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(Short communication)

REDISCOVERY OF *OMALODES (OMALODES) FASSLI* BICKHARDT, 1911 (COLEOPTERA: HISTERIDAE) IN COLOMBIA AND FIRST REPORT OF THE SPECIES ON BANANA CROPS (*MUSA PARADISIACA*)

REDESCUBRIMIENTO DE *OMALODES (OMALODES) FASSLI* BICKHARDT, 1911 (COLEOPTERA: HISTERIDAE) EN COLOMBIA Y PRIMER REGISTRO DE LA ESPECIE SOBRE CULTIVOS DE PLÁTANO (*MUSA PARADISIACA*)

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ABSTRACT. After 106 years, the presence of *Omalodes (Omalodes) fassli* in Colombia has been confirmed, and new distributional data for the country has been provided. This is the first report of the species on banana crops (*Musa paradisiaca*), it highlights its potential role in the control of the banana weevil, a key pest of this crop worldwide.

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RESUMEN. Después de 106 años, se confirma la presencia de *Omalodes (Omalodes) fassli* en Colombia y se aportan nuevos datos de su distribución para el país. Este representa el primer registro de la especie en cultivos de plátano (*Musa paradisiaca*) y se destaca su potencial papel como controlador del picudo del plátano, plaga clave de este cultivo en el mundo.

Histeridae Gyllenhal, 1808 is a family of predatory beetles with about 4200 species so far described (Mazur, 2011). *Omalodes* Dejean, 1833, is the genus with the highest number of species (63) within



Omalodini Kryzhanovskij, 1972 (Histerinae), comprising three subgenera: *Omalodes (Omalodes)*, *Omalodes (Cornillus)* Lewis, 1907, and *Omalodes (Diplogrammicus)* Lewis, 1907, all of Neotropical distribution, with only three species distributed along the southern border of the United States (Mazur, 1997; 2011; Moura, 2014). *Omalodes* species are mainly associated with decomposing dead animals and fruits, also being cited as important in the biological control of pests such as *Cosmopolites sordidus* (Germar, 1824) (Dryophthoridae), frequent in banana crops (Mesquita, 2003; Mise *et al.*, 2010; Moura, 2014).

Four specimens of *Omalodes (Omalodes)* were collected manually in pseudostem residues of banana crops, from the municipalities of Obando and Sevilla in Valle del Cauca, Colombia (Fig. 1), at altitudes between 1485 and 1582 m. These specimens exhibit the characters cited by Moura (2014) for *Omalodes (s. str.) fassli* Bickhardt, 1911 (Fig. 2): frons with a superficial medial impression; absence of lateral punctures of pronotum (Fig. 2C); external subhumeral striae marked only in the posterior third; weakly marked dorsal striae; marginal mesoventrite striae marked a little before medial angles; propygidium with strong and scattered punctures, with a superficial impression on each side of the posterior half (Fig. 2D). Moura (2014) mentions that the complete absence of lateral punctures in the pronotum is shared with *Omalodes (s. str.) brevisternus* Schmidt, 1893 and *Omalodes (s. str.) consanguineous* Marseul, 1854. But *Omalodes (s. str.) fassli* differs from *Omalodes (s. str.) brevisternus* by more dispersed punctures in the propygidium, lack of smooth area along the anterior margin, and marginal mesoventrite striae not strongly curved towards the prosternum. It differs from *Omalodes (s. str.) consanguineous* in that the frons have a superficial impression instead of a medial fovea, and propygidium without a smooth area along the anterior margin.

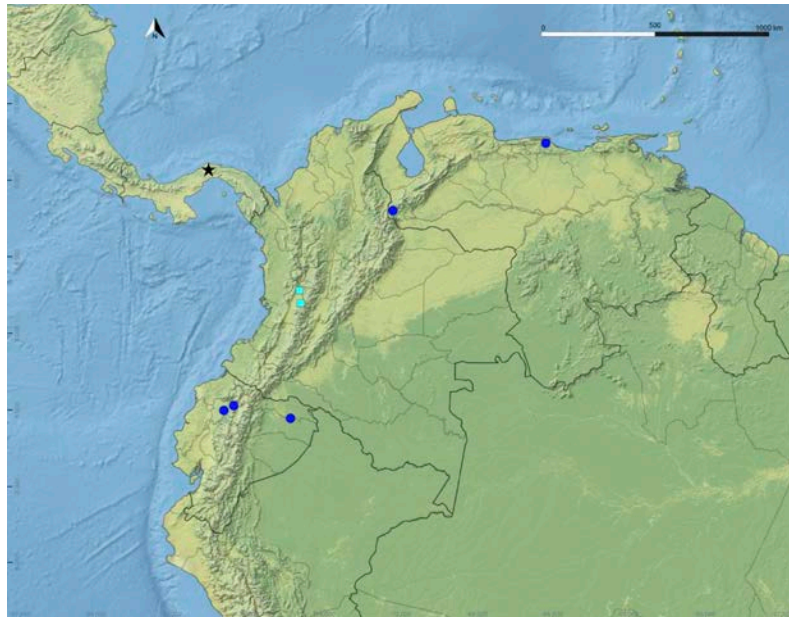


Figure 1. Known geographical distribution for *Omalodes (Omalodes) fassli* Bickhardt, 1911. Reports from Ecuador and Venezuela are taken from Moura (2014); the green squares represent the new localities recorded for Colombia; the black star represents a report of the species in Panama with no specific locations (see Mazur, 1997).

Throughout its distribution, *Omalodes (s. str.) fassli* has been collected in flight interception traps, wood-decay fungi, heliconias, decomposing fruits and under tree bark (Moura, 2014), in Colombia (Bickhardt, 1911), Panama, Ecuador (Mazur, 1997; 2011; Moura, 2014), Venezuela (Moura, 2014) and Mexico (Fig. 1). Specimens from Mexico were cited by Mazur (1997; 2001; 2011) and subsequently re-



examined by Moura (2014) who identified them as *Omalodes* (s. str.) *anthracinus* Marseul, 1853. Thus, the distribution of *Omalodes* (s. str.) *fassli* seems to be restricted to the southeast of Central America and northern South America at altitudes ranging from 270 to 1750 m.

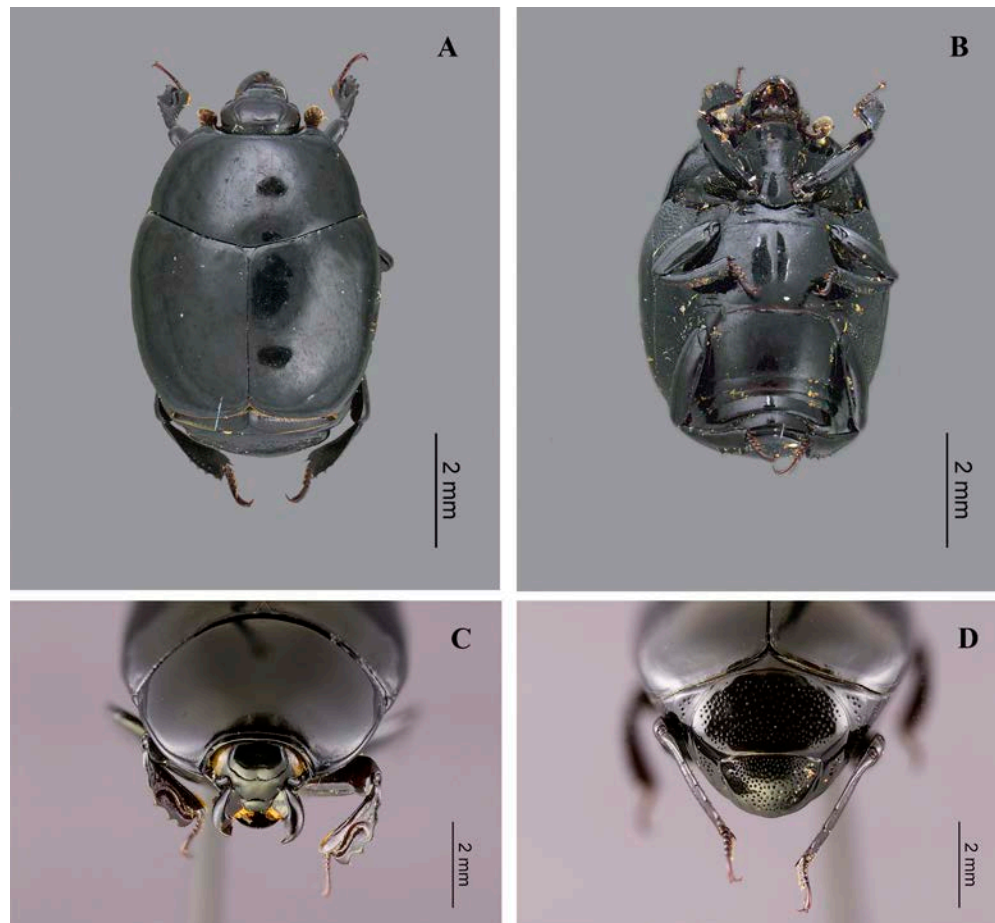


Figure 2. Habitus *Omalodes* (*Omalodes*) *fassli* **A.** dorsal view, **B.** ventral view, **C.** head, **D.** pygidium.

Bickhardt (1911) cites *Omalodes* (s. str.) *fassli* for Colombia. However, data on location ("West-Columbia Südamerika" in "Río Agna, Carmen, St. Antonio") is confusing, so it is not possible to locate them in a specific department, municipality or township within the country. After 106 years, these reports confirm its presence, providing specific locations for the species.

The Histeridae *Hololepta* (*Leionota*) *quadridentata* (Olivier, 1789), *Omalodes* (s. str.) *foveola* Erichson, 1834, *Plaesius* (*Plaesius*) *javanus* Erichson, 1834 and *Plaesius* (*Hyposolenus*) *laevigatus* Marseul, 1853 have been reported in banana crops from Central American countries, Venezuela and Indonesia (Boscan de Martínez & Godoy, 1991; Barrera & Jiménez, 1994; Gold *et al.*, 2001; Mesquita, 2003; Abera-Kalibata *et al.*, 2006). This is the first time that *O.* (s. str.) *fassli* has been collected from banana crops. It is worth mentioning that, during field work, specimens of *O.* (s. str.) *fassli* were found in association with *Hololepta* (*Leionota*) *quadridentata* (Histeridae) and *Dactylosternum* sp. (Hydrophilidae), two species reported in the literature as predators of the weevil complex (*Metamasius* spp. and *Cosmopolites sordidus*), the most damaging insect pests for banana crops (Castrillon, 1989;

Castaño, 1992; Goitía & Cerda, 1998). Consequently, given the importance of these beetles as predators of banana pests causing economic losses around the world, this report constitutes a significant finding.

Material examined: COLOMBIA: Valle del Cauca: Sevilla, La María, Buenavista; 4°16'5,3"N, 75°56'37,7"W; June 15 - 2016; 1521 m; col. C. Londoño (1♀); Obando, San José Alto, El Jardín; 4°35'44,4"N, 75°54'44,5"W; June 30 - 2016; 1582 m; col. C. Londoño (2♂); Obando, San José Alto, Villa Labrita; 4°35'59,2"N, 75°54'33,3"W; June 30 - 2016; 1516 m; col. C. Londoño (1♂). All the specimens have been deposited in the *Museo de Entomología de la Universidad del Valle* (MUSENUV P-022, P-117, P-121).

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LITERATURE CITED

- Abera-Kalibata, A. M., Hasyim A., Gold C. S., Van Driesche, R.** (2006) Field surveys in Indonesia for natural enemies of the banana weevil, *Cosmopolites sordidus* (Germar). *Biological Control*, 37, 16–24.
- Barrera J. F., Jimenez-Jimenez, E.** (1994) Establecimiento de *Plaesius javanus* (Coleoptera: Histeridae) en Chiapas, México, para el control de *Cosmopolites sordidus* (Coleoptera: Curculionidae). *Vedalia*, 1, 23–24.
- Bickhardt, H.** (1911) Neue Histeriden aus Afrika und Südamerika (8. Beitrag zur Kenntnis der Histeriden). *Entomologische Blätter*, 7, 206–217.
- Boscán de Martínez, N., Godoy, F. J.** (1991) *Hololepta (Lioderma) quadridentata* Fabricius depredador del gorgojo negro del plátano. *Agronomía Tropical*, 41(5-6), 285–290.
- Castaño O.** (1992) Manejo de problemas en los cultivos de plátano y banano. En: II Simposio Nacional sobre control biológico en Colombia. P. 75–96.
- Castrillon C.** (1989) Manejo del picudo negro (*Cosmopolites sordidus* Germar) en cultivos de plátano (Musa AAB) y banano (Musa ABB) en la zona cafetera de Colombia. En: Memorias de la IX Reunión de la Asociación para la Cooperación en investigación Bananera en América Tropical (ACORBAT). Mérida Venezuela. P. 349–362.
- Goitía, W., Cerda, H.** (1998) Hormigas y otros insectos asociados a musáceas (*Musa* spp.) y su relación con *Cosmopolites sordidus* Germar (Coleoptera, Curculionidae). *Agronomía Tropical*, 48(2), 209–224.
- Gold, S. C., Peña J. E., Karamura, E. B.** (2001) Biology and integrated pest management for the banana weevil *Cosmopolites sordidus* (Germar) (Coleoptera: Curculionidae). *Integrated Pest Management Reviews*, 6, 79–155.
- Mazur, S.** (1997) A world catalogue of Histeridae. *Genus International Journal of Invertebrate Taxonomy*, (Supplement), 1–373.
- Mazur, S.** (2001) Review of the Histeridae (Coleoptera) of México. *Dugesiana*, 8, 17–66.
- Mazur, S.** (2011) *A concise catalogue of the Histeridae (Insecta: Coleoptera)*. Warsaw University of Science–SGGW Press, Warsaw, 332 pp.
- Mesquita, A. L. M.** (2003) Importância e métodos de controle do “Moleque” ou Broca-do-rizoma-da-bananeira. Fortaleza: Embrapa, Circular Técnica online 17, 5 p. Available:



<http://ainfo.cnptia.embrapa.br/digital/bitstream/CNPAT-2010/8608/1/Ci-017.pdf> (accessed on November 2017).

Mise, K. M., Souza A. S. B., Campos, C. M., Keppler R. L. F., Almeida, L. M. (2010) Coleoptera associated with pig carcass exposed in a forest reserve, Manaus, Amazonas, Brazil. *Biota Neotropica*, 10, 321–324.

Moura, D. P. (2014) *Análise cladística de Omalodes e revisão de Omalodes (Omalodes) Dejean, 1833 (Coleoptera, Histeridae, Histerinae)*. Dissertation, Universidade Federal do Paraná. Curitiba, Paraná. 303 pp.