

Basidiocarpia terrestria, vulgo gracilia, 5-10 cm alta 3-7 cm crassa, basi alba vel pallide lutea, prope terram clariore lutea, ramis et apicibus laete aurantiacis, speciminibus nonnullis areis pusillis griseiviolaceis ubi contusis; stipes simplex vel subfasciculatus 0.5-4.0 x 0.5-2.0 cm, usque ad sextuplo e basi sursum ramificans. Consistentia carnis friabilis, carnosio-fibrosa, in siccitate leviter cretaceo-friabilis. Contextus stipitis vulgo tinctura guaiaci adfectus. Sporae 6.5-9 x 3.5-4.5 μ , numero medio 8.1 x 3.9 μ , verrucosae. Basidia 40-70 x 6-11 μ basi fibulata. Hyphae contexti 4-18 μ crassae, tenuitunicatae, stipite leviter agglutinatae, cellulis nonnullis prope septum vesiculatis 7-15 μ crassis, fibulis abundantibus; hyphae gleoeperae abundantes 3-7(-12) μ crassae.

Holotypus M-804 in Valle Amoena prope Elbe in comitato Lewis pagi washingtoniaci 10/26/67 lectus, in herbario SUCO conservatus.

Basidiocarp: Habitat--terrestrial, growing under Western Hemlock and Douglas Fir. Color--underground portion of the fresh fruiting body white to "pale yellow" (4A3), brighter yellow near the emergence from the substratum, branches and apices "deep orange" (5-6A7-8), faint and small "violet gray" (17-19C3) bruised spots sometimes present, context subconcolorous with surface. Dried specimens mostly "grayish orange" (5B4-6) or a shade paler, the tomentum-covered areas of the stipe whitish, and occasionally the apices retaining a "copper red" (7C8) tinge, the context off-white or near "golden yellow" (5B7) where exposed during drying. Taste--not distinctive. Odor--slightly fabaceous, or not distinctive. Form--basidiocarps mostly small to medium in size, slender, 5-10 x 3-7 cm. Stipe single or subfasciculate, conical, surface smooth, lower regions covered with a thin white tomentum, 0.5-4 x 0.5-2 cm; branching up to 6 times from the stipe, nodes polychotomous or mostly dichotomous above, axils acute and branches subparallel, internodes elongated especially in the middle and lower branches, 3.5 cm about the max length, branches slender, most 0.2-1.5 cm diam, forked to finely divided near the apices; apices acute or subacute. Consistency--brittle fleshy-fibrous, sometimes a small area of the stipe slightly gelatinous, drying brittle and slightly chalky-friable.

Macrochemical Reactions: Context of the stipe non-amyloid; no significant color changes usually occurring within 30 min of application to branch sections of pyrogallol, α -naphthol, guaiac, guaiacol, phenol and aniline; direct application of guaiac to the base is usually positive.

Microscopic Structures: Spores--average 8.1 x 3.9 μ , range 6.5-9 x 3.5-4.5 μ , subcylindrical to ellipsoidal, ornamented with numerous, papillate, cyanophilous warts, spores in deposit between "grayish yellow and grayish orange" (4-5B6). Hymenium--basidia clavate, 40-70 x 6-11 μ , basally clamped, 1-4-sterigmate; sterigmata 3-7 μ long, straight or slightly incurved, erect or slightly divergent; hymenium approx 60 μ thick and the subhymenium 25 μ thick. Subhymenial hyphae--loosely inter-

Ramaria sandaracina sp. nov.

var. sandaracina

woven, 2-4 μ diam, clamps frequently of the keyhole type, thin-walled. Contextual hyphae--outer parallel hyphae of the stipe collapsing into a densely stratified layer, context becoming more loosely organized inward, hyphae agglutinated in places. Context subparallel in the branches, slightly to highly inflated, 4-18 μ diam, walls mostly smooth and glassy, sometimes slightly fluted, moderately cyanophilous, thin-walled, ampulliform inflations near septa 7-15 μ diam, walls nearly smooth in the branches, distinctly ornamented in the stipe; clamps abundant, often of the keyhole type, the clamp cell occasionally enlarged; gleoplerous hyphae especially abundant in the stipe, localized bulbous regions enlarged up to 12 μ diam, otherwise diam 3-7 μ .

Collections Examined:

Number	Location	Date
*M-804, Holotype	Pleasant Valley, Lewis Co	
M-186	Lake Creek Trail, Olympic Nat Park, Clallam Co	10/26/67
M-209	Pleasant Valley, about 5 mi from Elbe, Wash., Lewis Co	10/3/65
M-213	"	10/10/65
M-237	Longmire, Mt Rainier Nat Park, Pierce Co	10/10/65
M-494	Sylvia State Park, Montesano, Wash., Grays Harbor Co	10/10/65
M-831	Sylvia State Park, Grays Harbor Co	10/23/66
M-900	Smith State Park, near Crescent City, Calif.	10/30/67
		11/13/67

Discussion: *Ramaria sandaracina* is distinct by its possession of: (1) small spores, average 8.3 x 4 μ , (2) clamped hyphae, (3) deep orange to light orange basidiocarps, (4) a context reacting negatively with most macrochemical tests, (5) grayish violet bruising reaction, and (6) a tendency for gelatinizing. The characteristics of this species parallel to a considerable extent those of the clampless species *R. gelatiniaurantia*. Both species probably belong to the *R. ignicolor* complex. Variety *sandaracina* differs from *R. flavobrunnescens* var. *auraea* by its more intensely orange fruiting bodies, wider and more ellipsoidal spores, and brittle fleshy-fibrous consistency. Variety *chondrobasis* resembles *R. largentii* in fruiting body color and massive form, but is clearly distinct by its smaller and more finely ornamented spores and subgelatinous base. Variety *euosma* resembles *R. subgelatinosa* in color and consistency, but differs from that species in its bruising reaction and spores of narrower diameter.

var. *chondrobasis* var. nov.

(Pl. VII Fig. 41, Pl. XXIX Fig. 98)

A varietate *sandaracina* forma et consistentia differt. Basidiocarpia lata 8-15 x 6-13 cm, basi ex fasciculo ramorum primordialibus constanti, subgelatinosa; hyphae contexti gelatinantes.

Holotypus M-848 prope Verlot in comitato Snohomish pagi washingtoniaci 11/4/67 lectus, in herbario SUCO conservatus.

Basidiocarp: Differs from var. *sandaracina* in form and consistency. Form--basidiocarps 8-15 x 6-13 cm. Branching from a connate, subgelatinous basal mass, commonly producing small, light-colored primordial branches; fruiting body consisting of numerous branches compactly arranged in a generally broad basidiocarp, upper nodes frequently dichotomous, internodes of mature specimens elongated, max about 4 cm long, axils acute and branches slightly divergent, mostly slender 1-7 mm diam, mostly forked near the apices; apices subacute. Consistency--subgelatinous, especially so in the base, drying brittle and slightly chalky-friable.

Macrochemical Reactions: Similar to those of var. *sandaracina*.

Microscopic Structures: Spores--average 8.3 x 4 μ , range 7-10 x 3.5-5 μ ; hyphae of the stipe and sometimes in the branches definitely gelatinizing. Other microscopic structures similar to var. *sandaracina*.

Collections Examined:

Number	Location	Date
*M-848, Holotype	Verlot, Wash., Snohomish Co	11/4/67
M-440	Tahoma Creek Area, Mt Rainier Nat Park	10/9/66
M-514	Mason Lake Area, near Shelton, Wash., Mason Co	11/1/66

Discussion: Variety *chondrobasis* differs from var. *sandaracina* principally by being more gelatinous in consistency and having a larger, broader basidiocarp without a distinct single or subfasciculate smooth base. It is very similar in appearance to the clampless *R. gelatiniaurantia* var. *gelatiniaurantia*, and the clamped species, *R. largentii*.

var. *euosma* var. nov.

(Pl. VII Fig. 42)

A varietate *sandaracina* forma, colore, et odore differt. Basidiocarpia lata 8 x 9 cm, suaveolentia, ramis pallide aurantiacis sordide violaceis ubi contusis, apicibus dilute luteis; hyphae gloeoperae infrequentes, graciles, 2.5-3 μ crassae.

Holotypus M-483 secus rivum Ipsut in territorio conservato montis Rainier in comitato Pierce pagi washingtoniaci 10/19/66 lectus, in herbario SUCO conservatus.

Basidiocarp: Habitat--terrestrial, growing under Western Hemlock. Color--

underground portion of the fresh fruiting body white, lower branches basally "light yellow" (4A4) shading upwards into "pale orange" (6A3), branches bruising "dull violet" (17C,E3-4), apices "light yellow" (3A4), context translucent, subconcolorous. Taste--not distinctive. Odor--sweet. Form--basidiocarps broad, 8 x 9 cm. Base compound; basal branches up to 2 cm diam, more slender and slightly flattened above, mostly 1-5 mm diam, polychotomous or dichotomous; axils narrowly u-shaped, internodes moderately elongated, about 2 cm long or less, multifid near apices; apices acute. Consistency--subgelatinous, rubbery when fresh, drying brittle and slightly chalky-friable.

Macrochemical Reactions: Branch sections reacting with phenol, otherwise similar to var. sandaracina.

Microscopic Structures: Spores--average $8.6 \times 3.8\mu$, range $7-10 \times 3.5-4\mu$, subcylindrical with a slight suprahilar depression and dorsal convexity, ornamented with small cyanophilous warts. Hymenium--hymenium and subhymenium combined about 70μ thick. Contextual hyphae--hyphae of the tomentum narrow, $3-3.5\mu$ diam, context of the stipe compactly interwoven, parallel in the branches, cells non-inflated to highly inflated, $7-20\mu$ diam, walls smooth, gelatinizing in the stipe, smooth to fluted in the branches, moderately cyanophilous, thin to moderately thick-walled, $0.25-1.5\mu$, vesiculation of hyphal cells near septa rare, about 12μ diam, walls nearly smooth; clamps abundant, frequently of the closed type; gleoplerous hyphae rare, slender, mostly $2.5-3\mu$ diam.

Collections Examined:

<u>Number</u>	<u>Location</u>	<u>Date</u>
*M-483, Holotype	Ipsut Creek Area, Mt Rainier Nat Park, Pierce Co	10/19/66

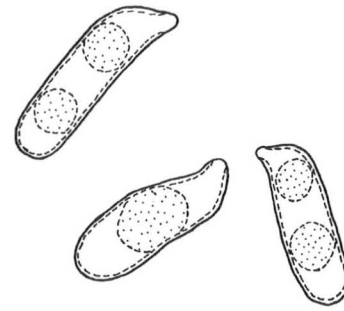
Discussion: Variety euosma differs from var. sandaracina by having yellow apices, broader more profusely branched basidiocarps, sweet odor, fewer and narrower gleoplerous hyphae. It resembles somewhat the clampless R. gelatiniaurantia var. violeitingens.

PLATE VII

Species of Subgenus Laeticolora

Camera Lucida Drawings of Spores, Standard Line = 10 μ

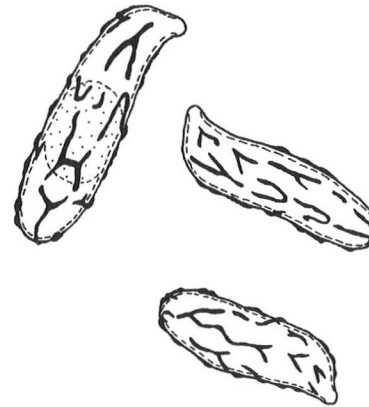
Figure	Collection
37. <u>R. magnipes</u>	M-583 (Type)
38. <u>R. rubiginosa</u>	M-746
39. <u>R. rubribrunnescens</u>	M-844 (Type)
40. <u>R. rubricarnata</u>	M-800 (Type)
41. <u>R. sandaracina</u> var. <u>chondrobasis</u>	M-848 (Type)
42. <u>R. sandaracina</u> var. <u>euosma</u>	M-483 (Type)



37



38



39



40



41



42

PLATE XXIX

Species of Subgenus Laeticolora

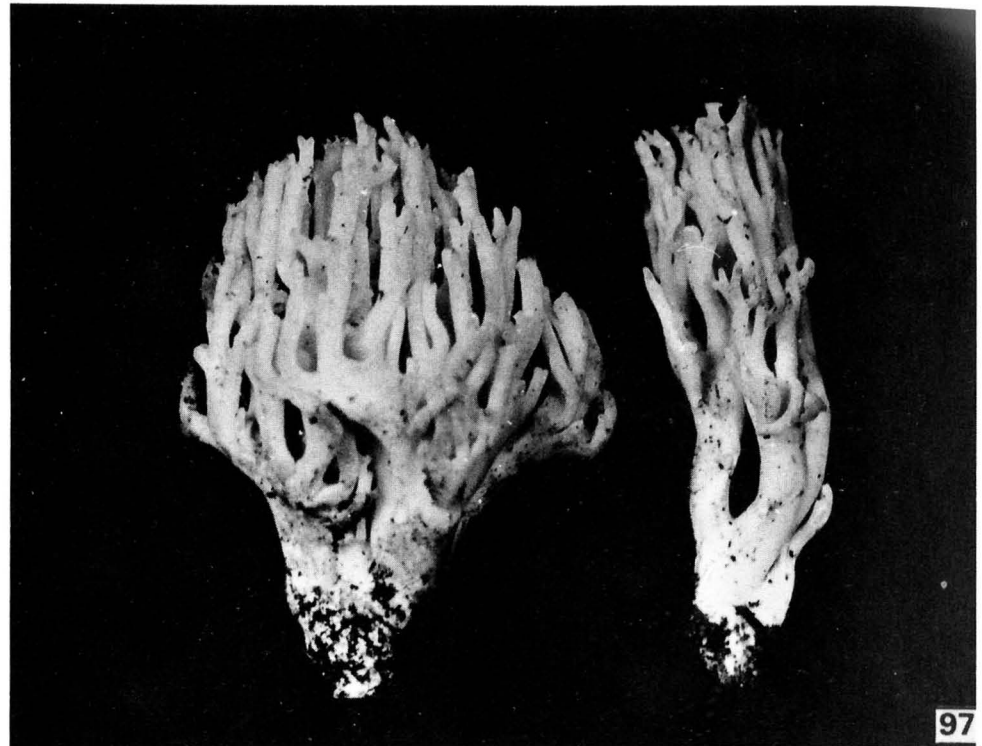
Figure

Collection

97. R. sandaracina var. sandaracina

Fruiting bodies 5-10 cm tall x 3-7 cm broad

M-209



98. R. sandaracina var. chondrobasis

Fruiting bodies 8-15 cm tall x 6-13 cm broad

M-440

