

BOOK REVIEW

O'TOOLE C. 2013: *BEES A NATURAL HISTORY*. Firefly Books, New York and Ontario, 240 pp., 125 colour photographs, 3 appendixes. ISBN 978-177085-208-2. Price GBP 30.00.

The cover of this book is good introduction to its contents. The cover depicts a worker of the western honey bee in great detail and this is not the only great macro-photograph in this book. These photographs illustrate important details and the beauty of bees (Apiformes) in spite of some of the photographs not being fully focused. This was my impression when I first briefly browsed through the book. It contains general information on the biology of bees, especially some of their peculiarities, for example, necrophagy in stingless bees. As mentioned above, the account of the natural history of bees is accompanied by excellent illustrative photographs. Many of them depict special features of bee biology that one can only with difficulty and rarely observe in nature. Therefore, they not only illustrate the beauty of bees but provide a better understanding of important biological phenomena about bees. The contents of this book clearly indicate that the author is an expert with a wide ranging experience of bee biology. Not surprisingly, the author worked for 37 years on the Hope Entomological Collections in the Oxford University Museum of Natural History, where he was director of Bee Systematics and curator of Hymenoptera. He has also presented many television programs and drawn on this experience to popularize bees in this book.

The first and second chapters contain a contemporary account of the phylogeny and evidence from fossil bees of their origin from wasps. Photographs depicting the whole of the juvenile development of a solitary mining bee are original and the best I have ever seen. The differences between solitary and social bees are described in the 3rd and 4th chapters. Details of nest structure, nesting material and special organs used in the construction of nests are described in detail. The pictures of bees with nesting material in the form of "a wool ball" (plant trichomes) or strips of leaves (tapestry) are very impressive. The author presents a short account of bee dances. A separate chapter is devoted to males, their territorial behaviour, patrolling, hilltopping behaviour and interesting clustering. Three chapters are devoted to pollination and mutualism between plants and bees. Some of the morpho-

logical and physiological details of bee and plant morphology and anatomy associated with pollination are really wonderful: long tongues, buzz pollination, corbicula for carrying pollen, ability to see ultra-violet light and their narrow or broad trophic specialization. There is also an account of special pollination systems such as those of orchids. The final chapters are on the enemies of bees, conservation and management of bees and bees in medicine and folklore.

I congratulate and thank the author. He has provided us with a wonderful account of bee natural history, which popularizes bees and stresses the importance of pollination. This will be helpful in their conservation as everybody can make the environment more suitable for bees but unfortunately are unaware of this. They need to be made aware of the needs of bees. Experts have a lot of highly specialized knowledge on bee conservation (Přidal, 2011), however, people need the facts in a popular and practical form. Therefore, this book is appropriate for them in spite of the fact that it presents accounts of particular aspects of bee natural history rather than a comprehensive description of bee biology. The selected examples of bee biology provide a well-established basis for understanding the global importance of bees.

I recommend this book to everybody who is interested in the ecology of pollinators and looking for information on the conservation of biodiversity. This book should be present in every biological library, particularly those in schools, for use by beginners in the study of bee ecology. I hope there will be many more books on this topic in the future.

The book is available at bookshops, online booksellers and www.waterstones.com.

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REFERENCE

- PŘIDAL A. 2011: Book review. Dicks L.V., Showler D.A. & Sutherland W.J.: *Bee Conservation. Evidence for the Effects of Interventions. Synopses of Conservation Evidence*, Vol. 1. Pelagic Publishing, Exeter, 2010, 146 pp. — *Eur. J. Entomol.* **108**: 196.