New Zygnemataceae from Ecuador

Prescott, G. W.
NEW ZYGNETMATACEAE FROM ECUADOR

G. W. PRESCOTT
Michigan State College
East Lansing, Michigan

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.

The author is greatly indebted to Dr. E. N. Transeau for his assistance in making identifications and preparing descriptions, and to Dr. Hannah Croasdale for Latin diagnoses. Also acknowledgments are due the Muellhaupt Fellowship, Ohio State University, where studies of the Ecuadorian collections were conducted.

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; zygosporeae compresso-globosae, 26–28 μ x (30) 32–38 μ, membrana exterior (refractione) subcaerulea, membrana media crassa, metallic viridis.

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

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

130
**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.

Cellulæ vegetativæ 10–15.5 μ x 80–250 μ; chromatophori 2–4 pyrenoideis seriatis praediti; conjugatio scalariformis, zygosporæ globosæ aut ad tubos breves conjugentes perpendiculariter compressæ, 30–32 μ diam., sporæ membrana media chalybea, scrobiculata, lacunis circa 1 μ diam., distantibus inter se 4–5 μ; sporæ membrana exterior tenuis levisque.

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

**Temnogametum transeauli**, 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 orangebrown at maturity.

Cellulæ vegetativæ 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; zygosporæ conjugatione laterali oblique ovatae, 35–42 μ x 80–100 μ; zygosporæ conjugatione scalariformi 40–50 μ x 45–60 μ; sporæ membrana media levis, puniceo-lutea ad flavo-brunneam cum maturerunt.

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