

THE EYELESS EUROPEAN SOIL COLYDIID, *ANOMMATUS*  
*DUODECIMSTRIATUS*, IN NORTH AMERICA  
(COLEOPTERA: COLYDIIDAE)

STEWART B. PECK

Department of Biology, Carleton University, Ottawa, Ontario, Canada

ABSTRACT

The presence of *Anommatus duodecimstriatus* (Müller) in North America at Rochester, New York, is confirmed. It is an eyeless, wingless, and probably parthenogenetic species, native to and widespread in Europe. Its introduction to Rochester was with soil accompanying plants. An extensive sampling program of North American forest litter has not shown the species to be established elsewhere.

---

Cooper (1962) reported the existence of a colony of *Anommatus duodecimstriatus* (Müller) in North America at Rochester, New York. This species is widespread in Europe, and is an eyeless and wingless soil inhabitant. Its presence in Rochester was explained as a result of its accidental introduction in soil accompanying plants used for nursery stock. The purpose of this note is to confirm the above determination and to provide additional thoughts on the species.

The genus *Anommatus* has been revised recently by Dajoz (1966). He found it to contain 49 species of which all but 2 have very local distributions in Europe. I have used Dajoz's revision to verify Cooper's determination of *A. duodecimstriatus* and its presence in North America. This is based upon a new collection of 32 specimens taken with Berlese funnels in April, July, and August of 1967 and 1970 by William B. Muchmore of Rochester.

Cooper suggested that the species may be parthenogenetic based upon dissections of 9 specimens which all proved to be females. The others in his collection of 22 were not dissected. My larger sample is composed entirely of females. This increasing evidence of parthenogenesis is not now surprising in view of the fact that Dajoz examined hundreds of specimens and found no males. Thus, this species can be added to the list of beetles of various families in America that are probably parthenogenetic, but for which the conclusive laboratory studies have not been performed (Smith 1971).

In parthenogenetic species the potential for colonization and range expansion is increased because only the female need move or be moved to a new site. Several species of flightless, European, soil-associated weevils, shown by laboratory study to be parthenogenetic, have undoubtedly benefited from this increased colonization potential and have become established in eastern Canada after transport in ship ballast (Smith 1971). This potential in *A. duodecimstriatus* undoubtedly accounts for its colonization success in Rochester, as well as over most of its range in Europe, a range which is probably largely one resulting from accidental transport of beetles in soil accompanying plants. That the species can build up large populations, once established, is demonstrated by the estimate of 460,000 per acre in an old field near London, England (work of Baweja, cited in Dajoz).



Cooper suggested that the species may be expected at additional North American localities. In my Tullgren funnel sampling program in the past 5 years I have processed over 4 metric tons of sifted soil and litter from eastern North American forests. I have not found *A. duodecimstriatus*, although other blind Colydiids have been collected, especially in Mexico (deposited in Field Museum, Chicago). If the species is established elsewhere in North America it is probably closer to cities or in more disturbed environments than I have sampled. This should not be surprising because the natural rate of range expansion from a propagule colony should not be expected to be high for an eyeless and wingless soil inhabiting beetle.

#### ACKNOWLEDGEMENTS

Support for my Tullgren funnel sampling of forest litter from 1966-1969 was from NSF grants GB 3167 and GB 7346 to the Evolutionary Biology Committee, Harvard University, Professor Reed C. Rollins, principal investigator; in 1971, from a systematic operating grant to Dr. H. F. Howden of Carleton University from the National Research Council of Canada. I also thank Dr. Muchmore for giving me the above *Anommatus* collections.

#### LITERATURE CITED

- COOPER, KENNETH W. 1962. A remarkable anophthalmic immigrant to North America: *Anommatus duodecimstriatus* Müller (Coleoptera: Colydiidae). Ent. News, 73:187-190.
- DAJOZ, ROGER. 1966. Révision des Colydiidae anophthalmes de la fauna paléarctique (Insectes, Coléoptères), Première partie: Genres *Anommatus* et *Abromus*. Rev. Ecol. Biol. Sol 11:239-269.
- SMITH, STANLEY. 1971. Parthenogenesis and polyploidy in beetles. Am. Zool. 11:341-349.

#### BOOK REVIEW

*Insecta Helvetica Catalogus*. 2. *Coleoptera, Scarabaeidae, Lucanidae*, by V. Allenspach. 1970. 186 p., 13 maps. Published by the Schweizerischen Entomologischen Gesellschaft. Entomologisches Institut der ETH, Universität-Strasse 2, 8006 Zurich, Switzerland. Paper, 33 Swiss francs (\$8.25 at the current exchange rate).

This volume is only the second in this series of catalogues of the Swiss fauna, but several others are in preparation. It really contains more information than most catalogues: distribution records both Swiss and general, seasonal data, collectors, depositories, and biological data. Considerable historical data, including nomenclatural and faunal changes, are discussed since Heers' first 1837 paper on the Swiss fauna. The manuscript was completed in January 1968. Many of the records are presented in abbreviated form, but they are keyed to lists in the introduction. There are 42 private collectors listed and the repositories for their collections. There is a 10-page, double column gazetteer showing the "Kantone", elevation in meters, and the zone. A table compares the fauna in 1900 (178 species) with that in 1967 (173 species).<sup>1</sup> There is an extensive bibliography, but it does not list page citations. It is printed on good quality paper with clear type styles. Such catalogues provide the foundation from which future taxonomic, biological, and ecological studies proceed. It is unfortunate that there are so few modern, quality publications such as this one.—R. E. Woodruff.



Peck, Stewart B. 1972. "The Eyeless European Soil Colydiid, *Anommatus duodecimstriatus*, in North America (Coleoptera: Colydiidae)." *The Coleopterists' Bulletin* 26(1), 19–20.

**View This Item Online:** <https://www.biodiversitylibrary.org/item/271415>

**Permalink:** <https://www.biodiversitylibrary.org/partpdf/372573>

#### **Holding Institution**

University Library, University of Illinois Urbana Champaign

#### **Sponsored by**

University of Illinois Urbana-Champaign

#### **Copyright & Reuse**

Copyright Status: In copyright. Digitized with permission of the rights holder.

Rights Holder: The Coleopterists Society

License: <http://creativecommons.org/licenses/by-nc-sa/4.0/>

Rights: <https://www.biodiversitylibrary.org/permissions/>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.