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CONTRIBUTION TO THE LICHEN FLORA OF BRAZIL. XIX.

New or additional records from Santa Maria,
Rio Grande do Sul State. (*)

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ABSTRACT: "*Contribution to the lichen flora of Brazil. XIX. New or additional records from Santa Maria, Rio Grande do Sul State*". Fifty one lichen species collected in the Municipality of Santa Maria, Rio Grande do Sul State, Brazil, are listed. *Dermatocarpon corticolum* is added to the known flora of Brazil, thirty four taxa are recorded for the Municipality for the first time and eleven species are added to the flora of the Rio Grande do Sul Highlands.

RESUMEN: "*Contribución a la flora líquénica de Brasil. XIX. Nuevos o adicionales registros para Santa Maria, Estado de Rio Grande del Sur*". Se enumeran cincuenta y una especies de líquenes colectadas en el Municipio de Santa Maria, Estado de Rio Grande del Sur, Brasil. *Dermatocarpon corticolum* se cita por primera vez para Brasil, treinta y cuatro especies se incorporan a la flora del Municipio y otras once se citan por primera vez para la flora del Planalto de Rio Grande del Sur.

During April 1987 the authors gathered lichens in the Municipality of Santa Maria, Rio Grande do Sul State. One of the collection sites (Parque Oasis) is located in the Highlands of Rio Grande do Sul. Several species found here are additions to the lichen flora of this region and its study is a long-term planned work carried out by the authors.

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The other localities visited during the field work are located in the Central Lowlands of Rio Grande do Sul.

With reference to Santa Maria City (29°41'25"S-53°43'42"W) the collection sites can be summarized as follows:

- A. 14.: cross of the road Santa Maria-Sao Pedro do Sul by a small unnamed brook, 14 km W from Santa Maria City.
- A. T.: cross of the same road as above by the Taquara brook, 7 km W from Santa Maria City. In both sites the lichens were collected in the evergreen broad leaved forests which border the water streams. Both forests are no more as 5 or 6 m high.
- M.M.: small hill named "Morro do Monumento" situated N from Santa Maria City on the edge of the urbanized area. Collections were made on scattered trees on the deforested slopes. A old quarry, out of use, placed beside the hill provides some interesting gatherings too.
- P. O.: Parque Oasis is a recreative place located in the Highlands, 500 m high, 10 km N from Santa Maria City (km 311 from the road Santa Maria-Júlio de Castilhos). The large part of the Park is forested with conifers (without lichens) and *Melia* and *Eucalyptus* with a interesting lichen flora. In the easternmost part of the Park two small waterfalls named "Betesda" and "Santa Maria" are surrounded by remnants of native forest.
- P. V.: Paso do Verde, cross of the road Santa Maria-Sao Sepé by the Vacacaí river, 31 km S from Santa Maria City. Collection were made in a native forest (partially deforested) and in *Melia*.

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

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Anthracothecium goniostomum MÜLL. ARG.

P.O.: on branches of shrubs near Betesda waterfall, SM/21.

P.V.: on branches of shrubs, flooded field, SM/59.

- * *Bacidia millegrana* (TAYL.) ZAHLBR.
A.T.: on trunk of a tree, marginal forest of the brook, SM/66.
- Caloplaca americana* (MALME) ZAHLBR.
M.M.: on rocks, S slope, shaded place, SM/84.
- Caloplaca erythrantha* (TUCK.) ZAHLBR.
M.M.: on trunk of a tree, in a old quarry, SM/90.
- Caloplaca granularis* (MÜLL. ARG.) C. SAMBO
P.O.: on *Melia azedarach*, SM/35.
P.V.: on wooden post, SM/50; on bark of a tree on riverside, SM/51.
- Campylothelium puiggarii* MÜLL. ARG.
P.O.: on trunk of a tree near Betesda waterfall, SM/25, dupl. confirm. R. HARRIS.
- * *Candelaria concolor* (DICKS.) STEIN.
P.V.: on trunk of a tree, on riverside, SM/53; on *Scutia buxifolia*, flooded field, SM/57.
- * *Collema glaucophthalmum* NYL. var. *implicatum* (NYL.) DEGEL.
P.O.: on trunk of a tree near Betesda waterfall, SM/30.
P.V.: on trunk of a tree on riverside, SM/49.
- * *Chiodecton sanguineum* (SW.) VAIN.
P.O.: on trunk of a tree near Betesda waterfall, SM/20.
- Dermatocarpon corticolum* RÄS.
M.M.: on *Phytolacca dioica*, S slope, SM/80.
- Dimerella pyrophthalma* (MONT.) VEZDA.
P.O.: on wet rocks near Santa Maria waterfall, SM/5.
- * *Diploschistes actinostomus* (PERS.) ZAHLBR.
M.M.: on rocks in a old quarry, SM/92.
- Dirinaria applanata* (FÉE) AWASTHI
P.V.: on *Parapiptadenia rigida*, on riverside, SM/46.
- Glyphis cicatricosa* (ACH.) VAIN. f. *confluens* (ZENK.) ZAHLBR.
M.M.: on trunk of a tree in a old quarry, SM/91.
P.O.: on trunk of young *Eucalyptus*, SM/2.
P.V.: on *Melia azedarach*, SM/39.
- * *Heterodermia albicans* (PERS.) SWINSC. & KROG
P.V.: on trunk of a tree on riverside, SM/48.

- * *Heterodermia comosa* (ESCHW.) FOLLM. & REDÓN
P.O.: on shrubs near Betesda waterfall, SM/24.
- Heterodermia diademata* (TAYL.) AWASTHI
A.T.: on trees, marginal forest of the brook, SM/73.
M.M.: on *Phytolacca dioica* in a old quarry, SM/88.
P.V.: on *Parapiptadenia rigida* on riverside, SM/47.
- * *Heterodermia leucomela* (L.) POELT
P.O.: on trunk of Leguminosa near Betesda waterfall,
SM/15.
- * *Heterodermia lutescens* (KUROK.) FOLLM.
A. 14.: on shrubs, marginal forest of a brook, SM/77.
- * *Heterodermia obscurata* (NYL.) TREVIS.
P.O.: on trunk of Leguminosa near Betesda waterfall,
SM/14.
- * *Heterodermia vulgaris* (VAIN.) FOLLM. & REDÓN
A. 14.: on shrubs, marginal forest of a brook, SM/76.
P.O.: on trunk of a tree near Betesda waterfall, SM/32.
- Lecidea piperis* (SPRENG.) NYL.
P.O.: on *Ocotea* near Santa Maria waterfall, SM/7; on
shrubs near Betesda waterfall, SM/28.
- * *Leptogium austroamericanum* (MALME) DODGE
M.M.: on trunk of a tree, S slope, SM/81; on *Phytolacca
dioica* in a old quarry, SM/87.
- * *Letroititia domingensis* (PERS.) HAF. & BELLEM.
M.M.: on trunk of a tree, S slope, SM/83.
P.O.: on shrubs near Santa Maria waterfall, SM/8; on
branches of shrubs near Betesda waterfall, SM/29.
- * *Lobaria conformis* VAIN.
A. 14.: on trunk of trees, marginal forest of a brook,
SM/74.
P.O.: on trunk of a tree near Betesda waterfall, SM/16.
- * *Lobaria cuprea* (MÜLL. ARG.) ZAHLBR.
P.O.: on trunk of a tree near Santa Maria waterfall,
SM/10; trunk of Leguminosa near Betesda water-
fall, SM/17, SM/19; trunk of a tree near Betesda
waterfall, SM/31, dupl. confirm. Y. YOSHIMURA.
- * *Lobaria pseudoglaberrima* ZAHLBR.
P.O.: on shaded rocks near Betesda waterfall, SM/34.

- * *Myriotrema wightii* (T. TAYL.) HALE
P.V.: on trunk of a tree, partially deforested place, SM/65.
- * *Parmelina consors* (NYL.) HALE
A.T.: on trees, marginal forest of the brook, SM/71.
P.V.: on *Luehea divaricata* on riverside, SM/42.
- Parmelina lindmanii* (LYNGE) HALE
P.V.: on *Melia azedarach*, SM/38.
- * *Parmelina pilosa* (STIZB.) HALE
A.T.: on trunk of a tree, marginal forest of the brook, SM/67.
- * *Parmotrema tinctorum* (NYL.) HALE
A.T.: on trees, marginal forest of the brook, SM/69.
P.O.: on *Melia azedarach*, SM/37.
P.V.: on trunk of a tree on riverside, SM/52; on a tree, inundated field, SM/63.
- Phaeographina arechavaletae* MÜLL. ARG.
P.V.: on *Melia azedarach*, SM/40.
- Phaeographina caesiopruinosa* (FÉE) MÜLL. ARG.
P.V.: on *Luehea divaricata* on riverside, SM/44.
- Phlyctella brasiliensis* (NYL.) ZAHLBR.
P.O.: on trunk of a tree near Betesda waterfall, SM/26.
- * *Porina subpungens* MALME
M.M.: on trunk of a tree, S slope, SM/82.
P.O.: on wet rocks near Santa Maria waterfall, SM/6;
on trunk of a tree near Betesda waterfall, SM/27.
- * *Pseudocyphellaria aurata* (ACH.) VAIN.
A. 14.: on trunk of a tree, marginal forest of a brook, SM/75.
P.O.: on *Luehea divaricata* near Betesda waterfall, SM/12;
on trunk of *Leguminosa* near Betesda waterfall, SM/18.
- Pseudoparmelia texana* (TUCK.) HALE
P.O.: on *Melia azedarach*, SM/36.
- * *Punctelia canaliculata* (LYNGE) KROG
P.V.: on shrubs, inundated field, SM/55.
- * *Punctelia constantimontium* SÉRUS.
A.T.: on trunk of a tree, marginal forest of the brook, SM/70.

- * *Pyrenula mastophora* (NYL.) MÜLL. ARG.
P.O.: on branches of shrubs near Betesda waterfall, SM/22.
- Pyxine berteriana* (FÉE) IMSH.
A.T.: on a tree, marginal forest of the brook, SM/68.
- Ramalina celastri* (SPRENG.) KROG & SWINSC.
P.O.: on trunk of young *Eucalyptus*, SM/11.
P.V.: on *Luehea divaricata* on riverside, SM/45.
- * *Ramalina peruviana* ACH.
A. 14.: on shrubs, banks of a brook, SM/78.
P.V.: on shrubs, flooded field, SM/58.
- * *Ramalina prolifera* TAYL.
P.V.: on wooden post of a bridge, SM/54; on shrubs, flooded field, SM/56; on wooden fence post, flooded field, SM/62.
- * *Ramalina usnea* (L.) HOWE
P.V.: on shrubs, flooded field, SM/61.
- * *Sticta weigeli* (ACH.) VAIN.
P.O.: on shrubs near Santa Maria waterfall, SM/9.
- Strigula elegans* (FÉE) MÜLL. ARG.
P.O.: on leaves of shrubs near Santa Maria waterfall, SM/4.
- * *Teloschistes exilis* (MICHX.) VAIN.
P.O.: on trunk of a tree near Betesda waterfall, SM/13;
on shrubs near Betesda waterfall, SM/23.
P.V.: on shrubs, SM/64.
- * *Trypethelium ochroleucum* (ESCHW.) NYL.
P.V.: on branches of shrubs, flooded field, SM/60.
- Xanthoparmelia farinosa* (VAIN.) NASH, ELIX & JOHNSTON
M.M.: on rocks in a old quarry, SM/86.

RESULTS AND CONCLUSIONS

The lichen flora of the Municipality of Santa Maria is known through the gathering made by G. O. A. MALME during the First REGNELL Expedition (MALME 1897:6). The large number of works published by MALME and others investigators based upon this important collection are the source of the knowledge of this group in the above mentioned Municipality.

A short note published by the authors (OSORIO & FLEIG 1983) is the only reference to the lichen flora in question found in the literature ever since.

The results obtained from the study of the collection here listed are as follows:

Dermatocarpon corticolum is added to the known flora of Brazil. Formerly this species was known from northern Uruguay and the Argentine Mesopotamia (OSORIO 1980:138, OSORIO & FERRARO 1975:2, RÄSÄNEN 1939:147).

Campylothelium puiggarii, *Phlyctella brasiliensis* and *Xanthoparmelia farinosa* are recorded for Rio Grande do Sul State for the first time. *Campylothelium puiggarii* was only known from two collections, both in Sao Paulo State, Brazil (MÜLLER ARG. 1883:596, ZAHLBRUCKNER 1909:94).

Moreover the above mentioned species thirty one species are added to the lichen flora of the Municipality. An asterisk preceding the name indicates such condition.

The following species are recorded for the Rio Grande do Sul Highlands for the first time: *Anthracotheceium goniostomum*, *Caloplaca granularis*, *Campylothelium puiggarii*, *Dimerella pyrophthalma*, *Glyphis cicatricosa* f. *confluens*, *Heterodermia comosa*, *H. vulgaris*, *Lobaria conformis*, *Parmotrema tinctorum*, *Phlyctella brasiliensis* and *Pseudoparmelia texana*.

In a recent issued paper (YOSHIMURA & OSORIO 1975:1) the authors demonstrated that the red vinous colour of the lower surface of *Lobaria cuprea* is a post mortem phenomenon. The study of the here mentioned samples enlarged our knowledge on this interesting feature. The four *Lobaria cuprea* collections showed the lower surface pale coloured after the first three months of storage in the herbarium. We have wetted a small part of the thallus after this lapse of time and a few minutes afterwards the red vinous colour typical of this species appears. Tap water was used and the specimens were dried among papers. At present six months after having been included in the herbarium a red vinous tinge is appearing in some parts of the lower surface. The biochemical study of collections after and before the change of colour is being planned to be carried out in the future with the cooperation of Dr. ISAO YOSHIMURA.

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