

PART IV

SUBGENUS LAETICOLORA

Subgenus Laeticolora subgen. nov.

Type species: Ramaria formosa (Pers. per Fr.) Quéf.

Basidiocarpia vulgo magna, profuse ramificantia, terrestria, coloribus vividis rubris, luteis, vel aurantiacis saepe instructis; sporae verrucis cyanophilis ornatae, rarer laeves; contextus et rhizomorphae ex hyphis uniformibus fibulatis vel efibulatis constantibus.

Fruiting bodies generally large, profusely branched, terrestrial, often brightly colored in yellow, orange and red shades, a few species cream, violaceous, or brownish, spores of most species warted, ornamentations consisting of fine to coarse, irregularly shaped, cyanophilous raised areas, in a few species spores smooth, context and rhizomorphs monomitic, hyphae with or without clamp connections.

Ramaria acrisiccensens sp. nov.

(Pl. II Fig 9, Pl. XVIII Fig. 75, 76)

Basidiocarpia terrestria 5-29 cm alta 1.5-18 cm lata, usque ad 9-plo e basi sursum ramificantia, basis simplex vel subfasciculata 1.5-9 x 1-3 cm, alba et leviter brunnescens; rami graciles et elongati, apicibus pro parte maxima rotundatis, juventute pallidioribus vel roseolis, demum concoloribus. Contextus ramorum albus colore brunneo suffusus; consistentia carnis carnosofibrosa in siccitate cretaceofriabilis. Odor speciminum vivorum leviter moschato-suaveolens vel fabaceus; sapor speciminum exsiccatorum amarus et acidus. Sporae 8-14 x 4-6µ medio numero 10.1 x 4.9µ, ellipsoideae apiculo prominenti, verruculis pusillis vel mediocribus ornatae. Basidia 40-90 x 7-13µ basi fibulis destituta. Hyphae contexti 3-24µ crassae, tenuitunicatae vel modice crassitunicatae, efibulatae, tumoribus prope septa 10-20µ crassis; hyphae gloeoplerae in stipite abundantes, 2.5-5µ crassae, tumoribus usque ad 13µ crassis.

Holotypus M-535 in Valle Amoena prope Elbe in comitato Lewis pagi washingtoniaci 11/8/66 lectus, in herbario SUCO conservatus.

Basidiocarp: Habitat--terrestrial, growing under Western Hemlock. Color--stipe of the fresh fruiting body white, superficial hyphae of the stipe and lower branches turning "brown" (6-7A4-7), branches slightly more brown than "pale yellow" or "pale orange" (4-5A2-4), terminal branches the most pallid part of the fruiting body, occasionally a very faint pinkish tint present, context brownish-white. Water-soaked specimens tending to dry dark brown, properly dried specimens almost entirely

"light yellow" (4A4), or the stipe and lower branches darker, about "leather brown" (6E6), the context a shade lighter than "grayish orange" (5A4). Taste--not distinctive or slightly acid when fresh, drying with a pronounced bitterish acid taste. Odor--faintly musty-sweet to fabaceous. Form--basidiocarps large, generally taller than wide, 5-29 x 1.5-18 cm. Stipe often deeply buried, single or subfasciculate, steeply tapered, slender, 1.5-9 x 1-3 cm, a well defined white basal tomentum usually present; mature basidiocarps with subparallel, very elongated branches, branching up to 9 times from the stipe, dichotomous, axils acute to narrowly u-shaped, branches slender, 1-12 mm diam, internodes frequently up to 3 cm long, occasionally up to 7 cm, bifid, antlered to plurinodulose near apices; apices mostly rounded. Consistency--fleshy-fibrous when fresh, drying brittle and very chalky-friable.

Macrochemical Reactions: Context of the stipe non-amyloid; no significant color reactions occurring within 30 min of application to branch sections of pyrogallol, α-naphthol, guaiac, guaiacol, phenol and aniline; weak reactions often occur with more time with any of the above reagents except phenol and aniline.

Microscopic Structures: Spores--average 10.1 x 4.9µ, range 8-14 x 4-6µ, subcylindrical to ellipsoidal with a prominent lateral apiculus, ornamented with distinct, lobed, cyanophilous warts, spores in deposit, "grayish yellow" (4-5A4-6). Hymenium--basidia clavate, 40-90 x 7-13µ, without basal clamps, inclusions cyanophilous, 1-4-sterigmate, mostly 4; sterigmata straight to slightly incurved, slightly divergent, 4-9µ long; hymenium and subhymenium combined 80-90µ thick. Subhymenial hyphae--interwoven, 2-5µ diam, lacking clamps, thin-walled. Contextual hyphae--subparallel to interwoven in the stipe, parallel in the branches, hyphal walls thin to moderately thick, 0.25-2µ, surface smooth to slightly fluted, non-inflating in the peripheral contextual regions, highly inflated nearer the center, 3-24µ diam, ampulliform swellings near septa 10-20µ diam, walls of the vesicles moderately to conspicuously ornamented; clamps absent; gleoplerous hyphae abundant in the stipe, less common in the branches, localized bulbous regions enlarging up to 13µ diam, except for these areas diam 2.5-5µ.

Collections Examined:

Number	Location	Date
*M-535,		
Holotype	Pleasant Valley, about 5 mi S of Elbe, Wash., Lewis Co	11/8/66
M-192	Lk Creek Trail, Olympic Nat Park, Clallam Co	10/3/65
M-245	Silver Springs, about 30 mi SE of Enumclaw, Wash., Pierce Co	10/10/65
M-262	Sulfur Creek, Glacier Peak Wilderness Area, Snohomish Co	10/17/65
M-267	"	10/17/65
M-391	Goldmeyer Hot Spring Trail, 19 mi E of N. Bend, Wash., King Co	10/4/66

Number	Location	Date
M-448	Tahoma Creek Area, Pierce Co	10/9/66
M-666	Sulfur Creek, Snohomish Co	10/10/67
M-714	Ipsut Creek Area, Mt Rainier Nat Park, Pierce Co	10/14/67
M-745	Pleasant Valley, Lewis Co	10/24/67
M-897	Jedediah Smith Redwoods State Park, Del Norte Co, Calif.	11/13/67

Discussion: When the alliance to which R. acrisiccescens belongs is fully studied, it may become apparent that R. spinulosa (Pers. per Fr.) Quél. is closely related. Fries (1821) describes C. spinulosa as being somewhat cinnamon in color, with a thick stipe, and having elongated, crowded, straight branches. His concept is further clarified by a watercolor painting approved by him and now kept at the Riksmuseum at Stockholm. (I am indebted to Dr. R. H. Petersen for providing me with a 35 mm slide of that painting: Marr). A specimen in the NCU herbarium (Oct 1902; Sopramento, Italy), collected and determined by Bresadola to be C. spinulosa Pers., is very similar microscopically to R. acrisiccescens, but as Coker (1923: 134) points out, Bresadola is not consistent in his determinations of this species. The difficulty in locating a suitable specimen on which to base the epithet R. spinulosa is mentioned by Corner (1970), and the proper placement of R. acrisiccescens with respect to R. spinulosa awaits further study.

Ramaria acrisiccescens is closely allied with several other species. Ramaria subspinulosa (Coker) Corner has the same habit of elongated, crowded, straight branches, and the bitter taste of dried specimens. Unlike R. acrisiccescens, R. subspinulosa occurs in a deciduous forest, the branches are darker brown, the base more bulbous, the consistency of dried specimens softer, and the spores slightly smaller and more finely warted. Judging from descriptions, R. mairei Donk, R. flaviceps Corner et avet. al., and R. perbrunnea Corner & Thind are other species that should be compared with R. acrisiccescens in order to ascertain whether or not they also come within the R. subspinulosa complex of species. Clavaria densa Peck seems intermediate between the R. subspinulosa and the R. flava alliances. Clavaria densa has the fruiting body habit, bitter taste, chalky-friable consistency of dried specimens of R. acrisiccescens, but differs significantly in several ways. Marr has collected C. densa from Oneonta, N.Y. (M1292, 2102, 2385) and the branches of young specimens are "pale yellow" (3A4), entirely lacking the pinkish tint sometimes occurring in the terminal branches of R. acrisiccescens. The spores of C. densa are on the average longer, narrower, and more coarsely ornamented, approaching those of R. flava var. subtilis (Coker) Corner.

The outstanding characteristics that unite the species of the R. subspinulosa complex are: (1) the pallid, yellowish, brownish fruiting bodies, sometimes with

flushes of pink to lavender near the apices, (2) the elongate, parallel ascending branches, (3) the distinct bitterish-acid taste of fresh and dried specimens, (4) the chalky-friable consistency of properly dried specimens (similar to that of R. formosa), (5) the absence of clamp connections, (6) wide spores, average 4.5-5.5 μ , with fine to moderately coarse ornamentation, and (7) the generally negative macrochemical tests (known only for R. acrisiccescens). The complex most definitely intergrades with the R. flava complex.

In the field R. acrisiccescens is most apt to be confused with R. velocimutans. The presence or absence of clamp connections decisively separates the two species.

Ramaria amyloidea sp. nov.

(Pl. II Fig. 10)

Basidiocarpia terrestria, 7-13 cm alta 7-15 cm crassa, basi alba hyphis superficialibus brunneis disperse tecta, ramis pallide aurantiacis leviter rubellis suffusis, inconspicue violaceo-griseis ubi contusis, apicibus laviter magis luteis, concoloribus vel fuscantibus, consistentia carnosio-fibrosa siccitate indurata fragilis. Stipes simplex 2-6.5 x 2-4.5 cm, usque ad octiens e basi ramosus, rami inferiores interdum connati, contextu zonam distinguendum brunneam praebenti, specimenibus vivis amyloideus, solutione ferri sulphate statim veneto. Sporae 7-10 x 3-4 μ pro parte maxima 8.9 x 3.6 μ , leviter verruculosae vel leves. Basidia 47-82 x 7-10 μ contentibus cyanophilis, basi fibuligeris. Hyphae contexti 4-19 crassae, stipite crassitunicatae pariete usque ad 0.25-1.2(2) μ crassis, cellulis nonnullis prope septum vesiculatis 8-22 μ crassis, fibulis abundantibus, hyphae gloeoperae infrequentes 3.5-4(-9) μ crassae.

Holotypus M-717 in comitato Kittitas pagi washingtoniaci prope lacum Kachess 10/15/67 lectus, in herbario SUCO conservatus.

Basidiocarp: Habitat--terrestrial, growing under Western Hemlocks or Amabilis Firs. Color--stipe of fresh fruiting body white to "orange white" (5A2) with subareolate regions of "brown" (7E,F5) superficial hyphae, in mature and older basidiocarps the stipe almost entirely brown, branches "light orange" (5-6A4) with a tinge of "pastel red" (7A4), occasionally with small "violet gray" (18C2) bruised spots, apices concolorous, slightly more yellow or darkening, a distinctive contextual band of pale "camel brown" (6D4) hyphae visible in the basal region of a radially section stipe, white above, context of the branches subconcolorous or paler and slightly more reddish. Stipe of dried specimens "yellowish white" (4A2) with "dark brown" (7F5) superficial areas, branches a shade browner than "pale yellow" (4A3), apices concolorous or darkening, context of the stipe similar to that of fresh material, context of the branches "yellowish white" (4A2). Taste--not distinctive. Odor--slightly sweet. Form--basidiocarps mostly of medium size, broad, 7-13 x 7-15 cm. Stipe single, conical to cylindrical, stout, 2-6.5 x 2-4.5

PLATE II

Species of Subgenus Laeticolora

Camera Lucida Drawings of Spores, Standard Line = 10 μ

Figure	Collection
7. <u>R. araiospora</u> var. <u>araiospora</u>	M-739 (Type)
8. <u>R. araiospora</u> var. <u>rubella</u>	M-741 (Type)
9. <u>R. acrisiccesens</u>	M-535 (Type)
10. <u>R. amyloidea</u>	M-717 (Type)
11. <u>R. aurantiisiccesens</u>	M-749 (Type)
12. <u>R. cartilaginea</u>	M-247 (Type)



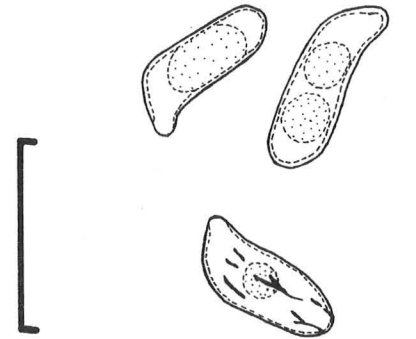
7



8



9



10



11



12

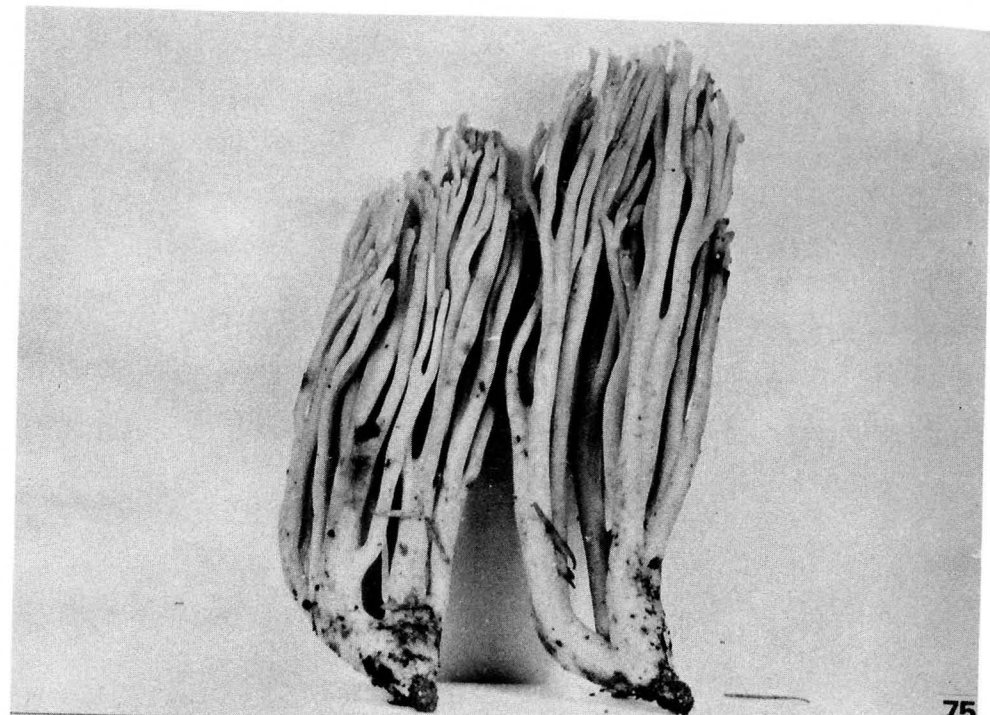
PLATE XVIII

Species of Subgenus Laeticolora

Figure Collection

75. R. acrisiccescens

Fruiting bodies 5-29 cm tall x 1.5-18 cm broad M-267



76. R. acrisiccescens

Fruiting bodies 5-29 cm tall x 1.5-18 cm broad M-262

