

Patočka, J. & M. Turčáni 2005. *Lepidoptera Pupae. Central European species.* – Apollo Books, Stenstrup, Text volume: 542 pp., Plate volume: 321 pp. – Hardcover (ISBN 87-88757-47-1). DKK 960.00 (excluding postage) (in English).

Most of our current knowledge on the pupal morphology of European Lepidoptera has been the result of years of research by Prof. Patočka and his collaborators, who published a huge series of papers in German on this topic. In this book, Prof. Patočka and Dr. Turčáni summarize their results and make them available in English for the great benefit of the scientific community. The two volumes are an illustrated key to the identification of the pupae and pupal exuviae of more than 2500 species of Lepidoptera (approximately 2/3 of the Central European fauna). Some families, for which the pupal morphology is still almost unknown, are not included; they are the Opostegidae, Lypusidae, Deuterogoniidae, Pterolonchidae, Autostichidae, and Lecithoceridae. Other families, such as the Micropterigidae, Eriocraniidae, Nepticulidae, Douglassiidae, Coleophoridae, and Blastobasidae, are only superficially treated, with no keys to the species. To each of the treated families a paragraph is dedicated, with information on morphology, life habits, and food plants. A short introduction on pupal morphology and biology, including methods for collecting and studying lepidopterous pupae, is given at the beginning of the book. This introduction is essential to become familiar with the terminology used in the keys, but it is not recommendable as a standard reference for pupal terminology. In fact, the authors use a series of uncommon terms (like „oculi“ for the eyes and „ommata“ for the ocelli), and there is some confusion about Latin terms, culminating in the substitution of meanings between decticus and adecticus pupae. The plate volume fully illustrates the text, with more than 8000 line drawings. Unfortunately, the legends to some figures are missing and some abbreviations used in the plates are not explained in the list. Figures A1–B5, essential for the understanding of the introductory part, are strangely never cited in the text. I tested the keys with 14 specimens from the collection of the Museum für Tierkunde in Dresden. Most of the specimens were pupal exuviae identified by Staudinger and Bang-Haas, who reared the pupae to adults. The correct identification to family or species level was easily possible in nine cases, while in five cases problems occurred in assigning a species to the correct family. In *Cepphis advenaria* (Geometridae), for example, the mandibles are located caudo-laterally to the labrum, which may lead to an erroneous identification (point 29 of the key). Moreover, psychid „pupae semiliberæ“ can be misidentified as Heterogynidae due to the absence of maxillary palpi in many of them (point 8 of the key). The extent to which the forewings cover the abdomen, often used as a character in the key, may be altered by dehydration in dead, non-obtect pupae. For example, in two dried pupae of *Synanthedon spheciformis* (Sesiidae), the forewings reached the border between the 5th and 6th abdominal segments, while in theory (point 24 of the key) they should not extend beyond the 4th. Some variability is to be taken into account even in the obtect pupae of drepanids, as regards the extent to which the forewings cover the hindwings (point 81 of the key). A visible labium is an essential character to identify a specimen as a zygaenid (point 21 of the key). However, as correctly stated in the paragraph dedicated to this family, in most zygaenid pupae the labium is concealed; only in a few cases a very small part of it is visible. A common problem in this publication is represented by typesetting errors. Some of them are likely to generate confusion, like the „Lb“ (= labium) that appears instead of „Pb“ to indicate the proboscis in fig. 14.20. This figure is cited at point 18 of the key to illustrate the absence of a labium! Moreover, at point 98 of the key to geometrid species, one is redirected to point 33, instead of 99. In spite of the above-mentioned problems, this book discloses the surprising diversity of lepidopterous pupae to non German-speaking scientists. I would suggest all lepidopteran morphologists to use it. They would find interesting ideas for their research and the chance to help the authors with improving the key. In this way, Patočka's and Turčáni's key may soon become a useful tool also for non-specialists, like ecologists or hymenopterists interested in pupal parasitoids.

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Artikel/Article: [Book Review Patocka, J. & M. Turcani 2005. Lepidoptera Pupae. Central European species 78](#)