

NEW ZYGNEMATACEAE FROM ECUADOR

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The freshwater algae of Ecuador have received very little attention, especially during the past fifty years. Such notices as have appeared are very brief and there have been no extensive lists to convey even a general idea as to the species which exist there, and their distribution. This is partly because the botanists of the country and those who have traveled in Ecuador have had their attention justifiably occupied by the very rich and seemingly inexhaustible terrestrial flora. It is not surprising, therefore, that algal collections, especially from the interior wilds, should yield additions to the records for Ecuador, and new or otherwise interesting species.

While on quinine exploration for the U. S. Government the author had occasion to make a few collections of algae, mostly from alpine regions. One habitat was a series of hanging bogs among old, grass-covered hills of volcanic ash on the flanks of Volcano Cotopaxi. This towering mountain rises in the eastern cordillera about 50 K. southeast from the capital city of Quito, itself located high on the inter-Andean plateau. The hanging bogs and shallow ponds visited on Cotopaxi varied in altitude from 12,500 to 14,000 feet. Most of them were grassy and some were carpeted with moss. One pond in particular, apparently somewhat acid, was very rich in variety of species, especially desmids. Scarcely any Oedogoniaceae were fruiting, and of the many Zygnemataceae only a few were in identifiable condition. Three of these species, described below, were new and seemed worthy of publication as preliminary to a subsequent more extensive report on the algae of Ecuador.

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Mougeotia chlamydata, sp. nov., Pl. I, Figs. 9-11.

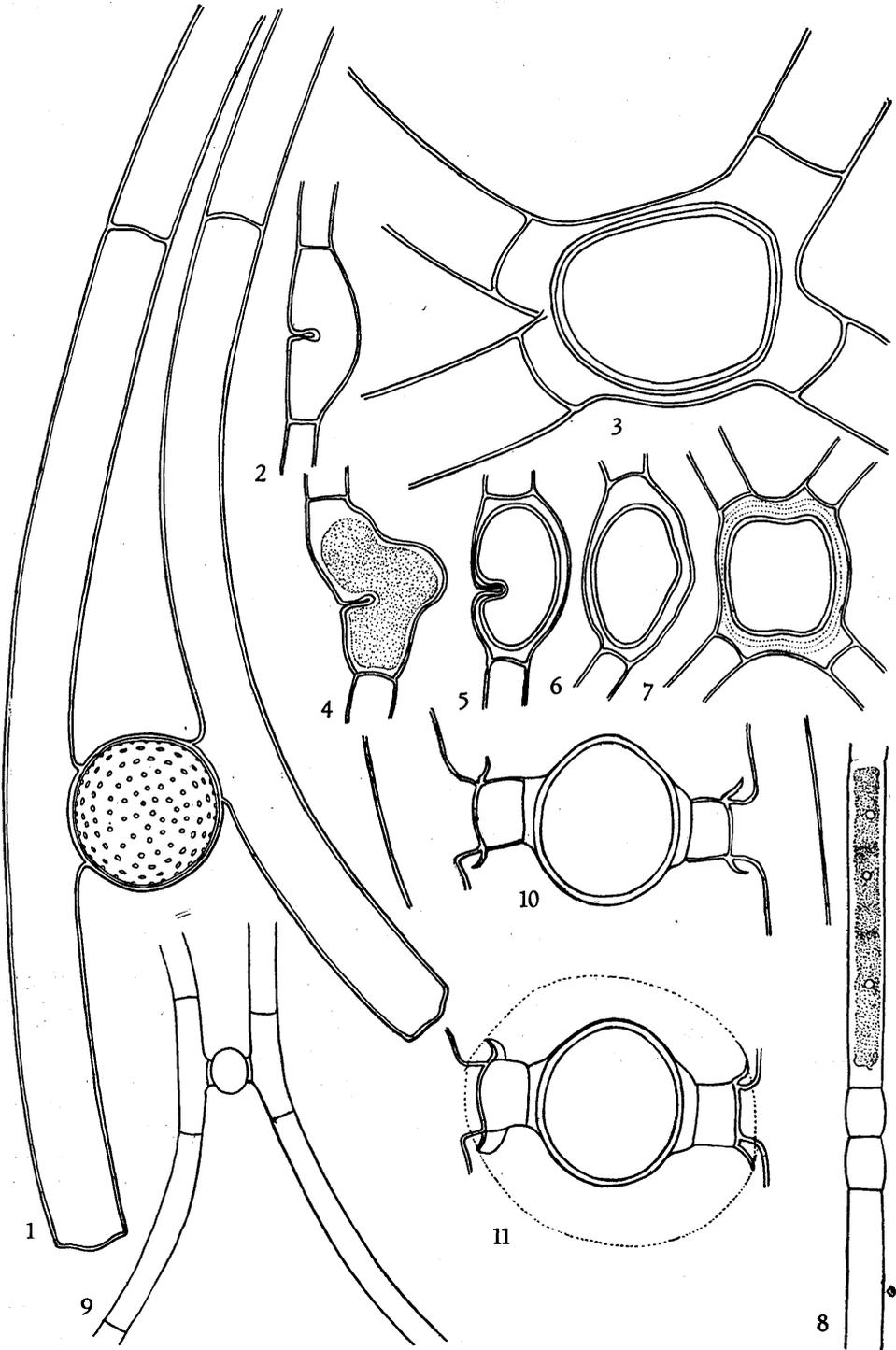
Vegetative cells 12-16 μ x 200-240 μ ; chromatophore a narrow band with 4-6 pyrenoids in a row; conjugation scalariform by rather long tubes; zygospores compressed-globose, 26-28 μ x (30) 32-38 μ , outer wall bluish (by refraction), median wall thick, metallic green.

The sporangium wall is characterized by having an inner and outer layer of cellulose, separated by a thick pectic layer. As the spore reaches maturity the outer layer disintegrates equatorially and the pectic layer dissolves leaving a collar with recurved margins at the base of each half of the conjugation tube.

Cellulae vegetative 12-16 μ x 200-240 μ ; chromatophorus taeniaformis, 4-6 pyrenoideis seriatis; conjugatio scalariformis tubis sublongis; zygosporae compresso-globosae, 26-28 μ x (30) 32-38 μ , membrana exterior (refractione) subcaerulea, membrana media crassa, metallice viridis.

Membrana sporangii proprie habet stratum cellulosum exterius interiusque per stratum pecticum crassum divisum. Ut spora maturescit stratulum exterius equatorialiter collabitur necnon stratum dissolvitur, collare marginibus recurvatis relinquens ad basim utriusque dimidii tubi conjugentis.

Ecuador: Volcano Cotopaxi; hanging bog at 14,000 ft.



Mougeotia cotopaxensis, sp. nov., Pl. I, Fig. 1.

Vegetative cells 10–15.5 μ x 80–250 μ , chromatophores with 2–4 pyrenoids in a row; conjugation scalariform; zygospores globose or compressed at right angles to the short conjugating tubes, 30–32 μ in diameter, median spore wall steel-blue, scrobiculate with pits about 1 μ in diameter, 4–5 μ apart, outer spore wall thin, smooth.

Cellulae vegetativae 10–15.5 μ x 80–250 μ ; chormatophori 2–4 pyrenoideis seriatis praediti; conjugatio scalariformis, zygosporae globosae aut ad tubos breves conjugentes perpendiculariter compressae, 30–32 μ diam., sporae membrana media chalybea, scrobiculata, lacunis circa 1 μ diam., distantibus inter se 4–5 μ ; sporae membrana exterior tenuis levisque.

Ecuador: Volcano Cotopaxi; hanging bog at 14,000 ft.

Temnogametum transeai, sp. nov., Pl. I, Figs. 2–8.

Vegetative cells 14–20 μ x 100–400 μ , with a narrow, axial chloroplast, pyrenoids 2–4 in a row; conjugation lateral and scalariform; gametangia 20–22 μ x 20–30 μ at the ends of vegetative cells; zygospores by lateral conjugation obliquely ovoid, 35–42 μ x 80–100 μ ; zygospores by scalariform conjugation 40–50 μ x 45–60 μ , median spore wall smooth, pinkish-buff to orange-brown at maturity.

Cellulae vegetativae 14–20 μ x 100–400 μ , chloroplastus axialis, angustus, pyrenoideis 2–4 seriatis; conjugatio lateralis scalariformisque; gametangia 20–22 μ x 20–30 μ in extremis cellulis vegetativis; zygosporae conjugatione laterali oblique ovatae, 35–42 μ x 80–100 μ ; zygosporae conjugatione scalariformi 40–50 μ x 45–60 μ ; sporae membrana media levis, puniceo-lutea ad flavo-brunneam cum maturuerunt.

Ecuador: Volcano Cotopaxi; hanging bog at 14,000 ft.
