



<http://dx.doi.org/10.11646/zootaxa.3872.5.3>

<http://zoobank.org/urn:lsid:zoobank.org:pub:6EB04C2A-1D72-400D-8DC2-0D9CEC82D60A>

The subgenus *Andrena* (*Micrandrena*) (Hymenoptera: Andrenidae) in the Iberian Peninsula

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Abstract

This work presents the results obtained after a revision of the current species of the subgenus *Andrena* (*Micrandrena*) Ashmead, 1899 that appear in the Iberian Peninsula. It provides a key to the species, diagnosis, biological data, and comments about the 19 species and 5 subspecies. Additionally, it includes a redescription of five species because their original descriptions were inadequate. Newly reported for the Iberian Peninsula are *Andrena floricola* Eversmann, 1852 and *Andrena strohmella* Stöckert, 1928. This study is the first contribution to resolve certain taxonomic problems in the subgenus *Andrena* (*Micrandrena*); however, the use of additional tools like morphometric and molecular characters are recommended in the future to confirm the taxonomic status of *Andrena spreta* Pérez, 1895.

Key words: Apoidea, Synonymy, Spain, Portugal

Resumen

Este trabajo presenta los resultados obtenidos después de la revisión morfológica de las especies presentes en la Península Ibérica del subgénero *Andrena* (*Micrandrena*) Ashmead, 1899. Se incluye la clave dicotómica para machos y hembras, diagnóstico y comentarios taxonómicos de 19 especies y 5 subespecies. Así como también la redescritión de 5 especies, debido a que las descripciones originales eran demasiado escasas. Dentro de la información proporcionada, destacan las primeras citas en la Península Ibérica de *Andrena floricola* Eversmann, 1852 y *Andrena strohmella* Stöckert, 1928. Este estudio es la primera contribución para resolver ciertos problemas taxonómicos en el subgénero *Andrena* (*Micrandrena*); sin embargo, en el futuro, es deseable el empleo de caracteres morfométricos y moleculares para confirmar los resultados presentados en este trabajo sobre el estatus taxonómico de *Andrena spreta* Pérez, 1895.

Palabras clave: Apoidea, Sinonimia, España, Portugal

Introduction

Bees (Hymenoptera: Apoidea) have been classified into different families by different authors following a diverse set of criteria, however, the proposal by Michener (2007) is here used. This author recognize seven families: Andrenidae, Colletidae, Halictidae, Melittidae, Stenotritidae, Megachilidae, and Apidae. Within the family Andrenidae is the genus *Andrena* Fabricius, with close to 1,400 species described. In Europe, there are between 650 and 700 species present (Laberge 1986; Michener 2007; Gusenleitner & Schwarz 2002). The large number of species in this genus has complicated the classifications, and as of now 95 subgenera have been described, with 52 present in the Western Palearctic region (Warncke 1968; Michener 2007; Schmid-Egger 2005).

floricola was previously reported to occur only in France; however, according to the data of the specimens identified in this work, the distribution is extended to western Spain.

Acknowledgments

The authors would like to express their gratitude to Charles Michener, Michael Engel, Javier Ortiz Sánchez, Jerome Rozen, Christian Schmid-Egger, Klaus Schönitzer, Osamu Tadauchi, and Ricardo Ayala for sharing information about Andrenidae and their advice. They would like to thank Fritz Gusenleitner for his hospitality and help in developing this work, as well as Claire Villemant at the Museum of Natural History in Paris, Frank Koch at the Museum of Natural History of Humboldt University in Berlin, Amparo Blay at the National Museum of Natural Sciences in Madrid, Fritz Gusenleitner at the Biology Centre of the National Museum of Upper Austria in Linz, and Angeles Vázquez from the Collection of the Department of Zoology at the University Complutense in Madrid for specimens. We would like to thank Erwin Scheuchl and Christian Schmid-Egger for allowing us the use of their genitalia drawings. Also to Natalia Escobedo for the *A. tiarretta* drawing. The authors express their gratitude for the editorial assistance received from Claus Rasmussen. Thanks are also extended to the anonymous reviewers for their helpful comments. Finally, the authors would like to thank the Banco de Santander-Universidad de Salamanca consortium for the grant awarded to María José Dardón to develop her doctorate studies at the University of Salamanca.

References

- Alfken, J.D. (1916) Über zweite Arten der *Andrena parvula*-Gruppe. (Hym.). *Deutsche Entomologische Zeitschrift*, 1916, 68–92.
- Alfken, J.D. (1925) Eine Neue Deutsche *Andrena*-Art aus der *A.-parvula* W. K. -Gruppe. *Mitteilungen der Badischen Entomologischen Vereinigung*, 1, 165–166.
- Ashmead, W.H. (1899) Classification of the bees or the superfamily Apoidea. *Transactions of the American Entomological Society*, 26, 49–100.
- Blüthgen, P. (1925) Beiträge zur Kenntnis der Hymenopterenfauna des Saaletals. *Stetiner Entomologische Zeitung*, 85, 137–172.
- Cockerell, T.D.A. (1898) On some panurgine and other bees. *Transactions of the American Entomological Society*, 25, 185–198.
- Destefani, T. (1889) Miscellanea Imenopterologica Sicula. *Naturalista siciliano*, 8, 203–208.
- Dubitzky, A. & Schönitzer, K. (2001) The propodeal corbicula of *Andrena proxima* and allied species (Hymenoptera, Andrenidae). *Apidologie*, 32, 429–434.
<http://dx.doi.org/10.1051/apido:2001107>
- Dylewska, M. (1987) Die Gattung *Andrena* Fabricius (Andrenidae, Apoidea) in Nord- und Mitteleuropa. *Acta Zoologica Cracoviensia*, 30 (12), 359–708.
- Erichson, W.F. (1835) Beschreibung von 19 neuen Hymenopteren aus Andalusien. In: Walzl, J. (Ed.), *Resie durch Tyrol, Oberitalien und Piemont nach dem südlichen Spanien. nebst einem Anhang zoologischen Inhalts (Über die Thiere Andalusiens)*. Vol. 2. Verlag der Pustet'schen Buchhandlung (J.F. Winkler), Passau, Pustel, pp. 101–109.
- Eversmann, E. (1852) Fauna Hymenopterologica Volgo-Uralensis. *Bulletin de la Société impériale des naturalistes de Moscou*, 25 (2), 1–137.
- Friese, H. (1887) Species aliquot novae generis *Andrena* FABR. *Természetrájsi Füzetek*, 11 (25), 21–26.
- Gogala, A. (1991) Contribution to the Knowledge of the Bee Fauna of Slovenia (Hymenoptera: Apidae). *Scopolia*, 25, 1–33.
- Gusenleitner, L. (1984) Faunistische und Morphologische Angaben zu Bermerkenswerten *Andrena*-Arten aus Österreich (Insecta: Hymenoptera: Apoidea: Andrenidae). *Linzer biologischen Beiträge*, 16 (2), 211–276.
- Gusenleitner, F. & Schwarz, M. (2002) Nomenklatorische Aktualisierungen in der Bienengattung *Andrena* sowie Beschreibung einer neuen Art (Hymenoptera: Apidae: Andreninae). *Entomofauna*, 21 (10), 105–116.
- Hedicke, H. (1933) Beiträge zur Systematik der Gattung *Andrena* F. *Mitteilungen aus dem Zoologischen Museum in Berlin*, 19, 199–220.
- Kirby, W. (1802) *Monographia apum Angliæ; or, An attempt to divide into their natural genera and families, such species of the Linnean genus *Apis* as have been discovered in England; with descriptions and observations*. Vol. 1. & 2. Ipswich, 258 pp. & 388 pp.
<http://dx.doi.org/10.5962/bhl.title.10346>
- LaBerge, W. (1964) Prodromus of American bees of the Genus *Andrena* (Hymenoptera, Apoidea). *Bulletin of the University of*

Nebraska State Museum, 4, 279–316.

- LaBerge, W. (1971a) A New Subgenus of *Andrena* Found in California and Oregon (Hymenoptera: Apoidea). *Pan-Pacific Entomologist*, 47, 47–57.
- LaBerge, W. (1971b) A Revision of the Bees of the Genus *Andrena* of the Western Hemisphere. Part IV. *Scrapteropsis*, *Xiphandrena* and *Rhaphandrena*. *Transactions of the American Entomological Society*, 97, 441–520.
- LaBerge, W. (1977) A Revision of the Bees of the Genus *Andrena* of the Western Hemisphere. Part VIII. Subgen. *Thysandrena*, *Dasyandrena*, *Psammandrena*, *Rhacandrena*; *Euandrena*, *Oxyandrena*. *Transactions of the American Entomological Society*, 103, 1–143.
- LaBerge, W. (1986) A Revision of the Bees of the Genus *Andrena* of the Western Hemisphere. Part XI. Minor Subgenera and Subgeneric Key. *Transactions of the American Entomological Society*, 111, 441–567.
- Michener, C. (2007) *The Bees of the World*. 2nd Edition. The Johns Hopkins University Press, Baltimore, 953 pp.
- Nylander, W. (1848) Adnotationes in expositionem monographicam apum borealium. *Notiser ur Sällskapetets pro Fauna et Flora Fennica Förhandlingar*, 1, 165–282.
<http://dx.doi.org/10.5962/bhl.title.66897>
- Noskiewicz, J. (1939) Beiträge zur Kenntnis der Bienenfauna Ungarns. *Polskie Pismo Entomologiczne*, 16, 240–265.
- Pérez, J. (1895) *Espèces Nouvelles de Mellifères de Barbarie* (Diagnoses préliminaires). Bordeaux, 45, 1–64.
- Pérez, J. (1903) *Espèces Nouvelles de Mellifères*. *Procès-Verbaux de la Société Linnéenne de Bordeaux*, 58, 78–93.
- Pérez, J. (1911) *Espèces Nouvelles de Mellifères Recueillies en Syrie, en 1908, par M. Henri Gadeau de Kerville*. *Bulletin de la Société des Amis des Sciences Naturelles et du Muséum de Rouen. Francia*, 46, 30–47.
- Perkins, R.C.L. (1914) Synopsis of the British Forms of the *Andrena minutula* Group. *Entomologist's Monthly Magazine*, 25 (2), 71–75, 112–115.
- Perkins, R.C.L. (1915) *Andrena falsifica* n. n. for *A. moricella* Weibchen, nec Männchen. *Entomologist's Monthly Magazine*, 1 (3), 215–216.
- Schenck, A. (1853) Nachtrag zu der Beschreibung nassauischer Bienenarte. *Jahrbücher des Nassauischen Vereins für Naturkunde*, 9, 88–307.
- Schmid-Egger, C. (2005) *Proxiandrena* subgen. nov. und Revision der west- und zentralpaläarktischen Arten der *Andrena proxima*-Gruppe (Hymenoptera, Apidae). *Revue Suisse de Zoologie*, 112 (4), 1029–1044.
- Schmid-Egger, C. & Scheuchl, E. (1997) *Illustrierte Bestimmungstabellen der Wildbienen Deutschland und Österreichs, unter Berücksichtigung der Arten der Schweiz*. Band III: Schlüssel der Arten der Familie Andrenidae, Velden, 180 pp.
- Smith, F. (1853) *Catalogue of Hymenopterous insects in the Collection of the British Museum. Andrenidae and Apidae Vol. 1*. Printed by order of the Trustees, London, 197 pp. [London]
<http://dx.doi.org/10.5962/bhl.title.20858>
- Smith, F. (1855) *Catalogue of British Hymenoptera in the Collection of the British Museum. Part I*. Printed by order of the Trustees, London, 252 pp.
<http://dx.doi.org/10.5962/bhl.title.50533>
- Schwenninger, H. (2009) Zum taxonomischen Status von *Andrena anthrisci* Blüthgen, 1925 (Hymenoptera, Andrenidae, *Andrena*, *Micrandrena*). *Linzer biologischen Beiträge*, 41 (2), 2025–2038.
- Stöckhert, E. (1924) Über einige neue deutsch *Andrena*-Arten. *Archiv für Naturgeschichte*, 90A (4), 169–171. [Berlin]
- Stöckhert, E. (1928) *Andrena strohella* n.sp. eine neue deutsche Biene (Hym.). *Archiv für Insektenkunde des Oberrheingebietes*, 2, 243–248.
- Stöckhert, E. (1935) Über einige neue deutsche Arten der *Andrena minutula*-Gruppe (Hym. Apid). *Deutsche Entomologische Zeitschrift*, I (II), 65–85.
<http://dx.doi.org/10.1002/mmnd.193519350102>
- Strand, E. (1921) Apidologisches, insbesondere über paläarktische *Andrena*-Arten, auf Grund von Material des Deutschen Entomologischen Museums. *Archiv für Naturgeschichte*, 87 (3), 266–304.
- Warncke, K. (1965) Beitrag zur Kenntnis der Bienengattung *Andrena* Fabricius in Griechenland. *Beitrage Zur Entomologie*. Berlin, 15, 27–76.
- Warncke, K. (1967) Beitrag zur Klärung paläarktischer *Andrena*-Arten (Hym. Apidae). *Eos*, 43, 171–318.
- Warncke, K. (1968) Die Untergattungen der westpaläarktischen Bienengattung *Andrena* F. *Memorias e estudos do Museu Zoológico da Universidade de Coimbra*, 307, 1–107.
- Warncke, K. (1974) Beitrag zur Kenntnis und Verbreitung der Sandbienen in Nordafrika (Hymenoptera, Apoidea, *Andrena*). *Mitteilungen aus dem Zoologischen Museum in Berlin*, 50 (12), 3–53.
- Warncke, K. (1975) Die Bienengattung *Andrena* F., in Iberien (Hym. Apidae) Teil A. *Eos*, 49, 293–314.
- Warncke, K. (1976) Die Bienengattung *Andrena* F., 1775, in Iberien (Hym. Apidae) Teil B. *Eos*, 50 (1–4), 119–223.
- Westrich, P. & Dathe, H. (1997) Die Bienenarten Deutschlands (Hymenoptera, Apidae) Ein aktualisiertes Verzeichnis mit kritischen Anmerkungen. *Mitteilungen Entomologischer Verein Stuttgart*, 32, 3–34.