KEYS

Keys:
Agaricales of California – a series of taxonomic treatments of the following genera and families: Amanita, Agaricus and Melanophyllum, marasmioid species in the Tricholomataceae, Tricholoma, Russula and Lactarius, Hygrophorus and Hygrocybe, Entoloma s.l., Cantharellaceae, Paxillaceae and Gomphidiaceae. Mad River Press.

Lists of and links to keys:
http://pmb.berkeley.edu/~bruns/pmb113/ - the class web site
http://www.mykoweb.com/systematics.html – this web site lists lots of references, including links to keys for California mushrooms and Pacific North West species.
Desjardin, D.E. A reference list for taxonomic treatments of Agarics.
http://www.mykoweb.com/misc/Agaricales_References.pdf
http://www.svims.ca/council/keys.htm – Pacific Northwest Key Council – keys to mushrooms of the Pacific Northwest

COLLECTING & DESCRIBING

Collecting:
1. Only pick good-looking specimens, preferably more than one of a species, and include the whole age range from young to full-grown. In many cases it is very hard to find a name if you have only one specimen.
2. Take care to pick the whole mushroom, use a knife or other tool to get the base of the stipe out of the soil or out of the wood.
3. Handle your mushrooms with care, don’t put big fingerprints on the stipe.
4. Transport your mushrooms with care, preferably in a box, well-padded with moss or leaves. Tackle boxes, freezer boxes, discarded cream containers etc are ideal. Big specimens may be wrapped in wax paper or aluminum foil and put in a basket. Wax paper bags can be used, but specimens get easily crushed. Do not mix species – one species per slot/box/bag!
5. Make notes in the field: where is your mushroom growing? Under which tree species, on which kind of wood? Put some leaves or needles with the collection if you cannot make notes.

Spore print:
When home, make immediately a spore print. Russulas don’t sporulate after a night in the fridge. Resupinate fungi: put a microscope slide on the fruit body, wrap everything in a wet paper towel and put it in a wax bag, with the slide underneath.
Russulas and other gilled or pored mushrooms: cut a good looking, fresh pileus off the stipe, or a wedge of a really big mushroom cap, and put it on whitepaper, aluminum foil or plastic with the lamellae facing down. Put a bit of wet filter paper on top of the pileus, and cover the mushroom with a beaker or glass. Too much water on the top is not good. Another method is to leave the mushroom as is, take a sheet of thick paper, and cut a hole in it, the size of the stipe, let the mushroom down through the hole, and put this in a glass in such a way that the base of the stipe reaches the water (like a flower). Cover this whole construction also with a glass beaker.

**Description forms:**
M.A. Castellano, J.E. Smith, T. O’Dell, E. Cázares & S. Nugent, 1999. Handbook to Strategy 1 Fungal Taxa from the Northwest Forest. -- Several forms for describing mushrooms; field tags, and a glossary. -- The form for describing gilled mushrooms is added to this hand out.
R. Fatto, G. Kibby & S. Evans, 2000. Cross-off sheets for easy recording of fungi. Field Mycology 1 (4): 126-127. Description sheets for *Russula* and *Hygrocybe*. -- These sheets are also added to this hand out.

**Drying & storage:**
Mushrooms are dried on wire mesh (like a sieve) with a constant stream of warm air. The temperature should be around 40 ºC. Big mushrooms get cut up before drying. A fruit drier works fine. A home made construction with lamps at the bottom, a frame, and sieves also works. A fan inside it is a good idea.
The specimens should be completely dry before put into plastic bags, otherwise they mould. Cardboard boxes, matchboxes etc are ideal to store mushrooms.
There are two main foes of dried specimens: mould, and beetles, especially beetle larvae which love mushrooms, and preferably devour polypores.
Keeping the temperature low, and a low relative humidity of the place where the collections are conserved, helps fighting those foes. Regular freezing kills the insect eggs & larvae, but might result in moulding of the specimens.

**Mycological Societies**
• Mycological Society of San Francisco (MSSF) – http://www.mssf.org – This is one of the two mushroom clubs in the Bay area. On the web site you can find the monthly newsletter, MycenaNews. Society meetings are every third Tuesday of the month, at the Randall Museum in San Francisco. Organizes a Fungus Fair, December 1&2 in the Oakland Museum.
• Bay Area Mycological Society (BAMS) - http://www.bayareamushrooms.org/ Organizes field trips, lectures etcetc.
• Sonoma County Mycological Association (SOMA) – http://www.somamushrooms.org/ - Based in Santa Rosa and surroundings, with monthly meetings in the Farm Bureau on the third Thursday of the month (often the same speaker as in San Francisco).
• North American Mycological Association (NAMA) – http://namyco.org/ – this nationwide amateur mycological association organizes forays in different parts of the country; bi-monthly newsletters (the Mycophile) and once a year the journal McIlvainea
• Mycological Society of America (MSA) – www.MSAfungi.org – the professional mycological society, issues bimonthly a newsletter, Inoculum and a journal Mycologia; organizes an annual meeting.
Survey and Manage Gilled Fungi Description Form

Provide notes and circle as many of the characters from grouped character sets as appropriate.

Genus/species: ___________________________ Mycology team collection number: ________________
Other collector’s number: __________________ Date: __________________
Collected by: ___________________________

Ecology:
Dominant trees and shrubs: ___________________________
Growth habit: single scattered caespitose grouped
Age of specimens: immature mature old mixed
On duff: none cone leaves needles twig litter
On soil: mineral humus
On wood: conifer hardwood Species: __________________
Other: fungus insect

General characters (write range of dimensions in mm for multiple specimens)
Color of spore print: ___________________________
Height of entire specimen: __________ Length of stem: __________
Width of cap: __________ Height of cap at center: __________
Width of stem at apex: __________ Widest width of stem: __________
Odor: mild strong pleasant unpleasant Other: __________________
Taste (don’t swallow): mild strong pleasant unpleasant peppery Other: __________________

Color (note color gradations, spots, streaks, bruising reactions, changes with age or drying)
Cap surface:
Hygrophanous (watery appearance when wet; changes color when losing moisture): N  Y
Cap flesh: ___________________________
Gills: ___________________________ Gill edge: concolorous darker lighter
Stem surface: ___________________________
Stem flesh: ___________________________

Cap characters:
Latex: N  Y  Latex color: ___________________________
Surface texture: dry greasy sticky slimy
Surface ornamentation: smooth pubescent fibrillose cracked wrinkled scaly granular warty
Shape: convex conic bell-shaped plane depressed umbilicate funnel mammilate umbonate
Other: ___________________________
Margin shape: straight uplifted recurved inrolled incurved
Contours of margin: striate even wavy irregular appendiculate Other: ___________________________
Flesh consistency: fleshy brittle spongy tough chalky Other: ___________________________
**Stem characters:**

**Stem shape:** equal ventricose tapered at apex tapered at base radicate (rooted) clavate bulbous twisted

**Other:**

**Surface texture:** viscid sticky dry polished smooth fibrillose punctate

**Surface ornamentation:** smooth pruinose (powdered at apex) scaly fibrillose tomentose

**Other:**

**Stem consistency:** cartilaginous fibrous chalky **Other:** ______

**Flesh texture:** solid stuffed hollow **Other:** ______

**Gill characters:**

**Attachment to stem:** free adnexed adnate sinuate decurrent **Other:** ______

**Edge shape:** entire scalloped wavy serrate eroded **Other:** ______

**Veil:**

Any veil or veil remnants present: N Y if yes, complete the following:

**Partial veil:** N Y **Veil color:** ______

**Veil structure:** membranous fibrillose cortina slimy

**Annulus:** N Y **General position of annulus:** apical central basal

**Annulus type:** single double **Annulus color:** ______

**Universal veil:** N Y **Volva shape:** saccate collared sheathing concentric zones

**Volva color:** ______

**Remnants present on cap:** N Y **Color of remnant:** ______

**Notes/Sketch:**