

Univerza v Ljubljani  
**Biotehniška** fakulteta  
Oddelek za zootehniko  
Groblje 3, 1230 Domžale

**ON THE MATING OF THE QUEEN IN THE BOOK:  
*NÜTZLICH UND GRÜNDLICHES BIENEN=BUCH (1747)***

Prepared:

Prof. emer. Andrej Šalehar, PhD

Ljubljana, 28. 5. 2025

**All rights are reserved. The contents of the monograph may be used exclusively for your personal, i.e. non-commercial use. Any other form of use of the contents of the monograph (such as copying, reproduction, distribution in physical or electronic form) for commercial purposes is prohibited without the consent of the author.**

**P.S.: Translation from Slovenian and German to English with the help of DeepL Translator**

## CONTENS

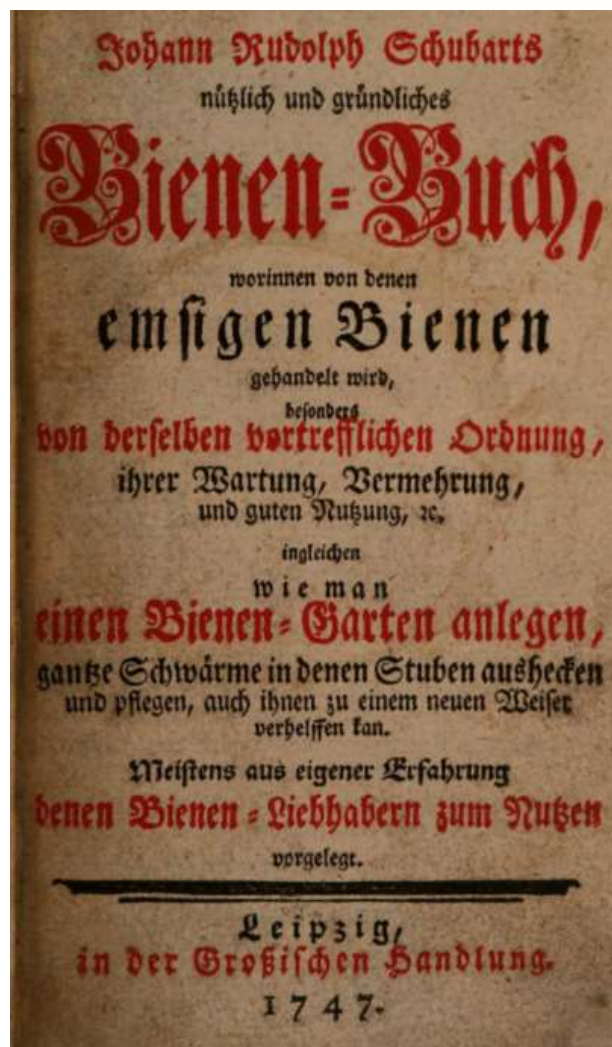
<b>1. PRESENTATION OF THE AUTHOR AND THE BOOK .....</b>	<b>4</b>
1.1. Author.....	4
1.2. Cover of the book.....	4
1.3. Contents of chapters (page 158).....	5
<b>2. ABOUT MATING.....</b>	<b>6</b>
2.1.The Fifth Chapter: About the queen bee and the obedience of bees (pp. 23-32).....	6
2.2. Page 31 .....	7
2.3.Sixth chapter: On drones or large 'Brut=Bienen' (pages 32 - 37).....	7
2.4. Pages 35-36 .....	8
2.5. Page 37 .....	8
<b>3. DISCUSSION AND CONCLUSION.....</b>	<b>9</b>

## 1. PRESENTATION OF THE AUTHOR AND THE BOOK

### 1.1. Author

The book was written by Johann Rudolph Schubarth (1747). The author's biography cannot be found online. From various materials, we have gathered that he lived in Saxony, was a pastor, and was engaged in beekeeping for a long time (he wrote the book after 25 years of beekeeping).

### 1.2. Cover of the book



Johann Rudolph Schubart  
Nützlich und gründliches Bienen=Buch (1747)<sup>1</sup>

<https://babel.hathitrust.org/cgi/pt?id=wu.89098858483&view=page&seq=15&skin=2021>

<sup>1</sup> The book is presented in Neuer Zeitungen von Gelehrten Sachen auf das Jahr MDCCXLVII. Erster Theil, pag. 535-536.  
[https://gdz.sub.uni-goettingen.de/id/PPN729352439?tfy={%22pages%22:\[589\],%22view%22:%22info%22}](https://gdz.sub.uni-goettingen.de/id/PPN729352439?tfy={%22pages%22:[589],%22view%22:%22info%22})

The book was published in Leipzig in 1747. It is written in German and in Gothic on 159 pages.

### 1.3. Contents of chapters (page 158)

Inhalt aller Capitel.	
Cap. I. Die Beschreibung und Zergliederung der Biene.	p. 5
II. Von der Bienen Natur, Kunst und Geschicklichkeit.	10
III. Von ihren Sinnen.	17
IV. Von der Bienen Policen und Deconomie	21
V. Von dem Weiser oder Bienen-Königin, und den Gehorsam ihrer Unterthanen, ingleichen wie ihnen zu einem neuen Weiser zu verhelffen.	23
VI. Von den Dräbhen oder grossen Brut-Bienen.	32
VII. Von der Bienen Generation und Erzeugung.	37
VIII. Von der Bienen Fleiß und Arbeit.	46
IX. Was sowol zu der Bienen Nahrung, als zu Einschlagung der Brut dienlich ist.	50
X. Von der Bienen natürlichen Ordnung.	54
XI. Von der Zeit und Geburt derer Bienen, ihrer Lebens-Länge, Lode und Begräbniß.	58
XII. Vom Streit und Krieg der Bienen, und wie sie einander berauben.	71
XIII. Von den Feinden der Bienen und ihrer Kranckheit.	80
XIV. Vom Schwärmen, und denen Ursachen, warum solches geschicht, ingleichen wie man den neuen Schwarm einfassen soll.	88
XV. Dergleichen vom Schwärmen, und was man dabey in acht zu nehmen hat.	102
XVI. Aus welchen Blumen die Bienen das Honig einsammeln, und welche sie nicht berühren.	115
XVII. Von ordentlicher Verpflegung der Bienen.	119
XVIII. Wie man die Bienen füttern soll.	123
XIX. Von der Begend oder Gelegenheit vor Bienenstöcke und den Bienen-Garten.	126
XX. Vom Beschneiden der Bienen und wie man ihnen zu rechter Zeit das Honig nehmen soll.	132
XXI. Von denen Bienenstöcken und deren Unterschied, und wie dieselben müssen zugerichtet werden.	137
XXII. Wie man das Honig läutern und wohl verwahren auch Honig-Eßig machen soll.	139
XXIII. Wie man sich ganze Schwärme, samt dem Weiser in der Stube ausbrüten und hernach einfassen soll.	141

## Summary:

Chapter I. Description and anatomy of the bee.

II. On the nature, art, and skill of bees.

III. On their senses.

IV. On the bee police and economy.

V. On the queen bee or mother and the obedience of bees.

VI. On drones or large 'Brut=Bien<sup>2</sup>en'.

VII. On the generation and production of bees.

VIII. Diligence and work of bees.

IX. What is beneficial both for bee food and for maintaining the brood.

X. From the natural order of bees.

XI. On the time and birth of bees, their lifespan, death, and burial.

XII. On the disputes and wars of bees and how they rob each other.

XIII. Enemies of bees and their diseases.

XIV. On swarms and the reasons why it happens, as well as how to catch a new swarm.

XV. On everything related to bees and what to pay attention to.

XVI. From which flowers bees collect nectar and which they do not touch.

XVII. Proper care of bees.

XVIII. How to feed bees.

XIX. About the area or arrangements in front of the beehive and bee garden.

XX. To cut out the comb and how to extract honey from them at the right time..

XXI. Beehives and their differences and how to prepare them.

XXII. How to clean and preserve honey and how to make honey vinegar.

XXIII. How to hatch entire swarms in a room, including the queen, and then close them up.

## 2. ABOUT MATING

**2.1.The Fifth Chapter:** About the queen bee and the obedience of bees (pp. 23-32)



---

<sup>2</sup> This is a designation of the drones



Wenn nun

dieser junge Weiser ausgekrochen ist, so bleibet er ohngefähr zwey Tage im Stocke, alsdenn gehet er in Mittags-Stunden heraus, und besiehet gleichsam seine Wohnung, probiret auch zugleich ob er fliegen kan, und schwinget sich mit andern Bienen in die Luft, als wolte er nimmer wieder zu seiner Wohnung kommen; aber es vergehen kaum zwey Minuten, so kömmt er mit vielen Bienen wieder an den Stock und vor das Flog-Loch, und kehret mit Freuden wieder dahinein, machet alsdenn gleich unter denen Unterthanen seine Anstalt zum Bruteinschlagen, und Honig und Wachs einzutragen, und ist also diesem Stock wieder geholffen.

Summary:

... After hatching, the young queen stays in the hive for about two days, then comes out around noon, inspects her home (the hive) and simultaneously tests her flying abilities. Then, together with other bees, she takes to the air as if she never wants to return to her hive. However, after barely two minutes, she returns, accompanied by many bees, to the entrance and happily goes back into the hive, where she immediately starts laying eggs. Bees bring in honey and wax. This helps the hive.

2.3.Sixth chapter: On drones or large 'Brut=Bienen' (pages 32 - 37)

Das sechste Capitel.  
Von denen Drähnen oder grossen  
Brut-Bienen.

#### 2.4. Pages 35-36

Gleichwie nun bey allen Creaturen, Menschen und Vieh, klein und grossen Geschöpfen der große Gott je ein Männlein und Fräulein erschaffen, damit alles, was er erschaffen hat, auch künfftighin, so lange die Welt stehet, erhalten und weiter fortgepflantzet werden möge; So ist es gleicher Weise bey denen Bienen auch beschaffen. Daß man aber bey allen Creaturen gemeiniglich ihre Vermischung und Besaamung zu gewissen Zeiten sehen kan, und solches bey denen Bienen im geringsten niemals gewahr wird, haben wir einzig und allein ihrer Keuschheit zuzuschreiben. Denn man kan niemals, wenn sie haussen vor dem Bienenstock sind, ein einkiges Werck ihrer Liebhosung oder Vereinbarung gewahr werden, sondern es geschiehet allezeit inwendig im Stock. Daß ferner anderns die Drähne oder Brut-Biene ein Männlein ist, erhel-

#### Summary:

Just as the great God created male and female in all creatures, people, and livestock, both small and large, in order for everything He created to be preserved and multiplied in the future, as long as the world exists, so it is with bees. However, the fact that we can generally observe the mixing and mating of all creatures at a certain time, and that this does not apply to bees, is solely a result of their purity. When they are outside the hive, we can never observe even a single act of courtship or arrangement; rather, this always happens inside the hive. Furthermore, the drone is the male.

#### 2.5. Page 37

Es verrichtet dannenhero die Brut-Biene weiter gar keine Arbeit, als daß sie die Königin fruchtbar machet, und auch zuweilen die kleinen Bienen bedienet und besaamet.



#### Summary:

The drones do no other work but to fertilize the queen bee and thus make her fertile, and sometimes he tends to and services the young bees.

### 3. DISCUSSION AND CONCLUSION

We examined many old beekeeping books and publications that were issued (published) before 1763. But only in the book *Bienen-Buch* (1747) did we find for now a record of how a young queen, about two days (depending on the weather) after her hatching, leaves the hive to the entrance together with the bees (drones are not specifically mentioned), how she inspects the hive, and then flies away into the air with the bees. Shortly (after two minutes), she returns to the entrance together with the bees and goes back into the hive, where she immediately starts laying eggs. Nothing is recorded about the purpose of this trip, perhaps something indirectly at the end, when it is said she immediately starts laying eggs. Nor are there any signs mentioned (such as white threads on her abdomen) that the queen brings back upon her return. The author observed and described the events closely, but did not understand their purpose. In the sixth chapter (pp. 32-37), when he describes drones, he initially emphasizes that God created males and females for all living beings so that everything He created would be preserved and reproduced in the future, and this is true for bees as well. However, we do not observe mating among them, as everything happens in the hive. The author emphasizes that the only function of drones is to fertilize the queen in the hive so that she becomes fertile.

Thus, Scopoli's record from 1763<sup>3</sup> remains the first that (pages 303 - 304) explains: '...she is surrounded by several drones; she takes off, mating in the air...'. This is the world's first record that the queen is mated by drones in the air. Scopoli was not a beekeeper and realized this through conversations with the old beekeepers of Gorenjska.

---

<sup>3</sup> Scopoli, Giovanni Antonio (1763), *Entomologia Carniolica: exhibens insecta Carnioliae indigena et distributa in ordines, genera, species, varietates, methodo Linnaeana*. Vindobonae: 420 strani.  
<http://www.dlib.si/?URN=URN:NBN:SI:DOC-VP8U24VW>