



L.I. SPOREPRINT
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FINDINGS AFIELD



Cortinarius albobrunnescens
The original 2008 collection

One of my favorite places to forage in late Autumn through early winter is beneath a group of introduced Little Leaf Linden in Wildwood State Park that has, in a very limited area, produced a wide variety of genera, from Amanita to Cortinarius. It also brought forth several species of Hebeloma, which were collected for Henry Beker's forthcoming North American Hebeloma monograph.

One pale colored, raw potato smelling collection turned out not to be Hebeloma, as I first mistakenly surmised, but Cortinarius as revealed by sequencing carried out by Henry's co-author, Ursula Eberhardt. This species was first encountered on Oct. 20, 2008 and did not reappear there until November of 2017, and again in November of the following year. Additionally, Peggy collected it in a mulched area in Setauket on December 23, 2017.

(Continued on page 4)

A Long Island Fungus Farming Ant

Most of us are aware of the leaf cutting tropical ants, which have been cultivating fungus gardens for more than 50 million years, and are confined to the Americas. We have mentioned recent discoveries regarding their farming practices in the "Gleanings" column, and natural history programs on television have publicized their columns of tireless workers holding aloft their tiny green prizes. (Above their head like an umbrella, which is why they are sometimes called "parasol ants".) But not all fungus ants are leaf cutters, and some species collect insect parts, caterpillar droppings and other frass to provide a substrate for their gardens. One such, I was surprised to learn, colonizes the southern United States, and reaches, in its northernmost extension, to the pine barrens of Long Island.

Trachymyrmex septentrionalis, commonly known as the Southern Fungus Farming Ant, (see illustration) lives in small, inconspicuous colonies of 500 to 1500 individuals. They are found in the Pine Barrens, where their nest entrance is usually hidden in sandy soil among fallen pine needles, but may be discovered by the excavation mound nearby, which takes a semi-circular or lunate pattern. The average nest depth is 3 feet or less and consists of 2 egg-shaped chambers, where the fungus is grown, and where their eggs hatch. Larva feed exclusively on the fungus, or to be exact, upon specialized fungal cell protuberances called gonglydia, which are nutritive bodies produced only in ant colonies, and which perhaps represent the fungus's "remuneration" of their caregivers, somewhat in the fashion that, e.g., corn under cultivation produces larger and more nutritive kernels than the ancestral wild variety. In other words, biologists raise the question, "Is the ant domesticating the fungus, or the fungus domesticating the ant?" This is not as far-fetched as it might sound when we consider such evolutionary developments as the aromas produced by truffles to entice their mammalian disseminators.



Human agriculture, though hardly as ancient, is speculated to have arisen in parallel ways. That is, by foragers accidentally dropping fragments (seeds or spores) in the vicinity of the dwellings,

(Continued on page 4)

PRESIDENT'S MESSAGE

So fall is here at last! This is my favorite time of year when the weather is cool and the leaves turn beautiful colors. Plus the Fall mushrooms are here. Today I saw many honey and hen-of-the-woods on my travels. They may not be good for trees but they can be good edibles. So go get them.

We have many new members in the past two months. I'm hoping some will take on tasks for the club. As Joel is retiring as editor of the Sporeprint, we are delighted that Andrea has stepped up to take over. Many thanks to her. Please do your best to submit items for her to peruse and perhaps use down the line. It is a lot for one person to do.

At our last foray in Brookhaven State Park, we went back to what we did many years ago. Instead of stopping at every find trying to identify it,

we all collected and put our finds on tables and then in gatherings by genetic family groups. I always thought this was a good way for members to learn to recognize the various groups and identify them. The forays seem to move more quickly this way. Of course, if something really interesting is found along the way we do stop. Another thing with table display is that everyone can see all the fungi collected, just like Mushroom Day and our annual picnic.

Next year will be better for the club as people may be more willing to get together when more have been vaccinated. Right now, we assume anyone who attends forays got their shots. Please do not attend if you have not. It is not safe for you and for us.

Hope to see you soon along the trails.

EDITOR'S NOTE

I am very pleased to report that editorship of the L.I.Sporeprint will now be assumed by Andrea Barracca-Rosen, who has bravely answered my call for an infusion of new blood for this newsletter, which I have edited for over 20 years, and which has been in existence, in one form or another, for almost the entire 48 years of this club's duration.

From its beginning as a double-sided one page mimeographed sheet, it morphed into an 8 page newsletter, now entirely digital, but in full color. It has been my privilege to author many of its articles, which has allowed me to follow the Edwardian dictum to "learn as much by writing as by reading". I will continue to provide material as a contributing

editor, while Andrea will assume the title of Editor-in-Chief.

It is heartening to see so many avid new young members, and I prevail upon them not to "hide their light beneath a bushel" but to step up and contribute to this newsletter by sharing their experiences, interests, and explorations with us all by submitting notes, articles, cartoons, art work, recipes, etc., to Andrea for publication. This newsletter should reflect the experiences and concerns of all our members, and the only way for that to happen is for all members to seriously consider how best they can share items of interest with their co-members, and enhancing their own knowledge by doing so.



**MATERIAL FOR THE AUTUMN EDITION SHOULD REACH THE EDITOR BY
DEC. 1ST.**

(Submissions may be forwarded by email in any format or typed.)

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(All unsigned articles authored by editor.)

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Foray Results Summary

SEPT. 4, BLYDENBURGH C.P.:

After a dry and foray-less August, our forays were off to a good start with a 55 species list, among which we counted a good number of edible *Russula* (*variata*, *virescens*, etc.) and *Lactarius* (*hygrophoroides*, *corrugis*, etc). The most common bolete was, unfortunately, the inedible *Leccinellum rubropunctum*, the “ash-tray bolete” whose odor lives up to its name. The oddly shaped *Inocephalus murrayi*, the Unicorn, is always a pleasure to see.



Inocephalus murrayi

SEPT. 11, CATHEDRAL PINES C.P.:



Tapinella corrugata

Of the 60 species collected Russulales predominated with a dozen species. Edibles were few, with a number of *Baorangia bicolor*, and a few *Agaricus* “*sylvaticus*” and *A. “silvicola*”. Two new species were added to our list: the Toothed Jelly, *Pseudohydnum gelatinosum* and *Tapinella corrugata*, an uncommon species previously classified as *Paxillus*.

SEPT. 18, SOUTHAVEN C.P.:

Out of an abundance of caution we did not hold our annual picnic, although the foray went off as

planned. And Southaven did not disappoint, producing 82 species including a good number of edibles: Black Trumpets, 4 species of *Suillus*, both Chicken and Hen-of-the-Woods, and more. There were a good many *Marasmius nigrodiscus*, which were not collected, but which may be an overlooked edible. (See page 6.) The well-named *Boletus nobilissimus* made one of its rare appearances. It can be recognized by its complete reticulum with compound meshes.



Boletus nobilissimus

SEPT. 25, CATHEDRAL PINES C.P.:

We returned here, as the scheduled foray site, Muttontown, was unproductive. Despite only two weeks separating the forays, only a minority of species were the same as previously. Now the Autumn species, such as *Cortinarius iodes*, *Inocybe* and *Hebeloma* species, *Hydnellum*, *Tubaria*, etc., made an appearance. There was a great abundance of Black Trumpets, to everyone’s satisfaction. Three new species were added to our list: *Helvella lacunosa*, the Elfin Saddle, *Pluteus granularis*, on wood chips, and the polypore *Heterobasidion annosum*.



Pluteus granularis

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Request a Tick Removal Kit by contacting karen.wulffraat@stonybrookmedicine.edu or (631) 726-TICK. Please provide your mailing address.

You can also request the free 25 page booklet: “Tick-Borne Disease Reference Handbook for Long Island and the Northeast” which lists a frightening array of maladies.

More information about the Stony Brook Tick-Borne Disease Center is available at www.EastEndTickResource.org



A L.I. Fungus Farming Ant (Cont'd from page 1)

leading to some sort of continued interaction and feedback between the two organisms. In one case this has led to a long history of coevolution, and in the other to directed breeding, although as Darwin remarked, “the art has been simple andfollowed almost unconsciously.”

While tropical fungus ants can be active all year round, their northerly representatives are faced with the onslaught of freezing winter temperatures, when no fungus can grow. At this time, they are forced to hibernate, and will not become active again until temperatures rise high enough in the Spring to activate their fungus garden. The fungus also remains in an inactive form during this time, but its exact nature is not known.

Although *T. septentrionalis* does not normally cut leaves, there is documentation of their occasionally doing so in early Spring, when their usual insect material is not available. The higher attine ants, of which *T. septentrionalis* is one, will also gather wild fungi from the field if for some reason they lose their traditional source. (*Trachymyrmex* queens normally transfer a bit of the fungus to a new colony by means of a specialized pouch in their cheek. On L.I. the mating flight takes place in early August.) However, they confine themselves to species very closely related to the original, normally a member of the *Leucocoprineae* (*Leucocoprinus*, *Leucoaga-*

ricus, and *Lepiota*) and in experiments, refuse all others. Persistent cropping by the ants prevents the development of any fruiting bodies, although abandonment of the nest may permit such fruiting, as also occurs in African termite colonies, where giant *Termitomyces titanicus*, much sought after by foraging humans, can reach three feet in diameter. However, some farmed species are so highly domesticated that they occur in ant nests only in a yeast-like form and never form fruiting bodies. While the continental separation of *Termitomyces* was long believed to be absolute, Dr. Roy Watling, in his presentation at NEMF 2005, revealed the startling news that it has recently been identified in tropical America, although its symbiotic helpmate remains unknown.

Other genera of the tropical Attine ants cultivate the pterulaceous or Coral fungi, and the more primitive of these weave the hyphae into a veil-like covering that covers the colony like a tent, rather than having an underground nest.

Southern Louisiana, Texas and Arizona are host to several species of leaf cutting ants belonging to the genus *Atta* and *Acromyrmex*, which are at the northernmost limit of their range.

Like human farmers, the fungus ants are cultivating a monoculture, and even after 50 million years, they are only one step ahead of invasive pests and parasites.

(Reprinted from *L.I. Sporeprint*, Autumn'05) 

FINDINGS AFIELD

(Continued from page 1)

Although the DNA had been sequenced earlier, it was not until November 2017 that Ursula “Blasted” it; that is, submitted it to GenBank, the online genetic sequence database of all publicly available DNA sequences, for comparison. This resulted in close,



***Cortinarius albobrunnescens*
en situ November 2017**

(97%) but not identical, match to *Cortinarius murinascens* and *C. urbicus*, and Ursula wrote that “my feeling is that your species has not been sequenced before (or the sequence has not been published).” Inasmuch as our collection did not match the former macroscopically, and the latter had much larger spores, we had to look further, and enlisted the aid of Joe Ammirati at the University of Washington, who is collaborating with the European researchers Kare Liimatainen and Tula Niskanen in a comprehensive study of *Cortinarius* worldwide.

When they viewed Ursula’s sequence, their response was “Your species is same than our *C. “legolandensis”* from Florida (first found near Orlando's Legoland). We don't have any collection from outside FL and not any valid name for this species. It belongs to section Urbici.” It was not until July 2021 that it was published as a new species: *Cortinarius albobrunnescens* Liimat. & Niskanen, sp. nov. in Index Fungorum no. 487. The epithet refers to the fact that the “basidiomata are initially white but become brown with age” as can be seen in the accompanying photographs.

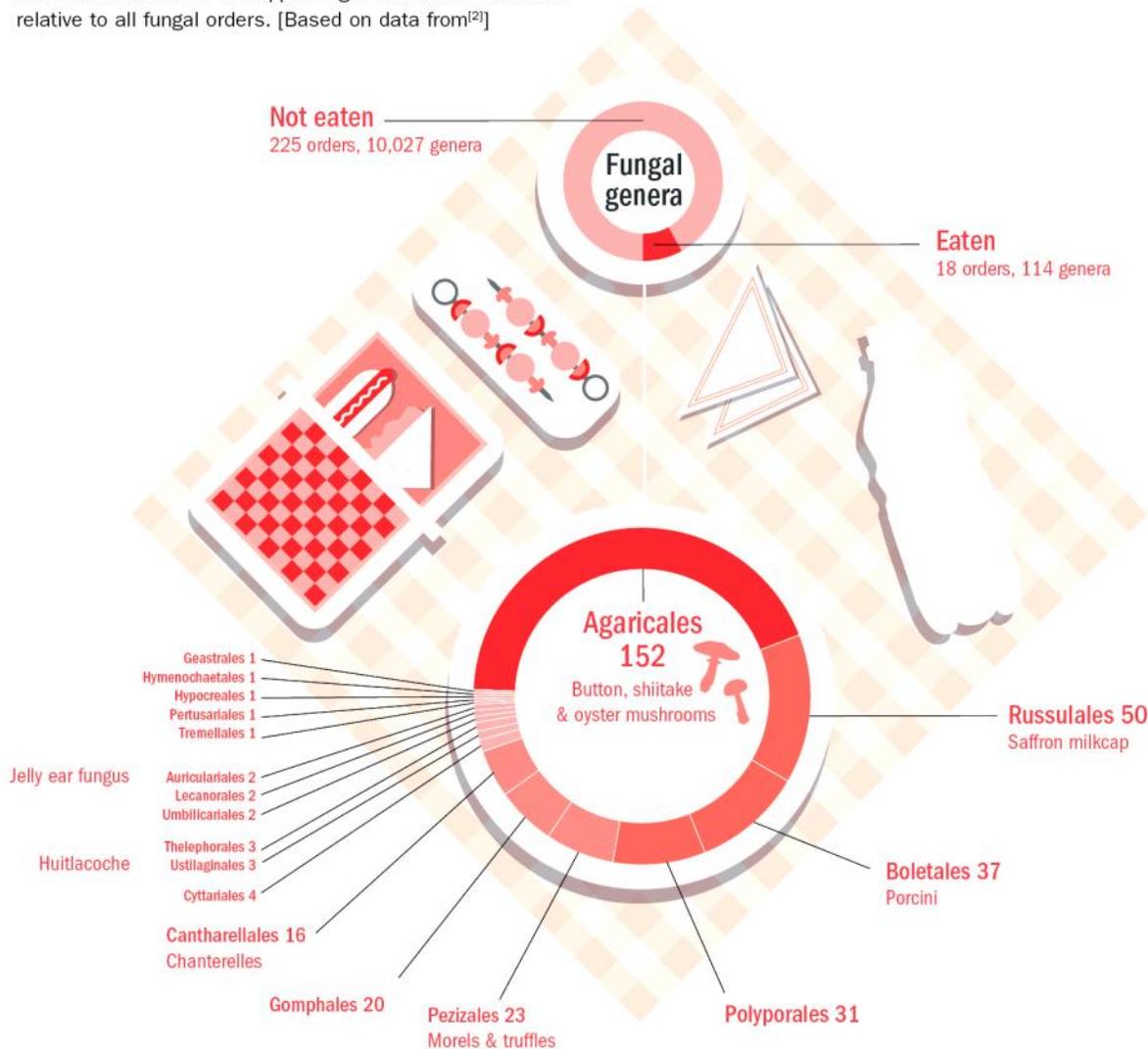
It is of small to medium size, with pileus 2-5 cm, hygrophanous, white at first, becoming silvery-gray to pale grayish-brown. Stipe white, bulbous, peronate with white veil remnants. Odor described as “faintly radish or indistinct” although I found it to be distinctly of raw potato. At this point known only from North America- Florida and Minnesota, with Oak and Pine- and now from Long Island, NY under introduced Little Leaf Linden, with White Pine a short distance away, separated by a roadway.

A first record for NYS, all collections will be donated to the NYBG fungarium, and the species added to the LIMC checklist. 

STATE OF THE WORLD'S FUNGI

FIGURE 1: EDIBLE FUNGAL DIVERSITY IN COMPARISON TO TOTAL FUNGAL DIVERSITY

The fungi that are recorded as being eaten for food represent a small fraction of total fungal diversity. The lower ring shows the species distribution of 350 confirmed fungal food species in 18 fungal orders. The number of edible species in each order is shown. The upper ring shows these 18 orders relative to all fungal orders. [Based on data from^[2]]



This illustration ((reprinted by permission) is taken from the online 92 page pdf “State of the World’s Fungi 2018” featured on the website of the renowned Royal Botanic Gardens Kew, accessible and downloadable at

<https://stateoftheworldsfungi.org/>

This report is the first of its kind, and has been produced to inform the public of the importance of fungi to all life on earth and which should be viewed “on a par with the plant and animal kingdoms”. It does so remarkably well, in clear and precise prose, accompanied by explanatory diagrams (as above) and stunning vivid photographs.

Starting with the definition, classification, diversity and evolution of fungi, and proceeding to the primary and potential uses of fungi, each topic reveals and clarifies knowledge that every mushroom aficionado should know.

Also addressed are the impacts of climate change on fungi, as well as global conservation efforts. China, where fungi have been used for food and medicine for thousands of years, receives special attention.

We urge all our members to take advantage of this very generous offer of Kew to heighten their awareness of the current state of fungi.



From our Members & the Public..



Pisolithus tinctorius/arhizus
from a Long Island resident



Boletus auripes
Jacques Brochard



A perfect Chanterelle
from an I.D, inquiry



Tylopilus felleus
mistaken for "Porcini"



Amanita guardian (Fowler's
toad) by Roger Eklund



Boletus edulis group
from a Pennsylvania resident

AN OVERLOOKED EDIBLE?



Marasmius nigrodiscus

All our guide books describe *Marasmius nigrodiscus* as unknown or uncertain as to edibility, and we have consequently never collected it for that purpose. However, I recently came across the following comment by Roy Halling, "Margaret Morris, of Long Island, New York, who provided me with some of the fresh material, informed me that she has eaten *M. nigrodiscus* with impunity for the past several years." This is from "A Synopsis of *Marasmius* Section *Globulares* (Tricholomataceae) in the United States Brittonia, 35(4), 1983", wherein *M. nigrodiscus* was renamed from *Collybia*. (Marge Morris was one of the founding members of LIMC.)

Marasmius nigrodiscus is quite common and easy to recognize. We have in fact found it on several of our recent forays. Halling has placed it in section *Globulares*, where *Marasmius oreades*, a popular edible, also resides. I, for one, look forward to tasting its larger relative.



Skidegate Scalloped Potatoes with Baby Chanterelles and Big Boletes**

by Patrick Hamilton, Mycochef

Preheat oven to 350°

Cook in salted boiling water: (you want the water boiling first to gelatinize the carbohydrates on the exterior of the slices)

- 4 medium peeled and thinly sliced potatoes

Cook them just enough to be almost cooked through--about 8 minutes. Be careful not to allow them to become close to mushy--not even mushrooms should be mushy. Drain well.

Chop coarsely, sauté for 10 minutes in olive oil and butter, set aside:

- 4 oz Chanterelles (non wet)
- 4 oz. Boletes

Chop coarsely:

- 1 large onion and begin to sauté it with:
- 2 tbl. of butter
- 1/4 tsp. dried thyme

Make a roux in the same pan as the onions with:

- 2 tbl. of flour and 2 more tbl. of butter and a little salt.

Cook 'til golden brown and the onion is softened then "break the roux" (this means add the liquid) to make a sort of Bechamel sauce with a mixture of:

- 1/2 cup vegetable or chicken stock
- 3/4 cup whole milk

Continue to cook until the whole thing is beginning to thicken--about 5 minutes. set aside.

Grate and set aside:

- 1/3 cup white cheese (Jack, Teleme, Fontina, etc.)

Assemble the dish by layering the potatoes in a buttered casserole dish. After one layer toss in some of the cheese, a little sauce and some of the mushrooms. Continue until all the stuff is gone but save some sauce and cheese for the top. Bake 'til bubbly. Six servings.

**From the Mykoweb.com website. Hen-of-the-woods is a good substitute, as is any firm-fleshed mushroom such as Tricholoma.



TELLING THE BROWN-SPORED TOOTHED MUSHROOMS APART

Our two most common brown-spored toothed mushrooms are *Hydnellum scrobiculatum* and *Sarcodon imbricatus*. The former exhibits indeterminate growth, which means that it incorporates any surrounding material such as leaves and twigs,

Sarcodon imbricatus

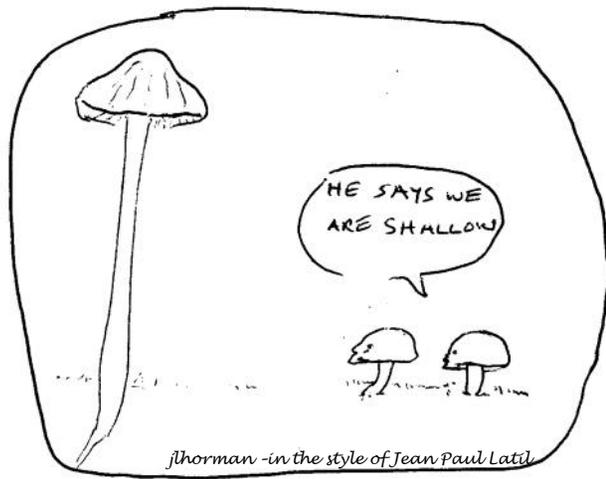


while the latter's growth is determinate, so that it pushes such material aside. This feature can be discerned in the accompanying photographs, while the chart show characteristics of all our toothed genera.

Hydnellum scrobiculatum



GENUS	SPORE COLOR	SPORE ORNAMENTATION	GROWTH HABIT	TEXTURE	FAMILY
<i>Bankera</i>	White	Echinulate	Determinate	Brittle	Bankeraceae
<i>Hydnellum</i>	Brown	Tuberculate/ Nodulose	Indeterminate	Leathery	Bankeraceae
<i>Hydnum</i>	White	Smooth	Determinate	Brittle	Hydnaceae
<i>Phellodon</i>	White	Echinulate	Indeterminate	Leathery	Bankeraceae
<i>Sarcodon</i>	Brown	Tuberculate	Determinate	Brittle	Bankeraceae



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"Mushrooming is not about what you're looking for... it's about what you find."
Gary Lincoff



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