Neottiella vivida

Andrus Voitk

Photo: Maria Voitk

Sometimes there is no particular reason to show a mushroom. Except simply that it is beautiful, a joy to share.

There are many small orange cups, whose identification can be difficult, partly because they are not often encountered. From its picture Dave Malloch suspected this to be a *Neottiella*. From several quite similar *Neottiella* species, this fit with either *N. rutilans* or *N. vivida*: habitat (moss on a sandy meadow), habitus (seated deep in sand among moss), macroscopic appearance (size; cup orange inside and out, hairy edge, short pale stem). Their difference is microscopic, as you learn from the new Ascomycete book by Beug, Bessette, and Bessette: *N. rutilans* has smooth, reticulate spores, *N. vivda* has finely warty spores. The spores of this specimen were finely warty.

The asco book, already useful, is reviewed by Dave on pp. 25-27.

Photo: Michael Burzynski

Book review

Dave Malloch

MW Beug, AE Bessette, AR Bessette

472 pp.
Texas University Press
Austin TX
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ASCOMYCETE FUNGI
Of North America
A MUSHROOM REFERENCE GUIDE

$80.00

An order from Amazon.ca totalled $84.00 CAD, taxes and shipping included. The discounted web price at the publishers website, is US$56.95.

This new book on North American ascomycetes is a welcome surprise. Treating about 600 species of ascomycetes it compares favorably with any of the larger books on North American basidiomycetes. The authors have attempted to bridge the gap between beginners and more advanced enthusiasts by taking a fairly scholarly approach to their subject while at the same time presenting the material in a very user-friendly way. They have arranged the descriptions and illustrations in a format that is taxonomically up-to-date and not necessarily intuitive, but have provided entry to this system through a creative use of picture keys that anyone can easily follow.

The book includes an introduction to ascomycetes accompanied by several photographs of microscopic characteristics, an identification key combining texts and pictures and a main section made up of descriptions and illustrations of individual species. The descriptive pages for each species include a simple description of macro- and microscopic features followed by a paragraph outlining habitat and geographic distribution. A final paragraph, labelled "Comments" contains a discussion of the correct name for the species and also a short overview of similar species not treated by the book in detail. In some species there may also be some comments on edibility. The book ends with a glossary of mycological terms, a list of photo credits, an index for common names and one for scientific names.

The introductory section is brief, declaring a detailed discussion of ascomycete biology to be beyond the scope of the book. The photographs of microscopic features are clear but few in number and not likely to inspire a new generation of amateur microscopists. I suspect most readers will quickly skip over this section and get on with the excellent keys, descriptions and illustrations, which are the real strength of this unabashed field guide.

The keys really are good. The authors undoubtedly gave them a great deal of thought and somehow managed to integrate useful thumbnail photographs with traditional dichotomous keys. Users can take an unknown collection through these keys step by step, or they can just skim over the thumbnails until they come upon the species they have in hand. As an educator, I have long known that some people are verbal in their approach to

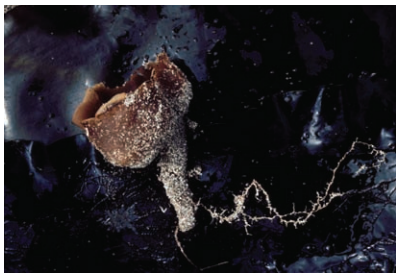
Picture Key to the Major Types of Included Ascomycetes

1a. Epigeous (aboveground) Ascomycetes (see also 3b) 9
1b. Hypogeous (below ground) Ascomycetes 2

2a. Interior near or at maturity ± completely filled 5
2b. Interior hollow or of thick folds of mushroom tissue 3

3a. Interior hollow or folds of tissue, usually buried at maturity, spores forcibly discharged or not 4
3b. Interior hollow, opening to the surface at the top by splitting into rays, spores forcibly discharged, sometimes with an audible hiss

Sarcosphaera coronaria W, NE p. 250



Peziza ammophila A (sand dunes) p. 204

Chorioactis geaster Texas p. 139

Geopora pellita QC p. 89

Geopora arenicola NE + CO p. 89

Geopora sepulta E p. 90

DISTRIBUTION NOTES USED IN CAPTIONS: A = widespread; N, S, E, W = region in North America; M = mountains; C = coast; B = boreal; MW = Midwest; ? = uncertain; state and province abbreviations are standard except that NE = northeast, not Nebraska; MX = Mexico; WC = west coast; EC = east coast.

Beginning of thumbnail key: both word and picture guide the reader to the correct identification; "thumbnails" are of good size and excellent quality.

identification while others are more visual. This book takes both by the hand and walks them through to their goal. Wonderful! The keys do not take the identifier just to a featured species, but may include species not given a major entry but nevertheless included in more detailed comments. By and large, the thumbnails are large enough to be useful but a few may be somewhat unclear to those not already familiar with the species. One unexpected diversion is found among the thumbnails of *Gyromitra* species, where a rather mutilated fruiting body is labelled *Sphaeronaemella helvellae*. In turning to the page indicated by the thumbnail, we come to the main page for *Gyromitra infula*, where under the Comments paragraph there is a detailed description of *S. helvellae*, a very small ascomycete growing parasitically within the cap of *G. infula*. There are no photographs of the *Sphaeronaemella* and it is doubtful the thumbnail in the key would be chosen by a person who actually observed it.

The main descriptive pages are nicely organized. The descriptions of both macro- and microscopic features are detailed enough to be useful to most users. The descriptions of microscopic structures are quite precise and will be useful to professional mycologists. Greater detail will only be found in technical journals. Writers of popular basidiomycete books could learn a lesson or two here. Under the heading "Occurrence" the authors outline what is known about the specific habitat of the species as well as its known geographic distribution. Readers in Newfoundland, as well as the rest of Canada, will find there are some inaccuracies regarding our country. For example, the location "northeastern North America" is often used when the authors really mean "northeastern USA and adjacent parts of Canada". *Mitrula paludosa* is said to occur in northeastern Canada, although it really is known mainly from southern Canada. *Neocudoniella radicella* is quoted as growing in "boreal forests across Canada and probably the northern portions of North America". I suspect that they really mean "northern portions of the USA".

The comments on each species are again far from condescending. Some readers will get more than they need here, while professionals and advanced amateurs will find a great deal of useful information. Discussions of nomenclature and taxonomy are carefully documented by current literature citations. Occasionally the descriptive pages have a short paragraph dealing with edibility. This seems a little inconsistent: with morels and similar fungi this makes sense but it can be spotty elsewhere. For example *Sarcoscypha austriaca* is declared

to be "nonpoisonous but not recommended", but there is no comment on the edibility of *S. coccinea* on the following page. Some species of *Helvella* have comments on edibility while others do not.

The treatment of morels is right at the cutting edge of our knowledge and lays out, perhaps for the first time in such a book, the baffling array of known species. These species are hard to tell apart and are still mostly the territory of molecular biologists. However, most readers who have searched for morels will probably find the discussions fascinating. Fortunately, according to these authors, all morels are edible if well cooked, so taxonomy should not interfere with the delight of eating these little morsels.

There are several pages devoted to species of truffles and truffle-like fungi. These may be less useful to Newfoundlanders than to western Americans but are great to see. Most books simply ignore them. One practice here I do not condone is the use of so-called "*nomina nuda*", that is, names that have yet to be formally published according to agreed-upon procedures. In this book several unpublished names are introduced in the genus *Elaphomyces* with the comment "in preparation". Once these illegitimate names make their way into the wider literature they become confusing. Should someone publish names for these species before the ones used here are published we will have yet another set of useless names to deal with. While *nomina nuda* can be sorted out by professionals, they can become a nightmare for amateurs and non-specialists.

The final sections of the book are well thought out. The glossary of terms is thorough, as is the bibliography. The authors are to be congratulated on their efforts to be as up-to-date as possible. The indices of common and scientific names are thorough. The scientific index even includes some plant species although not all. I would have preferred to see the scientific index to be alphabetized by species as well as genus, since many of us have yet to adapt to the latest generic names and may have difficulty finding the entry for a species we are familiar with.

In summary, despite a few small quibbles, I like this book very much. It is a landmark publication on North American ascomycetes. The authors understate its importance by citing Seaver's monumental North American Cup Fungi in its 1978 reprint rather than pointing out that this was originally published in two volumes in 1942 and 1951. We have waited a long time for such a book. It may contain a small percentage of the ascomycetes we are likely to find and is mainly restricted to the larger and more conspicuous species but is nevertheless a wonderful aid to identification. I enthusiastically recommend this book to amateurs and professionals alike, and congratulate its authors on a job very well done.

Gyromitra infula (Schaeffer: Fries) Quélet SADDLE-SHAPED FALSE MOREL

MACROSCOPIC FEATURES: fruitbody consisting of a cap and stalk; cap 2.5–10 cm wide × 2–10 cm high, usually saddle-shaped or sometimes trilobate, margin incurved; upper surface wrinkled to convoluted or sometimes nearly smooth, moist when fresh, reddish brown to dark brown or sometimes yellow-brown, lacking distinct violet to lavender tints; lower surface paler, minutely velvety; interior hollow or chambered, flesh brittle; stalk 2–6 cm long × 2–2.5 cm thick, dry, hollow, finely granular, whitish to pinkish buff.

MICROSCOPIC FEATURES: spores 18–23 × 7–10 µm, elliptic, smooth, with 2 large oil drops when mounted in water, uniseriate, nonapiculate, hyaline; asci 250–330 × 14–15 µm, 8-spored; paraphyses cylindrical, septate, forked, and enlarged apically.

OCCURRENCE: solitary, scattered, or in groups on decaying wood or humus; summer and fall, also winter and spring in coastal California; widely distributed in North America; occasional to locally common.

EDIBILITY: poisonous.

COMMENTS: This false morel is unusual for the genus *Gyromitra* in that it typically fruits in the summer and fall rather than spring, except for coastal California where it fruits in the spring. We have found versions of this species less than 1 cm tall in the spring. *Helvella infula* Schaeffer is a synonym. *Gyromitra ambigua* (P. Karsten) Harmaja is very similar and also fruits in the summer and fall, but its cap and stalk have distinct violet to lavender tints, with the cap a dark red-brown, nearly chestnut colored, and its spores are larger (21–30 × 7–12 µm) and indistinctly apiculate (Harmaja 1969a). Some authors consider *Gyromitra ambigua* and *Gyromitra infula* to be synonyms, but the combination of fruiting body color and spore characteristics appear to be consistent diagnostic features (Abbott and Currah 1997). *Sphaeronaemella helvellae* (P. Karsten) P. Karsten grows on the living fruitbodies of *Gyromitra infula* and *Gyromitra ambigua*. *Sphaeronaemella helvellae* gives *Gyromitra* fruitbodies a velvety, withered appearance but *Gyromitra* ascospores are always present, indicating that the infection does not occur until host maturity.

Sphaeronaemella helvellae fruitbodies are superficial to semi-immersed in the spore-bearing area of the host. They are composed of perithecia that measure 0.09–0.25 mm in diameter, are nearly spherical to ovoid, bald, smooth, and have a long neck through which the spores emerge. They are colored bright yellow-orange and are densely gregarious. Their spores are 8–10.5 × 3–4.5 µm, unilaterally flattened-elliptic in side view, elliptic in face view, smooth, hyaline, and yellowish in mass.

Gyromitra infula

Example of text page: 17 x 25 cm, ample room, legible text, beautiful photo, full description, discussion includes similar species.

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