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CONTRIBUTION TO THE LICHEN FLORA OF BRAZIL. XX.

Additional records from Sao Francisco de Paula,
Rio Grande do Sul State *

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ABSTRACT: "*Contribution to the lichen flora of Brazil. XX. Additional records from Sao Francisco de Paula, Rio Grande do Sul State*". Fifty one lichen species collected in the Municipality of Sao Francisco de Paula, Rio Grande do Sul, Brazil, are listed. *Xanthoparmelia tasmanica* is added to the known flora of Brazil. Seven species are reported for Rio Grande do Sul State for the first time. Seventeen taxa are incorporated to the lichen flora of the Rio Grande do Sul Highlands.

RESUMEN: "*Contribución a la flora líquénica de Brasil. XX. Registros adicionales para Sao Francisco de Paula, Estado de Rio Grande do Sul*." Se enumeran cincuenta y una especies de líquenes colectados en la Municipalidad de Sao Francisco de Paula, Rio Grande del Sur, Brasil. *Xanthoparmelia tasmanica* se cita por primera vez para Brasil. Siete especies se incorporan a la flora del Estado en tanto que otras diecisiete se citan por primera vez para la flora líquénica del Planalto Riograndense.

During October 1987 the authors made a two-day long field trip in the Municipality of Sao Francisco de Paula, Rio Grande do Sul State, Brazil. The main objective of this field work was the gathering of lichens as part of the study of this group in Rio Grande do Sul Highlands (Planalto Riograndense). We have concentrated our efforts in different collection sites located in close proximity to Sao Bernardo lake which is placed 1 km S from Sao Francisco de Paula City. This lake is surrounded by

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Araucaria angustifolia forests mixed with *Fagara* and *Podocarpus*. Several species of *Ocotea* and *Nectandra* which are named "canela" trees also provided a good number of collections. All the localities around it are being urbanized (mostly by summer houses). This feature and the activities of a sawmill give as a result an increasing damage of the native *Araucaria* forests.

The collection sites visited by the authors can be summarized as follows (taking as point of reference the lake Sao Bernardo: 29°20'S-50°31'W, 800 m above the sea level):

- CS/1.: 100-200 m SE from the lake, an *Araucaria angustifolia* mixed forest with Lauraceae (*Ocotea* or *Nectandra* sp.) *Fagara* and *Podocarpus*.
- CS/2.: 300 m SE from the lake, a largely deforested place with isolated specimens of *Araucaria* and *Fagara*.
- CS/3.: road to a waterfall named "Cascata da Ronda", 600-800 m. E from the lake.
- CS/4.: The E shore of the lake with some rocky outcrops and a partially deforested Lauraceae forest.

Two identical series were made with the lichens gathered and deposited in the Herbarium of the Departamento de Botânica, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil and in the private herbarium of the senior author.

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Brigantiaea leucoxantha (SPRENG.) R. SANT. & HAF.

- CS/1.: on *Araucaria angustifolia*, top of a small hill, 2SF/30.

Caloplaca erythrantha (TUCK.) ZAHLBR.

- CS/1.: on shrubs, hillside, 2SF/27.

Caloplaca granularis (MÜLL. ARG.) C. SAMBO

- CS/1.: on "canela" tree, deforested place, 2SF/16.

Candelaria concolor (DICKS.) ARN.

- CS/1.: on "canela" tree, deforested place, 2SF/15 p.p.

Candelaria fibrosa (FR.) MÜLL. ARG.

CS/1.: on *Fagara*, hillside, 2SF/26.

Cladia aggregata (SW.) NYL.

CS/4.: on damp rocks, 2SF/53.

Cladonia ceratophylla (SW.) SPRENG.

CS/1.: on stump of a tree, very scarce, 2SF/5.

Cladonia didyma (FÉE) VAIN.

CS/1.: on stump of a tree, 2SF/6.

Cladonia macilenta HOFFM.

CS/2.: on stump of *Dicksonia sellowiana* along a road,
2SF/70.

Cladonia miniata MEY. f. *sorediella* (VAIN.) VAIN.

CS/1.: on stump of a tree, deforested place, 2SF/12.

CS/2.: on stump of a tree, deforested hillside, 2SF/72.

Cladonia ramulosa (WITH.) LAUNDON

CS/2.: on soil along a road, 2SF/69.

Coccocarpia erythroxyli (SPRENG.) SWINSC. & KROG

CS/4.: on "caneia" tree, 2SF/59.

Cryptothelium octosporum (VAIN.) ZAHLBR.

CS/1.: on "canela" tree, 2SF/14.

Chiodecton sanguineum (SW.) VAIN.

CS/1.: on trunk of a tree, deforested hillside, 2SF/7.

Dictyonema glabratum (SPRENG.) D. HAWKSW.

CS/1.: on mossy bark of a tree, deforested hillside, 2SF/8;
on trunk of *Araucaria angustifolia* isolated in a
meadow, 2SF/13.

Heterodermia leucomela (L.) POELT subsp. *boryi* (FÉE) SWINSC.
& KROG

CS/1.: on trunk of a tree, on the edge of the forest, 2SF/42.

CS/4.: on "canela" tree, 2SF/62.

Hypotrachyna dentella (HALE & KUROK.) HALE

CS/1.: on mossy trunk, deforested hillside, 2SF/9.

Hypotrachyna imbricatula (Zahlbr.) Hale

CS/1.: on mossy trunk, 2SF/10.

CS/2.: on mossy rocks, top of a hill, 2SF/73.

Hypotrachyna pluriformis (Nyl.) HaleCS/1.: on isolated *Fagara*, on hillside, 2SF/25.*Lecidea piperis* (Spreng.) Nyl.CS/1.: on isolated *Fagara*, deforested hillside, 2SF/2.*Leptogium azureum* (Sw.) Mont.CS/1.: on a big climbing plant, on the edge of the forest,
2SF/39.*Leptogium cyanescens* (Ach.) Körb.CS/3.: on damp rocks along the road, 2SF/48; on "canela"
tree along the road, 2SF/51.*Leptogium tuckermanni* Dodge

CS/3.: on "canela" tree along the road, 2SF/52.

Lobaria conformis Vain.

CS/4.: on "canela" tree, 2SF/58.

Lobaria patinifera (Tayl.) Hue

CS/4.: on "canela" tree, det I. Yoshimura 1988, 2SF/67b.

Lobaria pseudoglaberrima Zahlbr.CS/1.: on a big climbing plant, on the edge of the forest,
2SF/36.*Lobaria pseudolivacea* Zahlbr.

CS/4.: on "canela" tree, 2SF/57, 2SF/67a.

Megalospora tuberculosa (Fée) Sipm.CS/1.: on *Araucaria angustifolia*, top of a hill, 2SF/29.*Normandina pulchella* (Borr.) Nyl.

CS/1.: on "canela" tree, 2SF/15 p.p.

Parmotrema mellissii (Dodge) Hale

CS/1.: on rocks along a road, 2SF/18.

Parmotrema subtinctorium (Zahlbr.) HaleCS/1.: on *Podocarpus*, deforested hillside, 2SF/4.

Pertusaria superans MÜLL. ARG.

CS/1.: on "canela" tree, deforested place, 2SF/17.

Phaeographina lecanographa (NYL.) MÜLL. ARG.

CS/1.: on isolated *Fagara*, on hillside, 2SF/1; on *Podocarpus*, deforested hillside, 2SF/3.

Phaeophyscia hispidula (ACH.) MOBERG

CS/3.: on rocks along the road, det. R. MOBERG 1988, 2SF/49.

Porina mastoidea (ACH.) FÉE

CS/1.: on "canela" tree, on the edge of the forest, 2SF/45.

Pseudocyphellaria aurata (ACH.) VAIN.

CS/1.: on trunk of a tree, on the edge of the forest, 2SF/40.

Pseudocyphellaria clathrata (DENOT.) MALME

CS/4.: on "canela" tree, 2SF/66.

Pseudoparmelia caroliniana (NYL.) HALE

CS/1.: on trunk of a tree, deforested place, 2SF/11.

Punctelia borrerina (NYL.) KROG

CS/1.: on isolated *Fagara*, on hillside, 2SF/21.

Ramalina celastri (SPRENG.) KROG & SWINSC.

CS/1.: on isolated *Fagara*, on hillside, 2SF/22.

Rinodina dolichospora MALME

CS/1.: on "canela" tree, deforested place, 2SF/15.

Stereocaulon microcarpum MÜLL. ARG.

CS/4.: on damp rocks, 2SF/55.

Stereocaulon ramulosum (SW.) RÄUSCH.

CS/4.: on damp rocks, 2SF/54.

Sticta fuliginosa (DICKS.) ARN.

CS/1.: on trunk of a tree, on edge of the forest, 2SF/32b.

Sticta variabilis (BORY) ACH.

CS/1.: on a big climbing plant, on the edge of the forest, 2SF/41; on trunk of a tree, on the edge of forest, 2SF/34.

Sticta weigeli (ACH.) VAIN.

CS/1.: on trunk of a tree, on the edge of the forest, 2SF/32a, 2SF/46.

CS/4.: on "canela" tree, 2SF/65.

Teloschistes exilis (MICHX.) VAIN.

CS/1.: on *Fagara*, on hillside, 2SF/24.

Teloschistes flavicans (SW.) NORM.

CS/1.: on *Araucaria angustifolia*, top of a hill, 2SF/23.

Trypethelium ochroleucum (ESCHW.) NYL.

CS/4.: on "canela" tree, 2SF/63.

Usnea sulcata MOT.

CS/1.: on *Araucaria angustifolia*, top of a hill, 2SF/28a.

Xanthoparmelia tasmanica (J. D. HOOK. & TAYL.) HALE

CS/4.: on damp rocks, confirm. J. ELIX 1988, 2SF/56.

RESULTS AND CONCLUSIONS

Before beginning our study of the lichen flora of the Rio Grande Highlands the knowledge of this group in the Municipality of Sao Francisco de Paula was practically nonexistent. We have emphasized (OSORIO & FLEIG 1986:2) that only one lichen species was previously reported for this Municipality: *Usnea krempehuberi* (MOTYKA 1936/38: 601).

In addition to our first contribution to the knowledge of the lichen flora in this Municipality (OSORIO & FLEIG 1986) we have found the following species quoted in the literature: *Cetrariastrum cirrhatum* and *C. vexans* (FLEIG 1985: 84 & 85) and *Cladonia subsquamosa* (FERRARO & AHTI 1987:60).

The results obtained from the study of our collection can be summarized as follows:

- a) *Xanthoparmelia tasmanica* is added to the known flora of Brazil. Formerly known in South America from the Argentine province of Córdoba: NASH, T. H. III, et al. 1987: 293.
- b) the following species are recorded for the first time for Rio Grande do Sul State: *Hypotrachyna dentella*, *H. imbricatula*, *Lobaria patinifera*, *L. pseudolivacea*, *Parmotrema mellissii*, *Pertusaria superans*, *Phaeophyscia hispidula*.

- c) Seventeen taxa are incorporated to the Rio Grande do Sul Highlands flora, namely: *Cladonia ceratophylla*, *Cl. didyma*, *Cl. macilenta*, *Cl. ramulosa*, *Hypotrachyna dentella*, *H. imbricatula*, *H. pluriformis*, *Leptogium tuckermanni*, *Lobaria patinifera*, *L. pseudolivacea*, *Parmotrema mellissii*, *Pertusaria superans*, *Phaeographina lecanographa*, *Phaeophyscia hispidula*, *Punctelia borrerina*, *Sticta variabilis* and *Xanthoparmelia tasmanica*.

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