2010 floramac

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Organisers

CCPA

CIBIO Açores

azorean biodiversity group

Universidade dos Açores

International Symposium FloraMac2010

23-25 September 2010

Ponta Delgada, Azores, Portugal

Funding

DRCTC

DIRECÇÃO REGIONAL DA CIÊNCIA, TECNOLOGIA E COMUNICAÇÕES

International Symposium
FloraMac2010

23-25 September 2010

Ponta Delgada, Azores, Portugal

Organisers

CCPA Centro de Conservação e Protecção do Ambiente
CIBIO Centro de Investigação em Biodiversidade e Recursos Genéticos, Pólo Açores

Organizing Committee

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Natural History Museum
Mark Carine • Fred Rumsey

Harvard University, Department of Organismic and Evolutionary Biology
Hanno Schäfer

Instituto de Investigação Científica Tropical
Maria Romeiras

Keynote speakers

David Bramwell
José Luis Martín Esquível
José María Fernández-Palacios
Juli Caujapé Castells
Ricardo Haroun
Robert J Whittaker

CONTENTS

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General Program

23-09-2010
Phylogenetics & Biogeography

08:30 Registration
09:30 Opening session
10:00 Session conference
10:30 Coffee break
11:00 Oral presentations
13:00 Lunch
14:00 Session conference
14:30 Oral presentations
15:30 Poster Session / Coffee break
16:00 Oral presentations
18:30 End of the day
19:00 Reception of participants

24-09-2010
Ecology & Conservation

09:00 Session conference
09:30 Oral presentations
10:30 Coffee break
11:00 Oral presentations
13:00 Lunch
14:00 Session conference
14:30 Oral presentations
15:30 Poster Session/Coffee break
16:00 Oral presentations
18:00 End of the day
20:00 Symposium dinner

25-09-2010
Ethnobotany & Plant Resources

09:00 Session conference
09:30 Oral presentations
10:30 Poster Session/Coffee break
11:00 Session conference
11:30 Conclusions of the symposium
12:00 Closing session
12:45 Lunch
14:30 Workshops
- DEMIURGO project meeting
- BIOCLIMAC project meeting
- Macaronesian Herbaria
- Conservation of Bryophytes in Macaronesia
- Edition of a Flora of Macaronesia

15:30 Coffee break

26-09-2010
Post-symposium Tour

08:30 Arrival of participants
09:00 Departure from the University Campus
09:30 Indigenous and non-indigenous species in the south coast
10:30 Lagoa do Fogo Nature Reserve – Indigenous and non-indigenous species
11:30 Porto Formoso tea plantations
12:30 Terra Nostra Gardens and swimming pool – Indigenous and non-indigenous species
13:30 Traditional Furnas Lunch
15:00 Visit to hotsprings
15:30 Lagoa das Furnas – Indigenous and non-indigenous species
17:00 Departure to Ponta Delgada

14:30 Oral presentations

Molecular systematics and morphology of the endemic *Leontodon* in the Azores islands
Moura M, Silva L, Dias EF, Schäfer H & Carine MA

The Azores diversity enigma: why are there apparently so few Azorean endemic plant species and why are they apparently so widespread?
Carine MA & Schäfer H

Molecular phylogenetic analyses of the Macaronesian endemic moss genera *Echinodium* and *Andoa*
Martins S, Stech M, & Sim-Sim M

What do nuclear genes tell us about the evolution of the Macaronesian Crassulaceae-Sempervivoideae?
Thiv M, Esfeld K & Koch M

15:30 Poster Session / Coffee break

1. **Contribution to the knowledge of the Desertas Islands Vascular Flora**
Jardim R, Fontinha S, Silva I & Menezes de Sequeira M
2. **Contribution to the knowledge of the Selvagens Flora**
Menezes de Sequeira M & Jardim R
3. **Contribution to the phycological flora of Cape Verde Archipelago**
Almada CHBA, Viera- Rodríguez MA & Haroun R
4. **Phylogenetic affinities of the *Laurencia sensu stricto* (Rhodophyta) on the basis of taxonomic and molecular analysis. Case study of *L. obtusa* in Canary Islands**
Aylagas E, CassanoV, Díaz-Larrea J, Sentíes A, Machín-Sánchez M, Fujii MT & Gil-Rodríguez MC
5. **Correlation between taxonomic and molecular analysis in *Osmundea* genus. Case study of *O pinnatifida* in Canary Islands**
Machín-Sánchez M, Fujii MT, Díaz-Larrea J, Sentíes A, Cassano V, Aylagas E & Gil-Rodríguez MC
6. ***Choreonema thuretii* and *Pneophyllum confervicola* (Corallinales, Rhodophyta), new corallines to the Azores**
Couto RP, Rosas-Alquicira EF, Rodrigues AS & Neto AI
7. **Phylogenetic diversity on Canary Islands *Dunaliella salina* strains based on ITS DNA barcoding**
Assunção P, Jaén-Molina R, Caujapé-Castells J, De la Jara A, Carmona L, Freijanes K & Mendoza H
8. **Algal collections in the Herbarium Ruy Telles Palhinha, AZB**
Nogueira EM, Medeiros J & Neto AI
9. **Bryophytes of the island of S. Jorge – Temporal analysis of biodiversity**
Claro D & Sérgio C
10. **Evidence for multiple evolutionary origins in the Moss flora of Macaronesia**
Aigoin DA, Devos N, Huttunen S, Michael S, Ignatov MS, Gonzalez-Mancebo JM & Vanderpoorten A
11. **Macaronesia: a source of hidden genetic diversity for post-glacial recolonization of western Europe in the leafy liverwort *Radula lindenbergiana***
Laenen B, Désamoré A, Devos N, Shaw AJ, González-Mancebo JM, Carine MA & Vanderpoorten A
12. **Bryoflora of the Lagoa do Canário (São Miguel, Azores)**
Dias EF, Jorge JC, Silva LB & Gabriel R

Correlation between taxonomic and molecular analysis in *Osmundea* genus. Case study of *O. pinnatifida* in Canary Islands

Machín-Sánchez*[1] M, Fujii[2] MT, Díaz-Larrea[3] J, Sentíes[3] A, Cassano[4] V, Aylagas[1] E & Gil-Rodríguez[1] MC

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The species of *Osmundea* genus occupy a great diversity of environments in the coastline of the heavy tides exposed coasts in the Canary Islands. Until now, the following *Osmundea* species have been recorded for the region: *O. hybrida*, *O. oederi*, *O. pinnnatifida* and *O. truncata*. The present study showed that the combination of morphological and molecular data based on *rbc*L chloroplast sequences, allow to clarify the delimitation and identification of the *Osmundea* species registered to the Canary Islands, revealing some incoherence in the taxonomic identification, and at the same time, improving the phylogenetic studies of the group. The phylogenetic analysis finally reflected the presence of *O. pinnatifida* in Tenerife, and the possibility of the presence of new taxonomic entities. The previous analysis also showed the fact of the erroneous taxonomic identifications. Finally, the morphological and molecular comparison of the *O. pinnatifida* from Tenerife with the samples called like *O. pinnatifida* from Galicia and Andalucía, also show the erroneous taxonomic identifications, and corroborating the possible over-estimation of the *O. pinnatifida* populations, in Canary Islands and Iberian Peninsula.

Keywords: *Osmundea*; Canary Islands; phylogeny.

Choreonema thuretii and *Pneophyllum confervicola* (Corallinales, Rhodophyta), new corallines to the Azores

Couto[1,2,3] RP, Rosas-Alquicira EF, Rodrigues[1,3] AS & Neto[1,2,3] AI

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Coralline algae, despite abundant and ecologically important in the mid Atlantic Azores archipelago, have been poorly investigated. The present study reports two new additions to the coralline algal flora of the Azores: *Choreonema thuretii* (Bornet) F. Schmitz and *Pneophyllum confervicola* (Kützing) Y. M. Chamberlain (Corallinales, Rhodophyta). Both species were found associated to *Jania rubens* (Linnaeus) J. V. Lamouroux, a geniculate coralline red algae: *C. thuretii*, as a semiendophyte parasite, *P. confervicola*, as an encrusting epiphyte. Plants of *J. rubens* were carefully observed. Fractured fragments were prepared for scanning electron microscopy (SEM). For each species, measurements of cells and other diagnosing features were taken. Information on vegetative and reproductive species morphology is provided. Both species fall within their overall distributional range, extending their distribution further north in the Macaronesian region.

Keywords: Coralline algae; encrusting epiphyte; semiendophyte parasite.

Choreonema thuretii and *Pneophyllum confervicola* (Corallinales, Rhodophyta), new corallines to the Azores

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Introduction

Relatively little attention has been given to studies of the smaller microscopic coralline red algae (Rhodophyta) of the Azores. To provide better knowledge of the marine algal flora of the Azores, particular attention was given to searching for smaller microscopic species. Two new records, both to specific and generic level are given, along with preliminary information on vegetative and reproductive species morphology.

Study site:

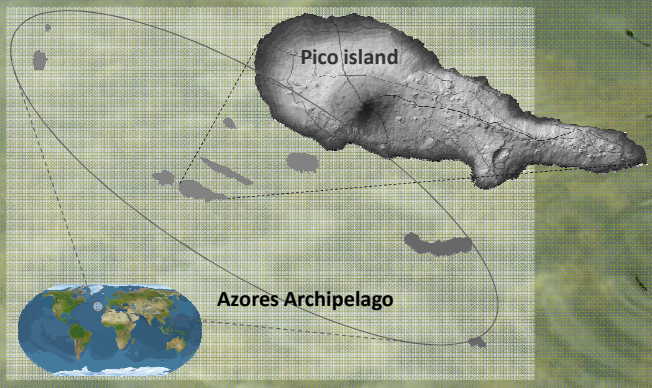

Figure 1. Pico island, Azores archipelago.

Results

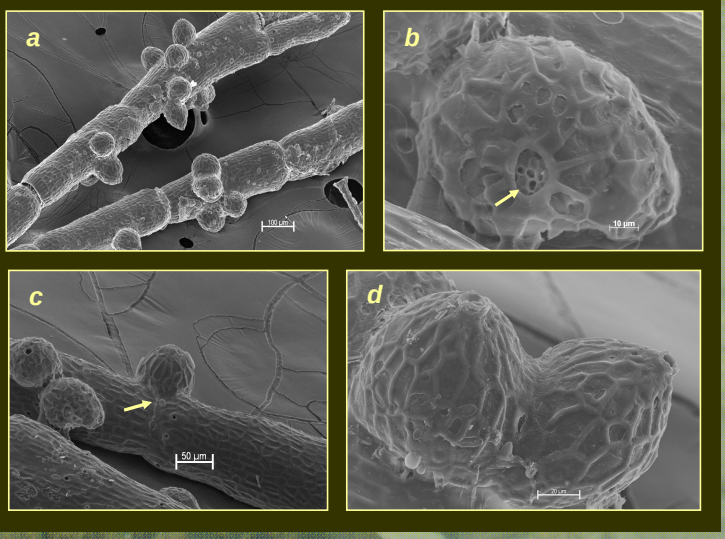

Figure 2. *Choreonema thuretii* . (*a*) *C. thuretii* semiendophyte parasite on *Jania rubens*. (*b*) Tetra-bisporangial multiporate plate. (*c*) Conceptacle at the genicula. (*d*) Geminated conceptacles.

Rhodophyta, Florideophyceae, Corallinales, Hapalidiaceae: *Choreonema thuretii* (Bornet) F. Schmitz (1889)

Plants were found as semiendophyte parasite on *J. rubens* (Fig. 2*a*). The specimens were visible as a calcareous conceptacle on the surface of host thalli, with surface composed of a reticulum of ridges enclosing flat plates. All conceptacles were similar in shape and size, however, gametangial conceptacles were globular to conical shaped, uniporate with 78-90 µm in diameter and 64-105 µm high and a gametangial pore with 4,5-10,6 µm in diameter. Tetra/bisporangial conceptacles presented a globular shape with 83-93 µm in diameter and 63-75 µm high. They were uniporate conceptacles, presenting a multiporate plate (Fig. 2*b*) inside the pore canal, witch has 7,7-16,5 µm in diameter. Conceptacles were found not only at the intergenicula, but also at the genicula (Fig. 2*c*), and geminated conceptacles were also found (Fig. 2*d*).

Rhodophyta, Florideophyceae, Corallinales, Corallinaceae: *Pneophyllum confervicola* (Kützing) Y.M. Chamberlain (1983)

Plants were found as epiphyte on *J. rubens* (Fig. 3*a*). Specimens presented a dorsiventral structure, dimerous, composed of a single layer of radiating, repeatedly branched (pseudodichotomously) basal filaments without erect filaments and each cell cut of a mainly uncalcified, small lenticular epithallial cell from its dorsal surface, showing a "*Pneophyllum* type" surface according to Chamberlain (1990). Non geniculate and attached, forming flat, crustose thalli more or less circular or lobed, diameter up to 229 µm and thickness up to 11 µm. Intercalary trichocytes were common. Cells in contiguous filaments joined by cell fusions. Germination disc (Fig. 3*b*) visible with 8 celled centre. Basal filaments constituted by unilayered, squarish basal cells witch are 5,69-15,31 µm long and 6,37-12,7 µm wide. The conceptacles observed were uniporate (Fig. 3*c*), dome shaped (Fig. 3*d*) with 51-88 µm diameter and 48-62 µm high.

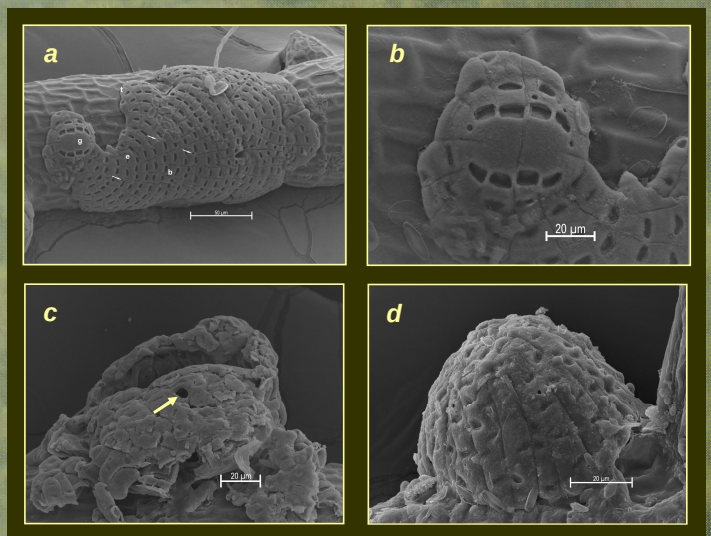

Figure 3. *Pneophyllum confervicola.* (*a*) Ephiphytic on *Jania rubens* showing developmental features of a dimerous thallus;. *g* - germinating spore; *b* - basal filament cell; *e* - epithelial cell, *t* - terminal initial; *arrows* - intercalary trichocytes. (*b*) Germination disc. (*c*) Uniporate conceptacle. (*d*) Dome shaped conceptacle.

Conclusion

This study increases the marine red algal flora of the Azores with two new species and also two new genera: *Choreonema* and *Pneophyllum*. Both *C. thuretii* and *P. confervicola* are world wide distributed species and none of them is likely to represent recent additions to the flora of the Azores, but have been overlooked until now because of their small size and/or parasitic/epiphytic habit. Both species fall within their overall distributional range, extending their distribution further north in the Macaronesian region.

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