

# Chapter 12

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## History and Current Trends of Ethnobiological Research in Europe

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We who belong to today's post-industrial society can sometimes have difficulty in imagining how close to the surrounding landscape rural people lived in pre-industrial Europe only a few generations ago. Trapping, transhumance livestock keeping, gathering of fodder and haymaking as well as hand-crafting utensils for the household meant that forest settings and mountain areas were not wildernesses, but multi-faceted production landscapes, which locals from childhood learned to interpret, use and transform. They knew their forest or mountains well.

Inhabitants of local, traditional societies, whether in the case of livestock herdsman in mountainous areas of southeastern Europe in the early twentieth century, or contemporary slash-and-burn agriculturalists of the Amazon rainforest, devoted a lifetime to learning to master the local environments on which they were dependent for their livelihood. Claude Lévi-Strauss has revealed that local populations typically have an excellent familiarity with the biological environment, and they show a passionate attention to it (Lévi-Strauss 1962).

This understanding of what Lévi-Strauss calls "science of the concrete" includes not only those organisms and contexts which reflect cultural, economic, and medicinal needs, but also deep and detailed knowledge of the environment in general. Therefore, mountain herdsman in the Balkan Peninsula, farm workers in Calabria, fishermen in Atlantic islands, rural cultivators in Central Europe, villagers in the vast marshlands of the Great Hungarian Plain, forest-cutters in the northern Iberian Peninsula, peasant hunters in central Scandinavia, or reindeer nomads in the Sápmi are at least as interesting to study in terms of their folkbiological knowledge as the Kayapó, Naulu, Ntlakyapamuk, or Piman.

Ethnobiologists in Europe work to get rid of the widely held notion that ethnobiology is all about "non-Western people." European rural people are part of our professional realm.



**Figure 12.1** Albanian women from Kelmendi in the northern Albanian Alps smelling spignel (*Meum athamanticum*), which is locally used as a cosmetic plant. Photograph courtesy of Andrea Pieroni. (See color insert.)

As ethnobiologists we usually study rural people's ecological knowledge in societies with high levels of self-sufficiency. We study the biocultural domains that develop in the interactions between human beings and their surrounding landscape, including perceptions of the biota, local management, and use of biological resources (Pardo-de-Santayana et al. 2010).

## HISTORY OF A DISCIPLINE

Overviews of the development of the sciences of ethnobotany and ethnobiology usually stress North American contributions to the subject. Ancient Greek and Roman writers are sometimes mentioned, but seldom do we read about important eighteenth to early twentieth century scholars in other parts of the world. The history of an academic discipline is a highly subjective matter; for ethnobiology it is very much so (Clément 1998; Ford 1978; Hunn 2007).

This bias in the historiography of our discipline is to a large extent a question of understanding languages other than English. Little information is to be found in international overviews. Only C.M. Cotton (1996) provides a brief overview of the European contribution to the development of ethnobotany and ethnopharmacology.

Although the terms “ethnobotany,” “ethnozoology,” “ethnobiology,” and “ethnoecology” were not coined until 1895, 1899, 1935, and 1954 respectively, the history of the ethnobiological field began in Europe long before then. Even though this type of research did not develop early into a separate academic discipline, over the centuries many European scholars within botany, ecology, ethnology, human geography, pharmacology, and zoology, as well as advanced amateurs, have made important contributions to the field of ethnobiology.

### The Recording Man

In every ancient culture with a written language, people have recorded useful knowledge about animals, plants, and environments. This is particularly true of medicinal discoveries and knowledge. Some of these texts have been preserved. We have Assyrian, Egyptian, and Greek medicinal books which bear witness to extensive knowledge about how animal and plant products could be utilized (cf. Raven 2000).

Greek and Roman authors reported, for instance, on the importance of the acorn (*Quercus*) for bread, the use of medicinal plants such as *herba vettonica* (*Stachys officinalis*), or the ingestion of yew (*Taxus baccata*) as a poison in the Mediterranean by old people no longer able to fight. The physician Pedanius Dioscorides (AD 40–90) wrote *Περὶ ὕλης ἰατρικῆς* “On medical material”—better known in its Latin translation *De materia medica*—which remained important until today. Dioscorides described in detail more than 600 medicinal plants and also included medicines made from animals and minerals. He also recorded ancient local plant names from various tribes.

His contemporary Pliny de Elder's (AD 23–79) encyclopedic *Naturalis historia* “Natural history” is another important written source for our knowledge about animals and plants among the Romans. Pliny provides a wealth of interesting information, such as that hedgehog skin was used in dressing cloth for garments, ravens were taught to imitate human voices, and dolphins assisted fishermen in catching fish.

### Natural History during the Renaissance

In medieval herbals of the thirteenth century, the ancient tradition of medicinal plants lived on with some additions of newer data. In Andalusia, Arab scientist Ibn Al-Baytar (ca. 1180–1248) compiled a book of food and medicinal plants, based on his own observations and more than 200 sources (including Dioscorides), presenting uses for 1400 simples.

With the invention and diffusion of Gutenberg’s printing press in the late fifteenth century it became possible to publish herbals in larger editions, for instance Leonhart Fuchs’ herbal *Neu Kreüterbuch* (1543) which catalogues more than 400 plants native to Germany and Austria, as well as about 100 exotic plants. The German language version is nicely illustrated with woodcut prints. The book has been used widely in handbooks throughout plant cultural history as a source for knowledge about medicinal plants in former times. Other herbals, for example, by Henrick Smid (1546), William Turner (1551), Remberd Dodoens (1554), Andrés Laguna (1555), Pietro Andrea Mattioli (1568), Juhász Melius (1578), Marcin z Urzędowa (1595), John Gerard (1597), and Simon Syrennius (1613), were also widely read. We know little about the ethnographic background and field methods adopted at that time (many just copied data from others), and so it is probably not accurate to use the term “ethnobiology” to refer to all the herbals and overviews on plant uses in Europe, which were carried out centuries before the proper development of ethnography in the nineteenth century.

The Swiss zoologist Conrad Gessner’s (1516–1565) books on birds and fish are of importance for our understanding of faunal change in Europe, but they also include many notes regarding the uses of various taxa (Kinzelbach 2004). Peter Claussøn Friis’ (1545–1614) description of northern Norway published in 1632 describes Nordic conceptions of animal life at the end of the 1500s. A manuscript by Jón Guðmundsson the Learned (1574–1658) provides folk knowledge details about whales and fish in Iceland.



**Figure 12.2** Olaus Magnus describes in 1555 how floats of reed (*Phragmites australis*) and club rush (*Schoenoplectus lacustris*) were used when boys in Scandinavia learned to swim. In the mid-1900s, it was still possible to document Swedish children learning to swim with floats made of this material. The technology is ancient, known to the Romans as *scirpus ratiae*. From Olaus Magnus, *Historia de gentibus septentrionalibus*, Roma; 1555.

**BOX 12.1** *Saami Use of Bark as Food*

In 1673, an international bestseller with the title *Lapponia* was published. It was compiled by Johannes Schefferus, and describes the Saami people and their relationship with the surrounding landscape. More important for ethnobiologists are the accounts which had furnished the basis for Schefferus' description of Lapland. These accounts, which were written in the 1670s by clergymen, some of Saami origin, are unequalled in quality and comprehensiveness. They provide a wealth of information on Saami methods of hunting, fishing, reindeer-herding, folk medicine, and wild-plant harvesting, and deserve further analysis. Samuel Rheen reports in detail in 1670, for instance, how the Saami utilized the inner bark of the pine (*Pinus sylvestris*) as food by preparing it wrapped in birch bark in the heat of a fire:

The Lapps also use pine bark for food, in particular the Lapps living in the forest region. This bark is called *Sautopetzi* [*savðduobiehtsie*], which they prepare as follows: they peel off the bark of large pine trees, particularly the bark near the root and clean it well, so that it looks like fine linen. This bark is dried in the sun, then cut into small pieces and then put into the big birch-bark slices, which they bury in the soil, covering it with sand and then light a large log fire above. The bark prepared thus is red and sweet, and they eat it as a confection."

This way of utilizing pine bark has been widespread among the Saami during centuries, and has been documented through a variety of sources in recent research.

## **Eighteenth Century: the Beginning of Economic Botany**

Several authors, including Paul Alan Cox (2001) and E. Wade Davis (1995), have pointed to the importance of Carl Linnaeus for the development of ethnobiology.

During the mid-1700s a wealth of empirical data of interest for ethnobiologists was scientifically and systematically gathered by Linnaeus and his contemporaries. Linnaeus was an excellent fieldworker, and through his diaries we can follow his method in detail. In 1732, during a journey to Lapland, Linnaeus studied the knowledge possessed by the Saami about plants and animals. He never hesitated to approach farmers or reindeer herders, and made notes of both large and small matters (Svanberg 2002). For example, he recorded that young Saami men engaged in courting used the scented fungus *Haploporus odoratus* as a fragrance. In his *Flora lapponica* from 1737 he noted that Saami bachelors stored

it carefully in a pouch furthest down on their stomach, in order the sweet fragrance it sends forth might make them more pleasing to their nymphs. Oh you ridiculous Venus, who in foreign lands have at your service coffee and chocolate, sweets and preserves, wines and lemonades, precious stones and pearls, gold and silver, silks and pomades, dancing and feasting, music and merrymaking! Here you must content yourself with a tasteless fungus.

From his travels in Dalecarlia in 1734 Linnaeus reported on the long-distance trade in medicinal plants. The roots of bitterwort (*Gentiana purpurea*) were imported by peasant peddlers into Sweden from Norway. This trade can be traced back to the early sixteenth century. It was gathered by farmers in the vicinity of Valdres. The trade continued for generations, but eventually the excessive demand and the growing scarcity and local extirpation of the plant in Norway brought it to an end (Svanberg 2001b).

The purpose of Linnaeus's research was to document the gifts left by the Creator in Nature. Linnaeus was genuinely interested in learning from the people. He looked closely at traps and fishing implements; he tasted the food prepared by reindeer herders, and he

inquired about household remedies; he peered into barns to see how vermin were being kept away; and he asked old women about the folk names of plants. Although Linnaeus's travelogues provide us with many first-hand observations of great interest we do not agree that he was the "father of ethnobotany." It is probably more correct to label him a bioprospector or economic botanist, because he had little interest in the data in context.

Linnaeus's travelogues became exemplars for a whole generation of scholars and developed into an international genre of topographical works including information of ethnobotanical and ethnozoological interest. Peter Kalm (1716–1779) gathered a lot of valuable first-hand information in southwestern Sweden (1741), Russia (1744), and North America (1749–1752), while Johan Peter Falck (1732–1774), who headed an expedition into Siberia and the Kazak steppe (1768–1774), made recordings about animal and plant knowledge among Turkic and Finno-Ugric peoples in Russia (Svanberg 1987).

We can also mention Jens Christian Svabo (1746–1824) on the Faroes, John Lightfoot (1735–1788) in Scotland, José Quer y Martínez (1695–1764) in Spain, and Félix de Avelar Brotero (1744–1828) in Portugal. In Poland the priest Krzysztof Kluk (1739–1796) devoted his life to the study of economic botany. His *Dykcyonarz Roślinny* "Plant Dictionary" was an alphabetic encyclopedia of plant uses both copied from other authors and observed from his area.

For this generation of scientists, folk knowledge of plants and animals was a storehouse of information which scholars could draw upon. The empiric data from these travelers were devoted to improving a nation's and a people's quality of life and health. Passed down in the literature, the Linnaean tradition is part of our shared knowledge of plant use today. It has also been exploited in various contexts for economic development and social change (Nelson and Svanberg 1987).

Past travelers reported on the ritual use of the hallucinogenic fly agaric (*Amanita muscaria*) by shamans in northeastern Siberia. Reading these reports, the Swedish clergyman Samuel Ödmann published in 1784 an article which could be described as an attempt to use ethnomycological observations to explain the so-called berserker rages among the Vikings. According to Ödmann they used fly agaric. However, there are no historical sources or pieces of archaeomycological evidence that the Vikings actually used fly agaric. It is interesting though, that the notion has become widespread, and Ödmann's report later inspired ethnomycologist R. Gordon Wasson (1898–1986) in his search for soma and magic mushrooms.

## Medicinal Plants and Economic Botany

Searching for new drugs is not a primary goal among contemporary ethnobiologists, but it has been part of the European scholars' interest in economic plants since Linnaeus's time. During his travels in the Swedish countryside Linnaeus observed how peasants used the marsh rosemary (*Rhododendron tomentosum*) against various ailments among small livestock and human beings. As a physician, he tried the plant in human medicine and in a dissertation from 1775 he praises marsh rosemary as a remedy against scurvy, whooping cough, laryngitis, and leprosy. The Linnaeans and their contemporaries showed great confidence in finding new medicaments among peasant folk-medicine.

More famous, and often given as an example in textbooks, is the physician William Withering, who observed how a local female healer in Shropshire achieved good results by treating patients suffering from edema with an herbal remedy. Withering examined the herb composition and through deduction found that it must have been the foxglove

(*Digitalis purpurea*), which was medically active. He prepared an extract of the plant and examined its effect on patients. The treatment proved successful in reducing fluid build-up in the tissues by its effects on the heart. Trials were extended to more patients. Withering published his results in 1785 (Balick and Cox 1996).

## Nineteenth Century: Explorers and Armchair Scholars

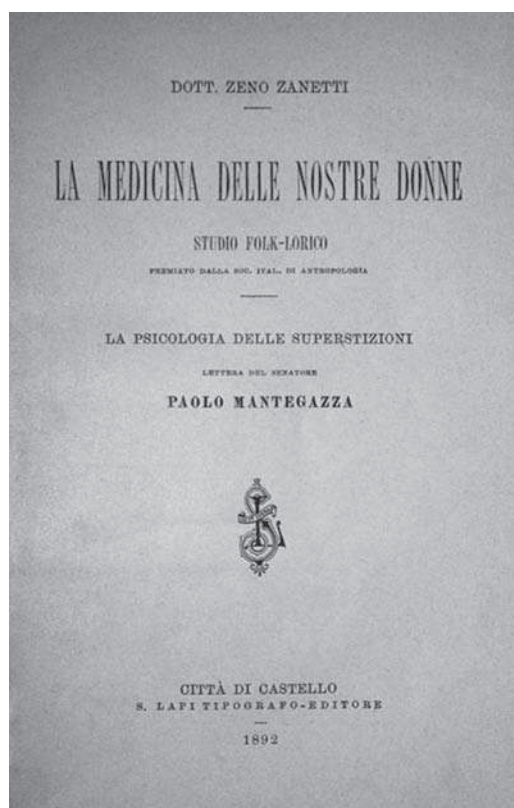
From the mid-nineteenth century—a time of increasing Western scientific explorations in the world—and onwards, interest increased in documenting folk knowledge and uses of wild plants and animals. Most of these are entries and passages in travelogues and ethnographical monographs, but there were also what could be regarded as proto-ethnobiological studies. Clergyman and local historian Johann Wilhelm Ludwig Luce (1756–1842) compiled a *Heilmittel der Ehsten auf der Insel Oesel* “Remedies among the Estonians of the island Saarema” (1829), one of the first systematic medico-ethnobotanical accounts within a specific area in Europe.

Swiss botanist Pierre Edmond Boissier (1810–1885) traveled through the Iberian Peninsula. Boissier noted that the shepherds of Sierra Nevada collected the endemic *Artemisia granatensis* to sell in the city of Granada. The herb was considered a panacea. Modern ethnobotanical studies have also registered its use and marketing in the area. The species was officially protected in 1982, since the high demand led to the threat of extinction (Pardo-de-Santayana and Morales 2010). German scholar Ludwig Hopf (1838–1924) published in an in-depth analysis based on a huge amount of comparative material on animals used as oracles and omens from various times and in various parts of the world. The author analyses these data from what he calls an “ethnological–zoological” perspective. Rudolph Krebel gave an account of folk-medicine among various ethnic groups in the Russian Empire from 1856. Johann Georg Dragendorff (1836–1898) in Tartu published *Die Heilpflanzen der verschiedenen Völker und Zeiten* “Medicinal Plants of Various Peoples and Times” (1898), in which he described the use of many species. Czech ethnographer Primus Sobotka (1841–1925) published in 1879 a book containing rich material concerning the folk beliefs about plants in Slavic countries.

The new currents of interest in aboriginal botany in North America did not pass unnoticed in Europe. During the Vega Expedition that travelled the North East Passage in 1878–1879, the ship was trapped in the ice for many months outside a Chukchee village. To get voucher specimens for his botanical collection, the expedition member Frans Reinhold Kjellman (1846–1907) asked the native Chukchee in the vicinity about food and household plants. After the expedition returned to Sweden, Kjellman, who was aware of the American studies, published in 1882 his findings, including both theoretical and methodological discussions.

“What people think about sickness and health, to what cause they ascribe their physical suffering, and what remedies they use, in order to cure or prevent illness, is derived from their medical knowledge, their folk medicine,” wrote physician Leopold Glück (1856–1907). He worked in Sarajevo and gathered folk remedies in Bosnia and Herzegovina at the end of the nineteenth century. Glück (1894) not only emphasized an emic perspective, but also gathered substantial material on traditional medicinal uses of plants among rural people. In his impressive study from 1894, he listed 108 taxa and their local medical uses in the region.

Ethnobiological studies in the modern sense were introduced in Europe by a few local scholars in the nineteenth century. For instance, Paolo Mantegazza (1831–1910) wrote in



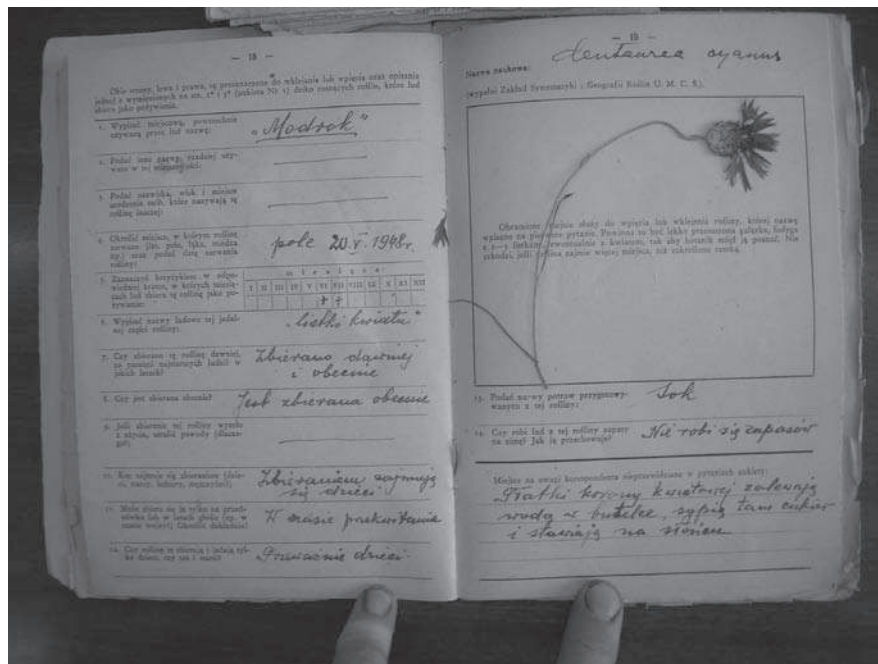
**Figure 12.3** Front page of Zeno Zanetti's *La Medicina delle nostre donne* (1892).

1892 *La medicina delle nostre donne* “The medicine of our women,” where he documented a large number of folk-medicinal practices, a few of them also plant based. The first proper ethnobotanical study in Italy, however, was probably that of Giuseppe Ferraro (1845–1907), who described traditional plant uses in his home town of Carpeneto d’Acqui. In 1884 Ferraro listed traditional uses and folk names of dozens of plants. His introduction to this report represented an early attempt to conceptualize the importance of folk botanical studies, although a clear indication of the adopted methodology is missing from this study.

A few years later the prominent Sicilian folklorist Giuseppe Pitrè (1843–1916), in his *Medicina popolare siciliana* “Sicilian popular medicine” (1896), described many folk remedies still in use in various areas of Sicily. The approach in this work was more medico-anthropological: Pitrè listed various illnesses and wrote about different animal, vegetal, or even spiritual treatments. However, in this case too, the methodology was not clearly spelled out, and the research had more of the characteristics of an overview of information gathered from many folk sources.

In Poland, over a hundred publications on ethnobotanical topics appeared at the end of the nineteenth century. Oskar Kolberg (1814–1890) was an ethnographer who spent his life traveling around Poland writing down various aspects of local culture. He also noted local knowledge about plants, with many references to their medicinal, magical and food use. Józef Rostafiński (1850–1928) was a botanist from Cracow. In 1883, he issued through contemporary media his 70-question inquiry about the traditional use of plants. He received





**Figure 12.4** A questionnaire used by Józef Gajek in his 1948 study of wild food plants in Poland. The study was performed by volunteers who gathered freelists of wild food plants. A questionnaire like this was used to extract detailed information on the use of a particular species (in this case it is *Centaurea cyanus*, whose petals were widely used to make a refreshing fermented drink). His project provoked a response from over a hundred people: local teachers, priests, farmers, and even scouts. A year later a similar study was performed regarding medicinal plants. Courtesy of the archives of the Polish Ethnographic Atlas, Cieszyn; photo by Łukasz Łuczaj.

a few hundred letters from Poles inhabiting the present area of Poland, Ukraine, and Belarus. The results of his field material have only recently been published.

During the mid-nineteenth century, comprehensive fishery biological research was initiated in Scandinavia. Studies were based on fieldwork and were conducted in collaboration with fishermen along the coastal areas and lakes. Scholars recorded emic data like local names, information on old fishing methods, the population's knowledge and perceptions of the fish behavior and habitats, and data about the economic importance of local fish fauna. In 1896 questionnaires were distributed in Sweden in order to make a general inventory of the fauna of the thousands of lakes and rivers in the country. Only a fraction of this material is published, but today it offers an excellent source material for ethnozoological research.

### Early Twentieth Century: Ethnographical Studies

While ethnobotany developed into its own scientific field in North America at the beginning of the twentieth century, it hardly got any following in Europe. The term itself was only occasionally used by European scholars before the 1980s (e.g., Borza 1931; Haudricourt 1956; Kowalska-Lewicka 1964; Moloney 1919; Nordenskiöld 1908). Those few European scholars who did dedicate themselves to ethnobotany, like Frenchman Jacques Barrau, undertook most of their research outside the continent (Barrau 1971). However, there were many European scholars within various fields (botany, ecology, ethnology, pharmacology)

who carried out substantial works that clearly qualify as important contributions to the field of ethnobiology, ethnobotany, and ethnozoology.

In 1908 the ethnographer Erland Nordenskiöld (1877–1932) compiled a manual for ethnographical fieldwork, in which he also discussed traditional knowledge of plants, and mentioned the word “ethnobotany” for the first time in Swedish. The manual was intended for Swedes, especially Christian missionaries, who lived and worked in distant lands. Nordenskiöld himself developed a collaboration with pharmacologist Carl Gustaf Santesson (1862–1939) for the analysis of poisons used by South American Indians. Santesson himself also collaborated with other ethnologists, and in 1939 he published an important analysis of the lichen *Letharia vulpina*, gathered from a Saami hunter who used it as a poison for killing wolves, an early study of ethnopharmacology (Holmstedt 1995).

Several researchers within cultural geography, such as John Frödin (1879–1960) in the 1920s to 1950s, published integrated, ecologically oriented studies of local resources and the role human activities played in landscape transformation in mountainous areas of Europe. These studies are similar to today’s problem-oriented ethnobiological research carried out in North America. They also provide a deeper historical dimension that is lacking in many modern studies. They stress both biological and socio-cultural perspectives.

### BOX 12.2 *Blessed Bouquets*

The blessing of herbs and wild flowers in churches used to have a high cultural value in Poland and some other Catholic countries. The blessed plants were later used to heal people and animals and in magic rituals (smudging ill individuals, burning to protect from thunderstorm, hanging in prominent places in the house, etc.). The tradition arose as a mixture of Catholic liturgy and pre-Christian beliefs.

In Poland flowers are blessed twice. On the eighth day after Corpus Christi, called *Oktawa Bożego Ciała* (usually in mid-June) small wreaths of plants are blessed (e.g., *Asarum europaeum*, *Thymus* spp., *Fragaria vesca*, *Potentilla* spp., *Sedum acre*, *Trifolium* spp., *Rosa* spp.). On the day of the Assumption of the Virgin Mary (15 August, called *Matka Boska Zielna*, i.e., *Mary of Herbs*) there tend to be larger bouquets. Apart from wild herbs (*Hypericum perforatum*, *Achillea millefolium*, *Tanacetum vulgare*), they must include shoots of cereals, dill, an apple on a stick, some vegetables (e.g., onion or garlic), some forest fruits (*Viburnum opulus*, *Sorbus aucuparia*, *Corylus avellana*) and garden herbs (*Calendula officinalis*, *Salvia officinalis*, etc.).

Seweryn Udziela was an ethnographer who spent his life studying the folk customs of the Cracow area. Between 1894 and 1899 he gathered

detailed information on the composition of Assumption Day bouquets in 13 villages south of Cracow. The results of his study were published in 1931. Although we do not know the methods he used (e.g., how many bouquets were studied) he documented his research using voucher specimens and wrote down which plants were used in the bouquets in each village. His herbarium is stored as a special collection of the Herbarium of the Institute of Botany of the Polish Academy of Sciences. Udziela also studied children’s toys made of plants—the results were published in a separate article from 1929. As early as in 1883 another scholar from Cracow, Józef Rostafiński, issued a detailed 70-question ethnobotanical questionnaire concerning all aspects of plant use, published in several Polish newspapers at the time. One of the questions also concerned the composition of the blessed bouquets. Recently Łukasz Łuczaj surveyed the composition of bouquets brought to churches using digital photo close-ups. This technique allows rapid acquisition of high quality data and will make it possible to compare future changes of bouquet composition. In 2008 in many rural areas the bouquets still have a similar composition to those from Udziela’s nineteenth century study, but gradually garden flowers are replacing wild herbs.



**Figure 12.5** A herbal bouquet from Stary Żmigród (the Beskid Niski Mountains). Such bouquets are still brought to Polish churches on Assumption Day (15 August). They are believed to acquire a healing and magical power. Photograph courtesy of Łukasz Łuczaj. (See color insert.)

Kazimierz Moszyński (1887–1959) was a Polish ethnographer, originally trained as a biologist. His *Kultura ludowa Słowian* “Folk culture of Slavs” (1929–1939) includes many pages on plants used in food, dyes, medicine, and magic, as well as beliefs concerning animals. He also attempted to create the first Polish ethnographic atlas in the 1930s, including an ethnobotanical question about apotropaic plants used during midsummer night celebrations (June 22). After World War II, ethnographer Józef Gajek (1907–1987) planned the compilation of a Polish ethnographic atlas. Ethnobotanical questionnaires were distributed throughout the country. This study is richly documented with voucher specimens and used freelisting, without pre-suggesting the use of any species (Łuczaj 2008).

Uses of plants in calendaric rites, festivals, folk beliefs, and household economy have been studied by many ethnologists. Plants as religious and social symbols are analyzed by British anthropologist Jack Goody in *The Culture of Flowers* (1993). Phebe Fjellström published a comparative study on the use of garden angelica (*Angelica archangelica*) among the Saami and the Scandinavians (Fjellström 1964). Gustav Ränk in the early 1960s studied the use of the insectivorous butterwort (*Pinguicula vulgaris*) to curdle milk, and the custom of the divining rod. Garðar Guðmundsson (1996) studied the harvest of lyme-grass (*Leymus arenarius*) for food in Iceland, Tómas Grynæus (2001) wrote on the importance of the houseleek (*Sempervivum tectorum*) as a medicinal plant in Hungary, and Ida Eichelter-Sennhauser examined the use of plants in Austrian popular religion. Holger

Rasmussen (1975) has written a monograph on the Danish early spring traditional custom of gathering sweet woodruff (*Asperula odorata*) and making it into green wreaths. The cultural and economic importance of cloudberry (*Rubus chaemaemorus*) and cowberries (*Vaccinium vitis-idaea*) in Scandinavia during the last century has been studied by several scholars, for instance Marianne Lien in Norway, and Nils-Arvid Bringéus (2000) in Sweden. All these studies discuss their topics in wider European contexts.

In 1927, Adam Maurizio in Lwów (Lviv) published his *Geschichte unserer Pflanzennahrung* “History of our food plants.” This study was an attempt to analyze a wild food plant from a wider Eurasian perspective and became one of the classics in its field. The gathering of foodstuffs from the wild has been an important issue for many ethnologists. Finnish ethnologist Ilmari Manninen (1894–1935) had published a comparative study on gathering wild plants in northern Eurasia already in 1931, and Hungarian ethnologist Béla Gunda (1911–1994) published another overview based on his own fieldwork in Central Europe (Gunda 1949).

An extensive study of the use of wild edible plants was launched in Poland in 1964–1969. It was carried out within a large project on material culture, and studied in a preselected grid of over 300 villages. The questionnaire concerned was over 100 pages long, which was the reason why it was often filled in hastily and superficially. Detailed questions about the use of certain species were included, for example, collecting spring sap from trees, and the gathering and consumption of fungi (Łuczaj 2010).

A five-volume work *Íslenskir sjávarhættir* “Icelandic sea-harvesting” (1980–1986), by Icelandic Lúðvík Kristjánsson (1911–2000), covers harvesting food and other utilities from the sea. A comparative work on the use of local food and emergency food in the circumpolar areas was published by Kerstin Eidlitz in 1969. Wild plants as food are still a popular topic for many ethnologists (Fenton 2000).

## POPULAR MEDICINE

Studies of popular medicine among ethnologists are deeply related to ethnobiology. These studies began at the end of the nineteenth century, and developed during the twentieth century, for example, Ignacio María Barriola, Victor Lis Quibén and Ingrid Kuschick in Spain, Elfriede Grabner in Austria, Valer Butură in Romania, Ingjald Reichborn-Kjennerud in Norway, Justin Qvigstad in Sápmi, and R. K. Rasmussen in the Faroe Islands. Folk remedies and healing methods did not only include parts of plants and animals (cf. Honko 1982; Sõukand and Raal 2005). Most of these studies reflect a strong medico-historical and ethnological point of view and are mainly interested in the cultural and social aspects of folk culture. Some studies include minorities like the Roma (Tillhagen 1956). Only a few more recent studies provide proper identifications of the plants or animals involved (Muriel 2008; Allen and Hatfield 2004). Considerable numbers of written records on folk healers and popular remedies are to be found in, for instance, Danish, Estonian, Finnish, Hellenic, Icelandic, Irish, Lithuanian, Norwegian, Polish, Romanian, and Swedish folklore archives.

José María Palacín recorded a huge amount of data in Aragon for his dissertation in 1983 and demonstrates the richness of European popular knowledge. For example, he recorded 1500 remedies from one of his informants (coming from 29 different minerals, 31 animal, and 234 plant species) for healing some 203 illnesses. He needed 69 interviews with her, which were carried out over a period of six years. This work shows the huge amount of knowledge lost in the past decades. During Pardo-de-Santayana’s field studies

in Campoo, Spain (2005), he was commonly told that he should have asked their parents. Informants said that they knew practically nothing compared to their parents and grandparents. As an example, the informant who provided the most information in the ethnopharmacological survey included uses of 41 plants, three animals and four minerals for healing 30 human and animal illnesses (Pardo-de-Santayana 2008).

## FOLKLORE AND PLANT NAME RESEARCH

Traditional plant names contain information about popular taxonomy, with plants arranged by color, features and other characteristics, as noted by the Danish philologist Marius Kristensen in 1911. Studies of plants in dialects have a long tradition in Europe. Local names are already to be found in plant lists from the 1600s and early 1700s, but it is also possible to study, for instance, Anglo Saxon and North Germanic plant names from the Viking age, with the help of rune stones, toponyms, and other sources. Nikolai I. Annenkov's (1819–1899) dictionary of plant names published in 1859 contains numerous Russian folk names and names in indigenous languages of northern and central Russia. In recent years, research on plant names has also begun to integrate the results of modern ethnobiology.

Heinrich Marzell (1885–1970) was the author of several hundred articles and about 20 books on *Volksbotanik*. His five volumes *Wörterbuch der deutschen Pflanzennamen* “Dictionary of German plant names” (1943–1979) represents the most important work on the subject published in any language. The folklore of plants had already become a research area in the mid-19th century. One of the most comprehensive works in the genre is Eugene Rolland's *Flore populaire* “Popular flora,” published in 11 volumes (1896–1914).

There are many handbooks on the folklore and use of wild plants published in various European countries. Most of them are based on various written sources such as old herbals, travelogues, folklore records, and archaeological material. The application of source criticism is still nowhere near rigorous enough, and so we continue to find in publications much material taken from already published sources, rather than being based on local or specific knowledge. One good example is the information often given about the plant *Ranunculus scleratus*, used, it is said, by beggars to produce sores and ulcers, in order to excite pity and obtain gifts. No further contextual information is given. This is a 2000-year-old story taken from Apuleius Platonicus, still presented in literature as being contemporary (cf. Svanberg 1998b).

Among more recent and more reliable volumes we can mention, for instance, Roy Vickery's *A Dictionary of Plant-Lore* (1995) on plant knowledge in Great Britain, and Tess Darwin's book on *The Scots Herbal* (1996) on Scottish plant lore. Vickery has also published a study of unlucky plants, on the basis of a survey conducted by the Folklore Society in London between 1982 and 1984 (Vickery 1985). The Belgian Marcel De Cleen and Maria Claire Lejeune's encyclopedia (2002–2004) is an impressive reference work which reviews ritual plants in central Europe. Pierre Lieutaghi is a French botanist who has analyzed plant use in Alpes-de-Haute-Provence (Lieutaghi 1983).

The Dane Vagn J. Brøndegaard has published countless studies in ethnobotany, based mainly on historical sources, and has gathered new material through interviews, not only in Denmark but also for instance in Spain (Brøndegaard 1985). Among his most important publications are his comparative studies of children's plant lore and use as toys and games. Brøndegaard has published several multi-volume handbooks on Danish ethnobotany and ethnozoology in the 1980s and 1990s.

## BOTANISTS ON PLANT USE

Some botanists, including a few amateurs, have undertaken ethnobotanical fieldwork of interest in Europe. In 1900 the first botanist to publish a proper ethnobotanical work in Italy, Giovanni Pons, wrote an article on the folk botany of the Waldensian Alpine valleys in Northwestern Italy. Once again details about methodology, such as sampling, number of interviewees, and adopted field techniques were not reported, but the approach of Pons' research was surely interdisciplinary: the authors reported linguistic labels of folk taxa, their local uses, and botanical voucher specimens were apparently collected. A more economic–botanical perspective was taken by the medical doctor and botanist Oreste Mattiolo (1856–1947), who in 1919 wrote the first food ethnobotanical survey in Italy, a review on wild food plant uses in Piedmont.

Danish dendrologist Axel Lange's (1871–1941) booklets from the 1930s, discussing local plant use on Danish islands, qualify as pioneering ethnobotanical works in Scandinavia. Also in Norway, several botanists performed ethnobotanical studies, that is, Jens Holmboe (1880–1943) and Rolf Nordhagen (1894–1979). From Sweden we can mention Gösta Ilien's exemplary thorough and methodological field study of butterbur (*Petasites hybridus*) and its role for the peasants as veterinary medicine, published in 1945. Lisa Johansson (1894–1982) gathered information on plant use in the mid-1940s among crofters in northern Sweden, especially as dyes (over 400 recipes), medicine, and for technical purposes, completed with voucher specimens.

In Romania, Alexandru Borza (1887–1971), who spent a lifetime studying the use of plants, published a comprehensive handbook of traditional plant knowledge that covers not only Romania, but also Moldavia, Bulgaria, and adjacent areas in the Balkan Peninsula (Borza 1968).

In Italy, proper systematic ethnobotanical studies began after World War II. They were initiated by scholars at the Department of Botany of the University of Genoa, at that time the lynch-pin of ethnomedical studies in Europe, with the beginning of Antonio Scarpa's research team. The first Italian ethnobotanical studies come from this research group. For instance, Elsa Bertagnon (1955) and Albarosa Bandini (1961) investigated the use of medicinal plants in the mountainous regions of Eastern Liguria, and Caterina Chiovena-Bensi (1957) did field ethnobotanical research in Walser communities in Piedmont.

From the 1960s onwards, more and more ethnobotanical studies were conducted within a number of botanical institutes at Italian universities (especially in Genoa, Padua, Pisa, Florence, and Rome), generally carried out by medical botanists at pharmacy schools. Ethnobotany has for many decades been a subject area officially classified by the Italian Ministry of Research as part of the broader medical botany/pharmacognosy area.

Between 1925 and 1973, botanist Ove Arbo Høeg (1898–1993) gathered an enormous amount of field material from all over Norway, published in 1974 in his *Planter og tradisjon* “Plants and tradition.” He has published many articles on plant use—for instance on children's games—and also a monograph on the juniper (*Juniperus communis*) in Norwegian folk tradition in 1981. This monograph was published by the Norwegian Forestry Museum as the first volume in a series on the cultural history of Norwegian trees. A successor of Høeg is Torbjørn Alm at Tromsø Museum. He has published monographs on various plant taxa, based on interviews made with Kven, Norwegian, and Saami informants of North Norway (Alm 2002).

Gustav Vilbaste's (1885–1967) rich plant name material with many notes on folk botany from Estonia is worth mentioning (Vilbaste 1993). He is, with his many publications and a large collection of records, considered the founder of ethnobotany in Estonia.

Jerzy Wojciech Szulczewski (1879–1969) contributed immensely to the ethnobiology of western Poland. Trained as a biologist, he gathered valuable, detailed, and reliable material about medicinal plants, and folk beliefs about plants and edible mushrooms. He was a pioneer in the field of market surveys. One of his achievements is a detailed record of plants and mushrooms sold in the market of Poznań, where he lists as many as 50 taxa sold there. At the end of the twentieth century, Piotr Köhler published excellent studies on the history of Polish ethnobotany, rediscovering Rostafiński's and Udziela's works (Köhler 1996).

### BOX 12.3 *Traditional Toys*

Studies of material culture give a good opportunity of understanding how locally available biological resources could be used. Almost every part of an animal was utilized in pre-industrial Europe. On the Faroes, pilot whales have provided a lot of benefits like food, fat, fuel, construction material, and tools for the inhabitants.

As elsewhere, the children on the islands used locally available material to create their own toys. The thin tendon discs of bone that lie between the vertebrae in the region of the tail of the pilot whale were used to make whirling discs. Ethnographer Nelson Annandale observed this during his visit to

the Faroes at the beginning of the twentieth century. He describes how they made a whirling disc by threading the thin tendon disc “upon a loop of wool or string. The ends of the loop are held, as wide apart as possible, in the two hands, and it is caused to rotate in such a way that it becomes completely twisted, the discs then revolve rapidly, producing a humming sound, if the hands be alternately approached to and drawn apart from another.”

Nowadays, the Faroe islanders only use the meat and blubber of the whale. However, these kinds of whirling discs are sometimes still made in the Faroes.



**Figure 12.6** Faroese whirling disc (*snurra*) made of a tendon disc from a pilot whale. Photograph courtesy of Ingvar Svanberg.

Spanish botanist Pio Font Quer (1888–1964) is the author of one of the most influential works about Iberian medicinal plants, *Plantas medicinales* “Medicinal Plants” from 1961. His book consists of a very interesting introduction and monographs of medicinal plants. Each monograph includes a critical review of the plant’s medicinal uses. Although he never used the term ethnobotany, he has inspired modern ethnobotanists, and he has been considered the father of this discipline in Spain.

## ENCOUNTERS BETWEEN HUMAN AND NONHUMAN ANIMALS

As in ethnobotany, most research in ethnozoology has been carried out within the framework of ethnology. When Faroese ethnographer Robert Joensen (1912–1997) realized that his fellow islanders had an extraordinary store of knowledge of things “they had learned through their daily work on the land, in the mountains and the sea,” he started to make a comprehensive record of all they knew about fishing, hunting, and animal husbandry, resulting in several books. Interesting studies on the relationship between animals and rural people have been conducted by the above-mentioned Hungarian ethnologist Béla Gunda, who has published detailed studies on such diverse topics as taming cranes among peasants in Central Europe, gathering of eggs of waterfowl in Hungary, traps and trapping in the Carpatho-Balkan area and the use of fish poisons in the Balkan Peninsula—all excellent works (Gunda 1979). Nils Storå is another researcher discussing the ethnoecological and ethnozoological aspects of peasant life in the Finnish archipelago (e.g., Storå 1985). Mart Mäger (1935–1993) gathered a rich body of material based on fieldwork on Estonian folk ornithology, which was only partly used in his *Eesti linnunimetused* “Estonian bird names” (1967).

Scottish ethnologist Alexander Fenton has made detailed research on the way of life among islanders in Orkney and Shetland. His many studies, collected in *The Northern Isles* (1997), give a good insight into how dependent on local biological resources the islanders were in former times. Other studies include fowling and egg gathering (Berg 1980; Nørrevang 1986) and traditional whaling in the Faroes (Joensen 2009). Patricia Lysaght has published excellent studies on food provision on Great Blasket Island on the Irish west coast (Lysaght 2001). Popular hunting is another topic of interest for ethnobiologists. Howe (1981) provides a sophisticated theoretical study on traditional fox hunting in the English countryside.

Researchers in ethnobiology seldom pay attention to invertebrates (cf. Svanberg 2009). However, Norwegian linguist Geir Wiggen recently published an interesting study on traditional names of lower animals (Wiggen 2008).

## TOWARDS A SCIENCE OF ETHNOBIOLOGY IN EUROPE SINCE 1980

Although ethnobotany has existed for over a century as a named research field in North America, it was not until the 1980s that ethnobiology and ethnobotany emerged as independent academic disciplines in Europe. Many European scholars still dwell within disciplines like anthropology, botany, and ecology, but ethnobiology has grown rapidly over the last 15–20 years. An increasing number of scholars view ethnobiology as a separate discipline with its own methods and theories, not only as a hard-to-define multidisciplinary field. In Europe, an abundance of courses, seminars, and annual conferences are now available,



especially in Great Britain, Italy, and Spain. One of the largest ethnobotanical libraries in the world, V.J. Brøndegaard's collection, is now available to scholars at the Royal Swedish Academy of Agriculture and Forestry in Stockholm.

Ethnobiology in Europe has built further on the extensive research which has already been carried out in a number of other fields (botany, ethnology, folklore, ecology, human geography, linguistics, and zoology). The first review covering all Italian ethnobotanical studies until 2004 has been recently compiled by Paolo Maria Guarrera, ethnobotanist at the National Folkloric Museum of Rome. This review considers hundreds of primary folkloric and ethnobotanical literature and field studies carried out in the last century in Italy (Guarrera 2006), and followed an impressive review of Sardinian ethnobotanical data (Atzei 2003). A full ethnobotanical bibliography of Polish ethnographic literature (nearly 400 articles and books) between 1876 and 2005 (Klepacki 2007), and a review of recent ethnobotanical studies in Spain were recently published (Morales et al. 2011).

## CURRENT TRENDS

Ethnobiologists in Europe should continue to systematize the large body of data collected in the last century by ethnographers and linguists (Babulka 1996; Łuczaj and Szymański 2007). We need more monographs like Nadiya Varhol's interesting and uniquely detailed study of plants in the culture of the Carpatho-Rusyn minority in Slovakia published in 2002. Few studies compare in detail the materials gathered in neighboring countries (Ståhlberg and Svanberg 2006; Svanberg 2007b). Some focus has been given on gender perspectives on folkbiological knowledge (Pieroni 2003). Analysis of material culture is an important issue (Svanberg 1998a). Dendrochronology is also an important method for ethnobiologists (cf. Niklasson et al. 1999). Technical analyses of textiles, tools, and furniture is useful for ethnobiologists (cf. Cybulska et al. 2008). Plant monographs continue to be important (Svanberg 1997; Molina et al. 2009; Vallès et al. 2004). Many contemporary Russian scholars do their ethnobotanical studies within linguistics, for instance Nadezhda Konovalova (2001), who has researched historical Russian plant names, Julia Koppaleva (2007), who has studying the naming of plants in Karelia, and Valeria Kolosova, who in 2003 published a study comparing Slavonic plant names and folklore related to plants.

A priority is recording unknown traditions of local animal and plant knowledge in rural areas. Fieldwork is still possible, especially in eastern and southern Europe, with recent publications from Albania, Bosnia-Herzegovina, Bulgaria, Greece, Italy, Ireland, Serbia, Spain, and Portugal (e.g., Camejo-Rodrigues et al. 2003; Dolan 2007; Guarrera et al. 2006; Hanlidou et al. 2004; Ivancheva and Stantcheva 2000; Jaric et al. 2007; Redzic 2006).

A few larger international projects have recently been carried out in Europe. Flora Celtica is based at the Royal Botanic Garden in Edinburgh, and is documenting the knowledge and sustainable use of native plants in the Celtic regions of Europe. The project has focused on the use of native plants in Scotland (Miliken and Bridgewater 2004).

The European Commission has so far funded only one large collaborative ethnobiological project in Europe (RUBIA 2003–2006), which was focused on the evaluation and comparative analysis of ethnobotanical knowledge as cultural heritage in 12 selected southern European and Mediterranean areas (González-Tejero et al. 2008; Hadjichambis et al. 2008; Pieroni et al. 2006), while in another funded collaborative project ethnobotany represented a minor part within a main bioprospecting framework for researching new nutraceuticals (Heinrich et al. 2006; Rivera et al. 2005).



**Figure 12.7** The regal fern, *Osmunda regalis*, is still a popular domestic medicine in Asturias and Cantabria, Spain. (a) Shows the gathered rhizomes of the fern; and (b) a bottle of *Antojil* wine made of the rhizomes macerated in white wine. Photograph courtesy of Manuel Pardo-de-Santayana. (See color insert.)

Ian Majnep and Ralph Bulmer's *Birds of My Kalam Country* (1977; see Hunn this volume) is now a minor classic in ethnobiology, and has been called the first postmodern writing on the subject. Bulmer himself referred to the cooperation between the Danish ethnographer Emelie Demant-Hatt, and reindeer-herding Johan Turi's book from 1910 that had obviously inspired him (Marcus 1991). An author working in the same tradition is Yngve Ryd (2005) who, in cooperation with elderly native Saami consultants, has produced several in-depth studies of ancient knowledge of snow, fire, and predators. By spending many years with his Saami consultants, Ryd obtained details concerning the Saami landscape like no other before. This method of intensive work with a few well informed native consultants will probably be more common in the future, as we try to save old knowledge among rural people in Europe.

We have also seen an increasing number of studies on local ecological knowledge in various settings of Europe (Molnar et al. 2008; Ruotsala 1999; Svanberg 2005). In a series of works attracting international attention, leading European system ecologists have analyzed those insights regarding the ecosystem—its function and vulnerability—which are embodied in folk knowledge (Colding and Folke 2002).

Traditional homegardens are to be found in mountainous areas in various parts of Europe and we have seen several ethnobiological publications over the last few years

(Agelet et al. 2000; Reyes-García et al. 2010; Szabó et al. 2002; Vogl-Lukasser and Vogl 2001). Homegardens have a multiplicity of functions and are a repository of a diversity of species and cultivars. Gardens with *Angelica archangelica* can still be found in the Faroe Islands, Iceland, and Norway, almost as they were during the Viking age. An old strain of a sweeter kind of cultivated angelica still exists in Norway (Fosså 2006).

Ethnomycological studies have so far been very rarely conducted in Europe, apart from Poland (e.g., Szulczewski 1996). Some works have partially addressed this issue within more general food ethnobotanical field studies (i.e., Pieroni et al. 2005) or ethnolinguistics (Bartnicka-Dąbkowska 1964). However, a first purely ethnomycological research project has recently been completed in Italy (Camangi et al. 2008).

Ethnoveterinary practice is another field attracting contemporary scholars, especially in Southern Europe (Blanco et al. 1999; Bonet and Vallès 2006; Bullitta et al. 2007; Pieroni et al. 2006; Uncini Manganelli et al. 2001). Recent field studies have shifted from listing local veterinary uses of medicinal plants to including local knowledge of plants important in peasants' communities for improving the quality of meat and dairy products (Pieroni et al. 2004). An overall ethnoveterinary checklist devoted to veterinarians has been recently implemented in Italy by reviewing more than 100 folkloric and ethnobotanical fieldworks conducted in Italy during the second half of the twentieth century (Viegi et al. 2003). On the other hand, ethnoveterinary studies in Scandinavia have taken a more historical perspective (Brag and Hansen 1994; Waller et al. 2001).

Recently, studies of perceptions and uses of plants among migrant communities have emerged (Ceuterick et al. 2008; Pieroni and Gray 2008; Pieroni et al. 2007; Sandhu and Heinrich 2005; Van Anandel and Westers 2010).



**Figure 12.8** Traditional *Angelica* garden in the village Gjógv, Faroe Islands. Photograph courtesy of Ingvar Svanberg.

There are neglected fields also within European ethnobiology. The importance of animal and plant knowledge among children deserves more attention (Łuczaj 2008, 2009). Child culture relating to plants and animals very seldom carries over into adulthood, and has therefore remained unnoticed by scholars. As Myrdene Anderson (2000) has shown, children's beliefs and practices sometimes contain "survivals" of older plant knowledge.

There are some recent historically oriented studies on the link between animals and humans, but the field deserves more attention (Chevallier et al. 1988; Svanberg 2001a, 2006, 2007a; Svanberg and Ægisson 2006). Ethnoentomology is rare, but a recent study describes how Carntian children used to eat the sweet crop from moths of the genus *Zygaena* (Zagrobely et al. 2009). Traditional knowledge about predators has been documented among reindeer herdsman. Fish management is another important issue (Eythorsson 1993). Perhaps Ragnar Kinzelbach's (1999) cultural zoology approach can inspire more theoretically sophisticated studies within the field of ethnozoology in Europe. Keeping pets has a very long tradition in Europe. Not only dogs and cats, but numerous other species, have been used as companion animals. The relationship people have with these animals is another neglected topic for European ethnobiologists.

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# Ethnobiology

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