

THE ROUTLEDGE HANDBOOK OF SUSTAINABLE FOOD AND GASTRONOMY

*Edited by Philip Sloan, Willy Legrand and
Clare Hindley*

Preface by Roberto Flore, Nordic Food Lab

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WILD IDEAS IN FOOD

*Christopher Münke, Afton Halloran, Paul Vantomme, Josh Evans,
Benedict Reade, Roberto Flore, Roland Rittman, Anders Lindén, Pavlos
Georgiadis and Miles Irving*

Introduction

Foraging for all manner of wild plants, animals and fungi and their products makes up part of the traditional diets of approximately 300 million worldwide (Bharucha and Pretty, 2010). Furthermore, their relevance in the global food supply is often underestimated, as policies and statistics at national and regional levels tend to neglect their importance for food sovereignty and food culture (Bharucha and Pretty, 2010). Foraged plants often grow spontaneously and many exist independent of human interaction (Heywood, 1999).

Foraging, or 'searching widely for food or provisions' (Oxford English Dictionary, 2013), is an interactive and intimate activity. Foraged foods can convey distinctiveness of local identity, representing ethnicity, culture, landscape, social context, connection to nature and stories of survival and wealth (Hall et al., 2003; Timothy and Amos, 2013). Moreover, foraged foods – gathered from varied and robust ecosystems – hold a vivid array of unique flavours, textures and aromas, and together represent the seasonality and biodiversity of different regions. Historical ethnobotanical surveys on wild plants estimate that approximately 7,000 species have been a part of human diets over time (Grivetti and Ogle, 2000). For example, more than 1,100 edible mushroom species are known worldwide (FAO, 2004).

Diversification of food sources promotes ecologically resilient and nutritious food systems; thus, foraged foods offer a great opportunity to broaden culinary horizons while simultaneously promoting diverse foodscapes. Wild foods are invariably more diverse than farmed foods, especially considering that 75 per cent of human food is derived from just 12 plants and five animals (Jaenicke and Höschle-Zeledon, 2006).

From elderflowers (*Sambucus nigra*) to samphire (*Salicornia europaea*) to wood sorrel (*Oxalis acetosella*), this diversity provides the opportunity to emphasize and celebrate locality by strengthening the sensory connection of the eater to their surroundings through food. In some areas of the world wild gathered foods risk disappearing from human diets (Leonti et al., 2006). On the other hand, foraging in forests, fields, lakes and by the sea is experiencing a gastronomic revival and is regaining significance in contemporary food culture, nutrition paradigms, local economies and society at large. This resurgence is due in part to the interest in wild products by some of the world's leading chefs, such as Michel Bras (Bras, Aveyron,

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France), Rene Redzepi (Noma, Copenhagen, Denmark), Alex Atala (DOM, São Paulo, Brazil) and many others.

In order to exemplify this ecological diversity and interaction with foraged foods in gastronomy, we provide four cases, each with a different theme (ethnobotanical knowledge, entrepreneurship, natural resources and conservation), from different parts of the globe: the Mediterranean island of Sardinia, southern Sweden, England and the Yunnan Province in China. These cases valorize the heritage of foraged foods and show how local knowledge renders products accessible to modern gastronomic entrepreneurs and chefs while drawing from a region's historical, geographical and social diversity (Hall et al., 2003).

Most wild-harvested products are accessed through traditional ecological knowledge of edible species, which provides further reason to preserve and enhance this knowledge before it vanishes. Indigenous knowledge accumulated over generations serves as the basis of agriculture, food production, human and animal health, as well as natural resource management decision-making (Slikkerveer, 1994). To exemplify the importance of interconnected knowledge systems, chef and forager Roberto Flore presents his approach to gastronomy, and its relation to the protection of biodiversity and food sovereignty in Sardinia.

Wild idea #1: Sardinia – handing down a family history through food: the tale of a chef-forager

Roberto Flore, Sardinian chef

'Chef-forager' is a relatively unknown term, and for some it may even seem like a new food fad. However, in reality it describes the genuine awareness of how to handle food through a greater contact with nature and the rediscovery of a region's own flavours.

The term 'foraging', when translated into the Sardinian language, is '*erbuzzae*', meaning the act of collecting wild herbs. Through my work, foraging, culinary research and interpretation I have the possibility of engaging in one of the most ancient of human activities: the collection of wild species. Since prehistoric times – when farming and agricultural systems were yet to develop – human beings foraged for seeds, fruits and herbs, which were used to feed, to heal and to perform spiritual rites. These practices still affect our everyday lives, even if now in a limited way. In Sardinia, wild species such as Mastic (*Pistacia lentiscus*), Myrtle (*Myrtus communis*), wild fennel (*Foeniculum vulgare*) and borage (*Borago officinalis*) have created a sound foundation for our historical and cultural heritage and are still used in most communities. As such, their protection needs to be ensured. The knowledge of wild herbs is often transferred orally to young people using the specific names in the Sardinian language, as their names in Italian are often not known. Plant names are often used as place names to identify where a given species prevails. This gives a clue as to what kind of vegetation, such as trees, shrubs, fruits and herbs, one can find in a given place. The names of wild plant species are also used to define the physical and psychological characteristics of a person. From these multiple significances it is easy to see the importance of wild herbs in our culture.

My training was born in the arms of my grandmother. She taught me how to cook and recounted to me how she had survived World War II nourished only by self-made foods, wild herbs and fruits. These stories have changed my perspective on food and cooking. Even as a child I was very aware of the origins of my food, as I was often foraging for it myself. The story of my

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family has been passed down through food; as a result food for me has always provoked strong emotions, which then feed my passion for food and cooking. For me the act of cooking is far more complex than just feeding people: a plate of food becomes a means to inspire young people or to illustrate to conscious travellers the image of '*la mia Sardegna*'. Therefore, it is essential to use high-quality local products and to fight for the preservation of small-scale producers. In this respect my former training as an agricultural technician has helped me become closer to producers and understand the quality of their products. The knowledge that I have accumulated has allowed me to interact with international colleagues who have a similar vision and allows me to promote local development in a global context.

Roberto Flore's example illustrates a sharing of knowledge based on a traditional understanding of the diversity of food resources. These resources play an important role in times of crisis, but even more so they play a role in the preservation of knowledge and culture, which shapes the identity of place (Fischler, 1988). Consumers often look for 'authentic' experiences associated with local, traditional foods and the history of an area, and are taken up by many marketing and branding initiatives in order to promote regional products (Sims, 2009). Shaping or creating an identity can be a spontaneous or a deliberate process, but often contains elements of both.

The arrival of fresh, wild products on our plates can be achieved in a variety of ways. In recent years there has been an increase in commercial foraging enterprises that supply wild food to restaurants, such as herbs, mushrooms, berries, fruits and nuts (Luczaj et al., 2012). Wild food enthusiasts have applied their knowledge to promote local food systems by enabling the provision of these foods to importers, wholesalers, greengrocers and restaurants.

The Swedish professional foragers of Roland Rittman Ltd. present their experiences as entrepreneurs, and their work that contributed to the expansion of New Nordic cuisine.

Wild Idea #2: Sweden – Roland Rittman and the Yellow Archangel

Roland Rittman and Anders Lindén – professional foragers, Sweden

This is the story of how wild tastes arrived on the plates of Noma in Copenhagen, considered the world's premier restaurant 2010–2012 according to 'The World's 50 Best Restaurants'. Our narrator is Roland Rittman, former teacher, field-biologist and environmental activist who has played a significant role in bringing these flavours to market.

'It all started with a modest sale of mushrooms at the farmers market in Lund some 15 years ago. I gradually expanded the assortment with classic weeds such as nettles (*Urtica dioica*). Shortly thereafter, I built up the courage to enter a restaurant kitchen for the first time in my life and I was over the moon when I left the building with my crates empty. At this point, I extended the hobby of foraging to an activity of survival! There was no grand plan for my little enterprise or any idea where it would lead. However, something fundamentally changed when I decided to take my wagon across the bridge from Skåne, Sweden to Copenhagen, Denmark, where I came into contact with René Redzepi. The culinary chemistry between my products and René was considerable and his enthusiasm stimulated my continued rediscovery of tastes from the wild. To

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the people involved in my company, foraging as a profession has meant a lot of hard work and weekly deliveries to Copenhagen but it has also given us many precious hours in the forests and on the beaches of our beautiful province. Among our current selection of more than 30 wild products, there is one herb that holds a special place in my heart.

During the mild winters of the early years, I foraged for Yellow Archangel (*Lamium galeobdolon*) among magnificent columns of Beech (*Fagus sylvatica*) and as dusk fell over the forest, roe deer (*Capreolus capreolus*) frequently joined me at a distance. These gastronomes often just pick the very best shoot of a plant before moving on to a different taste, utilizing up to three quarters of available herbs depending on the season. Now that is curiosity for flavour worth aspiring to! I knew that this type of ecosystem had been providing for humans and other wildlife for thousands of years and I never felt lonely as I navigated from one natural treasure to the next. Two close relatives of the Yellow Archangel, White Deadnettle (*Lamium album*) and Purple Deadnettle (*Lamium purpureum*) were already known as herbaceous delicacies. Deadnettles do well with scallops or flatfish and René created a dish combining Yellow Archangel with blood sausage. These herbs were also used in sweeter contexts such as in Quince (*Cydonia oblonga*) marmalade. The results were well-received and as Noma grew in reputation, *Lamium* from our humble forests came to populate plates across the region. Through successful relationships with Noma, many wild herbs now have the attention of the gastronomic world and they have made a contribution to establishing Copenhagen as the deepest taproot of the New Scandinavian Kitchen/Nordic Cookery/Nordic Cuisine.’

‘Wild’ as a theme and a source of inspiration for chefs involves different techniques aside from wild gathering to ensure a stable supply. Beyond the image of collecting rare species from the wild, cultivating wild plants within agricultural food systems is not yet fully acknowledged (Luczaj et al., 2012).

Prior to the dawn of agriculture, ‘weeds’ as we know them did not exist as such (Harlan, 1992). After all, the category of ‘weeds’ is much more cultural than botanical, as evidenced by the varying value of these plants as either unwanted pests or desired herbs. The same wild plants can be seen both as a detriment to agricultural systems and demanding removal, and as an edible and delicious resource – depending on history, culture and the individual forager. Although highly dependent on species, some wild plants can be semi-domesticated for commercial use. Some farmers and gardeners, such as Søren Wiuff and Søren Espersen in Denmark, produce food in this grey area between ‘wild’ and ‘cultivated’, letting wild plants grow alongside planted crops, and transplanting wild species into fields without selecting seed. Here the United Kingdom’s leading professional forager recounts his experience with the inclusion of a wild resource in the broader agricultural paradigm.

Wild Idea #3: United Kingdom – searching for fat hen (*Chenopodium album*)

Miles Irving – Forager Ltd.

The search for uses for our edible wild plants is a bit like the Greek god Janus, with one face to the future and one face to the past. We look back to see where plants have been used in the past,

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and this can provide a starting point for using them now. However, it is not a process of nostalgic primitivism that limits us to these historic uses. With all the resources of our contemporary cosmopolitan context at our disposal, we can forge a future that develops the possibilities of these plants beyond only what has been done before. We have techniques, technology and the ability to learn and communicate far beyond those our ancestors possessed. With this in mind, we are presently exploring the possibilities of various edible weed seeds with a strong history of use, but a future of use that we believe is even stronger.

This year we have homed in on fat hen (*Chenopodium album*), a plant whose place in the culture of rural Suffolk was strong enough to give its name – ‘melde’ – to several towns and villages, for example Milden and Melbourne (the original Melbourne being a Cambridgeshire village). Seeds of fat hen have been found in the stomach of several of the mummified peat bog men as well as on many sites of ancient settlement (Glob, 1969). However, the culture of using edible weeds along with the crop they share ground with has long since disappeared in Europe, despite being alive and well in most parts of the world where subsistence farming is still practised. For a farmer, fat hen, with its ability to produce as many as 50,000 seeds from a single plant, is public enemy #1. Yet fat hen shares the nutritional profile of its South American cousin quinoa (from which it is virtually indistinguishable to the untrained eye prior to flowering), having very high levels of calcium, vitamin A and protein. Farmers invest considerable resources trying to get rid of it, which only goes to prove its superior vitality as compared to the much less resilient cultivars with which it competes for ground. We think it wiser to work with the one that flourishes in spite of opposition!

This year we have harvested 20kg or so of ripe fat hen seeds. There are challenges with the processing of them – the seed coats are heavy in saponins, the removal of which demands repeated washings. At least some of what remains of this black outer coating should probably also be removed to allow the seed to swell, as mechanically prepared quinoa does, when cooked. But these are mere technical problems. It may be that fat hen seeds were abandoned precisely because earlier technologies could not solve these problems efficiently, so that large grass grains such as wheat and rye came to predominate. With all the technical tools available to us now, however, we are sure that processing fat hen seed quickly and efficiently will be just a matter of tracking down the right equipment and techniques. The first part of the processing is already happening: every year tons of fat hen seed gets processed through combine harvesters where it occurs as a weed in organic grain crops. Some of this gets sold as bird seed but often it is thrown away. This is a momentous step because we are edging a food production system back towards the wild by purposefully including a wild resource in the agricultural regime. This act, even just for this plant, has global implications: either fat hen or one of its close relatives is a prolific weed on every continent. The potential is vast.

Wild edible plant species grow within a diverse array of terrestrial and aquatic ecosystems. While these ecosystems are often defined by their resiliency, human pressures such as overharvesting, unsustainable forestry practices, introduction of invasive species and urbanization affect the biodiversity and population dynamics of wild edible plants (Heywood, 1999). As another example, Pavlos Georgiadis explains the importance of the wild edible golden orchid in Yunnan Province and the threat of overharvesting and habitat destruction.

Wild Idea #4: China – the wild edible golden orchid

Pavlos Georgiadis

Orchids (*Orchidaceae*) are the largest plant family, comprised of more than 40,000 known species. Several orchid species are traded as ornamental plants by virtue of their wide diversity of conspicuous floral patterns and arrangements. Many species from several genera have been used for a long time in the preparation of herbal treatments, especially in traditional Chinese medicine (Ye and Zhao, 2002) and Ayurveda (Georgiadis, 2007). Ethnobotanical research in Xishuangbanna of Yunnan Province in China has revealed that orchids might have more to offer than just a showy image and medicinal properties, but also are elements of indigenous food culture, what can be called ‘ethnogastronomy’.

Embodying the powerful spirit of nature, life, balance and love, the ‘golden orchid’ (*Dendrobium chrysotoxum*) possesses the rare ability to induce the balance between yin and yang, a natural duality forming the guiding philosophical principle in traditional Chinese medicine. This beautiful epiphyte has thus become highly sought after, with its stems corresponding to the (*Herba dendrobii*), the most commonly used herbal material in Chinese medicine (Li et al., 2005). These stems are still dried and sucked as cough drops as they are believed to induce the production of body fluids and to strengthen the immune system.

A rare ‘golden tea’ is also prepared from the flowers of *D. chrysotoxum*, which are carefully harvested from its bright-yellow racemes, followed by sun-drying. A dozen dried flowers are infused into a glass of hot water and drained three times to yield a golden-yellowish concoction with a smooth texture and warm, woody flavour reminiscent of wild forest honey. A larger dosage of flowers yields a stronger concoction with a more intense taste, while the dehydrated flowers can be ingested directly, in salads or preserved in marmalades. This special tea is prescribed by local healers to lower blood pressure, strengthen the immune system, enhance reproduction capacity, and to induce a calm sleep, free of bad dreams. Recent studies have revealed an array of beneficial substances present in this orchid (Gong et al., 2004; Yang et al., 2004), especially polysaccharide with anti-oxidant, anti-hyperglycemic and immune stimulation properties (Zhao et al., 2007).

Overharvesting due to high demand as well as habitat destruction from ecologically ill-conceived development activities in this global biodiversity hotspot (Myers et al., 2000) are threatening the existence of *D. chrysotoxum*. Once abundant in the wild, its occurrence is now limited, growing in support structures atop traditional homes in tropical forest communities around the Mekong River basin in southern China, Thailand and Myanmar. Scientific evidence and increased recognition for its anti-diabetic properties may hold the key for the conservation of this beautiful orchid. Research and development in emerging fields of gastronomy for the creation of premium products based on edible *D. chrysotoxum* should aim for the valorization of its organoleptic and medicinal properties in innovative food concepts. A moderate demand from high-end gastronomy can be met by sustainable production through tissue culture inside the orchid’s natural habitat, as part of adapted agroforestry systems and/or recovery initiatives for restoring native biodiversity in the tropical mountain forests of Xishuangbanna and neighbouring regions.

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The case by Pavlos Georgiadis brings to our mind that wild edible plants are not just edible but they also can have an ornamental function and be valued for medicinal properties, which are deeply embedded into local culture. However, this multiple function can increase demand and threaten the wild population. Setting up sustainable harvesting standards in combination with breeding and domestication, therefore, can ensure future supply and protection of some species, which are under pressure.

Conclusion

The untamed and fluid nature of 'wild' foods brings a myriad of flavours, textures and aromas that represent the seasonality and biodiversity of different regions. Wild plants have always comprised an important component of traditional diets, and continue to do so in many countries. These wild foods are uniquely adapted to specific agro-ecological niches, do not require inputs such as fertilizers to grow, and often have multiple uses (Jaenicke and Höschle-Zeledon, 2006).

With an increasing interest from leading chefs, as well as consumers, many wild foods are undergoing an important revalorization. The establishment of strong relationships between chefs and foragers helps to preserve, record, spread and build upon traditional knowledge, as well as to tell a story through specific gastronomic experiences. Nonetheless, the increased interest in wild foods must go hand-in-hand with sustainable harvesting practices in order to conserve wild populations. It is thus of crucial importance that the value of these resources becomes more deeply understood – allowing gastronomic enterprises to continue exploring the potential of these diverse and delicious wild resources while ensuring that they continue to thrive in the ecologies where they originate.

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