

JAR? Not Anymore!

By Andrea Ignatoff

Graphics and photos by Jeanne Peterson

Russulas get no respect. Consider the common epithet JAR (Just Another Russula), made famous in David Arora's *Mushrooms Demystified*. Oh sure, genus identification was easy: if you found a brightly colored cap on a sturdy, mid-sized mushroom; no latex; the cuticle peeled easily; and the stalk broke like chalk, it was a *Russula*. End of most identification. A few species made it to full identification, the rest condemned to anonymity as *Russula* sp.

If you really wanted to know the species, you handed the specimen to long-time club member Jeanne Peterson. She would scrutinize the specimen and pore over her key, several pages softened by years of use and enriched with lightly penciled notes.

The Presentation

But on July 9, Jeanne introduced us to the key she uses, Gertrude Burlingham's *Russula* key*, and a disciplined approach to identifying this genus. Gertrude Simmons Burlingham, Ph.D. (1872–1952) was a mycologist best known for her work on American *Russula* and *Lactarius*. She pioneered the use of microscopic spore features and iodine staining for species identification.

The Harvard Herbaria Seminar Room was packed for Jeanne's talk. You might have thought that only a talk entitled, "Ten Most Delectable Mushrooms Growing in Your Backyard," would attract such a crowd on a pleasant summer night. But the turnout testified to the curiosity about this often dismissed genus.

Using 14 specimens that were brought to the Club in the fall of 2011, Jeanne guided us through the Burlingham key. Step-by-step, Jeanne pointed out the macro characteristics she observed and compared them with the key's description. Are the gills forked? What color and texture is the pileus? What does the fungus smell and taste like? What color the spores and stipe? No, not all reddish stipes indicate *R. mariae*. These questions are appropriate for identifying any specimen, and Jeanne demonstrated that by asking the same questions of *Russulas*, amateurs can identify them to species.

Using the Key

Among Jeanne's 14 specimens was the one pictured below. This *Russula* had gills that were equal, rather than long and short, or forking; the cap was velvety, rather than glabrous, and separable from the flesh underneath. The spore deposit was yellow and the gills did not change color when bruised. Thus, it belonged to Group IV, *Subvelutinae*.



The specimen had yellow spores.

Lamellae alternating long and short.

Pileus without a pellicle.

Pileus with a pellicle more or less separable.

Lamellae dichotomously forking, narrowed at each end.

Lamellae equal or with a few scattered short ones, simple or some of them forking once.

Pileus with the pellicle glabrous at first, breaking up into areolae, squamules, or mealy particles, or velvety from the first.

Pellicle not separable; surface dry, becoming areolate or areolate-squamulose.

Pellicle separable part way to the disk.

Spores white.

Odor not characteristic.

Pileus green or brownish-ochraceous.

Pileus white or some shade of yellow or pink; margin even.

Odor usually foetid.

Pileus buff to burnt-umber; margin striate.

Spores yellow.

Lamellae remaining yellow.

Lamellae changing to brownish where bruised, or smoky to umber in drying.

Pileus glabrous.

Spores white.

Taste mild.

Wounds becoming gray or blackish.

Wounds not becoming gray or blackish.

Pileus yellow.

Pileus red.

Taste acrid.

Lamellae all equal and simple.

Pileus yellow, or white tinged with yellow.

Pileus red, red and yellow, vinaceous, violet, or white.

Lamellae partly short and some forking, chiefly near the stipe.

Pellicle separable, viscid.

Pileus ochroleucous to snuff-brown or umber; margin usually pectinate.

Pileus vinaceous.

Pellicle scarcely separable or viscid; pileus red.

Spores yellow.

Taste mild.

Wounds of lamellae becoming gray or blackish.

Wounds of lamellae not becoming gray or blackish.

Lamellae equal, simple.

Pileus yellowish.

Pileus some shade of red, or red and yellow intermingled, or gray and umber.

Spores pale-yellow.

Spores ochraceous.

Lamellae equal or nearly so, forking near the stipe at least.

Spores pale-yellow.

Pileus white or tinged with yellow or reddish.

Pileus some shade of green.

I. COMPACTAE.

X. HETEROPHYLLAE.

VIII. BIFIDAE.

II. LEPIDAE.

III. CRUSTOSAE.

VI. INSIGNES.

VII. PECTINATAE.

IV. SUBVELUTINAE.

V. ATROPURPUREAE.

XIX. DECOLORANTES.

XVII. FINGIBILES.

XXIV. PURPURINAE.

XII. OCHROLEUCAE.

XXV. FRAGILES.

VII. PECTINATAE.

XI. VINACEAE.

XIV. SANGUINEAE.

XIX. DECOLORANTES.

XVIII. LUTAE.

XXII. INTEGRAE.

XXIII. ALUTACAE.

IX. BASIFURCATAE.

XVI. GLAUCAE.

On Burlingham's key, the arrows indicate the specimen's characteristics.

Since mushrooms can develop in the shade, away from the bleaching sun, or can probably grow on different soils and with different amounts of water, cap color of the same species can vary. In the photo below, although the cap color appeared more orange than yellow, Jeanne felt that *R. flavida* was the right identification for this mushroom.



The specimen's cap, indicating *R. flavida*.

IV. SUBVELUTINAE	
Pileus some shade of red or vinous-purple.	
Taste mild.	
Surface red; the broken context not becoming sticky where handled.	21. <i>R. subvelutina</i> .
Surface vinous-purple, often intermingled with yellowish, very variable; the broken context becoming sticky where handled.	22. <i>R. Mariae</i> .
Taste soon acrid.	23. <i>R. rubriochracea</i> .
Pileus yellow	24. <i>R. flavida</i> .
Pileus violaceous; stipe white.	25. <i>R. Murrillii</i> .

The arrow points to the last characteristic, a yellow cap, indicating *R. flavida*.

Published Photos May Mislead

Jeanne projected photos of her specimens alongside photos of the same species shown in several well known mycology books. In many cases, the pileus and stipe colors varied greatly among the books and from the specimen. So beware. Consider all the evidence.

Thanks to Jeanne for preparing such a useful, educational talk. Her presentation encouraged Club members to identify *Russulas* with the same rigor as any other genus. Maybe it's time to reassign the acronym, too. JAR: Judiciously Appraised Russula?

 * Gertrude Burlingham's *Russula* key and species descriptions are part of a volume on *Agricales*. The *Russula* excerpt can be accessed from the BMC's website:

- [bostonmycologicalclub.org/Resources/Basidiomycetes/Russula Key](http://bostonmycologicalclub.org/Resources/Basidiomycetes/Russula%20Key).

The entire *Agricales* volume can be accessed in two ways:

- From the BMC's website:
bostonmycologicalclub.org/Resources/Basidiomycetes/Agaricales key
The *Russula* key is on pages 201-205 of the document. Descriptions of the *Russula* species begin on p. 205.
- <http://www.biodiversitylibrary.org/item/15416#page/205/mode/1up>