

Nº 025.

Alay. arb. nobile, topiaria, umbrosa
fruticosa, tubulosa
petala, calyx, o dehiscentia
regia, dura, arax, sero pache
mala, axax, vola, nodulosa, voluta, lant
coning, nax: cista, pulchra
soccum adhibere vorigaba
fluel: infra folia, ante folia curvata

Alay mala papul, fustuel ripax. o culx.
P. cupa ad area idell
arbit. non pax
legu. melle fru
sub f. cone. Siphonax, fundamenta
cellax, volax colli, orbiculos,
vasa locly, manubria selopale
Pestling malax, calici pax
Candax f. pyrio, calyx, nidore
lobax pax, ma, moficala loxpa

The Teacher

A Teacher who Arouses E

Linnaeus as a Teacher



he hunting horns echo softly and sonorously, the people fall silent. More than 200 persons have gathered together. The mood is merry, the early summer weather promising. At last the excursion is to begin. A short, brown-eyed man takes the lead with energetic steps. The whole company follows him along the streets of Uppsala, out of the city. The expectant members are looking forward to an exciting day, full of new knowledge and joyful discovery. Usefulness and desire blend happily.

Carl Linnaeus's scientific excursions round Uppsala are on everyone's lips. No one has ever seen anything like them before, a playful professor who has become so popular that a hundred or more people take part in every excursion to learn more about the marvels of Nature. Linnaeus is in the middle of a magnificent career. He is the famous scientist, an international celebrity, whose great knowledge and new ideas attract many students from both Sweden and abroad. He also has a never-failing ability to present his knowledge in a fascinating way.

In other words, Linnaeus is not only a keen-sighted scientist looking for new knowledge but also an enthusiastic teacher who strives to make science popular. But how does he manage to arouse such interest among his audiences? What tricks does he use? There are several answers to those questions. He is humorous and often uses drastic expressions. He is very down to earth. He often uses metaphors to clarify his reasoning. He works hard to create enthusiasm and wonder. He himself seems to be carried away. This attitude is the hallmark of both his indoor lectures and his outdoor excursions round Uppsala.

Taking students out on botanical excursions is a splendid way for Linnaeus to present his knowledge of Nature in pleasant circumstances. Together with his students, he is fascinated by the exciting discoveries they make in the course of the day. Every half-hour they meet up to go

Linnaeus Wins Applause

through the objects they have collected. Linnaeus demonstrates the properties of, for example, a certain plant, but he also talks about the medical and economic importance the species may have. Great emphasis is placed on botanical knowledge, but fish and amphibians are discussed, as well as small birds that have to be shot to be examined. And the boxes they have with them with insect pins are gradually filled with beautiful small objects for study. Geology is also on the agenda. Minerals and rocks are examined and soil type is of particular interest. In addition, Linnaeus takes every opportunity to emphasise knowledge that in various ways can be economically important for agriculture, in line with the aim of science to be useful for society in the 18th century, the Age of Enlightenment.

Linnaeus's sense of order permeates his excursions. A secretary is appointed for every excursion, to take notes both of the finds and of the demonstrations during the day. Moreover, a monitor is appointed to keep a check on the participants when they form groups, their absence, late arrival, times for lunch at 2 o'clock and the following siesta until 4 o'clock. Linnaeus arranges his excursions once a week in the spring and twice a week in the summer, except when it is too hot. There are altogether eight different excursion paths to follow. The participants are recommended to wear comfortable, informal clothing: a short tunic or jacket and wide trousers of light cloth. Actually, this was the dress of seamen

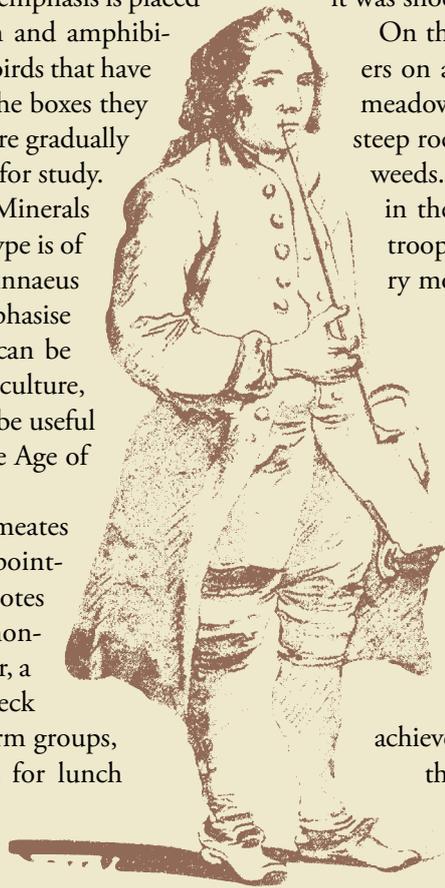
at that time, but Linnaeus considered that it was suitable for practical reasons for a whole day's walking and investigation in the countryside. But his critics thought it was shocking, not sufficiently becoming.

On these excursions, Linnaeus takes his followers on a journey of discovery through flowering meadows, wet marshes and thick fir forests, across steep rocks, groves full of insects and fields full of weeds. After a full day, the large group returns in the evening to Uppsala. Linnaeus leads his troops, who march through the town in a merry mood with horns and drums sounding and flags flying. The excursion ends at the botanic garden with three cheers for their popular teacher: "*Vivat Linneus! Vivat Linneus! Vivat Linnaeus*"

What is it that drives Linnaeus to put both effort and joy into presenting knowledge in an easily understandable and enjoyable way? Certainly he enjoys teaching and playing the role of the teacher. He also feels that he is called by God to systematise the world that creation had achieved and wants to pass on the knowledge of this divine work. Moreover, Linnaeus likes being at the centre of things. He is almost childishly happy about getting attention – he is, in fact, something of a PR genius. He has a special talent for advertising not only science but also himself. However,

his way of selling himself and science is not always looked upon kindly. It shocks some of his colleagues.

For example, the fact that Linnaeus attracts so many students to his lectures and excursions arouses jealousy



Drawing of Carl Linnaeus.

among other professors at Uppsala. In the summer of 1748 things have gone so far that Linnaeus is given a written reprimand by his own benefactor and friend, Carl Hårleman. In a letter to Linnaeus, he writes that he has received complaints about the excursions. The complaints are that they cause too much of a stir. Hårleman thinks that Linnaeus should forbid the horns and the seamen's clothes. Teaching is a serious business that should not be combined with pleasure. This reprimand upsets Linnaeus greatly. He finds it difficult to sleep at night for two months. His own notes reveal that this letter "almost killed" him.

Posterity can be grateful that, in spite of everything, the reprimand killed neither Linnaeus nor his passionate desire to share his knowledge. The joy of discovery, curiosity, the desire to teach – these were the hallmarks of Linnaeus's life, both as a scientist and as a teacher. In our own time, too, these concepts are in fact indispensable on our journey through life and the world of learning. In other words, Linnaeus's attitude to learning is timeless and has a great deal to contribute to posterity, long after his death. So let loose your sense of fun and allow Linnaeus to take you on an inspiring journey through time, science and reality.

*Småland has born me – I have travelled through Sweden
I have studied the 450-yard-deep entrails of Earth
Climbed miles high to the summit of weather
Seen summer and winter in one day and lived in them the same day
Walked through cloud, visited the end of the world
Seen the sun's resting place at night
Travelled thousands of miles by land in a year*

From The Journey to Lapland, 1732



In the footsteps of Linnaeus. This path leads from the buildings at Råshult into the nearby meadows and fields. Linnaeus certainly walked along it many times, stopping to look at the meadows' abundance of flowers, listen to the birds' song and rest a while under the pollarded trees.

Linnaeus as a Teacher

Linnaeus was not only an outstanding scientist, he was also a very good teacher. Many of his methods are still useful for arousing the desire to learn and the joy of discovery. When Linnaeus was made a professor of medicine at Uppsala University, he was also put in charge of teaching the faculty's students. His lessons were greatly appreciated and he attracted students from the other university faculties. Linnaeus always began his lectures at his desk. There he seems to have captured his audience's interest. He always spoke freely, with a small piece of paper in one hand, on which a few key words were written down. One of these pieces of paper containing Linnaeus's own lecture notes is included in the illustration introducing this chapter. Perhaps the gap you can see in the text was there for him to hold the paper between his finger and his thumb. Eyewitnesses have related how he could influence his audiences greatly, and he seems to have been a good and charismatic speaker.

From his desk he took his students out into the Academic Garden, which he had organised himself according to his sexual system. "The garden offers at one single glance far more herbs than if we had walked though the whole of Europe to look at plants," said Linnaeus, and continued: "During the excursions we can see again each plant in its natural growing place." It was self-evident for Linnaeus that the lessons in the garden should be followed by excursions round Uppsala.

Linnaeus called his excursions "*Herbationes Upsalensis*" and they were very well organised. This strict organisation made things easier when Linnaeus's teaching methods were a success and hundreds of students joined his excursions.

Linnaeus let the students themselves look for plants and animals, which were gathered together for teaching about the finds at particular places. He never left a student with a question unanswered and was happy to repeat things for those who found it difficult to learn. He got his students to burn with enthusiasm for their subject, and soon the brightest of them could be picked out to move on to the next step under Linnaeus's guidance: journeys of discovery in Sweden. Like their teacher, they were commissioned to investigate various parts of Sweden. Those who managed a journey in Sweden

were ready to take part in expeditions abroad, journeys that would turn the graduated students into independent researchers with great career opportunities. All the way, from the lecturer's desk to their departure by ship in Göteborg, Linnaeus was with them as mentor and tutor.

In the creative atmosphere encouraged by this fellowship between Linnaeus and his students, scientific methods could be developed and tested. One example is the binary nomenclature that appeared in the students' theses and was used on the excursions even before Linnaeus published *Species Plantarum* in 1753. The joy of discovery and enjoyment were guiding principles in Linnaeus's teaching, and the students were encouraged to do their own research, which in due course helped to increase Linnaeus's own knowledge.

Linnaeus's passion for teaching seems to have been established in his early years. Encouraged by his father, he learned as a young boy all the plants in Stenbrohult, and at the age of eight he taught the other boys in the village. Later, when he had a tutor who beat him when he didn't know his homework, he was convinced that the most effective way to learn was to arouse the desire to learn. Although Linnaeus's teaching took place more than 200 years ago, most of it still feels modern, and Linnaean methods can still be used today as a source of inspiration and a guiding light for teachers.

In Flora Suecia Linnaeus writes: "Wild strawberries grow very generally in open and dry forest land." This type of land is no longer so common, but in Linnaeus's time the students on his excursions could certainly often enjoy fresh wild strawberries. Linnaeus continues: "By eating large quantities of fresh berries every year I have been completely rid of my pesky gout for many years."



In Linnaeus's Footsteps

Carl von Linné (Linnaeus) was born on 23 May 1707 at Råshult, in the parish of Stenbrohult in Småland in southern Sweden. *“Just in the most beautiful springtime, when the cuckoo has called in summer between the months when the trees come into leaf and the blossom bursts out.”*



It is certainly significant that Linnaeus's interest in Nature was aroused at an early age. Curiosity and the joy of discovery in the youngest pupils can lead to deeper interest and commitment in older pupils. Who knows who will be tomorrow's Linnaeus and Linnea?

Linnaeus's father, a priest first at Råshult and later at Stenbrohult, was very interested in plants and made a garden full of unusual species. When he was a child, Carl had a little garden of his own with one specimen of each of the plants in his father's garden.

Linnaeus writes about the importance of having been given an insight into the world of plants so early:

“This his father's only Son, was as if brought up in his father's garden; for as soon as he was made a pastor at Stenbrohult, his father made one of the most beautiful gardens in the county, full of select trees and the rarest of flowers, where his father, when he was free from work, found his recreation.”

This interest spread to the surroundings of Stenbrohult, which Linnaeus describes in this way:

The meadows are more like most glorious groves and gardens overflowing with flowers than what they really are... It was not so strange that Linnaeus was happy to keep his father company on excursions and wanted to learn more about all the beautiful plants.

“But as a child does, he forgets the names, so he was once scolded sharply by his father, who said he would never tell him the names of flowers if he forgot them again. So the boy really worked hard to remember the names, so that he would never lose his most enjoyable times.”

This interest in nature study that was established so early continued during Linnaeus's school years in Växjö, when he would rather devote time to plants than to theological studies. Against his parents' will, he abandoned the plans to become a priest and started to study medicine. Throughout his life botany was henceforth to be his wholly dominant interest and commitment.