

# Book of Abstract



Università  
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**SESSION XII**

**SOCIAL INSECTS AND APIDOLOGY**

**Antonio Scopoli: the forgotten revealer of the millennial mystery of the fertilization of queen bees.**

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Giovanni Antonio Scopoli (1723-1788) was an Italian naturalist, physician and academic. Born in Val di Fiemme (Cavalese, Trento, Italy), after obtaining a degree in medicine from the University of Innsbruck he practiced the profession of doctor first in Cavalese, then in Trento and then in Venice, where he began to take an interest in natural history, collecting plants and insects in the Alps. Having become medical assistant of the imperial mines in Idrija, a small village in Carniola (Slovenia), he remained there for sixteen years. He was then called to the chair of mineralogy in Schemnitz (today in Slovakia). During his stay in Slovakia Scopoli published his main scientific works on botany and mineralogy. From 1777 he held the chair of chemistry and botany at the University of Pavia (Italy), a position he held until his death. In 1777 also, he became director of the Botanical Garden of Pavia, which under his direction became one of the most famous Italian botanical gardens. In one of his most famous works, *Entomologia Carniolica* (1763), dealing with the species *Apis mellifica* (sic), Scopoli described, first among all scholars, the phenomenon of mating in flight of queen bees with drones. A few years later he wrote a real treatise on Apoidea entitled *Dissertatio de Apibus* (1770), dedicating a large part to honey bees and beekeeping, illustrating the techniques and knowledge of Slovenian beekeepers. The part relating to the honey bee was also published in Italian a few years later (1779). Reading Scopoli's texts on bees, one can deduce his extensive knowledge of contemporary literature in this sector. It remains a mystery why Antonio Scopoli, despite being the naturalist who was the first to clearly describe how the mating between queen bees and drones takes place and despite having dealt extensively with Slovenian beekeeping and the related very advanced techniques, remained unknown to the apidological world, while being considered one of the most famous entomologists and naturalists of the 18th century. The reproduction of honey bees has always been a great mystery, from Aristotle (384-322 BCE) to the Enlightenment. The many authors who, over 20 centuries, have dealt with it, have for many centuries excluded the mating of the queen bee or have given very imaginative explanations and even descriptions of it. The modern history of scientific knowledge relating to the reproduction of honey bees has always attributed the discovery of the mating in flight of queen bees to the Slovenian Anton Janša (1734-1773) who, in his work *Hinterlassene vollständige Lehre von der Bienenzucht* (Complete manual of beekeeping), published posthumously (1775), had described in detail the mating of the queen bee in flight with several drones. The first experimental work on this phenomenon was instead due to François Huber (1750–1831) who, in his fundamental work 1792, *Nouvelles observations sur les abeilles* (1792) and in particular in the *Lettre première, Sur la fécondation de la Reine-Abeille* (First letter, On the fertilization of the queen bee), demonstrated that the mating of the queen bee can only take place outside the hive arriving to calculate, on the basis of the duration of the fertilization flights of the virgin queens, also the distance of this mating. Huber was not aware of the works of Scopoli or even of Janša, as wasn't later the noble father of scientific and technical knowledge on beekeeping, Johann Dzierzon (1811-1906), who, only after Huber's experiments, assumed the multiple mating of virgin queens in flight.

**KEY WORDS:** *Apis mellifera*, reproduction, history of entomology.

**POSTER**

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