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MARIE CLARK NELSON INGVAR SVANBERG

Lichens As Food

Historical Perspectives on Food Propaganda

Dare someone say that knowledge
of these small plants is not useful

Carl Linnæus on
lichens in *Cui bono?*
1753

Famine and hunger belong to the major problems of the world today. Scholars and world-wide organizations devoted to the development of the third world nations are continually forced to grapple with the problem. Efforts are made to provide both short- and long-range solutions. The development of new foodstuffs from locally available resources is one of the methods often discussed, and a number of contemporary development projects, especially in Africa, have adopted this approach. This idea is by no means new.

Crop failures, epidemics, and famines have been part of man's history. Starvation, however, does not always lead directly to death, that is, it consists of degrees of malnutrition.¹ Famines in Europe sometimes led to excessive mortality, but at other times, although the populace was plagued by want and disease, mortality did not increase drastically, especially in the nineteenth century. The political and economic machinery often functioned well enough so that starvation deaths were avoided, even if not the lesser degrees of starvation.²

Hunger was a not seldom recurring feature of the historical landscape. In Sweden famines were recorded around 1090, in the mid-1300's and during the reign of Gustav Vasa.³ The last decade of the sixteenth and seventeenth centuries were also times when Sweden was visited by famine.⁴ The last famines in Sweden with dramatic death rates occurred in 1772–1773 and during the Napoleonic wars.⁵ During the nineteenth century, there were a number of harvest failures, especially in the 1830's and the 1860's.⁶ 1867–1868 is considered by some to be the last great famine year in the country.

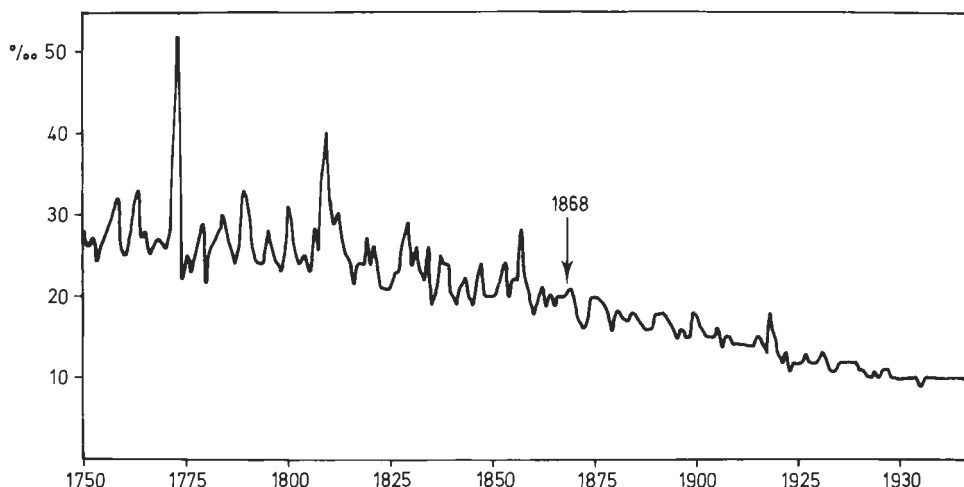


Fig. 1. Mortality (stillbirths excluded) in Sweden 1749–1967. Deaths per thousand of the mean population. While excessive mortality was associated with harvest failures in 1772 and during the war years 1808–1809, there was not a marked increase in deaths following crop failures in the 1860's. (Source: *Historisk statistik för Sverige. Del 1. Befolkning. 1720–1967. 2nd ed., Stockholm 1969, 91–99*).

The situation in Sweden's northernmost county, Norrbotten, in 1868 provides us with the opportunity to more closely study a "modern European famine." Society reacted to the crop failures of the 1860's on a number of different planes. Official measures were taken on the national, county, and local levels; there were private initiatives as well. Organizations of varying character also saw it as their duty to intervene in the face of an impending crisis. The actions taken might be placed into two categories: short-range measures geared to deal with the immediate problem of providing food to those in want and long-range plans for bringing about fundamental social and economic changes aimed at ultimately eliminating the causes of hunger.

It was soon apparent in the late summer of 1867 that food shortages would be enormous. Even in the best of years grain was imported to Norrbotten.⁷ The authorities were also well aware of the quantities of grain necessary to supply the needs of each inhabitant.⁸ With the detailed knowledge of the total population that Swedish authorities possessed, the calculation of the needs of the populace was a simple matter. When crops failed totally in 1867, the county government (*landsting*) mobilized their resources; a plea was sent to the Riksdag, and the county's Central Emergency Relief Committee was activated. Funds were granted for the purchase of relief grain. However, the

distribution of grain was often in the form of payment for labor, usually ditch-digging (to better drain land often plagued by early frosts), road construction, or the production of handicraft items. Relief in the form of grain and money were also sent from more prosperous sections of the country and from other parts of the world. In Skåne grain was collected from each household according to its ability to contribute; money flowed into the coffers of the Relief Committee from donors within Sweden, from Europe, and from America. Both Kristina Nilsson and Jenny Lind-Goldschmidt held benefit concerts in Paris and London, the proceeds of which went to the Relief Committees in the northern part of the country. The largest single contribution was from John Ericsson, whose gift of more than 20,000 *Rdr* was divided among the afflicted counties of the northern part of the country; the Riksdag sent him an official note of thanks for his generosity.⁹ All funds were channeled through the local branches of the Emergency Relief Committees which had been formed in nearly every community and had been granted certain freedom to determine the terms of the distribution of aid within their respective areas.

Aid that originated on the local level took many forms. Auctions were held and goods were sold that had been contributed for that purpose as well as handicraft items that had been produced as part of the aid program. Soup kitchens were established where the poor could be fed for a symbolic sum and the destitute free of charge. Variety shows and concerts were held for the benefit of those without food.

Debates and discussions were carried on concerning the future of the economy. For example, the balance within the agricultural sector was discussed: should the raising of livestock be encouraged? Attempts were made to introduce new products: the production of cheese and linen. The exploitation of mineral and lumber resources and their prospective roles within the economy were also debated. Questions were even raised concerning the improvement of the living standard of individuals through such measures as the encouragement of saving and the curtailment of coffee-drinking.¹⁰

There was one recommendation which was both a measure aimed at alleviating individual want and changing the habits of people for the better: the propaganda for the use of lichens as food. The Economic Society (*Hushållningssällskapet*), among many other projects, sponsored research into and the spread of information about suitable food surrogates, for example, lichens and mushrooms.¹¹ A number of questions may be posed concerning the introduction of new foods in times of famine and the exploitation of potential sources of food available locally that have not been previously utilized on a large scale.

Questions Surrounding the Introduction of New Foods

The purpose of this essay is to trace the development of propaganda for one new food item: lichens. What was the origin of this idea? What forms did the propaganda take and how was it distributed? What was the reaction to this innovation? Can we learn anything today from the historical efforts to introduce a new food item? Norrbotten will be used to attempt to study in depth the use of this propaganda and its success or failure.

Of the many approaches to the question of food, two will be presented here which encompass some major points that should be considered in a famine situation. Much attention has been recently directed to the concept of food entitlement as developed by Armatya Sen. The key to food lies, not within the amount of food available, but rather in the access to food. Sen expresses this access in terms of “entitlement relations.” Entitlement implies a complex set of relationships which vary with the reigning economic system and which may be derived in several ways: by means of trade, production, one’s own labor, inheritance, or transfer. In more general terms this:

approach to starvation and famines concentrates on the ability of people to command food through the legal means available in the society, including the use of production possibilities, entitlements vis-à-vis the state, and other methods of acquiring food. A person starves either because he does not have the ability to command food, or because he does not use this ability to avoid starvation. The entitlement approach concentrates on the former, ignoring the latter possibility.

The author himself has pointed out a number of limitations to this approach, as, for example, the possibility of ambiguity in entitlements, habits and customs in regard to food, and the fact that famine mortality may be caused by epidemics rather than by death due to starvation.¹² Sen’s theory is predominantly an economic theory and deals with economic relations. Even though it overcomes the discrepancies found between considerations of food supply on the national level and the realities of the individual within the economic sphere, there are additional problems which may be encountered in regard to potential food sources both in today’s world and the historical situation. Arne Oshaug has sought to deal with this dimension by developing the concept of food security, which is defined as consisting of the “food norm” plus “endurance.” The food norm is made up of three components: nutritional adequacy, cultural acceptability, and human dignity. When these three criteria are fulfilled and infrastructures have been developed that are necessary to maintain the food norm (“endurance”), then food security has been achieved.¹³

Food Propaganda

In Sweden food propaganda through the years has had two goals: to benefit the national economy and to improve the general health of the public. Ever since the beginning of the eighteenth century and the Age of the Enlightenment, men of science have sought possible natural products worth exploiting on a large scale in order to improve the country's economy. The travels of Linnæus were largely expeditions to collect folk knowledge in the countryside which could benefit the nation as a whole. Linnæus and his disciples emphasized especially the documentation of the use of wild plants. Medicinal plants, spices, dye plants, plants for use as soaps, textile plants, and plants that could be used for food and drink were described. Many articles in the Proceedings of the Swedish Royal Academy of Science and even more in the Economic Journal of the Swedish Royal Patriotic Society also have the character of lists of potentially useful plants. Not merely content with conducting inventories of folk knowledge of useful plants, many were swept up in a wave of experimentation. Clergymen, teachers, merchants, scientists, business leaders, and other persons of standing interested in economics tried on their own to discover which plants, animals, and even which organic and inorganic materials found in nature could be used. The general outlook was that everything that God had created was for man's use and possibly also for his pleasure. Even if the purpose of a thing was not immediately understood, it had a potential use that remained to be discovered. In a dissertation entitled *Questio historico naturalis: Cui bono?*³ (1752), with Christopher El. Gedner as respondent, Linnæus conducted a general inventory of the possible uses of animals and plants. The work was published in Swedish in 1753, and translated by the respondent, with the title "What is it good for?" Knowledge of the lower plants was, however, still extremely limited. Linnæus himself admitted that "... as far as mosses and the lesser herbs are concerned, I confess, that the thirst for knowledge has left them untouched until the end of the preceding century ...," but with his large study of mosses Johan Jacob Dillenius has:

... with unbelievable diligence investigated the most difficult and most numerous part of the natural history; but the question is asked: What is it good for? I do not wish to assume the task of proving the usefulness of each and every moss, although GOD and nature created nothing in vain, I predict that future learning will discover as many useful characteristics of mosses as of the others.¹⁴

During the second half of the eighteenth century numerous works appeared which were propaganda for the utilization of material not previously consid-

ered practical. The hyperutilitarian Lorens Wolter Rothof¹⁵ drove the thought that mankind could make use of all organic and inorganic material *in absurdum*. Nothing was to be wasted. Both fingernails and urine ought to be used. The corpses of horses and dogs could be taken and cooked to an excellent glue. This is a far cry from latter-day sensitivity, where strong opinions have been recently voiced when it was discovered that dogs and cats were used as raw material in the production of spackle. There was no limit to Rothof's inventiveness and ingenuity. But this was an era characterized by the rationalism and open-mindedness of the Enlightenment.

Today, when even well-educated persons regenerate to superstitious vegetarianism or other fanatical dietetic preferences, it is refreshing to read the works of more enlightened propagandists. Carl M. Blom, who spread knowledge of the renowned Rumford Soup in Sweden,¹⁶ included in his cookbook for the poor instructions on how potential food resources not previously utilized could be employed as remedies in times of famine. When crops had failed and the possibilities for the importation of grain were limited and when snow made the collection of wild plants impossible, there was still the chance of getting nourishing meat for food. Where would we get this?, Blom asked the reader: "... from such animals as we usually throw away and despise, or perhaps have acquired an unreasonable dislike for using as food." If horse meat was eaten by people in Asia, so could the Swedish peasantry:

Swedish peasants and men! Cast aside all of your prejudices and use it [horse meat], and begin, especially in times of want, not merely to eat it yourself, but also to inform your poor and hungry fellows. Lest it be forgotten, that everything that God hath created is good and should not be thrown away but made use of with thankfulness.

Blom maintained that the meat from dogs, bears, badgers, squirrels, otters, seabirds, crows, jackdaws, and small birds should be used. Here were enormous resources which had not been utilized, although food was needed. Everything in the animal kingdom could actually be eaten: "... it only requires that we think, are diligent and without prejudices, for us to obtain and utilize it."¹⁷

Ever since the eighteenth century the authorities have propagandized in different ways for new food among the peasantry with the goal of improving agriculture and diet. This propaganda intensified in conjunction with famine years. Four different foodstuffs in particular became the subjects of intensive propaganda campaigns for nearly two hundred years with varying results: potatoes, horse meat, mushrooms, and lichens.

The potato propaganda is rather well-known. As early as the 1720's one

began to propagandize for cultivation of the potato as the result of private initiative. Often cited is Jonas Alströmer who in the 1720's published brochures and pamphlets advocating potato cultivation. In certain tracts which often suffered from crop failures the provincial governor promoted the potato. An early example is the provincial governor in Kopparberg County, Peter Danckwardt who, in 1728 at the winter session of the council in western Dalarna, exhorted the peasants to grow potatoes in order to make their flour last longer.¹⁸ In the Västerbotten County of that day the provincial governor Gabriel Gyllengrip encouraged potato cultivation.¹⁹ There was strong resistance to potatoes, however. It was first in the beginning of the nineteenth century that peasants began to cultivate potatoes to any great extent, and then primarily for the production of alcohol. The potato long continued to be regarded as an additive to bread and as a surrogate to be used in times when flour was lacking. Opposition to the potato was especially great in the counties of Norrland where it was accepted first by the peasantry towards the end of the nineteenth century.²⁰

Also well-documented is the propaganda for, and the antipathy to horse meat in Sweden, which can be traced back to the middle of the eighteenth century. When Baron Adam Germund Cederhielm, an enthusiastic advocate of horse meat in the 1780's, wanted to print a propaganda article for horse meat in the Almanac of the Academy of Sciences, the natural scientist and doctor Anders Sparrman strongly disapproved of the idea. He feared not only an increase in the risk of horse thefts, but that it also could lead to the consumption of snakes, frogs, and dogs and—driving this reasoning to its ultimate—even the eating of human flesh.²¹ It was first during the second half of the nineteenth century that horse meat was accepted as food; then special slaughterhouses for horses produced sausages, and the growing urban population became their customers.²²

In contrast to southern and eastern Europe, mushrooms have never been a popular food in Sweden. Only among the upper strata of society have mushrooms been consumed to any extent. Mushrooms, however, have been regarded as suitable surrogates during famine years, and during the nineteenth century a large number of brochures and books were published in which mushrooms were presented as suitable foods.²³ However, there was never a real breakthrough for mushrooms among the rural population. Rather it was among the city's burghers that mushrooms were accepted.²⁴ With a little exaggeration, it can be stated that, in spite of a wealth of courses, an extensive literature on mushrooms, and the many mushroom advocates who every fall in various ways eagerly try to spread knowledge

concerning these plants, the picking of mushrooms remains a largely middle class phenomenon, while the working class and the rural folk preferably pick berries.

Lichens as Food

Some lichens have played an important role in the normal diet in different parts of the world. In Japan and China the Iwataka-lichen (*Umbilicaria esculenta*) is regarded as a delicacy. That lichens have long been known as famine food in China is indicated by the list published in the *Jiu Huang Ben Cao* (1406), according to which a plant called *shijie*, identified as a lichen species, was used.²⁵ Lichens were gathered by certain North American Indians. Especially along the coast of the Pacific the Indians collected the lichen *Alectoria jubata* (*Bryoria fuscescens*) for use as food. Most well-known, however, is the use of the lichen *Lecanora esculenta* in West Asia and North Africa. This lichen has been identified as the biblical manna which saved the Israelites from famine. Blended with flour, it is still used in North Africa for making bread.²⁶ According to eighteenth century travelers, a closely-related species was used as food by the Kazakhs and the Kalmyks in Central Asia.²⁷ In Egypt the lichen *Pseudevernia furfuracea* has been used to flavor bread.²⁸ The Turks used another lichen, *Evernia prunastri*, for jelly.²⁹ However, people have often found using lichens difficult because of their consistency. Among numerous circumpolar folk groups, however, Reindeer Lichen, (*Cladonia rangiferina*) was removed from the stomachs of slaughtered reindeer and used as food in its partially digested form. In her doctoral dissertation the ethnographer Kerstin Eidlitz Kuoljok describes how the Central Eskimos and other reindeer-hunting Eskimos in particular, as well as some groups in northeastern Siberia, for example, the Nganasans, Chuckchis, Evenks, Evens, Koryaks, and Yukaghirs, used lichens as food in that manner.³⁰

Eidlitz assumes that lichens have also belonged to the normal diet of the Lapps. This assumption is doubtful. Drake states that the Lapps in Västerbotten prepared flour of lichens, but that they learned this from the Swedes and the Norwegians, who used lichens in the preparation of famine bread. Kristoffer Sjulsson from Vapsten relates how Iceland Lichen was ground to flour which was used in sausages. Fjellström provides the same information but considers lichens as emergency food among the Lapps.³¹

Most well-known, however, is the use of lichens on Iceland as part of the normal diet. The collection of *Cetraria islandica* appears to have been a time-

honored custom on Iceland and has been of great significance for the economy of the island whose vegetable and cereal resources have been extremely limited. In several Icelandic manuscripts from the fourteenth and fifteenth centuries the right to the collection of lichens (*grasa*) is named. In Bualog a *grasafjórðungur* was valued at 1/2 ell and a *grasavætt* (=8 *fjórðungar*) at 12 ells.³² Olufsen and Povelsen's travel account from the second half of the eighteenth century provides an exhaustive description of the utilization of lichens. It is stated there that the most important employment of Iceland Lichen was as food for daily use and that it therefore was also valued in fixed prices, that is, exactly as in the Late Middle Ages. Olufsen and Povelsen have no information concerning the use of lichens in the baking of bread but assume that it was possible. On the other hand they state that:

Grütze ist sonst das allgemeine Gericht, das vom Felsengrase zugerichtet wird, indem man es vorher einen Tag in Wasser legt; denn es befindet sich auf den Blättern eine Art Bitterkeit, die im Wasser aufgelöst wird; diese Grütze wird in Milchwasser, bis sie als wie Gelee wird, gekocht, und wird hernach entweder gleich warm mit Milch, oder kalt mit Skiör gegessen. Viele hacken es, nachdem es im Wasser ausgeweicht worden, andre trocknen es übern Feuer oder an der Sonne, dass es hart und spröde wird, thun es hernach in ovale Sacke und klopfen es, wodurch er zerstotzen wird; hierauf wird es in Milch gekocht, und gieb es besonders ausgenommenes, leicht verdauliches und nahr Gericht.³³

Propaganda for Lichens in Other Countries

During the last half of the eighteenth century propaganda appeared encouraging the use of lichens for food in Norway, as it did in Sweden, especially in conjunction with famines.³⁴ The Agricultural Society and the Akershus Patriotic Society on several occasions between 1788 and 1811 paid premiums to those who collected the largest amount of Iceland Lichen and used it as food. As late as the 1860's the government was still interested in getting the peasantry to accept lichens as a surrogate for barley, but, in the words of the Professor of Botany F. C. Schübeler (1815–1892): "... all that [has] been as good as useless."³⁵ Even if the common Norwegian names for *Cetraria islandica*, "braudmose" (bread moss) and "matmose" (food moss), could indicate an acceptance of lichens as food in Norway, such was never the case. Thus Hanstein from the agricultural college in Aas was wrong in the mid-1800's when he predicted "that lichens are destined to become the great popular food for the masses because of their cheapness and nutritive value".³⁶ On the other hand, as is the case in Sweden, Iceland Lichen and

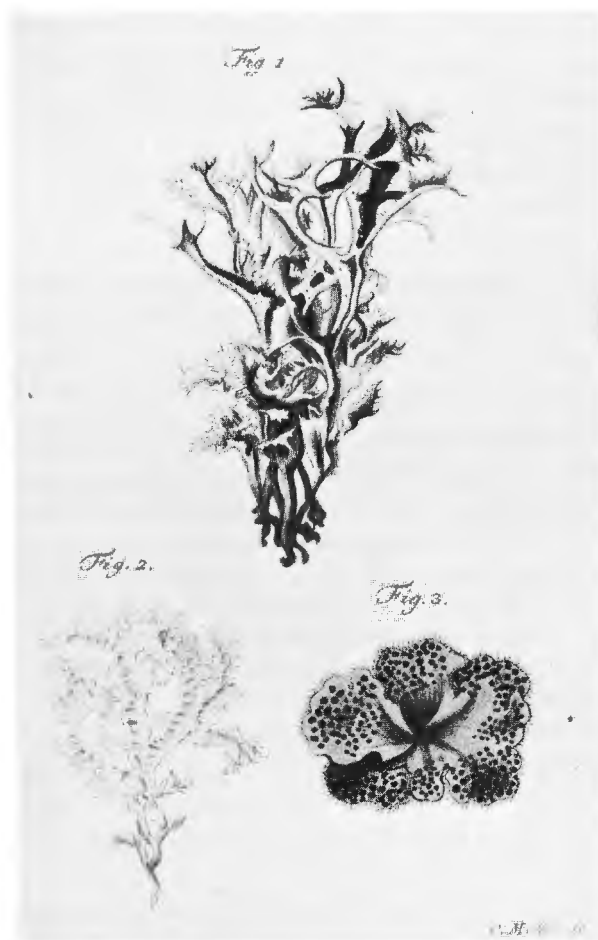


Fig. 2. Three species of edible lichens. 1. *Cetraria islandica*. 2. *Cetraria nivalis*. 3. *Umbilicaria proboscidea*. Hand-colored illustration from a Norwegian propaganda brochure (Strøm 1785).

Reindeer Lichen have played an important role as fodder, particularly for pigs, and large quantities of lichens have been collected for that purpose.

In Finland propaganda has also appeared for the use of lichens for baking famine bread. In the year 1772 Pehr Adrian Gadd (1727–1797) published an article in Åbo Tidningar on the topic of materials suitable for famine bread. Such traditional famine bread materials as straw, bark, and bog arum (*Calla palustris*) roots were listed there but were rejected as unsuitable. Lichen is not mentioned at all. Instead he recommended the shoots of spruce trees, grass seeds, rowanberries (*Sorbus aucuparia*), clover blossoms, and even dried fish.³⁷

Ten years later in a dissertation, written and defended by the then only 17 year-old J. F. Wallenius, a number of plants used by the Finnish peasantry for famine bread are considered. Lichens were not among them. On the other hand, the author mentioned that Iceland Lichen and Reindeer Lichen were used in Sweden.³⁸ At the close of the eighteenth century Professor Josef Pipping published a little popular work where he propagandized for the utilization of lichens as food. One thousand copies of the brochure were published in Swedish and two thousand in a Finnish translation.³⁹ In 1798 the Finnish Economic Society sent out samples of Iceland Lichen to the provincial governors for distribution to the clergy. During 1801 and 1802 the Finnish Economic Society also sent out the students Sahlberg, Laurell, and Hjerpe in Åbo County to spread propaganda for and demonstrate the uses of lichens as bread surrogates.⁴⁰ In connection with the famine years 1866–1868 extensive efforts were made to spread knowledge concerning the use of lichens and mushrooms in Finland. A number of propaganda brochures were also published which encouraged the use of lichens.⁴¹ Elias Lönnrot was the author of one of these, and he wrote in his introduction that:

where living beings exist and reside, nature has produced substances, which should serve then as nourishment. The birds in the air, the animals on the earth know, as a result of their instincts, seek and among these products of nature choose those most suitable for their food—only man, the masterwork of the creator, often is not acquainted with the rich treasures that nature under the various points of the compass in the world spontaneously brings forth for her subsistence, without in the moment of need and despair seizing as a source of sustenance that which is not only unsuitable for the purpose, but also injurious to the health.

According to Lönnrot, such was the case in Finland, where people turned to bark, straw, and chaff as substances for famine bread. They turned to nothing but unhealthful things, when nature still had so much in her cupboard that was useful, especially lichens. Lönnrot emphasized the fine nutritional value of lichens and gave instructions as to how they should be prepared. The booklet also contains a couple of recipes for lichen bread and lichen gruel.⁴² In his investigation of the conditions in Ala-Sääksmäki *häräd* in central Finland, the historian Hannu Voipala has commented on lichens. Under the direction of the provincial governor a special association was formed to instruct the famine-plagued peasantry in the use of lichens and mushrooms in bread. However, no response was received from the population; rather there was a deeply-rooted prejudice against these plants, which, in spite of the destitution, could not be bridged.⁴³ According to the ethnologist Professor Ilmar Talve, the Finnish peasantry restricted itself to earlier

known surrogates instead of trying something new.⁴⁴ In connection with the food shortages in Finland after the First World War, the physiologist Professor Carl Tigerstedt investigated the nutritional value of Reindeer Lichen and Iceland Lichen. This investigation was conducted with the economic support of two companies after the Finnish Commission for Household Economy did not grant aid to the project. Tigerstedt's verdict was harsh. He came to the conclusion that Reindeer Lichen practically lacked nutritive value; nor could he recommend the commercial production of lichen flour. On the other hand he concluded that a lichen diet was completely harmless, and thus nothing hindered the use of it in times of want to make the flour last longer. Finally he stated that during the fall of 1918 large quantities of lichens had been collected in the hope that they could be a useful source of food. Through his investigations these hopes were crushed. Tigerstedt instead recommended that it should be used as fodder, and that thus the collection would not have been a waste of effort.⁴⁵

Lichen propaganda was also found in other countries. On Greenland in 1856 a little book on lichens was published with pressed samples as illustrations. The work, however, deals primarily with the use of lichens for medicinal purposes.⁴⁶ During the years of food shortages in connection with the First World War several works were published in Germany which recommended the use of lichens as surrogates. These booklets also contained recipes.⁴⁷ In Russia during the nineteenth century a decree was published by the Tsar that the Zyrians (Komi) on the Kola Peninsula should use lichens instead of bark in famine bread.⁴⁸

During the famine in Spain at the end of the eighteenth century, numerous harmful plants were eaten as surrogates in bread. Because Iceland Lichen also grew in Spain in large quantities, the Spanish chemist Louis Proust began investigating the feasibility of using it as food.⁴⁹

The polar explorer John Franklin and the members of his expedition often had to eat rock tripe, according to the diaries which have survived. That was probably the source of the idea which prompted the United States Army Air Forces to recommend the use of this lichen to its personnel during the Second World War in emergency situations in the Arctic regions. But the lichenologist George A. Llano has pointed out that "members of the Franklin Expedition were also boiling and eating the leather of their equipment. Under such starvation conditions any type of food or plant may be used in an attempt to allay hunger." Franklin's diaries also stated that the rock tripe caused illnesses. These lichens cannot be eaten without first being prepared. Llano argued that without more knowledge lichens that were difficult to identify

should not be recommended as food, but rather that in crisis situations emphasis should be placed on employing vascular plants and animals.⁵⁰

The Use of Lichens in Sweden

Lichens have also been employed in different ways by the Swedish peasantry. Various lichens have served as folk medicine, although Reindeer Lichen has been most common. Decoctions of Iceland Lichen have been used internally for coughs and tuberculosis, and externally to treat rickets. Boiled Reindeer Lichen also played a not unimportant role in Lapp folk medicine, for example, as remedies for colds, eye diseases, stoppages in the bladder, and pains due to menstruation.⁵¹ Within pharmacognosy various types of lichens have been described since the Middle Ages as effective against respiratory diseases. The lichen mentioned in the medieval medical texts was probably Oaklung (*Lobaria pulmonaria*), which on account of its appearance was considered to be a good cure for lung diseases, that is, a manifestation of the notion that like cures like.⁵² Until rather recently other types of lichens have been used for tuberculosis among other diseases. In 1754 Linnæus' disciple Anders Tidström observed that the peasants drank goat's milk as a cure for tuberculosis. Tidström explained the recovery of people using this cure by the fact that goats were raised on Reindeer Lichen "... which in itself has a healing effect against this disease, and drinking the milk for some time should cause one to feel better."⁵³ As late as the 1940's lichens were collected for the production of medicine.⁵⁴

Various lichens, particularly *Parmelia saxatilis*, have been widely used as dye plants in the Nordic countries. Lisa Johansson collected information in Lapland on the traditional dye plants and also published a book on the topic. Three editions of this work have been produced (the most recent in 1963), and have played an important role in the revitalization of interest in vegetable dyes. Lisa Johansson personally organized courses in the 1940's and the 1950's.⁵⁵

During the nineteenth century lichens appear to have primarily been used as dyes in the home. However, during the eighteenth century lichens suitable as dye plants still played an important role in Swedish exports, and there were advocates of the processing of these plants within the borders of the country. Samuel Liljeblad (1761–1815), Borgströmian Professor of Practical Economy in Uppsala, was a great lichen enthusiast who advocated the establishment of

a lichen industry in Sweden. In his Swedish Flora he listed a large number of lichens which could be used as dye plants. He related that people from Västergötland prepared a red color from *Ochrolechia tartarea*, which they called “byttelet” or “Borås color.” He continued by stating that in England, Holland, and other European countries large factories had been founded for the production of dye from that lichen, and this dye was later profitably sold all over Europe. He reported that a factory in Leith employed 200 persons in the production of dyes from Stane Raw. In Sweden, however, there was no significant processing; rather, the lichens were exported as raw materials from Gothenburg. According to records from 1792, lichens with a total value of 62,000 *Rd*r had been shipped out during the preceding thirteen years; these lichens had been “... scraped together by the poor inhabitants of the county from cliffs and rocks.” In 1791 the value of the lichens exported was equivalent to a barrel of gold. Liljeblad cited several types that were shipped out. In reference to the Blood Lichen (*Haematomma ventosum*) it was stated that it: “is prized above others and is said to pay more, when it was alone, than when mixed with the others”. Liljeblad argued that lichens should be processed here in Sweden as well, and thus great profits made, as the raw materials were not lacking. As he expressed it: “No stone, no cliff is found here, that is not covered with useful dye lichens.”⁵⁶ *Ochrolechia tartarea* also appears to have been an important Norwegian export item. Between 1785 and 1788 not less than 24 tons of that lichen were exported from Flekkefjord. As early as the Late Middle Ages lichens were an important export from Norway. In the English customs records *litmossa* from Norway was named, and it should be noted that the English word “litmus” probably originated from the Nordic *litmosi*.⁵⁷

The collection of lichen has been especially important for the economy of farmers in northern Sweden. Linnæus reported from Särna in 1734 that in the fall each household collected between one and two hundred loads of Reindeer Lichen which were placed in piles with one load in each pile. During the winter the lichen was carried home and given to the cattle instead of hay. Linnæus stated that: “it feeds the cattle, although it does not make any of them fat, however, it should not be picked from one and the same place more frequently than every twentieth year, as it does not grow [rapidly].” A number of documents show that Reindeer Lichen, often mixed with cooked horse manure, comprised important winter fodder, particularly in the mountain pastures in the whole of Norrland, the northernmost regions of Sweden. Lichens were gathered during the summer and fall and, together with hay from the meadows, leaves, mosses, horse manure, and needles from

fir trees, were used as fodder during the period when the livestock was kept inside, that is, from the arrival of snow in the fall until the end of April or the beginning of May. Especially in the upper regions of Dalarna, lichens appear to have been gathered for winter fodder into this century.⁵⁸

Little evidence exists to indicate that lichens were used in famine bread in Sweden prior to the eighteenth century. According to information recorded in 1695 from Örslösa parish in Östergötland, during the famine years in the end of the sixteenth century the peasantry used malt and much that was unfit for bread: mash, the chaff of frozen grain, seed-vessels of flax (*knippel*), bark, hazel buds, nettles, leaves, hay, straw, reindeer lichen, nut shells, and pea vines.⁵⁹

Icelandic Influences

The first man of science in Sweden who displayed an interest in Iceland Lichen was Urban Hjärne, who at Medevi Springs in 1683 received the impulse from the Icelander Gudmund Olofsson, Secretary at the Royal Archives. Hjärne wrote that one Sunday morning Olofsson described for him a plant which the Icelanders ate instead of bread and which gave the strength and nourishment that bread usually provides. Hjärne became immediately interested and asked him to find the plant. Olofsson doubted that it grew in Sweden. He had already looked for it at the request of the late Doctor "Borrichi" (=Francesco Guiseppe Borri) with no results. But Hjärne was insistent and accompanied him on a walk to at least look for a similar plant. They found that plant, which turned out to be Iceland Lichen, and the lichen they collected was chopped and cooked in milk according to Olofsson's directions. Hjärne first experimented on himself with the gruel which he obtained. He found that the taste was good, and it was filling. He did not experience any discomfort because of it, but it had a slightly laxative effect. Hjärne became enthusiastic. He prepared the dish on numerous occasions for himself and for interested friends. He also began to experiment with lichens as health food for his patients at the springs. It was particularly good for lung diseases and the spitting of blood. When it became apparent the lichen occurred throughout the entire country, Hjärne understood the implications. He wrote that Gudmund Olofsson would be remembered as the man who first taught Hjärne to recognize this useful plant. It would be some time, however, before Hjärne's experiment first gained followers.⁶⁰

Linnæus did not have a great deal to say about lichens as food. In *Flora*

Dalekarlica, compiled in 1734, he mentioned that Reindeer Lichen was used as fodder. He also mentioned the medicinal qualities of Iceland Lichen, especially its purgative effect. Linnæus, without naming any sources, was acquainted with the fact that Icelanders daily cooked gruel from Iceland Lichen, but had difficulty in understanding why. "How this herb can both nourish the body and purge it, I do not understand, as the one gives, the other frustrates the *chylum*."⁶¹ A similar statement is found in Linnæus' *Flora Lapponica* from 1737.⁶² However, in his first article in the Proceedings of the Royal Academy of Science in 1739 he had a more positive attitude. He wrote that the Icelanders taught us to cook gruel from this lichen and showed how bread could be prepared from it. And, he concluded, if such is the case, then no one longer needs to die from a lack of bread.⁶³ In "What is it Good For?" Linnæus treated lichens more generously. He described their importance as dye plants, medicinal plants, and as fodder for domestic animals. But he also mentioned that in times of famine Iceland Lichen could be used to bake bread and make gruel. On the other hand, lichens were not mentioned in his brochure on Swedish plants which could be used for baking bread and preparing food, which appeared in 1757. The country had again been afflicted by crop failures, and Linnæus was naturally urged to share his vast botanical knowledge. Numerous traditional bread surrogates and other wild plants were named which the Swedish peasantry used.⁶⁴ Some years earlier Carl F. Mennander from Åbo Academy published an article in the Proceedings of the Royal Academy of Science on substances for famine breads in the northern provinces. He named straw and bark bread and also described Bog Arum bread made of *Calla palustris*, all common substances for famine bread. On the subject of lichens, he had nothing to say. On the other hand, the article ends with a recommendation to cultivate potatoes.⁶⁵

In the same year that Linnæus published his pamphlet on substances suitable for famine breads, his student, the doctor and botanist Peter Jonas Bergius, produced a little booklet in which he propagandized for the use of Couch Grass (*Elymus repens*). As a scientist, he felt the call to investigate all imaginable plants which could be used in bread instead of grain. He referred to the fact that many peoples, for example, the Lapps, the Samoyeds, the Peruvians, and North America's slaves, used foods other than grains. Thus the Swedes could utilize the domestic wild plants. Bergius listed seven criteria that an edible plant should fill. It should not be a medicament and therefore contain strong or poisonous substances; it should preferably belong to the same family as grain; it should be generally available in large quantities; it should be commonly known; it should be easily digested; it should be

nourishing; and it should be possible to make dough of it. After his survey of suitable plants, Bergius found that those recommended by other authors for bread were either harmful or dangerous. Bark, Reindeer Lichen and most other lichens were rejected by Bergius categorically as unsuitable for Swedes who were accustomed to good grain from childhood. Instead, he recommended couch grass.⁶⁶

Strangely enough, Rothof had nothing to say about the use of lichens as food. He notes that Reindeer Lichen was used as fodder. As early as 1742 the Proceedings of the Royal Academy of Science contained an article in which the use of Reindeer Lichen as fodder was warmly recommended.⁶⁷

In 1772 Lars Wennberg published a series of pamphlets and leaflets under the title "Nutrition and Household Newspaper" which contained information on plants that can be used in times of grain shortages. The information was derived from the works of Linnæus and other authors. A large number of plants were listed, but not a word on lichens. In order to prevent food shortages Wennberg finished his series by recommending the cultivation of potatoes whose qualities received nothing but praise. They tasted good, were easy to prepare and store for the winter, were nutritious, and did not cause flatulence as other root vegetables.⁶⁸

In the year 1775 J. Hesselius published an article about Reindeer Lichen and its potential use as food. He claimed that he got the idea after observing how well-fed the cattle were from lichen fodder. He baked bread and prepared porridge and gruel from it. He recommended Reindeer Lichen as a suitable substitute, especially for the poor, when the crops failed; if they could be taught to use it properly, the forests could be saved.⁶⁹

Samuel Liljeblad—the Lichen Missionary

Propaganda for lichens really started with the botanist Samuel Liljeblad. In April 1788 with Johan Låstbom as *præses* Liljeblad defended a dissertation which, among other things, treated substances for famine bread.⁷⁰ In June of that year together with a couple of traveling companions, he set out on a journey to Norrland for the purpose of collecting botanical specimens. The journey can be followed in the unpublished and somewhat abbreviated travel journal.⁷¹ The crops had failed the previous year, and the people of the counties in Norrland had been severely afflicted by famine. In The Economic Journal for 1789 Liljeblad published a comprehensive article on his reaction to the problem of hunger.⁷² When he came to Nora parish in Ångermanland

and the clergyman Johan Fougst described the conditions in Norrland for him, Liljeblad wrote:

I can not describe how moved I was. A few weeks before in Uppsala I had published and defended a work in which, among other things, plants suitable for famine bread were discussed. I now found myself in the places where that was most needed. Convinced of their usefulness and necessity, I ought naturally be the first to think about the application of it, and show that my work was not merely of use in the classroom and for the degree that I sought.

Thus it became a question of applied science, to use a latter-day concept. The entire journey was converted to a propaganda tour for the use of lichens as food. In his diary he wrote from Nora only that the clergyman's wife promised to experiment with Iceland Lichen in bread. A couple of days later when Liljeblad was on his way to Ava Inn, he picked Iceland Lichen and later began experiments with it. Liljeblad had probably gotten the idea of using Iceland Lichen from Olafsen and Povelsen's account of Iceland which he had read and cited in a note. He wrote that Iceland Lichen had long been known and used as a good and fine-tasting dish among Icelanders, but he did not understand why it was not used in Sweden in spite of its abundance. In his diary he reported that breakfast was prepared from milk and the lichen which had been soaked in water during the night. It produced a good-tasting gruel with the appearance of "egg-milk" (a kind of warm eggnog), and after he had eaten his fill, his traveling companions, who had first been doubtful, eagerly ate the dish. The inn-keeper also liked it. At Ångersjö Inn the lichens were prepared with sugar and cinnamon, and the result was a dish which could compete in flavor with the best. Liljeblad was filled with enthusiasm. What an advantage it would be to the country if everyone was acquainted with that lichen, he cried out! Because he was a careful observer, he noted that no purgative effect resulted from the lichen diet, but it was filling. Wherever he later arrived, Liljeblad had lichens prepared and served to people. He did not even need provisions in Umeå, in spite of the fact that the group was advised to have them because of the food shortages in the countryside. Liljeblad and his companions sustained themselves on the excellent and nourishing lichens. Everything is carefully documented in his article.

The diary provides some additional details of interest. At Grimsmark's Inn in Lövånger the proprietress related that people had received information from the provincial governor Fredrik von Stenhögen that lichens could be used as famine bread, but she doubted that it was possible. "But when I showed her a sample that we had in the wagon, she did not appear to

recognize it." She said that lichens were of great use for the cattle and that the previous fall much had been gathered and used when other fodder was lacking. But that was traditional fodder throughout Norrland. In Öjebyn Liljeblad visited Daniel Solander's sister, the pastor Daniel Idman's wife, and the company was served coffee. There he was told that people in the area had not yet accepted the cultivation of the potato, nor did they wish to regard lichens as food for human consumption. "Prejudices appeared to be deeply-rooted," commented Liljeblad.

In Råneå on June 18 Liljeblad observed a large forest of firs which provided good shade in the extreme heat. The travelers saw a very beautiful landscape by a stream which ran into a lake, and lush holms and pretty meadows captured the eye. The flowers were in full bloom and gave the landscape all of their splendor. But soon they came to a new place where they were met by a scene of destruction; the pines had been debarked for bark bread during the famine, while the ground was brown with Iceland Lichen. "I have never been so moved. I knew both *a priori et posterior* the excellence of this lichen as food. Now I saw here the destruction of famine and the ground covered with Iceland Lichen that no one made use of." His driver told him that during the famine people had died of starvation, and they had been found on the roads and in the woods with straw in their mouths and swelled up by bread made from straw.

The next morning they met the pastor Chrispin Thingvall at the Grötnäs Inn: "In his company we ate a breakfast of *Lichen islandicus*. He said he also found it to be good—said on the next Sunday he would call together the parish in Kalix to instruct them of the excellent use of this moss which was found in abundance there." In the article he added that Tingvall, however, feared that prejudices would stand in the way of the acceptance of lichens by peasants in the area, because they were not accustomed to their use. Liljeblad himself had noted that people's prejudices hindered them from accepting new things, not only lichens but also other unusual foods such as cabbage and potatoes. It was first during most recent years that clergymen and persons of standing had, by example, gotten people to accept new things. In other areas people had gratefully received Liljeblad's instructions and even complained that they had not been taught earlier, as the worst of the famine was already over. Liljeblad concluded the article by recommending that others repeat his experiments with lichens and spread propaganda for them. There were several lines of argumentation. Lichens were tasty; they could be used in place of flour; they were very filling; they were healthful; and they were excellent food for a weak stomach or a sickly chest. It was necessary to

spread the information to the public, because most important was the dispersion of the knowledge of nature, for there was to be found the solution to man's problems.

Lichen Propaganda Gains Momentum

In a collection of household advice, published in 1795, Pastor Sacharias Westbeck related that he got the idea of using tree lichens as food from the cattle he observed eating them. Tree lichens thus ought to be useful in famines. Westbeck experimented with the preparation of lichens as flour. Instead he discovered that the plant could be used as a textile plant. In spite of this unexpected discovery, he continued to experiment with preparing food from lichens. He cooked the lichens together with milk. That produced a thick, good gruel, but Westbeck left the determination of its edibility to medical expertise.⁷³

In *Inrikes Tidning*, July 2, 1799, a little list of substances suitable for use in famine bread was published. Instead of using unsuitable, even directly harmful substances, such as bark, heather, straw, sawdust, and burned bones, there was a wealth of nourishing things to be taken directly from nature which did not require any detailed and unusual preparation and provided tasty food. Wild animals were also recommended, for example, seals. Nor was horse meat to be forgotten. It was an excellent source of food which prejudice alone hindered people from utilizing. The plant kingdom provided even richer substances for good food, and in the article nearly fifty different items were listed that could be ground to flour. Iceland Lichen, Reindeer Lichen, and lung lichen were included in the list, and it was mentioned that well-dried lichens could be ground to flour.⁷⁴

In his Swedish Economic Flora Anders Johan Retzius (1742–1821) dealt thoroughly with Iceland Lichen. Retzius provided a comprehensive account of the significance of Iceland Lichen for the Icelanders' diet. In spite of the fact that Iceland Lichen was good, easily digested, and in all ways agreeable, it had unfortunately not been adopted by the peasantry in northern Sweden, who often in times of crop failures were relegated to bark bread, stated Retzius. And whose fault was that? The clergymen and persons of standing who lived in the midst of the peasantry did not know about the inestimable qualities of lichen either. Should that not be a matter of serious reproach among those who could learn about it in the gymnasiums and academies, Retzius asked himself? The problem was thus that botany did not have the

place which it deserved in the consciousness of the educated. If only botany were emphasized more than other less useful things! Retzius then gave a recipe for how lichens could be used in baking bread, as gruel, and how, in the Icelandic manner, a healthful chocolate could be made from lichens and cacao beans! Iceland Lichen could also be used as medicine and dye plants, useful properties as well. Reindeer Lichen was not quite comparable with Iceland Lichen, but nonetheless, it was excellent for making gruel. Retzius therefore exhorted the farmers to teach the poor to collect stores of Reindeer Lichen and make gruel or porridge from it. It also produced a good bread, more tasty and healthful than that baked from chaff.⁷⁵

In the beginning of the nineteenth century Jakob Berzelius (1779–1848) began to investigate Icelandic Lichen. One problem has often been the removal of the strong taste. Berzelius recounted the method that the above-named Proust used to prepare lichens. That method had also been adopted and improved by Johan P. Westring, who had published his results some years earlier.⁷⁶ Berzelius prepared Iceland Lichen according to Proust's method and then carried out a chemical analysis. He found that one hundred parts of dried lichen consisted of:

Syrup	3.6
Acidic potash, acidic lime, and a little phosphoric lime	1.9
Bitter substance	3.0
Green wax	1.6
Gum	3.7
Dye extract	7.0
Lichen starch	44.6
Starch-like skeleton	36.2
	101.6

The increase in weight during the analysis was 1.6 parts per hundred. Furthermore, Berzelius noted the presence of gall acid. However, there were no signs of protein or resins, which Westring had stated should be found in lichens. Berzelius concluded his long article with an evaluation of lichen as food. He maintained that the reason it had not yet been accepted was the bitter taste. If the lichens were soaked in lye according to Westring's method (Berzelius recommended common washing lye), they would be an outstand-

ing source of food. He gave directions for the preparation of some extravagant dishes which called for cinnamon, vanilla, sugar, and Rhine wine, but he concluded that Iceland Lichen could also constitute a rather large part of the necessary food of the poor in the places where it grew. According to Berzelius, lichens were a better source of nourishment than all other fresh vegetable substances with the exception of grain. On board ship it would be an excellent replacement for fresh vegetables, and he was convinced that if the Swedish fleet had had access to lichens during their campaign of the previous summer, then the serious diseases which occurred could have been largely avoided. Berzelius concluded the 41-page long article with: "May the topic's interest otherwise excuse my verbosity."⁷⁷

The pharmacist Daniel Olof Thomée in Karlshamn in 1813 sent a treatise on substances for famine breads to the Swedish Royal Board of Medicine. The board found that the plants which Thomée recommended were both healthful and suitable for bread and therefore had the work published. Thomée observed that many substances were recommended as suitable surrogates for use in famine bread: for example, Iceland Lichen, Swedish whitebeam (*Sorbus intermedia*), lily of the valley (*Convallaria majalis*), Bogbean (*Menyanthes trifoliata*), Polypody (*Polypodium vulgare*), Linden tree, Reindeer Lichen, lyme grass (*Leymus arenaria*), bog arum, bread cumin, elms, oaks, birches, lingon berries, vetch (*Vicia sylvatica*), etc. None of these wild surrogates, however, could compete with the roots of couch grass and the lady orchid. The author devoted the remainder of the booklet to how these two plants could be utilized and prepared as flour.⁷⁸

In 1818 Carl af Wetterstedt published a special propaganda pamphlet on Iceland Lichen as a suitable and healthful nutritional substance. He directed his writings to the clergy of the country so that they might spread knowledge of Iceland Lichen to their parishioners. His introduction contained a detailed description of Iceland Lichen. But to be on the safe side so that that lichen would not be confused with Reindeer Lichen or the green wall moss, a paper bag containing a sample of Iceland Lichen was attached to each printed copy. As far as we know, that was the first time that such a method of illustration was used in Swedish propaganda. He even gave directions as to how the examination should proceed:

Going out into the forest to an opening where the sun can shine on the ground, on sand heaths, hillsides, or other barren tracts, one should find lichens of the same kind, and which are similar to this sample. Then one can be certain of having located the right sort. Later one learns better and better how to find and distinguish it, so that one can not make a mistake.

The actual gathering was consigned to old men, old women, and children, because it was a task which was not especially difficult. Otherwise, he described how the lichens should be prepared and cooked as well as suitable methods of storage. Even if the soaking procedure seemed difficult, it was not, assured the author. He insisted that the rewards were great and compensated the work expended.⁷⁹

By the 1830's lichens were commonly turned to as recommended surrogates in times of disaster. In a leaflet from 1832 Carl F. Plageman observed that both types of lichens grew excellently in Sweden and Norway, but were wasted as they were not used;

... and it is unfortunate at this time, that the poor peasantry has no knowledge of, or because of prejudice does not use this good source of food, which the all-knowing Creator in these tracts has so lavishly bestowed upon these children of want in times of distress.⁸⁰

In 1833 the Economic Society in Västerbotten County published a comprehensive booklet concerning various types of recommendations designed to guide the peasantry through nature's storehouse both during poor years and as a supplement to their normally meager diets. Based on the works of Westring and Berzelius, as well as other unspecified sources, general directions were presented for the preparation of bread from roots and lichens, of which Iceland Lichen was recommended. A handbook was provided for the gathering of suitable roots in which numerous examples of uses far and near were named. The same was true for the case of lichens. Iceland Lichen in particular was touted as a highly prized source of nutrition for both men and livestock, richest "... through the wisdom of Providence ..." in just those areas otherwise so poor in food resources. Its role in Iceland was pointed out. Examples of its use in bread in the Jura Mountains in France, in Germany in 1531, and in England as a supplement in seamen's biscuits were cited, but Germany was regarded as the most important forerunner. The habitat, appearance, and uses of a number of lichens were described: Iceland Lichen (*Cetraria islandica*); Reindeer Lichen (*Cladonia rangiferina*); Ash Twig Lichen (*Ramalina fraxinea*); Parmelia (*Ramalina fastigiata*); *Evernia prunastri*; Blistered Rock Tripe (*Lasallia pustulata*); *Cladonia pyxidata*; and Sphagnum Moss (*Sphagnum palustre*). To make identification easier, samples of Iceland Lichen were made available at the apothecary shops for "a couple of shillings". Straw and straw bread were also recommended if prepared according to the recipes given. The text concluded with diverse instructions, including how to make use of frozen potatoes.⁸¹

Most well-known of the propaganda works from the 1830's is the often-cited booklet by Gustava Schartau. She clearly states the purpose of her work: to spread knowledge of nature's resources among those in need in time of crop failures, and she recognized the fact that no government could fully meet the needs of every individual family. Potatoes were featured first, as well as recipes for other types of bread from root vegetables in general. She then presented a section on wild plants suitable for bread, miscellaneous emergency breads, edible wild plants, followed by a soup and porridge cookbook, and a section dealing with how to utilize damaged grains.

Schartau also included a description of bark bread as baked in Finland, but expressed the hope that this bread would not be used. Four different lichens were presented: Iceland Lichen, Reindeer Lichen, Horsehair Lichen (*Bryoria spp.*), and Ash Twig Lichen. She gave detailed instructions for the collection and preparation of the lichens and a variety of recipes for breads, porridge, and gruel. She pointed out how nutritious the lichen preparations were: "... many times more nourishing than ... Rumford soup."

Schartau concluded her introduction with the thought that she would be well-rewarded for her work if she received news of the use of her ideas: "... if only to make less oppressive the need of the struggling workers, to lift the burden from the crushed hearts of a mother and father surrounded by a numerous and hungry family."⁸² If one is to judge from the quantity of pamphlets in the century that followed, then Schartau was poorly paid indeed.

A new wave of works appeared in the 1840's. In his 1841 handbook Magnus von Düben stressed the range, extent, and adaptability of the lichen family to varying and barren milieus and their medical, economic, and technical importance for man. While he cited their importance for the Lapps and Siberian peoples dependent upon reindeer herding cultures and their significance as food for Icelanders and North American nomads, only their use as dyes was mentioned as a traditional custom among the Swedish peasants. The commercial exportation of Blistered umbilicaria (*Lasallia pustulata*) and the lichen *Pertusaria corallina* from the Swedish west coast (*Bohuslän*) was also named.⁸³

Gustaf Torsell's booklet from 1845 has more the character of "classic" food propaganda. A response to crop failures in Uppland, his work addressed itself to the Economic Society in Uppsala County to "... attract their attention ..." and to inform the "... unfortunate peasantry ...". His introduction stressed the historical uses throughout the world and the concept that, although there were fewer grain surrogates in colder regions, "...

these lands are not left empty handed by mother nature, who benevolently supplied each region with certain substances suitable for human consumption." Instructions for gathering and preparing lichens in bread, porridge, gruel, and as jelly followed. He noted their usage for medical purposes and saw their chief economic value in their use as animal fodder. Torsell's book not only described the lichens, but also illustrated his book by attaching exsiccated samples to the last pages of the booklet itself. This method of illustration had been used by the Norwegian Hans Jacob Wille in 1801.⁸⁴

The agricultural journal *Odalmannen* published a pamphlet entitled "Help in Times of Need" as one of their series of supplements in 1846. Karl J. Ekeblad, author and publisher of the journal, compiled this work at least partly in response to a potato blight which destroyed this crop in southern Sweden. He dealt with a number of surrogates, the first being lichens. Ekeblad's foreword has a strongly moralistic character; he motivated his work with the need to counteract increasing poverty and crime. He saw work as the answer. The beggar should work for his bread and his sense of honesty thereby be awakened. The more fortunate members of society were seen as having a "... sacred and imperative duty ..." to help the unfortunate. He saw the clergy and persons of standing as the most logical instruments for the dispersal of information. Not only was practical information to be imparted, but also the idea that "... he is not poor as long as he is able to work and that one should never doubt the help of Providence, as he who helps himself also helps God." A second edition appeared the following year with a foreword by Pastor Primarius in Stockholm, Abraham Pettersson, who not only encouraged the clergy to spread the knowledge imparted by the pamphlet, but also saw it as an opportunity to engage the otherwise idle children of the poor by having them gather surrogate foods.

While the demand for the booklet was evidently great enough to warrant the printing of a second edition, there were those who doubted whether the booklet would actually achieve its purpose. In a postscript to the first edition added after the printing of the booklet, Ekeblad quoted a letter from The Director of the Land Survey Office, Carl af Forsell: "If this advice and information achieves its intended goal, that is, reaches the poor and destitute part of the working peoples' classes, is something which I doubt." Forsell continued by describing af Wetterstedt's brochure and distribution of that work to the clergy. "I fear that the same is true of the folk brochures published today; they do not reach those for whom they are written."⁸⁵

In 1849 Carl Gustaf Kröningsvärd came out with a work aimed primarily at Dalarna's "poorer household heads among the peasantry and other



Fig. 3. *Exsiccate of Reindeer Lichen from G. Torssell, Anvisning till nödrödsämnen. Upsala 1845 (Photo: Uppsala University Library).*

working classes.” He dealt solely with Iceland and Reindeer Lichens and their use in bread, gruel, and various jellies. Information was added on the preparation of feed for livestock, although the author assumed that such was common knowledge in the northerly regions of the country.⁸⁶

The hard years of the 1860’s also evoked a multitude of pamphlets and brochures. Although they were published in many parts of the country, it is not always clear which agencies, groups, institutions, or individuals sponsored the materials. There were pamphlets with identical or nearly identical contents printed in Luleå (1867), Jönköping (1868), Umeå (1867), and

Östersund (1867). Usually entitled "Instructions concerning Substances Suitable for 'Famine Bread' during Years with Crop Failures," they dealt with the gathering and preparation of these naturally occurring food resources, often together with a measure of advice and "wisdom" which reflected the views towards aid.

Mushrooms were considered the most important source of nourishment because of their richness in nitrogen. The populations of parts of Russia and Austria were cited as examples to be emulated. Instructions were given for collecting these mushrooms, along with assurances and cautions concerning the toxicity of some examples of the species. Iceland Lichen was named as an important source of flour to be used in bread and for gruel and porridge. Other lichens (*Usnea barbata* and *Cladonia rangiferina*) as well as lingonberries, rowanberries, bog arum, and the roots of pond lilies were also included. These potential sources of nourishment were seen as part of the divine order: (in reference to mushrooms) "... it was certainly not unintentional, that the Creator lavished these riches on places, where sources of nourishment otherwise are more rare, during the years when all other food runs short." However, people were also informed that the gathering of such resources would only take a "... few minutes ..." and, with a sterner voice, that "... God helps those who help themselves."⁸⁷

A public announcement indicates that Reindeer Lichen and other lichens were collected for commercial use in 1868 in Marietorp. Explicit instructions were given on properly gathering them so that payment would be received without delay.⁸⁸

Interest in lichens did not entirely abate with the general improvements in living conditions that characterized the last part of the nineteenth century. The medicinal value of Iceland Lichen as well as its nutritive value in the treatment of organic heart disease, chronic ulcers, stomach ulcers, tuberculosis, and chronic diarrhea were stressed in the 1872 and later editions of the *House Doctor*.⁸⁹

In 1880 Johan Lagergren's book entitled *The Collection and Preservation of Edible Swedish Plants* appeared. His informative and entertaining chapter on the household uses of lichens contains an historical survey of their use both within and outside the country. He gave explicit instructions for the preparation of various lichens and described dishes prepared from them. In Spain lichens were used as legumes: cleaned, blanched, and prepared with oil or clarified butter or stewed with almonds, lemon peels, and sugar. In Finland they were sometimes salted. For Sweden their use as dyes and medicine was stressed. He furthermore recounted the attempts made at the preparation of

alcohol by Urban Hjärne in the beginning of the eighteenth century and by Professor Sten Stenberg in the 1860's.⁹⁰ Accounts of the various scientific and chemical analyses of lichens were also cited along with their possible suggested uses as foods. Again the refrain was heard that instruction must be spread about these long-ignored sources of potential self-help.

Lichens as Food in Modern Times

During the twentieth century, with the disappearance of the threat of famine in Sweden, lichens have taken their place among other edible plants in guide books for use in case of emergencies. These books were generally illustrated and contained very brief instructions concerning their use. The books of Johannes Henriksson are examples, although the first appeared in 1890.⁹¹ Both the First and the Second World Wars brought a renaissance of such literature and inspired a new round of handbooks and cookbooks with advice on suitable food substitutes.⁹² There was even a factory near Stockholm which produced a product from Iceland Lichen, which, however, proved to be too expensive to be of any use.⁹³

There were two more comprehensive books that appeared, one the outgrowth of the other. Erik Lundström's work concentrated on various types of food substitutes. The topics dealt with included: plants suitable for bread; plants similar to grains; spices; plants for juices and jams; and surrogates for sugar, tea, and coffee. Lichens were dealt with as a major source of flour for bread. Not only was the history of lichens as food surveyed, their preparation was thoroughly described and variations on the basic recipes were given.⁹⁴ The Women's Council of the Commission on Household Economy, with which Lundström evidently cooperated closely, published a booklet intended for wide distribution that combined the information from a couple of chapters in Lundström's book with recipes tested by Ida Högstedt.⁹⁵

During the Second World War lichens again aroused interest in the form of brochures and the encouragement of the collection of lichens.⁹⁶ Nor has interest entirely waned. An academic dissertation defended in 1983 dealt with the nutritional value of wild plants in Sweden and called attention to the food potential of lichens. This dissertation even aroused attention in the press.⁹⁷ However, the large amount of cesium in the lichens as a result of the fall-out from the Chernobyl nuclear accident in the spring of 1986 implies that human consumption of lichens in Sweden is not advisable for a long time.⁹⁸ In India the possible use of lichens as food is still being discussed.⁹⁹

A Case Study

Crop failures afflicted the northern part of the country in 1867 and triggered the period often described as the last famine in Sweden. Norrbotten in the 1860's provides us with the opportunity to see the role which propaganda for the use of lichens actually played.

The hard years of the 1860's evoked a flora of pamphlets and brochures designed to provide the peasantry with the knowledge necessary for self-help, alongside the other forms of aid which society provided.¹⁰⁰ In Norrbotten action was taken on many levels and within both the public and private sectors to stem the crisis and alleviate suffering. One of the many actions taken was the decision by the Economic Society to promote the spread of information concerning a number of alternative foods including mushrooms and lichens. The pharmacist in Råneå, Jakob Widgren, was assigned the task of investigating some of these alternatives and disseminating information and knowledge concerning their uses to the general public.¹⁰¹ The results of his analyses showed that lichens and particularly Iceland Lichen and Horsehair Lichen contained relatively large amounts of starches. His results were published in Norrbotten's two newspapers, *Norrbottens-Kuriren* (Luleå) and *Norrbottens Posten* (Piteå).¹⁰² These articles contained explicit directions for the collection and proper preparation of lichens, as well as detailed recipes for the preparation of breads, puddings, porridge, and gruel from lichens, berries, and the roots of pond lilies. His findings were also published in a brochure entitled, "Instructions for the Preparation of Food Stuffs from Pine Lichen, Iceland Moss, etc."¹⁰³

This work limited itself to various lichens and the roots of pond lilies. After the introduction in which the hope was expressed that the attention of the general public would be called to the "many sources of nutrition which nature ... offers, ..." instructions were given for the collection of various lichens and the removal of bitter substances from them.

All foreign matter was first to be removed and the lichen placed in a weak, cold solution of wash lye and soaked for four days.¹⁰⁴ Potash solution was suggested as an alternative. The solution was then to be discarded and the lichens washed in cold running water until the water was clear and had no taste. Once again the lichen was to be placed in a weak lye solution for four days, stirred daily, and rinsed again. The process was to be repeated until the bitterness was satisfactorily removed.

Pine Lichen (*Cetraria pinastri*) and Iceland Lichen were both found to have a high starch content (30 % or more), while the minimal nutritional value of

Reindeer Lichen was thought best left to those creatures. Bread from Iceland Lichen was to be prepared as follows:

Take the chopped Iceland Moss, from which the bitter taste has been removed in the manner described in a weak, cold solution of washing lye or potash, for example—1 *skålpund*, cook the mass with the necessary water 1/2, or at the most 3/4 of an hour, stirring constantly to obtain a thick porridge. Eight *lod* or more of rye or barley flour are kneaded into that porridge-like mass. To the extent that means and access allow, salt and cumin are added, after which the dough is baked as thinbread (*tunnbröd*) or thicker rolls. When the rolls harden, they should be moistened on the upper side with water and placed on the coals, until they soften up again.

It is not necessary to grind the “moss” or allow the bread to rise. Allowing the bread to rise causes the loss of some starch and thus should not be used during hard times. On the contrary, one should see to it that none of the nourishment is lost. For example, when 20 *skålpund* of rye or barley, in which the nourishment consists of starch, is kneaded into dough and allowed to rise, 3 *skålpund* are lost in the process.

Widgren was not content merely to have his results published in the newspaper. On October 24, 1867 *Norrbottens-Kuriren* informed the public that Widgren was then in Luleå to carry out the task of “instructing in methods of preparing ‘famine bread’ of mosses, lichens, mushrooms, etc”. In the beginning of November Widgren held an exhibition and demonstration of emergency breads and soups.

The guests were many, both persons of standing and peasants. The dishes prepared, especially the soups, justly won approval, if one is to judge from the lust with which they were consumed by one and the other. Several large soup kettles were emptied. The bread cakes of Iceland Moss, Pine Lichen, and pond lilies, all mixed with rye flour, passed through their lips. Let not prejudice oppose the use and dispersion of these foodstuffs.¹⁰⁵

Apparently there was a great deal of wishful thinking in the description and enthusiasm shown, as the final plea in the quotation indicates.

Furthermore, the results of Widgren’s experiments with Iceland Lichen, Horsehair Lichen, Reindeer Lichen, the roots of white and yellow pond lilies, and the inner bark of the pine were submitted to the Royal Board of Medicine for scrutiny. Professor Sten Stenberg stated in his report: “As far as I know, among the emergency foodstuffs in question, only Iceland Lichen has previously had its starch content investigated.” Stenberg’s tests substantiated Widgren’s findings. Stenberg recommended Horsehair Lichen and Iceland Lichen from the nutritional point of view but pointed out, while the latter was easier to clean and the cooked substance more attractive, the former had the advantage of being plentiful and accessible even under the snow cover.¹⁰⁶

Dr Oskar Sandahl, who shared with Stenberg the task of checking Widgren's results, had no objections to Stenberg's report. He continued by pointing out that the discrepancies between Widgren's and Stenberg's results were caused by the different methods used and that the intention of the former had been to reach an approximation of the starch content. He continued by briefly summarizing the results of the analyses made in the past, as well as the other sources of food found in nature.¹⁰⁷

Widgren's experiments tantalized the imagination of several, among others, the above-mentioned Professor Sten Stenberg. Stenberg, in a report to the Royal Academy of Science dated January 8, 1868 reported on the suitability of lichens for use in producing spirits and cited Widgren as his source of inspiration. A more detailed booklet which discussed the feasibility of the production of liquor from lichens was soon published.¹⁰⁸

On Stenberg's behalf, a proposal was submitted to the First Chamber of the Riksdag on March 10, 1868 suggesting a grant of 50,000 *Rdr* to finance the experiments in the production of alcohol from lichens. It was argued that the abundance of plants, otherwise useless, could be put to use. Furthermore, grain and potatoes would be saved.¹⁰⁹ The committee which dealt with the proposal stressed that such discoveries were "of importance for the national economy" and should be supported.¹¹⁰ The discussion of the proposal showed that Stenberg in the meantime had received commercial support for his venture. However, the parliamentary committee recommended a grant of 5,000 *Rdr* for the collection of lichens suitable for the production of spirits, and this sum was approved. Although there was some production of liquor from lichens in Sweden, it never was on a large scale. By 1884 because of the lack of raw materials, the domestic production of lichen liquor had declined. However, as a result of Stenberg's work, spirits were produced from lichen in Russia in Archangel, Pskow, and Novgorod, and this production was for some decades a lucrative business in the northern part of the country.¹¹¹

Nor was Widgren's work ignored by the Royal Patriotic Society. More in the traditional vein of lichen propaganda was the booklet produced by Professor Nils Johan Andersson, Secretary of the Society, entitled *Our Best Edible Lichens*. Four thousand copies of this work, published in 1868, were given to the public schools and agricultural colleges to be distributed without cost.¹¹²

In this work Andersson compared the mushrooms and lichens of the north with the fruits of more southerly climes, that is, they were the gifts which nature provided for man's enrichment. His aim was to "... with the utmost accuracy take up what is known about the use of the most common lichens

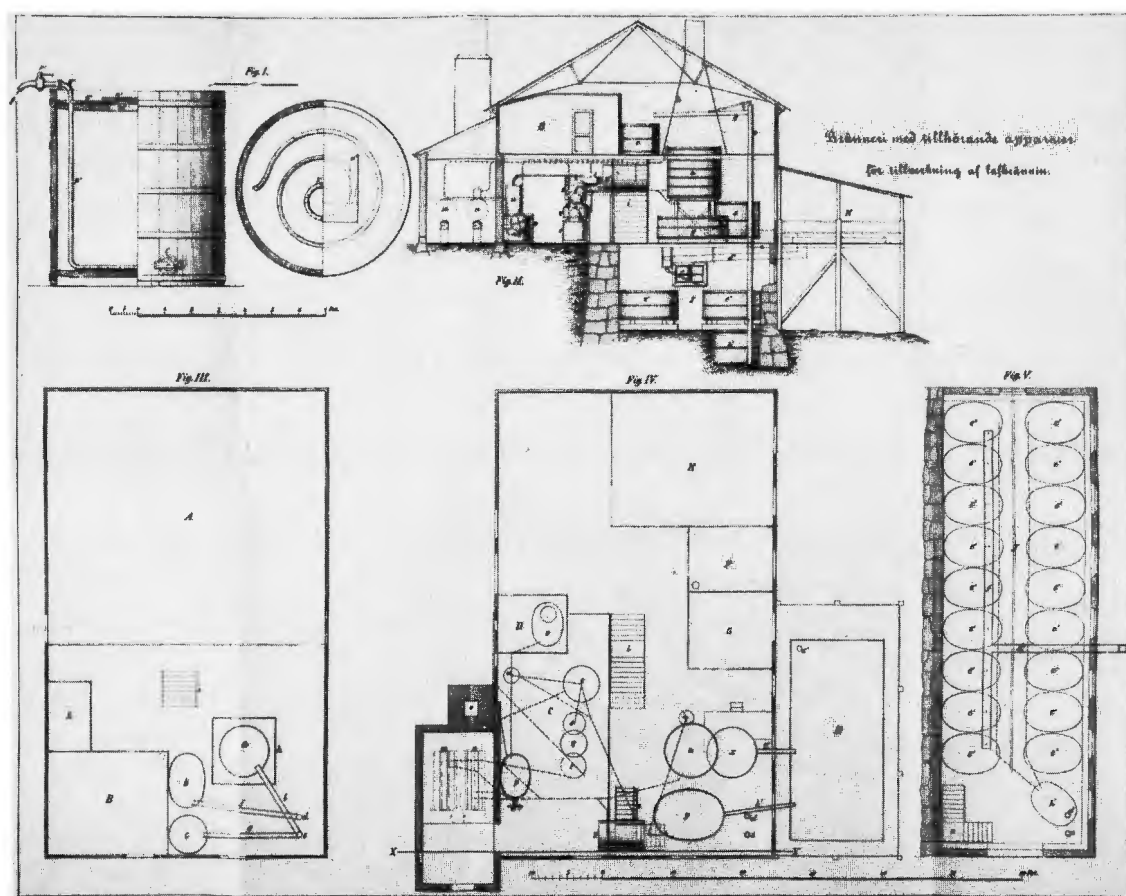


Fig. 4. Blueprint of a distillery for the production of lichen liquor reproduced from Sten Stenberg, *Om tillverkning af lafbrännvin* (Stockholm 1868).

and to call attention to a gift from God.” His booklet, furthermore, pointed out that lichens were already well-known for their usefulness as fodder, as medicine, and as a source of dye. A number of uses, more or less commonly well-known, were listed: reindeer lichen in the north as the chief source of nourishment for reindeer herds; various lichens in southern Sweden as a supplement to the normal fodder for animals in times of need; as a source of food during periods of want on Iceland and in the Orient; in the treatment of respiratory diseases; and the export of huge quantities for the preparation of dyes. He continued with Stenberg’s preparation of spirits and added in a tone of disappointment: “. . . while thousands of the country’s inhabitants are

suffering from want.” He praised the spread of information in the various parts of the country and especially the contributions of Jakob Widgren. Andersson summarized his arguments with the thought that “... attention [should be] directed to God’s gift which nearly literally floods our country and which certainly was given to us to be used.”

The remainder of the booklet described in detail six of the most common lichens: their collection, cleaning, preparation, and common uses. In conclusion he pointed out the harmful nature of bark bread and mentioned other suitable sources of surrogates, such as, the roots of pond lilies. On the last pages of the booklet samples of the lichens were attached.

The question remains as to what extent lichens were actually used as a source of food in Norrbotten and in the rest of the country. There is no doubt that foods prepared from lichens were actually consumed in the 1860’s both in Norrbotten and elsewhere in the country.¹¹³ However, few were as enthusiastic as the “correspondent Jakkol Mainos,”¹¹⁴ who in a letter from Malå stated:

In the beginning of September there arrived with this newspaper instructions concerning how spruce lichen and pine lichen could be used for bread. Want forced an attempt to be made immediately. And we soon rejoiced over the results, as it was immediately noticed, that the lichens had more nourishing characteristics than flour from firs, and that the weakened legs again find their strength. Still a mixture with some other flour is necessary to obtain bread. For that purpose flour from firs is used and reindeer moss until the frozen crops in the fields have been harvested and dried. After that straw has been cut from the top to the root, ground to flour, and together with lichens used for bread. One thinks that these substances should suffice. But unfortunately in several areas the grain was already consumed last spring, so that insignificant amounts were sown and consequently there was little straw to harvest. Therefore, all straw has already been eaten in most areas, and pine lichen and spruce lichen are now, since snow has covered the ground, alone available for food for the starving beings.¹¹⁵

More common were the reports such as that from Dalarna where a cottager reminiscing about his childhood recalled the dearth of food and the “slimy soup” of Iceland Lichen which had been given all school children along with instructions from “a lady from Stockholm.” These school children were also sent out to collect lichens, and copies of N. J. Andersson’s book were distributed.¹¹⁶ Lichens were apparently also used in Småland during these years along with other surrogates.¹¹⁷

From Norrbotten it was reported that lichens were used to supplement the flour, as well as for gruel and porridge.¹¹⁸ According to a report from an 87 year-old widow from Arvidsjaur recorded in 1934:

Iceland Moss and Birch Lichen were used to a great extent [1866–67] It was usually not ground to flour, but rubbed between the hands and thrown into a kettle to cook until a liquid formed. It was seldom eaten as porridge, rather some flour was added to the liquid that had cooled off, so that it later would be made into pancakes or thinbread. Iceland pancakes were so good that they could even be eaten today ... Iceland lichen was nutritious. It had about the same properties as the starch in potatoes. It thickened easily.

Sometimes it appears, however, that the bitter substances were not removed: "They also had Reindeer Moss ... But it wasn't good. It was too strong."¹¹⁹

It must be remembered, however, that these accounts comprise the reminiscences of older people from their childhoods, and thus these informants may not have had a realistic conception of what role this strange food actually played in the over-all picture of diet in the region during those years.

Some of the contemporary sources were not fully optimistic about the spread of these ideas. It should be recalled that the newspaper, when reporting on Widgren's exhibition used a tone which indicates that there may have been a great deal of opposition to and skepticism about the use of this substance.¹²⁰ Such a view receives support from the provincial doctor from the Överluleå district who commented in his report for 1868:

Emergency bread substances have been used only by the poorest and primarily during the period prior to the harvest. The inner bark of birch and straw have been preferably used, they do not readily want to use lichens, although instruction in their use has not been lacking.¹²¹

All the arguments, when looking at the evidence, seem to point towards the rejection of lichens. The traditional bark was preferred instead.¹²²

Testimonies

The question remains as to why? The problems associated with the preparation and gathering of lichens for human consumption appear often in the sources. This was most eloquently expressed by Petrus Læstadius in regard to the 1830's. Although not denying their value as nourishment, he found that Iceland Lichen was not plentiful, and that as far as Reindeer Lichen was concerned, "... one can scarcely use it without cleaning it ..." and "... to clean reindeer moss must take an unbelievably long time". He continued: "While they gather a pound (*pund*) of reindeer moss, they could plow a patch of land large enough to be able to harvest a *skäl* of barley ... It is better to turn to the pine ..."¹²³

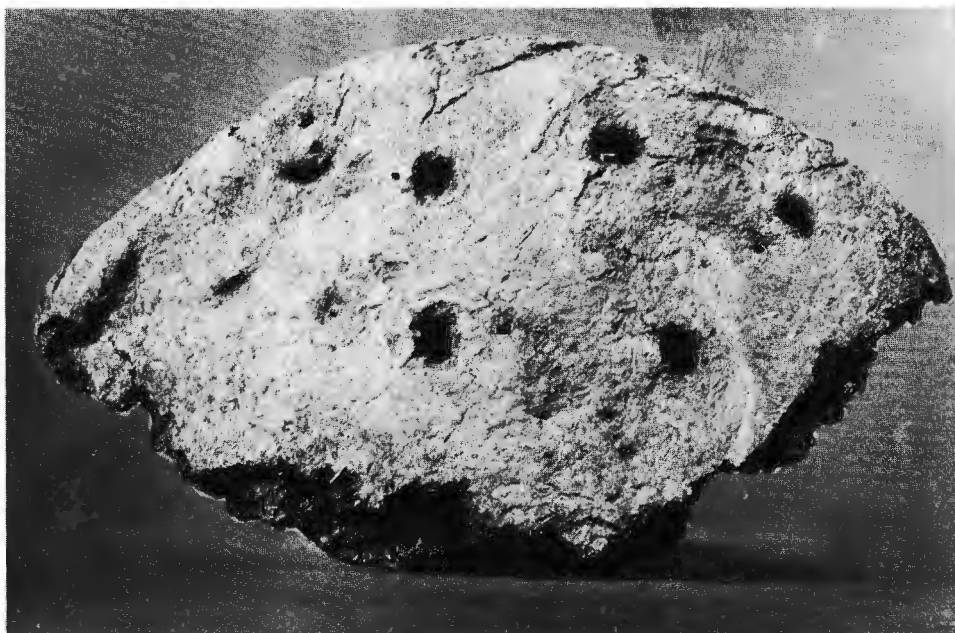


Fig. 5. *Bark bread* from the collection of the Nordic Museum, Stockholm (Photo: The Nordic Museum).

To delve more deeply into the problem and obtain an overview of how people actually reacted to lichens, 62 replies to the questionnaire concerning substances used as foodstuffs in times of disaster were studied in the Folk Lore Archives in Uppsala. These replies, primarily from central and northern Sweden, substantiate the conclusion that lichens were seldom used as emergency food. A number of the records include memories of the years of famine during the second half of the 1860's. A large number of time-honored emergency foods and substances used to make flour last longer were listed. Some of these substances were used only in connection with famine years, while others often served as common methods of stretching out flour for the poor and during famine years even for those who were better-off. Bark from pine, birch, spruce, ash, and other trees was named in 65 % of the records, straw in 35 %, ears of grain and chaff in 35 %, potatoes in 23 %, bone flour in 19 %, mash in 13 %; root vegetables and turnip greens in 6 %; and in a couple of records couch grass, nut shells, common weed, hazel buds, bran, straw from pea vines, vetch flour, heather, and wild berries were also named.¹²⁴

That lichens were not used as flour or in other forms was explicitly stated

in records from Mora (2 records) and Leksand in Dalarna, Bodsjö in Jämtland, and Överluleå in Norrbotten. Rather vague references where the informants had heard about the use of lichens, but had nothing further to relate, are found from Älvdalen (2 records) and Våmhus in Dalarna. Examples of the use of lichens were recorded from Öja in Småland; Råggård in Dalsland; Korsberga in Västergötland; Venjan, Transtrand, and Sollerön in Dalarna; Lit, Mariebyn, Frostviken, and Bodsjö in Jämtland; Indalsliden in Medelpad; Bjurholm and Gideå in Ångermanland; Frederika, Arvidsjaur, Sorsele, and Jokkmokk in Lapland; and Nederkalix and Nederluleå in Norrbotten. In several of these records it is clear that lichens were tried as a direct result of propaganda. From Venjan it was stated that someone came to the parish in connection with the famine years and taught people how to prepare Iceland Lichen and pond lily roots, but that the attempt was not really successful and was abandoned. In Transtrand someone from Stockholm appears to have spread propaganda for lichens. From Råggård parish it was reported that lichen was picked from the trees. Furthermore, a detailed description of how Reindeer Lichen and Pine Lichen should be prepared was added. One gets the impression that the informant had a propaganda brochure in front of her when she wrote down her reminiscences in 1947, especially as the remainder of the record appears rather confused. Reports from Lit and Marieby give the impression that the county government (*länsstyrelsen*) recommended the use of lichens as emergency foods. The informant from Marieby relates that people became ill from lichens, and thus they were not used for long. In Lit the story was told that an old woman had taken the wrong lichen and died of poisoning, after which it was forbidden to use them. Levi Johansson related that two people were said to have died as a result of a diet of lichens on a farm in Frostviken. In Bodsjö as well it was recorded that a man had died from eating a lichen preparation, but the informant was doubtful as to the veracity of that information. Because lichens were an unfamiliar foodstuff, a great deal of skepticism probably arose among the peasants when propagandists came out and tried to teach them to use these.¹²⁵ The information from Jämtland on deaths caused by lichens bears the mark of rumors which came into circulation as a result of the intensive activities of the county government to convince people to use lichens, and particularly Pine Lichen. The county government's eagerness also earned the Provincial Governor Gustaf Asplund the nick-names, "Lavlund" or "Lav-Kungen" (the Lichen King).¹²⁶ Notices were also sent out to the county administrator with the exhortation to arrange demonstrations of the preparation of breads from lichens in cooperation with members of the

local community councils and after the services in the churches, to instruct the parishioners in this matter.¹²⁷

The memory of this diet of lichens awakened strong emotions. When the Lapp Evangelist Jonas Larsson (b. 1855) told Levi Johansson about eating lichens, tears came into his eyes. The informant said that both its appearance and consistency were so horrible, that he shuddered even today with the thoughts of it.¹²⁸ Heart rending is the record from Vännäs where the informant remembered her mother sitting in the cottage cleaning lichens, while surrounded by her hungry, crying children. She remembered also how the tears ran down her mother's cheeks as she cleaned the lichens. The black pudding (*palt*) which was made from it was hard, tasted terrible, and ruined their stomachs.¹²⁹ The journalist Jonas Stadling, who traveled around Västerbotten in 1867 reported that at one farm he was offered porridge of pine bark and Iceland Lichen, but that he could not manage to swallow the mixture.¹³⁰ The only record in which someone was positive to this lichen diet was the previously cited record written down in 1937 from an 87 year-old widow from Arvidsjaur in which she stated that pancakes of lichen were so good that they could very well be eaten today. Recipes for pancakes were found in the propaganda books from the period around the First World War.

Why Did Lichen Propaganda Fail?

For three hundred years scientists and interested laymen have been fascinated by the properties of these plants. The desire and determination to share this information from the realm of Academe with the masses has not been lacking, but all attempts to demonstrate, remonstrate, preach, moralize, and cajole did not succeed. Although the use of lichens as food was common in other countries and may even have occurred in Sweden in the far distant past, these plants remain a curiosity to be dragged from the uppermost shelf of the cupboard as the "latest discovery" whenever necessity demanded that man seek to develop the food resources at hand. Why?

If one turns to the past, it appears that lichens were first advocated as an alternative to bark bread for two major reasons. The good of the national economy had to be considered. In times of famine, the most commonly used surrogate was the renowned bark bread, the preparation of which, according to the authorities, destroyed the potentially valuable forests. The preservation of this valuable resource has, ever since the 1770's, been an argument for the development of alternative emergency foods, such as lichens. Secondly, it

was suspected, even prior to the analyses that were made of lichens, that they comprised a valuable nutritional source. Modern analysis has, however, shown that bark bread perhaps was not quite as bad as the authorities thought.¹³¹

Nor were lichens accepted by the populace. It is nearly an axiom that the introduction of dietetic changes takes a long time. One needs only to recall the massive campaigns which were conducted recently by the Swedish Department of Social Welfare to get people to eat six to eight slices of bread per day. From the developing countries there are numerous examples of unsuccessful attempts to induce dietary changes.¹³² Bread prepared from lichens was simply not the emergency or famine bread to which people were accustomed.

Why is it so difficult to convince people to change their accustomed food pattern? Although there was no pronounced food taboo in regard to lichens, there was an apparent aversion to them. Psychologists distinguish three categories to explain why humans reject certain foodstuffs, according to Fallon and Rozin: distaste, danger, and disgust.¹³³ Often it appears that, in spite of the extensive distribution of brochures and the demonstrations and instructions, people did not know how to properly prepare lichens. They had a bitter taste, and it was this taste as well as the consistency that caused complaints. As mentioned above, in some areas rumors spread that lichens were toxic, which obviously proved a hinder to acceptance. Furthermore, there was a cultural barrier to overcome. More detailed knowledge on the food habits and diet of the peasantry in the actual areas would probably provide explanations for their behavior. Because lichens were used as fodder by the peasantry, it was food not considered fit for human consumption. To the peasants it was simply disgusting. There is also a not unimportant individual psychological aspect which must be considered. Adults lacked experience of this plant as food, and this made them unwilling to accept lichens and other new foods, a phenomenon for which the rather strong expression neophobia has sometimes been used. A possible assumption is that the greater the number of foods to which people are accustomed, the more likely they are to accept new foodstuffs. The peasantry ate a rather monotonous diet based upon cereals. Another plausible assumption is that the peasantry reacted negatively toward forced innovation from the authorities. The refusal to accept lichens as food can be interpreted as a kind of protest against the authorities. The peasantry expected them to provide grain, not a new food item about which they had no knowledge. During the nineteenth century, at least, the severity of famine and the level of malnutrition, in

general, were not great enough to bring the victims over the threshold which enabled them to accept lichens as food. If they had been on the verge of starving to death, they certainly would have eaten anything; alternatives were still available, albeit often in the form of bark and straw.

Also interesting is the flow of ideas that is elucidated here. The idea of the use of lichens is something which was taken from outside of one's cultural area introduced, and consciously spread to the masses. This attempt was obviously unsuccessful. The contemporary propaganda for mushrooms did lead to acceptance as food, not among the peasants, but among the urban bourgeoisie. In contrast to the mushroom propaganda, the propaganda for lichens never engaged the urban population and the upper strata.

The use of lichens (and other surrogates readily available in nature) was a method of increasing accessibility to food through the use of the labor of one's own household; food could be found in nature, outside of the realm of normal production through the use of available "free" labor, children and the elderly. Thus the normal production would not be disturbed. Although the lichens were nutritionally adequate, they met neither the criterion of cultural acceptability nor human dignity.

Acknowledgements

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Notes

1. For a discussion of the term "starvation," see W. R. Aykroyd, "Definition of different degrees of starvation," in: *Famine. A Symposium Dealing with Nutrition and Relief Operations in Times of Disaster*, eds., Gunnar Blix *et al.* (Uppsala 1971), 17-24. A six-level scale for the characterization of the nutritional level of European, especially Russian peasants has been developed in R. E. F. Smith and D. Christian, *Bread and Salt: A social and economic history of food and drink in Russia*. (Cambridge 1984), 332.

2. Cf. John D. Post, "Famine, Mortality, and Epidemic Disease in the Process of Modernization," *The Economic History Review*, XXIX:1 (February 1976), 14-37; Sølvi Sogner, "A Demographic Crisis Averted?," *The Scandinavian Economic History Review*, XXIV:2 (1976), 114-128.

3. C. G. Andræ, "Nödår," *Kulturhistoriskt lexikon för nordisk medeltid*, Vol. 12 (Malmö 1967), 467-468.

4. Andreas O. Rhyzelius, *Brontologia Theologico-Historica, Thet är Enfeldig Lära och sanferdig Berettelse*

- om *Åske*=Dunder/Blixt och Skott (Stockholm 1721), 70; Ingvar Svanberg, "Boskapsskötsel och jordbruk," in: *Lima och Trandstrand. Ur två dalasocknars historia*, 2. Utg. av S. Björklund and Tåpp J.-E. Pettersson. (Malung 1987), 209–210.
5. Agneta Emanuelsson, "Örebro krisåret 1773 — en fallstudie av den höga dödlighetens fördelning på sociala och ekonomiska grupper," (unpublished paper, Uppsala universitet, 1982); Hans Norman, "Svält och epidemier. Krisåren 1773 och 1809–1811 i Örebro, Stora Mellösa och Hällefors. Omfattning, dödsorsaker och demografiska följder," *Bebyggelsehistorisk tidskrift*, 5 (1983), 5–20; Ann-Sofie Ohlander and Hans Norman, "Kriser och katastrofer. Effekterna av nöd, svält och epidemier i det förindustriella Sverige," *Historisk tidskrift*, 104 (1984), 163–177; Gunnar Silow, "Makt, byråkrati och hungersnöd: Spannmålsunderstödet i Örebro län och Värmland 1773," (unpublished paper, Uppsala universitet, 1985).
6. A description of some conditions in Norrbotten are found in Marie C. Nelson, "Through a Looking Glass. Report on the Famine in Norrbotten as Seen through the Eyes of Norrbottens-Kuriren, 1867–1869." *Historisk tidskrift* 104 (1984), 179–204; for Norrland, see O. Häger, C. Torell, and H. Villius, *Ett satans år* (Stockholm 1978); for Småland, see E. G. Holm and E. Lönnberg, *Nödåren i norra Småland 1867–1869*. (Meddelanden från Norra Smålands Fornminnesförenings och Jönköpings Läns Hembygdsförbund. 1944.)
7. P. A. Widmark, *Underdånig berättelse innefattande Ekonomiska och Statistiska Upplýsingar om Norrbottens län, samlade under Embetsresor år 1859* (Stockholm 1860), 11.
8. The need for grain was calculated to be 12.85 ft³ for each Swedish or Finnish speaking inhabitant and 6.42 ft³ for each Lapp. *Bidrag till Sveriges Officiella Statistik. H. Kongl. Maj:ts Befallningshafvandes femårsberättelser. Ny Följd. 3. Åren 1866–1870*. Norrbottens län, 12. See also Härnösands Landsarkiv. Länsstyrelsens handlingar 1866–1870, D:V. Norrbottens län.
9. *Andra Kammarens protokoll 1867*: M. N:o 241, Vol. I: 136, 196, 219, 220; A. T. U. N:o 277, Vol. II: 394, 395; Vol. III: 597; R. S. N:o 80, Vol. IV: 693, 695.
10. Cf. Further details will be given in the forthcoming dissertation by Marie Clark Nelson, *Some Baked Their Bread from Bark, Lichen, and Straw*. [In progress.]
11. *Norrbottens hushållningssällskaps handlingar*. Protokoll hållet vid Norrbottens Läns Hushållnings-Sällskaps wintersammanträde i Lule den 28 Januari 1868, 10–11.
12. Armatya Sen, *Poverty and Famine: An Essay on Entitlement and Deprivation*. (Oxford 1981), 1–6, 45, 47.
13. Arne Oshaug, "The Composite Concept of Food Security," in: *Introducing Nutritional Considerations into Rural Development Programs with Focus on Agriculture. A Theoretical Contribution*. (Chapter 5 in Report No. 1 from the research program Development of Methodology for the Evaluation of Nutritional Impact of Development Programs, Institute for Nutrition Research, University of Oslo.) (Oslo 1983), 6–15.
14. Carl Linnæus, *En Fråga, som alltid föreställes de naturkunniga, då det heter: Huartil duger det?* (Stockholm 1753). Reprinted in Carl von Linné, *Valda smärre skrifter af allmänt naturvetenskapligt innehåll*. (Uppsala 1906.)
15. Lorens Wolter Rothof, *Hushålls-Magasin*, 1. (Skara 1762.)
16. See Gösta Berg, "Rumfordsoppan och den svenska fattigbespisningen," *Gastronomisk kalender*, 22/23 (1982/83), 85–104.
17. Carl M. Blom, *Kok-Bok för Fattige; Sammandragen ...* (Falun 1801), 23 f.
18. Ingvar Svanberg, *op. cit.*, 243.
19. Gustaf Utterström, "Den äldsta potatisodlingen i Norrbotten," *Norrbotten* 1945, 54.
20. Gustaf Utterström, "Potatisodling i Sverige under frihetstiden," *Historisk tidskrift* 63 (1943), 145–185; Gösta Berg, "Die Kartoffel und die Rübe," *Ethnologia Scandinavica* 1971, 158–166; Phebe Fjellström, Nord- och mellansvenskt kosthåll i kulturekologisk belysning," in: *Mat och Miljö*, Utg. av N.-A. Bringéus. (Lund 1970), 7.
21. Brita Egardt, *Hästslakt och rackarskam*. (Lund 1962), 56.
22. Egardt, *op. cit.*, *passim*; —, "Hamburgarehästkött. Några kulturhistoriska associationer." *Gastronomisk kalender* 1965, 121–130; Sven B. Ek, *Stadens födelse*. (Eslövs museums skriftserie 3.) (Eslöv 1967), 49–50; Ingvar Svanberg, "Sockenlappar". *Rig* 1986: 4, 115. The situation was similar in other European countries, e.g. in France, horsemeat was not legalized for sale for human consumption until 1866, D. W. Gade, "Horsemeat as human food in France". *Ecology of Food and Nutrition* 5 (1976), 1–11. An interesting and provocative discussion of the role of horsemeat is found in Marvin Harris, *The Sacred Cow and the Abominable Pig*. (New York 1987). The book, furthermore, deals with many important questions concerning the rationale behind meat-eating, within the parameter of insects to human flesh.
23. E.g. Elias Fries, *Sveriges ätliga och giftiga svampar tecknade efter naturen*. (Sthm 1860); Nils J. Andersson, *Våra bästa matsvampar eller kortfattad anvisning till de i vårt land förekommande mest matnyttiga matsvampi-*

- parnes igenkännande och användning. (Sthm 1867); N. G. Strömbom, *Sveriges förmästa ätliga och giftiga svampar*. (Sthm 1886). Propaganda booklets were also published in other Scandinavian countries, e.g., in Finland Arthur Thesleff, *Finlands förmästa ätliga svampar*. (Helsingfors 1893); Th. A. Genetz, *Finlands allmännaste matsvampar* (Folkupplysningssällskapets skrifter 73) (Helsingfors 1893).
24. Brita Egardt, "Svenskarna och svampmaten." *Rig* 37 (1953), 34–44.
25. B. Jonsson and Herman G. Simmons, *Gagnväxter*. (Lund 1935), 50; George A. Llano, "Economic Uses of Lichens," *Annual Report of the Board of Regents of the Smithsonian Institution* 1950. (Washington 1951), 395 (cf. also his "Lichens, their biological and economic significance," *The Botanical Review* X:1 (1944), 1–64). The Iwataka lichen and its use as food are described in W. W. Calkins, "An Edible Lichen not heretofore noted as such," *The Botanical Gazette* 17 (1892), 418, and in Manabu Miyoshi, "Die essbare Flechte Japans, *Gyrophora esculenta* n. sp.," *Botanisches Centralblatt* 56 (1893), 161–163. Bernard E. Read, *Famine Foods listed in the Chiu Huang Pen Ts'ao. Giving their Identity, Nutritional Values and Notes on their Preparation*. (Shanghai 1946), 22. There are some comprehensive books on lichens which among other things deal with their food values, e.g., Ann Lorrain Smith, *Lichens*. (Cambridge 1921), and D. H. S. Richardson, *The Vanishing lichens. Their History, Biology and Importance*. (London 1975.)
26. Llano, *op. cit.*, 396.
27. Johann Peter Falk, *Beyträge zur topographischen Kenntnis des Russischen Reichs*, Bd. 2. (S:t Petersburg 1786), 278; Peter Simon Pallas, *Reise durch verschiedene Provinzen des Russischen Reichs*, Bd. 3. (S:t Petersburg 1777), 760.
28. Georg Schweinfurth, "The Ancient Flora of Egypt," *Nature* 28 (1883), 109–114.
29. Llano, *op. cit.*, 395.
30. Kerstin Eidlitz, *Food and Emergency Food in the Circumpolar Area* (Studia Ethnographica Upsalien-sia 32). (Uppsala 1969), 51–52; cf., Ingvar Svanberg and Leif Lindin, "Traditional Reindeer Husbandry among the Evens of Kamchatka in the Beginning of the 1920's," in: *Contributions to Circumpolar Studies* ed. H. Beach. (Uppsala 1986), 168.
31. Sigrid Drake, *Västerbottenslapparna under förra hälften av 1800-talet*. (Uppsala 1918), 155; Louise Bäckman and Rolf Kjällström (eds.), *Kristoffer Sjölsons minnen om Västernorrlands lapparna i början av 1800-talet*. (Sthm 1979), 115; Phebe Fjellström, *Samernas samhälle i tradition och nutid*. (Sthm 1985), 285.
32. Ove Arbo Höeg, "Lav I," *Kulturhistoriskt lexikon för nordisk medeltid* 10. (Malmö 1965), 361.
33. Eggert Olafsen and Bjarne Povelsen, *Reise durch Island, veranstaltet von der Königlichen Societät der Wissenschaften in Kopenhagen*, Bd. 1. (Kopenhagen & Leipzig 1774), 85–86.
34. E.g. Hans Strøm, *Underretning om den Islandske Moss, Marie-Grasset og Geitna-Skoven, deres Tilberedelse til mad. Paa det Kongelige Danske Landhusholdnings-Selskabs Bekostning trykt og uddeelt i Norge*. (Kjøbenhavn 1785); Hans Jacob Wille, *En kort Afhandling om den islandske Moss (Lichen Islandicus) og dens Tilberedning til Menneske-Føde*. Udg. af det Kongl. Norske Videns.Selskab. (Trondhjem 1801); M. R. Flor, *Om fødemidler til Almuens Oplysning, efter Regjeringens Førelæstning trykt*. (Christiania 1808); Cf. H. Möller, "Forsøg og Erfaringer om Rendyr-Mosen til Brød". *Topographisk Journal for Norge* Bd 2 (H.7) (1794), 108–118; cf. Fredrik Grøn, *Om kostholdet i Norge indtil aar 1500*. (Oslo 1927), 74–75.
35. F. C. Schübeler, *Viridarium Norvegicum. Norges væxtrige. Et bidrag til Nord-Europas natur- og kulturhistorie*, Vol. 1. (Christiania 1886), 206.
36. Llano, *op. cit.*, 394.
37. P. A. Gadd, "Anmärkningar om nödbröd," *Åbo Tidningar* 1772, 145–148.
38. J. F. Wallenius, *Om finska allmogens nödbröd. Afhandling under Professor Carl Nidas Hellenii inseende utgiven och försvarad*. (Åbo 1782.)
39. Josef Pipping, *Beskrifning på Hedemossans och Renmossans beredning till sund och välsmaklig föda, utgifen af K. Finska Hushållningssällskapet*. (Åbo 1798.) The title of the Finnish edition is *Nuowo, kuinga terweellinen ja hywän mauallinen ruoka taitaan walmistaa Nummi- eli Kangas-jäkälästä eli Kangas-sammalesta ja Peruan-jäkälästä eli Peuran-sammalesta*. (Turussa 1798.)
40. O. E. A. Hjelt, *Naturalhistoriens studium i Finland*. (Helsingfors 1896), 359 note 1. A comprehensive description is given in Katri Laine, "H. G. Porthan ja kotitalousneuvonta vv. 1801–1802," *Historiallinen arkisto* 46 (1939), 225–294. The diary written by Bartholdus Laurel is published in Swedish on pp. 276–292 and gives interesting information about the reaction among the peasantry to the lichen propaganda.
41. Cf. Th. Rein, *Johan Vilhelm Snellman, Senare Delen*. II. (Helsingfors 1901), 592; I. Manninen, "Überreste der Sammlerstufe und die Notnarung aus dem Pflanzenreich bei den nordeurasischen, vorzugsweise den finnischen Völkern," *Eurasia Septentrionalis Antiqua* 6 (1931), 47; Berrel von Bonsdorff, *The History of Medicine in Finland 1828–1918* (The History of Learning and Science in Finland 1828–1918, 3). (Helsinki 1975), 111.
42. Elias Lönnrot, *Underrättelse om några lafarters begagnande såsom födoämne*. (Helsingfors 1867). Also published in Finnish with the title *Nuwoja erasten*

jakalien kayttamesta ruuassa (Laakarihallinnon ilmoittama). (Helsinki 1867.)

43. Hannu Voipaala, "Nalkavuodet 1866–68 Ala-Sääksmäen kihlakunnassa," *Historiallinen Arkisto* 48 (1941), 112–253.

44. Ilmar Talve, *Folkligt kosthåll i Finland. En översikt*. (Skrifter utgivna av Etnologiska sällskapet i Lund 7.) (Lund 1977), 116. Within this context it can be mentioned that J. Cygnæus published an article concerning the nutritional value of emergency bread: "Vår allmoges bröd", *Naturen* 1 (1893), 17.

45. Carl Tigerstedt, *Lavar såsom människoföda. Resultat af försök utförda å universitetets i Helsingfors fysiologiska institut*. (Hankkija Försökspublikationer, 1.) (Helsingfors 1918.)

46. *Naparsimasonut i kiortiksat*. 1859 (reprinted 1973).

47. Carl Jacoby, *Die Flechten Deutschlands und Österreichs als Nahr- und Futtermittel*. (Tübingen 1915); F. Tobler, "Flechten als Nahr- und Futtermittel". *Die Naturwissenschaften* 3 (1915), 365–367; cf. Per-Olof Lindahl, "Lavar till mat och dryck," *Fauna och Flora* 3 (1972), 126.

48. Žakov, "Etnilogičeskij očerk Zyrjan," *Živaja starina* 11:1 (1901), 7.

49. Louis Proust, "L' utilité du Lichen d'Islande comme Aliment," *Journal de Physique, de Chimie, d'Histoire naturelle et des Arts* 63 (1806), 81–96.

50. Llano, *op. cit.*, 396.

51. C.-H. Tillhagen, *Folklig läkekonst*. (Sthm 1977), 187, 194 & 301; J. Qvigstad, *Lappische Heilkunde*. (Oslo 1902), 198; Adolf Steen, *Samenes folkemedisin*. (Samiske samlinger V:2), (Oslo 1961), 35; Katarina Ågren, *Västerbottnisk örtabok*. (Umeå 1976), 158; Mats Bergmark, *Vallört och vitlök*. (Sthm 1981), 173; M. von Düben, *Handbok i vextrikets naturliga familjer, deras förwandskaper, geografiska utbredning, egenskaper och viktigaste användande i medicinskt, ekonomiskt och tekniskt afseende*. (Sthm 1841), 315; C. J. Hartman, *Husläkaren eller allmänna och enskilda föreskrifter i sundhetsläran* ... (Sthm 1872), 491–492; A comprehensive survey is given in Per-Olof Lindahl, "Lavar som medicinalväxter". *Fauna och Flora* 1973:2, 49–55.

52. Hakon Hjelmqvist, "Lav I." *Kulturhistoriskt lexikon för nordisk medeltid*, Vol. 10. (Malmö 1965), 363.

53. Anders Tidström, *Resa genom Dalarna 1754*. (Falun 1955), 6.

54. Bergmark, *op. cit.*, 22.

55. Lisa Johansson, *Gamla i lappmarken kända värtfärgningsrecept*. (Umeå 1947). A large amount of records collected by Lisa Johansson about dye-plants together with yarn samples is found in Dialekt- och Folkminnesarkivet, Uppsala.

56. Samuel Liljebblad, *Utkast til en Svensk Flora*.

(Uppsala 1798), 417–438. His biography is given by Olle Franzén in *Svenskt Biografiskt Lexikon* Vol. 23. (Sthm 1980–81), 4–6.

57. Ove Arbo Höeg, *loc. cit.*

58. Carl Linnæus, *Dalaresa*. (Sthm 1953), 59. A detailed description about the collection and preparation of lichens as fodder is given in Lars Levander, *Övre Dalarnas bondekultur under 1800-talets förra hälft*, Vol. 1. (Uppsala 1943), 199–204; see also Ingvar Svanberg, "Boskapskötsel och jordbruk", in: *Lima och Transtrand. Ur två dalasocknars historia*, Vol. 2. Utg. av S. Björklund och Tapp J.-E. Pettersson. (Malung 1987), 220 and Ola Bannbers, "Påslogmyr och lavhed. Slätterliv och foderflängst i norra Dalarna," *Svenska kulturbilder*, Vol. 6. (Sthm 1930), 259–286. Cf. also H. Juhlin Dannfelt, "Lavar till människoföda och kreatursfoder," *Landbruks-Akademiens Handlingar och Tidskrift* 56 (1917), 483–491; H. Edin, "Om renlav och islandslav som nödfoder," *Landbruks-Akademiens Handlingar och Tidskrift* 56 (1917), 491–503.

59. Andreas Olav Rhyzelius, *loc. cit.*

60. Urban Hiærne, "Om Hedegräset," *Kongl. Vetenskapsakademiens Handlingar* 5 (1744), 170–180.

61. Carl Linnæus, *Flora Dalecarlica*. (Örebro 1873), 50.

62. Carl Linnæus, *Lappsk flora*. (Skrifter af Carl von Linné 1.). (Uppsala 1905.)

63. Carl Linnæus, "Rön om Växters Plantering, grundat på Naturen". *Kongl. Vetenskapsakademiens Handlingar* 1. (1739), 9–10. Cf. on Iceland Moss in Carl Linnæus, *Flora Suecica*. (Sthm 1755), No. 1085.

64. Carl Linnæus, *Berättelse om The Inhemiska växter, som i brist af Säd kunna användas till Bröd- och Matberedning*. (Sthm 1757.) Cf. Telemak Fredbärj, "Linné och brödet," *Svenska Linné-Sällskapets Årsskrift* 48 (1965), 16–25 for further information on Linnæus' interest in using wild plants in bread.

65. Carl Fried. Mennander, "Berättelse om Stampe-Bark och Misse-Bröd," *Kongl. Vetenskapsakademiens Handlingar* 3 (1742), 284–286.

66. J. P. Bergius, *Rön om Spannemåls-Bristens ersättande medelst Qvickrot*. (Sthm 1757.) For a more thorough discussion of the economic value of couch grass, see Nils Hylander, "Om kvickrotens nytta," *Svenska Linné-Sällskapets Årsskrift* 30 (1947), 43–60.

67. "Beskrifning huru man med Renmåssa kan föda Boskap," *Kongl. Vetenskapsakademiens Handlingar* 3 (1742), 153–156.

68. Lars Wennberg, *Anvisningar til Swenska Almänheten, genom Närings och Hushålds Tidningar, För Medborgare på Landet och i Staden*. (Sthm 1772.)

69. J. Hesselius, "Rön och Försök, at göra Bröd af Renmåssa, til de Fattigas hjälp och understöd, i dyr tid och hungersnöd," *Hushållnings Journal*. Sept. 1775, 12–21.

70. *Dissertatio oeconomico-philosophica, de Historia Naturali Ordini Ecclesiastico necessaria*. Præses J. Löstbom. 1788.
71. Samuel Liljeblad, *Diarium för en Lappska Resa Anträdd d. 29 Maji 1788*. Manuscript S 40 in Uppsala University Library.
72. Samuel Liljeblad, "Om Nyttan af Lichen Islandicus, eller Hedemossa, til föda och uppehälle, i synnerhet wid Misswäxt-År," *Hushållnings Journal*, Febr. 1789, 291–308. Cf. Adolf Modeer's comments in *Hushållnings Journal*, Febr. 1789, 308–310. Another article on lichens as food was published in the journal the following year: "Om Hedemossans nytta och bruk," *Ny journal uti Hushållningen*, Jan.–Febr. 1790, 34–37. Liljeblad's lichen propaganda trip has been dealt with briefly by Ebbe Gyllenstierna, "Anförande av Kungl. Patriotiska Sällskapets sekreterare vid Sällskapets årsammanträde den 3 juni 1980," *Kungl. Patriotiska Sällskapet* 1980 (1981), 18–19.
73. Sacharias Westbeck, "Berättelse om Laf eller Träd-måssa," *Samling af Hushålls och andre Rön* 5. (Sthm 1795), 214–216.
74. *Utdrag af Inrikes Tidningen* den 2 Julii 1799.
75. Anders Johan Retzius, *Försök til en Flora Oeconomica Sveciæ eller Swenska Växternas Nyta och Skada i Hushållningen*, Vol. 1. (Lund 1806).
76. J. P. Westring, *Svenska Lafvarnas Färghistoria*. (Sthm 1805.)
77. Jacob Berzelius, "Undersökning af Islands-mossans sammansättning och dess användande såsom näringsmedel," *Ekonomiska Annaler* 8 (Nov. 1808), 53–94. Also published in German: "Versuche über die Mischung des Islandischen Moores und seine Anwendung als Nahrungsmittel," *Schweigger's Journal* 7 (1813), 317–352, reprinted in *Annale Chemie* 90 (1814), 277–321. Cf. also Evan M. Melhaldo, *Jacob Berzelius. The emergency of his chemical system*. (Lychnos-Bibliotek, 34) (Uppsala 1981), 279–281.
78. D. D. Thomée, *Anvisning till anskaffande af Brödämne, i brist af Spannemål, till tjenst för Sveriges Allmoge*. (Sthm 1813.)
79. Carl af Wetterstedt, *Beskrifning om ett tjenligt och hälsosamt Närings-ämne, nemligen Islands-Lafwen, att kunna användas till föda samt till bröd, hwilken äger en stark fodande kraft, och som finnes uti de flesta Landsorter både i Sverige och Norrige*. (Sthm 1818.)
80. Carl F. Plageman, *Om Nyttan af Islands- eller Hede-Lafwen, såsom ett ypperligt födoämne wid inträffande swåra år och hungersnöd*. (Sthm 1832.)
81. *Underrättelser uti Åtskilliga Ekonomiska Ämnen, ifrån trycket utgifna af Westerbottens Läns Kongl. Hushålls-Sällskap*. Andra Samlingen. (Sthm 1833) 27, 37, 42.
82. Gustava Schartau, *Wälmenta råd i Misswext-år, eller underrättelser om inhemska, till större delen wilda växter och andra natur-produkter, tjenliga till bröd och födoämnen* ... (Sthm 1831) 4, 27.
83. Magnus von Düben, *op. cit.*
84. Gustaf Torsell, *Anvisning till nödbrodsämnen. 1. Om användet af Lafvar till föda*. (Uppsala 1845.)
85. Karl J. Ekeblad, *Hielp i Nöden eller Råd till Allmogen, att under swåra år och wid smärre tillgångar bereda ett sundt och närande nödbrod* ... (Sthm 1846); 2nd enlarged edition 1847.
86. C. G. Kröningssvärd, *Afhandling om Islands- och Ren-Lafvens Nyta och Användbarhet, såsom födoämne*. (Sthm 1849).
87. *Anvisning till Nödbrodsämnen under misswextår*, (Luleå 1867); *Anvisning till Nödbrodsämnen under Misswextår*, (Jönköping 1868); *Anvisning till Nödbrodsämnen under Misswextår för befolkning inom Westerbottens län*, (Umeå 1867); *Nödbrodsämnen under misswextår*, (Östersund 1867). Cf. also *Om Lafvarnes beredning till födoämnen för menniskan*. (Falun 1867).
- There were also other works which propagandized for different surrogates, such as bran: Carl Palmstedt, *Kli-bröd, ett nytt medel att bidraga till afhjelpande af brist på födoämnen*. (Sthm 1868.) Today in Sweden, and certainly many other countries, the addition of bran is common and regarded as healthful in many types of bread.
88. C. A. V. Kallstenius, *Anvisning för insamling af Ren-lav*. (Sthm 1868.)
89. Hartman, *op. cit.*, 491–492.
90. Johan Lagergren, *Svenska matväxternas insamling och förvaring*. (Sthm 1880), 48–49. Lagergren obviously misunderstood Hjérne who only distilled alcohol in order to analyze the chemical content of the lichen.
91. J. Henriksson, *Handledning vid insamling och förvaring af Sveriges medicinalväxter med bihang. Upptagande de allmännaste af våra förbisedda matnyttiga växter*. (Sthm 1890); —, *Några förbisedda hushållsväxter och deras användning*. (Sthm 1906.). —, *Växterna i de gamlas föreställningar, seder och bruk*. (Sthm 1911.)
92. See for example, Gustaf Lind and Nils de Verdier, *Våra medicinalväxter*. (Sthm 1917); Elise Adelsköld, *Surrogatboken*. (Sthm 1917); Ida Tegnér-Högstedt, *Matnyttiga wilda växter och deras användning i hushållet*. (Sthm 1918.)
93. Yvonne Hirdman, *Magfrågan. Mat som mål och medel. Stockholm 1870–1920*. (Sthm 1983), 259.
94. Erik Lundström, *Ättliga wilda växter. En dyrtidsbok*. (Sthm 1918.)
95. *Några wilda brödväxter samt kaffe- och tesurrogat*. Folkhushållningskommissionens kvinnorråd. (Sthm 1917.)
96. E.g., Kåre Frøier, *Näringsrika wilda växter*. (Sthm 1942); Jens Holmboe, *Gratis mat av wilda*

växter. Med recept av Juliane Solbraa-Bay. (Sthm 1942.) See also Bergmark, *op. cit.*, 21–23.

97. Stefan Källman, *Näringsvärden i vilda svenska växter. Analyser och fysiologiska studier av olika komponenter med tonvikt på kolhydrater, protein och vitamin C*. Sthm 1983 [Diss.]; "Rötter och lavar till framtidsmiddag," *Arbetet* 30/5 1983; Britt-Marie Hallbert, "Ogräs kan bli klöver," *Dagens Nyheter* 30/5 1983.

98. Cf. *Efter Tjernoby! Information om följderna för Sverige av olyckan i Tjernoby!* (Stockholm 1986). Cf. also a debate article written by Kerstin Eidlitz Kuoljok, "Med det 'smittade' renköttet kan etniska fördomar förstärkas," *Samefolket* 1987:2, 33.

99. B. M. Lal and K. Ranganatha Rao, "The Food Value of Some Indian Lichens," *Journal of Scientific and Industrial Research*, 15C (1956), 71–73; Sankara S. Subramanian, "Lichens and their food value," *Indian Journal of Nutrition and Dietetics*, 2 (1965), 217–222.

100. See note 87 and 88.

101. Cf. note 11. Jakob Widgren (1802–1870) was born in Ulcåborg and received education as a pharmacist in Finland and Sweden. After working in or running several pharmacies, he established a chemical factory in Stockholm. After a decade in that field, he returned to his profession and was granted the privileges for the Råneå pharmacy in 1862, where, plagued by economic difficulties, he remained until his death. When there was no doctor in Råneå, Widgren even served in that capacity. A. Levertin, *et. al.*, *Sveriges Apotekarhistoria från Konung Gustaf I:s till närvarande tid*. Vol. IV (Stockholm 1922–1927), 1966–1967.

102. See, e.g., *Norrbottnens-Kuriren* (Luleå), 1 Aug., 8 Aug., 31 Okt., 5 Dec. 1867 and 28 Okt., 24 Dec. 1868. See also, *Norrbottnens Posten* (Piteå), e.g., 14 Dec. 1867, 25 Jan. 1868, and the short-lived *Luleå Snällposten* 13 Jun. 1868.

103. Jakob Widgren, "Anvisning att bereda födoämnen af Granlaf, Islandsmossa m. m." (Luleå 1868.)

104. *Ibid.*, p. 6. See also *Norrbottnens-Kuriren*, 31 Okt. 1867. Widgren warns against using warm water for soaking the lichen, as the nourishing starches could thus be partially dissolved. This is contrary to the advice given in the instructions listed in note 87.

105. *Norrbottnens-Kuriren*, 14 Nov. 1867.

106. Sten Stenberg, "Utlåtande angående Nödrödsämnen." *Hygiea*, XXIX:12 (December 1867), 513–515; cf. Berzelius, *op. cit.*

107. Oskar Sandahl, "Utlåtande angående Nödrödsämnen." *Hygiea*, XXIX:12 (December 1867), 515–519.

108. S. Stenberg, "Om användandet af Lafvar såsom material för framställning af Drusocker och Alkohol." *Öfversigt af Kongl. Vetenskaps-Akademiens Förhandlingar*, XXV:1 (1868), 17–28; S. Stenberg,

Om tillverkning af lafbrännvin (Stockholm 1868). For example, a distillery was established in Nederluleå in Norrbotten for the production of spirits from lichens. The attempt was abandoned, because it could not be sold. *Bidrag till Sveriges Officiella statistik*. H. Kongl. Maj:ts Befallnings hafvandes femårsberättelser 1866–1870, Norrbottens län., 17. Cf. Erik Jorpes, "När renlaven gav bröd och brännvin åt svältande svenskar," *Mora Tidnings Julläsning*, December 19, 1954, VI.

109. *Motioner i Första Kammarén*, N:o 87. Bihang till Riksdagens Protokoll 1868. I.2.

110. *Stats-Utskottets Utlåtande* N:o 65. Bihang till Riksdagens Protokoll 1868. IV.

111. *Första Kammaréns Protokoll*, April 18. 1868. III: Riksdagens underd. Skrifvelse. N:o 41, Bihang till Riksdagens Protokoll 1868. X; Llano, *op. cit.*

112. Nils Johan Andersson, *Våra bästa Mat-lafvar* (Stockholm 1868). 10,000 copies of the companion volume *Våra bästa Mat-svampar* (Stockholm 1867) had been distributed the previous year. The copies that were left were sold for 25 öre each in book shops. More information about the role of the Royal Patriotic Society in the campaigns for mushrooms and lichens in the 1860's is found in Staffan Högberg, *Kungl. Patriotiska Sällskapets Historia*. (Sthm 1961), 221–222.

113. See, for example, Nils Keyland, *Svensk Allmogekost*. Vol. I. (Stockholm 1919), 122–126.

114. This was the pseudonym for the clergyman J. Mörtzell of Vilhelmina. Cf. S. Rosén, *Tidningar i Norr 1841–1981. TU-kretsen 1941–1981* (Umeå 1981), 33–34 and A. Moberg, *100 år i Norrbotten* (Luleå 1961), 24.

115. *Norrbottnens-Kuriren*, December 19, 1867.

116. O. Hampus, "Barkbrödstider. Något om nödåren 1867–70 i Malung". *Skinnarehygd*. 16–17 (1963–64), 96.

117. A. Neander, "Den torre sommarn och det svåra året", *Ålmebodaboken*, 11 (1969), 10–11.

118. Dialekt- och folkminnesarkivet. Uppsala. ULMA, 3821 (Nederkalix). 13; ULMA 2261:5 (Edefors), 17, 20, 33; ULMA 2261:7 (Jokkmokk); ULMA 3062 (Piteå), 3; ULMA 7720 (Arvidsjaur), 6–12.

119. ULMA 7720 (Arvidsjaur), 7–8.

120. ULMA 2261:5 (Edefors), 33.

121. Riksarkivet, Sthm., Medicinalstyrelsens arkiv: MSP 39, "Årsberättelse för år 1868 från Öfver-Luleå provincial-läkare district."

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123. P. Læstadius, *Fortsättning af journalen öfver missions-resor i Lapplanden innefattande åren 1828-1832*. (Stockholm 1833), 259-261.
124. Replies to ULMA questionnaire Nr. 19. (the questionnaire is printed in *Svenska Landsmål och Svenskt Folkliiv*, Bih. B. 25 (1929), 213-266. Substitutes used by the peasantry in Sweden are also mentioned in e.g. Nils Keyland, *op. cit.*, 111-133; Sigurd Erixon, "Djurfångst och jakt samt insamling av vegetabiliska födoämnen under nyare tid," *Nordisk kultur* 11, (Sthm 1955), 118; —, "Surviving primitive gatherings in the Nordic countries," *Folk-liv* 14-15 (1950-51), 95-102; Julius Ejdestam, *Samling kring bordet*. (Sthm 1975), 12f.; Åke Campbell, "Äldre svensk brödkultur i belysning av 1800-talets allmogebröd," *Svenska Landsmål och Svenskt Folkliiv*, 66-67 (1943-1944), 1-89; Birgitta Lindstam, *Nödbrodsämnena i 1800-talets receptsamlingar*. (Unpublished manuscript, Department of Ethnology, Stockholm.); Brita Gustafsson, *Något om växter, nyttjande till nödbrod och medicin*. (Unpublished manuscript, Department of Ethnology, Uppsala.) A good comprehensive, global overview of bread surrogates is given in A. Maurizio, *Die Geschichte unserer Pflanzennahrung von den Urzeiten bis zur Gegenwart*. (Berlin 1927), 91-122. Valuable information on surrogates can also be derived from J. C. Th. Uphof, *Dictionary of Economic Plants*. (New York 1968.)
125. ULMA 2456 (Marieby); ULMA 3145:5 (Frostviken); ULMA 3469 (Lit); ULMA 9120 (Bodsjö), 88-91. In Dalsland there seems to have been the belief that Iceland Lichen caused dysentery, C. J. Engström, "Svensk och främmande nöd," *Färgelanda. Tidskrift för Dalslands folkhögskola* 8:1 (1927), 30.
126. C. G. Eriksson, "Nödtider i Jämtland," *Jämten* 36 (1942), 89; Kerstin Eidlitz, *Föda och nödföda. Hur människan använde vildmarkens tillgångar*. (Sthm 1971), 89.
127. Reprinted in *Oviks- och Myssjöbygden* 4 (1960).
128. ULMA 3145:5 (Frostviken).
129. ULMA 3026:5 (Degerfors).
130. Jonas Stadling, *Minnen vid slutet av vägen*. (Uppsala 1930), 26-27.
131. Karl Erik Thomé, "Hur dåligt var barkbrödet?", *Vår näring*, 16:4 (1981), 27-29.
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133. April E. Fallon and Paul Rozin, "The Psychological Bases of Food Rejections by Humans," *Ecology of Food and Nutrition*, 13 (1983), 15-16.

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INGVAR SVANBERG

Turkic Ethnobotany and Ethnozoology as Recorded by Johan Peter Falck

The three-volume work by Linnæus' student Johan Peter Falck, *Beyträge zur Topographischen Kenntniss des Russischen Reichs*, published in St. Petersburg 1785–86, constitutes an important but previously disregarded source of knowledge on the ethnography of the Central Asian and Siberian Turkic peoples.¹ Falck's detailed descriptions of the significance of various types of plant and animal life for ethnic groups in Siberia and Central Asia deserve particular notice. Of inestimable value are the terms for plants and animals in a long line of tongues including Turkic languages, which Falck recounts.

Of the great numbers of students of Linnæus who set off on long excursions to describe nature's three kingdoms, i.e., minerals, plants, and animals, and the customs and sources of livelihood in foreign lands, Johan Peter Falck has received the least attention. That is remarkable considering the fact that Linnæus himself especially valued Falck and early perceived his scientific capacity. But Falck was not born under a lucky star. His life was unhappy and ended in suicide. It also belonged to his dismal fate to be soon forgotten. In contrast to Linnæus' other students, biographical information is seldom found on him in modern reference works. He is also lacking in surveys on Swedish achievements in Central Asia.² Not even our assiduous and otherwise so alert contemporary scholars of Linnæus have devoted particular attention to Falck.

Johan Peter Falck was born November 26, 1732 in Broddetorps parish in Skaraborg County.³ His parents, who resided at Kockstorp, were Peter Falck, judge-advocate of Skaraborg's Regiment, and Beata Winge, daughter of a clergyman in the parish. After completing school in Ulricehamn and Skaraborg, Johan Peter came to Uppsala University as a student in 1751, where he devoted himself primarily to studies in the natural sciences under Linnæus. An anonymous biographer has given us the following strongly idealized portrait of Falck. It was written after his death, but may still be considered an attempt to characterize him during his Uppsala years:

He was tall, straight, strong and handsome; his face was oval, virile, and attractive. He most often had a glad countenance, appeared candid, honest, and aristocratic, was free from ingratiation, friendly, and charming. Because he was cheerful, loyal and honest, enjoyed jokes and amusing remarks, he combined the useful with fun and had his strength in sharp-wittedness, wisdom, and self-confidence. To some extent a Democritus by nature, however, with his lively fantasy he found the absurdities in others and scoffed at them in fun.⁴

Because of chronically poor economy, Falck was forced to support himself by tutoring, which made his studies more difficult and delayed his ambitions to become a medical doctor. Linnæus had, however, noted Falck's diligence. In order to help him, Linnæus therefore employed him as tutor for his son Carl. In spite of that support from the master himself, things did not go well for Falck. Furthermore, he early showed signs of a depressive nature. The melancholy was nourished, of course, by all the set-backs and constant economic worries which seemed to haunt him. Behind these periods of ruinous depression which alternated with times of nearly unique zeal and a capacity for work that came to characterize Falck's life, one conjectures the existence of a manic-depressive disposition.

A younger brother, Anders (1740–1796), came to Uppsala a few years later. Even his life was tragic in its own way in spite of a promising start. He soon made a name for himself as a talented astronomer and, to a certain extent, as a singer. However, his scientific career was ruined by the fact that he ended up as an apologist in Skara and eventually became headmaster for the town's secondary school. In spite of diligence in astronomical observations and a number of publications in the Proceedings of the Swedish Academy of Science, Skara was not the right place for an astronomer. He received little recognition, and the consistory in Skara was not willing to support a scholar with either money or equipment. He never reconciled himself with that, lamented the fact, and towards the end of his life he found, as they say, "solace where no solace is to be found."⁵

Linnæus had grand plans for his gifted student Johan Peter. First, in the summer of 1760 with his own funds he sent Falck to Gotland to collect plants and fossil corals. The circumstances surrounding this trip are not clear, but it appears not to have brought about a change in Falck's melancholy character, as Linnæus had hoped. Thereafter, Linnæus tried sending him to Arabia. Together with Peter Forsskål (1732–1763) and supplied with letters of recommendation from Linnæus, he departed in September 1760 for Copenhagen for the purpose of enrolling in the scientific expedition to southern Arabia, which the Danish government was preparing. However, the expedition

members had already been chosen and Forsskål, promised a position as botanist, was thus designated Danish titular professor; there was no place for Falck, and disappointed, he eventually returned to Uppsala. Perhaps that was just as well. Prior to its departure the expedition was shaken by internal squabbles. Nearly all of the members of the expedition died during the journey. The promising and contentious Forsskål ended his 31 years in the village of Yerim, Yemen in July 1763. Only Carsten Niebuhr survived and could take home the expedition's collections, including Forsskål's journal.

When he had returned home, Falck defended his dissertation for Linnæus on the South American plant genus *Alströmeria*.⁶ Linnæus continued to keep an eye on Falck, and new opportunities soon arose. From City Councillor and Royal Physician C. F. Kruse in St. Petersburg Linnæus received an inquiry as to whether he had a person who would be suitable as curator of Kruse's natural history cabinet. Linnæus recommended Falck, who in September of 1763 departed for St. Peterburg. The unfortunate Falck, however, was shipwrecked off Narva and thus lost the greater part of his possessions. Once in St. Petersburg happier times were at hand for a while. His talents and his competence were soon discovered. He was offered a couple of posts and in 1765 accepted a chair in medicine and botany at *Collegium medicum*. He attracted numerous listeners to his lectures, and, as curator of their garden for medicinal plants, he saw to it that rare herbs were obtained for the collections.

At that time Russia was equipping great expeditions for the exploration of Siberia and Central Asia. That was a part of tsarist Russia's eastward expansion which had been going on since the 1500's. During the reign of Peter the Great (1698–1725) several attempts had also be made to conquer Central Asia.⁷ During the entire eighteenth century a gradual annexation and pacification of the Kazakh Steppes had occurred. Under Catherine II the Academy of Science in St. Petersburg sent out numerous expeditions to explore the newly incorporated areas.⁸ These expeditions, which were sent out 1768–69, were led by prominent natural scientists: for example, the Germans, Peter Simon Pallas (1741–1811),⁹ Samuel Gottlieb Gmelin (1744–1774), and Johan Gottlieb Georgi (1729–1802); the Russians, Ivan Ivanovich Lepekhin (1740–1802) and Nikolaj Petrovich Rychkov (1746–1784); and Johann Anton GÜldenstädt (1745–1781), who had the misfortune to be held prisoner by the Tatars.

Through the initiative of Linnæus and the mediation of the medical doctor Johan Jacob Lerche, Falck was appointed leader of one of the so-called Orenburg expedition.¹⁰ During his first years in Russia Falck corresponded

eagerly with Linnæus. Thirteen letters from the years 1763–68, dated in St. Petersburg, have been preserved and published.¹¹ They consist of Falck's jeremiads over his melancholy and his constantly recurring migraine attacks, which bear witness to the fact that Falck was psychologically poorly equipped for the hardship-filled journey into the Asian interior. But there were favorable conditions for the leader of an expedition. Falck would receive a double salary, and after his return he could return to his previous post. As assistants he chose the assistant physician Christoph Bardanes, the students Ivan Bikov, Michael Lebedev, and Stephan Kashkarev, as well as the artist Peter Gregoriev. Furthermore, they were accompanied by some Cossacks to protect the expedition.

The expedition departed St. Petersburg September 5, 1768 for Samara via Moscow. In Moscow the hunter Karl Plamaski, who became Falck's interpreter and confidante during the entire sojourn, joined the expedition. During the years that followed Falck traveled southward to explore the southern Volga area, the Kazakh Steppes, parts of Siberia, and eastward to the Chinese border. Occasionally he worked together with Georgi and Pallas. Lerche kept Linnæus informed of the activities of the expedition leaders including Falck.

During the expedition Falck accumulated large collections, and his notes bear witness to enormous, even maniacal work. The years in the field, however, eventually broke him down completely. In 1773 he started out on his return journey to St. Petersburg. The astronomer Anders Johan Lexell informed Linnæus in a letter that Falck had spent the entire winter in Kazan and first came on his feet again when Pallas arrived there and got him to make a courtesy visit to the governor. Lexell further recounted that Falck intended to travel to Georgia to make use of the warm springs.

Falck spent the summer at the spa in Kizlar. September 1, 1773 he wrote to the Academy of Science in Petersburg that he was ready to travel and intended to leave for Georgia in the hope that his health would be improved there, according to Lexell's letter to Linnæus.¹² Then there was silence from Falck. Lerche wrote to Linnæus that from

Map of the exploration expeditions organized by the Academy of Sciences in St. Petersburg 1720–1780. The map shows, among others, the itineraries of D. G. Messerschmidt 1720, Johan Gottlieb Gmelin Sr. 1733, Peter Simon Pallas 1768, Johan Peter Falck 1768, Ivan Ivanovich Lepekhin 1768, Johann Anton Gldenstdt 1768, Nikolai Petrovich Rychkov 1769, Johan Gottlieb Georgi 1770 and Vassili Fiodorovich Zuev 1781 (From Falck Vol. 1, 1785).

LANDKARTE
 ZUR
 ÜBERSICHT
 der
 Acad. Reisen
 im
 Ruß. Reich

- Erklärung
 der Farben und Zeichen
 der Reisezeit 1792.
 ———— 1793-1795.
 ———— 1796-1798.
 ———— 1799-1801.
 ———— 1802-1804.
 ———— 1805-1807.
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 ———— 2030-2032.
 ———— 2033-2035.
 ———— 2036-2038.
 ———— 2039-2041.
 ———— 2042-2044.
 ———— 2045-2047.
 ———— 2048-2050.



Falck nothing is heard at all, except that he should now be on his return journey from the warm springs at Kizlar, which he made use of last summer. If that has freed him from his poor health and hypochondria, we know ever so little, not even how long he has come, as he does not correspond with anyone here.¹³

Falck returned to Kazan where he became bed-ridden, had hallucinations, and was plagued by anxiety. In order to ameliorate his pangs of anxiety he took opium, which, however, dampened his appetite. When Georgi, who had known Falck in Uppsala, arrived in Kazan in March 1774, he found Falck emaciated, demoralized, and extremely nervous. Everyone avoided him, because all company made him uneasy. Falck could speak only with Georgi. Lexell relates that Georgi visited Falck for the third time March 31 and found that he had locked himself in, but Georgi made himself known, was let in, and talked with him. During the conversation Falck became increasingly cheerful and spoke with a great deal of sense and clarity on a variety of topics. When Georgi left Falck, the latter paced back and forth and told his hunter to go and lie down. At four o'clock the hunter returned, and Falck was still alive then. But half an hour later, when a female servant brought in his tea, she found that Falck had fallen over in bed and was dead. Under him lay a razor blade with which he had first made an opening in his throat and a pistol with which he shot himself to death. The shot had entered his throat and gone out through his neck.¹⁴ Georgi has himself provided an eye-witness account which confirms Lexell's information in the letter to Linnæus:

I visited him often and was also with him the last evening until midnight. He spoke a little, but said nothing of importance. His hunter, who was, moreover, his faithful servant, wanted to wake him during the night, but he would not allow it.

When on the morning of March 31 I was called to his lodgings at 5 o'clock, I found him lying in his blood. Beside him lay a penknife, with which he had made a little wound in his throat, the fatal pistol, and a cone filled with powder. It was a horrible sight. He had placed the mouth of the pistol under his throat and the end of the stock against the bed, and thus fired the shot. The bullet had gone through his head up into the ceiling of the room. At 4 o'clock his soldier had seen him still awake in the bed in which he usually slept. In his room was found a confused note written the day before, but no document or anything of importance.¹⁵

Lexell explains his detailed description of Falck's suicide in a letter to Linnæus as follows:

The tenderness which Herr Arkiatern had for him has caused me to believe that I ought neither to be silent concerning the event nor the circumstances surrounding it, although I think that they may disturb His excellency Herr Arkiatern, as they made a very strong impression upon me, who had no other connection with Falck than that he was a fellow countryman. Although such a deed can in no way be acceptable, I

suspect that few have been in such wretched condition as Falck, before they have made such a dreadful decision. God, before whose judgement he stands, will try his deed according to the intent, and people must remain silent.¹⁶

We know nothing more of Linnæus' reaction to Falck's death. He had, however, worked for the appointment of Falck for an honorary doctorate at Uppsala in 1772, the news of which never reached Falck. Linnæus' son also named a plant genus, *Falckia*, for him.

Georgi took care of the large collection of specimens and manuscripts which Falck had taken with him to Kazan and saw to it that they came to the Academy of Science in St. Petersburg. It was intended that Erik Laxman, who also corresponded with Linnæus, should work with and publish the material. Nothing came of it, and in 1780, when Laxman was appointed a member of the Ministry of Mines in Nerčinski zavod in eastern Siberia, the Academy gave the task to Georgi. With great care Georgi edited Falck's diverse and often abbreviated notes to three thick (a total of nearly 1000 pages) and significant volumes. Georgi also made use of Falck's notes in his own work on the various peoples in the Russian Empire, in which some descriptions from Falck's work are cited nearly verbatim.¹⁷ The first volume of *Beyträge* ... gives a chronological account of the journey, while the second and third volumes, which have consecutive pagination, consist of descriptions of minerals, plants, and animals, as well as exhaustive descriptions of the Siberian and Central Asiatic peoples, arranged according to subject. Similar to his master, Falck strove to obtain a total perspective: "to carefully observe everything, not as the simple masses, the common crowd, the multitudes do, but so that nothing escapes his sharp sight and curiosity."¹⁸ The first part of *Beyträge* ... also concludes with a diary from the journey authored by Falck's fellow traveler, the assistant physician Christoph Bar-danes.

Apparently not all of the Falck material was published. According to Fries a comprehensive collection of Falck's notes is preserved in the archives of the Russian Academy of Science in Leningrad.¹⁹ This probably consists of the material that comprised the basis for *Beyträge* ... Nor has Falck's correspondence with the Academy been made public. Valuable material probably exists that may increase knowledge of Falck's life. Hopefully the Soviet authorities will make it possible for Swedish scholars to study the contents of the Falck material or for Soviet researchers to work with the materials.

The account of Falck's journey does not appear to have received a great deal of attention following its publication. As Sten Lindroth has correctly pointed out,²⁰ Pallas, Gmelin, and Georgi had published their books first, the

market was saturated, and Falck had nothing sensational to add. A similar fate was suffered by other contemporary expedition leaders, such as Lepekhin, Güldenstädt, and Rychkov, whose travel accounts have also fallen into total oblivion.²¹

Even if Falck's *Beyträge* ... lacks the literary merits of the work of Linnæus, it is just this fact-filled style that we appreciate today. As a student of Linnæus, Falck was especially interested in what could be economically useful. *Beyträge* ... is therefore a goldmine of information on the significance of different types of plants and animals for various ethnic groups.²² A great number of plants and animals useful for human beings are named here. Falck also noted the local terms for nearly all of the animals and plants he found. In addition to Russians and Cossacks, it was, above all, the various Turkic folk groups with whom he came into contact. The book therefore contains detailed ethnographic descriptions of these various Turkic peoples. He also recorded a large number of Turkic glosses, especially the names for plants and animals. There are also terms for plants and animals in Russian, Siberian Russian, Armenian, Circassian, Kalmyk, Votyak, Ostyak (=Selkupian), and, in some cases, even Tangutic (=Tibetan), Mongolian, Georgian, Chechen, Ukrainian, Persian, and Ossetian.

Falck's *Beyträge* ... has not been totally ignored by linguists. The German Altaic scholar Gerhard Doerfer has published Falck's Kalmyk Mongolian glosses and thus given them the following rating: "Die viele in diesem Werk enthaltenen von einem Fachman gesammelten Termini technici sind besonders wertvoll."²³

The same may be said of the significantly greater number of Turkic terms which Falck provides. Although Falck was first of all a natural scientist, there are witnesses to the fact that recording ethnographic information in his free time was a great source of amusement for him.²⁴

In addition to the fact that Falck's notes are of great ethnographic value, the words that he recorded are of much linguistic interest. Few later chroniclers of dialects have had his knowledge of botany and zoology and have therefore been able to correctly attribute these words. Furthermore, Falck's records comprise an important source for the history of words.²⁵ Several of the dialects of which Falck gives examples were first documented during the current century. Because of their closeness to wild animals either as hunters or as herders, Turkic peoples frequently used euphemisms for animals.²⁶ In certain situations many types of animals can not be called by their correct name; that is taboo. Rather, they must be described with circumlocutions. Furthermore, out of respect for her husband's kin, a woman should neither

use words related to his name nor to his clan. Thus some Turkic and also Mongolian peoples have developed a special female language.²⁷ As Zelenin has noted, the replacement words are seldom particularly old, and within the same language there are often several words for the same thing. One explanation is that these replacements soon also become taboo. There are many names for animals in Falck's notes which undoubtedly are euphemisms and thus are important contributions to research in this fascinating area, which in spite of the comprehensive literature is far from exhausted.

All of the Turkic words are presented below. Falck's orthography has been retained, and I have left the German endings. In some cases Falck provides translations to German which are presented here in parentheses clothed in their original language.

The Turkic Peoples Described

The third volume of *Beyträge* . . . provides a detailed description of the various Turkic folk groups with whom Falck came in touch.

The **Chuvash** were said to live in the province of **Kazan**.²⁸ They spoke a language which is distantly related to the other Turkic languages. During Falck's day it was classified as a Finno-Ugrian language. Falck gave numerous names for plants and animals in that then little-known language.²⁹

Settled Tatars, according to Falck, resided in various parts of the Russian Empire in separate villages and slobods as well as in Russian towns.³⁰ Falck distinguished several different Tatar groups. These divisions followed regional lines rather than ethnic distinctions. On the other hand they were essentially different from one another linguistically.³¹ In the Soviet Union today they are commonly categorized as Tatars with a common **Kazan Tatar** written language. In *Beyträge* . . . Tatars are described as follows:

The **Kazan Tatars** were said to have originated from The Golden Horde and once made up the inhabitants of the **Khanate of Kazan**. In Falck's day the Tatars who lived dispersed in Orenburg, Ufa, **Kasimov**, and most of the towns in Russia were **Kazan Tatars**.

Astrakhan Tatars were said to live near the **Terek River** and were descendants of the **Nogai Horde**.

Siberian Tatars were found in **Turai**, **Tobolsk**, and **Tomsk**, according to Falck.

The **Mountain Tatars** (*Gornii Tatari*) in the **Caucasus**, according to Falck, differed from the other Tatars in language and temperament.³²

Falck states that the settled Tatars lived in log cabins similar to those of

the Russians.³³ In the interior of the hut there was a wide bench, *urunduk*, which served as table, bed, and chair and which in the homes of the wealthy Tatars was covered with rugs, while the poor used felt covers. There was an open hearth, *tshuwal*, together with an iron kettle which was bricked in, *tagan*, and some chests which contained clothing and utensils. Falck described in detail the Tatars' clothing, marriage customs, institution of the brides' price, calendar, religion, and various customs associated with the seasonal cycles. He counted 134 different names for men and 40 for women among the settled Tatars. As examples of male names, he cited Alischa, Jakob, Senschop, Aripp, Mustapha, Ibrahim, Afam, Isak, Mosa, David, Abdela, Arslan, Saluk, Asai, Bati, Usbek, Ismael, and Tolboi. He exemplified women's names with Elima, Sakiba, Mylka, Solbi, Rakila, and Akuk.

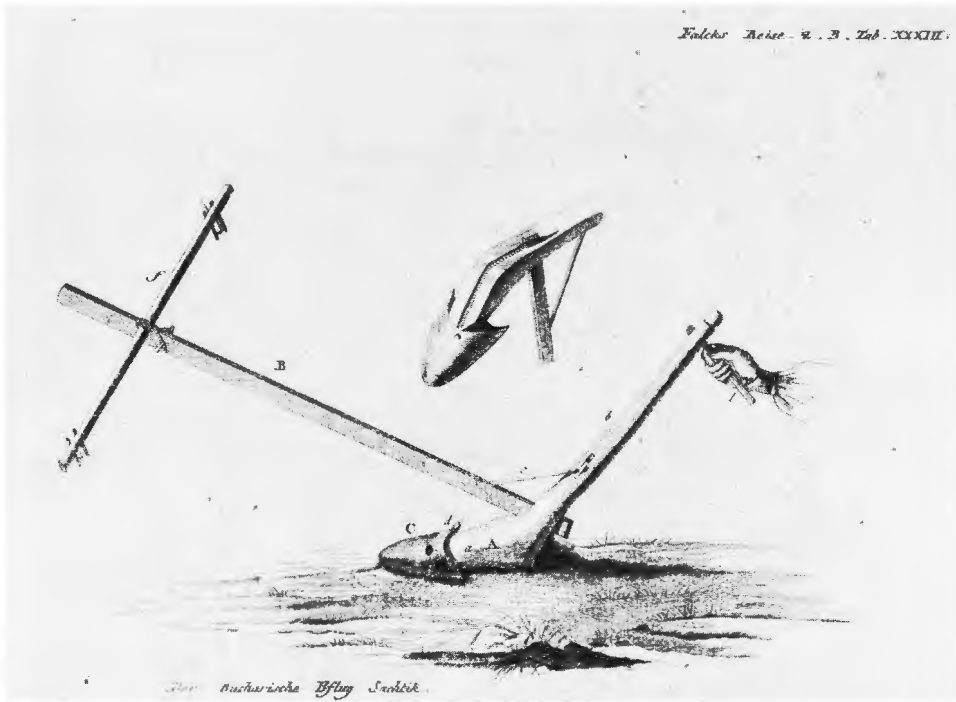
The concept of purity among the Tatars was dealt with in a long section. He states that they considered themselves unclean if their skin or only their clothing was soiled by dung; if they touched wild or carnivorous animals, amphibians, or insects or dead livestock and particularly dead humans; if mice or something similar died in their food and they ate from it; or if they ate the meat of pigs, dogs, or other impure animals or even pure animals that had been strangled or had died. They also considered themselves unclean if they had not yet bathed after having sexual intercourse with their wives or if they had not washed after eating.

The **Tyumen Tatars** who, according to Falck, cultivated the land, so-called tribute Tatars (*Jasaschnii Tatar*), were found in separate villages nearby as well as in the city of Tyumen.³⁴

Tara Tatars were said to be living in their own villages in Tara.

Lower Tomsk Tatars were Moslem cattle herders in Tomsk and in separate villages between the Tom and the Ob. According to Falck, there were as many as about 500 men who were liable for taxes.

Kuban Tatars³⁵ referred to themselves as *Chaser* and *Kitschi Nagoi* (sic). Their most prominent *mursen*³⁶ were the Arslam, Bekowa, Kiptschak, Mangutewa, and Naschrusowa families.³⁷ These Tatars lived in small winter villages, and during the summer they wandered as nomads. Falck recorded that they had sheep (some had up to 3,000), horses, beef cattle, and camels. They produced butter and cheese. Lamb was an important food. They also cultivated a little land, for which they used a large plow, *saba*,³⁸ that was drawn by eight oxen. Tobacco was grown, among other things. The Kuban Tatars were also said to be good archers, and they knew how to smelt and work with iron. They also produced good Turkish flint. The women prepared wool; sheep and lamb skins were tanned.

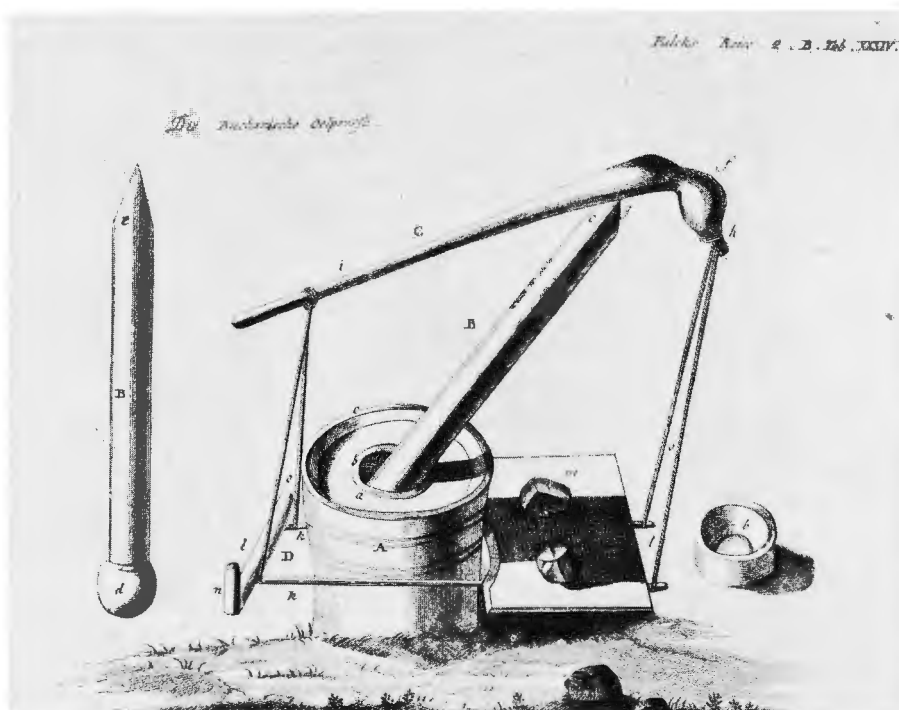


Bokharan plow. From J. P. Falck, Beyträge zur Topographischen Kenntniss des Russischen Reichs, St Petersburg 1785–86.

The **Bokharan**³⁹ lived in Bokhara. The Bokharan colonies were also recorded in Tomsk, Tobolsk, Tara (205 in the city itself and in ten surrounding villages a total of 669 men liable for taxation), Tyumen (602 men liable for taxation), and in the provinces of Iset and Ufa. In addition to the term which they used to describe themselves, Bokharan, Falck recorded that they were called *Sart* (*Kaufleute*)⁴⁰ in the cities, but that they were also named after their home tracts, for example, *Akshaer*, *Jerkener*, and *Kasgarer*.⁴¹

Falck enthusiastically told of the Bokharans and the Bokharan political organization and history, the clothing of the Bokharan infantry, the housing of the people, their food customs, hygiene, customs, and illnesses. He named a parasite infection, unique to the Bokharans, which they called *reschta* or *raschta*.⁴² It was described as a hair-like worm up to three feet in length which lived encapsuled in muscles. When it finally pierced the skin, it could be grasped and carefully removed by winding it up on a twig. Falck erroneously called the worm *Gordius aquaticus*.⁴³

He furthermore described Bokharan agriculture and a long line of cultivat-



Bokharan oil-press. From Falck 1785-86.

ed plants, such as, cotton (*pachta*), melon (*kawuk*), safflower (*saranyso*), hemp (*kaneb*), flax (*sager*), tobacco (*tamak*), madder (*kajan*, *kujan*, *urajan*), and opium poppies (*kukenar*).⁴⁴ He especially dwelt upon the significant cotton cultivation and the important silkworm breeding which were described in detail.

Falck reported that the Bokharans were very tolerant towards other folk groups who lived among them. They were allowed freedom of religion and the freedom to conduct their affairs. One group which he especially named was the *Uzbek* who inhabited several small villages. They belonged to the same people as the Bokharans and practiced the same religion, but had a special political structure and household organization. Their relationship to the Bokharans was analogous to that of the Cossacks to the Russians. As did the Cossacks, the Uzbeks provided military services rather than paying taxes. The other people in Bokhara were the Jews (*Djuhut*), Indians, Persians, Armenians, Arabs,⁴⁵ Moors (*Habasch*),⁴⁶ and Truchmens. The Gypsies (*Djugi*)⁴⁷ were, according to Falck, numerous in Bokhara and lived, as was their custom, in moveable tents near towns and villages. He reported that they spoke their own gibberish of which he unfortunately gave no examples.



Bashkir woman in summer dress. From Falck 1785–86.

They had many horses which they traded, and they presented themselves as fortune tellers and horse doctors. They bought horses that were sick, cured them, and later sold them again. Falck reported that Gypsies, as elsewhere, were lazy, dissolute, and deceitful rabble and the dregs among Mohammad's followers.

The **Masang** comprise another interesting Gypsy-like folk group that, according to Falck, was of Indian origin.⁴⁸ They were not great in number, and their language was Bokharian. The *Lulli*,⁴⁹ a similar group, were reported to be Muslims of unknown origin and were considered somewhat better than the Gypsies. They were reported to have procuration and bargaining as their major sources of income—something which the Khan of Bokhara had forbidden them.

The **Khivan** (*Chiwinsen*), according to Falck, referred to themselves as *Chiweli*, but, as did the Bokharans, also called themselves after their places of birth, for example, *Hasaner* and *Chanacker*. They were similar to the Bokhar-



Mishär woman in summer dress. From Falck 1785–86.

ans in all ways, and Falck considered them with certainty to be an Uzbek-Tatar tribe.⁵⁰ He stated, however, that the Khivan had poorer schools and were consequently more uneducated, uncivilized, disloyal and even lazier and dirtier than the Bokharans. Their number was as great as 80,000. Falck described the history, political structure, diets, agriculture, and industry of Khiva. The Khivans were more intolerant of other peoples than the Bokharans.

The **Truckmen** were, according to Falck, true nomadic Moslem Tatars who wandered along the coast of the Caspian Sea. He reported that they were divided into two Hordes, the *Ayralian* with 30,000–40,000 households and the *Takajamian* with about 5,000 households. The Truckmen were nomadic herders of camels and horses.

The **Karakalpaks** inhabited the northern side of the Aral Sea as far as Kunargentsk. Since 1743 they had comprised a horde led by Saltan Aitschowach.⁵¹ The Karakalpaks were herders who possessed mainly cattle.

According to Falck, The **Bashkir** referred to themselves as *Baschkurt*, derived from the words *Basch*, “head,” and *kurt*, “bee”, because they had always been beekeepers.⁵² The Bashkir were said to be divided into *Nogai* and *Siberian Bashkir*. The former lived in Ufa Province and in 1770 comprised 23,880 households, while the Siberian Bashkirs were found in Kathrinburg Province and totaled 3,118 households. According to Falck there were also significant Bashkir villages in the province of Perm. He gave a thorough account of their most important sources of income: cattle herding, bee keeping, hunting, and agriculture.⁵³

When Falck described the *Metscherjäken*, he was probably referring to the **Michär Tatars**, who were tatarized Meshcheryaks (a mixture of Slavic peoples) from Ufa province.

The **Baraba Tatars** lived in the Baraba Desert. According to Falck they called themselves *Barama* or *Baraba*, while they referred to the Russians as *Urus*,⁵⁴ the Kazaks as *Kasak*, the Kalmyks as *Kalmak*, and the Ostyaks as *Ischtäk*.⁵⁵

Taxes were levied on the Baraba Tatars for 2,316 men. They made their living as herders and in the summertime lived in beehive-shaped summer yurts, *tamak ugli* (*genehete Stube*), while they occupied small huts, *kabischu bru*, made of light blocks during the winter. Falck described their clothing, their herding, and their system of reckoning time. Furthermore, the book presents a large number of animal and plant names in this little documented Tatar dialect.

According to the custom of his time, Falck called the **Kazakhs**, *Kirgiz*.⁵⁶ He stated that they were divided into three hordes which lived on the vast Kazakh Steppe. The Larger Horde was called *Koerger* (*Leute der Wildnisse*); the Middle and the Lesser Hordes called themselves *Kir Kasak*, derived from *kir* (*Wüste*) and *kasak* (*Wagehals*). Falck later stated that the Larger Horde was usually called *Burutten* and that it did not have any close association with the other hordes.

Falck gave a thorough presentation of the social organization, the defense, the nomad tents, the clothing, foods, and ceremonies of the Middle and the Lesser Hordes. The hunt and the care of household animals, cattle, sheep, horses and camels were carefully described. The **Kazakhs** kept primarily the Bactrian camels, *aire tye*, but highly valued the dromedaries, *narr tye*, which they considered able to run faster, bear heavier burdens, and survive longer without water and fodder. The camels, on the other hand, were richer in wool and thus not only more useful, but also more tolerant of the cold. Yarn was spun from the camel wool, and *armäk*, a kind of camlet.



Kazakh man belonging to the Middle Horde. From Falck 1785–86.

Mambet, Mergen, Dalantu, Dschumagul, Chadir, Bektimir, and Baytemir were given as examples of men's names. Among the women's names mentioned were Tschobdara, Makpol, Aislu, and Mirwut.

Circumcision was conducted by an *Abdal* who continually wandered around.⁵⁷ A sheep was received as payment for "each stamp of orthodoxy." Falck also described the Kazakh shaman, *baksa*, and his duties.⁵⁸

Burutten was specially treated in a short chapter. They made up the Larger Horde and were referred to by the Middle and the Lesser Hordes as *Ulat Dshius*.⁵⁹ According to Falck they called themselves *Brut Erdenä*.

The **Chulym Tatars** inhabited the area around the Chulym River and its tributaries and the rivers Černa and Beloi Yjus. For administrative purposes

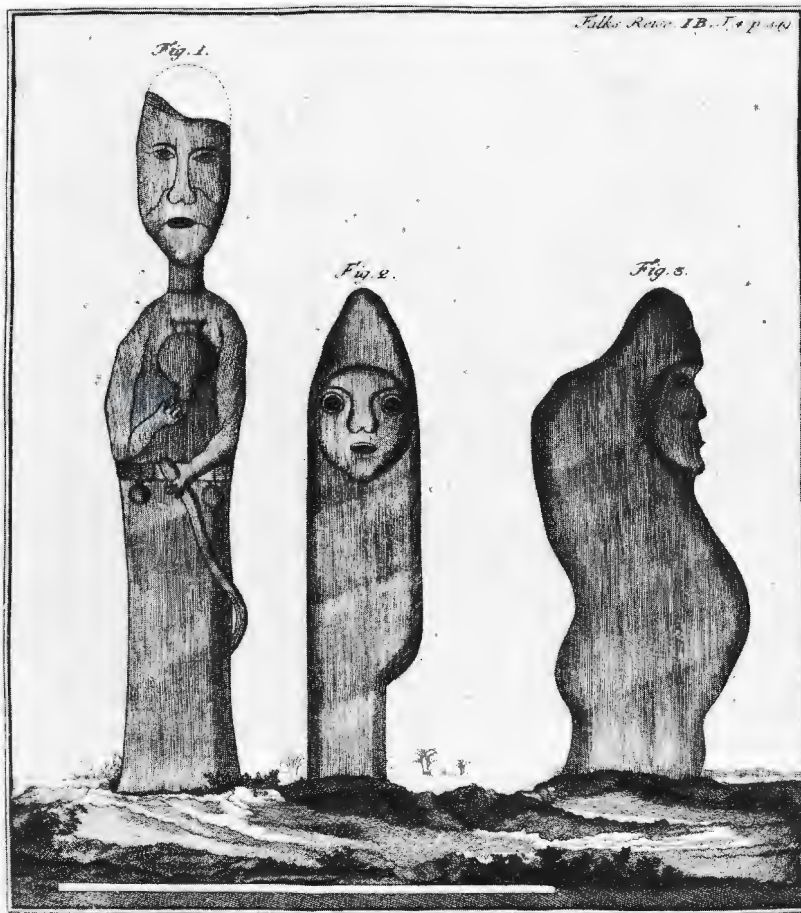


Kazakh woman from the noble class. From Falck 1785-86.

these Tatars were divided into a number of so-called *jon* or *djon* which were recorded by Falck. They made their living primarily as fishermen and hunters. Many also cultivated a little land, but only a few raised cows and sheep. The Chulym Tatars ate primarily fish. Falck also provided some information on their method of reckoning time.

In Barnaul, Kuznetsk and Tomsk, Falck became acquainted with the **Kacha** near the Abakan and other tributaries of the Yenisey River.⁶⁰ They were herders with horses and numerous sheep, while cattle made up about one-fourth of their livestock.

The **Teleut**, also called *Telengut*, are a Turkic people who were subdued by the Jungars (Falck called them *Soongoren*) and therefore moved to Russian territory. Among them about 5,000 persons were liable to taxation. Originally cattle herders, after their flight they cultivated the soil in increasing numbers. Hunting still played an important role. Falck stated further that



Stone idols made of red sandstone. These were observed by Falck in the Kuznetsk county. Fig. 1 was found on the bank of Černo Yjus; Fig. 2-3 was standing at Aksha brook near the Abakan River. The Soyots called them *Kasan Kis Tasch* (1) and *Kurtajak Tasch* (2-3), respectively, i.e. 'the girl stone' and 'old woman stone.' From Falck 1785-86.

they were "shamanists" and gave a short description of their religion and their sacrificial rites.

The **Soyot** (*Sajanischen Tataren, Sajaizen*) were nomads who wandered with their horses, sheep, and cattle. They lived along the border in the foothills of the Siberian mountains which are a continuation of the Altai. The Soyots were only partially Russian subjects. They were nomads living in felt yurts, had small herds, and often ate wild roots, but did not differ much in diet, clothing, customs, and "shamanistic heresies" from the Kacha. The Soyots

were said to have fine horses for which a good price was paid, and their fat oxen were highly valued. Many Soyots had become wealthy from the sale of livestock.

The account of the various Turkic peoples was concluded with a glossary which is given here *in extenso*:

<i>Words</i>	<i>Kazan Tatar</i>	<i>Kazakh</i>	<i>Bokharan</i> ⁶¹
Eins	Berr	The Kazakhs	Jaki
Zwey	Ike	use the same	Du
Drey	Otsch	numerals as	Se
Vier	Dort	the Tatars	Tschar
Fünf	Bisch		Pansi
Sechs	Alta		Schisch
Sieben	Ide		Haft
Acht	Sekes		Hasch
Neun	Tokos		Nu
Zehn	On		Da
Elf	On Ber		Josda
Zwölf	On Ike		Duarda
Zwanzig	Igerme		Bist
Dreyssig	Otes		Sujak
Vierzig	Kork		Tschit
Funfzig	Ille		Pansja
Sechszig	Altmosch		Schaft
Siebenzig	Ietmesch		Haftat
Achtzig	Seisan		Haschtot
Neunzig	Toisan		Nawat
Hundert	Jos		Sot
Zweyhundert	Ikcjos		
Tausend	Meng		Hassar
Gott	Alla		
Teufel	Schaitan		
Wolken		Bulut	
Wind	Jil	Djel	
Hagel		Burschak	
Regen	Jangor	Djamgur	
Thau		Krau	
Nebel		Tuman	
Regenbogen		Chorgasak	
Donner		Kunkur Karaset	
Blitz		Kunkur Otscheget	
Sonne		Kun	
Mond		Ai	
Sterne		Djuldus	
Heitere Luft		Aschek kun	

Trübes Wetter		Bulutu kun	
Tag		Kundus	
Morgen		Ertan	
Morgenröthe		Tangatat	
Mittag		Jarem Kun	
Abend		Keschtin Gurun	
Nacht		Tyn	
Früling	Jasbasch	Djasga Turu	
Sommer	Jass	Djasdun Kune	
Herbst	Kös	Kusdun Kun	
Winter	Kosil	Kistun Kun	
Feuer	Ot		
Hisse	Bik	Essak	
Feuerzeug	Otlok		
Zunder		Cho	
Kält	Sok	Souk	
Wasser		Su	
Eis		Mus	
Meer		Tengis	
Salzsee		Tusdukul	
See	Kul	Kul	Kul
Fluss	Inesch	Ulkunsu	
Bach	Jelga	Kitschansu	
Quelle	Kislaw	Bulak Su	
Berg	Tau		
Steppe		Tschöt	Tschöt
Insul	Aol		
Salzplatz	Asa	Aschli Djer	
Erde		Toprak	
Sand	Kum	Kum	
Thon		Batsak	
Stein	Tasch		
Salz	Toss	Tuss	
Gold		Altin	
Kupfer			Miss
Eisen	Temir	Kisse	
Baum	Agatsch	Katen Kisse	
Strauch	Nogetlek	Tschal	
Holz	Otan	Kamper	
Saamen	Jarma	Atam	
Mensch		Tschesche	
Frauenzimmer			
Greiss	Karl		
Alte Frau	Kart Schak		
Vater	Otai		
Mutter	Onai		

Sohn	Ulom	Meneng Bolan	
Tochter	Kassom	Meneny Kassem	
Knâbe	Lannar	Erkek Bala	
Jungfer	Kass	Kas	
Bruder	Agai	Agem	
Schwester	Tatai	Apte	
Hausherr		Baj	
Held		Batyr	
Kopf	Basch	Bas	
Augen	Kys	Kuss	
Ohren	Kulak	Kulak	
Nase	Bruun	Burun	
Mund	Aos	Aus	
Zähne	Tiss		
Bart	Sakal	Sakal	
Hand	Kolow		
Finger	Barmak		
Füsse	Ajak	Bakai	
Schaam	Djun		
Männlich			
Zeugungsglied	Kotak	Kotok	
Weibliches	Am	Am	
Knochen		Syjok	
Haut		Tera	
Haar		Tschasch	
Urin		Sied	
Unrath		Bak	
Kameel		Tye	
Pferd	Aht	At	
Kuh	Ser	Sir	
Schaaf	Koi	Ugus	
Ziege	Kodsia	Egakoi	
Esel	Ischek	Ischek	
Hund	It		
Schwein	Dongis		
Wolle		Djuna	
Heerde		Tabun	
Fisch	Balik	Balik	
Stadt	Tura	Kent	Schot
Dorf	Aul	Aul	Kant
Jurte oder Zelt		Tirma	
Stube	Sba		
Landstrasse	Djot (sic)		
Schüssel	Saitabak	Tuwuk	Tawak
Kessel	Kasan	Kasan	Deg
Löffel	Kaschek	Kosek	Kaschek

Beil		Suku	Tubar
Messer	Bzak	Pschak	Kart
Sattel	Jer	Jer	
Bogen		Dja	
Pfeil		Ok	
Flinte		Moltak	
Schiespulver		Dare	
Säbel		Kelisch	
Lanze		Noisa	
Harnisch		Saut	
Fleisch	Uet	Et	
Milch	Katak	Süd	Schir
Käse	Krut	Kurot	Kurt
Butter	Sermis	Maj	
Talg		Tano May	
Roth	Kisil		
Schwarz	Kara		
Weiss	Ak		
Bunt	Tschubar		

The modern scientific nomenclature has been provided for all the types of plants and animals as far as it has been possible to do so. The following abbreviations have been used for the Turkic glosses:

Barab. = Baraba,	Bashk. = Bashkir,	Chuv. = Chuvash,
Kaz. = Kazakh,	Bokh. = Bokharan,	Khiv. = Khivan,
Tat. = Tatar,	Tel. = Teleut,	Kuban. = Kuban Tatar (Noghay),
Sib. Tat. = Siberian Tatar,	Türk. = Truchmen?,	Kach. = Kacha.

Obvious typographical errors have been left uncorrected.

Plants

Salicornia herbacea = Marsh Sampshire, Salicornia herbacea

Kaz. *Sorokisch Tschup* (*Roth Salpeterkraut*)

Iris sibirica = Siberian Iris, Iris sibirica

Tat. *Kukmaras*

Kaz. *Dshilan Schiaptak* (*Schlangenheil*)

Falck reported that the Siberiaks, particularly the Tara Tatars, crushed the yellow (sic) flowers together with a little alum. The mixture was placed in simmering water, and in the boiling brew they dyed the small boys' shirts. The greenish-yellow color of the shirts made washing unnecessary. Accord-

ing to Christoph Bardanes the Kazakhs placed freshly crossed blossoms with “superstitious gestures” on snake and tarantula bites.

Scirpus lacustris = Club-rush, *Scirpus lacustris*

Barab. *Kagatsak*

Kaz. *Kuha*

Because the Baraba Tatars did not have wool, they braided or bound these plants with parallel straws from rushes to form a yurtcloth or tentcloth, which served as a felt cover. The Arals and Khivans wove sails or rushes. The Bokharans and Khivans braided rushes around each melon or pumpkin, so that they might be hung from the inner roof of the huts for the winter.

Scirpus Holoschoenus = Round-headed Club-rush, *Scirpus holoschoenus*

Kaz. *Hochum*

Panicum viride = Green Cat-tail millet, *Panicum viridis*

Green Cat-tail millet was sown on the poor soil of the Orenburg Steppes and cut by the Tatars for their horses.

Agrostis arundinacea = Reed Grass, *Calamagrostis arundinacea*

Kaz. *Tschiu*

Stipa pennata = Feather Grass, *Stipa pennata*

Tat. *Kolhan*

Kaz. *Ak Kudil* (*weisser Kudil*)

Stipa capillata = Hairy Grass, *Stipa capillata*

Kaz. *Kara Kudil* (*schwarze Kudil*)

Arundo phragmites = Common Reed, *Phragmites communis*

Tat. *Dgigan*

If one dug down two or three feet where reeds grew, sweet potable water soon gathered, a possibility which, according to Falck, travelers and peoples of the steppes did not allow to go unused.

Galium-species = Bedstraws, *Galium* spec.

All of them have red, fibrous, heavily dying roots, which are gathered, not only by the Russians, but also by the Votyaks, Mordvins, Tatars, Bashkirs, Kalmyks, and practically all other peoples. The bedstraws are dried in order to be used for dying wool and linen. The roots are called *Kisil Bojan* (*rothe Farbe*), independent of sort, by the Tatars.

Rubia tinctorum = Madder, *Rubia tinctorum*

Tat. *Bujan*

Türk. *Kermesa Buja*

Bokh. *Kajan, Kujan Uradan*

Madder is said to be an important plant for cultivation and trade in Siberia and Caucasia. In Bokhara it often grows wild, but for the factories it is sowed and replanted a year later. Only in the third or fourth year is it dug up for use.

Plantago major = Plantain, *Plantago major*

Kaz. *Bako Dsiape*

The crushed leaves together with tallow from the Saiga are used as salve.

Cornus mascula = Cornelian Cherry, *Cornus mas*

Tat. *Tschum*

Kuban., Türk. *Kisil Tschikir*

Cornus sanguinea = Red Dogwood, *Cornus sanguinea*

Tat. *Tschubak, Kara Bolan*

Cornus alba = Tatarian Dogwood, *Cornus alba*

Tat. *Schagutsch*; by Irtysh it is called *Kisil Subok, Schaitan Subok*

Barab. *Metscher*

Trapa natans = Water Chestnut, *Trapa natans*

Tat. *Tscholym*

When the Kalmyks and the Kazakhs are roaming around on the steppes for several days, they may eat only water chestnuts. The chestnuts are also cooked together with meat and gathered for the winter. They are usually roasted on hot coals and eaten as snacks.

Elaeagnus angustifolius = Russian Olive, *Elaeagnus angustifolius*

Tat. *Djigda, Dschigda*

Türk. *Jyda*

Bokh. *Djengerduk*

Khiv. *Djigerdak*

In Bokhara and Khiva this tree is planted even more abundantly than in Terek. They are planted in orchards and through fermentation a kind of wine is produced from the fruits. This can be distilled in exactly the same way as the Kalmyks distilled kumyss.

Alchemilla vulgaris = Common Lady's-mantle, *Alchemilla vulgaris*

Kaz. *Kas Dschabrak (Gänsekrout)*

Pulmonaria officinalis = Hound's-Tongue, *Cynoglossum officinale*

Tat. *Koiwiek*

Onosma echiioides = Golden Drop, *Onosma echiioides*

Kaz. *Tambu* (*Jungfernwurzel*)

The Kazakh women produce rouge from the roots. They rub their cheeks with the roots or produce a saturated tincture from a mixture of the root, water, and alun, which they thereafter apply to their cheeks.

Menyanthes nymphoides = Bogbean, *Menyanthes trifoliata*

Kaz. *Tombyjok*

Convolvulus sepium = Sea Bindweed, *Calystegia sepium*

Tat. *Tschermak*

Campanula lilifolia = Lily-Leaved Ladybell, *Adenophora liliifolia*

Barab. *Atlik*

The parsnip-like, white, mealy and well-tasting roots are collected by the Baraba Tatars for the winter supply. The roots are cooked with or without meat.

Lonicera tatarica = Tatarian Honeysuckle, *Lonicera tatarica*

Tat. *Selpe*

Barab. *Jabyshkau*

Kach. *Taggus*

Teleut. *Upstera*

Lonicera xylosteum = Fly Honeysuckle, *Lonicera xylosteum*

Tat. *Selpe*

Kaz. *Salupe*

The Tatars eat the berries, which they call *ignii*. The Kazakhs produce kurbashes from the branches.

Lonicera caerulea = Blue Honeysuckle, *Lonicera caerulea*

Tat. *Schilbe*

Bokh. *Otkkil*

Rhamnus cathartica = Buckthorn, *Rhamnus cathartica*

Tat. *Tschu Murt*

Rhamnus lycioides = *Rhamnus pallasii*

Tat. *Karganik*, *Kurganik*

Rhamnus frangula = Glossy Buckthorn, *Rhamnus frangula*

Kaz. *Tschumart*

Rhamnus paliurus = Christ's-thorn, *Paliurus spina-christi*

Tat. *Kara Tegerek*

Ribes rubrum = Red Currant, *Ribes rubrum*

Tat. *Kisliagatsch*

Barab., Kach. *Kisilgol*

Türk. *Kisiluk Muk*

Ribes nigrum = Black Currant, *Ribes nigrum*

Tat., Bashk., Barab., Kaz. *Karagat*

In Siberia, the Russians and the Tatars use the leaves in kvas, because of their healing effects. Even the smoke from the leaves is supposed to be pleasant.

Periploca graeca = Silk-Vine, *Periploca graeca*

Tat. *Sar Modam*

Salsola tamariscifolia and other *Salsola*-species

The Tatars and the Kalmyks in Astrakhan, as well as the Tatars, Armenians, and Georgians in Terek, use these and other salt-plants, such as *Statice*, *Artimisis*, *Tamariscus*, etc., to produce soda, in Tatar *kalakar*. Falck gives a short description of the process.

Ulmus campestris = Field Elm, *Ulmus campestris*

Tat. *Kirema*, *Karama*, *Jonka*

Chuv. *Choroma*, *Jama*

Teleut *Iso Agatsch*

Bokh. *Udan Agatsch*

Ulmus pumila = Siberian Elm, *Ulmus pumila*

Türk. *Karagatsch*

Tat. *Elme*

Eryngium campestre = Field Eryngo, *Eryngium campestre*

Tat. *Kuskon Mosil*

Daucus Carota = Wild Carrot, *Daucus carota*

The roots are called *Schita* in Tatar, and *Sargi* in Chuvash.

Peucedanum officinale = Common Hog's-Fennel, *Peucedanum officinale*

Kaz. *Akurai Diak* (*weisse Kamelröhre*)

Heracleum Sphondylium = Hogweed, *Heracleum sphondylium*

Tat., Barab., Bashk. *Baltirgan*

Angelica sylvestris = Wild Angelica, *Angelica sylvestris*

Bashk. *Schuma*

Rhus Cotinus = Common Smoke Tree, *Cotinus coggygia*

Tat. *Sara Agatsch*

Viburnum Lantana = Wayfaring Tree, Viburnum lantana

Tat., Türk. *Germeschek, Bitat*

Viburnum Opulus = Guelder Rose, Viburnum opulus

Tat., Barab., Bashk. *Bolan*

Kaz. *Asar Masa, Tschingis*

Kach. *Schangis*

Teleut. *Schangis Agatsch*

Chuv. *Polan*

Sambucus racemosa = Red Elder, Sambucus racemosa

Tat. *Usul Agatsch*

Tamarix gallica = French Tamarisk, Tamarix gallica

Tat. *Jelgun*

Kaz. *Dschaeugüt*

Bokh. *Tscholgan*

Khiv. *Dungu*

Linum usitatissimum = Flax, Linum usitatissimum

Tat., Türk. *Kilen*

Chuv. *Jidyn*

Allium Victorialis = Long-rooted Onion, Allium victoralis

Tat. *Juwa*

The Tatars eat the bulbs of this plant.

Allium oleracum = Field Garlic, Allium oleracum

Tat. *Djua*

Allium Cepa = Garden Onion, Allium cepa

Tat., Türk. *Soghan, Zugar*

Chuv. *Suhan*

Lilium pomponium = Red Lily, Lilium pomponium

Tat. *Saranna*

Lilium Martagon = Martagon Lily, Lilium martagon

Tat. *Saranna*

The term *Saranna* is known by all peoples in Siberia. To distinguish it from the preceding species, it is called *Tschep Sarana*. All Siberian peoples eat the bulbs with meat or cooked separately in milk or water. The bulbs are also collected for the winter. But so do the steppe-voles who can gather 10–15 pounds of the bulbs. Their nests are therefore plundered by the nomads, both because there are a lot of bulbs in the nests and because the bulbs collected by the voles are of the best quality.⁶²

Erythronium Dens Canis = Dog's Tooth Violet, *Erythronium dens-canis*
Tat., Kach. *Kandik*

Tulipa sylvestris = Wild Tulip, *Tulipa sylvestris*
Tat. *Karagatsch*
Bokh. *Lala*

Tulipa Gesneriana = Garden Tulip, *Tulipa gesneriana*
Tat. *Karagatsch*

Tulipa biflora = Wild tulip, *Tulipa biflora*
Tat. *Karagatsch*

Ornithogalum luteum = Gagea, *Gagea lutea*
The Siberian Tatars eat its bulbs and gather them for winter storage.

Hemerocallis flava = Lemon Day Lily, *Hemerocallis flava*
Tat. *Akelug*

The leaves provide warmth and softness in boots and under saddles. The Tatars knit good, strong rugs of the tough leaves.

Acorus Calamus = Sweet Flag, *Acorus calamus*
Tat. *Jir*
Kaz. *Jekin*
Bokh. *Eger*

The Bokharans use the fresh roots as a drug for all kind of chest-diseases, including phthisis. It is made by laying the roots on the warm ashes after which the skin can be removed and the root mashed to a drug.

Berberis vulgaris = Barberry, *Berberis vulgaris*
Bokh. *Sirch*, *Sirch Modun*

The roots and branches are used for a pure dye by the Bokharans.

Rumex acutus = Curled Dock, *Rumex crispus* X *obtusifolius*
Tat. *Sier Kuiruk*
Kaz. *Akkulak*

The Kazakhs use the roots for tanning and dying. To produce dye the roots are cooked together with birch leaves and a small amount of alum.

Rumex Acetosa = Garden Sorrel, *Rumex acetosa*
Tat. *Kusgalak*
Bashk. *Kuschkulok*, *Kermischlik*
Kaz. *Kumirlik*, *Kumisdok*

The leaves are utilized as food by all peoples in Russia.

Epilobium angustifolium = Rosebay Willow-Herb, *Epilobium angustifolium*

Tat. *Karamuk*
Bashk. *Kisil Ol*

Vaccinium Myrtyllus = Bilberry, *Vaccinium myrtilus*

Tat. *Kara Bulagei*
Bashk. *Kara Kugai, Kara Kubugei*

Vaccinium uliginosum = Bog-Berry, *Vaccinium uliginosum*

Barab. *Djilek*
Tat. *Kuk Tsia, Dier Tschestek*
Kach. *Tulga*

Vaccinium Vitis Idea = Cowberry, *Vaccinium vitis-idaea*

Tat. *Kisil Kubeged, Molt, Karagastschi*

Vaccinium Oxycocos = Cranberry, *Oxycoccus quadripetalus*

Tat. *Sasch Jemesch Karagat*
Teleut. *Sasch Tschestek*
Barab. *Tumagus*

All *Vaccinium*-species are commonly eaten as food by people in Russia and Siberia. Cowberries and cranberries are used in kvas.

Daphne Mezereum = Mezeron, *Daphne mezereum*

Tat. *Boja*

The Tatars take the berries for coughs. The berries cause increased coughing which soon cures the malady.

Polygonum frutescens = *Atrophaxis frutescens*

Kaz. *Itsigaek*

Polygonum aviculare = Knotgrass, *Polygonum aviculare*

Tat. *Alyknas*

Polygonum tataricum = Wild Buckwheat, *Fagopyrum tataricum*

Tat. *Kyrlik, Dikuscha*

Near Abakan and Yenisei the so-called “Krachnojars Tatars” commonly collect them in great quantities for their own use.⁶³

Polygonum Fagopyrum = Buckwheat, *Fagopyrum esculentum*

Tat. *Kara Bogdai, Karabdai*
Chuv. *Chura Dula*

Polygonum acidum = *Polygonum persicaria*

Bashk. *Kamyslik*

Butomus umbellatus = Flowering Rush, *Butomus umbellatus*

Kaz. *Tiin Bas*

Ledum palustre = Ledum, Ledum palustre

Barab. *Joschin*

Bashk. *Tschuschir*

Sedum Telephium = Orpine, Sedum telephium

Tat. *Kantibaer*

Lychnis chalcedonica = Maltese Cross Campion, Lychnis chalcedonica

Tat. *Obazin*

Nitraria Schoberi = Niterbush, Nitraria schoberi

Kaz. *Diesengir*

Portulaca oleraca = Purslane, Portulaca oleracea

Tat. *Kara Ot, Semosat*

Amygdalus nana = Russian Almond, Prunus tenella

Tat. *Nogot*

Chuv. *Nuchtaw*

Prunus Padus = Bird-Cherry, Prunus padus

Tat. *Jumurt agatsch, Mojel, Tschumurt*

Bashk. *Tschumart*

Prunus Cerasus v. pumila = Cherry, Prunus cerasus

Bashk. *Siö*

Bokh. *Tsia*

Prunus domesticus = Plum, Prunus domesticus

Tat., Türk. *Erik*

Prunus spinosa = Blackthorn, Prunus spinosa

Tat. *Kagun*

Crataegus Oxyacantha = Hawthorn, Crataegus oxyacanthus

Tat. *To Agatsch, Jubeskan*

Teleut. *Tolonna*

Kaz. *Tolonna, Dologa*

Bokh. *Dolna*

The Kalmyks and the Kazakhs eat the berries raw but also make jelly of them.

Sorbus acuparius = Rowan, Sorbus aucuparia

Tat. *Melesch, Kindritsch*

Chuv. *Pilesch*

Bashk. *Sagale Agatsch*

Mespilus germanica = Medlar, Mespilus germanica

Tat. *Ojus Jemisch*

Türk. *Mus Mela*

Mespilus Cotoneaster = Wild Cotoneaster, *Mespilius cotoneaster*

Tat., Bokh. *Irga, Irgai*

Bashk. *Bonschla Tschebga*

Pyrus Malus = Crab Apple, *Malus silvestris*

Tat. *Almagatsch*

Chuv. *Almagus*

Spiraea chamaedrifolia = Germander Spirea, *Spiraea chamaedryfolia*

Tat. *Tawalga, Tawolga*

Spiraea crenata = Snow Spirea, *Spiraea crenata*

Tat. *Tawalga*

Kaz. *Tabulga*

Chuv. *Towolha*

Teleut. *Tabuljah*

Spiraea Ulmaria = Queen-of-the-Meadow, *Pilependula ulmaria*

Tat. *Jarma Bäsch*

Baschk. *Direkulan*

Rosa villosa = Apple Rose, *Rosa villosa*

Barab. *Taganak*

Rosa canina = Dog Rose, *Rosa canina*

Tat., Kaz., Teleut., Bokh. *Tockme Gul*

Rubus Idæus = Raspberry, *Rubus idaeus*

Tat. *Tschestek, Uptschero, Umese*

Bashk. *Kura Silaga*

Teleut. *Kuperei*

Rubus fruticosus = Blackberry, *Rubus fruticosa*

Tat. *Kupanos*

Bashk. *Karagar*

Kaz. *Kara Bildurgan*

Rubus saxatilis = Stone Bramble, *Rubus saxatilis*

Tat. *Kusergil Tolkis, Tschertak*

Bashk. *Burlugon*

Rubus arcticus = Arctic Bramble, *Rubus arcticus*

Tat. *Kustischi*

Rubus Chamaemorus = Cloudberry, *Rubus chamaemorus*

Tat. *Marak, Murak*

Fragaria vesca = Strawberry, *Fragaria vesca*

Tat. *Oilan*, *Kük Tschischek*

Bashk. *Silag*

Capparis spinosa = Caper, *Capparis spinosa*

Tat. *Dier Karan*

Bokh. *Kibir*, *Kabar*

Nymphaea lutea = Yellow Water-Lily, *Nuphar advena*

Bashk. *Tombojuk*

Nymphaea alba = White Water-Lily, *Nymphaea alba*

Bokh. *Nelusa*, *Tellpa*

Tilia europaea = Lime-Tree, *Tilia europaea*

Tat. *Djuga*, *Juka*

Bashk. *Siuka*, *Schuka*

Chuv. *Suga*

Paeonia officinalis = Peony, *Paeonia officinalis*

Tat. *Tschigenak*

Teleut. *Tscheina*

Falck states that the southern Siberian peoples, especially the Sayans, make porridge of the roots, or, more seldom, mix them with meat. They also collected them for the winter. Falck tried them himself and found them a little bit strong, but if they were boiled twice and the first water discarded, the taste was milder.

Calligonum polygonoides = *Calligonum*, *Calligonum polygonoides*

Kaz. *Torlok*, *Turluk*, *Torlik*

Tat. *Jusgun*, *Djusgun*

Curly growths as big as fists often develop on the main root. The Kalmyks and Kazakhs carve small household articles, cups, etc. from them.

Delphinium elatum = Alpine Larkspur, *Delphinium elatum*

The Kazakhs sprinkle seeds that have been crushed between stones down the arms and necks of their furcoats as a joke.

Aconitum Lycoctonum = Wolfsbane Monkshord, *Aconitum lycoctonum*

The Russians and the Tatars bandage wounds and even broken bones with the fresh, fragmented roots.

Anemone Pulsatilla = Pasque Flower, *Pulsatilla vulgaris*

Kaz. *Sortschup*

Atragena alpina = Alpine Clematis, *Clematis sibirica*

Tat. *Zurgamysch*

Origanum vulgare = Marjoram, *Origanum vulgare*

Tat. *Kaus Baun*

Many Tatars use the leaves as tea.

Thymus Serpyllum = Wild Thyme, *Thymus serpyllum*

Bashk. *Tschista Busaun*

Cochlearia Armoracia = Horse-Radish, *Armoracia rusticana*

Tat. *Tabiran*

Alyssum clypeatum = Fibigia, *Fibigia clypeata*

Tat. *Kaschek Buran*

Lathyrus pratensis = Meadow Pea, *Lathyrus pratensis*

Kaz. *Die Oty*

Vicia Cracca = Tufted Vetch, *Vicia cracca*

The Kazakhs have noticed that the horses not only appreciate this vetch. When it is abundant, it also quickly fattens the animals.

Cicer arietinum = Chick-Pea, *Cicer arietinum*

Türk. *Nachunt, Nachius*

It is grown in Bokhara.

Robinia Caragana = False Acasia, *Robinia caragana*

Tat. *Karagan, Schapoi Agatsch*

Teleut. *Karagan*

Robinia spinosa = Pea Tree, *Caragana spinosa*

Kaz. *Kurkulduk*

Robinia frutescens = *Caragana frutex*

Kaz. *Thengil*

Robinia pygmaea = *Caragana jubata* f. *pygmæa*

Kaz. *Bus Karagan*

Glycyrrhiza glabra = Common Licorice, *Glycyrrhiza glabra*

Kaz. *Kutle, Bja Tamer*

Bokh. *Tschuschu Mya*

From the offshoots or the fruits the Kalmyks and the Kazakhs produce their most common tea, which both call *Age Tschai* and which is made with water and milk, usually with salt and butter added.⁶⁴

Leontodon Taraxacum = Dandelion, *Taraxacum officinale*

Tat. *Skuthigan*

Crepis sibirica = Siberian Hawk's Beard, *Crepis sibirica*

Tat. *Tragan Kupscha, Kuwas*

Bashk. *Kade*

Barab. *Käke*

Arctium Lappa = Burdock, *Arctium lappa*

Tat. *Kurmanck, Tschen*

Chuv. *Korschanga*

Serratula tinctoria = Saw-Wort, *Serratula tinctoria*

Tat. *Japrak*

Bashk. *Tymewasch*

Kaz. *Sara Kurai*

Serratula arvensis = Thistle, *Carduus arvensis*

Tat. *Kawlak*

Artemisia Abrotanum = Southernwood, *Artemisia abrotanum*

Kaz. *Duktschusan*

The Kazakhs crush the fresh leaves and mix them with a solution of sheep lard to produce a universal salve.

Achillea Millefolium = Common Yarrow, *Achillea millefolium*

Kaz. *Schrischkan*

Orchis Morio = Salep, *Orchis morio*

This is very common in Bokhara where it is called *Salab*. Landlords of inns buy the bulbs and dry, roast and grind them like coffee. Using the flour with hot water they brew a potion which is served by the cup. It is supposed to give strength in the hot climate. Using it too much, however, leads to nerve-feebleness.

Cypripedium Calceolus = European Lady's-Slipper, *Cypripedium calceolus*

Tat. *Kauk Jantschick (Kukucks-Tasche)*

Calla palustris = Bog Arum, *Calla palustris*

Bashk. *Jurmadan*

Typha latifolia = Great Reedmace, *Typha latifolia*

Tat., Bashk. *Igan, Irgan, Dietse*

The poor nomads braid rugs from the stems in order to cover their yurts and camping places. The reeds are laid out parallel and are bound together with the leaves. The reeds are braided to form containers for pumpkins and

melons by the Bokharans so that the fruit might be hung from the inner roof of the huts.

Betula alba = Birch, *Betula alba*

Tat. *Kain, Sirak, Baju*

Chuv. *Chorum*

Betula Alnus = Grey Alder, *Alnus incana*

Tat. *Serek, Sirek, Makar Agatsch*

Bashk. *Dierek*

Bokh. *Sirk*

Buxus sempervirens = Box, *Buxus sempervirens*

Türk., Mountain Tat. *Tschemtschir*

Urtica dioica = Nettle, *Urtica dioica*

Tat. *Schalkan Kinder, Ketscherkan*

Bashk. *Ketskan, Ksetkan*

Kaz. *Kirtken, Seisir*

Barab. *Parma*

Chuv. *Wildren*

To the Bashkirs, Baraba Tatars, Ostyaks, and several other Siberian peoples, nettles replace cultivated hemp. During the autumn they pick the faded stems, reap and dry them in small bunches, and thereafter soften them by stamping between stones or in a wooden mortar. The nettles are then cleaned of chaff, and thereafter spun into a thread on a distaff or woven on small and very simple looms to 1/2–3/4 *Arschin* broad linen cloths, which are boiled in ash-lye and thereafter bleached. The thread and the cloth are coarse, but very strong.

Urtica cannabina = Siberian Nettle, *Urtica cannabina*

The Bashkirs use it as the nettles are used, but regard it as better, partly because it is larger and more common, and partly because it gives a richer linen.

Morus tatarica = Mulberry, *Morus tatarica*

Tat., Türk. *Dut*

Bokh. *Jisma*

Quercus Robur = Common Oak, *Quercus robur*

Tat. *Eman Agatsch*

Bashk. *Iman*

Chuv. *Tuma*

Fagus sylvatica = Beech, *Fagus sylvatica*

Tat., Türk. *Tschinar*

Corylus Avellana = Hazel, *Corylus avellana*

Tat. *Tschättäng*

Bashk. *Tschek Laur*

Türk. *Frandik*

Plantanus orientalis = Oriental Plane, *Platanus orientalis*

Tat., Bokh., Khiv. *Tschinar*

Pinus sylvestris = Pine, *Pinus silvestris*

Tat., Bashk., Barab., Kaz. *Karagai*, *Nurat*

Pinus Cembra = Swiss Stone Pine, *Pinus cembra*

Tat., Barab. *Kusuk*, *Kussuk*, *Kussak*

Pinus Larix = Siberian Larch, *Larix decidua*

Tat. *Til Agatsch*, *Tut*

Barab. *Tet*

Bashk. *Kisil Karagas*

Pinus Picea = Silver Fir, *Abies alba*

Tat. *Tschibe*, *Akscharsche*

Bashk. *Ak Tirsche*

Telut. *Tschite*

Pinus Abies = Norway Spruce, *Picea abies*

Tat. *Tegan*

Teleut. *Tagen*

Bashk., Chuv. *Tschirsche*, *Sirsche*

In the spring all firs yield a resin-like gum, both spontaneously and due to the fires, which occur in many forest areas. This gum is gathered especially by the Bashkirs. Resin from the Norway spruce is called *karagai dan*, from Larch *kisil karagai dan*, from Silver Fir *narat kapkara*, and from the Red Spruce *scherschie kapkara*. They make cakes from the resin by mixing it with water and heating it over a fire. These cakes are sold per pud to Bokharan and Russian merchants. For one pud 30 to 40 kopek is paid. For several years, however, no trade has occurred, and therefore the gathering of resin has ceased.

Pinus orientalis = Oriental Spruce, *Picea orientalis*

Tat., Kaz., Bokh., Khiv. *Seraul*, *Sakaul*, *Sokaul*

Thuja occidentalis = White Cedar, *Thuja occidentalis*

The Mountain Tatars used its wood to cover coffins.

Cucumis acutangulus = *Sinkwa Towel Gourd*, *Luffa acutangula*

Tat. *Turi*

Salix fusca, *S. Caprea*, *S. cinerea*, *S. alba*, etc.

The Willow-species are called *tal agatsch* by the Tatars, *kara tal* by the Bashkirs and *turanga* by the Bokharans.

Hippophæ Rhamnoides = Sea Buckthorn, Hippophae rhamnoides
Teleut. *Schiderban*

Pistacia Therebinthus = Turpentine Tree, Pistacia terebinthus
Bokh. *Fisda*

The Bokharans eat its fruits as sweets and produce a kind of black dye from the gall.

Cannabis sativa = Hemp, Cannabis sativa
Barab., Bashk., Tat., Teleut. *Kinder, Kendirosch, Torma*
Chuv. *Kandyr*

Near Terek the Cossack and Tatar women gather hemp in autumn when seeds are produced in larger quantities. The hemp stems are put in small bunches and soaked in water for 48 hours; they are dried completely and then soaked again for 48 hours. Thereafter, having dried completely, they become tender, and the bark substance can be removed from the bast, which is swingled, heckled and spun and thereby transformed to a thread and linen. The Bashkirs, Baraba Tatars, etc. also utilize the wild hemp, but they treat it in the same way as nettles.

In Bokhara oil is produced from the seeds. *Bang* is also used as an inebriant. *Bang* is produced from the dried and pulverized female flowers and is smoked or mixed in drinks.

Humulus Lupulus = Hop, Humulus lupulus
Tat. *Kumulak, Kumudak, Kulmak*
Chuv. *Kumula*

Populus alba = White Poplar, Populus alba
Tat., Bashk. *Ak Terek*
Bokh. *Agge Terek*
Kaz. *Ak Usak*
Teleut. *Jas Terek*

Populus tremula = Aspen, Populus tremula
Tat. *Apsal*
Teleut. *Apsaik Agatsch*
Kaz. *Kirek Aksak*
Chuv. *Uwai*

Populus nigra = Black Poplar, Populus nigra
Tat., Kaz. *Akscha*
Bokh. *Ulassen Terek* (a variety is called *Hschar Terek*)

Populus balsamifera = Balsam Poplar, *Populus balsamifera*
Tat. *Maj*

Juniperus Sabina = Savin, *Juniperus sabina*
Tat. *Artersch, Arschan Agatsch*
Teleut. *Arschan*
Kaz. *Arschan, Tschagar*

The Tatars smoke the branches for medical and superstitious reasons, and the Kazakhs use the bush as firewood and as incense.

Juniperus communis = Juniper, *Juniperus communis*
Tat. *Atersch Agatsch*

Ephedra monostachia = Sea Grape, *Ephedra distachia*
Kaz. *Kisiltscha*

A decoction from this plant is a common chest medicine among Kazakhs.

Veratrum album = White False Helleborine, *Veratrum album*
Tat., Bashk. *Arerjack*

According to the Bashkirs sheep eat the free-air roots in spring, and many animals are killed this way. Other cattle find the taste awful, however.

Atriplex Halimus = *Atriplex halimus*
Tat. *Bol*

Atriplex portulacoides = Saltbush, *Halimione portulacoides*
Kaz. *Ala Buta*

Acer tataricum = Tatar Maple, *Acer tataricum*
Bashk., Tat. *Tschagan*

Acer Pseudo Platanus = Sycamore, *Acer pseudoplatanus*
Tat. *Oerga, Ak Telah*
Chuv. *Werena*

Acer campestre = Hedge Maple, *Acer campestre*
Tat., Türk. *Aktscha Agatsch*

Fraxinus excelsior = Ash, *Fraxinus excelsior*
Tat. *Guratsch Agatsch*

Osmunda Struthiopteris = *Matteuccia struthiopteris*
Tat. *Il Buganansch*

Lycopodium complanatum = *Lycopodium complanatum*
Bashk. *Seretna*

Agaricus muscaris = Fly Agaric, *Amanita muscaria*
Tat. *Muchamor*

Mammals

Talpa europaea = Mole, *Talpa europaea*

Barab. *Noman*

Bashk. *Kuschut*

Sorex moschatus = Russian Desman, *Desmana moschata*

Bashk. *Chuglyro*

Tat. *Su Dupar*

The musquash-scented tails are also called *Su Dupar* by the Bokharans.

Vespertilio murinus = Frosted Bat, *Vespertilio murinus*

Barab. *Popur*

Bakh. *Schapulak*

Kaz. *Dshjarganar*

Tat. *Djarkant*

Bashk. *Milguse*

Ursus Arctos = Brown Bear, *Ursus arctos*

Tat., Barab., Bashk., Kaz., Teleut. *Aju, Aja*

Kaz. *Kurganit Kiik*

Teleut. *Aba, Schakschek*

Bokh. *Ajech*⁶⁵

Noble Kazakhs sleep on bear skin. All people in Siberia, including the Mohammedans, eat bear meat. Falck also states that many people regarded the bear as sacred, and they told fables about it. According to Kazakh beliefs, at one point the bear was a Khan who aspired to his own daughter. Thanks to her prayers, the father was turned into a bear. He ran away to the wilderness where he is still ashamed of his faults and his metamorphosis.⁶⁶

Falck also briefly describes the techniques used among the various Siberian peoples for hunting bears. He also describes the bear-club the Bashkirs use to protect their beehives.⁶⁷

Ursus Meles = Badger, *Meles meles*

Bashk. *Barsuk*

Barab., Bokh., Kaz. *Borsuk*

Tat. *Borsch*

According to Falck the Kazakhs kill the badger by beating it with a whip. The fur is used, among other things, to cover quivers and flint-locks.

Erinaceus europæus = Hedgehog, *Erinaceus europæus*

Tat. *Kigu, Kerpe, Kerge*

Kaz. *Kirpi*

Chuv. *Tscherei*

Erinaceus sibiricus = Long-Eared Hedgehog, *Hemiechinus auritus*
Kaz. *Kirpitschitschin*

Sus Scrofa & *Aper* = Wild Boar, *Sus scrofa*
Tat., Kaz., Bashk. *Donjus*, *Jelan Donjus*
Kaz. *Tscharscha*
Teleut. *Kakaja*
Chuv. *Susna*

The Kalmyks hunt the wild boar for meat, while the Kazakhs, as Moham-medans, regard the boar as unclean and pursue it just for the pleasure of the hunt or because of intolerance.

Equus Caballus = Horse, *Equus caballus*
Tat. *Alacha* stallion: *Aiger*, mare: *Bia*
Bashk., Kaz. *Alascha* stallion: *At*, mare: *Bya*
Chuv. *Ut*, *Irga*

Equus Sylvestris = Wildhorse, *Equus ferus*
Tat., Bashk., Kaz. *Tarpan*, *Turpan*
Kaz. *Taga*, *Kis Taga*, *Kertaga*⁶⁸

According to a Kazakh fable, retold by Falck, the old man Bojan Bay was roaming around alone with his herd. In that way he himself became feral. After he died, his herds grew wild, and they are the forefathers of the contemporary wild horses. Falck is of the opinion that the wild horses are not indigenious but originate from the feral and run-away horses. The herds of the Kazakhs and other nomads are so large that horses may run away without being noticed.

Equus Asinus = Asian Wild Ass, *Equus hemionus*
Kaz., Bokh., Khiv. *Kulan*
Tat. *Baga Mural*

Falck says that their meat is very delicious and their skins sufficient as coats in warm areas. They are used mainly in Tashkent. Shagreen is produced from the skin, in Tatar called *baghri*, and in Bokharan *keimachl*, which is even better than that made of horse-skin.

Camelus Dromedarius & *ferus* = Dromedary, *Camelus dromedarius*
Tat., Kaz. *Duae*, *Kierk*
Bokh. *Tschöt Tuga*⁶⁹

Falck only discusses what he had heard about the wild and feral, one-humped camels. Among other things he states that the meat is very much appreciated, and the raw hides are bought by the Tashkent people, who know how to tan them.

Bos grunniens = Yak, *Bos mutus*

Bokh. *Katas* the bull: *Kajansch*, the cow: *Sarluk*

Two of Falck's elderly informants, the Taraic Bokharans Kembache and Titow, have seen herds of hundreds of yaks owned by the Kalmyk Khan Galdan Tscherin in Urga.⁷⁰ Falck has interviewed both these informants about the yaks and among other things they told him that its meat is well-tasting, has much fat, and produces large quantities of fat milk and somewhat tallowy butter.

Ovis Ammon = Argali, *Ovis ammon*

Tat. *Kirtaka*

Kaz. *Argaman*, *Kuldja*

Since it is so difficult to hunt wild sheep and as they are rare because of excessive hunting, their skin is worn as an exclusive furcoat by the Kazakhs. To kill a wild sheep gives the hunter a great deal the honor.

Capra Ibex = Ibex, *Capra ibex*

Tat., Kaz. the buck: *Tau Takia*, the goat: *Tau Itke*

Bokh. *Kara Koiruck* (*Schwartzschwanz*)

Antilope scytica = Saiga, *Saiga tatarica*

Tat. *Saiga*, *Saigak*

Kaz. *Akkük*

Cervus Alces = Elk, *Alces alces*

Tat., Bashk., Kaz., Barab., Teleut., Chuv. *Bulan*

Bokh. *Chowas*, *Kuk*

Khiv. *Sugun*

Cervus Elaphus = Reed Deer, *Cervus elaphus*

Tat. *Suun* the buck: *Buga* the hind: *Kerekschim*

Kaz. *Bogo Maral*

Bokh. *Goreschun*, *Mural*

Bashk. *Misches*

Cervus Tarandus = Reindeer, *Rangifer tarandus*

Tat. *Pschi*, *Akkuk*, *Juscha*

Barab., Bashk. *Juscha*, *Joscha*

Chuv. *Bulan*

Cervus Capreolus = Roe Deer, *Capreolus capreolus*

Tat., Barab., Kaz. *Ilek*

Teleut. *Aktuk*, *Ilik*

Bashk. *Akkin*

Kiv. *Kuk*

Bokh. *Ahu*

Moschus Moschiferus = Musk Deer, Moschus moschiferus

Teleut. *Tawarga*

Kaz. *Kudä*

Lepus timidus = Arctic Hare, Lepus timidus

Tat., Bashk. *Kojan, Kujan*

Kaz. *Kujak, Charkusch*

Bokh., Khiv. *Charkusch, Doolai*

Lepus alpinus = Mountain Hare (only color variations of Lepus timidus)

Lepus variabilis

Tat., Bashk., Barab. *Kojan, Kujan, Kojen*

Teleut. *Toloi, Tabuschkan*

Chuv. *Molgatsch*

Lepus Alpina = Northern Pika, Ochotona alpina

Lepus Ogotona

Tat. *Schadak*

Kaz. *Kyaekulak, Dyeglak (=Kameelohr)*

Lepus pusillus = Steppe Pika, Ochotona pusilla

Tat. *Tschotschok, Sulgan, Iltsitskan*

Bokh. *Julaman, Jelman, Kosajar*

Bashk. *Szäpzu, Temirse-Tselikan*

Kaz. *Kajan, Akkajan, Kik Kajan, Uslu Buran Tschkan*

Hystrix cristata = Porcupine, Hystrix cristata

Bokh. *Djaran*

Kaz. *Kirpitschitschin*

Glis Marmota = Bobak Marmot, Marmota bobak

Kaz. *Tuhur, Sahüre*

Bashk., Chuv. *Suwur*

Bokh. *Sugur*

Teleut. *Sur*

Tat. *Suru Surka*,⁷¹ *Schuljan, Kisilgal*

The Kazakhs hide near the marmot holes and shoot them with arrows.

Glis Cricetus = Common Hamster, Cricetus cricetus

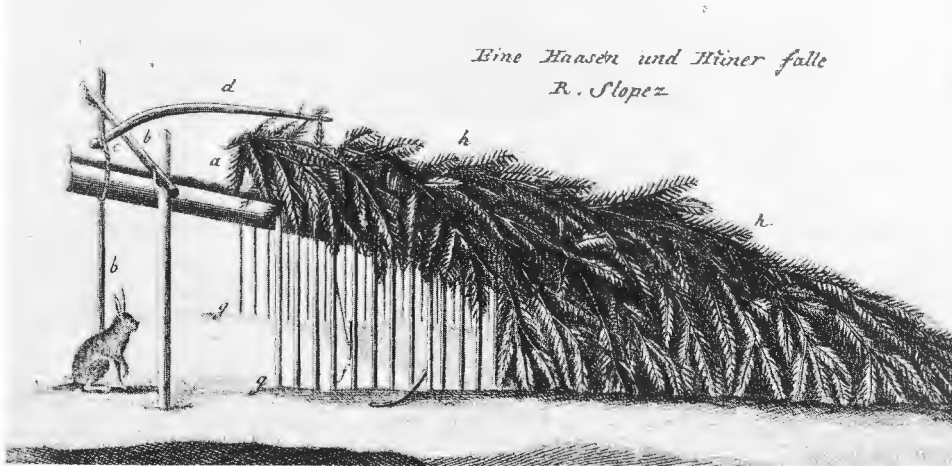
Tat. *Arlan, Surka*

Barab. *Arlan*

Bashk. *Bakuk*

This animal occurs in several color shades. The Black Hamster is called *Kara Jockstan* by the Kazakhs, a striped variety is called *Tschibar (der Bunte)* by the Bashkirs, and a grey variety with light cross-stripes is called *Arlan* by the Bashkirs.

Falcks Reise . 2 . B . T . XVIII .



Falck describes several ways of hunting hares. This trap is used by Russian and Settled Tatar hunters for catching hares and grouses. From Falck 1785–86.

Glis Citellus = Souslik, *Spermophilus citellus*

Bashk. *Jemuran*, *Jumuran*, *Kasuk*
Tat. *Schumron*, *Schömran*, *Dschumra*
Kaz. *Sakildan-Tschkan*
Chuv. *Tirgas*

Glis Lagurus = Steppe Lemming, *Lagurus lagurus*

Tat. *Dshitkis Zizchan* (*Wanderm Maus*)

Glis oeconomicus = Root Vole, *Microtus oeconomicus*

The Baraba Tatars and other Sibriaks search for the Root Vole's stores called *kulem*, in order to pillage them. According to Falck these supplies may amount to 20–30 pounds of bulbs in many nests and may serve as human food.⁷²

Spalax major = Blind Mole Rat, *Spalax major*

Tat. *Jumeran*
Kaz. *Sokurtskan*, *Saker Tschitskan*

Spalax minor = Northern Mole-Vole, *Ellobius talpinus*

Tat., Bashk. *Sucher*, *Kara Tskan*
Kaz. *Sokur Kan*

Mus Rattus = House Rat, *Rattus rattus*

Tat. *Ulutskan*

Bashk. *Jemusan*

Mus amphibius = Water Vole, *Arvicola terrestris*

Kaz. *Schantchan*

Mus Musculus = House Mouse, *Mus musculus*

Tat. *Tskan*

Teleut. *Tschetschkan Kuschka*

Chuv. *Schuschi*

The white mouse is called *Ak Tschkan* (*Weisse Maus*) by the Kazakhs.

Jaculus orientalis = Jerboa, *Jaculus orientalis*⁷³

Kaz. *Tasch Arap Tschkan* (*Zweyfass*)⁷⁴

Bashk. *Jalman, Jelman*

Tat. *Akkik, Malin, Tya Jelman* (*Kameel Haase*)

Jaculus orientalis (sic) = Three-Toed Jerboa, *Dipus sagitta*

The Kazakhs and the Baraba Tatars dry Jerboas until hard, and on occasions of difficult births and gallstone attacks use them in pulverized form in a full nutshell. They claim their effect is indisputable.

Sciurus vulgaris = Red Squirrel, *Sciurus vulgaris*

Tat. *Tihn*

Kaz., Barab. *Kuk Tihn*

Chuv. *Pakscha, Bakscha*

Sciurus striatus = Chipmunk, *Tamias sibiricus*

Tat., Teleut. *Kuuruk*

Tat., Barab. *Kuerwik*

Bashk. *Kujarik*

Sciurus volans = Flying Squirrel, *Pteromys volans*

Tat. *Sotergan, Tian Schör*

Bashk. *Babergan, Schörtien*

Castor Fiber = Beaver, *Castor fiber*

Tat., Kaz., Bashk., Barab. *Kondus, Kundus*

Bokh. *Chungus*

The Tatars and other groups call the beaver-gall *dairah*.

Lutra vulgaris = Otter, *Lutra lutra*

Tat., Kaz. *Kama*

Bashk. *Kamak*

Barab. *Kamnau*

Bokh. *Sup*

Teleut. *Sukandu*
Kaz. *Surp Kondus*
Chuv. *Chuma*

The Barabins capture the Otter with snares.

Lutra minor = European Mink, *Mustela lutreola*

Tat., Bashk., Chuv. *Schäsška*
Tat. *Chuma, Norka*

Mustela Martes = Pine Marten, *Martes martes*

Tat., Bashk. *Susar*
Chuv. *Sysan, Suwsar*

Mustela Putorius = Polecat, *Mustela putorius*

Bashk. *Chok, Kuson*
Kaz. *Sas Kusön*
Bokh. *Garbi Hussak*
Teleut. *Schergelak*

Mustela Zibellina = Sable, *Martes zibellina*

Tat., Barab., Bashk., Kaz. *Kisch, Küşch*

Mustela sibirica = Siberian Weasel, *Mustela sibirica*

Tat. *Kulon, Kisil Kisch*
Barab. *Jelelak*

Mustela Erminea = Stoat, *Mustela erminea*

Tat. *Sosuk Sen*
Bashk., Barab. *Asch, As*
Kaz. *Akkies, Ak Tschizkan, Ak Tien*
Bokh. *Ilten*
Chuv. *Psora*

The stoat trap used by the Bashkirs, a kind of cross-bow trap, is described in detail by Falck.⁷⁵

Mustela nivalis = Weasel, *Mustela nivalis*

Bashk., Tat. *Latsa*
Kaz. *Astar, Ak Zchan*

Mustela Gulo = Wolverine, *Gulo gulo*

Tat. *Jeken*
Barab. *Chunu*
Teleut. *Kanu*

*Felis Uncia*⁷⁶ = Tiger, *Panthera felis*

Bokh. *Julbars*
Tat. *Awgansch*
Kaz. *Dsiulbars*, a variety is called *Siulensin*

Wealthy Kazakhs and Bokharans may gladly pay a good horse for a tiger skin, and that is why skins seldom come to Orenburg.

Felis Chaus = Jungle Cat, Felis chaus

Tat. *Malem*

Türk. *Kahra Kulak*

Felis Manul = Pallas' Cat, Felis manul

Bokh., Tat. *Manul*

Tat. *Malem*

The furs of the Manul are often sold in Orenburg and other Siberian market towns. It looks like the domestic cat but is wilder and as large as a fox. In Orenburg and Siberia 35–50 kopek may be paid for its skin.

Felis lynx = Lynx, Felis lynx

Tat., Bokh. *Selausen, Scheleusen*

Kaz., Khiv. *Irbis*⁷⁷

Teleut. *Ys*

Chuv. *Tal*

The Kazakhs call a somewhat larger variety *tschöwer*.

Canis Lupus = Wolf, Canis lupus

Bokh. *Tschana, Tschono*

Tat., Barab., Kaz. *Bura, Böre, Burje*⁷⁸

Kaz. *Kaschkur*

Chuv. *Kaschkar*

Bashk., Barab. *Karschan*

Canis Vulpes = Fox, Vulpes vulpes

Tat., Bokh., Barab. *Tulka, Tylke*

Bokh. *Kuba*

Bashk. *Tinlen*

Chuv. *Tilu*

A black or semiblack type is called *Arak Sys* by the Bashkirs.

Canis Corsac = Corsac Fox, Vulpes corsac

Tat., Kaz., Bashk., Barab., Bokh. *Korsak*

Kaz. *Korsak Charsun*

Canis aureus = Golden Jackal, Canis aureus

Tat. *Tschakal, Tschubolka*

Phoca vitulina = Caspian Seal, Pusa caspica

Kaz. *It Balak*

Birds

Falco Chrysaetos = Golden Eagle, Aquila chrysaëtus

Bokh. *Schunkar*

Bashk. *Arlaen*

Falco Beucocephalus (sic) = White-headed Sea Eagle, Haliaëtus leucocephalus

Kaz. *Ak Sangar, Ak Saltan (weisse Prinz)*

Distinguished Kazakhs buy them at high prices and train them for hunting. The Kazakhs put wing-quills from all kind of eagles on their arrows.

Falco fulvus = South European Golden Eagle, Aquila chrysaëtus fulva

Bashk. *Berkut*

Bokh., Kaz. *Bergut*

The Bashkirs domesticate their nestlings and sell them through exchange via Russian and Tatar traders to the Kazakhs in Orenburg, Troizh and other places. The Kazakhs pay a good horse for an untrained eagle, and for a well-trained eagle they may pay 2–3 horses. With trained eagles they hunt hare, antelope, fox, roedeer, hogs, and even wolves. This kind of hunting belongs to the greatest enjoyments among distinguished Kazakhs and Kalmyks, according to Falck.⁷⁹

Falco rusticalus = Gyr Falcon, Falco gyrfalco

Kaz. *Ak Kartschaga*

Falco Milvus = Red Kite, Milvus milvus

Bashk. *Tyidügune*

Barab. *Taulu Oaun*

Falco vespertinus = Red-Footed Falcon, Falco vespertinus

Bashk. *Jagalbai, Kuigunak*

Falco vespertinoides = Merlin, Falco columberius ssp.(?)

Bashk. *Jagalbai*

Falco Lanarius = Saker, Falco cherrug

Bachk. *Kara Tschiga*

Falco Haliaetus = Osprey, Pandion haliaëtus

Tat. *Kalmyrgei*

Falco Gyrfalco = Gyr Falcon, Falco gyrfalco altaicus (?)

Bashk. *Schunckar*

The Kazakhs rear them carefully.



A white goshawk. From Falck 1785–86.

Falco palumbarius = Goshawk, *Accipiter gentilis*

Bashk. *Kartsak*

Strix Bubo = Eagle Owl, *Bubo bubo*

Bashk. *Schumurt*

Kaz. *Dschiabolak*

The Kazakhs like to wear an owl feather when travelling and hunting, because they believe it protects against witchcraft and brings them luck when hunting and fighting. This belief has its background in a legend about the valiant, invincible and invulnerable warrior (*Batyr*) Bai Tibet who was finally beaten by a despised knight and wizard, and who, without the possibility of turning back, was enchanted and turned into an owl. The knight in the owl still complains of his misfortune.

Strix Nyctea = Snowy Owl, Nyctea scandiaca

Kaz. *Ak Uku*

Strix Ulula = Hawk Owl, Surnia ulula

Tat. *Jabalak*

Lanius Collurio = Redbacked Shrike, Lanius collurio

Tat. *Karsala Torgoi*

Lanius infaustus = Siberian Jay, Perisoreus infaustus

Tat. *Posparschek*

Corvus Corax = Raven, Corvus corax

Tat. *Kaskan*

Bashk. *Kark Karga*

Kaz. *Kara Gus Gun*

Chuv. *Chara Kurak*

Corvus Corone = Black Crow, Corvus corone

Tat. *Kuschum*

Chuv. *Ula Kulak*

Kaz. *Kara Karga*

Corvus Cornix = Grey Crow, Corvus cornix

Tat., Bashk., Kaz. *Karga*

Chuv. *Schar*

Corvus Monedula = Jackdaw, Corvus monedula

Tat. *Taan, Sages Kan, Tschanka*

Kaz. *Tschankoi*

Bashk. *Tzawka*

Chuv. *Tschanga*

Corvus glandarius = Jay, Garrulus glandarius

Bokh. *Karkara*

Corvus Pica = Magpie, Pica pica

Tat. *Saichan, Saikan*

Bashk. *Saskon*

Kaz. *Saus Char*

Chuv. *Tschujak*

Oriolus Galbula = Golden Oriole, Oriolus oriolus

Tat. *Sary Kugurtschida*

Bashk. *Sara Kusch*

Kaz. *Sary Sellen, Tagulduk*

Cuculus canorus = Cuckoo, *Cuculus canorus*

Tat. *Kauk*

Bashk., Kaz. *Kokuk*

Barab. *Kakuk*

Picus martius = Black Woodpecker, *Dryocopus martius*

Bashk. *Kara Tumert Kan*

Kaz. *Kara Tukurt Kan*

Picus viridis = Green Woodpecker, *Picus viridis*

Bashk. *Kara Tumert Kan* (sic)

Kaz. *Dschaschit Tukart Kan*

Picus medius = Middle Spotted Woodpecker, *Dendrocopus medius*

Tat. *Kartaschin Turga*

Bashk. *Ala Takurt Kan*

Picus varius = Great Spotted Woodpecker, *Dendrocopus major*

Bashk. *Tokran, Tumert-Kan*

Alcedo ispida = Kingfisher, *Alcedo atthis*

Kaz. *Kyz Gasch, Sukis Gasch*

Upupa Epops = Hoopoe, *Upupa epops*

Bashk. *Oesesut*

Anas Cygnus = Whooper Swan, *Cygnus cygnus*

Tat., Kaz., Bokh. *Akkö*

Barab. *Akkusch*

Bashk. *Akkosch*

Anas Tadorna = Shelduck, *Tadorna tadorna*

Bashk. *Turalakas*

Kaz. *It Alakas, Itala*

Anas fusca = Velvet Scoter, *Melanitta fusca*

Bashk. *Yrok*

Anas Rutila = Ruddy Shelduck, *Casarca ferruginea*

Bokh. *Kanger*

Kaz. *Kisil Kai (rothe Ente)*

Anas Anser a. ferus = Gryleg Goose, *Anser anser*

Tat. *Kas, Kikas*

Bashk. *Konger Kas*

Chuv. *Kaik Gus*

Anas erythropus = Lesser White-Fronted Goose, *Anser erythropus*

Bashk. *Karakas*

Anas clypeata = Shoveler, Anas clypeata

Tat. *Kaschek Buran*

Kaz. *Irok*

Anas Strepera = Gadwall, Anas strepera

Bashk. *Kugal*

Anas Clangula = Goldeneye, Bucephala clangula

Tat. *Schomja, Schumja*

Anas Penelops = Wigenom, Anas penelope

Bashk. *Tanbak*

Anas acuta = Pintail, Anas acuta

Kaz. *Kanthu Irok*

Anas Querquedula = Garganey, Anas querquedula

Kaz. *Tschirogai*

Anas Boschas = Domestic Duck, Anas platyrhynchos domesticus

Tat. *Kogal*

Anas Fuligula = Tufted Duck, Aythya fuligula

Tat. *Kurultak*

Anas Mersa = White-Headed Duck, Oxyura leucocephala

Bashk. *Airak Bajan*

Mergus Merganser = Gooseander, Mergus merganser

Bashk. *Urjak*

Barab. *Oransi*

Pelecanus Onocrotulus a. Orientalis = White Pelican, Pelecanus orientalis

Barab. *Ptiza Korlai* (sic)

Kaz. *Byrkasan*

Pelecanus Carbo = Comoran, Phalacrocorax carbo

Bashk. *Kara Bakla*

Colymbus areticus = Black-throated Diver, Gavia arctica

Tat. *Kussur*

Colymbus cristatus = Great Crested Grebe, Podiceps cristatus

Bashk. *Opkai*

Barab. *Orlagan*

Kaz. *Sigruk Momu*

Colymbus auritus = Slavonian Grebe, Podiceps auritus

Barab. *Orlagan*

The Barabins catch all kind of grebes and pluck the feathers from their undersides. These are tanned and sewn together into sacks, which are sold. In the year 1772 1–1 1/2 rubels were paid for such a sack in Tobolsk. Furcoats of belylskin are not only warm, they also stay dry. Such a furcoat lasts one winter. The Governor in Tobolsk offered such furcoats to the imprisoned officers from the Polish confederation, some of whom were very lightly clothed.⁸¹

Larus canus = Common Gull, *Larus canus*

Tat. *Ak Sardak*, *Kul Chan* (*Seefürst*)

Bokh. *Tscherbak*

Sterna Hirundo = Common Stern, *Sterna hirundo*

Tat. *Tscharlik*

Kaz. *Karabasch Tschagala*

Barab. *Kaluschkan*

Phoenicopterus ruber = Greater Flamingo, *Phoenicopterus ruber*

Kaz. *Kisil Kas*

Platalea Leucorodia = Spoonbill, *Platalea leucorodia*

Tat. *Urdek*

Bashk., Kaz. *Schabala Bujun*

Ardea Virgo = Demoiselle Crane, *Anthropoides virgo*

Kaz. *Kaskarale Turne*, *Su Turne*

Since this crane is very shy, approaching it is very difficult. Therefore the Kazakhs dig a hole near its nest and cover the hole with straw. There they sit and watch with their arrows ready. In order to attract the crane near the nest, the Kazakh hunter ties a small dog, which is seen by the crane as a beast of prey and a threat to its nestlings. When the crane comes to drive away the dog, the hunter shoots the bird and pulls it down in the hole. Soon afterwards the bird's mate comes and attacks the dog, and the hunter is able to shoot the other one. The hunter cuts off the black necks and all the nice and delicately feathered skin. A pair of such skins may be sold for two or three beautiful horses.

The skins are stuffed, and by means of a wrapped up stick they are given the form of a bent horn. The daughters of distinguished Kazakhs bind such horns to their caps (*takia*), so that the crossed horns are bent a little backward. Such horns are not only decoration but also a sign of belonging to the noble class.

Ardea Grus = Crane, *Grus grus*

Bashk., Barab., Kaz. *Turna*

Scolopax Phaeopus = Whimbrel, Numenius phaeopus
Barab. *Kyylde*

Scolopax Limosa = Black-Tailed Godwit, Limosa limosa
Bashk. *Tan*

Tringa Pugnax = Ruff, Philomachus pugnax
Bashk. *Turnik Tun*

Tringa Vanellus = Lapwing, Vanellus vanellus
Bashk. *Sarkowul*
Kaz. *Kis Karlik*

Charadrius Hiaticula = Ringed Plover, Charadrius hiaticula
Bashk. *Sepsen*

Charadrius apricarius = Golden Plover, Pluvialis apricaria
Bashk. *Bakeldak, Barkeldak*

Charadrius Himantopus = Black-Winged Stilt, Himantopus himantopus
Bashk. *Kara Sepsen*

Recurvirostra Avocetta = Avocet, Recurvirostra avocetta
Tat. *Tschutscha*

Haematopus Ostralegus = Oystercatcher, Haematopus ostralegus
Tat. *Saushan Zepka*

Fulica atra = Coot, Fulica atra
Bashk. *Kara Urduk*
Kaz. *Kassaldak*

Rallux Crex = Corncrake, Crex crex
Bashk. *Tartai*
Kaz. *Katschir*

Otis Tarda = Great Bustard, Otis tarda
Tat. *Tuwadak*
Kaz. *Toadak*
Bakh. *Tagadak*
Bashk. *Kurtlik*

Otis Tetrax = Little Bustard, Otis tetrax
Tat. *Tutekusch (Narrenvogel)*
Bashk. *Bigalak*
Kaz. *Bisgehel, Tyillekus*

The species has received its Tatar name because it is often found stunned and is therefore easy to kill with a whip.

Phasianus colchicus = Pheasant, Phasianus colchicus

Kaz. *Kargant*

Bakh. *Margaitan*

The pheasant is kept as a domesticated bird in Bokhara.

Tetrao Urogallus = Capercaillie, Tetrao urogallus

Tat. *Tschar*

Bashk. *Sujar, Sojur*

Barab. *Sujer*

Kaz. *Soir Kasch*

Tetrao Tetrix = Black Grouse, Lyrurus tetrix

Tat. *Synda, Kartauga*

Bashk. *Kurt Luik, Uson*

Barab. *Usan*

Kaz. *Son Kusch, Kur*

Tetrao Lagopus = Willow Grouse, Lagopus lagopus

Tat. *Agaun*

Bashk. *Agona*

Barab. *Agoun*

Kaz. *Akkur*

Tetrao Bonasia = Hazel Grouse, Tetrastes bonasia

Tat. *Pösör*

The hazel grouse is captured with snares called *kat* by the Barabins. The snares are placed near paths and the birds are enticed by guelder-rose and other berries. The Orenburgian and Siberian Tatars place funnel-shaped baskets, *kosch*, near the sheaves in the fields. Falck also gives a very detailed description of these basket-traps.⁸²

Tetrao arenaria = Black-Bellied Sandgrouse, Pterocles orientalis

Tat. *Dsherak, Tschil*

Tetrao Alchata = Pin-Tailed Sandgrouse, Pterocles alchata

The Bokharan *Pachtal* is identified by Falck as belonging to this species.

Tetrao Perdix = Partridge, Perdix perdix

Bashk. *Karbusurk*

Kaz. *Tschint*

Tetrao Coturnix = Quail, Coturnix coturnix

Tat. *Bydena*

Bashk. *Busena, Budena*

Kaz. *Budenja*

Bokh. *Uartisch*

Tetrao Kakelik = Tian Shan Rock Partridge, *Alectoris graeca falki*
 Bokh. *Kakelik*

Falck knows this species, which is called *Kakelik* by the Bokharans, only by hearsay. He has never seen it himself. The voice may sound like “kakelik”, hence the name. Because of its beauty this bird is kept in cages in Bokhara.⁸³

Columba Oenas = Stock Dove, *Columba oenas*
 Bashk. *Kugarzik*
 Kaz. *Kuk Kugarzin*

Columba Palumbus = Wood Pigeon, *Columba palumbus*
 Tat. *Kogula*
 Bashk. *Kogerson*

Alauda arvensis = Sky Lark, *Alauda arvensis*
 Tat. *Sokol Psya*
 Bashk. *Melleus*
 Kaz. *Kongur Tuhur*

Sturnus vulgaris = Starling, *Sturnus vulgaris*
 Kaz. *Bartschin*
 Bokh. *Kara Baksar*
 Tat. *Sertsek*

Judging from the descriptions by the Bokharans, *Ala Targos* seems, according to Falck, only to be a variety of the starling. This variety is very popular among the Bokharans and in Khiva because it is even more dangerous for the migratory locusts than the common starling.⁸⁴

Turdus pilaris = Fieldfare, *Turdus pilaris*
 Barab. *Barbijok*

Fringilla Carduelis = Goldfinch, *Carduelis carduelis*
 Kaz. *Bla Turgai*

Fringilla domestica = House Sparrow, *Passer domesticus*
 Tat. *Sapsok*
 Bashk. *Aslach*
 Barab., Kaz. *Aslak Turgai*

Motacilla Luscinia = Nightingale, *Luscinia luscinia*
 Tat. *Sandowar*⁸⁵

Motacilla alba = White Wagtail, *Motacilla alba*
 Tat. *Kimetschi*

Motacilla flava = Yellow Wagtail, *Motacilla flava*
 Bashk. *Sara Turgai*

Parus Pendulinus = Penduline Tit, Remiz pendulinus
Bashk. *Kureldai*

Hirundo rustica = Swallow, Hirundo rustica
Bashk. *Kardegus*
Tat. *Kaligaz*, *Torschuk*
Kaz. *Kara Karulhak*

Caprimulgus europaeus = Nightjar, Caprimulgus europaeus
Tat. *Telegesch*

Reptiles & Amphibians

Testudo lutaria = European Pond-Tortoise, Emys orbicularis
Tat. *Temir Pakta* (*Eisenfrosch*)
Kaz. *Tasch Buka*
Bokh. *Sauch Pusch*

Testudo Graeca = Steppe Turtle, Testudo marginata
Bokh. *Dschilak Tasch*

Rana temporaria = Common Frog, Rana temporaria
Tat., Bashk. *Baka*
Kaz. *Kara Buk*⁸⁶

Lacerta agilis = Sand Lizard, Lacerta agilis
Kaz. *Kesertke*

Lacerta helioscopa = Agama, Phrynocephalus helioscopus
Bokh. *Kallas*

The Bokharans believe that this lizard attaches itself to the skin of sleeping people and sucks so hard that it must be cut away. If it is allowed to suck too much, the affected human will become ill and poisoned.

Coluber Berus = Common Adder, Vipera berus
Tat. *Gelan*
Tat., Kaz. *Dshilan*

The Kazakhs believe the adder to be very wise, bewitched, and vindictive. A snakebite is bandaged, while the Kazakh makes faces and conjures with a crushed root of Siberian Iris, which therefore is called *Dshilan Dsabak* (*Schlangenheil*) (Cf. above).

Fishes

Acipenser Sturio = Sturgeon, Acipenser sturio

Tat. *Ugolak*, *Tago*

Bashk. *Bikre*

Kaz. *Bikria*

Teleut. *Fan Bulik*

Acipenser ruthensis = Sterlet, Acipenser ruthensis

Tat. *Sewjuk*, *Oskoi*

Siberian Tat. *Suruk Balik*, *Sugha Balik*

Kaz. *Tschuga*

Teleut. *Oska Balik*

Falck gives a detailed account of the sturgeon fishery in Russia. Among the Barabins, fishing under the ice is called *karmak*. They also practice a kind of hook fishing, which they call *tartma*. Small holes are cut into the ice and small fish carved out of wood are used as bait. The men lie down on their stomachs near the opening. When the big fish come to play with the wooden bait, which are equipped with small iron hooks, they are very quickly and skillfully thrown up on the ice.

The most important method of fishing among the Barabins is done in summertime in the lakes and is called *gison* or *itzu*. A long arrangement of railings is made of parallel dampers which are interconnected by reeds. These kinds of weirs are placed in the lakes. At the very end the enclosure forms a snailshell-like entrance. The Barabins trudge around in the water in order to drive the fish into the enclosure.⁸⁷

Gadus Lota = Burbot, Lota lota

Tat., Barab., Teleut. *Korte Balik*

Tat. *Schamle*

Bashk., Kaz. *Schamba Balik*

In Siberia burbot skin is often used for windows by the people in the country. The skin is placed over the window openings, as it lets in as much light as oiled paper. The Ostyaks and Chulyum Tatars even use burbot and other fishskins to make summer clothes and sacks for keeping their garments.⁸⁸

Perca fluviatilis = Perch, Perca fluviatilis

Tat., Bashk., Barab., Kaz. *Alabuga*,⁸⁹ *Albuga Balik*

Perca Cernua = Pope, Acerina cernua

Tat., Bashk. *Tasch Basch*, *Tasch Pasch*

Barab. *Kartejek*

Teleut. *Il Balik*

Cobitis Barbatula = Loach, *Noemacheilus barbatulus*

Tat. *Jelantscha, Tasch Besch*

Cobitis taenea = Spined Loach, *Cobitis taenea*

Tat. *Et Balik (Hundefisch)*

Silurnus Glanis = Wels, *Silurnus glanis*

Tat. *Jain*

Salmo Hucho = Danube Salmon, *Hucho hucho*

Tat. *Mier*

Bashk. *Kisil Balik*

Teleut. *Bel Balik*

Salmo Salvelinus = Charr, *Salvelinus alpinus*

Tat., Teleut. *Rusch Kutsch Kalik*

Salmo Lavaretus = White Fish, *Coregonus lavaretus*

Teleut. *Ak Balik, Urundu Balik*

Tat. *Ak Kongrala, Urundu Suga, Urundu Aun*

Salmo Thymallus = Grayling, *Thymallus thymallus*

Tat. *Kara Kongrala*

Barab. *Palok*

Teleut. *Kara Balik*

Bashk. *Berdy Balik*

Esox Lucius = Pike, *Esox lucius*

Tat., Barab., Bashk. *Tschortun, Tsortan*

Cyprinus Tinca = Green Tench, *Tinca tinca*

Tat., Bashk., Teleut., Barab., Kaz. *Kara Balik (Schwartzfisch)*

Cyprinus Carassias = Crucian Carp, *Cyprinus carassius*

Tat., Bashk., Barab. *Taban, Tuban Balik*

Tat. *Karaka*

Teleut. *Jesubalik*

Cyprinus Dobula = Bleak, *Alburnus lucidus*

Tat. *Kumnuk, Zabak*

Bashk. *Kara Kusawak*

Cyprinus Leuciscus = Dace, *Leuciscus leuciscus*

Tat. *Asu*

Cyprinus Idbarus = Ide, *Leuciscus idus* (small variety)

Bashk. *Sawan Balik, Chalok*

Barab. *Chalok*

Cyprinus Rutilus = Roach, *Rutilus rutilus*
 Bashk. *Assan Balik*

Cyprinus Idus = Ide, *Leuciscus idus*
 Barab. *Alabuga*
 Bashk. *Opru*
 Tat. *Upta*
 Teleut. *Bora Balik*

Cyprinus Orfus = Orfe, *Leuciscus orfus*
 Tat. *Bertas*

Cyprinus Brama = Bream, *Abramis brama*
 Tat. *Tschabar, Kurban Balik*

Cyprinus Jeses = Ide, *Leuciscus idus*
 Tat. *Bertas, Kusir*

Invertebrates

Blatta orientalis = Cockroach, *Blatta orientalis*
 Tat. *Jaman Bruchi*
 Bokh. *Nachoran*

Gryllus migratorius = Migratory Locust, *Gryllus migratorius*
 Tat. *Bergelez*
 Bokh. *Mallach*

Cimex equestris = Knight Bug, *Lygaeus equestris* (rather a Reduviidae according to the description of its behavior)
 Kaz. *Alaguluk*

Papilio Apollo = Apollo Butterfly, *Parnassius apollo*
 Tat. *Kubelek*

Vespa vulgaris = Wasp, *Vespa vulgaris*
 Bashk. *Sagardae*
 Kaz. *Sipse*

Apis mellifera = Honey-Bee, *Apis mellifera*
 Tat. Bashk. *Kurt*⁹⁰

Tabanus bovinus = Gadfly, *Tabanus bovinus*
 Kaz. *Kugaan*

Culex pipiens = Mosquito, *Culex pipiens*
 Bashk. *Nasak*
 Kaz. *Zebük, Zerekü*

Pediculus humanus = Head-Louse, *Pediculus humanus capitis*

Tat. *Pet*

Pulex irritans = Flea, *Pulex irritans*

Tat. *Bortsa*

Phalangium Aranoides = Scorpion spider, *Galeodes arancoides*

Tat. *Akrap*

Kaz. *Kara Kurt Bi*

Bokh., Khiv. *Tschian*, *Kotschun*

Aranea Tarantula = Tarantula, *Aranea tarantula*

Bokh. *Gunda*, *Sarabagur*

Canser Astacus = Crayfish, *Astacus astacus*

Tat. *Kosla*

Bashk. *Kessela*

Lumbricus terrestris = Earthworm, *Lumbricus terrestris*

Tat. *Tschildtschan*

Hirudo medicinalis & *sanguisuga* = Leech, *Hirudo medicinalis*

Tat. *Siuluk*

The medical use of leeches occurs not only among Russians, but also among Tatars and especially the Armenians.

Notes

1. On the front page and in the prefaces his name is spelled Johann Peter Falk. His Russian name was Ivan Petrovič Falk. According to Friedrich Theodor Köppen, *Bibliotheca Zoologica Rossica*, Vol 1, St.-Petersbourg 1905, in addition to the original the following completed and abridged editions of Falck exist: Russian translation *Zapiski putešestvia akademika Falka-Polnoe Sobronie učenyx' putešestvij po Rossii*, tom. 6–7, Petersburg 1825; in German *Joh. Peter Falk's Reise in Russland. In einem ausführlichen Auszuge und mit Anmerkungen begleitet von J. A. Martyni-Laguna*, Bd. 1, Berlin 1894, and in *Allgemeine Geschichte der neuesten Entdeckungen, welche von verschiedenen gelehrten Reisenden in vielen Gegenden des russischen Reich und Persien in der Histoire, Landwirtschaft und Naturgeschichte, etc. sind gemacht worden*, Th. 1–6, Bern 1777–1786; in French in *Histoire universelle des découvertes faites par divers savans voyageurs dans plusieurs contrées de la Russie et de la Perse*, Vol. 1–6, Berne 1778–1787.

2. E.g. not mentioned in Gunnar Jarring, "Swed-

ish Relations with Central Asia and Swedish Central Asia Research." *Asian Affairs* 61 (1974), 257–266, or James Evert Bosson, "Some Early Swedish Contributions to China Border Area Studies," in: *Proceeding of International Conference on China Border Area Studies*, Taipei 1985, 1821–1829. He is however, dealt with in P. M. Hebbe, "Svenskryska vetenskapliga förbindelser under 1700-talets senare hälft," *Lychnos* 1938, 390; T. J. Arne, *Svenskarna och österlandet*. Stockholm 1952, 272; Sten Lindroth, "Svenskryska vetenskapliga förbindelser under 1700-talet," in: *Löjtnant Åhls äventyr. Svenska studier och gestalter*. Stockholm 1967; Bengt Jonsell, "Linnés ryska förbindelser. Glimtar från ett fyrtioårigt verksamhetsfält," in: *Utur stubbotan rot*, red. Ragnar Granit. Stockholm 1978, 69–70, Gunnar Eriksson, *Botanikens historia i Sverige intill år 1800*. (Lychnos-Biblioteket 17:3). Uppsala 1969, 257 f. and in the *Vår svenska stam på utländsk mark*, utg. av Axel Boëthius, Stockholm 1952, 262 f. It must also be noted that contrary to the contem-

porary explorers of Russian Central Asia and Siberia Falck is not mentioned in *Bol'shaja Sovetskaja Enciklopedija*. Moskva 1975–78.

3. Biographical information about Falck is, when nothing else is stated, from *Biographiskt Lexikon öfver namnkunnige svenska män*, Vol. 4., Stockholm 1838, 296–298 and Sigurd Lindman's article in *Svenskt biografiskt lexikon* Vol. 15. Stockholm 1953–56, 96–101. Both have derived most of their information from Georgi's biography published in the preface to *Beyträge* Some addenda and corrigenda were published in *Upfostrings-Sällskapets Almänna Tidningar* 1787: 1, 51–53 and 108–110. A short biography containing numerous errors was published by Fr. Wilh. Theile in *Allgemeine Encyclopädie der Wissenschaften und Künste*. 41 Theil, Leipzig 1845, 210.

4. Olle Bergquist, "Anders Falcks brev till Petersburg," *Lychnos* 1965–1966, 127.

5. See N. V. E. Nordenmark in *Svenskt biografiskt lexikon* vol. 15. Stockholm 1953–56, 101–102. The quotation is from J. W. Warholm, *Skara stifts herdaminne*, Vol. 2. Mariestad 1874, 646. Letters from Anders to his brother is found in Bergquist, *op. cit.*

6. J. P. Falck, *Planta Alströmeria*. Upsaliae 1762.

7. For further information see Manuel Sarkisyanz, "Russian Conquest in Central Asia: Transformation and Acculturation," in: *Russia and Asia. Essays on the Influence of Russia on Asian Peoples*, Ed. by Wayne S. Vucinich, Stanford 1972, 248–288; Geoffrey Wheeler, "The Russian presence in Central Asia," *Canadian Slavonic Papers* 17 (1975), 189–201; and Alton S. Donnelly, "Peter the Great and Central Asia," *Canadian Slavonic Papers* 17 (1975), 202–217.

8. A short account about the scientific expeditions promoted by the Imperial Academy of Science in 1768–1774 is given in L. S. Berg. *Geschichte der russischen geographischen Entdeckungen. Gesammelte Aufsätze*. Leipzig 1954, 258–262.

9. The biography and scientific research of Pallas is discussed in Carol Urness, *A Naturalist in Russia: Letters from Peter Simon Pallas to Thomas Pennant*. Minneapolis 1967. Besides the travel account by Pallas himself, *Reise durch verschiedene Provinzen des Russischen Reichs*, Bd. 1–6. S:t Petersburg 1773–1776, it should also be mentioned that one of his co-travellers, the student Vassili Fiodorovich Zuev, conducted ethnographical observations, especially among the Samoyeds and the Chants (Ostyaks). His very interesting manuscript was not published until after World War II; see V. F. Zuev, *Materialy po etnografii Sibiria XVIII veka (1771–1772)* (Trudy Instituta etnografii Akademii Nauk SSR N. S. 5.) Leningrad 1947. The map published in Falck's *Beyträge* . . . over the travel

routes by his contemporaries does not show, as erroneously stated, Pallas' itinerary but Zuev's!

10. A handwritten copy of the letter from Lerche is found in *Linnæus' Correspondence* in the Linnæan collection, Uppsala University Library.

11. In *Bref och skrivelser af och till Carl von Linné*, Avd. I, del 6, Upsala 1912, 32–65.

12. The proofs of *Bref och skrivelser . . . I*, del 9, The Linnæan Collection, Uppsala University Library.

13. Handwritten copy from the *Linnæus' Correspondence* in the Linnæan Collection, Uppsala University Library.

14. The proofs of *Bref och skrivelser . . . I*, del 9, The Linnæan Collection, Uppsala University Library.

15. Rendered in J. G. Georgi, *Bemerkungen einer Reise im Russischen Reichs in den Jahren 1773 und 1774*, Bd. 2, S:t Petersburg 1775, 805, and in the preface to *Beyträge* A Swedish translation of Georgi's extract-article published in *Deutsches Museum* Juli 1777, 82–85 is given in Carl Christoffer Gjörrwell, *Almänna Biblioteket* 30 Juli 1777, 206–209.

16. The proofs of *Bref och skrivelser . . . I*, del 9, The Linnæan Collection, Uppsala University Library.

17. J. G. Georgi, *Beschreibung aller Nationen des Russischen Reichs*, Bd. 1–4. S:t Petersburg 1776.

18. Carl Linnæus, "Instruktion för resande naturforskare," in: *Valda smärre skrifter*, II. Stockholm 1906, 199.

19. Th. M. Fries in *Bref och skrivelser af och till Carl von Linné*, Avd. I, del 6, 32.

20. Sten Lindroth, *Svensk lärdomshistoria* 3. Frihetstiden. Stockholm 1978, 267. Cf. Lindroth, "Svensk-ryska förbindelser . . .".

21. Iwan Lepechin, *Tagebuch der Reise in den Jahren 1768 und 1769*, 1–2. Altenburg 1774–75; Johann Anton Güldenstädt, *Reisen durch Russland und im Caucasischen Gebirge*, 1–2. S:t Petersburg 1787–91; Nicolas Rytchkow, *Tagebuch über seine Reise durch verschiedene Provinzen des Russischen Reichs in den Jahren 1769, 1770, und 1771*. Riga 1774.

22. As far as I know, the only one who has used Falck's records about the utilization of wild plants among the peoples of Russia is I. Manninen, "Überreste der Sammlerstufe und die Notnahrung aus dem Pflanzenreich bei den nordeurasischen, vorzugsweise den finnischen Völkern," *Eurasia Septentrionalis Antiqua* 6 (1931), 30–48. Manninen, however, gives only a few samples.

23. Gerhard Doerfer, *Ältere westeuropäische Quellen zur kalmückischen Sprachgeschichte (Witzen 1692 bis Zwick 1827)*. (Altäische Forschungen 18). Wiesbaden 1965, 15. The Selkupian (Ostyak) words recorded by Falck are commented in Lieselotte Schiefer, "Ein unbekanntes selkupisches Wörterverzeichnis aus dem Jahre 1786," *Journal de la société finno-ougrienne* 72 (1973). 350–359.

24. Cf. J. G. Georgi, *Bemerkungen* ..., 804: "Seine Pappiere müssen viele und gut, ausgearbeitete Thieren und Pflanzen und gute Nachrichten von den Nationen, die sein Weg berührte, enthalten, weil er das erste zu seiner Hauptbeschäftigung und das letztere zur Erholung erwählte."
25. Cf. Stanisław Stachowski, "Osmanisch-türkische Wörter in Wörterbuch von P. S. Pallas (1787–1789)," *Folia orientalia* 9 (1968); G. Kara, "Les mots Mongols dans une liste de marchandises chez Gmelin (1738)," *Acta orientalia* 13 (1961), 175 ff.; István Kecskeméti, *Index to P. S. Pallas 'Zoogeographia'*. (Studia Orientalia 34:4). Helsinki 1968, 3–4; Harald Haarmann, "Vorwort," in: *Wissenschaftsgeschichtliche Beiträge zur Erforschung indogermanischer, finnisch-ugrischer und kaukasischer Sprachen bei Pallas*, Hrsg. von H. Haarmann, Hamburg 1979, 7–8; and Doerfer, *op. cit.*, 17 ff. For the documentation of different languages in the Russian Empire during the reign of Catharine the Great, see Friedrich Adelung, *Catherinens der Grossen Verdienste um die vergleichende Sprachkunde*. St. Petersburg 1815. The ethnographical significance of the Russian expeditions during that time is stressed in Sulo Haltsosen, "J. G. Georgi suomenheimoiesten kuvaajana," *Virittäjä* 74 (1970), 155–164.
26. See e.g. D. K. Zelenin, "Tabu slov u narodnov Vostočnoj Evropy i Severnoj Azii. 1. Zapety na oxote i inyx poromyslax," *Sbornik Muzeja Antropologii i Etnografii* 8 (1929), 1–151; Ilse Laud-Cirtautas, "Preliminary notes on taboo and euphemism in Kazakh, Kirghiz, and Uzbek," in: *Altaica Collecta*, Hrsg. von W. Heissig, Weisbaden 1976, 173–190; and Horst Wilfrid Brands, *Studien zum Wortbestand der Türkssprachen*. Leiden 1970, 92–94. the phenomenon is of course, universal. see W. Havers, "Neuere Literatur zum Sprachtabu," *Sitzungsberichte der Akademie der Wissenschaft in Wien, Phil.-hist. Klasse*, 22:5. Wien 1946.
27. Pentti Aalto, "Frauensprachliche Erscheinungen im Mongolischen," *Zentralasiatische Studien* 5 (1971), 127–137; Erica Taube, "Zum Problem der Ersatzwörter im Tuwinischen des Cengelsum," *Schriften zur Geschichte und Kultur des Alten Orients* 1974:5, 589–607; Ingvar Svanberg, "The Nomadism of Orta žüz Kazaks in Xinjiang 1911–1949," to be published in *The Kazaks of China* [forthcoming]. A comic example is given by Schuyler, who told about a Kazakh woman "who wanted to say that a wolf had stolen a sheep and taken it to a reedy shore of the lake. Unfortunately the man of the family bore names corresponding to most of these words and she was obliged to gasp out that 'in the rustling beyond the wet a growler gnaws one of our woolies'," E. Schuyler, *Turkistan. Notes of a Journey in Russian Tukistan, Khokand, Bukhara, and Kuldja*. 1. London 1876, 40.
28. For the English orthography of the ethnonyms I follow Ronald Wixman, *The Peoples of the USSR. An Ethnographic Handbook*. London 1984.
29. With the exception of a grammar published in Moscow 1769 there are only a few records of the Chuvash language in Pallas and some other travelers accounts from the 18th century. Falck's records are therefore valuable additions to these. Cf. Johannes Benzing, "Das Tschuwaschische," *Philologiae Turcicae Fundamenta*, I. Wiesbaden 1959, 696 ff.
30. *Slobod*—Russian word for enclave where foreigners and minorities resided.
31. The geographical distribution of the different Tatar groups in contemporary USSR is discussed in *Geografija i kul'tura etnografičeskix grupp Tatar v SSSR*, Moskva 1983.
32. The Mountain Tatars certainly refer to the people today called the Balkars, earlier called Mountain Tatars by the Russians. Cf. Waldermar Jochelson, *Peoples of Asiatic Russia*, New York 1928, 156.
33. Cf. The illustration and description in Arthur Byhan, "Die Türkvolker Ostrusslands," in: *Illustrierte Völkerkunde*, 2, Hrsg. von G. Buschan, Stuttgart 1926, 874.
34. *Jasaschnii*—the word would seem to be derived from the Tataric *yasak* 'tribute in natura', M. Vasmer, *Russisches etymologisches Wörterbuch*, 3, Heidelberg 1958, 495.
35. Here Falck certainly means the people we today call Noghay. *Kişi Nogay* 'Lesser Noghay' is the name of one of the Noghay tribal fractions.
36. *Mursen*—tribal chief, properly *mirza* or *murza*, a Persian loanword.
37. Of these tribal groups or lineages Klaproth mentions *Kipčak* and *Mangit*, Julius von Klaproth, *Reise in den Kaukasus und nach Georgien, unternommen in den Jahren 1807 und 1808*, Bd. 1, Halle 1812, 181.
38. I.e., *saban*, see also the illustration in Lepechin, *Reise* ..., 1, Taf. 4. For further details about plows among Turkic peoples see Adam Molnár, "The plough and ploughing among the Altaic Peoples," *Central Asiatic Journal* 26 (1982), 215–224.
39. The Bokharan are today included in the people called Özbeks. The Bokharian Emirate is today divided in the Özbek, Tajik and Turkmen SSR.
40. *Sart* (*Kaufleute*)—the word is to be found already in Mahmud al-Kašgaris' medieval Turkic glossary with the meaning merchant, Carl Brockelmann, *Mitteltürkischer Wortschatz nach Mahmud al-Kašgaris Divan luyat at-Turk*. Budapest & Leipzig 1928. The nomads of Central Asia still use the categorization Sart for the sedentary oasis farmers

and townspeople, whether they are Özbeks, Tajiks or Uighurs, cf. W. Barthold, "Sart," *Enzyklopaedie des Islam*, Bd. 4, Leiden 1934, 187–188.

41. I.e. from Aksu, Yarkand and Kashgar. However, these were not from Bukhara, but Uighur merchants from Eastern Turkistan, sometimes called Little Bokhara in western sources, Cf. Falck, *Beiträge* ... 1, 396.

42. In O. Olufsen, *A Vocabulary of the Dialect of Bokhara*, København 1905, *rista* 'Guinea Worm' while Wilhelm Radloff, *Versuch eines Wörterbuches der Türk-Dialecte*, 3. St. Petersburg 1905 gives *ristā*.

43. Erroneously identified species. Actually it is the question of a very interesting endoparasitic nematode nowadays usually called Guinea Worm (*Drancunculus medinensis*), which occurs in subtropical and tropical parts of Asia and Africa, and which through the slave trade has even been spread to South America. In Soviet Central Asia it was exterminated during the 1930s. Perhaps it was Linnæus who, in *Fauna Svecica*. Stockholm 1741, 363, erroneously attributed the parasite infection caused by worms to the harmless *Gordius aquaticus* and which therefore, Falck confused with the Guinea Worm.

44. In modern Özbek *paxta*, *qovun*, *maxsar*, *kanop*, *zigir*, *tamaki*, *röjan* and *köknor*.

45. Arabs are mainly to be found in scattered settlements along the Zeravshan River between Samarkand and the Karakul Oasis. They are supposed to be descendants of Arabic conquerors who came to Central Asia during the 8th century, and to the nomads who immigrated between the 16th and 19th centuries from northern Afghanistan. Elisabeth Bacon, *Central Asians under Russian Rule. A Study in Culture Change*, Ithaca NY 1966, 22.

46. *Habash*—the word is possibly of South Arabian origin and is the name of descendants of negro slaves in Central Asia. They are usually linguistically assimilated among the Özbeks. For turkified negroes within the former Ottoman Empire, see Ingvar Svanberg, "Marginal Groups and Itinerants," in: *Ethnic Groups in Turkey*, Ed. by Peter Andrews (Beihefte zum Tübinger Atlas des Vorderen Orients) [in press].

47. The ethnonym *Juki* still appears for peripatetic marginal groups in Western and Central Asia, see I. M. Oranski, "Novye svedenija o sekretnyx jazykax (argo). Svednij Azii. Materialy dlja izucenija argo etnografičeskoj gruppy Džugi," in: *Iranskaja filologija: Isdatel'stvo Leningradskogo universiteta*, Leningrad 1964, 62–75, and Douglas Halevi, "The World of the Juki," *Studies in comparative religion (U.K.)* 15 (1983), 66–80.

48. *Masang* is an ethnonym for peripatetic groups within the Persian-Tajik area. According to Arthur

Byhan, "Nord-, Mittel- und Westasien," in: *Illustrierte Völkerkunde*, 2. Hrsg. von G. Buschan, Leipzig 1923, 418, they speak Turkic and Persian.

49. *Luli* is, within the Persian-Tajik area a common term for gypsy-like groups, see V. Minorski & [L. P. Elwell-Sutton], "Luli," *Encyclopaedia of Islam* 5, Leiden 1983, 816–819; V. Minorski, "Les Tsiganes Luli et les Lurs persans", *Journal Asiatique* 218 (1931), 281–385.

50. The Khiva Khanate was situated to the south of the Aral Sea and limited by deserts, Kizil Kum to the northeast and the Kara Kum to the south. In 1873 Khiva was incorporated by Russia, and finally in 1924 it was incorporated into the Özbek SSR. The sedentary majority population is today included among the Özbeks.

51. Probably he means Ayčüvaq Khan, ruler of the Lesser Horde Kazakhs and a son to the very influential Abulkhair Khan who subdued the Karakalpaks in 1748.

52. This folk etymology is common but doubtful. Also *qurt* with the meaning 'wolf' is common, see Martti Räsänen, *Versuch eines etymologischen Wörterbuchs der Türk Sprachen*. (Lexica societatis Fennougricae 17, 1). Helsinki 1969, 65. According to Byhan, "Die Türk-völker Ostrusslands ...", 881: "Ihr Name wird meist von *baş* = Haupt und *kurt* = wolf oder Biene abgeleitet, da sie sich jetzt selbst Baschkurt, Baschkirt nennen, oder von *baş* und *ir* = Mensch oder *kir* = rot, was dem osmanischen Kyzylbaş = Rotkopf entsprechen wurde. Auch *baş-kir* = Obere Steppe, entsprechend dem kirgisischen Namen der Baschkiren Istjak (von *ust* = oben, *jak* = Gegend) wurde vorgeschlagen. Diese Deutung wurde annehmbar sein, wenn ihr nicht die überlieferten Formen—schon Aschmed ibn Foslan nennt sie 921 Baschkird—entgegenstünden, und die übrigen lassen sich mit der sonst üblichen Art türkischer Wortbildung nicht gut vereinbaren."

53. Concerning the Bashkirs during the 18th century, see also Roger Portal, "Les Bashkirs et le gouvernement russe au XVIII^e siècle," *Revue des études slaves* 22 (1946), 82–105.

54. *Urus* is the usual name for Russian in the Turkic languages.

55. *Istāk* in Baraba Tatar with the meaning Ostyak, in Kazakh with the meaning Bashkir is, according to Vasmer, *Russisches* ... 2, Heidelberg 1955, 288, derived from the Chanti *as-jax* 'people from the river Ob'. Cf. footnote 52.

56. There is some confusion about the ethnonym Kirghiz and Kazakh for modern readers. Falck called the Turkic people we today know as Kazakhs for Kirghiz. This was earlier the usual name in Western European and Russian literature. It

was only during that 1920s the Kazakh became the accepted ethnonym for this people. The people today called Kirghiz is in older literature usually termed Kara Kirghiz, which means the 'Black Kirghiz' or maybe the 'Real Kirghiz'. All 'Kirghiz' linguistic samples given in Falck's *Beyträge* ... are definitely Kazakh. The Kazakhs are traditionally divided in three territorial groups, the Lesser, Middle and Greater Horde, *Kişi*, *Orta* and *Ulu žüz*, as is correctly pointed out by Falck. On the other hand the term *Burut*, which is of Oirat Mongolian origin, is used as a categorization for the real Kirghiz, not the Greater Horde, as is said in Falck, cf. Lawrence Krader, *Peoples of Central Asia*. Bloomington In. 1962, 60. The etymology of the word Kazakh (by Falck *kasak* = Wagehals) has been the object for a lively discussion among scholars, see e.g. Lawrence Krader, "Ethnonym of Kazakh," in: *American Studies in Altaic Linguistics*, Ed. by N. Poppe, Bloomington, Ind. 1962, 123–124. A definitive conclusion has still not been reached. In several Turkic languages the word *kazak* has the meaning 'ein freier, unabhängiger Mensch, Abenteurer, Vagabund' according to Räsänen, *Versuch* 243.

57. *Abdal* is one of the common Alevitic peripatetic groups, which is found within Sunni Muslim Turkic areas in Western and Central Asia. The *Abdal* population of Turkistan is only sparsely known, see however Fuat Köprülü's comprehensive overview "*Abdal*" in his *Türk Halk Edebiyatı Ansiklopedisi* 1, Istanbul 1935, 23–56. Modern references are given in Svanberg, "Marginal ...".

58. *Baqsi* 'sourcer, quack, shaman'. The Kazakh *baqsi* is described in J. Castagné. "Magie et exorcisme chez les Kazakh-Kirghizes et autre peuples Turcs orientaux," *Revue des études islamiques* 4 (1930), 53–156.

59. i.e. *Ulu žüz*, the Greater Horde.

60. *Kacha* is today regarded as a territorial group of the Khakass.

61. The numerals mentioned by Falck are not Bokharan Turkic (i.e. Özbek) but Persian. A few other words, such as *tubar* (i.e. *tover* 'axe') and *schir* (i.e. *šir* 'milk') are also Persian, but most of the others are Özbek. It is a well-known fact that the Bokharan town dwellers were, and still are, bilingual in Özbek and Persian. The interlingua among the Central Asian merchants has long been Persian.

62. Cf. Kerstin Eidlitz, *Food and Emergency Food in the Circumpolar Area* (Studia Ethnographica Upsaliensia 29). Uppsala 1969, 48.

63. *Krashnajor Tatar*, i.e., the Turkic people living in the Krashnojarsk county. Falck is certainly referring to the Kyzyl Tatars.

64. *Ağçay* 'white tea'—tea mixed with milk, salted

and spiced, and served with sheep lard or butter is still a very common drink among Kazakhs and Kalmyks in Central Asia.

65. For a discussion about the various terms for the bear in Turkic languages, see Mefure Mollova, "Contribution aux études de tabous linguistes," *Rocznik Orientalystyczny* 24 (1960), 31; and Louis Bazin, "Les noms turcs et mongols de l'ours," *Quand le crible était dans la paille. Hommage à P. N. Boratav*. Paris 1978, 83–94.

66. The incest motive in the bear myth among Turkic people is discussed briefly in Altan Gökalp, "L'ours Anatolien. Un oncle bien entreprenant," *Études mongoles* 11 (1980), 238–240.

67. The Bashkir bear-club is described in Sture Lagercrantz, "Die Bärenkeule," *Lud Slowianski* 3 (1934), B 278.

68. The Turkic terms for horses are dealt with in Denis Sinor, "Notes on the Equine Terminology of the Altaic Peoples," *Central Asiatic Journal* 10 (1965), 306–315; Cf. Emil Esin, "The Horse in Turkic Art," *Central Asiatic Journal* 10 (1965), 167–227.

69. For a more thorough discussion of Turkic terminology for the camels, see Karl Menges, "Die Wörter für 'Kamel' und einige seiner Kreuzungsformen im Türkischen", *Ungarische Jahrbücher* 15 (1935), 517–528.

70. Galdan Tsering, ruler over the Oirat Khanate 1727–1745.

71. *Surka* is a Russian loanword according to Berta Arpat, *Tatarische etymologische Studien, 1. Die russische Lehnwörter in der getauften Tataren*. (Studia uralo-altaica, 21). Szeged 1983, 102.

72. Cf. Eidlitz, *loc. cit.*

73. Obviously the author is referring to another unidentified *Jaculus species*.

74. An obscure etymology.

75. The crossbow trap is known from several ethnic groups in northern Asia. There are two kinds of crossbow traps, one with a fork-shaped frame and one with a quadratic frame, cf. Béla Gunda, "Die Armbrustfallen in Nordasien und ihre ethnologische Bedeutung," *Ethnos* 5 (1940), 35–53.

76. This is the scientific name for the snow leopard. There is, however, no doubt that Falck is referring to the tiger. The Turkic names for the larger felines are discussed in W. Bang, "Über die türkischen Namen einiger Grosskatzen," *Keleti Szemle* 17 (1916–17), 112–146.

77. *Irbi* generally refers to the snow leopard.

78. The oldest name for the wolf, common for all the Turkic languages, is *böre*, see Gerhard Clausen, *Turks and Wolves* (Studia Orientalia 28:2). Helsinki 1964.

79. Falconry and hunting with eagles in Central

Asia are described in Albert von LeCoq, "Bennerkungen über türkische Falknerie", *Baessler-Archiv* 1914, 3–6.

80. The custom of using an owl feather as an amulet still survives among the Kazakhs, see J. Castagné, "Magie et exorcisme chez les Kazak-Kirghizes et autres peuples turks orientaux," *Revue des études islamiques* 4 (1930), 67; B. Rinchen, "Mélanges ethnographiques," *Rocznik orientalistyczny* 20 (1958), 22; Milton J. Clark, "How the Kazakhs fled to Freedom," *National Geographic Magazine* 106 (1955), 638; Cf. John Andrew Boyle, "The Owl and the Hare in the Popular Beliefs of the Medieval Mongols", *Central Asiatic Journal* 23 (1979), 65–71.

81. The use of birdskin in Siberia is discussed in John Granlund, "Birdskin Caps. A Cultural Element of Arctic and Northern Countries", *Ethnos* 1953:3–4, 125–142.

82. For an illustration of these basket-traps, see Pallas, *op. cit.*, Vol. 2, Tab 2.

83. The onomatopoeic bird name 'kakelik' seems to refer to the Chukar. *Alectoris graeca*. In 1917 the Central Asian Chukar was described as a certain subspecies by Harfert. Falck's description is very incomplete, and his scientific name was not regarded as valid. Instead this subspecies was named after him. Cf. *Birds of the Soviet Union*, Ed., G. P. Dement'ev & N. A. Gladkov, vol. IV, Jerusalem 1967, 183.

84. Falck is certainly referring to the Rose-Colored starling (*Sturnus roseus*). The Myna starling (*Acridotherus tristis*) which today is very characteristic for Özbekistan is a recent immigrant from southern Asia.

85. This bird name has long been discussed among scholars. Hasan Eren, "Etymologische Untersuchungen. 1–2," *Ural-altaische Jahrbücher* 24 (1952), 133 deny its soghdian origin, a theory that was in vogue earlier. It must certainly have been derived from the Russian word *salovej* (СОЛОВОЙ) according to Jan Reychman, "Tschuwasch Saigajz = Nachtigall (*Luscinia luscinia*). *Studia Turcica*, Ed., L. Ligeti, Budapest 1971, 386.

86. *Kara buk* certainly refers to the toad (*Bufo bufo*/*B. viridis*) rather than the frog.

87. This is a very widespread fishing method in Siberia and is described in detail by U. T. Sirelius. *Über die Sperrfischerei bei den Finnisch-Ugrischen Völkern. Eine vergleichende ethnographische Untersuchung*. (Matériaux et recherches ethnographiques de la Société Finno-ougrienne), Helsingfors 1906.

88. Cf. Gösta Berg, "The Use of Fish Skins in Northern Europe before the Industrial Era," in: *The Fishing Culture of the World*, Vol. 1, Ed., B. Gunda, Budapest 1984, 91–104.

89. Literally "dappled bull". The word and its meaning is discussed briefly in Bang, *op. cit.*, 115 and in G. V. Jusupov, "Survivals of Totemism in the Ancestor Cult of the Kazan Tatars," in: *Popular Beliefs and Folklore Tradition in Siberia*, Ed. V. Diószegi, Budapest 1968, 195.

90. For Turkic bee-terminology, see Edward Tryjarski, "Beekeeping among the Turks. A historical and linguistic evidence," *Acta orientalia* 32 (1970), 241–267.

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BENGT LÖFSTEDT

Zu Linnés Latein

Linnés Reiseberichte gehören zur klassischen schwedischen Literatur, und sein schwedischer Stil ist oft besprochen worden¹. Was das Latein betrifft, haben natürlich in erster Linie die naturwissenschaftlichen Termini die Aufmerksamkeit auf sich gezogen. Eine seiner grössten Leistungen war ja, dass er die wissenschaftliche Nomenklatur der Botanik und der Zoologie geschaffen hat; dabei hat er teils neue Wörter und Ableitungen gemünzt, teils die Bedeutungen alter Termini präzisiert und fixiert; in seiner lateinisch abgefassten Vita (S. 181)² formuliert er dies folgendermassen: *Terminos novos introduxit . . . vel hos terminos figit*; s. auch z. B. W. T. Stearn, *Botanical Latin* (London 1973) 34 ff.

Linné war ein vielseitiges Genie (die rein literarische Bedeutung seiner Reiseberichte ist ausserhalb Schwedens nicht genügend bekannt und geschätzt), aber das Sprachstudium lag ihm nicht: seine Schullehrer stellten fest, dass er wegen mangelnder Kenntnisse der klassischen Sprachen nie Pfarrer werden könnte, und in seinen autobiographischen Darstellungen bedauert er mehrmals seine mangelnde Fähigkeit, Fremdsprachen zu lernen; vgl. z. B. in der lateinischen Vita 179: *Linguas addiscendas minime aptus* (die Herausgeber fügen vor *linguas* ein *ad* hinzu)³. Uggla, Svenska Linnésällskapets årsskrift (im folgenden abgekürzt: SLÅ) 1947 S. 72 erwähnt, dass Linnés Latein »Svarbäckslatin« genannt wurde (Svarbäcken war ein Viertel der Handwerker, nicht der Akademiker in Uppsala).

Andrerseits hat sich m. W. Linné selbst nie über mangelnde Lateinkenntnisse beklagt (wohl aber *expressis verbis* über sein Unvermögen, Englisch, Niederländisch u. a. zu lernen). Dass ihm das Latein jedenfalls leicht aus der Feder floss, ersieht man schon daraus, dass er sehr viele Briefe an seinen vertrauten Freund A. Bäck auf Latein schrieb, und zwar nicht nur über wissenschaftliche Fragen, sondern auch ganz persönlichen Inhalts (z. B. über die Krankheit seiner Tochter Bref I 4 S. 255 Nr. 825). Linné war sich auch dessen wohl bewusst, dass er seinen internationalen Ruhm dem Umstand verdankte, dass er seine wissenschaftlichen Arbeiten auf Latein geschrieben hatte; die Vermutung liegt deshalb nahe, dass er sich um das

Latein bemühte. Man kann auch von vornherein vermuten, dass es ihm mehr daran lag, klar und verständlich als in Ciceronianischem Stil zu schreiben; seine Neigung und Fähigkeit, lateinische Neologismen zu machen, könnte damit zusammenhängen, dass er das Ciceronianische Latein für seine Zwecke nicht angemessen hielt.

Dies sind Vermutungen. Um auf festerem Boden zu stehen, müssen wir Linnés Latein näher untersuchen und würdigen. Bei dieser Untersuchung werde ich mich nicht in erster Linie auf die fachsprachlichen Neologismen konzentrieren, und bei der Behandlung des Wortschatzes interessieren mich besonders die Wortbildungstypen. Ich habe vorläufig auch die Frage ausgeklammert, inwieweit Linnés Latein von dem seiner naturwissenschaftlichen Vorgänger abhängig ist, und ich werde mich mit der groben Klassifizierung 'klassisch', 'mittellateinisch' oder 'neulateinisch' begnügen.

Der einzige Forscher, der sich in letzter Zeit etwas ausführlicher und gründlicher mit Linnés Latein, seiner Grammatik und seinem Stil, beschäftigt hat, ist m. W. John Lewis Heller. In erster Linie interessiert uns hier sein Kapitel über den Hortus Cliffortianus im Sammelband *Studies in Linnaean Method and Nomenclature* (Frankfurt 1983) 76 ff. Heller publiziert dort Übersetzungen der Dedikation und des Vorworts in Linnés Hortus Cliffortianus und des Vorworts in seinem Viridarium, und er bespricht das Latein dieser Texte. Jener Aufsatz mag den Ausgangspunkt dieser Untersuchung bilden.

Die von Heller übersetzten und besprochenen Texte, und zwar in erster Linie die *Dedicatio*, sind in einer ungewöhnlich eleganten Sprache abgefasst; man sieht, dass sich Linné Mühe gegeben hat, einen rhetorischen Stil zu schreiben. Das hat Heller 94 f. hervorgehoben, und seine Übersetzungen sind dem Original gerecht. Nur selten hat er Linnés Latein missverstanden; ich notiere *Dedicatio* Nr. 7 *caput ferire ultimae terrae, inocciduum adspicere solem* ... „to strike one's head against the limits of the world ...“ (syntaktisch unmöglich; *caput* muss Objekt von *ferire* und *ultimae terrae* ein davon abhängiger Genitiv sein; also etwa: 'den Endpunkt des entferntesten Landes zu erreichen'; zu dieser Verwendung von *caput* s. Thesaurus linguae Latinae [im folgenden abgekürzt: ThLL] 3, 411. 38 ff., zu *ferire* 6: 1, 514, 79 f.⁴); Nr. 27 *Desiderabam nil magis, quam ut tantum Hortum publici iuris faceres, metuens nil minus, quam quod ego auxiliatrices porrigerem manus* „my greatest desire was that you should publish so rich a garden, my least fear that I would not extend a helping hand“ (die Negation im letzten Satz muss gestrichen werden). Zu den rhetorischen *lumina* dieser Texte gehören nicht nur, wie Heller bemerkt, die klassischen Zitate und mythologischen Allusionen, sondern auch z. B. die

Paronomasie Dedicatio Nr. 1 *Animalium greges hunc* (sc. orbem) *perreptare, pervestigare, permatate, perrepere, pervolitare, percurrere*; die Praeteritio Dedicatio Nr. 21. Heller 109 f. hebt den kunstvollen Chiasmus an der folgenden Stelle hervor: Dedicatio Nr. 3 *serit alter, alter exserit; alter laboriosus colligit, alter consumit piger*, aber er weiss nicht, wie *exserit* zu beurteilen ist. M. E. ist es nur wegen des Wortspiels mit *serit* gebraucht, und zwar bedeutet es 'ein anderer pflückt' (zu dieser Bedeutung von *exserere* vgl. Colum. 12, 58, 1 *radicem ... exserito* [var. lect.: ThLL 5:2, 1859, 15 ff.]).

A. O. gibt Heller ein Verzeichnis unklassischer Konstruktionen um zu zeigen, dass „Linnaeus's knowledge of syntax was not faultless“. Hier figurieren u. a. *alter* für *alius* an der letztgenannten Stelle und *quam quod* statt *quam ut* (od. *ne*) an der oben zitierten Stelle Dedicatio Nr. 27. Heller hat nicht eingesehen – und das ist der wesentliche Fehler seiner Darstellung –, dass Linnés Latein nicht rein klassisch (oder klassisch mit archaischen Elementen, so S. 107) ist oder sein wollte, sondern viele mittellateinische Bestandteile enthält, die nicht ohne weiteres als „faults“ zu bezeichnen sind. Die genannten „Fehler“ gehören ja zu den mittellateinischen Charakteristika. Dasselbe gilt für die folgenden Fälle, die Heller als (Druck)Fehler korrigieren will: *Tapezii* statt *Tapetii*, *cepta* statt *coepta* (und die anderen 108 f. angeführten Schreibungen); Konstruktionen wie Dedicatio Nr. 1 *nescientes quid ... ferit* (statt *feriat*; der Indikativ statt des Konjunktivs in indirekten Fragen ist ja häufig im Mlat.). Merkwürdigerweise kritisiert Heller auch einige Fälle, die früh begegnen: Dedicatio 29 *modo* („for *tantum*“) *brevem catalogum* (diese Verwendung von *modo* vor einem Adjektiv wird vom ThLL 8, 1298, 51 ff. u. a. aus Cicero belegt); Dedicatio 25 *navicula ... secundo vento appulit ad Hollandiae portum* (Heller würde *naviculam secundus ventus appulit* vorziehen, vgl. aber über intransitives *appellere* 'landen' Oxford Latin Dictionary s.v. Nr. 4 B⁵).

Statt in derartigen Fällen von „faults“ in Linnés Latein zu sprechen, sollten wir uns damit zufriedengeben, dass er kein Ciceronianisches Latein schrieb und wohl auch nicht schreiben wollte. Er hat spät- und mittellateinische Konstruktionen benutzt und auch gelegentlich neue Wörter und Ableitungen geprägt, um das Latein zu einem praktischen wissenschaftlichen Gerät zu machen. Wie er dabei vor sich ging, erschen wir am einfachsten nicht aus den rhetorisch angehauchten Vorworten und Dedikationen. Ob sein Latein wirkliche Fehler enthält, ob es von seiner schwedischen (småländischen) Muttersprache beeinflusst wurde, bleibt noch festzustellen.

Meiner sprachlichen Untersuchung lege ich die folgenden Schriften Linnés zugrunde: *Bref och skrifvelser af och till Linné I 1–8* (hrsg. v. Th. M. Fries, Uppsala 1907 ff.); *II 1* (hrsg. v. J. M. Hulth, Uppsala 1916) und *II 2* (hrsg.

v. A. Hj. Uggla, Uppsala 1943) (auf Latein oder auf Schwedisch oder in einer Mischung beider Sprachen abgefasst; abgekürzt: Bref); *Diaeta naturalis* (v. J. 1753; hrsg. v. A. Hj. Uggla, Uppsala 1958; in einer Mischung von Schwedisch und Latein geschrieben; nicht von Linné gedruckt; abgekürzt: *Diaeta*); *Fauna Suecica* (Stockholm 1761; Latein; abgekürzt: *Fauna*); *Flora Laponica* (Amsterdam 1737, Facsimileausgabe Stockholm 1977; Latein; abgekürzt: *Flora*); *Lachesis naturalis* (hrsg. v. A. O. Lindfors, Uppsala 1907; Mischung von Schwedisch und Latein; nicht von Linné gedruckt; abgekürzt: *Lachesis*); *Nemesis Divina* (hrsg. v. E. Malmeström und T. Fredbärj, Stockholm 1968⁶; Mischung von Schwedisch und Latein; nicht von Linné gedruckt; abgekürzt: *Nemesis*); zu *Vita* s. unten S. 134 Anm. 2. – Ferner wurden die folgenden Reiseberichte untersucht: *Dalaresan jämte Utlandsresan och Bergslagsresan* (v. J. 1734 bzw. 1735 und 1734; hrsg. v. A. Hj. Uggla u.a., Stockholm 1953; nicht von Linné gedruckt⁷); *Lapplandsresan* (v. J. 1732; hrsg. v. M. v. Platen und C.-O. v. Sydow, Stockholm 1977; nicht von Linné gedruckt); *Öländska och Gotländska resan* (v. J. 1741; hrsg. v. C.-O. v. Sydow, Stockholm 1977); *Skånska resan* (v. J. 1749; hrsg. v. C.-O. v. Sydow, Stockholm 1975); *Wästgötaresan* (v. J. 1746; hrsg. v. N. Beckman, Uppsala 1928).

Die Reiseberichte sind auf Schwedisch abgefasst, aber Pflanzen und Tiere werden in der Regel mit lateinischen Termini beschrieben und klassifiziert, und Linné zitiert oft auch klassische Autoren und verwendet idiomatische Ausdrücke auf Latein. In den von Linné nicht gedruckten Schriften *Diaeta*, *Lachesis* und *Nemesis* sowie in Briefen wechseln Schwedisch und Latein oft regellos, ungefähr wie in Luthers Tischreden. Man kann aber beobachten, dass er in diesen Texten besonders oft dann aus dem Lateinischen ins Schwedische hinüberwechselt, wenn ihm das lateinische *mot juste* nicht leicht einfällt, z. B. *Bref II 1 S. 330 Nr. 216 si rescribas, hoc facias under kuvert ...* ('unter der Anschrift'; zu dieser Verwendung von *under kuvert* s. Svenska Akademiens Ordbok [im folgenden: SAOB] Bd. 15 K 3300 c; ähnlich *II 2 S. 19 Nr. 280*); *II 2 S. 115 Nr. 349 mercatores nostrates praetendunt quartum quemque nummum ob wexel-curs, ut vocant*; *Lachesis 80 Spiell non in australibus, ut aer adsit bonus*; *92 Fenestra olim erat in tecto ... Sic gothis nostris a latere meridionali, non drag*; *154 Lavant pavimenta (pro sofa)*. In seinen gedruckten Arbeiten kommt so etwas selten vor, aber ich notiere aus der *Fauna* 102 *habitat in Scania: in Toppe ladugård* (d. h. 'Viehstall').

Man fragt sich, ob Linnés Latein Suezismen enthält und ob sein Schwedisch durch das Latein beeinflusst ist. Die Beantwortung der letzten Frage überlasse ich den Nordisten. Dass sie nicht einfach ist, zeigt z. B. der Aus-

druck *densamme med*, der dem lat. *idem cum* entspricht. Beide sind in Linnés Schriften auffallend häufig: Der schwedische begegnet z. B. in Skånska resan 243, der lateinische Fauna 29.83.280, Flora 74.96.98 usw. In SAOB unter D 921 Nr. 4 (wo der Sprachgebrauch erst ca. 100 Jahre später belegt wird) hat man den lat. Ausdruck zum Vergleich herangezogen, und man scheint einen Latinismus anzunehmen. Im Lat. ist aber *idem cum* nicht so häufig wie *idem ac* (vgl. ThLL 4, 1374, 44 ff. und 7: 1, 199, 67 ff.), und was Linné betrifft, bleibt es vorläufig unsicher, welche Sprache durch die andere beeinflusst wurde.

Man könnte geneigt sein, Ausdrücke wie die folgenden als Suezismen zu betrachten, da sie im Schwedischen Entsprechungen haben: Bref II 1 S. 122 Nr. 66 *Hallerus in sua methodo sic dicta* ('så kallade') *naturali*; Dalaresan 151 *sibi sapiens* 'självklok'; Diaeta 57 und 119 *ut talis* 'såsom sådan'; Fauna 144 *Datur alia duplo maior* 'det gives ...' (ebenso 167); Flora 342 *aeque bonum si non praestantiorum pulverem* 'lika bra om inte bättre pulver'; Lachesis 41 *carnes durae pro viris* (so ist wohl statt *vivis* zu schreiben), *magis pro infantibus* '... hårdsmält för ...'; 103 *Tempus somni pro robustis 6 horas, pro debilibus et juvenilibus plures* '... för friska ... för sjuka ...' Diese Ausdrücke haben aber auch in anderen modernen Sprachen ihre Entsprechungen (vgl. dt. *sogenannt*; *selbstklug*; *als solcher*; *es gibt*; *ebenso gut wenn nicht besser*; *schwerverdaulich für*; *Schlafenszeit für*), und sie mögen sehr wohl zum internationalen europäischen Neulatein gehören. Vgl. auch Nemesis 115 *fert domum* 'håller hus' im Sinne von 'Gastfreundlichkeit üben' (SAOB H 1455) und das frz. *tenir maison* im selben Sinne (v. Wartburg, Französisches etymologisches Wörterbuch 6: 1, 243 A; seit 1762). Etwas auffallender sind Ausdrücke wie Flora 177 *qui vel fugitivis oculis ... adspexit* 'den som har sett med ett flyktigt öga' (derselbe Ausdruck *fugitivis oculis* begegnet auch Bref II 2 S. 175 Nr. 389 und Föreläsningar öfver djurriket [hrsg. v. E. Lönnberg, Uppsala 1913] 4) und Flora 119 *hic tamdiu illi locum concessi*, wo *tamdiu* dem schwed. *så länge* im Sinne von 'bis auf weiteres' entspricht. Ferner notiere ich den Ausdruck *ingratissimus cuculus et nebulo* (von Siegesbeck) in Bref I 3 S. 194 Nr. 563; ich kenne sonst keine Belege für die pejorative Verwendung des lat. *cuculus* mit bezug auf Personen, s. aber über diesen Gebrauch des entsprechenden schwed. *gök* SAOB G 1675; es sei hinzugefügt, dass dieser Gebrauch von *gök* in Linnés Heimat Småland ganz geläufig ist. Eine scherzhafte Bildung ist wohl *spaltum* statt *fissum* nach dem schwed. *spaltat* in Bergslagsresan 394 *saxum in strata velut sectum, velut spaltum*⁸.

Die Orthographie ist in den untersuchten Schriften in der Regel durchaus klassisch. Die wenigen unklassischen Schreibungen (z. B. *sylva* statt *silva*) kommen in anderen neulateinischen Texten vor. Aus den von Linné gedruckten Schriften notiere ich als auffallend lediglich Flora 314 *mista* statt *mixta*. In

der Diaeta, die er als Manuskript hinterliess, finden sich dagegen ein paar bemerkenswerte Fälle: 57. 112 *lassessitus*; 110 *concideratur* für *consideratur*; 168 *sensiunt* für *sentiant*. Sie zeigen, dass Linné *c* vor hellem Vokal als *s* und *ci*, *ti* vor Vokal als *si* ausgesprochen hat. Sie lassen auch die Vermutung zu, dass die orthographische Korrektheit der gedruckten Schriften vielleicht eher den Setzern und Editoren als Linné zuzuschreiben ist⁹.

Bei der Formenlehre liegen die Dinge ähnlich. In Linnés Manuskripten, die er selbst nicht in Druck gegeben hat und die z.T. als Entwürfe zu betrachten sind, finden sich einige morphologische Fehler, z. B. Bergslagsresan 400 wird *latus* als ein Mask. behandelt: *exterior crassior latus* (ähnlich 384); ebda. 374 steht *cuius* statt *quarum* (zu diesem Sprachgebrauch s. Verf., Arctos 15 [1981], 70)¹⁰; Bref II 2 S. 18 Nr. 280 verwendet er *gratitudo* als ein Mask., und ebda. S. 155 Nr. 375 steht die Form *emulgat* für *emulgeat* (ein Beleg für *emulgo* im ThLL 5:2, 539, 33 f., aber *mulgo* ist recht häufig: ThLL 8, 1566, 63 ff.); ähnlich ist *aleo* (nach der 2. Konjug.) statt *alo* II 2 S. 115 Nr. 349 (ich kenne keine Parallelen); merkwürdig ist *noristi* statt *novisti* II 1 S. 110 Nr. 61 und S. 115 Nr. 63 (wohl nach *noritis* = *noveritis* u. dgl.¹¹); aus der Diaeta notiere ich Mehreres: 19 *pluria*; 35 *evanescentur* für *evanescent*; 81 *carnivora omnia agiles, quocumque mobiles*; 83 *ructus nidorosos* (Nom. Plur.); 113 *congregire* (Inf.); 120 *calor hic* (Akk. Sing.); 134 *ratio ... completissimus*; 146 *totus hepar*; 149 *vegetabiliorum* (Gen. Plur.); 156 *lac ... cocta* (andere Belege für fem. *lac* bei Verf., Acta Classica 12 [1969], 95 Anm. 15); 163 *alius* (Gen. Sing.; auch Nemesis 87. 117; vgl. *alterae* statt *alteri* Nemesis 47 [hierzu Verf., Studii Clasice 23, 1985, 75] und *toto* für *toti* Lachesis 133); 170 *aves levissimi, elegantissimi*; Nemesis 93 *referit* statt *refert* (zu thematischen Formen von *ferre* s. Neue-Wagener, Formenlehre der lateinischen Sprache 3, 617); Vita 178 *eadem methodo quo ...* Ich verzeichne auch die Form *degeas* statt *degas* Diaeta 52; dies soll aber nicht als ein Lapsus Linnés angesehen werden, denn dieses Verb wird in mittellateinischen Texten oft nach der 2. Dekl. flektiert, s. Verf., Der hibernolateinische Grammatiker Malsachanus (Uppsala 1965) 93, Glotta 54 (1976), 131. – In den gedruckten Schriften kommen so grobe Schnitzer wie die oben genannten kaum vor. Der unklassische Komparativ *australior* Flora Prolegomena Nr. 29 ist als eine praktische Neubildung zu beurteilen. Dasselbe gilt für die Superlative *aterrimus* und *glaberrimus* Fauna 206¹² und für das Adverb *mascule* Bref I 3 S. 139 Nr. 532.

Auch was die Syntax betrifft, finden sich mehrere spät- und mittellateinische Charakteristika, und in den Manuskripten gibt es auch reine Fehler. Die von J. B. Hofmann & A. Szantyr, Lateinische Syntax (München 1965) S. 32 aus dem archaischen und späten Latein belegte Konstruktion von *parcere* mit

dem Akk. begegnet Flora 3^v: *Nullas impensas parcens*. Ähnlich ist Bref II 2 S. 39 Nr. 293 *Ego gratulor me* (statt *mihi*) und S. 43 Nr. 298 *eum credebam*. Zur Konstruktion von *prohibere* mit dem Dat. Lachesis 38 s. Verf., Arctos 18 (1984) 41, Mittellateinisches Jahrbuch 18 (1983) 275 u. a. – Ich habe früher bemerkt, dass der Dativus agentis im Humanistenlatein auffallend häufig ist, vgl. z. B. Vetenskapssocieteten i Lunds Årsbok 1983 S. 28; auch Linné verwendet ihn oft, z. B. Fauna 11 *visus ... non nobis*; Flora 71 *visa nobis*; 93 *illis dicitur*; auch 106.120 u. a.; Bref I 3 S. 84 Nr. 495 *mihi corticale dictum*. Wenn *aliis* ohne Prädikat im Sinne von ‘nach anderen’ begegnet (z. B. Bergslagsresan 397 und Skånska resan 271,36 [vgl. 535]), wird es auch als ein Dat. ag. aufzufassen sein, indem *dictum* oder *dicitur* hinzuzudenken ist. Ebenso ist *incolis* Dalaresan 66 ein Dat. ag.: *Gräsänderna s. (=sive) Blånackarne incolis*. – Zur unklassischen Konstruktion Bergslagsresan 371 *latior quam longus* (statt *longior*) s. Hofmann–Szantyr a. O. 162 f. – Für die Verwendung von *quivis* statt *quisque* Wästgötaresan 199 14. *quovis die* ‘jeden 14. Tag’ kenne ich keine Parallelen. – Über die Flora 53 zu belegende Anfangsstellung von *autem* s. Hofmann–Szantyr a. O. 491: „In der Literatur finden sich hierfür nur vereinzelte Belege“; ebenso steht *enim* Dalaresan 328 am Anfang des Satzes (Hofmann–Szantyr a. O. 507). – In der Flora 112 steht *mox* statt *mox ut*; s. Hofmann–Szantyr a. O. 637 (seit der *Vetus Latina*). In der Fauna 252 wird *quam primum* als eine Konjunktion gebraucht; ebenso Bref I 4 S. 344 Nr. 911 und S. 353 Nr. 918, II 1 S. 109 Nr. 61, Flora 40. 188.254.342 u. a.; zu diesem im Humanistenlatein häufigen Sprachgebrauch s. Verf., Vetenskapssocieteten i Lunds Årsbok 1983 S. 30. Flora 129 *an noctem dicam* ‘falls ich es Nacht nennen sollte’; zu *an* ‘wenn’ s. Verf., Mittellateinisches Jahrbuch 18 (1983), 285 f. Hofmann–Szantyr a. O. 582 belegen *quod* statt *ne* nach *verba timendi* aus Hieronymus; der Sprachgebrauch findet sich bei Linné Bref I 5 S. 8 Nr. 929 *vereor quod* und S. 8 Nr. 930 *metuant ... quod*; vgl. oben S. 121. – Diaeta 153 lesen wir: *Diogenes ... nil ... extra ... quaesivit, ut vanas mortalium ambitiones ... irrideret*; zur Auslassung von *quam* vor dem *ut*-Satz s. Verf., Indogermanische Forschungen 75 (1970), 118. – Flora 316 *nullibi tamen per totum iter in copia hoc observavimus, quam ad cataractam*; zu *quam* statt *magis quam* s. Hofmann–Szantyr a. O. 593 f. – Linné verwendet oft *ne* statt *ne ... quidem* (wozu Hofmann–Szantyr a. O. 447 f.: seit Petron), z. B. Bref I 5 S. 70 Nr. 994 *ne verbum* ‘nicht einmal ein Wort’ und S. 80 Nr. 1004 *ne obolum possidet*; Diaeta 192 *Ne pennam ... describere possem*; auch Flora 63.157.206 u. a.¹³ – Über pleonastisches *-que* s. Hofmann–Szantyr a. O. 475 f.; vgl. *ubique* für *ubi* Bref II 1 S. 392 Nr. 254 *iam degis ubique plurima collectanea observantur*; *ideoque* für *ideo* steht Bref II 2 S. 152 Nr. 373; Bref II 2 S. 47 Nr. 302 *benignitate et maximoque amore*. – Hof-

mann–Szantyr a. O. 220 besprechen den Gebrauch von *adeo* statt *ideo*; er begegnet bei Linné Bref II 1 S. 60 Nr. 35, S. 66 Nr. 37 und S. 268 Nr. 175; Malmeström SLÅ 1939 S. 61 korrigiert also zu unrecht zweimal überliefertes *adeoque* in *ideoque* in der Schrift Theologice. – Wistrand, Eranos 65 (1967), 66 bespricht die Konstruktion mit dem Genitiv eines Gerundiums in Fällen wie Vita 177 *Herbaria conficiendi didicit*; den von Wistrand angeführten Belegen aus Linné füge ich hinzu: Bref II 1 S. 323 Nr. 213 *Academia Scientiarum omnino laboravit transmittendi et sibi comparandi hanc arbusculam in Europam*; II 2 S. 112 Nr. 346 *Dedit Soc. Regia mihi in mandatis hoc tibi significandi*; Lachesis 129 *obtinuit petendi quidquid vellet* (es ist unnötig, mit dem Editor *potestatem* hinzuzufügen). – Im klassischen Latein darf sich ja ein Relativsatz nicht auf einen Superlativ beziehen¹⁴, aber bei Linné finden sich einige Belege dafür, die sich durch Einfluss seiner Muttersprache erklären: Bref II 1 S. 300 Nr. 197 *maximas, quas umquam potui ... ago* (sc. *gratias*); II 2 S. 17 Nr. 280 *exemplum Summi favoris, quod in me mortalium contulit ullus, hoc Tuum excepi*.

Die nicht von Linné gedruckten Schriften enthalten aber andere unklassische Konstruktionen, die als Fehler anzusehen sind, die wohl Linné selbst (oder ein Helfer) bei einer sprachlichen Durchsicht ausgemerzt hätte. Vgl. etwa in den Briefen: II 2 S. 39 Nr. 293 ... *quos tamen plures proferre potuisse Horti* (statt -os) *dudum testantur Botanicorum scripta*; S. 156 Nr. 375 *pro filio meo ... vestras petiturum* (für -o) *terras*; S. 167 Nr. 385 *nunc mihi redditus* (für -o) *primum erit Te salutare*; S. 233 Nr. 420 *utinam non intermisisti* (für -misisses); Nemesis 39 *excusavit* (sc. *Pluto*) *se jam in senio coecum non videre quos* (statt *quibus*) *daret*; 45 *ad littus properat canicula quae in insula peperit caniculam, quae* (statt *quam*) *ore tenet*; 92 *Loefling Hispaniam petituro* (statt -us) *titubabat a me discedente* (statt -dens); 115 *venit ad Bl. expresse quasi a primate Angliae misso* (statt *missus*). Bezüglich Syntax ebenso wie bezüglich Orthographie und Morphologie stehen also die gedruckten Schriften auf einem bedeutend höheren Niveau als die Manuskripte.

Wenn Fälle wie die oben genannten den Eindruck erwecken, dass sich Linné um sprachliche Korrektheit wenig kümmerte, wenn das Geschriebene nicht gedruckt werden sollte, hat er dennoch auch über grammatische Fragen nachgedacht und konnte sich auf diesem Gebiet wenn nötig mit triftigen Argumenten verteidigen. Das geht z. B. aus einer brieflichen Antwort an B. Bergius hervor, der ihn wegen seines fem. Geschlechts von *remex* kritisiert hatte: *Remex är wähl stricte masculini generis, och däruti felas intet. Men wij hafwa tagit oss den licentiam poeticam att göra det till comunis och brukat det uti feminino, då ordet penna subintelligitur; alltså remiges secundariae, quasi pennae, remiges dictae, secundariae* (Bref I 3 S. 118 Nr. 517).

Es ist aber im Wortschatz, dass Linné seine grösste Selbständigkeit dem Ciceronianischen Latein gegenüber zeigt. Im 16., 17. und 18. Jh. wurde ja die lateinische Terminologie der Naturwissenschaften geschaffen (s. M. Benner & E. Tengström, *On the Interpretation of Learned Neo-Latin* [Göteborg 1977] 51), und wie anfangs bemerkt hat Linné bei der Schöpfung der botanischen und zoologischen Nomenklatur eine entscheidende Rolle gespielt. Stearn, *Botanical Latin* 26 f. hebt hervor, dass Linnés Pflanzenbeschreibungen gewöhnlich keine Verba enthalten, und man kann feststellen, dass seine Neologismen hauptsächlich Substantive und Adjektive sind. Es hat keinen Zweck, alle in den genannten Schriften auftretenden unklassischen oder neugebildeten Wörter anzuführen, und die Besprechung der wissenschaftlichen Nomenklatur im besonderen überlasse ich, wie oben gesagt, anderen¹⁵. Hier sei nur darauf hingewiesen, dass Linné selbst in seiner Vita hervorhebt, dass er mehrere Termini eingeführt hat; er schreibt S. 181 bezüglich botanischer Termini: *Terminos novos introduxit: Involucrum, Gluma, Amentum, Spatha, Calyptra, Volva, Corolla, Nectarium, Filamenta, Antherae, Pollen, Fovilla, Germen, Stylus, Stigma, Siliqua, Legumen, Folliculus, Pomum, Bacca, Drupa, Arillus, Receptaculum, Paleae, Stipulae, Bracteae, Glandulae, Spinae, Aculei, Stimuli, Cyma, Scapus, Petiolus, Pedunculus etc. vel hos terminos figit Foliorumque figuras figurabat*; S. 182 bezüglich zoologischer Termini: *Termini artis desiderantur, introduxit itaque sequentes: Suturae, calli, verrucae. Capistrum, Lorum, Armillae, Crissum, Alecta. Impennes, Compedita, Remiges, primores, Secundariae. Rectrices 1, 2, 3. Scutum, scutellum, Nantes. Apodes, Jugulares, Thoracici, Abdominales. Larva, Pulpi, Halteres, Stemmata, Scutellum, Stigma. Hemiptera, Hymenoptera, Neuroptera. Alae reversae, fenestratae. Tentacula, Cardo, Anus, Vulva.*

In diesen Verzeichnissen sagt Linné nichts davon, was die verschiedenen Termini bedeuten. In Skånska resan aber gibt er eine andere Liste, und zwar von Linné sogenannter „ökonomischer“ Termini, und dort werden die schwedischen Entsprechungen beigelegt. Da mehrere dieser lateinischen Wörter durchaus ungewöhnlich und interessant sind, da es wertvoll ist zu erfahren, welche Bedeutung sie nach Linné haben, und da dieser Reisebericht ausserhalb Schwedens weniger bekannt ist, drucke ich dieses Verzeichnis hier ab:

<i>praedium</i>	lantgods	<i>præsepe</i>	täppa
<i>tugurium</i>	torp	<i>ergastulum</i>	kvia
<i>villa</i>	mansgårdshusen	<i>maceria</i>	stängsel
<i>madra</i>	ladugårdshusen	<i>clatri</i>	flätgårdsgård
<i>horreum</i>	sådeslada	<i>crates</i>	spöttgård
<i>foenile</i>	hölada	<i>arvum</i>	träde

<i>bovile</i>	fähus	<i>verbenna</i>	plogen
<i>caprile</i>	gethus	---	blädd
<i>caula</i>	fårhus	<i>ager novalis</i>	tvesäde
<i>opilio</i>	fårherde	— <i>restibilis</i>	ensäde
<i>pedum</i>	ringstav	— <i>vervacta</i>	en gång körd
<i>pera</i>	prentsel	— <i>partiarius</i>	halvnadsbruk
<i>hara</i>	svinhus	— <i>acceptæ</i>	teg
<i>gallinarium</i>	hönshus	<i>fovea</i>	dike
<i>anserarium</i>	gåshus	<i>comma</i>	snitt
<i>columbarium</i>	duvslag	<i>scamnum</i>	rygg
<i>hybernaculum</i>	orangeri	<i>colliquiæ</i>	vattufärer
<i>caldarium</i>	drevhus	<i>sulcus</i>	fåren i djup
<i>hydria</i>	vattukar	<i>porca</i>	fåren i höjd
<i>gutturnium</i>	vattukanna	<i>fori</i>	smal gång
<i>pala</i>	sköffel	<i>versura</i>	ren <i>quibusdam</i>
<i>ligo</i>	spada	<i>gleba</i>	koka
<i>tridens</i>	grep	<i>frit</i>	slögsäd
<i>rastrum</i>	räfsa	<i>glabreta</i>	solsvedd plats
<i>rutrum</i>	raka	<i>sicilimentum</i>	illa slagit
<i>sarculum</i>	hacka	<i>striga foeni</i>	flod, sträng
<i>occa</i>	harv	<i>proscindere</i>	rista
<i>falx</i>	lia	<i>arare</i>	ärja
<i>falcicula</i>	skära	<i>resulcare</i>	sneda
<i>vectis</i>	järnstör	<i>imporcare</i>	höstköra
<i>vehiculum</i>	bår	<i>lirare</i>	färja
<i>carrus</i>	skottkärra	<i>inarare</i>	mylla neder
<i>valgium</i>	trampbräde	<i>pastinare</i>	upptaga
<i>aratrum</i>	plog	<i>sarrire</i>	hopa <i>anglis</i>
<i>vomer</i>	bill	<i>occare</i>	harva
<i>stiva</i>	spret	<i>irrigare</i>	vattna
<i>dentale</i>	billsnytet	<i>amputare</i>	beskära
<i>jugum</i>	ok	<i>tondere</i>	klippa
<i>cylindrus</i>	vält	<i>inserere</i>	ympa
<i>fascis</i>	band, nek	<i>inoculare</i>	okulera
<i>vannus</i>	vanna	<i>runcare</i>	luka, rensa
<i>palus</i>	påle	<i>transmutare</i>	flytta
<i>pertica</i>	stång	<i>ablactare</i>	avlägga
<i>tribulus</i>	fotangel	<i>palea</i>	stäck
<i>tesqua</i>	allmänning	<i>tradux</i>	ympkvist
<i>pascuum</i>	hage	<i>malleolus</i>	telning
<i>pratium</i>	äng	---	snöplog

Einige dieser Wörter müssen besprochen werden; ich behandle sie in der Ordnung, in der sie bei Linné vorkommen. *Madra* 'Kuhställe' ist mir unklar; ich vermute, es steht für *magaria*. – *Anserarium* m. W. sonst unbelegt, natürlich

nach *gallinarium* gebildet. – *Hybernaculum* ‘Orangerie’ ist ein schönes Beispiel für die Verwendung eines alten Wortes in einer neuen, speziellen Bedeutung. – *Gutturnium* ‘Wasserkanne’ ist in unseren Wörterbüchern des klassischen und mittelalterlichen Lateins nicht belegt; es steht aber in Johannes Balbus’ *Catholicon* (Mainz 1460; Neudruck 1971) s.v.: *gutturnium ... vas aquatile in inferiori parte perforatum, quod inferius deguttat aquam*. – *Valgium* ‘Tretbrett’ ist mir unklar. – Zu *dentale* vgl. Serv. Georg. 1, 172 *dentale est lignum, in quo vomer inducitur*; ähnlich Isid. etym. 20, 14, 2. – *Glabreta* ‘von der Sonne abgebrannter Platz’ stammt aus Colum. 2, 9, 8f. *Solet autem salsam non numquam et amaram uliginem vomere terra, quae quamvis matura iam sata ... corrumpit et locis calentibus sine ulla stirpe seminum areas reddit*. *Ea glabreta* (so einige Hss. und Editionen; Lundström druckt *eam glaebam*) *signis adhibitis notari convenit*. – *Imporcare* (statt des jetzt gedruckten *imporcire*) stammt aus Colum. 2, 10, 6. – *Tesqua* ‘Gemeintrift’ ist ein weiteres Beispiel für die Spezialisierung und Modernisierung eines alten Wortes. – Linné wusste nicht, wie er ‘Schneepflug’ auf Latein nennen sollte.

Ich werde nun einige andere Wörter, die in den untersuchten Schriften Linnés vorkommen, kurz behandeln und sodann einige interessantere Ableitungen und Zusammensetzungen verzeichnen.

Antrorsum. Flora 56 *flos nimis planus et antrorsum reflexus*; auch Fauna 304.506 u. a. Das Wort ist nach *retrorsum* gebildet. Im ThLL ist es nicht belegt, wohl aber im Mittellateinischen Wörterbuch¹⁶ 1, 724, 17 ff., bei Bartal¹⁷, Plezia¹⁸, Fuchs-Weijers¹⁹ und in Word-List²⁰. Es findet sich auch bei Olaus Magnus, *Historia de gentibus septentrionalibus* (Rom 1555) 4, 3 S. 134.

Audire ‘genannt werden’. Diaeta 84 *quod crisis audit*. Zu dieser Verwendung von *audire* s. ThLL 2, 1291, 48f., Verf., Beatus Liebanensis, *Adversus Elipandum* (CCcm 59) XVIII.

Diurnus für *diuturnus*. Nemesis 79 Nr. 36 *Nil perpetuum, pauca diurna*. Dies ist ein Zitat aus Sen. dial. 11, 1, aber, wie Håkanson a. O. 96f. bemerkt, hat Seneca *diuturna*, und Håkanson möchte so schreiben. Er hat übersehen, dass im Mittellatein *diurnus* mehrmals im Sinne von ‘lange dauernd’ gebraucht wird, und zwar weil es als eine Ableitung von *diu* aufgefasst wurde (Verf., Arctos 14 [1980], 47). Linné kann diese Verwendung von *diurnus* in seiner Lektüre gesehen und deshalb *diurnus* und *diuturnus* als Synonyma betrachtet haben.

Extus ‘aussen’. Flora 185.207; Fauna 31. Dieses im ThLL unbelegte, aber von Bartal verzeichnete Wort ist eine Rückbildung aus *exterior*, und zwar nach Analogie von *intus interior*.

Incurius (für *incuriosus*). Lachesis 14 (zweimal). 103. Im ThLL s. v. wird nur

ein Glossenbeleg angeführt, s. aber Verf., Vetenskapssocieteten i Lunds Årsbok 1983 S. 33 f.

Panatella 'Zwiebäcke'. Bref I 5 S. 8 Nr. 929. Diminutiv von *panata* > frz. *panade*. Auch bei Wilh. Salic. chirurg. 22 (ed. Venedig 1546 S. 328 A).

Per consequens 'folglich'. Diaeta 88.160; Vita 126. Dies ist ein im Mittel- und Neulatein recht häufiger Ausdruck, s. Verf., Vetenskapssocieteten i Lund Årsbok 1983 S. 38. Lachesis 78 tritt dafür *per consequentiam* ein.

Primum ver statt *ver*. Bref II 2 S. 116 Nr. 349; Fauna 236.286.309. Zu diesem im Mittellatein mehrfach begegnenden und im Romanischen weiterlebenden (ital., span. *primavera*) Ausdruck s. Verf., Kungl. Humanistiska Vetenskaps-Samfundet i Uppsala Årsbok 1985 S. 134.

Ich verzeichne nach Suffixen einige interessante Ableitungen Linnés, von denen keine klassisch ist und mehrere auch im Spät- und Mittellatein nicht begegnen.

-alis. *Arsenicalis* Diaeta 89. *Horizontalis* Flora 27.144 (auch bei Bartal, Plezia und in Word-List [1686]). *Longitudinalis* Diaeta 161; Fauna 22.40 usw. (auch bei Bartal und in Word-List). *Praeternaturalis* Diaeta 57 (auch Bartal und Word-List). *Salicalis* Diaeta 189 (Word-List; auch Albert. M. animal. [ed. Stadler] 1, 240. 365; 7, 134; 14, 57; veget. [ed. E. Meyer & C. Jessen] 3, 69; Matth. Platear. gloss. S. 371 C)²¹. *Transversalis* Fauna 47 (Bartal und DuCange²²). *Umbilicalis* Lachesis 32.

-aneus. *Frustraneus* Bref II 2 S. 205 Nr. 406 und S. 256 Nr. 432. S. Verf., Vetenskapssocieteten i Lunds Årsbok 1983 S. 32.

-astrix. *Medicatrix* Dalaresan 67. Zu Pejorativen auf *-astrix* im Humanistenlatein s. Verf., Vetenskapssocieteten i Lunds Årsbok 1983 S. 32.

-atus. *Campanulatus* Fauna 541 (Bartal). *Lunulatus* Fauna 140. *Punctatus* Fauna 64.208 (DuCange; vgl. unten S. 133). *Sagittatus* Fauna 79. *Verticillatus* Flora 2 (vgl. *verticillatim* Flora 32).

-ceus. *Arenaceo-micaceus* Skånska resan 332 (*arenacius* bei Fuchs-Weijers). *Cylindraceus* Lapplandsresan 116. *Olivaceus* Fauna 237 (Bartal). *Papilionaceus* Lapplandsresan 67. *Pulveraceus* Dalaresan 154. *Spadiceus* Fauna 88. *Terraceus* Utlandsresan 331 (geschrieben *terraqueus*; = *terrestris*; auch Ps. Avic. anim. 6, 17 [S. 326]. Vgl. unten S. 133 zu *subcylindraceus*).

-esco. *Caulesco* Flora 69; Lapplandsresan 31 (Bartal). *Glauesco* Fauna 312.320 (auch Albert. M. animal. [ed. Stadler] 19, 15). *Grisesco* Fauna 321.322. *Opalesco* Wästgötaresan 270.

-etum. *Alnetum* Fauna 28 (vom ThLL einmal aus Glossen belegt, im Mittellatein recht häufig). *Cerasetum* Fauna 81. *Ericetum* Fauna 73.284; Flora praef.

6^r (Bartal, Word-List). *Iuniperetum* Fauna 86.200. *Lupuletum* Fauna 304 (Bartal, Plezia). *Salicetum* Fauna 104 (DuCange).

-*fer*. *Anatifer* Fauna 514. *Balsamifer* Bref I 5 S. 65 Nr. 991. *Margaritifera* Fauna 516 (Word-List 1652). *Nectarifer* Flora 185.

-*formis*. *Antenniformis* Fauna 509. *Cimiciformis* Fauna 251 f. *Cordiformis* Fauna 302 (Bartal). *Ensiformis* Fauna 218; Flora 89. *Falciformis* Dalaresan 103 (Bartal). *Filiformis* Flora 136.142. *Infundibuliformis* Flora 62.64 (Bartal). *Lentiformis* Fauna 225. *Lumbriciformis* Wästgötaresan 192. *Moniliformis* Fauna 326 (Bartal). *Pediformis* Fauna 509. *Pinniformis* Fauna 17. *Pisiformis* Fauna 10. *Pyriformis* Fauna 516. *Reniformis* Fauna 311. *Schistiformis* Wästgötaresan 234. *Scrotiformis* Flora 246. *Terebriformis* Fauna 524.

-*ger*. *Cruciger* Fauna 238 (Bartal, Latham²³, Plezia).

-*inus*. *Lacertinus* Bref II 1 S. 403 Nr. 256.

-*itus*. *Animitus* 'vom Herzen' Bref I 4 S. 290 Nr. 858; I 5 S. 36 Nr. 960; S. 60 Nr. 965; II 2 S. 150 Nr. 371. Im ThLL nur aus Nonius belegt.

-*ivus*. *Distensivus* Diaeta 167 (Word-List). *Inunctivus* Lachesis 72. *Mastivus* (*canis*) Fauna 3 (Novum Glossarium, Word-List). *Palliativus* Bref I 5 S. 75 Nr. 998 und S. 76 Nr. 1000 (Bartal). *Pungitivus* Diaeta 187 (Bartal, DuCange, Word-List; auch Albert. M. animal. [ed. Stadler] 8, 38; Chron. Reinh. a. 1195 [MGH Script. 30 S. 553, 11]; Gesta Boem. 29 [MGH Script. 24 S. 481, 28]; Urso anat. 207 S. 45; Urso gloss. 22 S. 48, 18)²⁵. *Transmutativus* Bergslagsresan 402 (Word-List; auch Albert. M. euch. 6, 2, 2, 19 [ed. Borgnet S. 395 a, 1]; metaph. 9, 1, 2 [ed. Borgnet S. 521 a, 43]; summ. creat. II 1, 13, 1 [ed. Borgnet S. 127 b, 29]). Zur Verbreitung der Bildungen auf -*ivus* im Mittellatein und später s. neuerdings A. Piltz, Eranos 83 (1985), 155 ff.

-*ntia*. *Florescentia* Flora 69.71.139 usw.; Vita 90. *Frondescentia* Lachesis 66; Vita 90. *Inebriantia* Vita 164. *Protuberantia* Öländska och Gotländska resan 200.

-*orius*. *Grallatorius*. Bref I 2 S. 186 Nr. 293 und S. 260 Nr. 358. *Indigitorius* (*digitus*) Lapplandsresan 141. *Oscillatorius* Bref I 4 S. 349 Nr. 914. *Repletorius* Bergslagsresan 402.

-*orsus*. *Sinistrorsus* (Adjektiv) Fauna 522.525 (zur Adjektivierung s. E. Löfstedt, Coniectanea [Uppsala 1950] 52 ff. und Verf., Vetenskapssocieteten i Lunds Årsbok 1983 S. 40 Anm. 12 über adjektivisches *extrinsecus* u. dgl.).

-*osus*. *Adiposus* Lachesis 118; Wästgötaresan 286. *Fibrosus* Flora 7.98 (Bartal, DuCange). *Filamentosus* Flora 7.16.186. *Grumosus* Diaeta 186. *Maxillosus* Fauna 140.230. *Scirrhusus* Diaeta 38.65. *Siliculosus* Flora 209. *Siliquosus* Flora 213 (Bartal, Word-List 1570). *Stertorosus* 'schnarchend' Bref I 4 S. 255 Nr.

825. *Ventricosus* Fauna 515. Keine dieser Ableitungen wurde von A. Ernout, *Les adjectifs latins en -osus et en -ulentus* (Paris 1949) verzeichnet.

-*tas*. *Flexilitas* Lachesis 13 (vom ThLL nur als varia lectio verzeichnet).

-*ties*. *Glabrities* Flora 151 (Bartal).

-*tim*. *Cruciatim* Lapplandsresan 161.176. *Longitudinatim* Bergslagsresan 377. *Pinnatim* Flora 342. *Plicatim* Fauna 201. *Reticulatim* Dalaresan 40 (auch Albert. M. animal. 1, 302; veget. 2, 49; in Iob 40, 12 [ed. M. Weiss S. 478, 18]).

-*tio*. *Deglutitio* Lachesis 17. *Ingravidatio* Nemesis 60.

-*turio*. *Dormiturio* Lachesis 100. *Vomiturio* Lachesis 95. Zu den Desiderativa auf -*turio* s. Verf., Vetenskapssocieteten i Lunds Årsbok 1983 S. 35.

-*ulentus*. *Flatulentus* Lachesis 106 (von Ernout a. O. nicht verzeichnet).

Linné verwendet auch viele unklassische Diminutiva: *Animalculum* Diaeta 50.186; Fauna praef. 2^v; 6^r (Bartal; von Benner & Tengström a. O. 1693 aus Unaeus belegt). *Florula* Flora 75 (auch Carm. Bur. B 103, I, 2 a, 9 und 108, 2 b, 8). *Foveola* Fauna 518 (auch Aethicus Ister 37 [ed. Wuttke S. 25, 25]). *Matronula* Flora 109. *Speciminiculum* Bref II 2 S. 175 Nr. 389. Bisweilen verwendet Linné eine Diminutivendung statt einer anderen üblichen, z. B. *uxorula* statt *uxorcula* Bref I 4 S. 295 Nr. 862; *tessulatim* für *tessellatim* Flora 246.

Hier seien auch einige der zahlreichen Ableitungen auf -*iusculus* verzeichnet, die bei Linné vorkommen: *Acutiusculus* Diaeta 51; Fauna 44.510. *Compresiusculus* Fauna 522. *Convexiusculus* Fauna 529. *Crassiusculus* Flora 297 (Bartal). *Erectiusculus* Fauna 14. *Horridiusculus* Diaeta 166. *Humidiusculus* Flora 107.365 (Bartal). *Laeviusculus* Fauna 58.219.517. *Latiusculus* Fauna 211. *Molliusculus* Fauna 201; Flora 136. *Oblongiusculus* Fauna 151.253.529. *Obtusiusculus* Fauna 37.78.224 (Bartal). *Pallidiusculus* Flora 111 (ein unsicherer Beleg im ThLL). *Planiusculus* Fauna 2.192. *Rigidiusculus* Flora 85. *Scabriusculus* Fauna 219. *Teretiusculus* Fauna 22.103.204. *Villosiusculus* Flora 241. Als vorsichtiger Wissenschaftler wollte Linné durch Gebrauch dieser Endung seine Adjektive etwas abschwächen; zum selben Zweck hat er auch das Präfix *sub-* verwendet, s. unten S. 133.

Linné verwendet auch eine Menge unklassischer Komposita. Hier seien nur einige Typen exemplifiziert. Zusammensetzungen mit einem Substantiv: *Fumibibitor* Diaeta 101. *Funambulo* Vita 55 (auch Gerhoh. in psalm. 39 [MGH Libell. de lite 3 S. 438, 2], Herbord. Ott. 3, 24 [ed. I. Wikarjak S. 187]). *Metallifossor* Diaeta 66 (Bartal). *Solifugus* Dalaresan 148 (auch Amarc. Serm. 3, 637 [ed. Manitius S. 159]). – Mit einem Adjektiv oder Pronomen: *Crassicornis* Fauna 254. *Multisulcus* Diaeta 77 (vgl. das alte *bisulcus*). *Novaccola* Flora 18. 25. *Recurvicornis* Fauna 347. *Ruficollis* Fauna 206. *Rufipes* Fauna 184. – Mit einem Zahlwort (und *semi-*, *bi-*, *tri-*): *Quinquefidus*, *sexfidus* Flora 104; *semitrifi-*

Flora 297 (vgl. *bifidus*). *Semiglobosus* *Lapplandsresan* 142. *Sedecimguttatus*, *octodecimguttatus*, *vigintiguttatus* *Fauna* 158; *octoguttatus* *Fauna* 212. *Bilobus* *Fauna* 248; *trilobus* *Fauna* 287. *Bimaculatus* *Fauna* 271. *Unipunctatus* *Fauna* 153; *quinquepunctatus*, *septempunctatus* *Fauna* 154 usw. *Quadripustulatus*, *sempustulatus*, *decempustulatus* usw. *Fauna* 159. *Bivalvis* *Fauna* 238. *Octidium* *Bref I* 5 S. 12 Nr. 934 (ein Beleg im *Novum Glossarium*; auch Luther, *Tischreden* [Weimarer Ausgabe] Bd. 2 S. 460, 24). – Die zahlreichen Zusammensetzungen bei Farbenbezeichnungen (*Fauna* 7 *griseo-fuscus*, 28 *croceo-fuscus*, 43 *caesio-rufescens* usw.) verdienen eine besondere Untersuchung²⁶. Dieser Typus von Adjektivkomposita, bei denen das erste Adjektiv auf -o endigt, ist auch sonst bei Beschreibungen häufig: *Fauna* 518 *reflexo-echinatus*, 520 *conico-convexus*, 523 *curvato-multangulus*, 524 *patulo-caudatus*, 528 *subrotundo-lunata*, 529 *producto-convexus*; *Wästgötaresan* 194 *fusco-maculatus*, 201 *inciso-serratus*.

Adjektivische Zusammensetzungen mit *sub-* sind ungemein häufig in der *Fauna*; falls nicht anders vermerkt, stammen die folgenden Belege aus diesem Texte: *Subaeneus* 224. *Subaequalis* 528. *Subangulatus* 534. *Subargenteus* 337. *Subbarbatus* 311. *Subcaniculatus* 535. *Subcarinatus* 238.523. *Subcarnosus* *Wästgötaresan* 163. *Subcaudatus* 282.283. *Subcinereus* 527 (auch *Pontif. Rom.-Germ. [Studi e Testi 227]* S. 220, 10). *Subclavatus* 258. *Subcompressus* 513. *Subconcolor* 277. *Subcordatus* 518. *Subcoriaceus* 510. *Subcristatus* 298. *Subcroceus* 532 (auch *Theoph. sched.* 3, 62 [ed. *Dodwell* S. 121]). *Subcultratus* *Fauna* 52. *Subcylindraceus* 526; *Skånska resan* 382. *Subcylindricus* 182.510 (*Bartal*). *Subdeflexus* 302. *Subdentatus* 181.276. *Subdiaphanus* 518.521. *Subdidymus* *Wästgötaresan* 207. *Subelinguis* 296.309. *Subfenestratus* 291. *Subferrugineo-obsoleteus* 194. *Subflavescens* *Wästgötaresan* 270. *Subfuliginosus* 315. *Subfuscens* 304. *Subfuscus* *Skånska resan* 382 (auch *Epist. var. I* 17 [MGH *epist.* 4 S. 523, 8]). *Subglobosus* 261.513. *Subgriseus* 287 (auch *Hildeg. div. op.* 3, 7, 1 [Migne *PL* 197 S. 961 D], 3, 7, 8 [S. 967 D]). *Subinterruptus* 210. *Sublongior* 193 (auch *Chron. Median.* 3 [MGH *Script.* 4 S. 88 b, 8]). *Submacronatus* 517. *Suboppositus* 540. *Suborbicularis* 529 (*Bartal*). *Suborbiculatus* 333. *Subovalis* 181.192. *Subovatus* *Wästgötaresan* 207. *Subpellucidus* 509. *Subpilosus* 186. *Subprismaticus* *Wästgötaresan* 296. *Subpurpureus* 210; *Wästgötaresan* 227. *Subramosus* 302. *Subrotundus* 518; *Skånska resan* 41. *Subsolitarius* 530. *Substriatus* 517. *Subtestaceus* 187. *Subtruncatus* 224. *Subumbilicatus* 528. *Subvillosus* 252.516 (auch *Aurora consurg.* 22 [ed. *Basel* 1593 S. 243, 10]). *Subviolaceus* 219.291. *Subvirescens* *Wästgötaresan* 258.

Von interessanten verbalen Zusammensetzungen vermag ich nur zu zitieren *pronasci* *Flora* 2.64.211 und *denatus* im Sinne von 'tot' *Wästgötaresan* 298 f. (einige andere Belege für dieses Partizip, und zwar auch aus dem schwedischen Neulatein, führe ich im *Kratylos* 20 [1975], 121 an).

Anmerkungen

1. S. zuletzt den Sammelband Linnés språk och stil, hrsg. v. S. Fries, Vänersborg 1971.
2. Vita Caroli Linnaei, hrsg. v. E. Malmeström und A. Hj. Uggla, Uppsala 1957 (eine Vita ist auf Latein, die anderen auf Schwedisch geschrieben; keine ist von Linné gedruckt; im folgenden abgekürzt: Vita).
3. S. auch Vita 113 *var dock dervid att märka, det Linnaei genie var så aldeles intet för språk*; 144 *a linguis addiscendis facile omnibus var han alien i hela sin tid*. Vgl. ferner Th. M. Fries, Linné. Lefnadsteckning I (Stockholm 1903) 231 Anm. 2.
4. Ähnlich wird *ferire* von Linné Praefatio Nr. 4 gebraucht: *si ... istum feriant Botanici gradum ...*
5. Auch Brief II 2 S. 144 Nr. 367 *utinam Tua navis brevi appelleret*.
6. Die beigegeführten Übersetzungen des Lateins sind oft fehlerhaft, s. Håkanson, SLÅ 1982–83 S. 93 ff.
7. Die beigegeführten Kommentare sind wertvoll, und Übersetzungsfehler sind selten; vgl. aber 331 *Jungfruer i bröllop sitta fram om männen. Doctores med. före Professores och Rådherar, donec officium, tum non „tills de få ämbete, ej sedan“* (S. 363); vielmehr muss *donec officium* 'so lange als sie (d. h. die Doktoren) ein Amt haben'. Druck- oder Lesefehler kommen auch kaum vor, aber 323 steht *pileum calmeum* statt *pileum culmeum* 'Strohhut'.
8. Als einen Suezismus ist vielleicht auch das von Heller a. O. 109 erwähnte „modal lapse“ in der Dedicatio 29 *In animo habuissim ... At ...* zu beurteilen. Das entspricht dem schwed. als irrealen Konjunktiv aufgefassten *jag hade tänkt ...* Ähnlich ist das Plusquamperfekt Konj. Brief II 1 S. 379 Nr. 247 *Fere oblitus fuissem 'jag hade nästan glömt'* (aber auch dt. *ich hätte fast vergessen*).
9. Für die Schreibung *crabones* statt *crabrones* Brief I 5 S. 62 Nr. 987 gibt es viele Parallelen in Handschriften, s. ThLL 4, 1096, 58 ff.
10. Das Latein von Bergslagsresan ist überhaupt ungewöhnlich schlecht, s. auch oben S. 123.
11. Der Herausgeber hat an der ersten Stelle, aber nicht an der zweiten ein ! hinzugefügt. Die Verwendung der Ausrufungszeichen in dieser Ausgabe ist überhaupt mehrfach merkwürdig: warum wird z. B. S. 114 Nr. 63 gedruckt: *quod foret[!] paradoxum?* Die Form *foret* statt *esset* ist ja klassisch.
12. Vgl. den scherzhaften schwedischen Superlativ *ultimaaste* Brief I 4 S. 65 Nr. 652.
13. Vielleicht gehört Brief II 2 S. 106 Nr. 341 (*medicus*) *qui ne quid contulit ad rem herbariam* hierher: *ne quid* 'nicht einmal etwas'; oder für *non quidquam?*
14. Zur Erklärung s. Verf., Maia 37 (1985), 57 f.
15. S. etwa zur zweigliedrigen Nomenklatur Heller a. O. 41 ff.
16. München 1959 ff.
17. Glossarium mediae et infimae Latinitatis regni Hungariae, ed. A. Barta, Leipzig 1901, Neudruck Hildesheim 1970.
18. Lexicon mediae et infimae Latinitatis Polonorum, ed. M. Plezia, Warszawa 1953 ff.
19. Lexicon Latinitatis Nederlandicae medii aevi, ed. J. W. Fuchs & O. Weijers, Leiden 1977 ff.
20. Revised Medieval Latin Word-List from British and Irish Sources, ed. R. E. Latham, London 1965.
21. Diese Belege verdanke ich dem Archiv des Mittellateinischen Wörterbuchs in München.
22. Glossarium mediae et infimae Latinitatis, ed. C. DuCange, Paris 1883–87; Neudruck Graz 1954.
23. Dictionary of Medieval Latin from British Sources, ed. R. E. Latham, London 1975 ff.
24. Novum Glossarium mediae Latinitatis, ed. F. Blatt u. a., Kopenhagen 1957 ff.
25. Diese Belege verdanke ich dem Archiv des Mittellateinischen Wörterbuchs in München.
26. Vgl. vorläufig die Übersicht bei Stearn a. O. 236 ff. (mit Literatur).

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SVEN KILANDER

Ett gammalt herbarium

I fytoteket, det botaniska museet, i Uppsala låg ett herbarium länge, kanske i 90 år, mer eller mindre glömt tills det för cirka 30 år sedan togs fram ur sin vrå och fick plats i ett skåp under beteckningen »herbarium antiquum». Oftast har det dock kallats »västgötaherbariet», eftersom de flesta växtetiketterna berättar om en växtplats i Västergötland men inte avslöjar insamlarens namn.

Nästan alla växter med uppgivet insamlingsår är tagna under förra hälften av 1800-talet, framförallt under 10-, 20- och 30-talen. Som framgår nedan var det Lars Dalman, possessionat i Lidköpingstrakten, som en gång ägde herbariet och hade samlat nära hälften av materialet. Han har tidigare omnämnts i botanisk litteratur endast i förbigående. Emellertid var han ganska känd bland samtida naturalhistoriker, delvis såsom bror till Johan Dalman, och han förtjänar att inte bli helt bortglömd av sena tiders botanister.

Johan Dalman

I början av 1790-talet flyttade Jakob Vilhelm Dalman (1738–1813) till Västergötland och bosatte sig på Ro (Stora Ro) i Mellby sn en mil VSV om Lidköping och en dryg halvmil från Vänern.¹ Född på Hinseberg i Näsby sn i Västmanland avlade han bergsexamen 1754 efter tre års studier i Uppsala, där han räknades till Linnés lärjungar, och gick sedan in vid Bergskollegium; från detta verk drog han sig 1781 med bergmästares titel tillbaks till Hinseberg. Förutom hans maka ingick i familjen vid flyttningen till Västergötland sönerna Johan Vilhelm och Lars Reinhold Nils samt dottern Maria Elisabet. En andra dotter, Kristina Regina Ulrika, föddes 1794 på Ro. Änkling 1800 gifte han samma år om sig med Johanna Elisabet König. Även om det var Lars Dalman som samlat mest växter till herbariet, hör även hans syskon till dem som åtminstone indirekt kan sättas samman med dess uppbyggnad.

I den svenska biologins historia intar Johan Vilhelm Dalman (1787–1828) en hedrad plats, framförallt som entomolog och paleontolog. Efter avslutade

juridikstudier i Lund 1803–1805 fortsatte han studierna i Uppsala för C. P. Thunberg och avslutade dem med att 1817 promoveras till medicine doktor. Han blev 1818 Vetenskapsakademiens bibliotekarie samt intendent för dess zoologiska samlingar och 1819 adjunkt och botanices demonstrator vid Karolinska institutet för att 1827 där bli professor i botanik och naturalhistoria.² Redan före åren i Lund hade hans intresse för naturen väckts, och därvid spelade fadern en stor roll.

Alltifrån det tidiga 1800-talet hade Johan Dalman täta kontakter med den kände entomologen och Linnélärjungen Leonard Gyllenhaal (1752–1840) på St. Höberg i N. Vånga SV om Skara, knappt tre mil från Ro.³ Även om den senare mest blivit känd som framstående skalbaggsforskare, hade han mångsidiga naturalhistoriska intressen med goda kunskaper i botanik och geologi. Man kan nästan säga att han var en enmansfakultet på sin gård i utkanten av västgötasläkten, och förutom med Johan Dalman stod han i nära förbindelse med bl. a. de kända entomologerna Gabriel Marklin⁴ och Carl Johan Schönherr; den förre som blev nära vän med Johan och Lars var under sex år i kondition på Höberg, och den senare som innehaft sidenväveri i Stockholm, hade 1812 slagit sig ner på Sparresäter strax NV om Billingen.

Sina viktigaste naturiakttagelser, förvärv etc. antecknade Johan Dalman alltifrån 1803 i sin dagbok.⁵ Särskilt under de tidiga studieåren räckte hans tid till även för botanik, och i broderns herbarium finns många insamlingar från Västergötland men även en del från t. ex. Stockholmstrakten 1819. I allmänhet står hans namn på etiketten, men ibland får man lita till handstilens karakteristika. Många växtark fick han av lärare och kamrater, men detta slags tillskott behandlas senare. Här skall endast två sådana nämnas, noterade i dagboken den 6 september 1806 i Kemi under en resa runt Bottenhavet. Det ena var *Dianthus superbus*, praktnejlika, vars originaletikett också anger »Kemi 1806», medan det andra, *Calypto bulbosa*, norna, i herbariet saknar både blomma och etikett. Sannolikt fick han inte bara den tidigblommande nornan utan även nejlikan som pressad, medan han tydligen tog en annan av herbariets växter själv under resan, *Arabis petraea*, strandtrav, med etiketten »*Cardamine petraea*. Hernösand 1806». Han hade i Härnösand den 5 augusti träffat Gunnar Backman, lärare i klassiska språk vid gymnasiet, Linnébeundrare och intresserad botanist, känd bl. a. för sin tävlingsskrift 1792, som vann Vitterhetsakademiens pris i ämnet »Försök till Inscription å framlidne Archiatern v. Linnés minnesvård på Latin». I dagboken noterade han »På Excursion med Mag. Backman – *Cardamine petraea*. Växter. Insecter».

När Johan Dalman sökte adjunkturen i naturalhistoria vid Karolinska

institutet visste han att hans meriter i botanik var svaga – hans konkurrent var nedannämnde J. E. Wikström, som å sin sida nästan enbart hade botaniska meriter. Hans skrev därför till Göran Wahlenberg, då botanices demonstrator i Uppsala, och bad att han som var »den enda som haft godheten besöka Roo ... skulle kunna intyga att Trädgårdsskötsel och blomsterodling ej äro mig alldeles främmande». ⁷ Besöket hade ägt rum den 10–11 juli 1817 under Wahlenbergs långa geologiska resa. Dalmans dagbok antyder att både trädgård och orangeri var artrika, och Wahlenberg kände säkert igen flera av de arter som han eller Thunberg hade givit Dalman som frö eller plantor ur Hortus Upsaliensis.

Lars Dalman

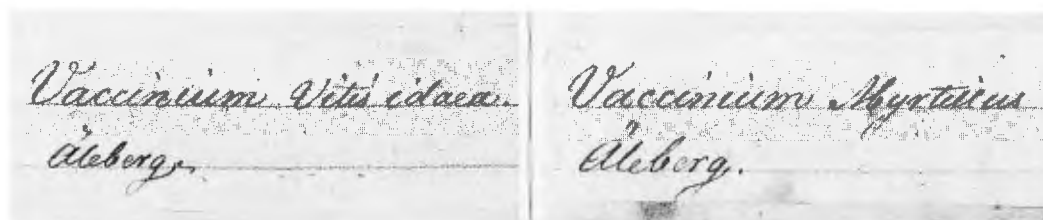
Lars Dalman (1789–1858) sändes 1796 tillsammans med Johan att gå i herrnhutarnas internatskola Kristiansfelt i Slesvig, och där stannade de i fem år. ⁸ Han studerade sedan vid Lunds universitet 1803–1805 samtidigt med brodern. Även Lars flyttade därefter över till Uppsala och skrevs in där som student 1806. Han läste bl. a. botanik för Wahlenberg, och som ämnet då ingick i medicinska fakulteten kan man misstänka att han siktade mot att bli läkare. Emellertid lämnade han universitetet utan examen 1811, tydligen med viss bitterhet mot Thunberg. ⁹

Likaväl som fadern intresserade Johan för naturen får man förutsätta, att också Lars fick del av sådan undervisning. Av Johans dagböcker framgår att Lars delade broderns intresse för entomologi, och dagboken berättar även att Lars följde med Wahlenberg på botaniska exkursioner i Uppsalatrakten, då de samlade mossor och lavar. ¹⁰ Sedan Lars återvänt till Västergötland, bodde han i början på Ro och senare på Äleberg och slutligen som ägare på Katrineberg, även dessa två senare större gårdar i Mellby.

Medan Johan allt mindre kom att ägna sig åt botanik, blev detta ämne tydligen det stora intresset för Lars, där han bodde som privatlörd på sin gård på slätten, en kollega till de mer kända Leonard Gyllenhaal och Schönherr. Även lavar samlade han, såsom framgår av brev till Wahlenberg den 30/11 1819: »Jag har alltsedan jag lämnade Upsala 1811, helt och hållit negligeradt Lichenes, men denna höst har jag ånyo börjadt intressera mig för dem och äfven gjort en ej obetydlig samling af sådana som växa på träd, sten och jord», och i fortsättningen bad han om adressatens hjälp med bestämning av lavar som han sände upp. Den 30/1 1829 skickade han jämte brev nya paket, ett med lavar och »för localens skull» några fanerogamer, och ett

Åreköping & Åleberg d. 30 Januari 1829.

Högädel och Värderande Herr Professor!



Överst: Ingressen i ett brev från Lars Dalman till Göran Wahlenberg, daterat i Åleberg (UUB G 320: 121). Foto: UUB. Underst: Växtetiketter för lingon och blåbär från Åleberg, skrivna av samma hand som brevet ovan. Foto: Fytoteket, Uppsala. Lars Dalman skrev aldrig sitt namn på etiketterna till de växter som han tog för det egna herbariet, ibland inte heller insamlingsår.

med »dubiösa växter» som han ville ha hjälp med.¹¹ Lavarna hade han samlat flitigt i flera år »på bergen i denna orten» (Åleberg), medan ganska få var från Kinnekulle.

Johan var sin broders stimulerande sällskap under exkursioner i Västergötland. Ett år efter Johans bortgång skrev Lars till Gabriel Marklin, att han i sin broder förlorade »den bäste och ömmaste Vänn, och hela naturen har för mig förlorat allt Intresse, sedan jag ej mera får betrakta den med Honom, och se den med hans ögon».¹² Sannolikt var Johans bortgång även en anledning till den återupptagna kontakten med Wahlenberg; Lars hade inte längre brodern som direkt eller indirekt kunde hjälpa honom med artbestämningar.

Det är denne Lars Dalman, vars handstil återfinns vid de flesta kollekterna i det aktuella herbariet (jfr stilprov). Många av de växter som andra samlat (det kan vara flera kollekter på samma ark) har en mer eller mindre provisorisk etikett, och då sitter där vanligen ännu en etikett som Lars eller ibland Johan renskrivit med uppgift även om insamlare. Men ungefär hälften

av kollekterna har endast Lars Dalmans etikett, och då finns oftast inget namn alls på insamlaren. Det gäller merparten av växterna från Skaraborgs län: ark från Ro, Äleberg och Katrineberg samt andra orter i Kållands härad (t. ex. Källstorp, Rackeby, Degeberg, Järna, Råda och Lunnelid), från Kinnekulle, från Borrud där hans yngsta syster bodde med sin man bruksägaren Georg Camitz en mil från Mariestad eller från Skagersholm där svågern var disponent, och från Grimmestorp i Härja sn 25 km ÖSÖ om Falköping där Lars hälsade på sin syster Maria och sväger Carl Gustaf König.¹³ Även makarna Königs son Carl Vilhelm (1808–1874), med tiden regementsläkare vid Skaraborgs regemente, var botaniskt intresserad, och i herbariet ligger flera insamlingar av honom.

Herbariet innehåller endast fanerogamer. Tyvärr saknas gräsen; förmodligen kom de aldrig med i sändningen till Uppsala. Ett ark av *Alliaria petiolata*, löktrav, ligger i ett tunt helark som är unikt i herbariet och har etiketten »*Alliaria Officinalis*. Ups. Östg. Nats. trädg. d. 18¹/₆65». Det är det enda med datum efter Dalmans bortgång; kanske lades det in i herbariet av misstag strax efter att herbariet kom till museet.

Totala antalet kollektor är ca 2 300; exakt siffra är svårt att lämna. En del ark utan etiketter är troligen dubletter. Exemplar av samma art som Lars fått från skilda håll, sitter ofta på gemensamt ark, och det är ibland svårt att veta vart etiketterna hör. Cirka 1 160 insamlingar anges från Västergötland; omkring 140 är icke eller endast ofullständigt etiketterade, och även de flesta av dem är sannolikt också därifrån. Kvar blir då drygt 1 000 från andra landskap (några få är utländska). Förutom de två brödernas växter innehåller herbariet material från 40 namngivna insamlare jämte några oidentifierade bidragsgivare.

Brödernas egna äldsta insamlingar gjordes 1805 i Fågelsång i Skåne; förmodligen hörde de till vad Johan samlade den 5 juni enligt dagboken: »ökt Herbarium med en 24 Växter». På etiketten till en annan insamling som han noterade i dagboken, *Drosera longifolia*, Grimmestorp den 14 juli 1808, skrev han till initialerna L. D. Som nedan nämns återkommer detta L. D., skrivet av Johan, på många växter som tagits av utomstående person.

Innan vi tittar på herbariets inslag av växter som samlats utanför Västergötland, är det lämpligt att dels nämna något om två botanister som Lars Dalman hade kontakt med i Västergötland, nämligen S. J. Lindgren och J. Mathesius, och dels dröja något vid en del västgötska fynd.

Sven Johan Lindgren

Sven Johan Lindgren (1810–1849), bördig från Vittinge i Uppland och student i Uppsala 1829, var 1839–1846 lärare vid Sveriges första lantbruksinstitut i Degeberg, Rackeby sn, inte långt från Ro.¹⁴ Han var skarpsynt och idérisk som botanist och god kännare även av kryptogamer, särskilt mossor och svampar. Som människa var han däremot djupt olycklig och splittrad, och när han lämnat sin lärartjänst talade han i brev till sin gamle lärare Elias Fries om sina »nära 7 högst olyckliga!!! år på Degeberg».¹⁵ Under sin tid där sysslade han mycket med botanik – förutom att han samlade material bl. a. till egna exsickat över foderväxter och mossor och till Fries' Herbarium normale, hann han med att publicera 16 smärre uppsatser och notiser, inräknat rättelser och tillägg.

Många av de fynd han offentliggjorde hade Lars Dalman gjort. Om dennes insatser för västgötafloristiken skrev Lindgren:¹⁶ »Tiden för utgifvande af en Flora Vestrogothica är neml. ännu obestämd. Herr L. R. N. Dalman, som länge med största noggrannhet och kritik studerat landskapets vegetation har likväl, hvad Fanerogamer och Filices beträffar, redan manuskriptet färdigt till en mera detaljerad vextförteckning för landskapet, men H:r Dalman har hittills, i förväntan på flere bidrag, tvekat att i tryck utgifva densamma. Hvad det herrliga Kinnekulle beträffar önskade jag att framdeles derom kunna lemna ett särskildt blad.»

August Rudberg, som 1902 var den förste att publicera västgötaflora, menade att Dalmans förteckning troligen var förkommen, och samma antog han om Lindgrens botaniska anteckningar.¹⁷ I dessa dagar, då det arbetas på en ny västgötaflora, hade det varit värdefullt få tillgång till dessa papper. Tyvärr tycks Rudbergs förmodanden vara riktiga.

Den enda nya uppgift jag sett om Dalmans manuskript finns i ett brev från Lindgren till Elias Fries:¹⁸

Dalman har lämnat mig en uppsats å de af honom och andra inom WGöthland fundna Fanerogama wexter. Med de tillägg jag dertill kunnat göra och med tillsättande af Musci och Lichenes, som jag här något nogare eftersett, kunde det väl bli en några arks uppsatts. – Men då kommer man och säger att det är Dalmans opus, ej mitt. Min mening har likväl aldrig varit att vilja tillegna mig något som tillhör en annan, utan om Flora Westrogothica skulle tilläfventyrs en dag komma att ventileras i Lund t.ex. så skulle tittelbladet upptaga Dalmans namn, jemte antyda att några tillägg blifvit gjorda af mig, äfwensom hwilka tillägg.

Sina fynd på Kinnekulle hade Lindgren berört redan tre år tidigare i brev till samma adressat.¹⁹

På Kinnekulle har jag funnit omkring 40 för stället nya phanerogama wexter. Jag har uppsatt en catalog på hwad som Linné, Bjerkander och Dalman funnit jemte tillägg af de nu under sommaren der fundna. --- Catalogen öfwer Kinnekulles wexter utbeder jag mig att få uppsända med Herr Tengberg eller någon annan.

Lindgrens egen Kinnekulle-lista finns inte i Elias Fries' handskriftssamling i Uppsala universitetsbibliotek; däremot finns några floristiska notiser i brev till Fries. Inte heller har jag funnit någon ledtråd i sökandet efter Dalmans uppsats. Kanske hade Lindgren den kvar, när han lämnade Degeberg och flyttade till Gammelstorp utanför Lidköping, där han bodde ännu i september 1847. – Två år senare dog han på Uppsala hospital.

Vad som bevarats till eftervärlden av Lars Dalmans kunskap om Västergötlands växtvärld tycks därför nästan endast vara uppgifterna på hans herbarieetiketter samt notiser som Lindgren publicerat jämte några data i Johans dagbok. Slutligen kan här nämnas att Lars Dalman under åtminstone ett år uppehöll Lindgrens tjänst på Degeberg.²⁰ Ett manuskript av honom, förmodligen föreläsningar från denna tid, innehåller ingen floristik.²¹

Johan Mathesius

Dalmans påbörjade västgötaflora var den andra i ordningen av ofullbordade – den första planerades av Johan Abraham Gyllenhaal med brodern Leonard som medhjälpare, och troligen kände Lars Dalman till detta projekt genom kontakt med Leonard Gyllenhaal och med Wahlenberg, som i sin *Flora svecica* utnyttjat uppgifter ur det Gyllenhaalska manuskriptet.²² Ett tredje försök till västgötaflora gjordes i början av 1850-talet av den ovannämnde Mathesius, vars påbörjade floramanuskript länge ansetts vara förkommet tills det återfanns för cirka 20 år sedan.²³ I Dalmans herbarium finns flera växter som Mathesius samlade, och Lindgren publicerade några av hans fynd.

Johan Mathesius (1800–1869) tillhörde en gammal svenskfinländsk kultursläkt med rötter i Luthers Tyskland. Som lärare vid Skara läroverk förvaltade han väl det linneanska arvet, och då dessutom Linné hade kontakt med åtminstone en representant för släkten, kan det finnas orsak att behandla honom närmare.

Johan Mathesius' fader Aron (1732–1808) var yngsta och 25:e barnet till den kände prosten Nils (Nicolaus) Mathesius i Pyhäjoki söder om Brahestad i Österbotten.²⁴ Den senares namn förekommer i Linnés »plånbok» på en lista över personer som besöktes (eller borde besökas) av Linné på återresan

från Lappland genom Finland 1732; då prosten inte omnämns i *Iter lapponicum* är det dock ovisst om Linné träffade honom.²⁵ Däremot hade Linné kontakt med prostens son Gabriel Mathesius (1705–1772), som var Linnés professorskollega i Uppsala men i teologiska fakulteten; han förekommer f. ö. i *Nemesis divina* och kunde knappast ha hört till Linnés närmare vänner.²⁶ Han understödde sin halvbror Aron under hans studietid i Uppsala 1754–1764, och denne måste ha tagit många intryck av Linné under sina studentår. En tredje i brödrakretsen var Per Niklas som 1734 disputerade i Uppsala på *Dissertatio geographica de Ostrobotnia*, en viktig topografisk avhandling. Aron Mathesius själv blev efter att bl. a. ha varit svensk pastor i London slutligen kyrkoherde i Fågelås söder om Hjo 1805.

Johan Mathesius blev student i Uppsala 1820, fil. dr 1830 och lärare vid Skara läroverk från 1829, först mest i gymnastik, sedan framförallt i naturalhistoria. Väl förtrogen med västgötabergen företog han mycket uppskattade exkursioner till Kinnekulle och Billingen med eleverna, av vilka flera som präster eller lärare kom att fortsätta studiet av landskapets flora. Under ett par decennier från 1830 var sannolikt adjunkt Mathesius (naturalhistoria var då ett lågstatusämne utan lektorat vid gymnasiet) skolans största pedagogiska och vetenskapliga kapacitet. Enligt Elias Fries hörde hans elever vid examinationen för studentexamen i Uppsala till de bästa bland studenterna, och Fries karakteriserade honom som mycket skarpsynt (»oculatissimus») och en synnerligen framgångsrik uppspårare av sällsyntare växter (»felicissimus plantarum rariorum indagator»).²⁷ Hans fynd av tistelhybrider på Mösseberg väckte uppmärksamhet, och han hade i motsats till många samtida svenska botanister en klar uppfattning om hybridbildningen mellan linneanska arter.²⁸ När potatissjukan (potatisbladmöglet) härjade svårt i Sverige i mitten av 1840-talet uppdrogs åt fyra personer att i vart sitt svårt utsatta län rapportera om sjukdomen till regeringen. Det var de tre välkända botanisterna Fries, J. G. Agardh och P. F. Wahlberg samt Mathesius; myndigheterna hade tydligen stort förtroende för Skaraadjunkten!²⁹ Mest känd är han i vår tid för sina fynd av *Orobanche reticulata*, tistelsnyltrot, och *Festuca altissima*, skogssvingel, såsom nya i Sverige samt återupptäckten av *Stipa pennata*, som inte hade setts av botanister sedan Linnélärjungen J. P. Falck fann den omkring 1760.

Några västgötska växtfynd

Några av de västgötska kollekterna i Dalmans herbarium är av olika skäl så intressanta att de förtjänar att närmare behandlas i denna uppsats.

När Skårman 1927 rapporterade sina fynd från 1919 av bergek, *Quercus petraea*, på Kållandsö och Kålland jämte H. E. Johanssons ett par år äldre fynd, trodde han att de var de första som funnit arten i Skaraborgs län; förekomst på Hunneberg strax utanför länsgränsen noterades redan 1746 under Västgötaresan av Linné, som dock inte urskilde denna typ som egen art. För några år sedan kunde visas att en floristiskt kunnig Skaragymnasist K. L. Brandt 1871 rapporterade arten från Kållandsö till Anders Sahlén.³⁰ Och Lars Dalman samlade den ännu tidigare, dock utan att uppge år. Växtlokalen var »Degeberg. Jerna». Han kallade växten först för »*Quercus robur* var.» och skrev sedan till *sessiliflora*.

Den enda bevarade mistel (*Viscum album*) som säkert vuxit på Kinnekulle, finns i herbariet med uppgiften att den tagits »vid ett torp vid Hellekis i en apel d. 10 Majj 1836». Insamlaren är onämnd men sannolikt stod Johan Mathesius bakom upptäckten. Fyndet har rapporterats tidigare; här skulle det därför inte ha tagits med om det icke funnits ytterligare att berätta om mistelns gamla förekomst i trakterna (arten är sedan länge utdöd i Västergötland).³¹

Linné skrev den 20 juni 1746 i sin Västgötaresa de i olika sammanhang citerade raderna om misteln på Kinnekulle:

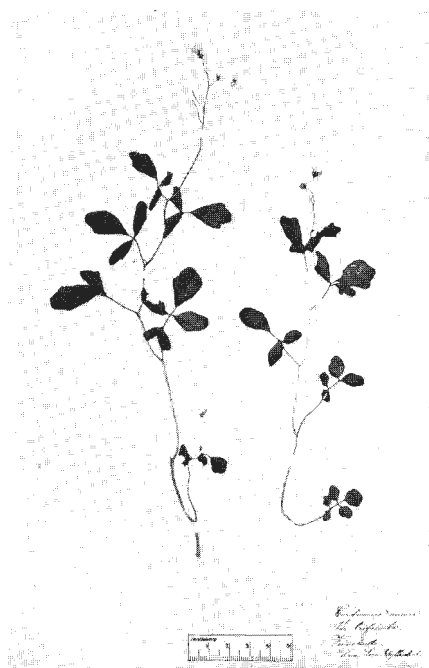
Wespelten kallades *Viscum* (Flor. 816.) som sågs här på Kinnekulle mer än på andra ställen, hälst i Aplar. Gemeene man trodde, at då denne Wespeltencen hängdes i huset, skulle det wara säkert för wålded.

Det förefaller åtminstone för en lekman, som om Linné här tecknat ner en mycket gammal föreställning. För att en sådan tradition skulle ha levat vidare måste växten ha haft gamla, säkra förekomster i trakten. Det är därför särskilt intressant att i brev från Lindgren till Fries den 23/12 1843 kunna läsa:³²

Viscum album har nu mogna bär på öarne mellan Degeberg och Kållandsö. Den är nu en raritet; men gamla gubbar berätta mig att den i deras ungdom war högst allmän i de gamla Lindar som fordom utgjorde den g^{la} skogen stycketals på nämnde öar.

Även om »gubbarna» knappt var 70 år, måste förhållandena ha gällt senast 1790-talet.

När Pehr Kalm 1742 reste i Västergötland fann han på Kinnekulle en korsblommig ört, som Linné i 1:a upplagan av Flora svecica 1745 kallade *Cardamine folia ternatis* och i Species plantarum 1753 samt i 2:a upplagan av floran 1755 gav det binära namnet *Cardamine trifolia*, dessutom uppgiven endast från Lappland där Olof Rudbeck d. y. funnit den. Det taxonomiska värdet har senare reducerats till en form (f. *trisecta*) av *C. amara*, bäckkrasse.



Ett av herbariets växtark som samlats av »Dom.» (Herr) Leonard Gyllenhaal. Etiketten har Johan Dalman skrivit.

Sannolikt var det Gyllenhaal som kallade växten *Cardamine amara* var. *trifoliata* och tydligen identifierade den med *Cardamine trifolia* (Linné i *Flora svecica*, ed. 2, 1755, *Cardamine foliis ternatis* i ed. 1745), uppgiven från Kinnekulle redan av Pehr Kalm (Linné a. a.). Att de nedersta bladen har två par småblad och inte bara ett, behöver inte betyda något, då man inte vet hur Kalms exemplar såg ut (de kunde t. ex. ha tagits med kort stjälk).

Denna form, inte känd av Skårman i hans flora över Kinnekulle,³³ ligger i Dalmans herbarium i ett exemplar som är samlat på berget av Leonard Gyllenhaal (se fig.); årtal anges inte, men växten är sannolikt från 1700-talets slut. Det är mycket frestande att antaga att Gyllenhaals exemplar tillhörde samma klon som Kalms, men även om så inte skulle vara fallet, har arket stort floristikhistoriskt intresse. – Ytterligare fem arter samlade av Gyllenhaal ligger i herbariet.

I 2:a upplagan av C. J. Hartmans Handbok i Skandinaviens flora (1832) uppges *Zannichellia polycarpa* (= *Z. palustris* ssp. *palustris*, hårsärv) från Västergötland, »i Mellby sn, der anledning skall vara till saltkällor». Vad inledningsvis saltkällorna beträffar, var det känt sedan länge, att marina sediment på västgötaslätten flerstädes innehåller så mycket salt att grundvattnet tar smak av det. I sin dagbok antecknade Johan Dalman den 25 juli 1827:

... rest till Queum, att undersöka det der förekommande salta vattnet vid och i Åsaka bäcken. Det fans nu orent men föga salt. Saltvattnet framkommer ur ett såg, till höger om bron, nedom en liten plan på hvilken fordom brunnsborrningarne blefvo gjorda. – Folket berättade, att vattnet var saltast om vintern, när det för öfrigt i bäcken var bottenfruset, då det vid nämnde såg gick öppet, och då var så salt, att de kunde koka gröt därmed, utan att behöfva tillägga salt. – Några saltväxter efterletades förgäfv. I bäcken fanns ——— samt vid stränderna en smalbladig *Arenaria rubra*. För öfrigt endast de allra vanligaste växter: *Gnaphal. uliginosum*, *Calitriche verna*, *Lotus*, *Matricaria chamomilla*, *Apargia* [= *Leontodon*] *autumnalis*, *Plantago media*, *Potamogeton perfoliatum*, *Potentilla anserina*, *Triglochin palustre* osv.

I det tidigare nämnda brevet från Lars Dalman till Wahlenberg den 30/1 1829 berättade avsändaren att han i en sändning för »localens skull» bifogade »*Zannichellia palustris*, *Alsine rubra* och en liten *Juncus buffonius*, som togos vid de omtalte Saltkällorna i Åsaka Socken utmed Lidan». Det måste ha varit den för bröderna okända hårsärven, som avsågs med luckan i Johan Dalmans dagbok, och i Lars' herbarium finns arten från »Åsaka bäcken vid Quæumsby», utan årtal. Ytterligare en insamling gjordes i »Lidan vid Lofvened» i juli 1843; även denna lokal ligger i Åsaka socken. Uppgiften Mellby i Hartmans m.fl. floror avser utan tvekan Mellby pastorat, dit Kållands Åsaka hör.

Återstår så att säga något om saltkällorna i Åsaka. Det är källor som omnämns i Economiska annaler 1808 och i biografen över Jakob Vilhelm Dalmans kollega bergshauptman Anders Polheimer.³⁴ Denne »företog 1809, på Regeringens befallning en ny resa till Westergöthland, till utrönande, huruvida någre fördelaktiga Saltverk af Saltkällorne i orten kunna anläggas; men hvilken förrättning blef tills vidare uppskjuten». Polheimer själv återkommer i annat sammanhang nedan.

I Dalmans herbarium ligger slutligen ett ark av den flikbladiga gråal som fått namnet *Alnus incana* f. *lobata* Larss. Ingen etikett finns på arket, endast en blyertsanteckning, Grimmetorp, varmed självklart avses det Königska säteriet i Härja; såväl Lars och Johan Dalman som C. W. König gjorde i Grimmetorp många insamlingar som ligger i Dalmans herbarium. – I en inträngande studie i Lustgården 1956–1957 har Nils Hylander redogjort för de flikbladiga formerna av våra alar. Den äldsta bevarade insamlingen av gråalens f. *lobata* gjordes enligt Hylander »redan 1858 av R. Blomberg & O. Nordstedt vid 'Grimmetorp' (numera Grimstorp) i Sandhem». Som framgår nedan har tillfälligheterna här spelat ett litet spratt.

Den framstående botanisten Otto Nordstedt (1838–1924), känd inom Linnésällskapet som en av dess stiftare, var son till Carl Peter Ulrik Nordstedt och hans maka Beata Sofia Palmstierna.³⁵ Fadern, dotterson till Linnés

bror Samuel Linnæus, var fältläkare i Jönköping och hade i Uppsala varit elev till C. P. Thunberg. Modern förde i boet med sig Grimstorp i Sandhems sn, och Otto Nordstedt vistades ofta på Grimstorp.

Likafullt är det inte Grimstorp som var växtlokal för den flikbladiga gråalen, utan det var det endast 12 km avlägsna Grimmestorp i Härja sn. Hade det varit en lokal i Sandhem, skulle utan tvekan Nordstedt ha nämnt förekomsten i sin skrift Sandhems flora, som endast anger två lokaler för arten gråal.³⁶ Det Dalmanska exemplaret bör vara taget tidigare än det Blomberg-Nordstedtska. Lars Dalman dog den 5/8 1858 »efter en lång och tärande sjukdom» – den flikbladiga alen kom troligen in i herbariet åtminstone något år tidigare. Otto Nordstedts insamling av den flikbladiga gråalen vittnar om kontakter mellan familjerna König och Nordstedt – inte överraskande då ju både C. W. König och C. P. U. Nordstedt var militärläkare och intresserade av botanik och hade anknytning till var sin stora gård i samma pastorat!

Edvard Goës

Bröderna Dalmans intresse för naturalhistoria delades av den till familjen nära relaterade Henrik Edvard Theodor Goës (1790–1869), född på Stora Ro innan Dalmans övertog gården.³⁷ Edwards far Jakob Edvard och hans farbror Axel Johan, f. ö. bosatt i Uppsala, var gifta med var sin syster till bröderna Dalmans styvmor Johanna Elisabet König. Edvard Goës hade som barn varit elev vid Kristiansfelt samtidigt med bröderna Dalman, och han var kamrat med dem under sina år (1806–1808) vid Uppsala universitet, som han lämnade såsom med. kand. för att sedan vara fältläkare under den oroliga tid som följde. Han övergav läkarbanan 1817 (sist var han sjukhusläkare i Bergen på Rügen) och ägnade sig sedan åt lantbruk och åt sina naturalhistoriska intressen, bosatt i Östergötland först på Soleryd under Sättra i Rök sn och senare på Lunna i Appuna sn.

Goës var en grundlig botanist, elev till Wahlenberg, och dessutom kännare av fåglar jämte musslor och snäckor. Han höll nära kontakt med bröderna Dalman och nämns ofta i Johans dagbok, antingen det var fråga om brevväxling eller besök som han gjorde hos släkten i Västergötland. Av hans rika naturalieinsamlingar hamnade många växtark i Lars' herbarium; insamlingsort är oftast Sättra, där även Lars botaniserade vid besök. Även hans son Achmed (1828–1877) samlade växter som Lars fick, speciellt under sitt år i Lund, 1848 (han blev senare militär), och detta är herbariets sist insamlade större tillskott, 31 ark. Edvard nämnde i brev 1848 till Gabriel Marklin om

Achmeds intresse för naturen men tillade, att en yngre son hade ännu starkare dragning åt naturhistoriska studier.³⁸ Däruti fick han rätt: sonen Axel Theodor (1835–1897) blev även han läkare och röntte som sådan stor uppskattning för sina insatser, men framförallt har han blivit känd såsom framstående zoolog.

Övriga växtförvärv. Carl Polheimer

Över hälften av herbariet består alltså av västgötaväxter, de flesta samlade av Lars Dalman. Att Edvard och Achmed Goës' växter från Östergötland och Skåne hamnat i herbariet, är inte förvånande. Hur de övriga växtarken fann sin väg dit går i många fall att mer eller mindre säkert belägga.

Bröderna Dalman var under flera år aktiva i den naturalhistoriska studentföreningen Zoophytolithiska sällskapet, från 1807 kallat Linnéska institutet, där dåvarande botanices demonstrator Adam Afzelius var preses, och många av deras kamrater återfinns i föreningens protokoll.³⁹ Johan var sekreterare under flera år, och Lars lämnade bl. a. in två botaniska uppsatser att föredragas samt en kollektion på 21 mossor.

Många föreningsmedlemmar samlade växter, och Johan noterade i sin dagbok förvärv till sitt herbarium från dem. En del av dessa växter kan ha hamnat hos Lars, men minst lika sannolikt är att många växtark gick raka vägen till honom. Och på flera etiketter står med Johans stil tillskrivet »L. D.» efter insamlarnamnet (se ovan); de växterna tog uppenbarligen Johan emot för Lars' räkning.

Förutom från Adam Afzelius, Edvard Goës och Gabriel Marklin finns i herbariet växter från följande medlemmar i Linnéska institutet: Jacob Henric af Forselles (1785–1853), Lars Herman Gyllenhaal (1790–1858), Carl Stenhammar (1782–1827), Johan Haquin Wallman (1792–1853), Johan Emanuel Wikström (1789–1856), Fredric Anton Wrangel (1786–1842), Olof Nordenfeldt (1790–1843) och Carl Polheimer (1782–1820).

De sex första är kända eller välkända i botaniska sammanhang.⁴⁰ Av dem skall endast två närmare nämnas här, af Forselles och Wikström, medan mest utrymme ägnas Polheimer.

J. H. af Forselles, som härstammade från Strömfors bruk i Nyland, Finland, och som tog bergsexamen 1812 och blev bergshauptman vid Sala silververk 1817, var en duktig florist som i Linnéska institutets skrift till Linnéjubileet 1807 beskrev två för vetenskapen nya växtarter, *Poa remota* och *Artemisia coarctata*. Den senare har visserligen värderats ner till en varietet av

gråbo, *A. vulgaris* var. *coarctata*, men det är en karakteristisk typ som av allt att döma är inhemsk på havsstränder (af Forselles' ex. i Dalmans herbarium är från Finland) och som återfinns i vår nyaste flora, den omarbetade Krok–Almquist som kom 1984. – Mest kontakt hade bröderna Dalman med J. E. Wikström som blev Johans kollega i Vetenskapsakademiens tjänst. De var inte bara studiekamrater i Uppsala; Wikström var bördig från Vänersborg, och åtminstone Johan träffade honom där och i Ro och exkurrerade då med honom.

Intressantast av de utomvästgötska växterna är, förutom af Forselles' gråbo, det material som direkt eller indirekt kan förknippas med Carl Polheimer, ett namn som inte förekommit i vår botaniska litteratur. – Den ovannämnde bergshauptmannen Anders Polheimer (1746–1811), brorsonson till Christoffer Polhem och Linnélärjunge, var 1802–1805 knuten till Gustafs och Carlbergs kopparverk på Åreskutan. Vid sina uppdrag på skilda håll i landet var han på äldre dar biträdd av sonen Carl, som i olika omgångar studerade i Uppsala, och åtminstone 1803 var Carl med i Huså vid Åreskutan.⁴¹ Han botaniserade tydligen flitigt där, för vid Linnéska institutets sammankomst den 22/11 1807 upplästes enligt protokollet en honom författad avhandling: »Uppgift på en del örter som växa på fjället Åreskutan i Jämtland», och i Dalmans herbarium ligger åtminstone 30 växter som han samlade på detta fjäll, där han hade J. O. Hagström och Olof Swartz som föregångare. – Anders Polheimer var 1806 på uppdrag i Nasa, den gamla silvergruvan i Pite lappmark, samtidigt som han skulle undersöka möjligheterna till nyodlingar i dessa trakter, allt omtalat i Ekonomiska annaler för 1807. I herbariet finns också en växt som Polheimer, väl Carl, samlat där. Från samma ort ligger även åtta ark, tagna av Anders Westerlund (1779–?), student i Uppsala 1805 och utexaminerad lantmätare 1812.⁴² Han nämns inte i Johans dagbok eller i något föreningsprotokoll. Dessa växter från Nasafjäll tycks vara de första som samlats i denna del av Lappland.⁴³ Uppenbarligen följde han med Polheimers expedition dit. Och när man stannade för i Skellefteå, tog Westerlund med sig en backnejlika (*Dianthus deltoides*) som i herbariet ännu vittnar om besöket.

Det som återstår att sägas om herbariet kan fattas kort, i synnerhet som flera botanister med blott enstaka ark här utelämnats. – Några växtark från den kände botanisten m. m. Carl Adolph Agardh (1785–1859) återspeglar både brödernas år i Lund och vänskapen med Agardh. – Ett 30-tal växter från Göran Wahlenberg, de flesta från Nordskandinavien, kan ha ingått i gåvor till Johan.⁴⁴ – Johan fick 1814 efter brev till Carl Johan Hartman (1790–1849) en bunt växter från Jämtland, mest Åreskutan, tagna under

resan 1813; 30 ark ligger i Lars' herbarium. Samma år fick han Ölandsväxter från Abraham Ahlqvist (1794–1844), och 1819 kom växter från Gotland, Öland och fastlandet från Johan Peter Rosén (1788–1825?) allt enligt dagboken; även från dessa botanister finns många växter i herbariet. – Drygt 30 växter som Lars Levi Laestadius samlade i Lule lappmark 1821 och som försetts med tryckta etiketter, har sannolikt passerat Johan eller Wikström i Stockholm. Andra fjällväxter som den kände Ölandsbotanisten Magnus Gustaf Sjöstrand pressade under sin resa i Härjedalen 1832, har åtminstone delvis gått genom Wikström. Ett rätt sent förvärv är växter som »Wiede», väl Lars Chr. Wiede (1804–1882, med tiden präst i Linköpings stift) samlade på 40-talet i Östergötland; troligen har de förmedlats av Edvard Goës. – Slutligen finns det växter som samlats 1819 i Stockholmstrakten av Anders Brusin (1790–1824, läkare i Roslagen) och växter som utan uppgift om år tagits av Lars Gistrén (1810–1852, med.-fil. kand., godsägare i Österåker utanför Stockholm; mest Skånematerial, troligen från studieår i Lund) hur de arken fann sin väg till herbariet i Västergötland får man gissa fritt.⁴⁵

Slutord

Det är spännande att gå igenom ett gammalt herbarium. Växtarken med sina etiketter är dokument från en gången tid. Man finner växter som nu är sällsynta eller försvunna från stora delar av vårt land, och omvänt saknar man sådana som nu blivit vanliga – klätt och gatkamomill representerar här var sin pol. Man kan upptäcka förbisedda tidiga fynd som påminner om äldre botanistgenerationers nu glömda insatser, eller man får kanske lösning på ett problem med oklar lokaluppgift. Exempel på allt detta ger Lars Dalmans herbarium.

Intressanta är också de glimtar av människoöden, av kontakter mellan människor som växtetiketterna kan förmedla. Vad det aktuella herbariet beträffar får dessa kontakter också belysning av en dagbok och av gamla brev och protokoll.

Materialet går tillbaks till de sena Linnélärjungarnas tid och ger exempel på den linneanska traditionens betydelse. Detta gäller speciellt inom släktgruppen Dalman–König–Goës, där denna tradition lätt kan följas i tre generationer från Linnélärjungen Jakob Vilhelm Dalman över hans söner Johan och Lars samt den nära relaterade Edvard Goës till C. W. König och framförallt Axel Goës.

Man får ett intryck av ökat intresse för floristik hos de årgångar studenter

som kom till universiteten i början av 1800-talet. Och man får exempel på vad den dåtida läkarutbildningen med inbyggd biologikurs betydde för spridning av kunskaper i naturalhistoria bland många som efter akademiska studier hade att verka i 1800-talets Sverige. Eller det var så i många fall, att för naturalhistorikerna var läkarbanan en försörjningsväg.

Under uppsatsens tryckning har den Dalmanska växtsamlingen börjat införlivas i fytotekets skandinaviska herbarium. Växterna fästs upp på nya ark,

som jämte originaletiketterna får etiketter med ny-framtagna uppgifter.

Noter

1. Biografiska uppgifter om släkten Dalman i Elgenstierna, Den introducerade sv. adelns ättartavlor.
2. Se Biographie öfver Johan Wilhelm Dalman, KVAH 1828, och B. Boethius i SBL 10, 1931. Om Dalmans och flera av hans här nämnda kamraters inställning till naturfilosofin, se G. Eriksson, Elias Fries och den romantiska biologien. Lychnos-bibl. 20, 1962.
3. Biografi av O. Franzén i SBL 17, 1969.
4. Biografi av O. Franzén i SBL 25, 1985.
5. Dalman, J. W., Dagböcker 12: 1–2 (1803–11, 1812–28) i SUB.
6. Det var nära nog självklart att Dalman under resan skulle söka kontakt med naturhistoriskt intresserade personer. – G. Backman (1762–1848) var född i Rödön i Jämtland, gick i skola på Frösön och i Härnösand, blev fil. mag. i Uppsala 1791, rektor vid Frösö trivialskola 1810–1829, sedan kh och prost i Sunne (G. Hasselberg, Frösö trivialskola, 1935). Om sitt herbarium skrev han till Marklin (15/2 1819, UUB, G 170 e): »I hela Stiftet, så stort det är, fins ej någon Ört- eller Insekt-Samling. Min Ört-Samling, så obetydlig, är likväl den största och här i landet [= Jämtland?], utan skryt, den första.» Hans son Carl Johan (1822–1898) utgav 1874–1878 tillsammans med V. F. Holm den välkända Elementarflora öfver Westerbottnens och Lapplands Fanerogamer och Bräkenartade växter. 7. 13/4 1819, UUB, G 320.
8. Uppg. om Lars' skolgång från C. A. Olshammar, En bergsmansläkt på Kålland, Lidköpingsbygden 1972: där berättas även om Jakob Vilhelm Dalmans insatser som framsynt lantbrukare på Stora Ro.
9. Dalman till Marklin 13/7 1829, UUB, G 170 b: »Sedan Thunberg är borta, bör man väl för öfrigt tro att Nepotismens tid är förbi ...» – Johan nämner i sin dagbok ingenting om Lars' studier.
10. 7/6 1809: »Lars som med Wahlenberg varit åt Whitulfsberg, hemförde Cinclidium stygium, och Meesia longiseta samt Parmelia vulpina med flera.» – Om Lars' kunskaper i entomologi vittnar bl. a. hans uppsats i KVAH 1824.
11. Brev till Wahlenberg i UUB, G 320.
12. Brev som i not 9.
13. Släkten König se Elgenstierna a. a.
14. Data om Lindgren från Krok, Bibliotheca botanica suecana, 1925.
15. Våren 1846 (utan datum), UUB, G 70 Q: 259.
16. Bot. Notiser 1842, s. 47.
17. A. Rudberg, Förteckning öfver Västergötlands fanerogamer och kärllkryptogamer, 1902, s. xii.
18. 28/11 1843, UUB, G 70 Q.
19. 2/9 1840, UUB, G 70 Q.
20. Edv. Goës till G. Marklin 26/3 1847, UUB, G 170 B.
21. Dalman, L. R. N., Svenska träd o. buskar. Sv. gräs o. foderväxter, Växtsjukdomar: UUB, D 121 a.
22. Kilander i Skaraborgsnatur 1983.
23. Kilander i Västgötalitteratur 1971.
24. J. W. Warholm, Skara stifts herdaminne. 1871.
25. A. Hj. Uggla, Linnés »plånbok». Ett minne från Lapplandsresan, SLÅ 1940, s. 80.
26. Mathesius placerade Linné efter Rosén och Wallerius vid konkurrensen om professuren 1740, se Th. M. Fries, Linné I, 1903, bil. X.
27. Citaten från E. Fries, Mantissa tertia, 1842–43, s. 9 o. 58. Se f. ö. N. Beckman, Vår skolas historia, 2, 1931, s. 368 f.
28. Bot. Notiser 1854; jfr H. Weimarck i Bot. Notiser 1957, s. 117.
29. Se P. F. Wahlberg, Bidrag till kännedomen om potäternas sjukdom i Sverige åren 1845 och 1846, i Handl. rör. Landtbr. o. dess binäringar år 1846 (tr. 1847); Mathesius' bidrag, Underdånig berättelse

om Potates-Farsotens förhållande i Skaraborgs Län, s. 64–80.

30. J. A. O. Skårman i Svensk Bot. Tidskr. 1927, s. 196; Kilander i Skaraborgsnatur 1981, s. 68.

31. Kilander i Skaraborgsnatur 1979, s. 79.

32. UUB, G 70 Q (onummerat; efter 266).

33. I Svensk Bot. Tidskr. 1931.

34. KVAH 1812. Se även Polheimer, Anledningar till Bergsalt i Väster-Göthland, KVAH 1804; jfr S. Lindroth, Kungl. Sv. Vet.-akad. historia 1739–1818, II, 1967, s. 244. Saltkällorna i Åsaka hade rapporterats av bergmästare Jakob Dalman.

35. Biografi av O. Gertz i Bot. Notiser 1924.

36. Bot. Notiser 1900. Rudberg a.a., s. 83, har riktig uppg.

37. Släkten Goës se Elgenstierna a.a. och SBL 17, 1967; Edvard Goës även i A. H. Wistrand, Sveriges läkarhist., N. F. 1873, s. 268.

38. 25/2 1848, UUB, G 170 B.

39. Om denna förening se J. M. Hulth, Det första naturvetenskapliga studentsällskapet i Uppsala och dess arkiv, Symbola litteraria, Uppsala, 1927.

Föreningsprotokollen i UUB, U 169 g: 1–2, h: 1–2. 40. Alla sex återfinns hos Krok a.a. med korta biografier.

41. J. A. Almquist, Bergskollegium och Bergslagsstaterna 1637–1857, 1909. Komministern och Linnélärjungen Lars Erik Festin (1749–1828) från Undersåker har skildrat midsommarfirandet 1803 i Huså, då han träffade A. Polheimer med båda sönerna, se G. Ullberg, Huså bruks historia, 1967.

42. V. Ekstrand, Svenska landtmätare 1628–1900, 1896–1903; f. i Karlstad (1778 enl. UUM), där fadern var skeppare.

43. Ej kända av Th. Arwidsson, Studien über die Gefässpfl. in den Hochgebirgen der Pite Lappm. 1943.

44. Johan fick enl. dagboken växter av Wahlenberg vid flera tillfällen, den 1/5 1819 ej mindre än 70 arter.

45. Se J. F. Sacklén, Suppl. t. Sveriges läkarehistoria, 1835 (Brusin), och G. Anrep, Svenska släktboken 1, 1871 (Gistrén).

Summary:

AN OLD HERBARIUM

By

SVEN KILANDER

In the Herbarium of Uppsala University there is a separate collection of 2 300 sheets of phanerogams. The author shows that it has belonged to and to a great extent been collected by Lars R. N. Dalman (1789–1858), one of the sons of the Linnaean pupil Jacob Vilhelm Dalman. Another son was Johan Dalman, well-known entomologist and paleontologist. Lars Dalman, whose botanical contributions have been very little known, had, after studies in Uppsala, settled down as a landowner in Västergötland near Lidköping. The collection also includes six sheets by the Linnaean pupil Leonard Gyllenhaal, famous entomologist and a friend of the Dalmans', together with many sheets from the first years of the 19th century, collected by the well-known botanist Göran Wahlenberg and some fellow students of the two brothers.

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HANS KROOK

De två senfödda linneanerna

Det är sällan man möter Elias Fries och Göran Wahlenberg omnämnda tillsammans, trots att det kunde ligga nära till hands att spela ut dem mot varandra. Men det är mer som skiljer dem åt än som förenar dem.

Om man ser till vad de hade gemensamt var de relativt samtidiga: Fries var 14 år yngre, men levde 27 år längre än Wahlenberg; en betydande del av deras aktiva åldrar sammanföll alltså. Båda var botanister och båda innehade professurer i ämnet. Därtill var de under en följd av år verksamma vid samma universitet. Båda två sysslade mycket och gärna i tankarna med sin föregångare Linné, till vilken båda i mindre eller högre grad befann sig något som kunde kallas för en posthum lärjungeställning.

Såväl Fries som Wahlenberg utgör välkända gestalter i den svenska botanikhistorien, och utförliga biografier finns tillgängliga: Gunnar Eriksson har skrivit sin avhandling om »Elias Fries och den romantiska biologin»¹ och över Wahlenberg finns en levnadsteckning av J. E. Wikström,² men också hans egen utförliga självbiografi redigerad av F. V. Palmblad i Svenskt Biographiskt lexicon.³

Fries hade studerat i Lund, Wahlenberg i Uppsala – att detta innebar olikheter är självklart, men det är också möjligt att akademisk provinsialism kan ha lagt visst bränsle på den brasa som dock aldrig egentligen flammade upp.

Fries' professur tillhörde filosofiska fakulteten, medan Wahlenbergs ingick i den medicinska – de båda professurernas syften var därmed säkert mera vitt åtskilda än de bådas verksamhet visade. En effekt hade säkert de skilda fakultetstillhörigheterna, och det var att de båda inte hade så mycket med varandra att göra, som ämnesgemenskapen kunde komma att förmoda.

Karakteriserad i korthet kan om Fries sägas att han åtnjöt högt anseende som stilist och vältalare, egenskaper som förde honom till en stol i Svenska Akademien. Han specialiserade sig på svampar och lavar, områden inom vilka han gjorde banbrytande insatser, men också när det gäller det naturliga fanerogamsystemet spelade han en framträdande roll, och länge var hans system allenarådande i Norden. På äldre dagar framstod han som en patriark

inom den svenska naturvetenskapen, i vida kretsar uppburen och älskad inte minst genom sin lätthet att entusiasmeras.⁴

Ett brinnande intresse för naturen redan som barn, och anseende som värdiga efterträdare till Linné är egenskaper som utmärkte dem båda. Men Fries fick stöd och även kunskaper från fadern, som kan sägas ha representerat »prästgårdsbotaniken»; Wahlenberg däremot blev tidigt faderlös, men han gick i sina studier den klassiska vägen efter Linnés eget mönster som så många av lärjungarna också hade gjort, dock inte någon så påfallande nästan bokstavligt i mästarens fotspår som Wahlenberg: efter medicinska och botaniska studier i Uppsala följde en resa till Gotland, därefter lapsk resa, och så en flerårig utlandsresa med en rad tryckta arbeten utgivna i utlandet.

I den personliga framtoningen var skillnaden mellan dem stor – Wahlenberg var butter, tvär och enstörig, och hade intet av den tilltalande charm som Fries utstrålade. Det var växtgeografi som blev Wahlenbergs speciella insats inom botaniken – för eftervärlden har han blivit praktiskt taget lika känd för sin entusiasm för homeopatins främjande, och hans ryktbarhet på detta område får närmast betecknas som herostratisk.⁵

Fries ivrade för popularisering av sin vetenskap, och han var själv en pionjär på detta område: han slog en brygga mellan naturvetenskap och humaniora.⁶ Wahlenberg intog en motsatt attityd, bland annat genom att fasthålla vid att skriva sina vetenskapliga arbeten på latin, och han hade föga till övers för amatörer eller lekmän.

Kontakten mellan Fries och Wahlenberg personligen tog sig uttryck i en brevväxling som dock upphörde 1834, eftersom båda från och med då bodde i Uppsala. Kulmen av kollisionskursen emellan var uppståndelsen kring Hartmans flora⁷ – men värre blev det egentligen inte, sannolikt främst beroende på att Fries var en så blid föga stridslysten personlighet – orsaker hade det funnits gott om.

Båda två var alltså ett slags efterlevande linnélärjungar, och den bild de hade av mästaren var sannolikt i stora drag densamma – den som då ännu var den allmängiltiga. En viss stagnation hade börjat inträda inom svensk naturforskning, men bilden av den internationellt ledande naturforskaren, i synnerhet botanisten, stod fast. Det förefaller som om de båda delat sin samtids oförståelse för Linné den yngre.

Fries var romantiker, och Wahlenberg var konservativ – men Wahlenbergs uppfattning av Linné innehöll mera av romantiska drag än Fries'. »Ehuru Wahlenberg icke var lärjunge af Linné, slöt han sig strängare till Linnés method än öfriga samtida», skrev Fries på ett ställe i *Botaniska Utflygter*,⁸ och två sidor längre fram heter det: »Han ansåg ock sig sjelf som den sista

'äktas Linnéanens', och genom sin stränga konservatism var han strängare än Linné själv, ty denne var hela sitt liv progressiv». Fries trampar på en öm tå när han påpekar Wahlenbergs strävan att vara »linneisk» – den tar sig ett närmast rörande uttryck när han kort före sin död uttrycker sin önskan att få dö om vintern som Linné gjorde, medan Thunberg fick finna sig i att dö på sommaren – »alltså var han icke så helt linnaeisk».⁹

Just stackars Thunberg, här så utpekad av Wahlenberg, var ett exempel på Linnés positiva inverkan på den följande generationen naturforskare – han blev en av de utsända "apostlarna". Men sedd ur denna synpunkt representerar Wahlenberg själv snarast ett exempel på Linnés negativa inverkan på sin efterföljd – insnärjd i regler konserverade Wahlenberg den botaniska systematiken och stod fullkomligt främmande för praktiskt taget varje förnyelse inom detta område.

Men det måste med skärpa understrykas att det sagda gäller det rent systematiskt-botaniska, och Fries har i sitt uttalande helt bortsett från Wahlenbergs långt ifrån konservativa eller »strängt linneanska» inställning som naturforskare i vidare bemärkelse. Utanför systematiken stod han i de flesta sammanhang öppen för mycket som var nytt, och blev inom flera områden något av en nydanare, och var i många bemärkelser progressiv i en utsträckning som vida överträffade den stora förebilden.

Men visst är det sant: Wahlenbergs beundran för och dyrkan av Linnés person visste inga gränser, och tog sitt mest påtagliga uttryck i hans uppsats »Linné och hans vetenskap. Ett bidrag till fäderneslandets vetenskaps-historia».¹⁰ Om den skriver Fries i ett brev till Christian Stenhammar:¹¹ »Wahlenbergs afhandling i Svea har jag läst. Mycket eget, något löjligt; men ganska mycket sant i mitt tycke. Ty vad mängden kallar naturligt system kan väl i all evighet ej få detta namn. Då skulle ett system kunna gifvas utan Idé – hwilket väl W/ahlenberg/ uppsatt men derpå afkunnar cathégoriskt att naturligt system är quadratura circuli!!!»¹²

I ett brev till Wahlenberg något tidigare skriver Fries¹³ i en på tvären tillagd not, efter att ha dekreterat att han icke önskar några förändringar inom vetenskapen som inte reformerar densamma i stort: »... jag antager Sexuallsystemet efter Linné *alldeles oförändradt*: ehuru jag söker efter Linnéi anvisning en mer naturlig uppställning. Men äfven *det naturliga systemet*, såsom system måste hafva en *yttre petrifierad form*, ehuru dess inre utveckling fortlöper uti oändlighet – en sak, som jag intet ännu sett bevisad ...» Detta är alltså skrivet av den som längre fram skulle håna Wahlenbergs fasthållande vid sexualsystemet! Men var Fries i varje fall ger klart besked om är hans av romantisk påverkan tydligt präglade inställning.

I sin uppsats hyllar Wahlenberg Linné som »det mest undransvärda phaenomen öfver Sveriges horizont», och de enda svenskar han kan tänka sig att mäta Linné med är Gustaf Vasa och Gustaf II Adolf. Han vill ge sin studie över Linné en vidare utblick:¹⁴ »... att naturen genom den större inflytelse, som den måste äga på utvecklingen af världens största naturkännare, må tillika visa oss, huru den utbildar nationens charaktér i allmänhet.» Uppslaget för tanken till Montesquieu.

Wahlenberg framlägger ett kanske en smula oväntat argument för sexualsystemet: allt levande organiskt genomgår en kretsgång, som hos växterna tar sig uttryck i å ena sidan fröet, ägnat för vinterbevaring, å andra sidan blomman. En del växter »blomstra till den grad att de ofta hel och hållna derföre med skäl få namn af blomster; å andra sidan återigen utmärka sig flera så mycket i sitt fröbärande tillstånd, att de företrädesvis få namn af frukter». Detta förhållande, menar han, ger en avbild av varje saks yttre och inre sida, och därför »också de enda grunder för deras indelande på ett systematiskt sätt: antingen skall man blifva vid blomman eller vid frukten».

Han gör en återblick på tidigare försök med botaniska system – på Cesalpino och hans på frukten grundade system, liksom på Rivinus och Tournefort och deras i huvudsak på blomman grundade system. Men dessa hade enbart fäst sig vid blommans mest iögonfallande delar; det blev Linné förbehållet att kungöra växternas kön och ett på detta grundat system – »det bästa, och egentligen det enda riktiga, som ännu finnes, såsom stödt på en enda princip».

Men Linné var själv inte blint intagen av detta sitt system, fortsätter Wahlenberg, utan han uppmärksammade också möjligheterna att skapa ett naturligt system, till vilket han ju också lämnade fragmenter genom uppdelningen i enhjärtbladiga, tvåhjärtbladiga och hjärtbladslösa växter. Dock vill Wahlenberg lämna frågan därhän, om detta var Linnés egen skapelse, eller om den ursprungligen kom från Bernard de Jussieu. Det är i varje fall numera, menar han, det enda som tävlar med Linnés sexualsystem.

Det naturliga systemets stora svaghet är att det inte kan hålla sig till en enda grundprincip: antingen måste det ta hänsyn till blombladens anordning, eller måste det ta hjälp av anatomin. Det var inte heller på Linnés tid lika klart som det är nu, menar Wahlenberg, att det är omöjligt att få fram ett naturligt system. Ett sådant tycks vara att likna vid fysikens perpetuum mobile, cirkelns kvadratur i matematiken, »kanske också de vises sten i Philosophien».¹⁵

Detta Wahlenbergs resonemang – som ju Fries syftade på i sitt anförda brev till Stenhammar – måste givetvis betraktas som ett extremt utslag av en



Elias Fries 1837 eller möjligen något år dessförinnan. Pennteckning av L. V. Herrlin. Kungl. Bibl.



Göran Wahlenberg. Skiss till porträtt av J. G. Sandberg. I författarens ägo.

konserverativ uppfattning, och han stod också ensam i sin tid med denna inställning. Han fortsätter emellertid sin framställning med vidare lovprisande av sexualsystemet: genom att hålla sig till ståndare och pistiller kan man utan svårighet få 24 klasser, »beroende blott af antal och förhållande i längd och läge: allt bestämmningar i högsta grad mätbara». Det sista påpekandet är förvisso obestridligt, men icke desto mindre häpnadsväckande när man betänker hur klass 24 Cryptogamia tillvuxit just genom Wahlenbergs insatser!

Då är det lättare att hålla med Wahlenberg då han lite längre fram menar att ett naturligt system måste bereda svårigheter »för vanliga mänskliga förmögenheter» och i synnerhet för nybörjaren; »naturens mest sammanväxta irrgång låter icke utan våld utveckla sig till ett naturligt system, lättfattligt för människan». Det gäller tvärtom att öppna de minst onaturliga konstvägar »för att från dem få tillfälle att utan förvillelse granska hvarje del. Detta sednare har Linné gjort uti sitt Sexualsystem; och världen torde beständigt blifva tvungen att, af anförda skäl, med erkänsla följa det sanna».

Så tillvida har ju Wahlenberg här rätt, som sexualsystemet visat en

märkvärdig livskraft som handledning för nybörjare. Dessutom är ju sexualsystemet, skriver Wahlenberg, så långt ett naturligt system, som att släktena är naturliga enheter, bestämda icke »efter någon enskild del, utan efter alla delar tillika». Som framgår förkastar Wahlenberg inte tanken på ett naturligt system, men han understryker med skärpa de svårigheter dess användande innebär.

Från och med höstterminen 1816 föreläste Wahlenberg i sin egenskap av demonstrator över medicinalväxterna, och hans anteckningar till dess föreläsningar finns bevarade.¹⁶ Han inledde föreläsningsserien med följande ord: »Vid frågan hvad system man bör följa vid Medicinalväxternas uppräknande, välja vi utan betänkande det Linnaeiska Sexualsystemet. Man kan icke neka att ett naturligare system skulle för det mästa bringa växter af lika kraft tillsammans på ett ställe mera än det Linnaeiska artificiella systemet gör; men då vi icke äga några böcker, som i detalj följa det naturliga systemet, tror jag att man bör uppoffra något af denna förmån för den säkrare ledtråd och de större hjälpredor för minnet, som vi nu enligt Linnaeiska Sexualsystemet hafva. Dervid bör man likväl aldrig försumma att hafva beständigt afseende på ordines naturales, deras kännedom och allmänna kraft.»

Det är påfallande med vilken aktning Wahlenberg här nämner det naturliga systemet och dess möjligheter, och det är närmast med urskuldanden och erkännande av sexualsystemets svagheter som han motiverar dess användning. Den anförda bristen på floror som helt följer det naturliga systemet måste också anses som ett fullgott skäl att avstå från det. Dock använde han sig av det i ett speciellt sammanhang – nämligen vid sina föreläsningar över varmare länders vegetation, som han höll i orangeriet.¹⁷ »Naturliga Systemet el Methoden blir både behöfligare och brukbarare vid afhandlandet af en sydligare vegetation eller all verldens vegetation i det hela. Endast denna är i stånd att göra dess serie temligen tydliga och uppfyllda annars deruti uppstående luckor. Af dessa skäl vill jag nu då orangeri växterna företes ordna dem efter naturliga methoden så att Herrarna få mera bekantskap med dess förhållanden.»

Men då det gäller frilandsväxterna låter det annorlunda:¹⁸ »Husväxterna, som nu följa, kunna väl ordnas efter naturliga methoden, hvilket med kalljordväxterna knapt var möjligt, I naturliga methoden är väl skäl, att i allmänhet erkänna den franska skolans affiniteter; men, hvad allmänna uppställningen vidkommer, så är den ännu hos De candoll så litet för oss passande, att jag måste antaga en annan, som för öfrigt här icke är tid att i allmänhet motivera.»

I sina egna tryckta arbeten med systematiskt innehåll följer Wahlenberg

konsekvent och närmast slaviskt Linnés sexualsystem. Såväl hans *Flora Lapponica* som hans *Flora Carpathorum* är uppställda helt efter *Systema Naturae*s principer. Schweitzerfloran är inte försedd med några högre kategorier än slakten – i detta arbete utgör växtförteckningen närmast en katalog, men släktena är helt anförda i sexualsystemets följd.

Wahlenbergs båda svenska floror, *Flora Upsaliensis* och *Flora Svecica*, är båda uppställda efter sexualsystemet. Men i bägge dessa arbeten har han mot slutet tillfogat ett utkast till ett naturligt system. I *Flora Upsaliensis* meddelas detta utan några som helst kommentarer – det är en enkel översikt som bara omfattar tio sidor.¹⁹ Det utkast han senare tog in i *Flora Svecica* skiljer sig från det i *Flora Upsaliensis* endast med avseende på kryptogamer-na. Däremot ger han i *Flora Svecica* en kommentar till detta system.²⁰

Sin uppställning av de naturliga ordningarna har han gjort efter tre principer: 1) för att ge en översikt över de naturliga ordningarna uppställda efter Linnés metod; 2) för att ge en framställning över frönas inre delar, något som knappast nämnts i de allmänna karakteristikerna, samt 3) för att ge en beräkningsgrund av värdet hos de enskilda naturliga ordningarna i vårt land och i dess olika delar. Men genom att dessa målsättningar är varandra så olika har det inte kunnat undgå att denna uppställning framstår som ganska blandad – den saknar en konsekvent genomförd nyckel, och förtjänar därför inte namnet naturligt system.

För övrigt menar Wahlenberg att det är en omöjlighet att uppställa ett naturligt system som enbart bygger på vegetationen i ett land med en flora som är så fattig som den svenska – skall en sådan uppställning vara möjlig måste den omfatta hela världens växtvärld, och det ligger utanför detta arbetes gränser, menar Wahlenberg. Men för att nå det uppställda målet – att så kortfattat som möjligt ge en framställning av det naturliga systemet – har han något frångått de linneanska ordningarna, skriver han, något som han dock inte kan tro är till hinder för vetenskapen.

De många reservationerna och den ringa entusiasmen i Wahlenbergs framställning av detta utkast till ett naturligt system understryker hur ringa hans intresse var för denna sak. Det vittnar om föga intresse för saken att han ändrat ytterst lite i detta avsnitt från den första versionen i *Flora Upsaliensis* till *Flora Svecica*s första och senare även andra upplaga.

I »Botaniska utflygter»²¹ har Elias Fries givit en samlad framställning av sin uppfattning om Linné – den är koncis och saklig, och några spår av de romantiska påverkningar Fries undfick som yngre återfinns knappast här. När det gäller sexualsystemet finns här inga sådana dunkla föreställningar om dess innebörd och betydelse som Linné själv givit uttryck för, liksom

också Wahlenberg gjorde – här heter det helt enkelt så: »fastän hvarken naturligt eller vetenskapligt, hvilket Linné sjelf uttalat, förblifver det alltid ett odödligt snilleverk och för begynnaren den lättaste ledtråd till växternas bestämmande» . . . »Liksom man i ett register utgår från namnet för att finna saken, utgår man i sexualsystemet (ett inverteradt register) från saken för att finna namnet.» Några rader längre ner heter det: »Eget nog är, att Linné aldrig insåg vigten af skillnaden mellan Monokotyledoner och Dikotyledoner.»

I sin översikt över »Växtkännedomens framsteg i Sverige» ägnar han Wahlenberg ett eget avsnitt, där det inledningsvis heter att »Ehuru Wahlenberg icke var lärjunge af Linné, slöt han sig strängare till Linnés method än öfriga samtida. Han var autodidakt i ordets fulla mening. Utom Linnés och sedermera Hahnemanns skrifter synes endast Humboldts växtgeografiska skildringar inverkat på hans bildning.» Vid ordet »autodidakt» finns en asterisk som hänvisar till en not som lyder sålunda: »Ehuru W. aflade sitt första lärdomsprof under Pro. Thunbergs inseende, kunna vi omöjligen anse honom för elev af Thunberg. Så väl deras studiers riktning som lynnen voro motsatta, – och vänskapen dem emellan blef ej heller långvarig.»²² Den livslånga fientligheten mellan Thunberg och Wahlenberg berör Fries alltså med lika lätt hand som de systematiska funderingar som Wahlenberg torgförde vid flera tillfällen tidigare.

Sedermera kyrkoherden Johan Wallman, Elias Fries' gode vän och främste inspiratör som romantiker, skriver i ett brev till Fries:²³ »W/ahlenberg/ går här och brummar öfver Tyska Botanisterne, öfver de svenska, ja öfver allt som intet är Wahlenberg, i synnerhet om det på något närmare eller längre håll har att göra med naturfilosofi, som han hatar och flyr som Pesten. Här har försports en gång ett löst ryckte, att han skulle söka sig till Ryssland, hvilket jag tycker vore högst förträffligt, ty med sin grofva inhumanitet, och bornerade okunnighet i den sanna Naturkännedomen skulle han just ibland de råa Ryssarna vara på sin plats. Eländigt är det för vårt fattiga Sverige, att då ett sådant ypperligt tillfälle som det Byzantinska stipendium gifves, är förhanden, vi ej en gång skola äga någon riktigt duglig Naturforskare att utsända åt främmande land.» Dessa hårda ord var ej endast betingade av Wahlenbergs klara ställningstagande inför de romantiska strömningarna, som också nått fram till Uppsala – det fanns ett betydligt mera närliggande skäl till att låta piskan vina över Wahlenberg – saken var den att Wallman hade åtagit sig att göra en ny upplaga av Liljeblads flora, ett företag inför vilket Wahlenberg visade föga entusiasm. Han skriver till Swartz:²⁴ »Liljeblad är rätt krasslig så att han ofta kijkar efter andan, men ändå vill han

partout göra en ny upplaga af sin Flora, och vill per aures draga mig med in i den saken. Hur det går så blir jag vist en later medarbetare i den saken; ty den är platt intet i min smak.» Och i ett annat brev till Swartz skriver Wahlenberg:²⁵ Liljeblad sträfvat svårligen med verlden och sin nya flora. Den ena dagen ligger han till sängs, den andra dagen agerar han dictator i Botaniken och examinerar Candidater.»

Wahlenberg ville alltså inte befatta sig med en nytugåva av Liljeblads flora, ett arbete som Wallman med friskt mod grep sig an, dock under fortsatt irritation över Wahlenbergs sannolikt ofta och eftertryckligt ventilerade kommentarer.

Wallman hade tydligen skrivit till Fries och klagat över dylika ting, ty Fries skriver till Wallman:²⁶ »För öfrigt har jag i denna följt Wahlenbergs uppställning. Ingen inser lättare, än jag huru rakt den är ofta stridande mot naturen och att de kunna bringas i ganska naturliga familjer» . . . »vet jag af egen erfarenhet; men de för hvilka Liljeblads bok är ärnad, är det af föga intresse om de äro rangerade efter naturen eller handlöst kastade om hvarandra. Och af artificiella är *W:s* den bästa, som såsom den *allra mäst artificiella*.» Detta är en ovanligt gruvlig salva för att komma från den blide Fries, men förmodligen gav den Wallman den tröst han behövde. Men det var just under denna tid, då Fries ännu var nyfrälst av de romantiska tongångarna, som han hade som minst till övers för den strängt konservative Wahlenberg.²⁷

I ett brev till en annan av sina romantiska inspiratörer, Christian Stenhammar, skriver Fries:²⁸ »Jag kan icke uraktlåta att anmärka min öfvertygelse, att Wahlenberg och ännu mer Wikström i inledningen till *Thymelae*²⁹ helt och hållet missförstått Linnés *occulte consulendus est habitus* då de förklara ett habituellt behandlingssätt af den Systematiska Botaniken för den enda rätta. Linnés teori blir sann, då vigten lägges på ordet *occulte*.»

I samband med Wahlenbergs avsky för naturfilosofiska spekulationer står hans empiriska krav – att endast beskriva sådant som man med egna ögon har sett. Varje påstående skall kunna beläggas av goda herbarieexemplar eller än hellre genom autopsi i naturen – naturligtvis helst bådadera. Hans stränga krav på sammanhang mellan beskrivning och iakttagelser i naturen belyses av en liten anteckning från hans andra lapska resa. Han har där på ett ställe noterat³⁰ att han stannade inomhus en hel dag: »ideoque sine linea fuit» – det är naturligtvis Linnés välbekanta »nulla dies sine linea» som föresvävade honom.

I sitt arbete »Utkast till Gottlands flora»³¹ skriver Wahlenberg: »Jag har noga följt regeln, att icke upptaga något, som ej med visshet är sedt på

landet, ehuru allmänt det ock för öfrigt må vara.» Och i inledningen till sin uppsats »Om svenska jordens bildning»³² framhåller Wahlenberg att i hans uppsats »intet blifvit upptagit, som ej i naturen kunnat genom egen erfarenhet bestyrkas . . .» I sin biografi över Wahlenberg skriver Wikström apropå detta:³³ »Om många ibland de författare, hvilka utgifvit arbeten i Växt-Anatomi och Växt-Fysiologi, sade Wahlenberg, att han tydeligen såg, att de aldrig 'satt knif på växt'.»

Särskilt skeptisk ställde han sig mot dem som enligt hans förmenande inte vinnlade sig om sina herbarier. Speciellt kritisk var han på den punkten mot Carl Johan Hartman³⁴ men också i hög grad mot Elias Fries. I ett brev till Swartz skriver han:³⁵ »I allmänhet har jag af Fries' växter icke sedt annat än dåliga smulor, hvaraf intet kan dömas. Det tyckes i anledning deraf som samlade han öfvermåttan flygtigt.»

Men inte långt därefter nås Wahlenberg av ett brev från Fries, som där smickrar honom just på den punkten:³⁶ »Utom Linné och Herr Demonstratorn hafva alla svenskar förunderligen vårdslösat i uppgifvandet av växtställena . . .» När Wahlenberg ett par år senare skriver till Fries och kommer in på den frågan, använder han milda tonfall mot Fries, men framför i stället antydningar mot andra botanister på den punkten:³⁷ »Jag fägnar mig oändligt öfver Herr Magisterns noggrannhet att anteckna växningsställena och i detta afseende har Flora Hallandica högst interesserat mig. Herr Magistern förskonar mig för den verkliga förtrytelsen som så många andra tillfogat mig, då de icke sagt mig hvarest de tagit sina växter.» På detta svarar Fries med att upprepa sitt tidigare smicker:³⁸ »Med skäl klagas öfver våra Botanisters vårdslöshet i afseende på bestämda loca natalia – utom Linné och Herr Demonstratorn hafva få derpå haft något afseende.»

Men när Fries längre fram hade andra delen av sitt *Systema mycologicum* under arbete har Wahlenberg återtagit sina tidigare posteringar och skriver³⁹ att han helst hade önskat »att Herr Adjuncten först utgifvit de lofvade partiell Flororna öfver de landsorter, som Herr Adjuncten mest undersökt. Det är väl sant att ungefärligen detsamma kan komma uti ett generellare verk, men aldrig så fullständigt och föröfrigt inblandat med så mycket annat mindre säkert och mindre noggrant. Jag begriper också icke huru Herr Adjuncten skall komma ut med localiteterna för ett så stort land, som till en så liten del af honom sjelf är besökt. Detta tyckes mig vara en hufvudsak vid en Flora, hvarförutan allt sväfvat i luften. Att erhålla det af andra ordentligt, synes mig vara omöjligt. För att få något ordentligt i den delen har jag samlat och rest ut i flere och tjugo år, samt derigenom fått en massa af erfarenheter, som jag tror ingen annan kunnat reda.»

Detta brev kan inte ha utgjort någon angenäm lektyr för Fries. Men trots detta försöker han ge en rättvis bild av Wahlenberg, när han till sin vän Christian Stenhammar berättar om deras sammanträffande i Lund:⁴⁰ »Därefter kom Wahlenberg. Han var så förekommande och artig, att oaktat all föresats jag icke kunde annat än följa min naturliga böjelse att visa honom allt, hvad jag hade att säga, allt hvad jag visste, ehuru jag sedan mycket harmats öfver dess otacksamma egoism. Han är verkligen skarpsyntare Botanicus än jag trodde, men jag fann ock, hvilket han erkände, att han aldrig bryr sig om andras auktoritet, emedan det först var säkert sedan han tillegnat sig det m.m. Vid varje ny växt, sade han, det kan ingen undra på Linné, om han ej brydde sig om den, då han ej sett den sjelf o.m.d. Han är visst icke svår att antaga nya arter blott han sjelf får först bestämma dem» ... »men däremot en fiendskap mot allt hvad andra, i synnerhet Svenska författare bestämma. Hvad mina arter angå sade han mig icke sin tanka, men troligen hafva de icke funnit mera nåde för hans ögon än andra – + disputer ville han ej ingå, utan sade: 'kan väl vara'; 'man kan uppskjuta sitt omdöme' osv. Med få ord: jag finner honom vara likast Baco af verulam, att jag undrar mycket att ej äfven antagit dess valspråk: 'Malo academiam ruminandem, quam nova detegenam' eller 'melius est cum Linnaeo (Galeno) errare, quam cum recentioribus vera dicere', likväl med den skillnad att han blott tilllämpar det på andra och ej på sig sjelf. Just detta sednare anser jag för dess fel. Också vill han icke att någon Svensk skall mer än han heta kännare af Svenska Phanerogamerne» ... »Derefter reste jag i förväg till Femsjö; villkoret för mitt sällskap med Wahlenberg var att han skulle komma efter till Femsjö som han ock lofvade vid vår skillsmässa i Halmstad, men han uteblev tvärtemot löfte och aftal.» Fries' försök att vara rättvis i bedömningen av Wahlenberg gör ett ärligt intryck – men det är lätt att föreställa sig hur förargligt och kitsligt Wahlenbergs uppträdande måste ha varit.

Christian Stenhammar var i sanning rätt adressat för ett brev innehållande löjeväckande uppgifter om Wahlenberg – han torde ha varit Wahlenbergs kanske allra främsta belackare, som gärna skrev långa och beska skildringar av Wahlenbergs uppträdande och mentalitet. Han skriver till Fries:⁴¹ »Jag känner honom sedan min Upsalatid, utan att ha närmare bekantskap med honom. Hans inbundenhet och hemlighetsfullhet göra honom odräglig. Han är otillgänglig och förbehållsam, så snart han tror att den frågande kan i någon mon blifva hans medtäflare. Ja! äfven när detta ej är fallet visar han en oginhet och snålhet i meddelande af noticer och specimena som stämplar en Naturhistoricer ej till det bästa. Flera exempel deraf kunde jag nämna. Hvad tyckes att hans Commisionär – som ändå skall vara gynnad af honom – ej

kunnat tigga till sig ett enda exemplar af en enda Vext eller Lichen från Upsala. För öfrigt är han till sin bildning inskr/änkt?/ som röjer sig i hans afundsjuka och ensidighet. Det är intet exempel att han gillat någon enda inhemsk Botanist – att han gjort rättvisa åt någon endas upptäckter. Swartz har han många gånger smädat, och om Acharius talte han aldrig, utan ett försmädligt löje. *De nyare* är hans beständiga uttryck på hans excursioner, åtföljt af ett förnämt skratt och föraktliga grimacer. – De nyare gifva den *det* eller det namnet, påstå det och det. – Denna sin characters fulhet vill han nu skymma bort med Linnés namn och auktoritet. Linné skall vara den afgud för hvars oraklesvar man måste buga sig. Huru galet detta är – ja! ursinnigt, behöfver ej vidlöftigt omordas.»

När det gäller aversionen mot nya namn hade Wahlenberg dock även själv i brev givit luft åt sin förtrytelse. Han skriver till Fries⁴² samtidigt som han tackar för ett nyutkommet häfte av Fries' *Novitiae florae suecicae*: »Jag inser väl att de i början af Disputationen beskrefne *Veronicae floribus solitariis* kunna anses lika väl skiljda som många bland *spicatae* och har således intet särdeles mot deras antagande såsom species, men jag hade vist önskat att Herr Magistern för dem kunnat bibehålla några flere gamla namn. Är det då osäkert att t. ex. *V. polita* verkligen är *filiformis* Vahl? Jag måste tillstå att många nya namn synes mig vara en last för Vetenskapen.»

Men Stenhammar fortsätter sin behandling av Wahlenberg i ett något senare brev till Fries:⁴³ »Apropå! En anecdot om Wahlenberg! Förleden höst bad jag en vän i Upsala från W om vissa Lichener! Wahl. underrättade honom då positivt att det gamla tak vid Skogkloster – der särdeles ymnigt *Pam scortea* fanns, vore nedrifvet under sommaren! Jag skref straxt: tro honom icke! Sannolikt ljuger han af en usel afvundsjuka, så fram han ej förra sommaren sjelf legat der ock skrapat af alltsammans. Och se! Nu befanns taket quar denna vår – och jag har nu derifrån minst 150 Exemplar – väl flera! Hvad synes dig om sådant! – W. lär för dig yttra mycken aktning – men tillägger alltid: Det är besynnerligt – han lärer ej äga något herbarium! W:s mening är dermed att göra dina bestämningar misstänkta för mindre noggrannhet. För honom finns ingen människa i lag.»

Innan Wahlenberg sammanträffade med Fries i Lund sommaren 1822, hade han på vägen söderut besökt Stenhammar i Linköping, och från detta besök rapporterar Stenhammar till Fries:⁴⁴ »W for från mig idag 8 dar sedan, och Du har, kan jag tänka, längesedan emottagit honom i Lund. Jag ämnade skrifva samma dag han for – men hann omöjligen. Jag vill nemligen varna Dig: var icke för öppenhjertig! Han gör spe af allt hvad han sjelf ej funnit, eller tillegnar han sig det, såsom sitt. Säg honom icke dina anmärkningar

öfver vexterna. Det är ju aldeles onödigt. Han är ock blir sin egen man, jemte hvilken ingen annan kan bestå. Hos mig till och med fälde han så många vrånga omdömen både öfver den ena och andra, att jag deröfver högeligen förargades i mitt sinne: men naturligtvis trätte jag icke med min Gäst. Vid frågan om en uppsats öfver Österg. växter, försäkrade han att den skulle komma in i Wett.Acad. Handlingar: och på min erhindran att jag t. ex. hvad Charex beträffar skulle komma i strid med Doct W, sade han grinande: Nå! Om jag stryker ut ett nummer och i stället sätter ett β , hvad gör det? – Bland annat yttrade han sig till Laestadius: 'Få nu se, om vi icke kan forderfva alla de här species af Erythrea för Fries och di andra, när vi kommer ner åt kusten och får se dem, med mycket dylikt, som jag förargades öfver ... Du lär väl sjelf nu ha hört mycken vishet af honom. Men släpp ej ur Dig, all din vishet! Man kan ju visa en människa all tjenstaktighet i verlden, utan att derföre lära honom allt hvad man vet. Lå honom se och forska sjelf, när han är af W:s gryt.»

Det är uppenbart vilket omtyckt samtalsämne Wahlenberg med alla sin egenheter utgjorde för de samtida botanisterna. Men det är tydligt att han hyste ett slags – kanske en smula motvillig – respekt för Elias Fries. År 1834 blev Elias Fries professor Borgströmianus i Uppsala, och därmed upphör möjligheten av bevarade brev dem emellan. Men trots att de nu bodde i samma stad fjärmades deras världar från varandra – Wahlenberg övergick alltmer till att ägna sig åt homeopatin, och hans botaniska produktion upphör praktiskt taget helt och hållet.⁴⁵

Under de sjutton år som återstod av Wahlenbergs levnad finns inga konkreta belägg för någon direkt kontakt mellan honom och Elias Fries. När professuren efter Wahlenbergs död 1751 delats upp i en i zoologi, en i farmakologi och en i botanik, blev det Elias Fries som kom att efterträda honom på den senare lärostolen, och även flytta in i ämbetsbostaden i Botaniska trädgården. Trots de många tänkbara möjligheterna till samarbete – eller sammanstötningar – tycks deras liv snarare ha löpt som parallella linjer – nära, men utan att mötas.

Botaniken flyttades från den medicinska fakulteten till den filosofiska, och Elias Fries bröt den linneanska bundna bokstavstroende traditionen. Trots deras relativa samtidighet kan man våga påstå att Wahlenberg kom att avsluta en period i den botaniska utvecklingen, medan Elias Fries länkade in den på nya vägar.

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8. Del III s. 97.
9. X 304 s. 7 r.
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11. G 266 b nr 17 16/11 1822.
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17. D 93. Föreläsningar i systematisk botanik, 16:de bladet 13/11 1829, 11/11 1830, 8/11 1831, 9/11 1832, 3/11 1845.
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21. Del III, s. 58–59 (1864).
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25. G 320 f: 160 20/1 1815, tillägg gjort 25/1.
26. G 70 ba: 24 15/3 1816.
27. Ang. Fries och romantiken se Gunnar Eriksson, »Elias Fries och den romantiska biologin», s. 60 f., 288 ff. och 311 ff.
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39. G 70 v: 11 13/11 1821.
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41. G 70 T: 13 10/1 1821.
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JOHN BERNSTRÖM

Anteckningar om svärdfiskar,
Xiphias gladius L.,
i Östersjön

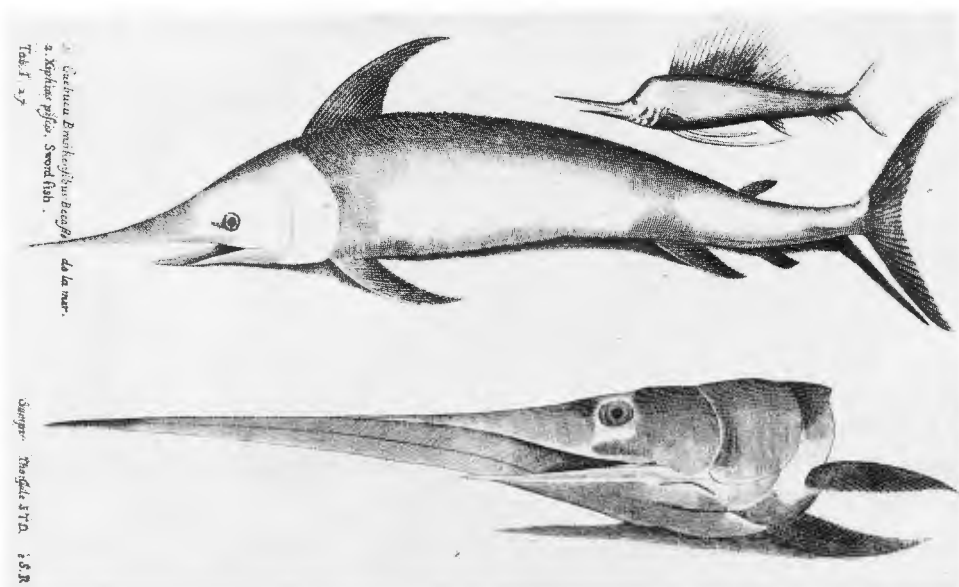
Den soliga och heta midsommardagen 1741 bevistade professor Carl Linnæus högmässan i Sancta Maria kyrka i Visby och gjorde därvid följande iakttagelser (1745, s. 165):

Jätte-Benen, som bewarades i Stora Kyrkan, såsom underwärk, woro wärkeligen Hwalfiskben.

Fisken, som i samma Kyrka hängde öfwer Görans bild, war en *Piscis malacopterygius*, *cauda bifurca*, *pinnis dorsi duabus*, *ani unica*, *cum altera intra hanc & caudam e regione posterioris pinnæ dorsalis*; enfaldiga hopen sade, det om denna fisk wore spådt, at då han blir förtärd, skal dommen komma; måste altså intet wara långt igen.

Såväl »jättebenen» som den illa medfarna fisken har för länge sedan försvunnit från domkyrkan och fallit i glömska; deras forna närvaro på denna plats har ej veterligen bekräftats av andra ögonvittnen. En närmare identifiering av valben var på Linnæus' tid omöjlig, men det bör anses anmärkningsvärt att varken han själv eller någon senare utgivare av hans välkända reseberättelse sökt artbestämma den säkerligen storvuxna fisken. Den ofullständiga latinska diagnosen är emellertid entydig. Beskrivningen avser »en mjukfenig fisk med kluven stjärt, två ryggfenor, en analfena, samt mellan denna och stjärten ännu en fena, belägen mitt emot den bakre ryggfenan», och en fisk med denna fenställning måste ha varit en fullvuxen svärdfisk, *Xiphias gladius* L.; en sådan är visserligen taggfenig (lat. *acanthopterygius*), men misstaget torde under omständigheterna vara ursäktligt. Eftersom intet sägs om artens alltid mest uppmärksammade särdrag, dess »långa hwassa snyte, som ser ut som ett swärd» (Linnæus: Föreläsning 1751, ed. Lönnberg 1913, s. 187), så kan man räkna med att detta redan före 1741 hade förkommit.

När valar eller pelagiska stora fiskar tillfälligt visat sig utanför sina normala spridningsområden, har detta alltid väckt uppseende (jfr Bernström 1972, sp. 593–95). Långt in i nyare tid har man varit benägen att i första hand tolka deras besök såsom »onda portenta», hotfulla förebud till stundan-



Svärdfisk ur planschbandet till John Ray & Francis Willoughby *Ichthyographia* (London 1685–86).

de olyckor. »Emedan Gudh sådana foretekn ofta gifwer eller tillåter at de gifne warda, så gör man wäl at man the samma, til sin omwändelse, såsom en naturlig wächtere-stämman anseer», förklarade sakkunnigt den lärde kyrkoherden Simon Isogæus (1714, s. 1155). Genom att utställa aktuella järtecken i församlingens kyrka kunde man effektivt tvinga menigheten att låta sig varnas; uteblivande vid söndagens gudstjänst var under karolinsk tid straffbelagt. De väldiga valbenen, förmodade kvarlevor av urtidens jättar (jfr Bernström 1963, sp. 71), och den sannolikt på enklaste sätt uppstoppade och fernissade fisken i Visby domkyrka torde följaktligen ha varit gotländska strandfynd, som »enfaldiga hopen» och kanske även dess själasörjare uppfattat såsom gudomliga budskap. Om svärdfisken trots sitt usla konserveringskicks tillåtits kvarhånga i kyrkan, så kan detta tänkas ha berott på församlingsbornas trosvisa övertygelse att dess slutliga sönderfall skulle ske i samband med världens undergång.

Stjärten av en annan storvuxen svärdfisk hängde under första hälften av 1800-talet i Linde kyrka på södra Gotland och sågs där av flera omdömesgilla besökare; deras iakttagelser har sammanfattats av Lilljeborg (1891, s. 388). Han fann det vara »påtagligt» att fenan tillhört samma svärdfisk som redan 1682 hade »uppkastats död på stranden af ön Linde [!]» och som

beskrivits och avbildats i en lärd skrift av Georgius Hannæus (1690, s. 241–43). Den som gör sig besvär att verkligen läsa dennes uppsats, något som Lilljeborg måhända underlåtit, finner emellertid att Hannæus, som var professor i Odense, skildrat en helt annan svärdfisk: denna hade strandat på den lilla ön Lindø utanför Fyens nordkust, således i Kattegatt.

I Östersjöns inre delar har svärdfiskar, kosmopoliter i varma hav, endast sällan anträffats (jfr Linnæus 1746, s. 108: *Swerdfisk. Habitat in mari Baltico rarior*). Det nordligaste säkra fyndet synes vara ett exemplar som 1818 fångades i Mörköfjärden; dess svärd och stjärtfena förvarades länge i Hörningsholms slott (Ekström 1828, s. 38). Greve Carl Carlsson Bonde (f. 1897) har sagt mig att föremålen sannolikt senast 1855, då hans farfars far efter en avlägsen släkting tillträdde fideikommissen, torde ha förstörts eller bortskänkts.

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Smärre meddelanden

Linné bland deckarvänner. Linnés ofta omvittnade mångsidighet gör att man kan möta honom även i mycket överraskande sammanhang. Ett ställe där han väl knappast var att vänta är i deckarvännernas tidskrift *Jury* – men där fanns han minsann i fjärde numret för 1986, presenterad av Dag Hedman, närmast känd för sin avhandling om Frank Heller. »Om Carl von Linnés gudomliga brott och straff» heter detta senaste bidrag till belysning av Linnés rika fasettering.

För cirka tjugo år sedan kom den första fullständiga utgåvan av *Nemesis divina*, men innehållet har sedan länge i stora drag varit välkänt. Genom att detta arbete så länge var relativt oåtkomligt framstod det i en alldeles speciell dager – detta naturligtvis också genom innehållets unika ställning i Linnés produktion – ämne och sfär ligger en bra bit vid sidan om Linnés ordinarie verksamhetsfält.

Det är Linnés roll som kriminalförfattare som Hedman vill belysa. Det som ger denna läsning dess speciella tjusning är Linnés bistra humor men samtidigt grundliga inventering av alla tänkbara slag av brottslighet. Att Linné med sina anteckningar inte var ute efter den juridiska eller kriminologiska sidan av saken, utan snarast var rent moraliserande understryks av Hedman, som betonar hur varje förseelse i det rika sortiment som presenteras, vederbörligen blir bestraffat genom Guds rättfärdighet. Framför allt är det sådana fall där syndaren inte uppdagas av den världsliga rättsapparaten – »de privata, dolda brotten», som ändå drabbas av Guds vedergällning.

Linné återfinns också på ett annat ställe i samma nummer av denna tidskrift, nämligen i Karl G. och Lilian Fredrikssons betraktelse över titlar på deckare, där man citerar *Critica botanica*, och menar att Linnés påstående att »nomina si nescis, perit et cognitio rerum» gäller i lika hög grad deckartitlar som det hos Linné gäller växtnamn. (Tio år senare använde Linné sentensen också i inledningen till Västgötarezan.)

Det är långt mellan deckarvärldens blodiga marionetter och de älskliga örterna, men visst går det trådar, om än långa och sköra, mellan de olika världarna.

Hans Krook

Linné-lärjungar på frimärken. I samband med världsutställningen av frimärken i Stockholm den 28 aug.–7 sept. 1986 var det åtskilliga postförvaltningar, som med specialstämplar eller frimärken uppmärksammade denna händelse. Ur svensk synpunkt var franska postverkets utgåva för *Polynésie française*. Den bestod av ett frimärke och ett block med märke båda avsedda för luftpost. Märkena visar James Cooks karta över *Otaheiti* + *Nue* (= Tahiti) och porträtt av Linné-lärjungarna Daniel Solander och Anders Sparrman. Den förre medföljde Cook på hans första världsomsegling och då besöktes Tahiti för observationer av Venus-passagen. Den senare deltog i Cooks andra världsomsegling, som bl. a. gick ner till Antarktis. Franska

postverket har med dessa märken velat hedra de svenska forskare, som tidigt varit med att utforska områden, som fortfarande har stort intresse för Frankrike.

Beträffande Sparrman, så återfinns han på ett annat frimärke utgivet 1986. Det är ett märke i en serie av sex, som är utgivet av Samoa i Stilla Oceanen. Motiven på märkena är fjärilar och en av dessa är beskriven av Sparrman under namn av *Anapheis Java* Sparrman. Den beskrevs 1767 och infördes av Linné i *Systema naturae* 1768. Tyvärr är Sparrmans namn skrivet med litet s, vilket gjort att missförstånd uppstått så att artens förekomst på Samoa är representerad av en underart.

Stellan Erlandsson

Palmhuset i Göteborgs trädgårdsförening heter en skrift i stort format författad av Eva-Maria Hermansson och Maria Lundgren. Den inger omedelbart läsaren lustkänslor fint formgiven som den är. En tillgång är också den ordentliga engelska sammanfattningen (där man dock glömt Johannes Rudbeckius trädgård i Västerås). Trädgårdsföreningen i Göteborg grundades 1842 och palmhusets gjutjärnskonstruktion restes 1878. Författarna ger en allmän överblick över växthusets utveckling och de illustrerar framställningen med ritningar och gamla foton av betydande charm. Restaureringen under 1980-talet dokumenteras till förmån för kommande forskning. Vad man kan sakna är mer om personerna som arbetade i denna fascinerande miljö. Kanske kommer en annan skrift ägnad trädgårdsföreningens öden.

Svenska naturskyddsföreningen. I en akademisk avhandling i ämnet historia i Lund har Désirée Haraldsson skildrat Svenska naturskyddsföreningens framväxt och tidiga utveckling. Titeln på hennes bok är *Skydda vår natur!* Utropstecknet kan sägas markera hur naturskyddet i Sverige verkligen haft karaktär av folkrörelse. Framställningen sträcker sig från 1880-talets slut fram till 1930-talet och erbjuder rika bakgrundsteckningar såväl som inblickar i själva föreningshistorien. Naturskyddsföreningen har onekligen präglats av starka personligheter – Louis Ameen, Calla Anrick, Thor Högdahl, Einar Lönnberg, Karl Starkbäck, Rutger Sernander och många andra. Författarinnan spårar en förskjutning från de tidiga årens naturskydd med nationalparkerna i centrum till en mer allmänt inriktad naturvård. Vårt förhållande till naturen är ett oändligt ämne och Désirée Haraldssons avhandling innebär en nyttig påminnelse om att det finns mycket att utforska härvidlag även efter Linné.

Nobelpristagare och botanist. Carl-Johan Clemedson har i ett antal artiklar i *Fauna och Flora* (1985:6, 1986: 1–3) skildrat The Svedberg som botanist, ett ämne som visar sig överraskande rikt. Svedberg företog en mängd resor inom Norden och i Arktis från 1890-talet till 1968, vilka avsatte stora samlingar och ett antal botaniska skrifter. Av Clemedsons initierade skildring framgår att Svedberg var något långt mera än en amatör. Kombinationen med hans verksamhet som målare och hans litterära intressen – och givetvis det arbete som ledde fram till nobelpriset 1927 – gör honom till något av en renässansmänniska.

The Ecologists. From merry naturalists to saviours of the nation (Almqvist & Wiksell International). Titeln på Thomas Söderqvists avhandling i vetenskapsteori i Göteborg anger dess spännvidd. Här beskrivs framväxten av den svenska ekologin

under 1900-talet med rika bakgrundsteckningar av vad Söderqvist kallar proto-ekologi. Många nu verksamma biologer kan känna igen sig själva och sina lärare i denna innehållsrika och spännande bok. Dess värde ska inte mätas av längden på denna notis.

Fyra år efter Linné. Jonas Meldercreutz, med tiden professor i Uppsala och en av personagerna i *Nemesis divina*, reste 1736 i Lappland tillsammans med den franska gradmätningsexpeditionen under Maupertuis. Hans *Berättelse om En till Lappland och Norrsjöen gjord Resa* har nu för första gången getts ut genom Jouko Vahtola (*Societas Historica Finlandiae Septentrionalis*, Rovaniemi 1984). Meldercreutz var väl ingen märkligare stilist och har kanske inte heller några direkta nyheter att erbjuda, men han berättar underhållande om samisk exotica och lappländsk natur. Beskrivningen tål ingen jämförelse med Linnés fyra år äldre *Iter Lapponicum* men dock finns en hel del likheter, t. ex. i den av klassiska förebilder färgade skildringen av samerna och i pläderingen för en uppodling av lappmarken. Förargligt och rätt svårförklarligt är att inledning och noter är på finska när Meldercreutz' text är på svenska. En karta hade varit till stor hjälp. Vi tackar dock varmt för texten.

En fyrahundrafemtioårig örtabok. Christian Pedersens *Om Urte Vand* utgiven i Malmö 1534 har föreningen Malmö Stadsbiblioteks Vänner nu gett ut i en snygg faksimil; efterskriften är signerad Bengt Holmström. Pedersens skrift är inte självständig utan står i starkt beroende till ett arbete av Bartolomeus Vogter av 1531, vilket i sin tur går tillbaka på *Hortus sanitatis*. Innehållet är alltså inte märkligt ur botanisk synpunkt – men fyndorten för läkebetonika vid Stehag i Skåne utgör ett intressant undantag. (Härom O. Gertz i *Bot. Not.* 1932, 460f.; källäget bakom Pedersens arbete är utrett i Paul Hauberg i *Tidskrift för historisk botanik* 1, 1918/19, 104–122.) Det är riktigt att betydelsen i Pedersens arbete främst ligger på det språkliga planet, men intresserade av gamla ruggiga recept går inte lottlösa. »Urtevand», dvs. »örtvatten», kan verkligen tillredas på många sätt och med många syften. Man kan ge Pedersens skrift både till sina vänner – med en varning – och till sina fiender – med en rekommendation att pröva bokens hälsokurer.

Odlarmöda. Om vi ser till resenären och etnologen Linné så var hans främsta sentida motsvarighet varken Elias Fries eller Sven Nilsson utan Nils Månsson Mandelgren (1813–1899). Hos både Linné och Mandelgren fanns ambitionen till en totalinventering av Sverige; de om några kände landets mångfald och mångfaldens tjuvning. Mandelgren har länge oförtjänt varit bortglömd men har på senare år genom en rad publikationer fått sin upprättelse. Numera finns ett mandelgrenskt samfund som ger ut en särskild tidskrift om personen och hans verksamhet betitlad *Odlarmöda*. Den bör intressera även denna årsskrifts läsare. Postgironumret är 32 57 01-1 och prenumerationsavgiften så låg som 65 kronor.

Det gröna Uppsala har förre stadsträdgårdsmästaren i Uppsala Eric Laufors kallat en trevlig skrift (Uppsala stads historia VI:6). Den återgår på en artikelserie om stadens parker först publicerad i Uppsala Nya Tidning 1975 men som här publiceras i uppdaterat skick och med tillagt fotomaterial; Yngve Svalanders teckningar kvarstår.

Ämnet måste tilltala många uppsaliensare liksom säkert många andra; mängden inhemsk historisk trädgårdslitteratur är verkligen inte stor. Laufors framställning har sin styrka i senare perioder, vilket bara är en fördel eftersom så mycket redan skrivits om t.ex. Linnéträdgården. Med sin journalistiska ton är *Det gröna Uppsala* både läsbar och läsvärd. Den har också ett budskap, formulerat i dagsvers av Herr Talman i UNT »Och rådde det större brister/ på parker än nu idag/ så vore vi pessimister,/ förmodar jag överlag.»

Äppelbibeln. En bok som verkligen får det att vattnas i munnen på läsaren är Anton Nilssons *Våra äppelsorter* (Nordiska Museet). Den består av nästan femhundra sidor med de svenska äppelsorterna beskrivna alltefter landskapshärkomst. Anledningen att här särskilt peka ut detta standardverk är det inledande historiska partiet. Det ska uppfattas som en introduktion till vilken mer onekligen finns att tillägga. Den historiskt intresserade hade nog gärna också sett att äldre bildmaterial hade använts. Sådant förmedlar information om äldre odlingsmetoder och om den status äppelträdet haft, det ger också en doft som av efter vällagrad ripston eller åkerö. Som helhet är Nilssons bok en andlig vitamininjektion under mörka vinterkvällar.

Registret till Svenska Linnésällskapets Årsskrift från 1918 till 1985 känner väl alla läsare av vår årsskrift till. På ca hundra sidor får man kompletta innehållsregister, författarregister, register över illustrationer, över huvudord och – inte minst – personer. Härmed öppnas den långa sviten av årsböcker för forskare och allmänintresserade. Alla kanske inte hunnit reagera på möjligheten att skaffa sig information, men chansen finns kvar. Beställningar ställs till Svenska Linnésällskapet, Pg 55 1855-0. Priset är för medlemmar 75 kr, icke medlemmar 100 kr.

Linnéfonden Svenska Linnésällskapet avser att fr. o. m. året 1988 ur »Linnéfonden» varje år utdela ett eller flera bidrag till forskning och till spridning av forskning som rör dels Carl von Linné och den linneanska traditionen i allmänhet, dels arbeten rörande svenskt odlingslandskap och hortikultur med anknytning till den linneanska epoken (dokumentation, vård, rekonstruktion m.m. kan komma ifråga). Beroende på övrig verksamhet och på bedömning av ansökningarnas ekonomiska kalkyl kommer bidragens storlek att variera. Ansökan skall vara inne före 1 feb. och ställas till Svenska Linnésällskapets styrelse, som är beslutande i ärendet.

Gunnar Broberg

Sällskapetets verksamhet åren 1985–1986

1985

Vårsammankomsten, den 68de i ordningen, hölls den 2 juni i Linnéträdgårdens orangeri med inbjudna gäster från Uppsala kommun. Ordföranden, prof. Magnus Fries, informerade om styrelsens aktiviteter, bl. a. översättningsarbetet med Flora Svecica och utarbetandet av ett generalregister. Föredrag hölls av doc. Gunnar Broberg med titeln »Linné i Rudbeckarnas trädgård». Visning av det delvis restaurerade Linnémuseet och Linnéträdgården med nya ekonomibyggnader företogs varefter subskriberad middag intogs i orangeriet.

Höstsammankomsten ägde rum den 19 november sedvanligt på Kungl. Vetenskapsakademien, den institution, som Linné var med om att grunda. Ordföranden höll en parentation över Sällskapetets mångåriga styrelseledamot, prof. John Axel Nannfeldt, som avlidit den 4 november. Till ordförande för 1986 valdes prof. Bengt Jonsell och till vice ordförande prof. Gunnar Eriksson efter överbibl. Wilhelm Odelberg. Av de styrelseledamöter som stod i tur att avgå omvaldes avdelningsdir. Inger Estham, bankdir. Lars Jonasson och med. dr Birger Strandell samt som suppleant doc. Örjan Nilsson. Prof. Bertil Nordenstam valdes till suppleant för år 1986 och till styrelseledamot efter Bengt Jonsell valdes prof. Magnus Fries. Till revisorer för 1985 och 1986 valdes bankkamrer Jan-Olov Sandberg och doc. Mats Thulin med prof. Rolf Santesson som suppleant. Årsavgiften för 1986 fastställdes till oförändrat 60 kr. Med anledning av att 250 år förflutit sedan Linné utgav sin *Systema naturae* gav ordf. en kort presentation av verket. Linnéättlingen Lona Forslid föreslog att Sällskapet bör verka för att Humlegården, där Linné står staty, bör få namnet Linnéparken. Prof. Bo Holmstedt höll föredrag med titeln »Linné och psykofarmaka».

Under 1985 har styrelsen sammanträtt två gånger, den 27 mars i Stockholm och den 15 oktober i Uppsala. Viktiga beslut har varit översyn av försäkringar för Linnémuseet samt fortsatt upprustning av museet.

Till representant i styrelsen har Uppsala universitets konsistorium utsett prof. Olov Hedberg efter framlidne prof. John Axel Nannfeldt.

Linnémuseet har haft öppet tiden 19 maj–15 september alla dagar utom måndagar. Öppettider har varit 13–16.

Sällskapet har arrangerat 3 vandringar på Linnéstigarna under sommaren, en på vardera Gottsunda, Vaksala och Jumkil.

1986

Vårsammankomsten, den 24 maj, hölls traditionsenligt på Linnés Hammarby där doc. Björn Ambrosiani höll föredrag med titeln »Hammarby i det förhistoriska kulturlandskapet». Ordf. i Linnénämnden, doc. Örjan Nilsson, visade sedan delar av parken och byggnaderna och redogjorde för de förändringar och upprustningar som vidtagits.

Vid höstsammankomsten den 9 oktober, som hölls på Drottningholms slott, omvaldes ordföranden och vice ordföranden för 1987. Av de styrelseledamöter, som stod i tur att avgå, omvaldes prof. Allan Ellenius samt docenterna Gunnar Broberg och Roland Moberg. Till suppl. omvaldes prof. Bertil Nordenstam. Bankkamrer Jan-Olov Sandberg och doc. Mats Thulin omvaldes till revisorer för 1987 med fil. lic. Börge Pettersson som ny suppleant. Årsavgiften för 1987 fastställdes till oförändrad 60 kr. Fil. dr Sten G. Lindberg kåserade om Drottning Lovisa Ulrika och hennes samlingar på Drottningholms slott samt visade hennes bibliotek. Subskriberad supé intogs på Bromma hotell.

Styrelsen har sammanträtt två gånger, den 8 april i Stockholm och den 2 oktober i Uppsala.

I början av juni anordnades en pressvisning av Linnémuseet med anledning av den omfattande restaureringen och de stora förändringarna i utställningsverksamheten.

Som samarrangemang med bokförlaget Forum presenterades i augusti översättningen av Flora svecica för pressen i Linnéträdgårdens orangeri. Ett praktexemplar har också överlämnats till Konungen av sällskapets sekreterare.

Linnémuseet har haft öppet tiden 18 maj–21 september alla dagar utom måndagar. Öppettider har varit 13–16.

Sällskapet har arrangerat 3 vandringar på Linnéstigarna under sommaren, en på vardera Gottsunda, Vaksala och Jumkil.

Roland Moberg

Svenska Linnésällskapetets styrelse 1987

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SVENSKA LINNÉ-SÄLLSKAPET

Resa i Linnés fotspår till Lappland.

Linnean Society of London arrangerar i samarbete med Svenska Linné-Sällskapet en resa i Linnés fotspår till Lappland tiden 26 juli-7 aug. 1988. Ett fåtal platser finns tillgängliga för Svenska Linné-Sällskapets medlemmar.

Resan startar i Uppsala och går längs kusten upp till Luleå och därifrån till Kvikkjokk, Abisko, Haparanda, Åbo samt åter till Uppsala.

Priset kommer att ligga på omkring 6.000 kr och de som önskar följa med på resan ombuds snarast kontakta undertecknad för ytterligare information, dock senast 25 jan. 1988.

Roland Moberg
sekr.

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