

# Scopolia Carniolica Jaq., Joannes Antonius Scopoli & Scopolamine

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In early spring, a flower grows in the rocks in this region. It often grows in damp stony places in the hilly regions, but most people do not notice this. In fact, it's not a very noticeable plant and most people do not know it or care to know its name.

A plant grows in the hills of this area...



However, in the mid 16<sup>th</sup> Century, the poor people of this region would collect such plants and bring them to a great scholar to make him happy. That scholar, Matthioli, who lived from 1500 to 1577 in Gorica, was keen to give every plant its own name.

This plant was particularly interesting to him, because it was not Deadly Nightshade, nor was it *Solanum somniferum*, but it reminded him of both... so he called it "*Solanum somnificum alterum*"- an alternative version of a plant he knew.

Matthioli describes the plant in 1569



...



Solanum somniferum  
(*Hyosciamus niger*)  
(Black henbane)



Solanum somniferum  
alterum



Solanum maius  
(*Atropa belladonna*)  
(Deadly nightshade)

After a series of names, including “*Solanum somnificum alterum*”, “*Atropa 2*”, “*Hyosciamus Scopolia L.*”, “*Litophyla carniolica*” and then *Scopola carniolica. Jacq.*”, it was finally settled in 1821 in Utrecht at the international congress of plant nomenclature as *Scopolia Carniolica*.

However, the names in this plant have a strong history with this region and are closely tied with a very unfortunate, but very brilliant naturalist.

## Joannes Antonius Scopoli (1723-1788)



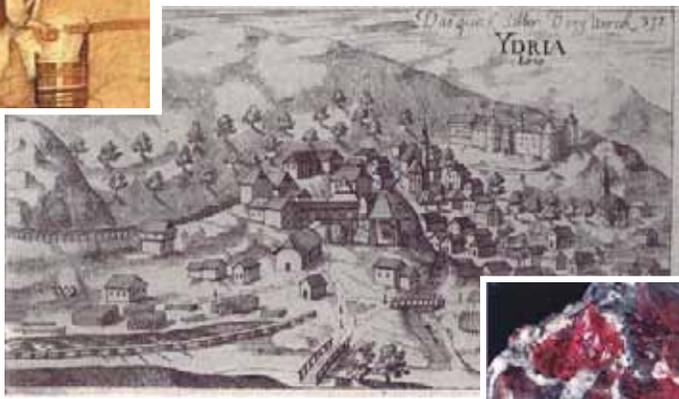
Joannes Antonius Scopoli was born in 1723 in Austrian South Tyrol – now the Italian province of Trentino. All of this region at the time, including Slovenia, was part of the Austrian Empire. Scopoli was born into a noble family and quickly acquired a privileged education, studying medicine in Innsbruck, working in hospitals in Trento and Venice, working as the personal secretary of the Bishop of Seccova Firmian, and spending his spare time studying botany and preparing for the state exam.

In the Austrian Empire at the time, the state exam in Vienna was the only way to get a licence for the job of general practitioner. In 1753, at the age of 30, Scopoli took the exam and passed brilliantly, being promised that he would be given the first free post of physician in the Empire.

### Scopoli was sent to the Idrija mine in Carniola



...where mercury had been poisoning workers for centuries



However, this is where Scopoli's luck began to change. The first free post was given to someone else due to reasons of court intrigue, and Scopoli was instead given a newly created post of mine physician in Idrija, Carniola, where the 2000 mercury miners suffered from mercury poisoning and widespread alcoholism. On the long journey there with his wife and daughter, their boat hit a log and overturned, losing all Scopoli's books and equipment. This happened again with a fire, and later, much more tragically, his wife and two children died.

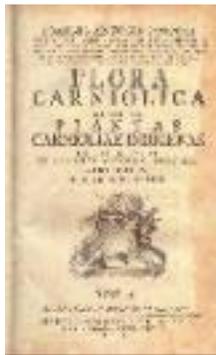
Following this, Scopoli entered into a new problem at work. The director of the Idrija mine, who had had been so keen to work with Scopoli on improving conditions at the mine, also died. His successor was only concerned with the income of the mine and was extremely hostile to Scopoli. It was only in 1769, at the age of 46, that Scopoli finally left the mine and was free to pursue his passion for the natural world.

However, during those dark years at the mine, Scopoli's passion for science was undimmed. He wrote pioneering books on the occupational health of the mercury miners, on minerology and on local fauna. However, it was his book, *Flora Carniolica*, which brought him into detailed correspondence with his contemporary, the great Swedish botanist, Carl von Linne. The 30 letters of correspondence which still survive to this day show great mutual admiration and collaborative work. In fact, Scopoli has been called "the Linnaeus of the Austrian Empire".

### But despite tragedy, produced several great publications



- *De Hydrargyro Idriensi* (1761)
- *Flora Carniolica* (1760)
- *Entomologia Carniolica* (1763)
- *Annus historico-naturalis* (1769-72)
- *Deliciae Flora et Fauna Insubrica* (1786-88)



**>30 letters written and sent over great distances**

Epistola number and date	Epistolae number	Recipient's address Name & address		Recipient's address Name & address	
		Destination	Number of letters	Destination	Number of letters
1	1750	L. B.	1	L. B.	1
2	1751	L. B.	1	L. B.	1
3	1751	L. B.	2	L. B.	1
4	1751	L. B.	1	L. B.	1
5	1751	L. B.	1	L. B.	1
6	1751	L. B.	1	L. B.	1
7	1752	L. B.	1	L. B.	1
8	1752	L. B.	1	L. B.	1
9	1752	L. B.	1	L. B.	1
10	1752	L. B.	1	L. B.	1
11	1753	L. B.	1	L. B.	1
12	1753	L. B.	1	L. B.	1
13	1753	L. B.	1	L. B.	1
14	1753	L. B.	1	L. B.	1
15	1753	L. B.	1	L. B.	1
16	1753	L. B.	1	L. B.	1
17	1753	L. B.	1	L. B.	1
18	1753	L. B.	1	L. B.	1
19	1753	L. B.	1	L. B.	1
20	1753	L. B.	1	L. B.	1
21	1753	L. B.	1	L. B.	1
22	1753	L. B.	1	L. B.	1
23	1753	L. B.	1	L. B.	1
24	1753	L. B.	1	L. B.	1
25	1753	L. B.	1	L. B.	1
26	1753	L. B.	1	L. B.	1
27	1753	L. B.	1	L. B.	1
28	1753	L. B.	1	L. B.	1
29	1753	L. B.	1	L. B.	1
30	1753	L. B.	1	L. B.	1



The correspondence is even more remarkable given the great distances through which it had to travel and the complications involved. Linnaeus complains in two letters that he has still not received the copy of *Flora Carniolica* that Scopoli sent, and believes that it must have “stayed in Vienna”. Such correspondence may well have been intercepted by rival scientists paying a price. Finally, however, a German student arrived in Uppsala with a copy of the book and Linnaeus says “I bought it from him with supplications and money and I have read it eagerly and thoroughly”.

**... and one plant of Scopoli's fascinated Linnaeus**

*Linnaeus to Scopoli,  
Letter 3  
(28.12.1761)*

... “Most of all, I would like to see your 288 *Atropa* 2, because it seems to me a completely paradoxical and singular species. If You possess its seeds or even a dried specimen, please, send it to me in a letter.”...

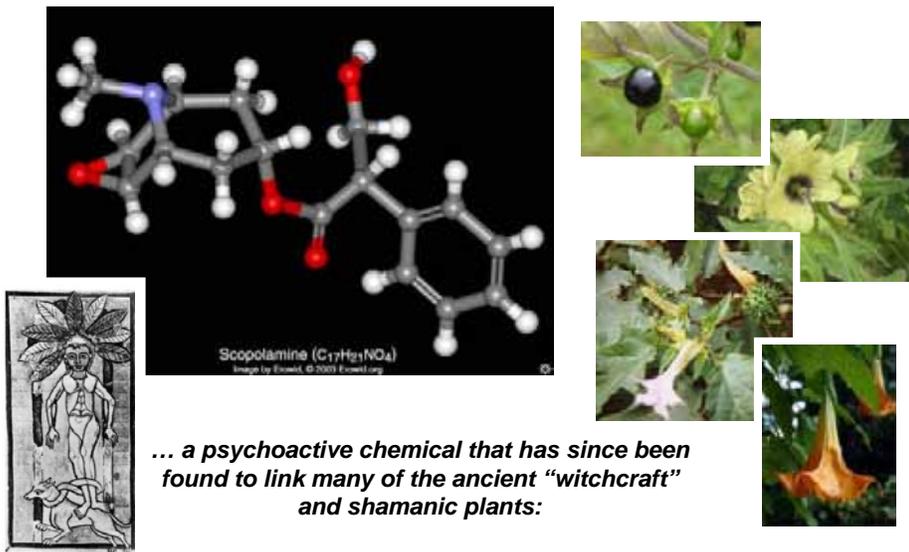


... so Linnaeus named it after Scopoli, and it is still in Linnaeus' garden today



And here is the connection with the plant *Scopolia Carniolica* – now named after him – because this plant fascinated the great Swedish botanist... and it even still grows in his garden. In his third recorded letter to Scopoli, Linnaeus states “Most of all, I would like to see your 288 Atropa 2, because it seems to me a completely paradoxical and singular species. If You possess its seeds or even a dried specimen, please, send it to me in a letter.”

***... it is also the plant from which scopolamine was first isolated***



***... a psychoactive chemical that has since been found to link many of the ancient “witchcraft” and shamanic plants:***

*Scopolia Carniolica* was the first plant from which scopolamine was extracted. Scopolamine is one of the most active alkaloids in a variety of European witchcraft plants – like henbane, madrake and deadly nightshade, or new world shamanistic plants such as brugmansia.

**Scopoli's association with Linnaeus cost his reputation for years**



**... in 1813, (25 years after Scopoli's death)  
Charles Nodier praised Scopoli.  
Ljubljana biologists rejected him.**

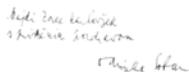
**Slovenia was part  
of the "Illyrian  
Provinces" of the  
French Empire.**



But Scopoli's association with Linnaeus was to prevent his fame during his lifetime or the years after. Linnaeus' brave new system was not liked in Scopoli's part of the world. In fact, during Napoleon's control of Illyria in 1813, Charles Nodier came to Ljubljana to edit the official French newspaper. He wrote about Scopoli enthusiastically, setting him out as an example for naturalists to follow. However, a group of Ljubljana botanists refuted Nodier's claims in an article in his own paper. Scopoli was disowned, as the work of Linnaeus was disliked in Vienna.

Scopoli is now honoured for the great naturalist and physician that he was.

*... and the correspondence between the two great men is recorded...*



**JOANNES A. SCOPOLI-  
-CARL LINNAEUS**

Dopisovanje / Correspondence  
1760-1775

Darinka Soban

*In Latin...*

*and English...*

*and Slovene!*

*In a fascinating book  
by Darinka Soban*

PRIRODOSLOVNO DRUŠTVO SLOVENIJE  
SLOVENIAN NATURAL HISTORY SOCIETY  
Ljubljana, 2004

The mercury mines in Idrija where Scopoli produced his great works, still stand today, although they are closing after more than 500 years of operation. These mines have produced 107,000 tons, or 13% of the world's production of mercury. But the mines have also contributed great science during their history. Not only with Scopoli's pioneering work on the occupational health associated with these mines, but also in the technological advances employed to work them.

So if you should notice a plant growing in a damp stony place around here, with the appearance of belladonna and dark purple flowers, please remember its name, *Scopolia Carniolica*, and remember Joannes Scopoli, his work in the Idrija mines in the region of Carniola, and his book *Flora Carniolica*, which introduced Carl von Linne to an interesting little flower which he named after Scopoli and which grows in his garden today.

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