

## *RAMALINA MAHONEYI*, A NEW CORTICOLOUS LICHEN FROM A WESTERN GUATEMALAN CLOUD FOREST

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**Abstract:** *Ramalina mahoneyi* Quedensley & Véliz, is described from Pico Zunil in Guatemala. *Ramalina mahoneyi* morphologically appears closely related to *R. celsastri* (Sprengel) Krog and Swinscow, but its apothecial discs are peach-colored and marginal, the thallus is gray-blue and overall much smaller than that of *R. celsastri*.

**Resumen:** Se describe *Ramalina mahoneyi* Quedensley & Véliz como especie nueva del Pico Zunil, Guatemala. Basándose en su morfología, la especie nueva parece estar estrechamente relacionada con *R. celsastri* (Sprengel) Krog & Swinson, pero difiere por tener los discos apoteciales marginales y de color durazno, y el talo de color gris-azul y en conjunto, mucho más pequeño que el de *R. celsastri*.

**Keywords:** Cloud forests, Guatemala, Pico Zunil, *Ramalina*.

During field work on Pico Zunil (Fig. 1), located in the Sierra Chuatroj in the western Guatemalan Department of Quetzaltenango, the first author discovered several specimens of an unusual *Ramalina*. Available taxonomic keys preliminarily identified this as *Ramalina celsastri* (Kashiwadani & Kalb, 1993; Brodo et al., 2001; Kashiwadani & Nash, 2004). However, these specimens of *Ramalina* differed from *R. celsastri* by having a small, gray-blue thallus, and peach-colored instead of pale gray or pale yellow apothecia. In addition, the apothecia are marginal in these specimens, but in *R. celsastri* they are marginal and laminal. The apothecial discs are always convex at maturity, whereas in *R. celsastri* the apothecial discs are flattened to slightly convex. Based on these differences, *R. mahoneyi* is described below as a new species.

***Ramalina mahoneyi*** T.S. Quedensley & M. Véliz P., sp. nov. (Fig. 2).

**TYPE: GUATEMALA.** QUETZALTENANGO: Municipality of Zunil, Sierra Chuatroj, northwestern slopes of Pico Zunil, 14°44'32.0" N, 91°28'03.1" W, elev. 2900 m, corticolous near base of trunks of *Alnus acuminata* Kunth in dense cloud forest, 3

January 2008, T. Sultan Quedensley 4677 (HOLOTYPE: F; ISOTYPES CAS, MSC, NY, US).

*Ramalinae celsastri* (Sprengel) Krog and Swinscow similis sed differt apotheciis pericinis marginalibus et thallo atrocyaneo ubique multo minore.

THALLUS fruticose, subpendent, branches flattened, 2–4 cm long, with individual lobes 0.7–3.0 mm wide; margins involute; upper surface gray-blue; lower surface gray-blue. PSEUDOCYPHELLAE linear, white, present only on the underside of the thallus. PHOTOBIONT a *Trebouxia* green alga. APOTHECIA marginal, 0.3–1.2 mm in diameter. DISC convex, without pruina, peach-colored, exciple occluding with age. ASCI elongate-clavate, 8-spored, ASCOSPORES hyaline, 1-septate, broadly fusiform, 4–6 × 12–16 μm. PYCNIDIA not observed. SPOT TESTS cortex K-, C-, KC-, P-; medulla K-, C-, KC-, P-. SECONDARY METABOLITES not detected using thin layer chromatography. Trace amounts of usnic acid in the cortex detected by high-performance liquid chromatography.

This new species appears to be closely related to *Ramalina celsastri* (Sprengel) Krog & Swinscow, a wide-ranging species also in

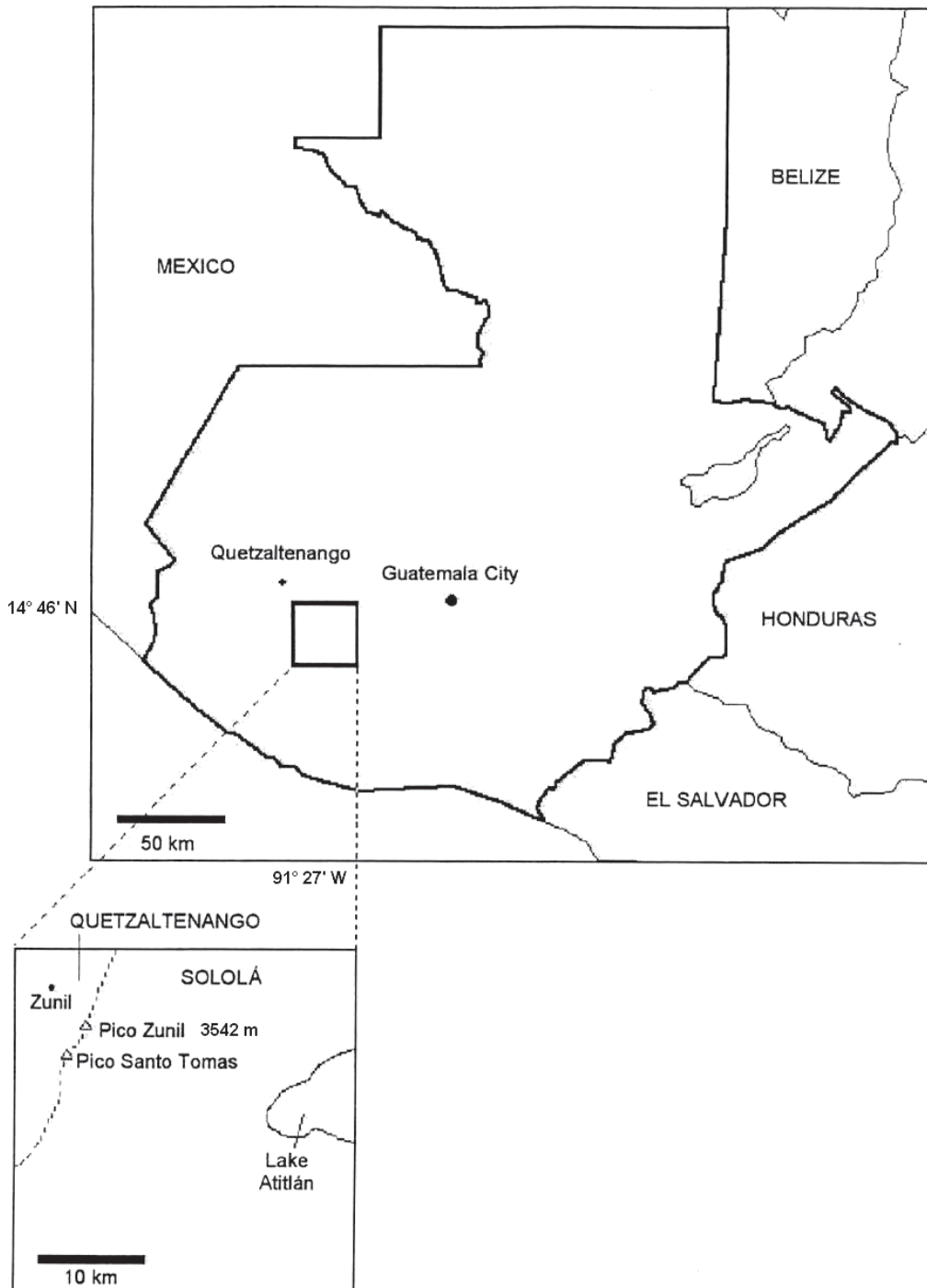


FIG. 1. Map of Guatemala including type locality at Pico Zunil. Reprinted from Lundellia, 2007.

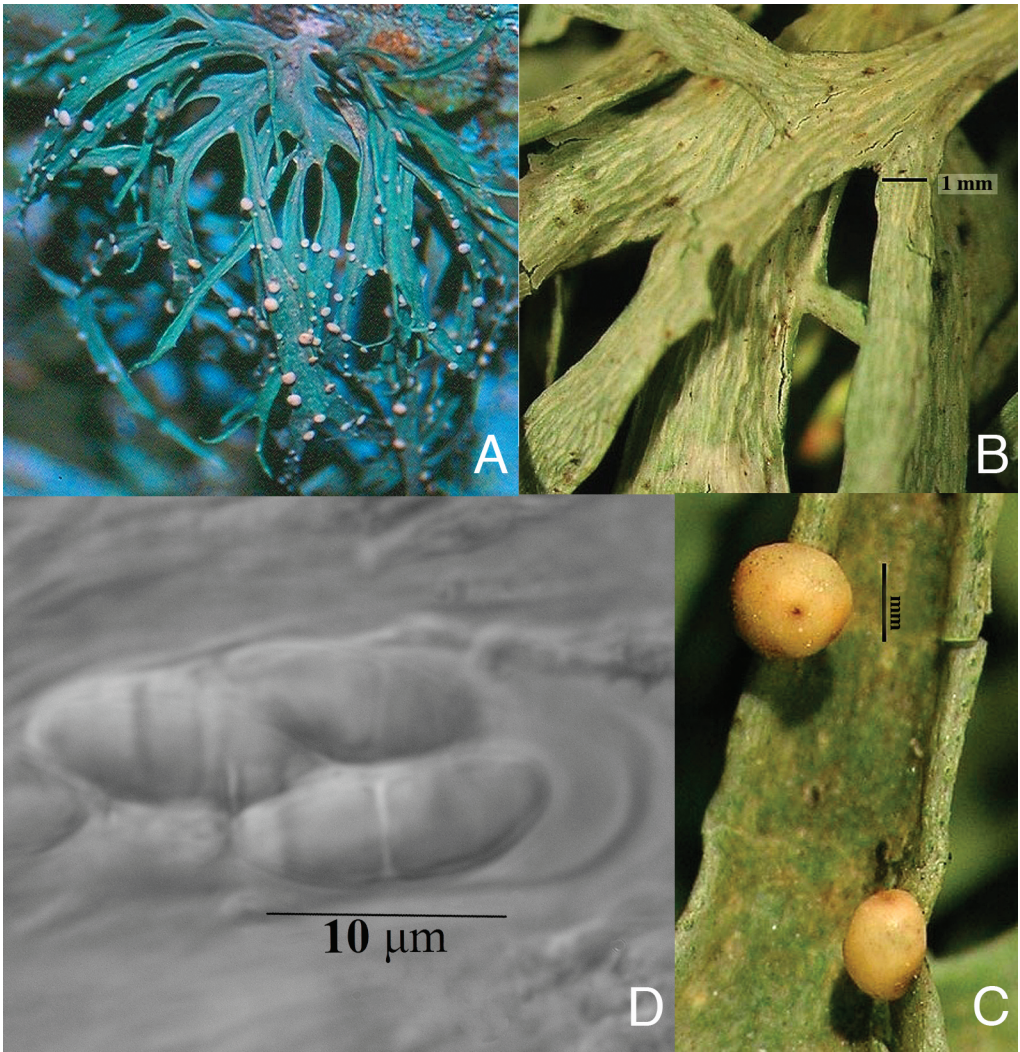


FIG. 2. A. Habit of *Ramalina mahoneyi* on *Alnus acuminata*, 2.5 $\times$  normal size. Photo by T. Sultan Quedensley. B. Striate pseudocyphellae on lower thallus surface. Photo by R. Lüicking. C. Marginal apothecia. Photo by R. Lüicking. D. Ascospores within ascus. Photo by T. Sultan Quedensley.

the Neotropics (Krog & Swinscow 1976) and extending to the southwest United States (Brodo et al., 2001). Both species have striate pseudocyphellae and a shrubby growth habit. *Ramalina mahoneyi* is distinguished by its smaller thallus and apothecia (Fig. 3). *Ramalina mahoneyi* is only known from the type locality where it is not abundant. *Ramalina celastri* is found throughout Central America (Nash et al., 2004), but has not yet been reported for Pico Zunil and

Guatemala has few records of lichens, including macrolichens, collected in the region.

*Ramalina mahoneyi* occurs near the base of trunks of *Alnus acuminata* in a dense cloud forest on the northwestern slopes of Pico Zunil. Associated trees included *Alnus acuminata*, *Cupressus lusitanica*, *Chiranthodendron pentadactylon*, *Fuchsia paniculata*, and *Verbesina apleura*. *Roldana heterogama* was a common shrub.

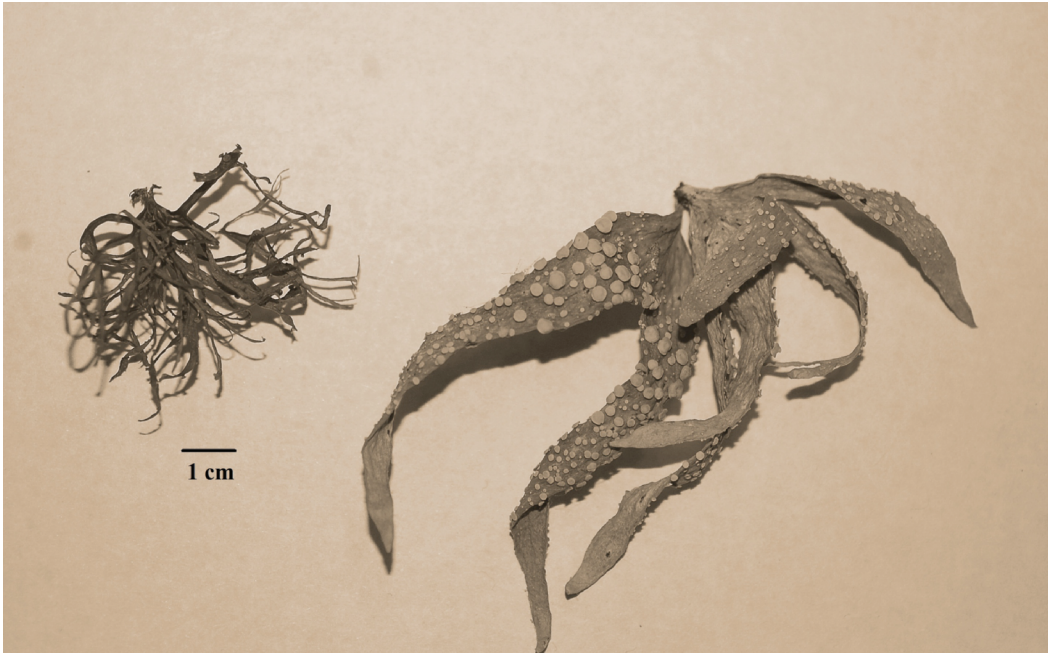


FIG. 3. Size comparison between *Ramalina mahoneyi* (T. Sultan Quedensley 4677) and *R. celastri* (T. Sultan Quedensley s.n.) from Pflugerville, TX.

More field work focused on collecting *Ramalina* in Western Guatemala could help elucidate the distribution of this species. Furthermore, while the genus *Ramalina* is easily recognized in the field, species diversity within the genus is large and species descriptions can be dubious due to innumerable intergrades across a geographic range (Howe, 1913).

The Latin epithet refers to Dr. Donald Mahoney, horticultural manager at the San Francisco Botanical Garden. Don has had an overwhelming positive influence on the first author's life. Under his guidance the senior author gained a wealth of knowledge about botany and horticulture, especially pertaining to New World cloud forest species.

ADDITIONAL SPECIMENS EXAMINED: GUATEMALA. QUETZALTENANGO: Municipality of Zunil, Sierra Chuatroj, northwestern slopes of Pico Zunil, 14°44'32.0" N, 91°28'03.1" W, elev. 2900 m, corticolous near base of trunks of *Alnus acuminata* Kunth in dense cloud forest, 7 May 2005, T. Sultan Quedensley 2292 (BYU, NY, TEX, US) and 2 January 2005, T. Sultan Quedensley 2198 (BIGU, F, OMA).

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