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VOLUME 24, NUMBER 2, SUMMER, 2016

DOMINICK LAUDATO
1930 – 2016

Dominick Laudato, former president of the Long Island Mycological Club and author of "Mushrooming on Long Island" passed away on June 6 at the age of 86. A decorated Korean war veteran, he joined the NYC school system as a science teacher in 1960, retiring in 1988. His study of mushrooms began at a time when guide books were few, but he persevered despite his lack of color vision, an impressive accomplishment. In 1990 he joined the LIMC and became president in 1993, a post which he held for more than nine years. He documented several species previously unrecorded on Long Island. As president, he was a jovial, outgoing personality who enlivened forays and gatherings, animatedly sharing his knowledge with all. He served on the Poison Control Center for many years, identifying mushroom species that were involved in suspected poisonings. His

(Continued on page 3)

Leucoagaricus jubilaei:
First N.A. record

Leucocoprinus and *Leucoagaricus* are strikingly similar genera, indeed sister taxa, and form a clade (Vellinga, 2010). There has been much contention over the years about principal distinguishing differences, sometimes said to be "the fragile coprinoid basidiomata, the plicate-sulcate–striate pileal margin, the relatively large cheilocystidea, and the abundance of pseudoparaphyses (pavement cells) in the hymenium of *Leucocoprinus* (Kumar & Manimohan, 2004). Despite these and other differences, a number of species have been placed in both genera, and Mycobank considers *Leucoagaricus jubilaei* and *Leucocoprinus jubilaei* to be synonymous.

It is a European taxon, with no previous records evident on the Mycoportal website, and previous literature reports its presence in northern France, Spain, Bulgaria, Turkey and into India. Some of these reports are recent, within the past decade.

Leucoagaricus jubilaei

Our collection of two caps was discovered by Peggy among wood chips in the garden on Oct 1 2015. At first, I thought this might be *Leucoagaricus brunnesens* Peck (originally *Lepiota*) but many of the characters did not fit, and the identity could not easily be resolved. Therefore, a small sample of one cap was sent for DNA analysis to AlvaLabs in Spain, a commercial lab that specializes in sequencing fungi, for professional researchers but also for "amateur researchers, both independent and members of Mycological Societies from different countries." While the reader has already been

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PRESIDENT'S MESSAGE

This is the time of year that mushrooms should be appearing in vast varieties. So far it has been a lackluster beginning with just a few showing up mostly growing on wood. The oaks in large areas have been denuded by caterpillars and are being doubly stressed by lack of rain. Will fungi and trees be able to support one another? Time will tell what the effect will be long term.

Dom Laudato's passing is very sad. He was the first one to really interest me in mushrooms. I'll always remember him behind the tables at Mushroom Day in 1991.He was so enthusiastic and kind. I asked "can you eat it?" He laughed and gave me a piece of Hen-of-the–Woods to try; I was hooked. I will miss him.

Some of us had the great pleasure of a wonderful talk by Dr. Barbara Theirs and Dr. Roy Halling at the New York Botanical Gardens in June. The herbarium is amazing and we were treated to a walk through of the place, displays of fungal specimens, old books and an interesting discussion. (If there are any future talks there you might want to sign up.) AND, congratulations to Steve Huysman for getting a dream job at the herbarium, dealing with Mycoportal. We are very happy for him.

Joel reviews a new book called Mushrooms of the Northeast in this issue. My opinion is that this is a wonderful guide for beginners and intermediates. It doesn't have everything in it and you do have to read the text carefully but I love it The pictures are great too. (One thing, this book has just been published. It is listed on Amazon, new as well as used. I believe thr used ones cannot be the same, so buyer beware!)

I wish you all a nice summer and hope to see you sometime soon along the trails.

EDITOR'S NOTE

What to make of a diminished thing? the poet Robert Frost asked, of the coming of the Autumn. Of course, for mushroomers, it is usually the Spring rather than the Autumn, that is more likely to be dry and bare. And that has certainly been the case this Spring, and it seems, a good many before.

Well, if little is to be found, that permits us to concentrate our gaze on what we do encounter, and if we look hard enough, there is always something new. If we are lucky, it may be a previously overlooked mushroom, but if the mycelia are still asleep, the rest of Nature is awakening, in all its beguiling forms. Avian migration is in full swing, the woods ringing in song from competing performers, while flitting shreds of color, delicate Spring Azures and somber Mourning Cloaks catch the eye. Brilliantly hued flowering plants make their own demands upon our attention, for their brief existence, while their attendant native bees hover busily at their task of pollination. Graceful grasses nod silently, the wallflowers at Nature's ball.

All these can be sources of delight, esthetically if not as subjects for study, if we take the trouble to notice them. As E.O.Wilson wrote,"Nature holds the key to our aesthetic, intellectual, cognitive and even spiritual satisfaction."

MATERIAL FOR THE AUTUMN, 2016 EDITION SHOULD REACH THE EDITOR BY SEPTEMBER 1ST.

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

(All unsigned articles authored by editor.)

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Leucoagaricus jubilaei -New to N.A.

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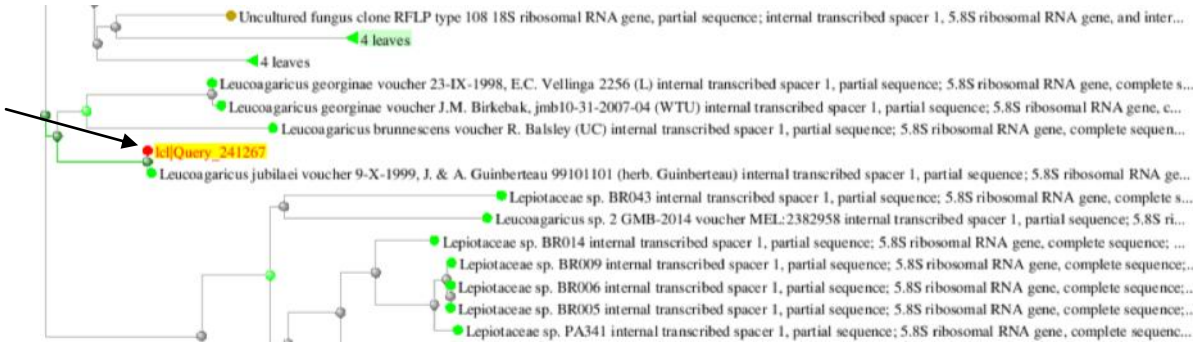
informed of the identity of the mushroom, this result came as a complete shock to us, so much so that doubt was not easily eradicated.

To get technical for a moment, the DNA segments sequenced were Internal Transcribed Spacer 1, 5.8S ribosomal RNA gene, and ITS 2, which produced a nucleotide sequence of 753 letters. This sequence was entered into the NCBI GenBank database, which search produced a 99% similarity match to a sequence of *Leucoagaricus jubilaei*, a French sample dated 1999 which had been analyzed by Else Vellinga at the University of California Berkeley. Else Vellinga is known worldwide as the foremost expert in Lepiotaceous fungi. She kindly responded to my inquiry stating that "your specimen is indeed so close to the European jubilaei that it is really the same species!...it is exciting though that this species would be present in North America as well!"

GenBank also generates a phylogenetic tree showing the degree of relationships between the specimen submitted and other closely related taxa, an abbreviated version of which is shown below:



The arrow points to our specimen,(Query 241267) nestled next to Else Vellinga's sequence of the French collection of *La. jubilaei*. Note that on the branch immediately above lies *Leucoagaricus brunnescens,* closely related enough to be considered a sister species, and with a common ancestor, forming a clade.

Else was also kind enough to provide me with Josserand's original description and other documentation which enabled me to go beyond the DNA evidence to realms I am more at home with: macro and microscopic character descriptions. There were two characters that gave me pause because of an imperfect match: firstly, the size. Our specimens were fairly robust, with caps measuring up to 8 cm., while Josserand's measured a maximum of only 5 cm. But we all know that size is a variable character, and not infrequently encounter specimens which are "off the charts". The other character is the " plicate-striate " cap margin, but this is not emphasized by Josserand and others, with Kumar's key making a point of indicating that the pileus of *L. jubilaei* is non-striate.

While the molecular evidence is paramount in clinching this identification, this is an abstraction for most amateur mycologists, so we need to provide a more concrete picture, and a physical description follows:

Cap shallowly depressed, (in mature stage) 6.5—8.5 cm., ivory to cream colored, with numerous small. pointed, brownish- purple scales, the disc darker. **Stipe** enlarged toward the base, with fixed median annulus, about 5 cm. long, 1.5 cm. at base, 1 cm at narrowest point. Cream colored at apex, brownish below. Stipe, flesh and gills all turning reddish brown on handling and injury. **Gills** free, close (~ 90 full gills) with 4 layers of lamellulae. No discernible odor.

Microscopically, spores dextrinoid, elliptic with one flattened side, 6.5-7.5 X4 µm, germ pore lacking. Cheilocystidea abundant, crowded, clavate, to 50 X 20 µm. No pleurocystidea. Pellis a trichoderm, hyphae

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DOMINICK LAUDATO 1930-2016

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love of nature and of mushrooming has been passed on to his children and grandchildren.

He is survived by his wife Gloria, his daughter, and three sons and their children. He will be fondly remembered and his presence deeply missed by all who knew him.

Drive-by Mushrooming

by David Babik

Originally published in the Nov. 2015 edition of The Bulletin of the Boston Mycological Club

Most mycologists talk about slowing down your pace to spot mushrooms. I think it is a well-known fact that many of them can hide when they see us coming. Nevertheless, I think that there is also a good deal of support for 40 MPH mushroom hunting. I first heard that term when George Davis was describing how easy it is to spot a chicken mushroom from a great distance. *Laetiporus* is not the only fungus in that group and many others can be spotted at highway speeds too.

This summer, I found myself reminiscing about some of the more memorable "high-speed" fungi that I have spotted. On one such occasion, my wife and I, along with some friends, were heading out to dinner. On a back road, West of Worcester, MA, two large silhouettes caught my eye as we cruised past. Everyone was hungry and the idea of stopping at that moment would have surely caused a revolt. All through dinner, I kept thinking about those dark shapes. I was sure that they were just Amanitas, but, then again, maybe I was wrong. After dinner, hoping that I could recall our exact route, I raced back from the restaurant at 15-20 mph. It was getting dark and I wasn't taking any chances. Luckily, wine with our meal and lively conversation kept my traveling companions from noticing our painfully slow speed. Finally, there they were! I shouted, "Hang on a minute!" pulled over and leaped out, knife in hand. As I got closer, it quickly became apparent that these were no Amanitas but were huge king boletes. The first was too old and spongy but the second one was a picture perfect Edulis. I finished the ride home with one hand on the wheel and the other holding a prize bolete.

Any veteran forager can attest that some days you just come up empty. I was out with a friend last year, in a great spot, finding a whole lot of nothing. After miles of bushwhacking we gave up and decided to call it a day.About two miles from home, my fellow hunter yelled, "Stop! Back Up!". She pointed down into a wooded gulley, where on a dark, moist log a large flush of chicken mushrooms had sprouted. Their brilliant orange was like a beacon against the dark woods. A few moments later, as we were positioning our find on my trunk for a victory photo, a loud noise forced us to spin around. There, rushing from the tree line was a red-faced, agitated fellow screaming " You're stealing my mushrooms!!!". Our new acquaintance, later referred to as the " Mushroom Nazi", was clearly not pleased with our foraging efforts. He claimed we were on his property, although in retrospect, we were more than a little skeptical. The nearest house was a long way off and there were train tracks a few feet away. Nevertheless, we felt that we had no choice but to hand over the mushrooms and apologize profusely. To our surprise, he had no interest in keeping the mushrooms and was merely upset that we had removed them from his property, preventing them from ever sprouting again. Even though the veins were bulging in his neck, his hands were clenched into fists and we assumed he was packing a weapon, we couldn't stop ourselves from launching into a lecture on the topic of mycileum vs. fruiting bodies. We did our best to assure him that the chickens would be back next year. Eventually, he calmed down and began to tell us how fungally rich his woods were. As he described the giant puffballs that come out each summer, our minds started to wander as to what else was out there. I'm not sure if we will ever approach the territory of the "Mushroom Nazi" again, but I won't deny that the thought has crossed our minds…

I usually take back roads when traveling for business (to increase the likelihood that I will spot something good). However, sometimes I can't avoid the busier thoroughfares. These roads can present a challenge to the mushroom hunter, since the heavier traffic often prevents pulling over quickly. One misty morning, I was in a suit and tie ,driving to a business meeting. I came to a congested intersection, where cars were backed up for several light cycles. As I began to slow down, something big and white caught my eye. It was a huge Lion's Mane, about fifty feet into the woods and nine or ten feet off the ground, growing out of an old beech tree. At 5' 7", I was not of a stature to reach this lofty fungus, but I travel prepared for such contingencies. I swung the car onto the dirt shoulder and popped the trunk. In it, I always keep a long wooden pole with a mushroom knife, duct-taped to the end. While fighting my way back through the wet woods, carrying a dripping hericium and a six-foot knife stick, I looked up to see everyone in all the cars, stopped at the light, staring in disbelief. You would think that they had never seen a guy, in a suit, with a big wet clump of mushrooms and a knife extension coming out of the woods before! Besides, it made a great appetizer, gilled with garlic butter for dipping.

Those were just a few of my more memorable hunting tales from America's highways and back roads. There are plenty of mushrooms that can be spotted at higher speeds. I have speed-hunted Oysters, Hens, and Chanterelles too. But please keep in mind, that there are inherent risks in foraging for wild edibles. Not least among them is the risk of rear-end collisions, so make sure to always signal before slamming on the brakes.

GLEANINGS.. from the research literature

■ **CONSIDER THE SPORE:** A review article by Else Vellinga summarizes what we know about spore shape, size and ornamentation, which while useful for identification are crucial for species survival. Mushroom enthusiasts who use the microscope are familiar with the astonishing variety of spore morphology which has evolved due to evolutionary pressures. Some features have been explained, for example hypogeous (below ground, such as truffles) fungi lack sterigmata (a small appendage), which are needed for spore ejection, which does not take place in these species, whose spores are disseminated by animals. Some recent studies demonstrated that saprotrophic fungi (decayers) produced smaller fruitbodies than mycorrhizal (symbiotic) ones, and that the latter are more likely to be ornamented. Since it has also been shown that the knobby spores of a *Tomentella* species were dispersed by mites, this manner of dispersal may also be operative in other mycorrhizal species, although *Tomentella* is not a gilled genus. Much of these relationships remain unknown, and this article is a call for further basic research. *(The shape of fungal ecology: does spore morphology give clues to a species' niche? Else Vellinga, Fungal Ecology 17, 2015, p.213-216)*

■ **CRYPTIC DIVERSITY IN THE N.A. CAESAR MUSHROOM:** A far ranging and sophisticated study of the genetics, evolution and biogeography of the N.A. Caesar's mushroom complex, widely called *Amanita jacksonii,* involved extensive sampling (280 specimens) throughout its range, from Central America, Mexico to Canada. An amazing 19 species were uncovered in two major clades, *jacksonii* and *basii,* of which only seven had been previously described (and four others proposed) based on morphological descriptions. *A. jacksonii,* previously thought to have a distribution ranging from Canada to Central America, is now shown to be composed of at least nine other cryptic species, some geographically separated (e.g., three in southern Mexico) and others more widely situated. The present distributions are inferred from DNA evidence to be the result of glaciations which caused the retreat of species to refugia in the warmer climes of SE USA, Mexico and Central America, with subsequent expansions taking place upon glacial retreat. (*In and out of refugia: Historical patterns of diversity and demography in the North American Caesar's mushroom species complex. S. Sanchez-Ramirez, R. Tulloss, L. Guzman-Davalos et al, Molecular Ecology, Dec. 2015).*

■**MY FRUIT BODY IS BIGGER THAN YOURS:** This is what mycorrhizal agarics can legitimately claim, according to a European study that used both field studies and available data in the literature on fruit body size as well as spore size and shape. Compared with saprotrophs, mycorrhizal mushrooms were shown to have larger fruit bodies, although saprobes produced a greater number of them. Spore size did not vary significantly between the two guilds, although saprobes did show a significant relationship between size and spore shape, their larger fruit bodies producing more globose spores. The authors suggest that saprobes produce smaller bodies since their access to nutrients (carbon) is more limited, and without this limitation, evolution might favor larger fruit body size in mutualists, leading to greater spore production, but suggest avenues for further research. (*Ectomycorrhizal fungi have larger fruit bodies than saprotrophic fungi, Fungal Ecology, 2014, Vol 30, pp.1-8)* *Compiled by Editor from above-cited sources*

FORAY RESULTS SUMMARY

WELWYN,APRIL 16 & 23: After 5 barren years of Morel absence, it seems to be time to let go.

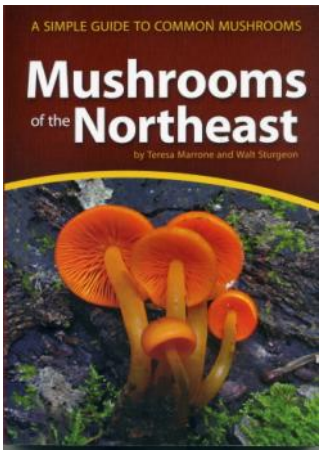
PLANTING FIELDS ARBORETUM, April 30: Cancelled, no mushrooms seen.

BETHPAGE STATE PARK, May 7: Cancelled. Ditto.

PLANTING FIELDS ARBORETUM, May 14: Finally, we were able to hold a foray, ending up with a respectable total of 22 species, including 3 species of Agrocybe, the most numerous being *A. pediades*, although elsewhere the invasive *A. putaminum* was widely reported. There was a good amount of Winecaps, the only edible found, unless one includes *Pluteus cervinus*, which although edible is of poor quality.

EDGEWOOD PRESERVE, May 28: No foray was scheduled, but a "Flash Foray" was announced since the Spring Oyster, *Pleurotus populinus,* had made its appearance, although a bit late. Although we were not able to duplicate last year's "hat trick" of Oysters at three sites, we did very well, with the use of extension poles to reach high in the poplars. An added bonus was the unusual Spring appearance of *Leccinum aurantiacum,* of which several dozen were collected.

BOOK REVIEW CORNER



MUSHROOMS OF THE NORTHEAST, A Simple Guide to Common Mushrooms, by Teresa Marrone & Walt Sturgeon, Adventure Publications, 288 pages with color photos, $16.95

Measuring 4.4 by 6 inches and weighing in at 9 ounces, this bantamweight is in a class of its own, truly a "field guide" that can easily fit in a pocket and be carried into the field more readily than any competitor, which is not to say that it is ideal.

We are now blessed with three mushroom field guides boasting "northeast" in their title, as well as several other more geographically general treatments that include northeastern species. Of these, Gary Lincoff's Audubon Guide, although dated (1981), still stands as the classic that remains in wide general use, its format of grouping photos of species of similar appearance rendering it most easily used by beginners. It won't fit into your pocket, but can be carried in a backpack, basket or collecting bag, as can the other Northeastern guides, by George Barron and the Petersen Series guide by the McKnights, itself also somewhat dated (1987).

The most complete Northeastern guide, and the one I most frequently turn to, is the Bessette's, but weighing in at four and a half pounds, it is likely to be carried into the field only by body builders or masochists. George Barron's Northeast guide has much to recommend it, with large color photos and easy to use keys, and at just a bit over one pound, you can cram it into a backpack. The Peterson series guide by the McKnights like the Audubon's, rewards flipping through the illustrations, which are concentrated into one section, and are often more informative than photographs. It can also be fitted into a backpack, as can the Audubons.

So the book under review is the only one in its weight class. How important is this in an age of apps? After all, there are several mushroom apps, as well as internet access in the field on smartphones. For many of us however, nothing can replace the feel and convenience of a "hard copy" which never depletes its batteries or requires connectivity. And (Luddite alert!) does not require fumbling with one's thumbs.

This is entirely and completely a field guide, using only those characteristics that are immediately available to our unaided senses, so there is no reliance on microscopic data or even on spore print color, although that is not overlooked; keys are not used either. This does not permit the narrowing of possible identifications to a manageable number, so the novice collector will often be at sea when dealing with a gilled mushroom. The instructions inform us that to properly use this guide, one proceeds to the proper category (e.g., mushrooms with cap, stem and gills) and then searches the photos which are arranged by color, from light to dark. Unfortunately, this is an imperfect method, as there are unavoidable exceptions to the color arrangement. Searching would have been improved by the addition of a few simple keys, in this writer's opinion.

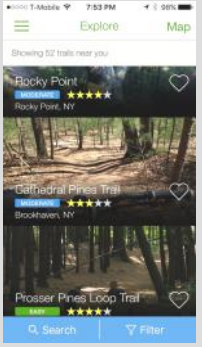
But this is not merely a picture guide. It is densely written, with as much space devoted to text as to illustrations, and will benefit close reading. Walt Sturgeon is well known nationally as a devoted field mycologist who avoids the use of microscopes, and his lifelong concentration on field marks is reflected in the wealth of detail he supplies to his readers.

One of the best features of this guide, particularly for beginners, is the section devoted to "top edibles" and "top toxics". In fact, devoted fungivores need go no further and still be rewarded with the knowledge of providing for the table and remaining toxin free.

Despite some shortcomings, this guide is to be recommended for a number of reasons: its portability, economical price, concentration on field characteristics (particularly of edible and toxic species) and its wealth of precise field details not easily available elsewhere. With its up-to-date taxonomy, it complements, rather than replaces, the prior guides mentioned above, and is a useful addition to the libraries of foragers and mycophiles.

ALLTRAILS: A NEW AND USEFUL APP

Available for both iphone and android, this free app accesses detailed trail maps (not available on Google) using the gps function on your phone to pinpoint and track your location. It is applicable throughout the USA, and automatically brings up all the trails in your immediate vicinity. To download maps for offline use, a yearly membership fee is assessed, but here on Long Island, there are few areas without connectivity.



FROM OUR MEMBERS:

CLOSE TO HOME

Jim's Wine-cap Patch.
Jim Lampert.

Earliest Honeys Ever! June 22.
Rich & Carol Capaldo.

FAR AFIELD

Favolaschia calocera. Kauai, Hawaii.
Amy Hill.

Leucoagaricus jubilaei

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over 100 µm long, up to 23 wide, ends rounded. No clamp connections. Unfortunately, several chemical reactons (gill ammonia reaction, spore to cresyl blue) were not tested as I was initially unaware of them. On drying, the entire specimen became very dark, as is reported for other species in *Leucoagaricus* section *Piloselli.*

Interestingly, Josserand in 1973 named this species *jubilaei* as the species account was to be offered for publication in the Jubilee volume of his mentor Prof. Robert Kühner, the noted French mycologist, upon his seventieth birthday. Its presence in northeast NA mirrors several closely related species in *Leucoagaricus* sec. *piloselli ,* which Vellinga recently reports as being present in both California and Italy. And it matches an existing pattern of species present both on the East Coast and Europe, e.g., *Tricholoma colossus* and *Pluteus romelllii.*

The DNA sequence was duly registered with GenBank, by Pablo Alvorado of AlvaLabs, where it is publicly available to researchers. Our collection was donated to the NYBG Herbarium. *La. jubilaei* will be added to our LI checklist and hopefully will be reencountered by others.

References:

Bon, Marcel Documents Micologues, Cle Sect Piloselli pp 62-63 (Translation by Jacques Brochard)

Checklist of the Myxomycetes, larger ascomycetes , and larger Basidiomycetes in Turkey. (http://www.mycotaxon.com/resources/checklists/sesli-v106-checklist..pdf)

Jordan (Encyclopedia of Fungi of Britain & Europe, 1995).

Josserand, M. Une Novelle Espece de Lepiote Rougissante: Lepiota ubilaei. Bull. Mens. Soc. War. Lyon #43, 1974

Kumar, T.K. Arun & Manimohan, P. A new species of Leucocoprinus from India, Mycotaxon, Oct-Dec 2004, Vol. 90 pp 393-7

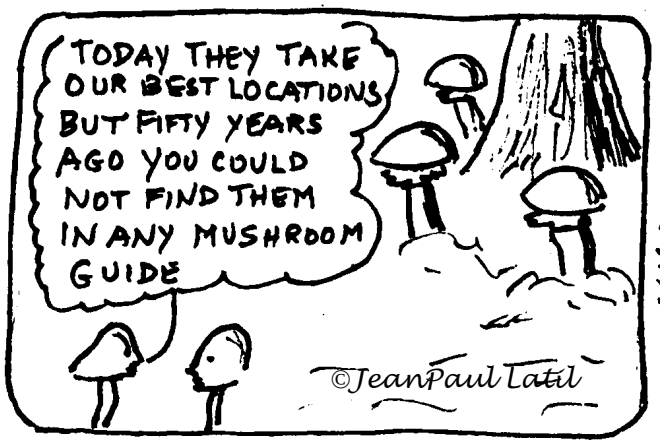
Kumar, T.K. Arun & Manimohan, P The genera *Leucoagaricus* and *Leucocoprinus (Agaricales, Basidomycota)* in Kerala State, India Mycotaxon, Vol 108, Apr-Jun 2009, pp385-428

Mushroomexpert.com Leucoagaricus brunneum

Vellinga, Else C & Davis, R M. Lepiotaceous fungi in Cal., USA –1. *Leucoagaricus amanitoides* sp. nov. Mycotaxon, Oct-Dec 2006, Vol98 ppp 197-204

Vellinga, Else C.,Contu, M. & Vizzini, A *Leucoagaricus decipiens* and *La. erythrophaeus,* a new species pair in sect. Piloselli. Mycologia, Mar-Apr 2010, vol. 102 pp. 447454

Vellinga, Else C & . Balsley, Richard B *Leucoagaricus dacrytus* a new species from New Jersey, U.S.A. Mycotaxon, July_Sept 2010, Vol. 113, pp. 73-80



IN THIS ISSUE

To find new things, take the path you took yesterday.

John Burroughs

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