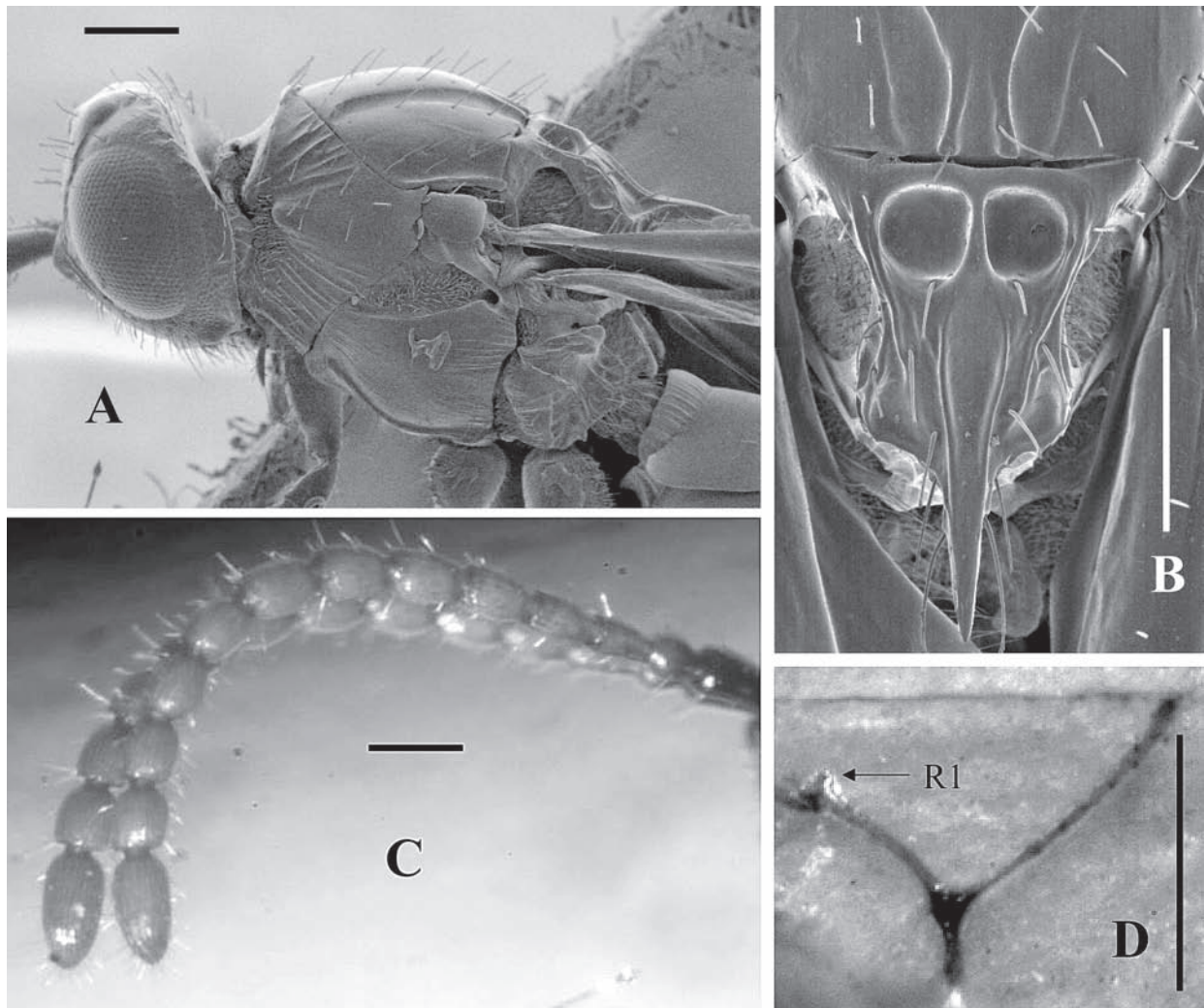


Figure 1
Principal morphological aspects of *Neralsia incompleta* n. sp. (A) Head and mesosoma in lateral view. (B) Detail from the scutellum in dorsal view. (C) Female antenna. (D) Radial cell with the short length of R1 indicated. Scale bar: 0,2 mm.

The SEM pictures included in this study have been made at low voltage without gold coating in order to preserve the specimens. The radial cell and antenna pictures have been made with a Canon digital camera.

Neralsia incompleta Jiménez & Pujade-Villar

n. sp. (Fig. 1)

Type material. **Holotype** ♀ deposited en CNCI (Ottawa, Canada), *EEUU (VA)*: “C-270, Page Co. Shenandoah Nat. Park, Big Meadow, 8.VIII.1987, J.T. Huber: ♀” (white label), Holotype desig.-2004 M. Jiménez & J. P-V” (red label), “*Neralsia incompleta* n. sp ♀ M. Jiménez & J. P-V det.2004” (white label). **Paratypes** 114♂ and 160♀: **CANADA: BRITISH COLUMBIA (BC)**: BC, Osoyos, East Bench, 5.VIII-12.IX.1994, G. G. E. Scudder, Pitfall trap/Artemisia Purshia association: 2♀ (CNCI); **ONTARIO (ONT)**: Ancaster, Ont., 8.VIII.1969, J. E. H. Martin: 1♀ (UB); ON, Ancaster, 8.VIII.1969, J. E. H. Martin: 1♀ (CNCI); C-232, Ont., Ancaster bag, 1-8.VIII.1984, B. De Jange: 1♀ (CNCI); Bonville, Ont., 24.VI.1913, W. A. Ross: 1♂ (CNCI); Brighton, Ont., 3.VIII.1956, caught in melaise trap: 1♀ (CNCI); Chatterton, Ont., 19.VIII.1951, John C. Martin collection: 1♂ (CNCI); Chatterton, Ont., 25.VIII.1952, J. E. H. Martin, Ex Bitter Boletus, Boletus fellens (Bulls) in baetle galleries: 1♂ (CNCI); “Cristal Beach” Madoc, Ont., 22.VI.1950, John C. Martin collection: 1♀ (CNCI); Grand Hend, Ont., VII.1939, G. E. Shewell: 1♂ (UB); Co. Hastings, Ont., Can., Evans 1895, Onychia armata Say (unknown det): 1♀ (CNCI); Marmora area, Ont., 25.VIII.1959, L. K. Smith: 1♂ (CNCI); Ont., Nepean, Pine Glen, 10-14.VIII.1989, L. Masner, PT: 1♂ (CNCI); Ottawa, Ont., 23-VI.19??: 1♂ (CNCI); Ottawa, Ont., 24-VI.1940, O. Peck: 1♂ (CNCI); Ottawa, Ont., 18.VII.1972, O. Peck, Swept from Salix blanda-Wisc., Willow-wilth, Euura atra: 1♀ (CNCI); ON, Ottawa, 12-19.VIII.1989, H. Goulet, MT: 1♂ & 1♀ (CNCI); ON, 44°47'12"N-75°30'38"W, 22-30.VIII.1994, nr. Hwy #16, sands, L. Masner, YPT: 1♀ (CNCI); **QUÉBEC (QUE)**: QUEBEC: Mt. Albert, Qué., 100' 24.VII.1964, W. J. Brown: 1♀ (UB); Aylmer (Gat), 1-8.IX.1987, calcaire exposé sous pylones Hydr. Pfosses, Jaunes., L. LeSage, n° 1158.40: 1♀ (CNCI); Qué. Berthierville, 11.VII.1940, A. Robert: 1♂ (CNCI); Qe, 8km, W. Bristol Mines 80m, 45°30'N-76°21'W, 27.VIII-4.IX.1997, Goulet&Dumouchel open very fine send: 1♀ (CNCI); PQ, Frelighsburg, 7.IX.1995, Noubar Bostonian, Orchard, J-est YPT, Location CE,1043.34: 1♀ (CNCI); Hammingfort, Qué., 16.VII.1985, G. H. Hammond: 1♂ (UB); Kazubazua, Qué., 10-VII.1947, O. Peck: 1♂ (CNCI); Lac Mondor, PQ, 13.VI.1951, E. G. Munroe: 1♂ (CNCI); Montreal, Qué., J. Quellet, 13-VI.1940: 1♀ (CNCI); idem, 27.VIII.1940: 1♂ (CNCI); Old Chelsea, Qué., 3.IX.1958, S. M. Clark: 1♂ (CNCI); Quyon, Qué., 22.VII.58, L. A. Kelton: 1♀ (CNCI). **U.S.A.: ALABAMA (AL)**: Montgomery. Co., 8km N. W. Blacksburr, 20-29.VII.1987, BRC HYM. Team MT, disturbet, forestedge: 1♀ (CNCI); **ARIZONA (AZ)**: C-33, AZ, Santa Cruz, Patagonia MT., 5.VIII.1995, B. Brown & E. With: 1♀ (UB); **ARKANSAS (AR)**: Faulkner Co., Ark, 2.VI.1960, Crimson Claver: 1♂ (USNM); C-280 Pope Co., Dixon Springs, 19.VI.91 S. S. D. Pinto.: 1♂ (CNCI); ARK, Mountain Pine, L. Ouachita St. Pk., Mal. Tr., V.1972, G. Heinrich: 1♀ (CNCI); Washington Co., Ark. 19.VIII.1967, Coll. by D. Harris: 1♀ (USNM); **CALIFORNIA (CA)**: C-45, New California, Macen

Co., White Iace, BRC Hym Team, MT., 1600 mt: 1♀ (CNCI); C-105, North California, Mc Dowell Co, 9.VII-17.IX.1987, Oak Rondoreion, BRC, HYM Team: 1♀ (CNCI); C-257, McDowell Co, 37° 00'N 81°30'W, VII-IX.1987, MT, Oak-Rhododendron forest, CNC Hym.team, North California: 1♂ & 2♀ (1♂ & 1♀ CNCI, 1♀ UB); **COLORADO (CO)**: Pagosa Springs, Col. Baker, Collection C. F. Baker, without data: 1♀ (USNM); **CONNECTICUT (CT)**: Norwalk Ct., 26.VI.1916, I. N. Gabrielson Collector: 1♂ (USNM); **DELAWARE (DE)**: Dewey Beach, 27.VIII-1.IX.1972, L. Knutson, Malaise Trap: 1♂ (UB); N°10 Frederica, Swp.1 beans Del., 25.VIII.1961: 1♀; **FLORIDA (FL)**: C-523 Alachua Co, Gainesville, DPI, 1- 31.V.1987, J. Wiley, MT: 1♀ (UB); FL, Alachua, Co. Gainesville, IFAS For., 16.IX.1987, L. Masner, undergrowth, S. S: 1♂ & 1♀ (CNCI); C-3 Alachua Co. Graineville, 22.III.- 2.IV 1988, D. B Wahl Malaise Trap: 1♀ (CNCI); C-190, Alachua Co, 14-16.IV.1986, E. Gibson // Levi: 1♀ (MLP); Gainesville, Flo., F. W. Mead Coll., 31.III.64, Medicago sativa L: 1♂ (CNCI); C-420, Florida, 23-30.VI.1987, Wahl: 1♀ (CNCI); Oneco, Flo., 30.III.53, John C. Martin collection: 1♂ (CNCI); Placida, Flo., 11.IV.1952, Collector O. Peck: 1♂ (CNCI); Torreya, State Park, Liberty Co., Fl, Flo., 16.V.1968, H. V. Weems, Jr.: 1♀ (UB); C-421, Florida, 1.V-13.VII.87, Alachua, Co., San Felascolt, Ammoch.: 1♀ (CNCI); C-429, Florida, 7-13.V.1987, DB, Wahl: 1♀ (CNCI); C-240, Florida, 1-3.VI.1987, J. Whiley: 1♀ (CNCI); C-193, Florida, 15-25.V.1987, Wahl Col.: 1♀ (CNCI); **GEORGIA (GA)**: Forsyth, 8-22.IX.1970, Malaise Trap, F.T. Naumann: 1♀ (CNCI); C-488 McIntosh Co., Sapelo Island, 28.IV-9.V.1987, MT., Live Oak Forest, BRC HYM. TEAM: 1♀ (CNCI); GA, McIntosh Co., Sapelo I., 15.IX.1987, live oak forest: 1♀ (CNCI); Rabun Co., 9.VII.1957, J. G. Chilcott: 2♀ (CNCI); Georgia: Stephens County, Tocoa Falls, 25.V.1980, G. F. Hevel & J. A. Fortin: 1♀ (USNM); Warwoman Crk., 26.VII.1957, W. R. Richards: 1♂ (CNCI); **ILLINOIS (IL)**: Evanston III, 4.VII.1916: 1♂ (USNM); Evanston III, Captured 04, weeds by river, 8.VIII.1914: 1♂ (USNM); **LOUISIANA (LA)**: Opelousas, La., Gr Pilate, without data: 3♂ & 1♀ (USNM); Opelousas, Pilate, La., Collection Carl F. Baker, No. 4.97, without data: 1♀ (USNM); Opelousas, Pilate, La, without data: 3♂ (USNM); Louisiana, W. of Ruston, D.A. Young, IV.1955: 1♂ (USNM); **MARYLAND (MD)**: Glen Echo, Md., 2.VI.1922, J. R. Malloch Collector: 1♂ (USNM); Glen Echo, Md, Summer, 1922, J. C. Bridwell, S/1-3: 1♂ (USNM); Maryland: Montgomery Co, Chevy Chase, “Woodend”, 18.VIII.1974, Gary F. Hevel & Susan Hevel collectors: 1♂ (USNM); Plummers Is, Md., 6-VI-1959, K. V. Krombein, without data: 1♀ (USNM); Washington, D.C., 13.VIII.1952, Richard Boettcher: 1♀ (USNM); **MASSACHUSETTS (MA)**: W Springfield, n° 16316, 28.IX.1916, Putney Vt, H. E. Smith: 1♂; **MICHIGAN (MI)**: Ann Arbor, M. G. Fitton, 3-16.OX.1975: 1♂ (CNCI); **MISSISSIPPI (MS)**: Oktibbeha Co., Starkville, Msu North Farms, 27-29.X.1989, G. T. Baker: 1♂ (UB); **MISSOURI (MO)**: Missouri: Columbia, Boone County, 16-30.IV.1968, Malaise trap, F. D. Parker: 2♂ (USNM); Missouri: Columbia, Boone County, 1-15.VI.1968, malaise trap, F. D. Parker: 1♂ (USNM); Boone Co, Mo, 13.VII.19??: 1♂ (USNM); MO, Wayne Co., Williamsville, 15-30.VI.1988, J. T. Becker, MT:1♀ (CNCI); C-527 Mo, Williamsville, VII.1987: 1♀ (CNCI); C-41, MO, Wayne Co., Williamsville, 16.VII-18.VIII.1988, J. B. Becker, MT: 2♂ (CNCI); Williamsville, 8-VII-1955, E. C. Becker: 1♀ (CNCI); **NEW HAMPSHIRE (NH)**: S. Albert Shaw, Hampion N. H.,

VIII.2.1906: 1♀ (USNM); *NEW YORK (NY)*: Batavia, NY, 12.VIII.1913, H. H. Knight: 1♂ (USNM); Fislikill, NY, E. R. Kalmbash Collector, 1-VII.1916: 1♀ (USNM); Medina, N.Y., 30-VI (without year), captured Old Meadaow: 1♂ (USNM); Oswego, 5.VI.1896: 1♀ (USNM); C-426, Washington Co., Geddy farm, 28.VII.1999, Hamilton: 1♂ (UB); C-238, NY, Washington Co., Geddy farm., 28.VII.99, Hamilton: 1♂ & 1♀ (CNCI); *NORTH CAROLINA (NC)*: Chestnut Bald, 5900', 2.VIII.1957, J. G. Chilcott, 1♂ (CNCI); Devil's Court Hose, N.C., Blue Ridge Parkway, 2.VIII.1957, W. R. Richards: 1♀ (CNCI); Great Smoky Mt., N.P., N.C. Tenn., W. R. M. Mason, Indian Gap, 5200', 28.V.1957: 1♂ (CNCI); idem, 29.V.1957: 1♀ (CNCI); idem, 8.VII.1957: 1♀; Franklin, N.C., 16.VIII.1957, L. A. Kelton: 1♂ (CNCI); Highlands, NC, 1.VII.1957, W. R. M. Mason, Whiteside Mt., 4900': 1♀ (CNCI); idem, 13.V.1957: 1♀ (CNCI); idem, 29.VI.1957: 1♂ (CNCI); Highlands, N.C., 21.VIII.1957, L. A. Kelton: 1♀ (CNCI); Highlands, N. C. Skittle Creek, 18-VII-1957, Collector, J.G. Chilcott: 1♀ (CNCI); Highlands, NC, 27.VIII.1957, L. A. Kelton: 1♀ (CNCI); Highlands, 3800', 1.VII.1957, J. R. Vockerth, Whiteside Mt., 4900': 1♀ (CNCI); C-482, Jackson Co, Whiteside Mt., Near Highlands, 1600m, IX-23.XI, 1997, B.J. Sinclair creek, YPT: 1♀ (CNCI); Jackson Co, Whiteside Mt, near Highlands, 1600m, 10.VII-13.IX.1987, BRC HYM TEAM, oak for: 8♀ (CNCI); C-253, Macon Co, Whiteside, IV-VII.1987, MT, Mat. Oak forest, 1600m: 1♀ (CNCI); C-231, Macon Co, White face, MT, 10.VII.1987, J. T. Huber: 1♂ (MLP); MT., Mitchell, 6800', N.C., 12.VIII.1957, J.G. Chilcott: 1♀ (CNCI); C-134, McDowell Co, 37° 00'N 81°30'W., VII-IX.1987, MT, Oak-Rhododendron forest, CNC Hym. team: 3♀ (CNCI); NC, Road Mtn., 6200', 13.VIII.1957, Collector J.G. Chilcott: 1♂ (CNCI); Wayah Bald, 5400', Macon Co, N.C., 20.VI.1957, W. R. M. Mason: 1♂ (CNCI); Wilson's Gap, 3100', Highlands, NC, 25-V.1957, J. R. Vockerth: 1♂ (CNCI); *OHIO (OH)*: OH, Union Vill., Vt, 63&31, K. W. Cooper, without data: 1♂ (USNM); *OKLAHOMA (OK)*: Guyman, Okla., 4.XI.1932, Bishopp, n° 20018, R. A. Roberts Collector: 1♂ & 1♀ (USNM); C-277, Latimer Co, Red Oak., XI.1989, K. Stephan, FIT: 1♀ (CNCI); C-258, idem, VII.1993: 3♀ (CNCI); C-204, idem, VIII.1993: 1♀ (CNCI); C-251, idem, IX.1994: 2♂ (1♂ CNCI, 1♂ MLP); C-223, Latimer Co, Pead Oak anvivons, VI.1994, K. Stephan, Fit: 4♀ (3♀ CNCI, 1♀ MLP); *PENNSYLVANIA (PA)*: Coll. C. F. Baker, Cana 2416, without data: 1♀ (USNM); IehighGap, 13.VIII.1904, Pa, G. M. Greene Collector: 1♀ (USNM); Mass, n° 1689, Coll C. F. Baker, without data: 1♂ (USNM); Penna. 5mi. NW Davidsburg, VII.30.1966, Paul J. Spangler: 1♂ & 1♀ (UB); St. Davids, 1.VIII.1932, 1♂ (CNCI); *SOUTH CAROLINA (SC)*: C-216, SC, Anderson Co, Pendleten, Tanglewood Spig, MT, 13-19.1.1987, J. Morse: 2♀ (CNCI); C-291, SC, Anderson Co, Pend Leton 250 m, 6-10.VI.1987, MT, Mat. Hardarood Forent.: 1♀ (CNCI); C-211, SC, Anderson Co., Pendleton, 250m, 17-24.VI.1987, MT, Mat. Hardwood Forest, BRC HYM. Team: 1♀ (CNCI); Clemson Col, SC, G. G. Ainslie collector without data: 1♀ (USNM); C-235, Dorchester Co, Francis Beidler Fr., 10km NE Harleyville, 1-9.V.1987 MT, Fit, Bald Cypress Swamp: 1♀ (CNCI); C-213, idem, 5-15.V.1987: 3♀ (CNCI); C-199, idem, 15-26.V.1987: 1♀ (CNCI); C-221, idem, 26.IV-1.V.1987: 1♀ (CNCI); C-225, SC, Rickens Co, Clenson Cherrys Crossing, 6-23.XI.1987 FIT, J. Johnson: 1♀ (CNCI); SC, Pickens Co, Clemson, Cherrys Crossing, J. Johnson, FIT, near lakeshore 1-7.VIII.1987 & 25.VIII-

3.IX.1987: 2♀ (CNCI); idem, 25.VIII-3.IX.1987: 1♀ (CNCI); idem, 6-13.IX.1987 1♀ (CNCI); Mount Pleasant, Fla., 1.V.1952, O. Peck: 1♂ (CNCI); *TENNESSEE (TN)*: 2D Heath Bald, Garlinburg, Tenn, GSNMP 4900, Seeps, 29.VI.1947, R. H. Whittaker, 2Dh3 407: 1♀ (USNM); idem, 2Dh1, 44: 1♀ (USNM); C-267, Lexington, Tenn., 1-7.VII.1972, Mal tr., G. Heinrich: 2♀ (CNCI); C-237, Montengle, 28.VI.1941, T. D. Pinto: 1♀ (CNCI); *TEXAS (TX)*: Boca Chica, Tex, 19.IV.1930, Bishopp, n° 12711, R. A. Roberts Collector: 4♀ (3♀ USNM, 1♀ UB); Brownsville, Tex, P. A. Glick, Coll, 481, cotton, 15.04.1936: 1♂ (USNM); Chanming, Tex, 13.IX.1932, Bishopp, n° 20015, R. A. Roberts Collector: 1♀ (USNM); Lubbeck Tex, Bishopp, n° 20016, 10.XI.1932, R. A. Roberts Collector: 1♀ (USNM); Uvaldo, Tex, 15.VI.1932, Bishopp, n° 17349, R. A. Roberts Collector: 1♀ (UB); Uvaldo, Tex, 24.VI-1932, Bishopp, n° 17350, R. A. Roberts Collector: 2♂ (USNM); *VIRGINIA (VA)*: Virginia, MT. Ellittott, Augusta Co, 4200 ft, 17.VIII.1963, A. B. Gurney: 1♀ (USNM); On flowers of parsnip, E. Fallschurch, VA, 27.VI.1926: 1♂ (USNM); idem, 8.VI.1927: 1♂ (UB); idem, 28.V.1927: 1♂ (USNM); idem, 31.V.1927: 4♂ (USNM); idem, 17.VI.1928: 1♂ (USNM); idem, 6.VI.1929: 2♂ & 1♀ (USNM); idem, 4.VII.1935: 1♀ (USNM); idem, 7.VII.1935: 1♀; idem, 7.VI.1935: 1♀ (USNM); idem, 13.VI.1937: 2♀ (USNM); idem, 13.VI.1940: 1♀ (UB); idem, 2.VI.1945: 2♀ (USNM); idem, 5.VI.1946: 1♀ (USNM); idem, 6.VI.1946: 1♀ (USNM); idem, 11.VI.1946: 1♂ (USNM); idem, 4.VI.1947: 1♂ (USNM); idem, 2.VI.1948: 1♂ (USNM); idem, 6.VI.1948: 1♀ (USNM); idem, 14.VI.1949: 1♀ (USNM); idem, 6.VI (without year): 1♀ (USNM); idem, 8.VI: 1♂ (USNM); idem, 12.VI: 1♂ (USNM); idem, 15.VI: 1♂ (USNM); idem, 24.VI. 19??: 2♀ (USNM); idem, 26.VI: 1♂ & 1♀ (USNM); idem, 7.VII: 1♀ (USNM); idem, 14.VII: 1♂ (USNM); idem, 16.VII: 1♂ (USNM); idem, 20.VII: 1♀ (USNM); idem, 21.VII: 1♂ (USNM); C-263, VA: Page Co, Shenadoah Nat.Park, 8.VII.1987, 1850m., L. Dm Mouchel: 1♀ (CNCI); Shenandoah Nt. Pk, 1300m, MT, Big Meadow, 8.VII-20.VIII.1987, BRC HYM TEAM, natural meadow: 3♀ (CNCI); C-270, same data than holotype: 1♀ (UB). **MEXICO**: Cuernavaca, IX.1965, N. L. H. Krauss: 1♀ (USNM); C-11, Jalisco Chamela, 4-9.VII.1993, H. J. Sharhey, M.T: 1♀, (CNCI); Michoacan, San José Purua, VI.1965, N. L. H. Krauss, 1♂ (USNM); Taxco, 4 MT. S., 4800', Guerrero, Mex. 8.VIII.1954, J. G. Chilcott: 1♂ (CNCI); Xilitla, 14 Mi. W., 4200', S. L. P., Mexico, 22.VII.1954, J. G. Chilcott: 1♀ (CNCI); Chis., 5700ft, 20mi N. Bochil, Yerba Buena, 24.VI.1969, Mal. Trap.: 1♀ (UB). **EL SALVADOR**: San Salvador, 27.VI.1958, L. J. Bottimer: 1♂ (USNM). **NICARAGUA**: Granada, Volcan Mombacho, Santa Ana, J. M. Maes col., Malaise trap, #1, 2.VI.1998: 1♂ & 1♀ (MEL); idem, #2, 21.VI.1998: 2♂ & 1♀ (MEL); idem, 30.VI.1998: 1♂ (UB); idem, #3, 21.XI.1998: 3♂ (MEL); Granada, Volcán Mombacho; El Progreso #1, 2.VI.1998, J. M. Maes col, Malaise trap, 1♀ (UB); Granada, Volcán Mombacho; San Joaquín #3, 2.VI.1998, J. M. Maes col, Malaise trap: 1♂ (MEL); Zelaya, Cano El Macho 13, 48N/84, 58W, IX.1995, Maes/B. Hernández Col: 2♂ & 1♀ (MEL). **COSTA RICA**: C-158, Costa Rica, Alajuela, 8-28.II.1970, Mt., O. Peck: 2♀ (1♀ CNCI, 1♀ UB); Alajuela, Chiles de Aguas, Zarcas, Café, 300m, III.1990 R. Céspedes: 1♂ (UCR); Guanacaste, Prov. Estación Exper. Enrique Jiménez Núñez, (20 Km SW Cañas), 5-17.XI.1991, Malaise trap- A. S. Menke: 1♂ & 1♀ (USNM); Hered Rio Frio, Banano, 100m, IX.1989, col. Edgar Quiros: 1♂ & 1♀

(UCR); Limón, Prov. Cahuita, 23-25.XII.1988, A. S. Menke, Malaise trap: 1♀ (USNM); Puntarenas, Monteverde area, 6.VI.1973, 1400-1700 meters, Central American Expedition, 1973: 1♂ (USNM); Puntarenas: Monteverde. 1400m el. 10°18' N, 84°48'W, 12-15.VI.1974, Waharding & J. P. Donahue, Malaise: 3♂ (LACM); San Isidro General, 700-800 meters, VIII.1980, N. L. H. Krauss: 1♂ (AMNH); Turrialba, 15-19.VII.1965, P. J. Spangler: 1♂ (USNM). **PANAMA:** Pueblo Buevo, 4mi. From Panama City, Papaya Plantation, A574., 28.VIII.1918, H. Morrison. Col.: 1♂ (USNM). **BERMUDAS:** Spanish Point, Bermuda, 5.VII.1912, Reynold Shalth: 1♀ (USNM). **TRINIDAD:** W. I., Curepe, Santa Margarita, Circular Rd., 31.VII.-6.VIII.1977, E.D. Bennett, Mal tr.: 1♀ (CNCI); idem, 21.XII.1977: 1♀ (CNCI); W. I., Curepe, CIBC lab. Grounds, 13.VII-31.VIII.1974, coll. M. N. BEG.: 2♀ (CNCI). **PARAGUAY:** C-494, Caazaapa, Hermosa, Sosa Family Prop, San Rafael Reserve 90 m, 3-6.XII.2000, Z. H. Felin: 2♀ (1♀ CNCI, 1♀ UB).

Diagnosis. In *Neralsia incompleta* n. sp., the carina that separates the foveae is slightly exceeding their level, and the second metasomal tergite is completely smooth. *Neralsia incompleta* n. sp. can be separated easily from all other known *Neralsia* by presenting a incomplete radial cell (Fig. 1D) because the R1 vein is very short, being located very far from the alar margin.

Description. Females: 2.4-4.3 mm.; males: 2.0-4.0 mm. Black; antennae red-brown, tegula and legs reddish and the metasoma reddish in lateral view.

Head. Transfacial line as long as eye's height. Head triangular shaped in frontal view, in dorsal view 1.8 times longer than wide. The relation POL:OOL:OCO:OD is 8.5:4.5:2.5. Genal sulcus present, with some transversal costulae (Fig. 1A).

Antennae. Females (Fig. 1C) with F1 and F2 without rhinaria and equal length; F3 slightly longer than F1; last joints 1,1 times longer than wide (4.5:4). Males with joints much longer than wide, similar to the rest of species of *Neralsia*.

Mesosoma. Pronotum with sparse acute carinae in the dorsal part, more abundant in the ventral part (Fig. 1A). Mesopleura mostly smooth, finely carinated in the ventral part (Fig. 1A). Medial sulcus of the scutum very marked (Fig. 1B). Carina that separates the foveae slightly exceeds their height (Fig. 1A). Scutellar disk carinated exceeding two carinae that start from the foveae and direct to the spine, forming a wide and smooth canal, rest of the disk with sparse parallel carinae that disappear before reaching the posterior edge (Fig. 1B). Spine long, thin and acute (Fig. 1B), more than 1/3 the total length of the scutellum.

Forewings. Hyaline. Venation pale yellow. Radial cell around 1.7 times longer than wide; R1 vein very short, almost absent (Fig. 1D). Abundant setae in the edge and sparse in the surface.

Metasoma. Petiole wide and carinated (Fig. 1A). Second visible metasomal tergite completely smooth (Fig. 1A).

Etymology. Species denominated for presenting the R1 vein of the radial cell extremely short.

Distribution. Species with a wide distribution. Exhaustively collected from Canada and USA; also collected in Mexico, El Salvador, Nicaragua, Costa Rica, Panama, Bermudas, Trinidad and Paraguay. This species is probably present in the entire American continent.

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References

- Borgmeier T. 1935. Sobre alguns Cynipídeos parasíticos e Cecidogênos do Brasil (Hymenoptera, Cynipidae). *Archivos do Instituto de Biologia Vegetal de Rio de Janeiro* 2 (1): 97-124.
- Dalla Torre K. W., Kieffer J. J. 1910. *Cynipidae*. Berlin: Das Tierreich, 24, 891pp.
- Dettmer H. 1932. Beschreibung einiger südamerikanischer Arten der Gattung *Xyalophora* Kieffer. *Broteria, serie Ciências Naturais* 1(3): 120-143.
- Díaz N. B. 1990. Presencia de *Neralsia splendens* en la República Argentina (Cyn. Figitidae). *Neotrópica* 36 (95): 22.
- Díaz N. B., Gallardo F. 1995. Nuevos aportes al conocimiento de *Neralsia splendens* en la Rca. Argentina. (Hym., Cyn., Figitidae). *Revista de la Sociedad Entomológica Argentina* 54: 74.
- Díaz N. B., Gallardo F. 1996. Sobre Cynipoideos de Brasil, parasitoides de dípteros estercoleros (Hymenoptera: Cynipoidea). *Revista de la Sociedad Entomológica Argentina* 55 (1-4): 127-129.
- Díaz N. B., Gallardo F., Marchiori C., Linhares A. 2000. About Cynipoidea of Brazil, parasitoids of dung-flies. II (Insecta, Hymenoptera). *Anais da Sociedade Entomológica do Brasil*. 29 (3): 469- 474.
- Gibson G. A. P. 1985. Some pro- and mesothoracic characters important for phylogenetic analysis of Hymenoptera, with a review of terms used for structures. *Canadian Entomologist* 117: 1395-1443.
- Harris R. A. 1979. A glossary of surface sculpturing. *Occasional Papers in Entomology* 28: 1-31.
- Jiménez M., Díaz N. B., Gallardo F., Ros-Farré P., Pujade-Villar J. (2005 a). Resultados preliminares del estudio de las especies sudamericanas del género *Neralsia* Cameron (Hymenoptera: Cynipoidea: Figitidae: Figitinae). *Sessió d'Entomologia de la Institució Catalana d'Història Natural-Societat Catalana de Lepidopterologia*: 13: (2003): 73-84.
- Jiménez M., Díaz N. B., Gallardo F., Ros-Farré P., Pujade-Villar J. (2005 b). Las especies sudamericanas del género *Neralsia* Cameron (Hymenoptera: Cynipoidea: Figitidae: Figitinae): estudio del material tipo. *Butlletí de la Institució Catalana d'Història Natural* 72 (2004): 61-71.
- Jiménez M., Díaz N. B., Gallardo F., Ros-Farré P., Pujade-Villar J. (2005 c). Sobre los *Neralsia* que presentan la carena que separa las fosetas escutulares alta: descripción de 8 nuevas especies sudamericanas (Hymenoptera: Cynipoidea: Figitidae). *Nouvelle Revue d'Entomologie (Nouvelle Serie)* 22 (2): 165-179.
- Jiménez M., Díaz N. B., Gallardo F., Ros-Farré P., Pujade-Villar J. (in press). Descripción de nueve especies sudamericanas del género *Neralsia* Cameron, 1883, con carena escutelar baja (Hymenoptera: Cynipoidea: Figitidae: Figitinae). *Neotropica (in press)*.
- Kieffer J. J. 1909. Description de nouveaux Cynipides zoophages. (2ème partie). *Bulletin de la Société d'Histoire Naturelle de Metz* 26: 57-96.
- Kieffer J. J. 1910. Nouveaux Cynipides exotiques. *Bolletino del Laboratorio di Zoologia Generale e Agraria della R. Scuola superiore d'Agricoltura di Portici* 4: 329-342.
- Marchiori C., Oliveira A., Díaz N. B., Gallardo F., Penteado-Dias M., Linhares A. 2000. Cynipoidea (Hymenoptera) associados com fezes bovinas e coletados em áreas de mata nativa e pastos em Goiás. *Arquivos do Instituto Biológico (Sao Paulo)* 67(1):19-23.
- Ronquist F., Nordlander G. 1989. Skeletal morphology of an archaic cynipoid, *Ibalia rufipes* (Hymenoptera, Ibalidae). *Entomologica Scandinavica, Suppl.* 33: 1-60.
- Weld L. H. 1930. Notes on types (Hymenoptera, Cynipidae). *Proceedings of the Entomological Society of Washington* 32(8): 137-144.
- Weld L. H. 1952. *Cynipoidea (Hymenoptera) 1905-1950*. Privately printed, Ann Arbor, Michigan. 351 pp.