Ramaria gelatinosa (Coker) Corner, *Ann. Bot. Mem.*1: 593 (1950)
var. **oregonensis** Marr & D.E.Stuntz, Biblioth. Mycol. 38:95 (1973) A.M.Young, Apr. 2014

Preliminary notes: Until June 2006, only a single record of this taxon was previously known for Australia (*Notes Roy. Bot. Gdn. Edinburgh* 46(1): 147, 1989). If the information in the 1989 paper is correct, Petersen collected material of this species in 1977 from Mt Wilson in Victoria but the TENN herbarium label states it was found at Kinglake, Victoria in 1987 and there is reason to suspect the record in the 1989 paper may be incorrect with respect to location, date and collectors. Petersen then sent all of the Victorian specimen to Herbarium TENN in the USA so that no part of the original material (to provide an Australian reference collection) was deposited in MEL - an action this author believes is totally inappropriate and thoroughly reprehensible for a species newly found to be present in Victoria.

The collection description in the 1989 paper contains no illustrations of either the specimen or its microdetails however the relevant TENN material has been seen by this author and its microdata agrees very closely with the published information. The lack of any illustrations in the 1989 publication increases the difficulty during any attempt to show that a later collection is the same species as that collected in Victoria in 1977/1987. Because the Australian taxon is considered to be the same as that found in the USA, an additional image of this species as known from North America has been provided. There are some differences in colour and morphology between the American images and the Australian images, but the author cautions that fruiting bodies of species of *Ramaria* can be notoriously variable depending upon their age and habitat. The description below is largely based on the Gibraltar Range (NSW) collection and it is stressed that the author believes that this NSW collection is a late mature stage specimen.. Colour references are to the chips in the Colour Identification Chart produced by the Royal Botanic Garden Edinburgh (1969).

Description

Fruiting body – 7.5 cm high and 3.5 – 8.0 cm diam., very compact, arising from a short fused base; *apices* near luteous (8G), dry, single to more or less cristate but very variable with the ultimate end always rounded but the entire apex either broadly or acutely tapered, small apices may emerge at random on the ultimate or penultimate branches producing a 'thorny' effect; *branches* stout, 2 –6 mm thick, at first spreading horizontally from the fused base then rising vertically in a tangled, densely compact mass, largely fulvous (12) but probably yellow to orange before being overlain with the brown spores, mostly smooth but there may be indistinct wrinkles on the surface of the upper branches; *axils* round to narrowly round; *stipe* – 2 cm high and –2.5 cm. diam., white at the very base then becoming light brown (9H) to sienna (11), smooth, sinuous but occasionally broadly flattened and compressed, composed of a fasciculate bundle of lower branch sections, often with numerous spine-like projections; aborted branches present and often resembling dendritic outgrowths. *Rhizomorphs* present and often thick (– 1.5 mm diam.) Colour changes absent. *Flesh* fulvous (12) and gelatinous in stem and branch bases. *Odour* soapy. *Taste*: nil.

Macrochemical reactions: According to Petersen & Watling, a drop of 10% solution of either KOH or NaOH produces a "ruddy" discoloration but this could not be seen in the Gibraltar Range collection.

Basidiospores 8.3–11.5 × 5.0–6.1 µm, mean 9.4 × 5.7µm, Q: 1.4–1.9, mean Q: 1.66, broadly ellipsoid to (rarely) subglobose (may be immature spores), frequently uniguttulate, hilar appendix prominent, profile finely to moderately rough; ornamentation of many randomly scattered small warts; *basidia* 60–94 × 8.4–12 µm, mean 79.2 × 10.7 µm, 4-spored with scattered 2-spored basidia frequent, basal clamps present; *sterigmata* –7 µm, distinctly long conical, often a little curved; *branch trama* monomitic, composed of thin-walled, septate hyphae 4–7 µm diam., clamps present, ampulliform septa –11 µm diam. and exhibiting stalactitic ornamentation, gleoplerous hyphae not observed, otherwise normal diameter hyphae may exhibit thickened walls which are also 'gnarled' and irregular in outline; *stipe trama* similar to branch trama but with abundant gelatinised deposits.

Habit: clustered, gregarious or solitary on soil amongst deep leaf litter. *Habitat*: in eucalypt forest; this collection from NSW occurred on sandy, granite based soils.

Known Distribution: NSW, Vic.

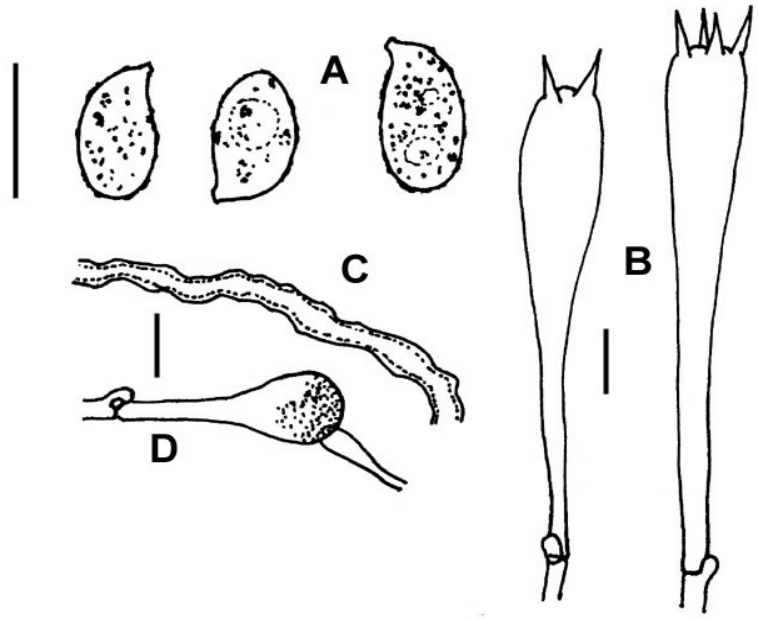
Notes: *Ramaria gelatinosa* var. *oregonensis* has yellow to orange colours (which may also be overlain with brown tones as the fruiting body matures) and its hyphal walls in the gelatinised areas remain intact rather than disintegrating as they do in var. *gelatinosa*. The species is very easily recognised by its very tightly clustered habit and the gelatinised stipe and branch bases in cross-section. In his book on the Pacific North West species, Ron Exeter (as co-author with Lorellei Norvell and Efrén Cázares) says that the fungus is "densely branched and crowded" and this is certainly the case for the Gibraltar Range collection.

Petersen & Watling suggested in 1989 that this species may have been introduced to Australia however the collection made by the authors (over 1000 km from the 1977/87 site) in almost undisturbed eucalypt forest in the Gibraltar Range National Park in New South Wales suggests otherwise and it is very possible that *Ramaria gelatinosa* var. *oregonenis* may simply be a widely distributed but rarely collected Australian taxon. There is mounting evidence that a cluster of at least six North American taxa within genus *Ramaria* does occur naturally in Australia, and this in turn poses many unanswered questions as to why this disjoint distribution should occur.

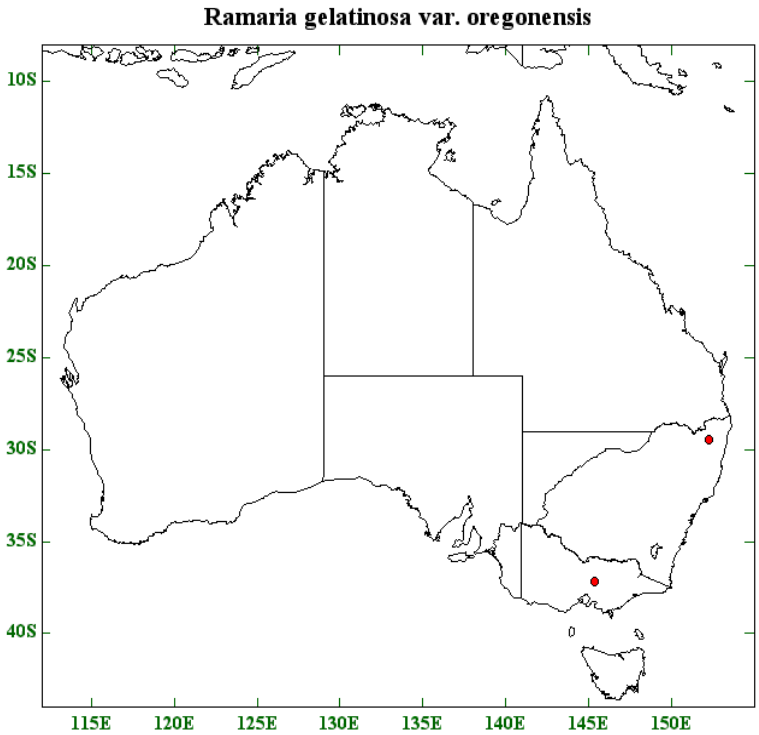
Ramaria gelatinosa var. *oregonensis*, a mature fruiting body from the Gibraltar Range National Park, NSW. The rhizomorphs and fasciculate false stipe are clearly displayed. Unfortunately, no cross section of this fruiting body was made, however the aggregation of individual stipes would produce the same cross section as shown in the image of a USA specimen further down this page.

Ramaria gelatinosa var. *oregonensis*, mature fruiting bodies from the Gibraltar Range National Park, NSW. An *in situ* image displaying the normal growth habit. © A.M.Young.

Ramaria gelatinosa var. *oregonensis*. An early maturity collection from North America. The fused "false stipe" made up of a number of individual stipes can be seen clearly in the cross section. Exeter et al. indicate that the species is at first light orange, but becomes "agate brown" with age and only the lower branches retain any of the original colour. The apical and branch colours above are very close to those shown on the upper branches of the left hand specimen of the Gibraltar Range collection shown above. © R. Exeter.



Ramaria gelatinosa var. *oregonensis*, microdata. A. basidiospores; B. basidia showing clamp connections; C. gnarled hyphae; D. ampulliform septum. Each scale bar = 10µm. © A.M.Young.



Ramaria gelatinosa var. *oregonensis*. Known Australian distribution.

Acknowledgements

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