

Chapter 16

Staden's First Report in 1557 on the Collection of Stingless Bee Honey by Indians in Brazil

Wolf Engels

Dedicated to my colleague and friend Paulo Nogueira-Neto on the occasion of his 90th birthday, April 18, 2012.

16.1 Introduction

Honey has presumably been much in demand by people since prehistoric times. To procure this unique, delicious food, many modes of honey hunting were developed, of which several are still in use today. To facilitate access to this delicacy, several ancient cultures invented modes of beekeeping, in particular with two species of honey bees, *Apis mellifera* in Europe and Africa, and *Apis cerana* in Asia (Crane 1999). In the Americas, management of stingless bees in artificial hives has only been reported for the culturally advanced Mayans and Aztecs, a tradition of meliponiculture now continued by the indigenous population of the Mexican peninsula, Yucatán (Inoue 1990). As far as we know, the early Brazilians never developed similar techniques, although their methods of honey hunting include sustainable removal without destroying the nest (Posey 2002). Nevertheless, that they knew very well where to find stingless bee colonies was already reported by Hans Staden in the sixteenth century (see also Cobo 1653, in Roubik 2000).

W. Engels (✉)

Zoological Institute, University of Tübingen, Tübingen, Germany

Departamento de Genética, Universidade de São Paulo, Ribeirão Preto, Brazil

e-mail: wolf.engels@uni-tuebingen.de

16.2 The Oldest Written Report on Brazilian Honey Collection

The first book on Brazil, the “Warhaftig Historia” by Hans Staden (Fig. 16.1), was published in Marburg in 1557. The author was a German adventurer who served as a mercenary on Spanish and French ships exploring the Atlantic coast from the La Plata region north to Cabo Frio near Rio de Janeiro. During two journeys he spent

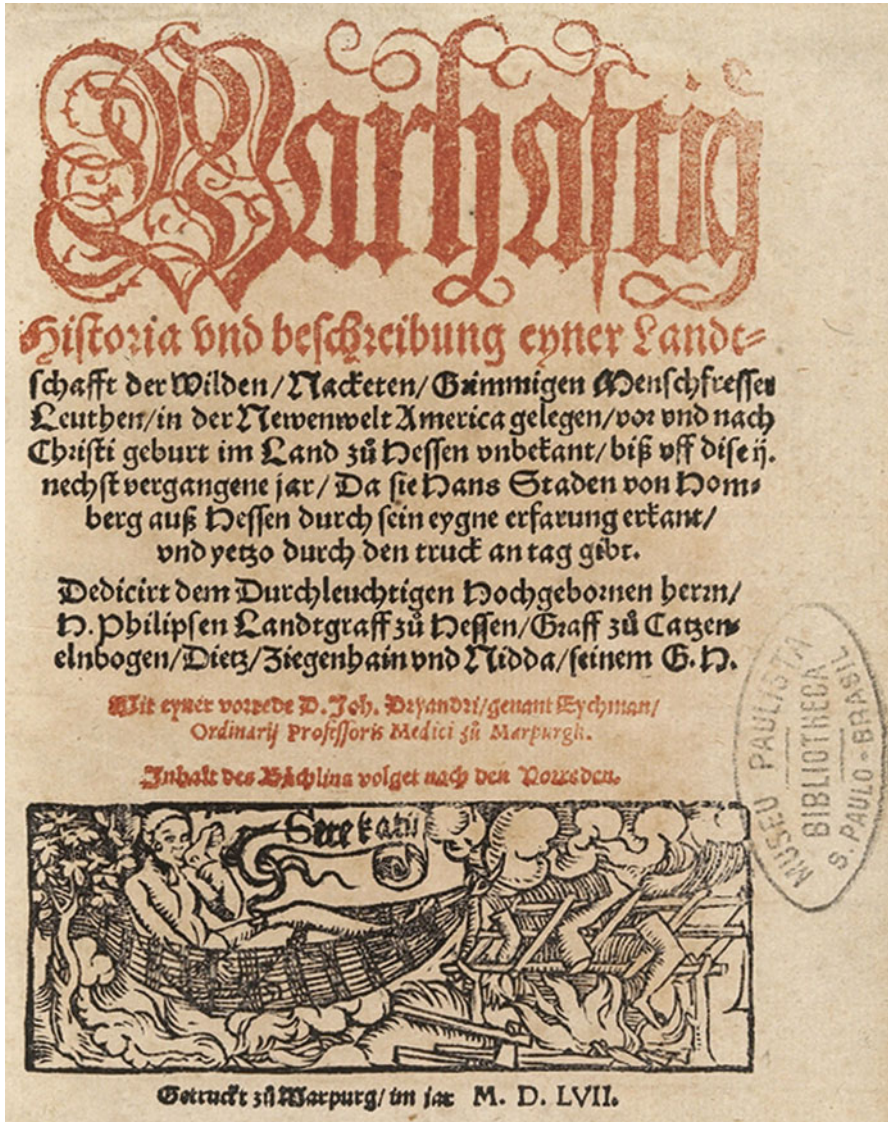


Fig. 16.1 Frontispiece of Hans Staden’s book, original edition 1557

about 10 years in the New World, including 10 months as a prisoner of the Tupinambá tribe in the São Paulo region. In his 178-page book he described in New High German language the coastal geography in great detail, based on his experience cruising the coast. In addition, he reported on the life of the indigenous people. Especially because it included description of an anthropophagic cult, the book immediately became a bestseller.

16.3 Hans Staden's Contribution to the Knowledge of Stingless Bees in Brazil

The original publication of Staden's book as well as early illegal editions, and also recent literature on Hans Staden and on stingless bees in Brazil, were consulted. The figures shown here are copies from online facsimiles prepared by the University of São Paulo.

At the very end of his book, in only six pages, some peculiarities of Brazilian nature (Engels and Heinle 2011) were recorded (Fig. 16.2). In the second part of the book, the last chapters discuss nature in Brazil, beginning with Chap. 30, titled "Bericht etlicher Thier im lande" (record on several animals in Figs. 16.1 and 16.2).

Chapter 35 is entitled "Von Binen oder Imen des lands" (from bees or "ims" of the land), including remarks on stingless bees and the collection of their honey (Fig. 16.3).

With a mere 140 words Hans Staden described stingless bees, mentioned their typical behavior, and noted that nests with honey stores are found in hollow trees. He had observed how the Indians collected the honey and participated in the process, and was attacked vigorously by the non-stinging but biting bees. He wrote [in translation]:

There are three species of bees in the land. According to their nature, the first are almost like those in our land. The others are black and as large as flies. The third are small like midges. All these bees have honey in hollow trees. Together with the wild men, I frequently collected the honey. Among the three species, we usually found better honey from the smallest bees than from the others. They do not sting so hard as the bees in our country. As I have

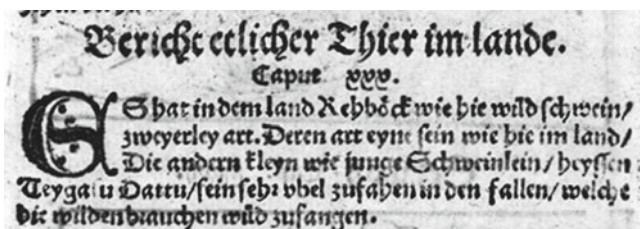


Fig. 16.2 Title of Chapter 30 on Brazilian animals

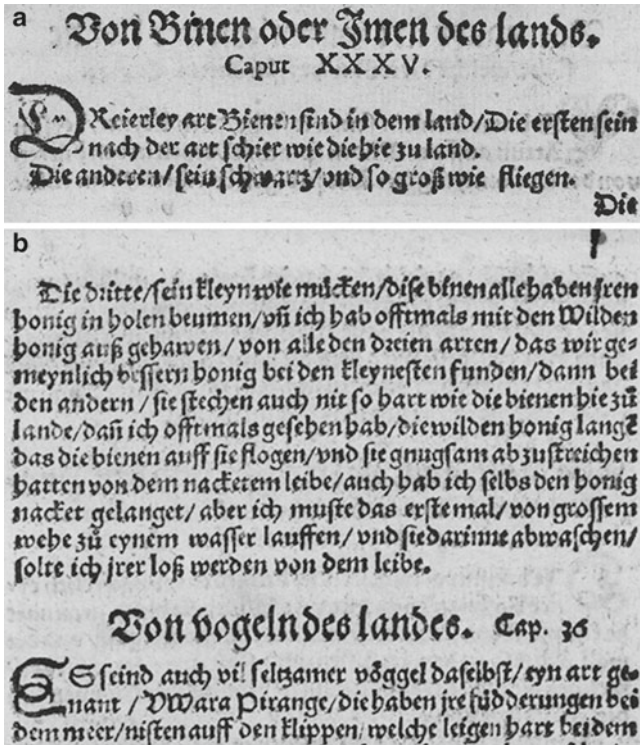


Fig. 16.3 Chapter 35 on Brazilian stingless bees, their behavior, and how the Indians in Brazil collect their honey

often seen, when the wild people take honey, the bees fly upon them, so that they had much to do in striking them off from their naked bodies. I myself also took honey naked. The first time I had to run with great pain to water and wash them off, merely to get rid of the bees from my body.

16.4 Forward-Thinking Based on the Precise Bee Descriptions of Staden

The original text of this short chapter in German is very precise (Fig. 16.3). I will comment on the above-mentioned sentences. First of all, it was possible for me to deduce the genera and the probable species mentioned by Hans Staden. These are most likely *Melipona quadrifasciata*, *Scaptotrigona postica*, and *Tetragonisca angustula* (Engels 2009), all today still occur in the São Paulo region (Nogueira-Neto 1997; Marcolin 2009).

According to Staden, these stingless bees use hollow trees as nesting sites, a correct observation (Nogueira-Neto 1997). The Indians collected the honey by removing it

from the colony after cutting the trunk open. Presumably they only took the honey pots, because it is known from recent studies on apicultural traditions of the North Brazilian Kayapó Indians (Posey and Camargo 1985; Posey 2002) that honey hunting is done by repeated removal of sealed pots from the storage area of stingless bee nests without destroying the colony. In comparing the honey of the three species, Staden favored that from *T. angustula*, and in fact this “jataí” honey also yields the highest price on today's Brazilian market. It is delicious and also is used for medicinal purposes.

The term “stingless bee” was unknown in the sixteenth century; however, Staden mentioned correctly that the Brazilian bees did not sting. In particular, *S. postica* colonies very actively defend their nest. Any enemy is immediately attacked, the workers hang onto hairs and eyelashes, bite into the skin, enter the ears, nostrils, and mouth, and chase the intruder. I experienced this behavior during field work in Brazil, as documented in our film on their nest biology (Engels and Engels 1980). Staden reported that it is not easy to get rid of these defenders, which also recruit many nestmates by releasing an alarm pheromone (Smith and Roubik 1983).

16.5 Conclusions

In summary, Hans Staden's book provided the first published information on stingless bees, unknown then in Europe. He described their nesting habit, non-stinging defense strategy, and in particular, stingless bee honeys of different qualities. This precise record was until recently (Engels 2009; Marcolin 2009) not quoted in the scientific literature on stingless bees (Nogueira Neto 1997; Michener 2007; Moure et al. 2007). The cultural traditions of South American Indians evidently allowed them to harvest honey as a valuable product of the native meliponine bees, similar to various forms of honey hunting developed in Europe, Africa, Asia, and both Americas (Crane 1999). We can assume that detailed knowledge on stingless bee biology was present in the indigenous Brazilian tribes and practiced in the sustainable use of the resources available in the tropical forests. Honey hunting from stingless bees presumably was common long before the Europeans arrived in South America.

Acknowledgements I thank David De Jong, Klaus Hartfelder, and David Roubik for critical reading of the manuscript, and Sabine Heinle for cooperation in our search for Staden literature in the rare books collection of the University of Tübingen library, and for preparation of the figures.

References

- Crane E. 1999. *The World History of Beekeeping and Honey Hunting*. Routledge; New York, USA. 682 pp.
- Engels W. 2009. The first record on Brazilian stingless bees published 450 years ago by Hans Staden. *Genetics and Molecular Research* 8:738–743.

- Engels W, Engels E. 1980. Nest biology of the Stingless Bee *Scaptotrigona postica*. Farbtonfilm 16 mm, 18 min. IWF C 1351; Göttingen, Germany.
- Engels W, Heinle S. 2011. Hans Staden als Tropen-Biologe: Erste Beschreibungen andersartiger Tiere und Pflanzen in seiner Warhaftig Historia - Stadens 22 Beispiele der Biodiversität Brasiliens - Martius-Staden-Jahrbuch 58: im Druck.
- Inoue T. 1990. A trip in Yucatan, Mexico - meliponiculture of the Maya. *Journal of Honeybee Science* 11:49–58.
- Marcolin N. 2009. Hans Staden naturalista. *Pesquisa Fapesp (São Paulo)* 164:10–11.
- Michener CD. 2007. *The Bees of the World*, 2nd edn. The Johns Hopkins University Press; Baltimore, Maryland, USA. 953 pp.
- Moure JS, Urban D, Melo GAR, eds. 2007. *Catalogue of Bees (Hymenoptera, Apoidea) in the Neotropical Region*. Sociedade Brasileira de Entomologia; Curitiba, Paraná, Brasil. 1058 pp.
- Nogueira-Neto P. 1997. *Vida e criação das abelhas indígenas sem ferrão*. Editora Nogueirapis; São Paulo, Brasil. 442 pp.
- Posey DA. 2002. *Kayapó Ethnoecology and Culture*. Routledge; New York, USA. 304 pp.
- Posey DA, Camargo JMF. 1985. Additional notes on the classification and knowledge of stingless bees (Meliponinae, Apidae, Hymenoptera) by Kayapó Indians of Gorotire, Pará, Brazil. *Annals of Carnegie Museum, Pittsburgh*, 54 (8):247–274.
- Roubik DW. 2000. Pollination system stability in Tropical America. *Conservation Biology* 14:1235–1236.
- Smith B H, Roubik D W. 1983. Mandibular glands of stingless bees (Hymenoptera: Apidae): chemical analysis of their contents and biological function in two species of *Melipona*. *Journal of Chemical Ecology* 9:1465–1472.
- Staden H. 1557. *Warhaftig Historia*. Andreas Kolbe; Marburg, Germany. 178 pp.