

## New species or interesting records of foliicolous lichens VII. *Calenia flava* (Ostropales: Gomphillaceae)

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**Abstract:** *Calenia flava* spec. nova from Papua New Guinea is described and illustrated. The new species is closely related to *C. phyllogena* but differs in the larger apothecia with yellow disc and the abundance of sterile thallus hairs.

### INTRODUCTION

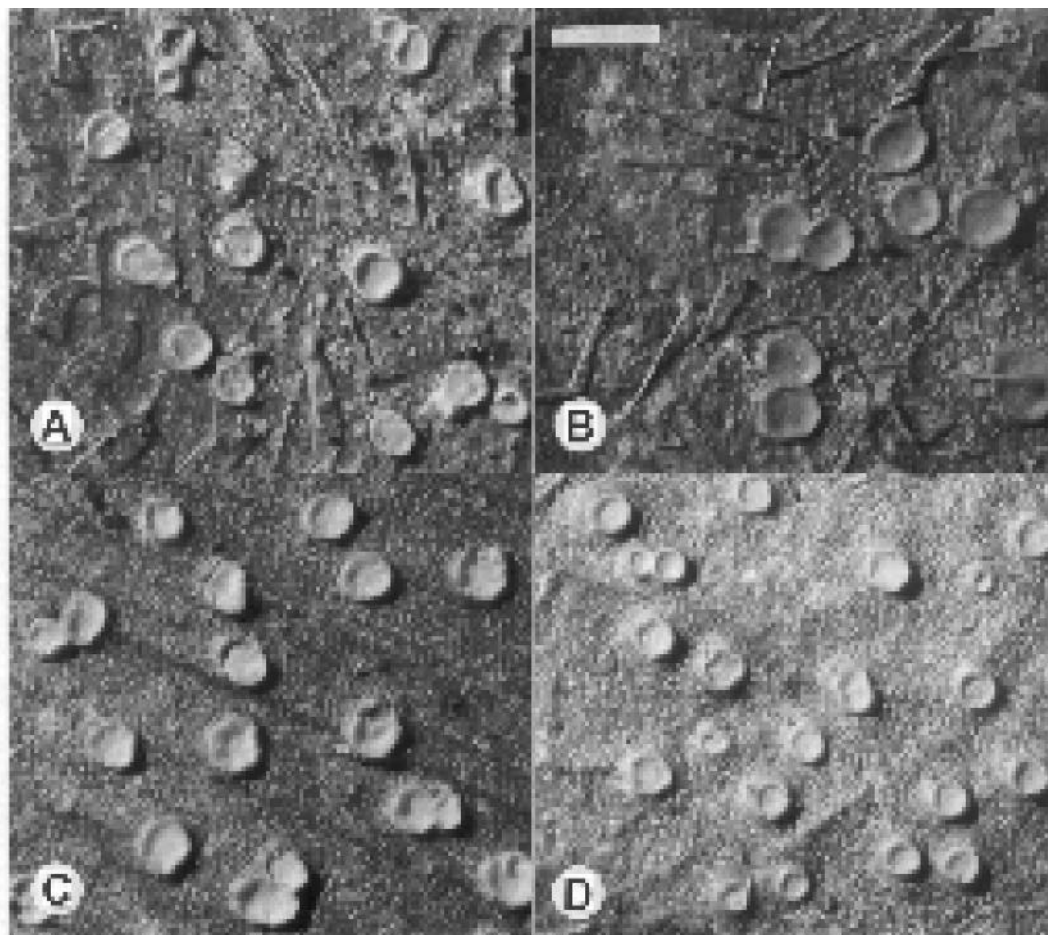
Species of the lichen family Gomphillaceae grow on a wide array of substrata but are most diverse on living leaves (Vezda & Poelt 1987; Lücking 1997). Almost every collection yields new taxa of Gomphillaceae. The genus *Gyalideopsis*, established nearly 30 years ago with four species (Vezda 1972), now includes more than 70 taxa. The only genuine *Gyalectidium* in the monograph of Santesson (1952) was the type *G. filicinum*, but presently the genus comprises no less than 29 species (Ferraro *et al.*, in prep.). A similar trend is found in *Calenia*, in which 12 taxa were described in the last years (Sérusiaux 1978; Vezda 1979; Hartmann 1996; Lücking 1997).

This paper deals with a new species of *Calenia* from Papua New Guinea, belonging to the core group of the genus and related to *C. phyllogena* (Müll. Arg.) R. Sant.

***Calenia flava*** Lücking, Sérus. & Sipman spec. nova (Fig. 1-2)

*Calenia phyllogena* thallo setis albis et apotheciis maioribus discis flavis differt.

Typus: Papua New Guinea. Madang: Balek Wildlife Reserve, 15 km of Madang along road to Lae, 5° 18' S, 145° 43' E, 20 m, lowland rain forest, VII. 1992, Sérusiaux 13555-51 (LG, holotypus; isotypi to be distributed in Lücking: LICHENES FOLIICOLI EXSICCATI).



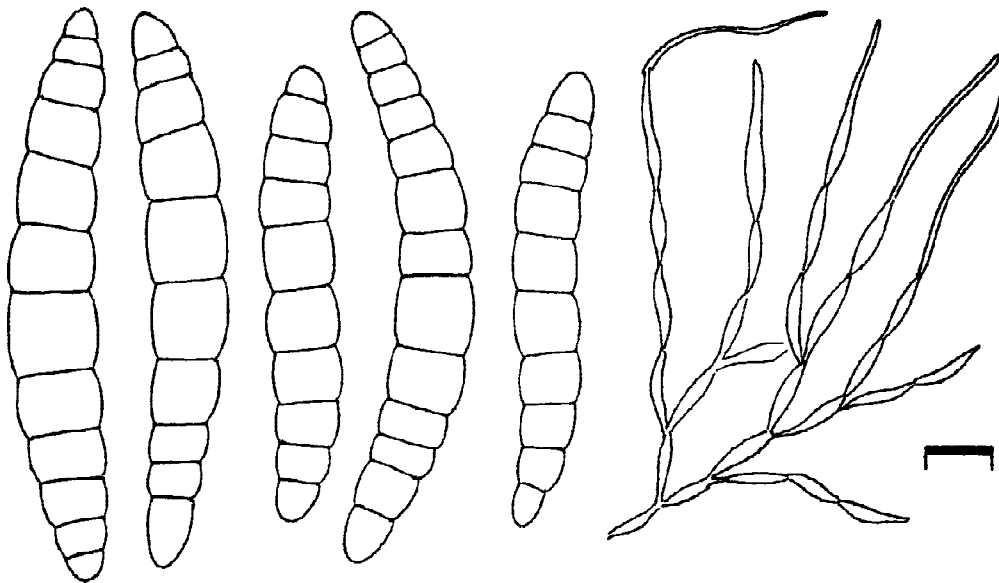
**Figure 1.** (A)-(B) *Calenia flava* (A: an isotype; B: Sipman 24282), thalli with sterile setae and apothecia. (C)-(D) *C. phyllogena* (C: from the type locality; D: from Costa Rica), thalli with apothecia. Scale = 1 mm.

**Description:** Thallus epiphyllous, continuous, 5-15 mm across, finely verrucose, pale greenish grey, verrucae whitish, encrusted with calcium oxalate crystals and densely furnished with sterile setae; setae whitish, 1.5-2.0 mm long, basally 35-50  $\mu\text{m}$  broad. Phycobiont a species of Chlorococcaceae, cells 5-8  $\mu\text{m}$  diam.

Apothecia immersed-erumpent but comparatively low, rounded to slightly irregular in outline, 0.4-0.8 mm diam.; disc yellow to orange yellow; margin thin but distinct, prominent, whitish. Proper excipulum reduced, 5-7  $\mu\text{m}$  broad, colourless, externally covered by a 20-30  $\mu\text{m}$  thick thalline layer with abundant algal cells; epitecium yellowish; hypothecium

8-15  $\mu\text{m}$  high, colourless to pale yellowish; hymenium 70-90  $\mu\text{m}$  high, colourless. Paraphyses 0.5-0.7  $\mu\text{m}$  thick, richly branched and anastomosing; asci ellipsoid-ovate, 60-80  $\times$  20-30  $\mu\text{m}$ . Ascospores 2-4 per ascus, vermiform, 9-13-septate, colourless, 60-85  $\times$  9-13  $\mu\text{m}$ .

Hyphophores abundant, formed laminally on the thallus surface between the sterile setae, acute, 0.3-0.5 mm long and basally 25-45  $\mu\text{m}$  broad, whitish. Diahyphae produced in a subapical, drop-shaped bunch, branched throughout, constricted at the septa; single segments fusiform, 7-15  $\times$  2.5-3.0  $\mu\text{m}$ ; final segments elongate-fusiform (15-20  $\mu\text{m}$ ) to bacillar-filiform and then 0.07-0.1  $\mu\text{m}$  broad.



**Figure 2.** (A) *Calenia flava*, asci and ascospores. (B) Diahyphae. Scale = 10 µm.

**Notes:** *Calenia flava* is a very conspicuous taxon due to the densely setose thallus and the large apothecia with yellow disc. The yellow colour is best observed in freshly collected specimens but eventually disappears in old herbarium material.

At first, we believed the rich material to represent an aberrant form of *Calenia phyllogena*, but the latter occurs abundantly at the same locality (to be distributed in Lücking: LICHENES FOLIICOLI EXSICCATI) and shows a number of differences shared by other collections of this species: sterile setae are usually absent or at least rare, the apothecia are smaller (0.3-0.6 mm) and higher, and the apothecial disc is pale yellowish grey to almost whitish. Furthermore, the ascospores are smaller on an average (up to 65 µm long).

With its large, low apothecia with yellow disc, *Calenia flava* also resembles *C. graphidea* Vain., but the latter has a less prominent, strongly irregular apothecial margin and much smaller, 5-7-septate ascospores.

*Calenia flava* has the same hyphophore type as the core group of *Calenia*, further including *C. depressa* Müll. Arg., *C. dictyospora* Lücking, *C. graphidea* Vain., *C. leptocarpa*

Vain., *C. phyllogena* (Müll. Arg.) R. Sant., and *C. thelotremella* Vain.

**Additional specimens examined:** Papua New Guinea. Madang: Balek Wildlife Reserve, 15 km of Madang along road to Lae, 5° 18' S, 145° 43' E, 20 m, lowland rain forest, III. 1987, Sipman 24282 (to be distributed in Lücking: LICHENES FOLIICOLI EXSICCATI).

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