

Book Review

Placed in a Global Overview of Literature on Honey Identification. Book Review: El-Labban, M. *Beekeeper's Guide for Pollen Identification of Honey*, 2nd ed.; Northern Bee Books: Hebden Bridge, UK, 2023; ISBN: 978-9953-0-5184-0

Henry Hooghiemstra

Institute for Biodiversity and Ecosystem Dynamics, University of Amsterdam, Science Park 904,
1098 XH Amsterdam, The Netherlands; h.hooghiemstra@uva.nl



Academic Editor: Anna Maria
Mercuri

Received: 10 March 2025

Revised: 24 April 2025

Accepted: 16 May 2025

Published: 6 June 2025

Citation: Hooghiemstra, H. Placed in a Global Overview of Literature on Honey Identification. Book Review: El-Labban, M. *Beekeeper's Guide for Pollen Identification of Honey*, 2nd ed.; Northern Bee Books: Hebden Bridge, UK, 2023; ISBN: 978-9953-0-5184-0. *Quaternary* **2025**, *8*, 30. <https://doi.org/10.3390/quat8020030>

Copyright: © 2025 by the author. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Melissopalynology, the study of honey, is a flourishing area within palynological research. The quality of honey is assessed on the basis of several physical characteristics, such as consistency, taste, smell, and contamination by fungal spores (yeasts) and charcoal particles. By matching the pollen grains to the parent plants, the source area of honey may be identified. A salient difference from palynological studies is that pollen from honey is not acetolyzed before the pollen grains have been examined under a light microscope (LM). As a consequence, the LM photographs of pollen grains from honey may be blurred by the surrounding protoplasm. Mohammed El-Labban published a second edition of his impressive *Beekeepers' guide for pollen identification of honey* [1], in which 495 species of honey plants are shown. The identification of pollen grains is based on comparing and matching the unacetolyzed pollen grains in honey with pollen grains in the nectar collected from well-identified plants. In the absence of sufficient information about pollen ornamentation (sculpture), beekeepers have developed their own methods of pollen identification. The photographs of pollen grains are presented in four size categories, and within these categories, pollen types are arranged by shape: triangular, round, elongated, and 'other shapes'. A map based on data from Kew Garden shows the approximate world distribution of honey plants. An interesting addition for palynologists is that information about the flowering season, the frequency of bee visits, and (in a website) plant-specific literature is also provided. The book consists of an introduction (pages 7 to 44); colour photographs and distribution maps of 495 species of honey plants and their pollen grains (pages 45 to 295); an index of Latin plant names (pages 296 to 309); and an index of common names of plants (pages 310 to 321). The LM photographs of unacetolyzed pollen grains are of high quality and the experienced pollen morphologist may recognize a good deal of the pollen ornamentation.

Considering honey pollen identification manuals on a global scale, this book is remarkably complete and concise. The following publications deal with honey plants and their pollen grains: Asperges et al. [2], with a focus on Belgium (illustrating the pollen grains and plants of 161 species); Bambara and Leidy [3], with a focus on the Eastern United States (illustrating the pollen grains of 37 species); Barth [4], with a focus on Brazil (illustrating the pollen grains of 88 species); Bucher et al. [5], with a focus on southern Tirol and northern Italy (illustrating the pollen grains of 165 species); Clemson [6], with focus on Southeast Australia (illustrating 298 species of honey plants, but no pollen grains); Crompton and Wojtas [7], with a focus on Canada (the pollen grains of 188 species are SEM-illustrated and 192 species are LM-illustrated); Hodges [8], with a focus on southern England (illustrating

the pollen grains of 143 species); Jones et al. [9], with a focus on the Southeastern United States (illustrating the pollen grains of 398 species); Maurizio et al. [10], without a geographical focus; Neve and Van der Ham [11], with a focus on the Netherlands (the pollen grains and plants of 240 species are illustrated as line drawings); Ricciardelli D'Albore [12], with a focus on the Mediterranean (illustrating the pollen grains of 218 species); Sawyer [13], with a focus on Britain (illustrating the pollen grains of 161 species); Sun, G. [14], with a focus on China (illustrating the pollen grains of 90 species); Van der Ham et al. [15], with a focus on The Netherlands (illustrating the pollen grains of 204 bee plants); and Ahman et al. [16], with an unspecified focus (113 species of honey flowers are shown with photographs of the flower, the unacetolyzed pollen grain, and a scanning electron microscope (SEM) image of the pollen grain). According to Ahman et al. [16], there are some 500 major honey plants on a global scale; a number that comes close to the 495 taxa illustrated in El Labban's manual. The SEM images in Ahman et al. [16] suggest that beekeepers are now more interested in examining the pollen morphology of honey plants more thoroughly.

El Labban's book [1] is well organized, compact, and full of information. The author is to be congratulated for having produced one of the most relevant pollen identification manuals for melissopalynologists. This book is also of value for archaeologists and paleoecologists where honey contributes to their research objectives. This book is warmly recommended to a broad audience working with pollen as proxy information.

Funding: This research received no external funding.

Conflicts of Interest: The author declares no conflict of interest.

References

1. El-Labban, M. *Beekeeper's Guide for Pollen Identification of Honey*, 2nd ed.; Northern Bee Books: Hebden Bridge, UK, 2023.
2. Asperges, M.; Vaes, R.; Lambie, R. *Pollenstof, een Bijenwandeling Door Der Wereld Van Bloemen En Stuifmeel*; Lieteberg: Zutendal, Belgium, 2016; 208p.
3. Bambara, S.B.; Leidy, N.A. *An Atlas of Selected Pollen Important to Honey Bees in the Eastern United States*; North Carolina State Beekeepers Association: Raleigh, NC, USA, 1991; 38p.
4. Barth, O.M. *O Polen no Mel Brasileiro*; Instituto Oswaldo Cruz, Fiocruz: Rio de Janeiro, Brazil, 1989; 115p.
5. Bucher, E.; Kofler, V.; Vorwohl, G.; Zieger, E. *Das Pollenbild der Südtiroler Honige*; Landesagentur für Umwelt und Arbeitsschutz, Biologisches Labor: Bolzano, Italy, 2004; 677p.
6. Clemson, A. *Honey and Pollen Flora*; Inkata Press: Melbourne, Australia, 1985; 263p.
7. Crompton, C.W.; Wojtas, W.A. *Pollen Grains of Canadian Honey Plants*; Publication 1892/E-1993; Centre for Land and Biological Resources Research: Ottawa, Canada, 1993; 228p.
8. Hodges, D. *The Pollen Loads of the Honeybee, a Guide to Their Identification by Colour and Form*; Facsimile reprint 1974; Bee Research Association: London, UK, 1952; 14p.
9. Jones, G.D.; Bryant, V.M., Jr.; Lieux, M.H.; Jones, S.D.; Lingren, P.D. *Pollen of the Southern United States with Emphasis on Melissopalynology and Entomopalynology*; AASP Contributions Series; American Association of Stratigraphical Palynologists: New York, NY, USA, 1995; Volume 30, 78p.
10. Maurizio, A.; Duisberg, H.; Evenius, J.; Focke, E.; Vorwohl, G. *Der Honig, Herkunft, Gewinnung, Eigenschaften und Untersuchung des Honigs*; Eugen Ulmer Verlag: Stuttgart, Germany, 1984; 212p.
11. Neve, A.; Van der Ham, R. *Bijenplanten, Nectar en Stuifmeel voor Honingbijen*; EIS Kenniscentrum, KNNV Afdeling Delfland, Naturalis Biodiversity Center: Leiden, The Netherlands, 2014; 511p.
12. Ricciardelli D'Albore, G. *Mediterranean Melissopalynology*; Universita Degli Studi di Perugia, Facolta di Agraria: Perugia, Italy, 1998; 466p.
13. Sawyer, R. *Pollen Identification for Beekeepers*; University College Cardiff Press: Cardiff, UK, 1981; 111p.
14. Sun, G. *The Atlas on Pollen of Honey Plants in China*; China Scientific Books: Beijing, China, 1993; 74p.

15. Van der Ham, R.W.J.M.; Kaas, J.P.; Kerkvliet, J.D.; Nerve, A. *Pollenanalyse, Stuijfmeeionderzoek van Honing voor Imkers, Scholen en Laboratoria*; Stichting Landelijk Proefbedrijf Voor Insektenbestuiving en Bijenhouderij Ambrosiushoeve: Hilvarenbeek, The Netherlands, 1991; 256p.
16. Ahmat, M.; Nabila Fahad, S.; Pieroni, A.; Zafar, M.; Sultana, S.; Majeed, S. *Melissopalynology: Bee Flora, Pollen and Honey*; Academic Press/Elsevier: London, UK, 2024; 278p.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.