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Marine algae collection in the Herbarium of the Funchal Natural History Museum (MADM) with new records from the archipelago of Madeira

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With 7 figures

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ABSTRACT: The marine algae collection, in the Herbarium of the Funchal Natural History Museum (MADM), contains macroalgae specimens from the archipelago of Madeira, with scientific and historical significance, the bulk of which is a collection of 598 specimens made by Tore Levring between 1968 and 1973. At present the Herbarium holds 967 specimens of marine algae, corresponding to a total of 206 species (39 Chlorophyta, 48 Ochrophyta, 119 Rhodophyta), 6 of which are new records from the archipelago of Madeira (*Ulva pseudorotundata*, *Dictyota adnata*, *Sargassum hystrix*, *Sargassum platycarpum*, *Sargassum polyceratium* and *Gymnophycus hapsiphorus*). Two already recorded species from the Selvagens are now recorded for the first time from the island of Madeira, (*Ulva polyclada* and *Sargassum cymosum*). *Sargassum hystrix* and *Sargassum polyceratium* are not only new for the archipelago of Madeira, but also new records for the whole Macaronesia.

Keywords: marine algae, MADM, Madeira, Porto Santo, Desertas, Selvagens, Macaronesia, new records, Northeast Atlantic Ocean.

RESUMO: A coleção de algas marinhas do Herbário do Museu de História Natural do Funchal (MADM) contém espécimes de macroalgas colhidas no arquipélago da Madeira, com interesse científico e histórico, tendo na sua génese uma coleção de 598 espécimes colhidos por Tore Levring entre 1968 e 1973. Toda a coleção de algas marinhas, totaliza 967 espécimes (598 da coleção Tore Levring), pertencentes a 206 espécies (39 Chlorophyta, 48 Ochrophyta, 119 Rhodophyta), das quais 6 são novos registos para o arquipélago da Madeira (*Ulva pseudorotundata*, *Dictyota adnata*, *Sargassum hystrix*, *Sargassum platycarpum*, *Sargassum polyceratium* e *Gymnophycus hapsiphorus*) e 2 anteriormente assinalados para as Selvagens, são novos assinalamentos para a ilha da Madeira (*Ulva polyclada* e *Sargassum cymosum*). *Sargassum hystrix* e *Sargassum polyceratium* não somente são espécies novas para o arquipélago da Madeira, como também novos registos para toda a Macaronésia.

Palavras-chave: alga marinha, MADM, Madeira, Porto Santo, Desertas, Selvagens, Macaronésia, novos registos, Oceano Atlântico Nordeste.

INTRODUCTION

The algal collection of the Herbarium of the Funchal Natural History Museum (MADM) was initiated, by Günther Maul in the early 1940's. The first marine alga in the MADM is a specimen of *Pterocladia capillacea* that was collected by Günther Maul in 15/2/1943 at Gorgulho (Funchal). In the late 1960's (1968-1973), 598 specimens collected by Tore Levring, professor of Marine Botany at the University of Göteborg, were added, giving a great increment to the collection.

The MADM collection possesses sixteen specimens collected during the CANCAP-II, CANCAP-III and CANCAP-IV expeditions between 1977 and 1983. During the 1980's and the beginning of the 1990's there were no more algae additions to this Herbarium. New additions started in 1994 and led in part to the publication of a checklist of the benthic marine plants of the archipelago of Madeira, based on published information and new collections (NETO *et al.*, 2001). In 2010 and 2011 two large expeditions organized by the Portuguese Government surveyed the Selvagens, Madeira, Desertas and Porto Santo: EMEPC/ M@rbis/ Selvagens 2010 and EMAM/ PEPC_ M@rbis/ 2011. Scientists involved in these expeditions deposited 257 specimens of macroalgae in MADM. Also in July 2011, a group of scientists lead by Prof. Ana Neto (University of Azores) visited Madeira and contributed to the enlargement of this algae collection, with 141 new specimens.

MATERIAL AND METHODS

For the purpose of this catalogue, the archipelago of Madeira covers the islands of Madeira, Porto Santo, Desertas and Selvagens (Fig. 1).

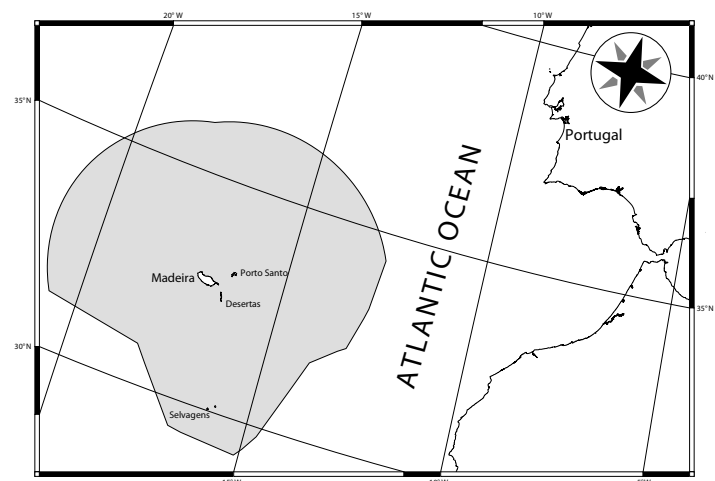


Fig. 1 – Map of the archipelago of Madeira. Grey area shows the Economic Exclusive Zone.

The adopted taxonomic organization follows NETO *et al.* (2001). For each species the original reference containing the first record from the archipelago is given, as well as the specimens deposited in the herbarium.

Abbreviations and other marks used: **M**, Madeira; **PS**, Porto Santo; **D**, Desertas Islands (Deserta Grande); **S**, Salvage Islands; **C**, Canary Islands; **A**, Azores; *, new record for the archipelago; ^{TL}, collected by Tore Levring.

Catalogue of MADM Algae

CHLOROPHYTA

Anadyomenaceae

Microdictyon sp.

Specimens: **M** (MADM 2937) **PS** (MADM 4024).

Microdictyon umbilicatum (Velley) Zanardini

(syn. *Microdictyon boergesenii* Setchell)

First record: **M** (LEVRING, 1974) as *Microdictyon boergesenii* Setchell.

Specimens: **M** (MADM 3251^{TL}; MADM 3252^{TL}) **PS** (MADM 4023).

Boodleaceae

Phyllodictyon anastomosans (Harvey) Kraft & M. J. Wynne

First record: **M** and **PS** (AUDIFFRED & PRUD'HOMME VAN REINE, 1985) as *Struvea anastomosans* (Harvey) Piccone & Grunow ex Piccone

Specimens: **C** (MADM 3867; MADM 3868).

Phyllodictyon pulcherrimum J. E. Gray

(syn. *Struvea ramosa* Dickie)

First record: **M** (LEVRING, 1974) as *Struvea ramosa* Dickie.

Specimens: **M** (MADM 3260^{TL}; MADM 3261^{TL}; MADM 3262^{TL}).

Ulvellaceae

Ulvella viridis (Reinke) R. Nielsen, C. J. O'Kelly & B. Wysor

First record: **M** (LEVRING, 1974) as *Entocladia viridis* Reinke.

Specimens: **M** (MADM 3831^{TL}; MADM 3832^{TL}).

Ulvaceae

Ulva clathrata (Roth) C. Agardh

(syn. *Enteromorpha clathrata* (Roth) Greville)

First record: **M** (GRUNOW, 1870) as *Enteromorpha ramulosa* Hook. and *Enteromorpha spinescens* Kutzing.

Specimens: **M** (MADM 3963; MADM 3964; MADM 3817^{TL}; MADM 3818^{TL}).

Ulva compressa Linnaeus

(syn. *Enteromorpha compressa* (Linné) Nees)

First record: **M** (GRUNOW, 1870) as *Enteromorpha compressa* (Linné) Nees.

Specimens: **PS** (MADM 2548) **M** (MADM 3807^{TL}; MADM

3809^{TL}; MADM 3810^{TL}; MADM 3811^{TL}; MADM 3812^{TL}; MADM 3813^{TL}) **D** (MADM 3808^{TL}).

Ulva flexuosa subsp. *paradoxa* (C. Agardh) M. J. Wynne

(*Enteromorpha flexuosa* (Wulfen ex Roth) J. Ag. subsp. *paradoxa* (Dillw.) Blinding)

First record: **M** (LEVRING, 1974) as *Enteromorpha flexuosa* (Wulfen ex Roth) J. Ag. subsp. *paradoxa* (Dillw.) Blinding.

Specimens: **M** (MADM 3814^{TL}).

Ulva intestinalis Linnaeus

(syn. *Enteromorpha intestinalis* (Linné) Nees)

First record: **S** (GAIN & MIRANDE, 1912) as *Enteromorpha intestinalis* (Linné) Nees.

Specimens: **M** (MADM 2984; MADM 3960; MADM 3961; MADM 3962) **S** (MADM 3163).

Ulva linza Linnaeus

(syn. *Enteromorpha ahlneriana* Blinding)

First record: **M** (TAYLOR, 1882).

Specimens: **M** (MADM 3805^{TL}; MADM 3806^{TL}).

Ulva polyclada Kraft

(syn. *Ulva multiramosa* E. Taskin)

First record: **S** (PARENTE *et al.*, 2000) as *Enteromorpha multiramosa* Blinding.

Specimens: **M** (MADM 2547).

Remarks: New record from Madeira Island. Locality: Reis Magos, Caniço; Date of collection: 2011/07/01; Collector: Sara Ferreira, EMAM 2011 Expedition; Identified by: Ana Neto & Sara Ferreira.

Ulva prolifera O. F. Müller

(syn. *Enteromorpha prolifera* (O. F. Muller) J. Agardh)

First record: **M** and **D** (LEVRING, 1974) as *Enteromorpha prolifera* (O. F. Muller) J. Agardh.

Specimens: **M** (MADM 3816^{TL}) **D** (MADM 3815^{TL}).

Ulva rigida C. Agardh

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 2624; MADM 2938; MADM 2965; MADM 3965; MADM 3966; MADM 3967; MADM 3819^{TL}; MADM 3820^{TL}; MADM 3821^{TL}; MADM 3822^{TL}; MADM 3823^{TL}; MADM 3824^{TL}; MADM 3825^{TL}; MADM 3826^{TL}; MADM 3827^{TL}; MADM 3828^{TL}; MADM 3829^{TL}; MADM 3830^{TL}).

* *Ulva pseudorotundata* Cormaci, G. Furnari & Alongi

(syn. *Ulva rotundata* Bliding) (Fig. 2).

First record: Present paper.

Specimens: M (MADM 2546; MADM 4036).

Remarks: Locality: Reis Magos, Caniço; Date of collection: 2011/07/01; Collector: Sara Ferreira, EMAM 2011 Expedition; Identified by: Ana Neto & Sara Ferreira.

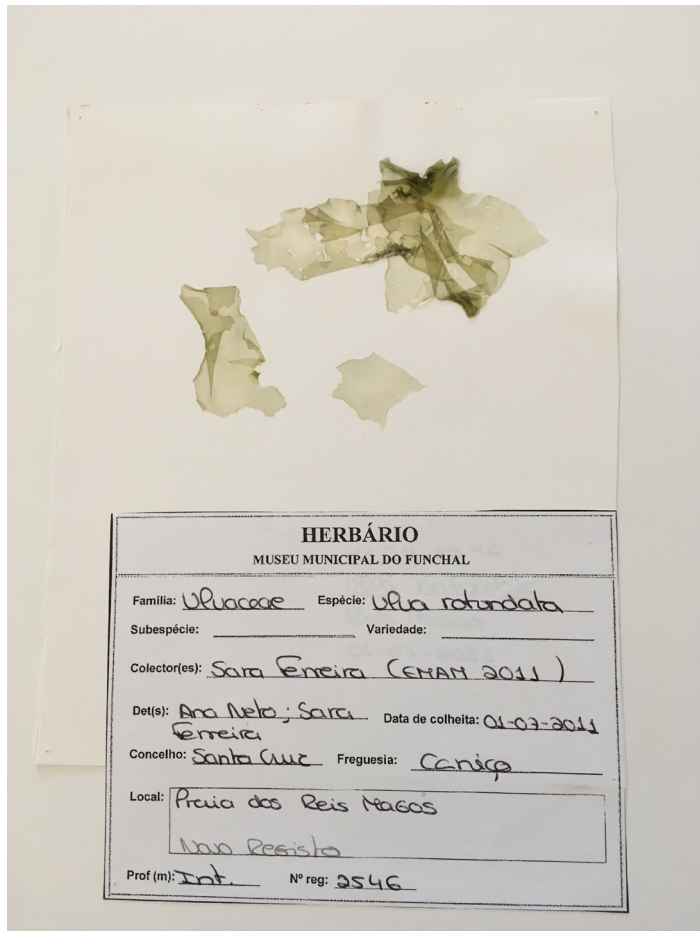


Fig. 2 – *Ulva pseudorotundata* Cormaci, G. Furnari & Alongi (syn. *Ulva rotundata* Bliding) (MADM 2546).

Ulva sp.

Specimens: M (MADM 2860; MADM 2862; MADM 2910; MADM 2915; MADM 2969; MADM 2970).

Dichotomosiphonaceae

Avrainvillea canariensis A. Gepp & E. S. Gepp

First record: PS (RIBEIRO *et al.*, 2018).

Specimens: M (MADM 6979).

Kornmanniaceae

Blidingia minima (Nägeli ex Kützing) Kylin

First record: M and PS (LEVRING, 1974).

Specimens: M (MADM 3588^{TL}) PS (MADM 3589^{TL}; MADM 3590^{TL}).

Cladophoraceae

Chaetomorpha aerea (Dillwyn) Kützing

First record: S (GAIN & MIRANDE, 1912).

Specimens: M (MADM 3330^{TL}; MADM 3331^{TL}; MADM 3332^{TL}; MADM 3333^{TL}; MADM 3334^{TL}).

Chaetomorpha ligustica (Kützing) Kützing

(syn. *Chaetomorpha capillaris* (Kützing) Børgesen)

First record: M (LEVRING, 1974) as *Chaetomorpha capillaris* (Kützing) Børgesen.

Specimens: M (MADM 3335^{TL}; MADM 3336^{TL}).

Chaetomorpha linum (O. F. Müller) Kützing

First record: M (LEVRING, 1974).

Specimens: M (MADM 3877; MADM 3878; MADM 3337^{TL}; MADM 3338^{TL}).

Chaetomorpha pachynema (Montagne) Montagne

First record: M (LEVRING, 1974).

Specimens: M (MADM 3876).

Remarks: According to the collectors Délia Cravo, Ana Neto and José Azevedo this identification needs to be confirmed.

Cladophora sp.

Specimens: M (MADM 2888; MADM 2911; MADM 2942; MADM 2943; MADM 2971).

Cladophora coelothrix Kützing

First record: M (GRUNOW, 1870) as *Cladophora repens* (J. Agarth) Harvey.

Specimens: M (MADM 3879; MADM 3363^{TL}; MADM 3364^{TL}) S (MADM 3362^{TL}).

Remarks: According to the collectors Délia Cravo and Ana Neto the identification of MADM 3879 needs to be confirmed.

Cladophora hutchinsiae (Dillwyn) Kützing

First record: M, S (LEVRING, 1974).

Specimens: M (MADM 3880; MADM 3348^{TL}; MADM 3349^{TL}; MADM 3350^{TL}; MADM 3351^{TL}; MADM 3352^{TL}; MADM 3353^{TL}; MADM 3354^{TL}; MADM 3355^{TL}).

Cladophora liebetruthii Grunow

First record: M (LEVRING, 1974) as *Cladophora boodleoides* Børgesen.

Specimens: M (MADM 2929; MADM 2967).

Remarks: According to the collectors Ana Neto, Mutue

Toyota Fujii and Maria Machín-Sánchez the identification of MADM 2929 needs to be confirmed.

Lychaete pellucida (Hudson) M. J. Wynne

(syn. *Cladophora pellucida* (Hudson) Kützing)

First record: **S** (GAIN, 1914) as *Cladophora pellucida* (Hudson) Kützing.

Specimens: **M** (MADM 2856; MADM 2883; MADM 4037) **D** (MADM 3356^{TL}; MADM 3357^{TL}).

Remarks: According to the collectors Ana Neto, Mutue Toyota Fujii, Maria Machín-Sánchez, Helena Encarnação, Eunice Nogueira, Abel Senties and Valeria Cassano the identifications of MADM 2856 and MADM 2883 need to be confirmed.

Cladophora prolifera (Roth) Kützing

First record: **D** (GAIN, 1914).

Specimens: **M** (MADM 2549; MADM 2945; MADM 3881; MADM 3882; MADM 3883; MADM 3285^{TL}; MADM 3358^{TL}; MADM 3359^{TL}; MADM 3360^{TL}; MADM 3361^{TL}).

Cladophora vagabunda (Linné) van den Hoek

(syn. *Cladophora fascicularis* (Mertens ex Agardh) Kützing).

First record: **M** (LEVRING, 1974) as *Cladophora fascicularis* (Mertens ex Agardh) Kützing

Specimens: **M** (MADM 3339^{TL}; MADM 3340^{TL}; MADM 3341^{TL}; MADM 3342^{TL}; MADM 3343^{TL}; MADM 3344^{TL}).

Ulotrichaceae

Urospora laeta (Thuret) Børgesen

First record: **D** (LEVRING, 1974).

Specimens: **D** (MADM 3803^{TL}; MADM 3804^{TL}).

Ulvophyceae family incertae sedis

Blastophysa rhizopus Reinke

First record: **M, D** (LEVRING, 1974).

Specimens: **M** (MADM 3833^{TL}).

Valoniaceae

Valonia sp.

Specimens: **M** (MADM 2928; MADM 2964).

Valonia utricularis (Roth) C. Agardh

First record: **M** (GRUNOW, 1870).

Specimens: **M** (MADM 2627; MADM 3968; MADM 3969; MADM 3970; MADM 3835^{TL}) **S** (MADM 2649; MADM 2664;

MADM 2687; MADM 3125; MADM 3142; MADM 3187; MADM 3194; MADM 3834^{TL}; MADM 3836^{TL}; MADM 3837^{TL}; MADM 3838^{TL}).

Derbesiaceae

Derbesia tenuissima

(Morris et De Notaris) P. Crouan et H. Crouan

First record: **D** (LEVRING, 1974).

Specimens: **D** (MADM 3487^{TL}).

Pedobesia simplex

(Meneghini ex Kützing) M. J. Wynne & Leliaert

(syn. *Derbesia lamourouxii* (J. Agardh) Solier)

First record: **M, D** (LEVRING, 1974) as *Derbesia lamourouxii* (J. Agardh) Solier.

Specimens: **D** (MADM 3486^{TL}).

Caulerpaceae

Caulerpa chemnitzia (Esper) J. V. Lamouroux

(syn. *Caulerpa peltata* J. V. Lamouroux)

First record: **S** (AUDIFFRED & WEISSCHER, 1984) as *Caulerpa racemosa* var. *peltata* (J. V. Lamouroux) Eubank.

Specimens: **S** (MADM 2661) **C** (MADM 3869).

Caulerpa prolifera (Forsskal) J. Agardh

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3264^{TL}; MADM 3265^{TL}; MADM 3266^{TL}; MADM 3267^{TL}) **PS** (MADM 4028).

Caulerpa webbiana Montagne

First record: **M, PS, S** (LEVRING, 1974).

Specimens: **M** (MADM 2626; MADM 2926; MADM 3870; MADM 3871; MADM 3872; MADM 3268^{TL}; MADM 3269^{TL}) **S** (MADM 2682; MADM 3167; MADM 3185; MADM 3232) **PS** (MADM 3270^{TL}).

Codiaceae

Codium adhaerens C. Agardh

First record: **S** (GAIN & MIRANDE, 1912).

Specimens: **M** (MADM 2620) **S** (MADM 2726; MADM 3119; MADM 3139; MADM 3165; MADM 3368^{TL}).

Codium decorticatum (Woodward) Howe

First record: **M, D** (LEVRING, 1974).

Specimens: **M** (MADM 3884; MADM 3369^{TL}; MADM 3370^{TL}) **D** (MADM 3371^{TL}).

Codium effusum (Rafinesque) Delle Chiaje

First record: **M** (HAROUN *et al.*, 2002).

Specimens: **M** (MADM 2861; MADM 2884; MADM 2903; MADM 2966).

Dasycladaceae

Dasycladus vermicularis (Scopoli) Krasser

First record: **M** (BARTON, 1897) as *Dasycladus claveformis* C. Agardh.

Specimens: **M** (MADM 2899; MADM 2939; MADM 2968; MADM 3892; MADM 3467^{TL}; MADM 3468^{TL}; MADM 3469^{TL}; MADM 3471^{TL}) **PS** (MADM 3465^{TL}) **D** (MADM 3464^{TL}) **S** (MADM 2650; MADM 2662; MADM 3124; MADM 3140; MADM 3186; MADM 3192; MADM 3463^{TL}; MADM 3466^{TL}; MADM 3470^{TL}).

Halimedaceae

Halimeda tuna (J. Ellis & Solander) J. V. Lamouroux

First record: Not recorded from the archipelago of Madeira.

Specimens: **C** (MADM 3909; MADM 3910).

Remarks: According to the collectors from CANCAP 2 Expedition the identification of MADM 3909 needs to be confirmed.

Udoteaceae

Pseudochlorodesmis furcellata (Zanardini) Børgesen

First record: **M, S** (LEVRING, 1974).

Specimens: **S** (MADM 3802^{TL}).

OCHROPHYTA

Acinetosporaceae

Feldmannia mitchelliae (Harvey) H.-S. Kim

(syn. *Giffordia mitchelliae* (Harv.) Hamel.)

First record: **M** (LEVRING, 1974) as *Giffordia mitchelliae* (Harv.) Hamel.

Specimens: **M** (MADM 3236^{TL}; MADM 3240^{TL}) **D** (MADM 3241^{TL}).

Chordariaceae

Asperococcus fistulosus (Hudson) W. J. Hooker

(syn. *Asperococcus echinatus* Greville)

First record: **M** (MENEZES, 1926) as *Asperococcus echinatus* Greville.

Specimens: **M** (MADM 3319^{TL}; MADM 3320^{TL}).

Elachista intermedia P. L. Crouan & H. M. Crouan

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3323^{TL}).

Leathesia marina (Lyngbye) Decaisne

First record: **S** (PARENTE *et al.*, 2000) as *Leathesia difformis* Areschoug.

Specimens: **M** (MADM 2927).

Liebmannia leveillei J. Agardh

First record: **M, D** (LEVRING, 1974).

Specimens: **M** (MADM 3324^{TL}).

Myrionema sp.

Specimens: **M** (MADM 3973; MADM 3978).

Remarks: According to the collectors Ana Neto, Mutue Toyota Fujii, Maria Machín-Sánchez and Helena Encarnação the identification of MADM 3973 needs to be confirmed.

Myrionema orbiculare J. Agardh

(syn. *Ascocyclus orbicularis* (J. Ag.) Magnus.)

First record: **M** (LEVRING, 1974) as *Ascocyclus orbicularis* (J. Ag.) Magnus.

Specimens: **M** (MADM 3321^{TL}; MADM 3322^{TL}).

Myrionema strangulans Greville

First record: **M, D** (LEVRING, 1974).

Specimens: **M** (MADM 3325^{TL}; MADM 3326^{TL}; MADM 3327^{TL}; MADM 3328^{TL}).

Nemacystus hispanicus (Sauvageau) Kylin

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3329^{TL}).

Sphacelariaceae

Sphacelaria cirrosa (Roth) C. Agardh

First record: **M** (GRUNOW, 1870) as *Sphacelaria irregularis* Kutzing.

Specimens: **M** (MADM 3747^{TL}; MADM 3748^{TL}; MADM 3749^{TL}).

Sphacelorbis nanus

(Nageli ex Kützing) Draisma, Prud'homme & H. Kawai

(syn. *Sphacelaria nana* Nageli ex Kutzing)

First record: **M, PS** (LEVRING, 1974) as *Sphacelaria britannica* Sauvageau.

Specimens: **M** (MADM 3746^{TL}).

Stypocaulaceae

Halopteris filicina (Grateloup) Kützing

First record: **M** (PICCONE, 1884) as *Sphacelaria filicina* (Grateloup) C. Agardh.

Specimens: **M** (MADM 2875; MADM 2936; MADM 3955; MADM 3771^{TL}; MADM 3772^{TL}; MADM 3773^{TL}; MADM 3775^{TL}) **S** (MADM 2752; MADM 3774^{TL}).

Halopteris scoparia (Linnaeus) Sauvageau

First record: **M** (BUCH, 1825) as *Conferva scoparia* Linnaeus.

Specimens: **M** (MADM 2633; MADM 2855; MADM 2874; MADM 3956; MADM 3957; MADM 3958; MADM 3777^{TL}; MADM 3778^{TL}; MADM 3779^{TL}; MADM 3780^{TL}; MADM 3781^{TL}; MADM 3782^{TL}; MADM 3783^{TL}; MADM 3788^{TL}; MADM 3789^{TL}; MADM 3792^{TL}; MADM 3793^{TL}; MADM 3794^{TL}; MADM 3796^{TL}; MADM 3797^{TL}; MADM 3799^{TL}; MADM 3801^{TL}) **PS** (MADM 3776^{TL}; MADM 3786^{TL}; MADM 3787^{TL}; MADM 3800^{TL}; MADM 4021) **D** (MADM 3798^{TL}) **S** (MADM 2723; MADM 3150; MADM 3235; MADM 3784^{TL}; MADM 3785^{TL}; MADM 3790^{TL}; MADM 3791^{TL}; MADM 3795^{TL}) MADM 3959.

Remarks: MADM 3959 location site was not registered.

Cladostephaceae

Cladostephus spongiosus (Hudson) C. Agardh

First record: **M** (PICCONE, 1884).

Specimens: **M** (MADM 2864; MADM 2876).

Cladostephus spongiosus f. *verticillatum*

(Lightfoot) Prud'homme van Reine

First record: **M** (LEVRING, 1974) as *Cladostephus verticillatum* (Lightfoot) Lyngbye.

Specimens: **M** (MADM 3365^{TL}; MADM 3367^{TL}) **PS** (MADM 3366^{TL}).

Dictyotaceae

Dictyopteris polypodioides (De Candolle) J. V. Lamouroux

(syn. *Dictyopteris membranacea* (Stackhouse) Batters)

First record: **M** (PICCONE, 1884) as *Haliseris polypodioides* (A. P. de Candolle) C. Agardh.

Specimens: **M** (MADM 2925; MADM 3894; MADM 3895; MADM 3488^{TL}; MADM 3489^{TL}; MADM 3490^{TL}; MADM 3491^{TL}; MADM 3492^{TL}) **PS** (MADM 3493^{TL}; MADM 4029) **C** (MADM 3896; MADM 3897).

Dictyota sp.

Specimens: **M** (MADM 2623; MADM 2982).

* *Dictyota adnata* Zanardini (Fig. 3).

First record: Present paper.

Specimens: **M** (MADM 3898).

Remarks: Locality: Lido, Funchal; Year of collection: 1995; Collectors: José Azevedo & António Domingos Abreu; Identified by: Délia Cravo & Ana Neto.

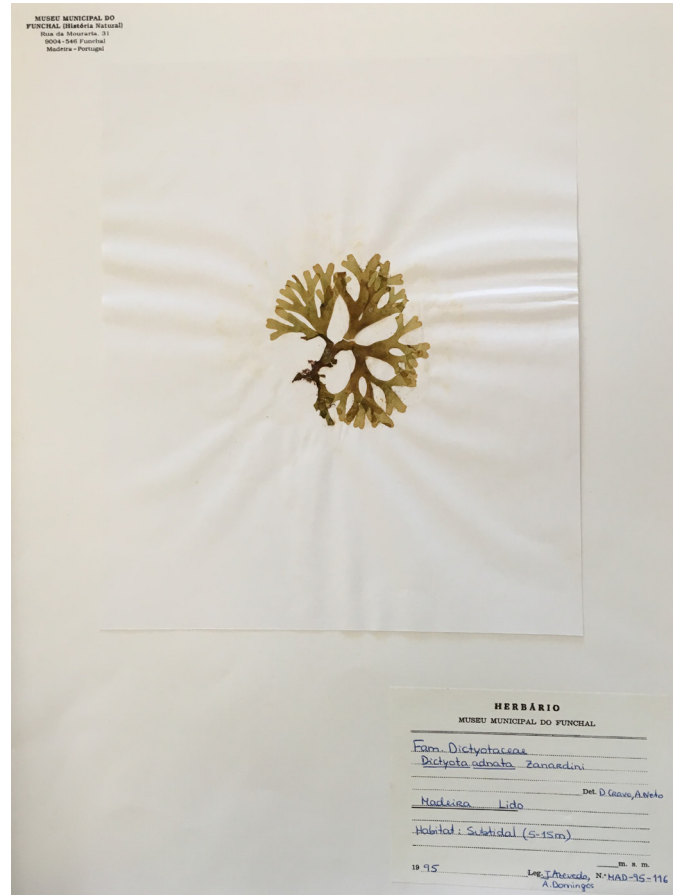


Fig. 3 – *Dictyota adnata* Zanardini (MADM 3898).

Dictyota bartayresiana J. V. Lamouroux

First record: **S** (AUDIFFRED & WEISSCHER, 1984) as *Dictyota bartayresii* J. V. Lamouroux.

Specimens: **SP** (MADM 3221).

Dictyota ciliolata Sonder ex Kützing

First record: **S** (AUDIFFRED & WEISSCHER, 1984).

Specimens: **M** (MADM 2935).

Dictyota dichotoma (Hudson) J. V. Lamouroux

First record: **M** (MENEZES, 1926).

Specimens: **M** (MADM 3899; MADM 3494^{TL}; MADM 3495^{TL}; MADM 3496^{TL}; MADM 3497^{TL}; MADM 3498^{TL}; MADM 3499^{TL}; MADM 3500^{TL}; MADM 3504^{TL}) **S** (MADM 3501^{TL}; MADM 3502^{TL}; MADM 3503^{TL}) **PS** (MADM 4019; MADM 4032).

Dictyota fasciola (Roth) J. V. Lamouroux

First record: **S** (GAIN & MIRANDE, 1912).

Specimens: **PS** (MADM 3508^{TL}) **S** (MADM 3509^{TL}).

Dictyota implexa (Desfontaines) J. V. Lamouroux

(syn. *Dictyota linearis* (C. Agardh) Greville)

First record: **M** (LEVRING, 1974) as *Dictyota linearis* (C. Agardh) Greville.

Specimens: **M** (MADM 2904; MADM 2972; MADM 3900)

PS (MADM 2553; MADM 3507^{TL}) **S** (MADM 3505^{TL}; MADM 3506^{TL}).

Dictyota liturata J. Agardh

First record: **S** (PARENTE *et al.*, 2000).

Specimens: **M** (MADM 2933) **PS** (MADM 4020).

Dictyota pinnatifida Kützing

First record: **M, S** (JOHN *et al.*, 2004).

Specimens: **M** (MADM 2552; MADM 2878).

Lobophora variegata (J. V. Lamouroux) Womersley ex Oliveira
(syn. *Pocockiella variegata* (J. V. Lamouroux) Papenfuss)

First record: **M** (MENEZES, 1926) as *Zonaria variegata* J. V. Lamouroux.

Specimens: **M** (MADM 3527^{TL}; MADM 3529^{TL}; MADM 3530^{TL})
S (MADM 3528^{TL}) **PS** (MADM 4031).

Padina pavonica (Linné) Thivy

First record: **M** (GRUNOW, 1870) as *Padina pavonia* (Linnaeus) J. V. Lamouroux.

Specimens: **M** (MADM 2554; MADM 2621; MADM 2857; MADM 2873; MADM 2931; MADM 2973; MADM 3901; MADM 3511^{TL}; MADM 3515^{TL}; MADM 3516^{TL}; MADM 3518^{TL}; MADM 3520^{TL}; MADM 3521^{TL}; MADM 3522^{TL}; MADM 3523^{TL}; MADM 3524^{TL}; MADM 3526^{TL}) **PS** (MADM 2555; MADM 3514^{TL}; MADM 3519^{TL}; MADM 4022) **D** (MADM 3513^{TL}) **S** (MADM 2647; MADM 2665; MADM 2727; MADM 2746; MADM 3121; MADM 3130; MADM 3173; MADM 3179; MADM 3205; MADM 3510^{TL}; MADM 3512^{TL}; MADM 3517^{TL}; MADM 3525^{TL}).

Taonia atomaria (Woodward) J. Agardh

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 2932; MADM 3902; MADM 3531^{TL}; MADM 3532^{TL}).

Zonaria tournefortii (J. V. Lamouroux) Montagne

First record: **S** (PICCONE, 1884).

Specimens: **M** (MADM 3903; MADM 3904; MADM 3905;

MADM 3906; MADM 3982; MADM 3533^{TL}; MADM 3534^{TL}; MADM 3535^{TL}; MADM 3536^{TL}; MADM 3537^{TL}; MADM 3539^{TL}; MADM 3540^{TL}; MADM 3541^{TL}; MADM 3542^{TL}).

Scytosiphonaceae

Colpomenia peregrina Sauvageau

First record: **S** (PARENTE *et al.*, 2000).

Specimens: **M** (MADM 3948).

Colpomenia sinuosa (Mertens ex Roth) Derbès et Solier

First record: **M** (GRUNOW, 1870) as *Asperococcus sinuosus* (Mertens ex Roth) Bory.

Specimens: **M** (MADM 2622; MADM 2950; MADM 3949; MADM 3741^{TL}) **PS** (MADM 3740^{TL}; MADM 4030) **S** (MADM 3141).

Hydroclathrus clathratus (Bory ex C. Agardh) Howe

First record: **S** (GAIN & MIRANDE, 1912) as *Hydroclathrus cancellatus* Bory.

Specimens: **M** (MADM 3950; MADM 3742^{TL}) **PS** (MADM 4027).

Scytosiphon lomentaria (Lyngbye) Link

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3951; MADM 3743^{TL}; MADM 3744^{TL}; MADM 3745^{TL}).

Sporochnaceae

Sporochnus bolleanus Montagne

First record: **M, D** (LEVRING, 1974).

Specimens: **M** (MADM 3750^{TL}; MADM 3751^{TL}; MADM 3752^{TL}; MADM 3753^{TL}; MADM 3754^{TL}).

Sporochnus pedunculatus (Hudson) C. Agardh

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3755^{TL}; MADM 3756^{TL}).

Arthrocladiaceae

Arthrocladia villosa (Hudson) Duby

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3253^{TL}).

Sargassaceae

Cystoseira sp.

Specimens: **M** (MADM 2537; MADM 2866; MADM 2902; MADM 2919; MADM 2920; MADM 2941).

Cystoseira abies-marina (S. G. Gmelin) C. Agardh

First record: **M** (GRUNOW, 1870).

Specimens: **M** (MADM 2538; MADM 2854; MADM 3931; MADM 3932; MADM 3688^{TL}; MADM 3689^{TL}; MADM 3690^{TL}; MADM 3691^{TL}; MADM 3692^{TL}; MADM 3693^{TL}; MADM 3694^{TL}; MADM 3695^{TL}; MADM 3696^{TL}; MADM 3697^{TL}) **S** (MADM 2725; MADM 3160) **C** (MADM 3933).

Cystoseira compressa (Esper) Gerloff & Nizamuddin

First record: **M, S** (LEVRING, 1974) as *Cystoseira fimbriata* Bory.

Specimens: **M** (MADM 2947; MADM 3934) **S** (MADM 2689; MADM 3104; MADM 3132; MADM 3172; MADM 3215).

Cystoseira foeniculacea (Linné) Greville

(syn. *Cystoseira discors* (Linné) C. Agardh)

First record: **M** (GRUNOW, 1870) as *Cystoseira abrotanifolia* (Linnaeus) C. Agardh.

Specimens: **M** (MADM 3935; MADM 3936; MADM 3699^{TL}; MADM 3719^{TL}; MADM 3720^{TL}; MADM 3721^{TL}; MADM 3722^{TL}; MADM 3724^{TL}) **PS** (MADM 3698^{TL}; MADM 3723^{TL}) **C** (MADM 3937).

Cystoseira humilis Schousboe ex Kützing

First record: **S** (GAIN & MIRANDE, 1912) as *Cystoseira canariensis* Sauvageau.

Specimens: **M** (MADM 3938; MADM 3939; MADM 3940; MADM 3726^{TL}) **PS** (MADM 2536; MADM 2540) **S** (MADM 3725^{TL}; MADM 3727^{TL}) **C** (MADM 3941).

Cystoseira wildpretii Nizamuddin

First record: **M** (FERREIRA, 2011).

Specimens: **M** (MADM 2847).

Cystoseira tamariscifolia (Hudson) Papenfuss

First record: **M** (MENEZES, 1926) as *Cystoseira ericoides* (Linné) C. Agardh.

Specimens: **M** (MADM 3942; MADM 3728^{TL}; MADM 3729^{TL}).

Sargassum sp.

Specimens: **M** (MADM 4040).

Sargassum cymosum C. Agardh

First record: **S** (PARENTE et al., 2000).

Specimens: **M** (MADM 2918).

Remarks: New Record for Madeira Island. Locality: Praia da Laje, Seixal; Date of collection: 2011/07/07; Collectors: Eunice Nogueira, Abel Sentiés, Valeria Cassano, Helena Encarnação; Identified by: Ana Neto, Sara Ferreira.

Sargassum desfontainesii (Turner) C. Agardh

First record: **M, DG** (PICCONE, 1884).

Specimens: **M** (MADM 3943; MADM 3730^{TL}; MADM 3731^{TL}; MADM 3732^{TL}).

Sargassum filipendula C. Agardh

First record: **S** (PARENTE et al., 2000).

Specimens: **M** (MADM 2545; MADM 2871; MADM 2872).

Sargassum furcatum Kützing

First record: **S** (PARENTE et al., 2000) **M** (FERREIRA, 2011).

Specimens: **M** (MADM 2539).

* *Sargassum hystrix* J. Agardh (Fig. 4).

First record: Present paper.

Specimens: **M** (MADM 2868).

Remarks: Locality: Ponta de S. Jorge, Santana; Date of collection: 2011/07/06; Collectors: Eunice Nogueira, Abel Sentiés, Valeria Cassano; Identified by: Ana Neto, Sara Ferreira.

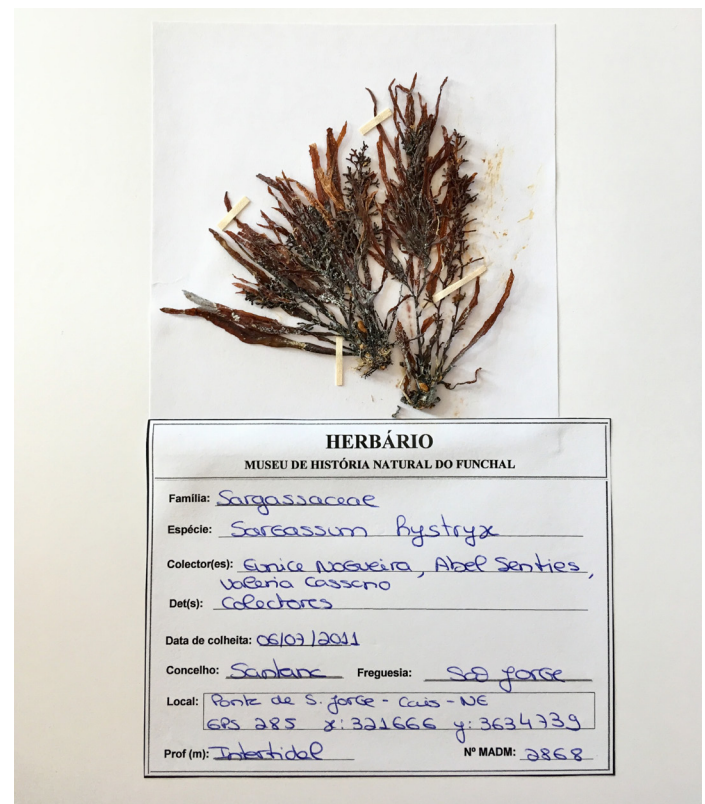


Fig. 4 – *Sargassum hystrix* J. Agardh (MADM 2868).

* *Sargassum platycarpum* Montagne (Fig. 5).

First record: Present paper.

Specimens: **M** (MADM 2975).

Remarks: Locality: Reis Magos, Caniço; Date of collection: 2011/07/08; Collectors: Ana Neto, Mutue Toyota Fujii, Maria Machín-Sánchez, Helena Encarnação; Identified by: Ana Neto, Sara Ferreira.

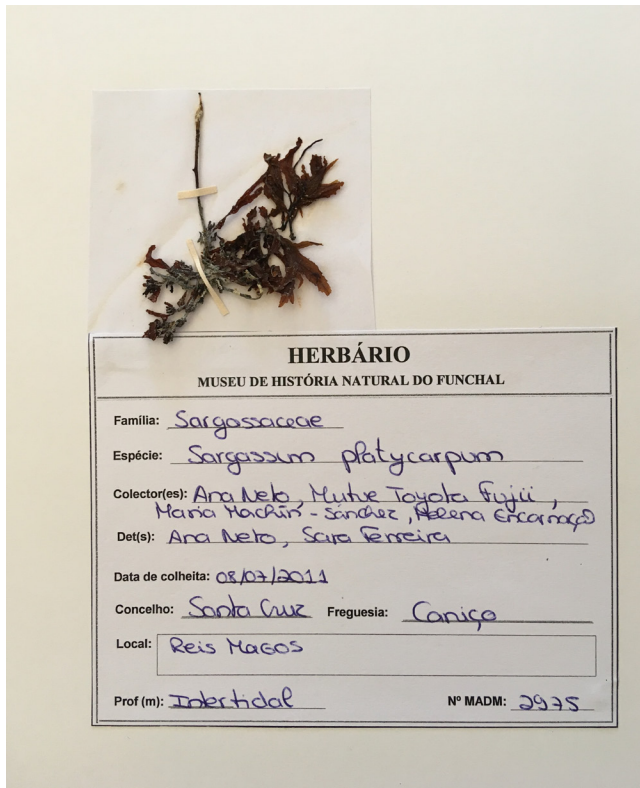


Fig. 5 – *Sargassum platycarpum* Montagne (MADM 2975).

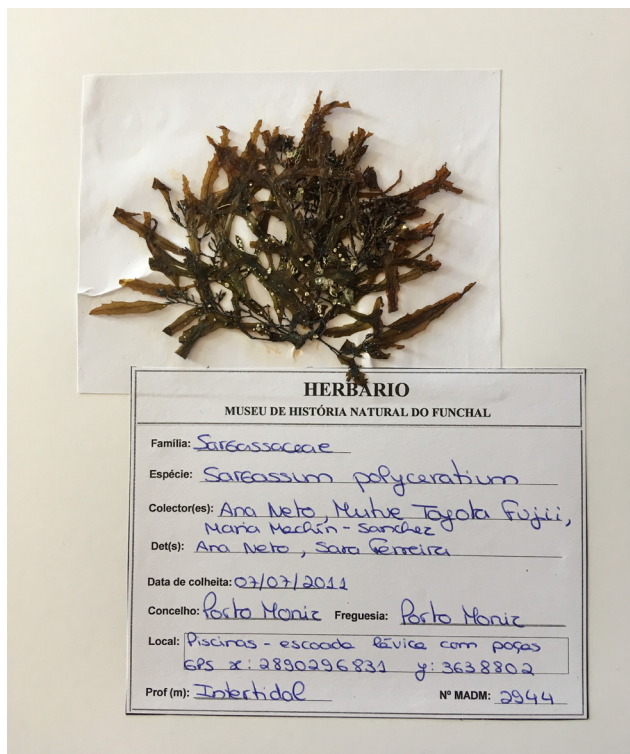


Fig. 6 – *Sargassum polyceratium* Montagne (MADM 2944).

* *Sargassum polyceratium* Montagne (Fig. 6).

First record: Present paper.

Specimens: M (MADM 2944).

Remarks: Locality: Porto Moniz (Piscinas); Date of collection: 2011/07/07; Collectors: Ana Neto, Mutue Toyota Fujii, Maria Machín-Sánchez; Identified by: Ana Neto, Sara Ferreira.

Sargassum vulgare C. Agardh

First record: S (GAIN, 1914).

Specimens: M (MADM 3944; MADM 3945; MADM 3946; MADM 3733^{TL}; MADM 3734^{TL}; MADM 3735^{TL}).

Sphacelariaceae

Sphacelaria sp.

Specimens: M (MADM 3972; MADM 3974).

RHODOPHYTA

Acrochaetiaceae

Acrochaetium crassipes Børgesen

First record: M, S (LEVRING, 1974).

Specimens: M (MADM 3242^{TL}; MADM 3243^{TL}; MADM 3244^{TL}; MADM 3246^{TL}; MADM 3247^{TL}) S (MADM 3245^{TL}).

Acrochaetium pulchellum Børgesen

First record: M (LEVRING, 1974).

Specimens: M (MADM 3248^{TL}).

Acrochaetium robustum Børgesen

First record: M (LEVRING, 1974).

Specimens: M (MADM 3249^{TL}).

Acrosymphytaceae

Acrosymphyton purpuriferum (J. Agardh) Sjöstedt

First record: M, D (LEVRING, 1974).

Specimens: M (MADM 3250^{TL}).

Stylonemataceae

Stylonema alsidii (Zanardini) K. M. Drew

(syn. *Goniotrichum alsidii* (Zanardini) Howe)

First record: M, D, S (LEVRING, 1974) as *Goniotrichum alsidii* (Zanardini) Howe.

Specimens: M (MADM 3765^{TL}) D (MADM 3767^{TL}; MADM 3768^{TL}; MADM 3769^{TL}; MADM 3770^{TL}) S (MADM 3764^{TL}; MADM 3766^{TL}).

Erythrotrichiaceae

Erythrocladia irregularis Rosenvinge

First record: **M, S** (LEVRING, 1974).

Specimens: **M** (MADM 3544 ^{TL}).

Erythrotrichia carnea (Dillwyn) J. Agardh

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3547 ^{TL}; MADM 3549 ^{TL}) **S** (MADM 3548 ^{TL}).

Sahlingia subintegra (Rosenvinge) Kornmann

(syn. *Erythrocladia subintegra* Rosenvinge)

First record: **M, S** (LEVRING, 1974) as *Erythrocladia subintegra* Rosenvinge.

Specimens: **M** (MADM 3545 ^{TL}; MADM 3546 ^{TL}).

Colaconemataceae

Colaconema caespitosum

(J. Agardh) Jackelman, Stegenga & J. J. Bolton

(syn. *Rhodothamniella codii* (Hamel) Feldmann)

First record: **M, D** (LEVRING, 1974) as *Rhodothamniella codii* (Hamel) Feldmann.

Specimens: **M** (MADM 3373 ^{TL}; MADM 3374 ^{TL}) **D** (MADM 3375 ^{TL}).

Colaconema daviesii (Dillwyn) Stegenga

(syn. *Acrochaetium daviesii* (Dillwyn) Nageli)

First record: **M** (TAYLOR, 1882) as *Callithamnion daviesii* (Dillwyn) Lyngbye.

Specimens: **M** (MADM 3372 ^{TL}).

Callithamniaceae

Callithamnion sp.

Specimens: **M** (MADM 2877; MADM 2951; MADM 2952).

Seirospora sp.

Specimens: **M** (MADM 2980; MADM 2985).

Remarks: According to the collectors Eunice Nogueira, Abel Senties and Valeria Cassano the identification of MADM 2985 needs to be confirmed.

Dumontiaceae

Dudresnaya sp.

Specimens: **M** (MADM 2901).

Remarks: According to the collectors Helena Encarnação,

Eunice Nogueira, Abel Senties and Valeria Cassano this identification need to be confirmed.

Liagoraceae

Ganonema sp.

Specimens: **M** (MADM 2529).

Ganonema farinosum

(J. V. Lamouroux) K. C. Fan & Yung C. Wang

First record: **M** (FERREIRA, 2011).

Specimens: **M** (MADM 4034).

Liagora sp.

Specimens: **M** (MADM 2895; MADM 2963) **PS** (MADM 2531; MADM 2532; MADM 2534).

Liagora canariensis Børgesen

First record: **M, D** (LEVRING, 1974).

Specimens: **M** (MADM 3591 ^{TL}).

Liagora ceranoides J. V. Lamouroux

First record: **M** (MENEZES, 1926) as *Liagora pulverulenta* C. Agardh.

Specimens: **M** (MADM 3593 ^{TL}; MADM 3594 ^{TL}; MADM 3595 ^{TL}) **S** (MADM 3592 ^{TL}).

Liagora distenta (Mertens ex Roth) J. V. Lamouroux

First record: **M** (HARVEY, 1863).

Specimens: **M** (MADM 3596 ^{TL}; MADM 3597 ^{TL}; MADM 3598 ^{TL}; MADM 3600 ^{TL}) **PS** (MADM 3599 ^{TL}).

Liagora tetrasporifera Børgesen

First record: **S** (WEISSCHER, 1983).

Specimens: **PS** (MADM 3912; MADM 3914; MADM 3915) **C** (MADM 3913).

Liagora viscida (Forsk.) C. Agardh

First record: **S** (GAIN & MIRANDE, 1912).

Specimens: **PS** (MADM 2533).

Nemalion helminthoides (Velley) Batters

First record: **S** (PARENTE *et al.*, 2000).

Specimens: **M** (MADM 2865).

Neoizziella divaricata

(C. K. Tseng) S. M. Lin, S.-Y. Yang & Huisman

(syn. *Liagora divaricata* C. K. Tseng)

Specimens: **A** (MADM 3911).

Titanophycus validus

(Harvey) Huisman, G. W. Saunders & A. R. Sherwood
(syn. *Liagora valida* Harvey)

First record: **M** (LEVRING, 1974) as *Liagora valida* Harvey.

Specimens: **M** (MADM 2530; MADM 3601^{TL}; MADM 3602^{TL})
C (MADM 3916).

Galaxauraceae*Galaxaura rugosa* (J. Ellis et Solander) J. V. Lamouroux

First record: **S** (PICKERING & HANSEN, 1969) as *Galaxaura flagelliformis* Kjellman.

Specimens: **S** (MADM 3550^{TL}).

Tricleocarpa fragilis (Linnaeus) Huisman & R.A. Townsend

(syn. *Galaxaura oblongata* (J. Ellis et Solander) J. V. Lamouroux)

First record: **S** (LOWE, 1869) as *Galaxaura oblongata* (J. Ellis et Solander) J. V. Lamouroux.

Specimens: **S** (MADM 3551^{TL}; MADM 3552^{TL}; MADM 3553^{TL}).

Scinaiceae*Scinaia complanata* (F. S. Collins) A. D. Cotton

First record: **M, D** (LEVRING, 1974).

Specimens: **M** (MADM 3738^{TL}; MADM 3739^{TL}) **D** (MADM 3737^{TL}).

Scinaia furcellata (Turner) J. Agardh

First record: **M, D** (LEVRING, 1974), **D** (CABIOCH, 1974).

Specimens: **M** (MADM 3947).

Gelidiaceae*Gelidium crinale* (Hare ex Turner) Gaillon

First record: **M** (MENEZES, 1926).

Specimens: **S** (MADM 3554^{TL}).

Gelidium pusillum (Stackhouse) Le Jolis

First record: **M, D, S** (LEVRING, 1974).

Specimens: **M** (MADM 2976; MADM 3555^{TL}; MADM 3557^{TL})
D (MADM 3556^{TL}) **S** (MADM 2641; MADM 3558^{TL}; MADM 3559^{TL}).

Gelidium spathulatum (Kützinger) Bornet

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3560^{TL}).

Gelidium spinosum (S. G. Gmelin) P. C. Silva

(syn. *Gelidium latifolium* Bornet ex Hauck)

First record: **M** (HAROUN *et al.*, 2002) as *Gelidium latifolium* Bornet ex Hauck.

Specimens: **M** (MADM 2940, MADM 3907).

Pterocladaceae*Pterocladia capillacea*

(Gmelin) Santelices et Hommersand

(syn. *Pterocladia capillacea* (S. G. Gmelin) Bornet)

First record: **S** (GAIN, 1914) as *Pterocladia capillacea* (S. G. Gmelin) Bornet.

Specimens: **M** (MADM 2550; MADM 2905; MADM 2974; MADM 3917; MADM 3918; MADM 3919; MADM 3606^{TL}; MADM 3607^{TL}; MADM 3608^{TL}; MADM 3609^{TL}; MADM 3610^{TL}; MADM 3611^{TL}; MADM 3612^{TL}; MADM 3613^{TL}; MADM 3614^{TL}; MADM 3615^{TL}; MADM 3616^{TL}; MADM 3617^{TL}; MADM 3618^{TL})
S (MADM 3619^{TL}).

Gracilariaceae*Gracilaria armata* (C. Agardh) Greville

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3567^{TL}).

Gracilariopsis longissima

(S. G. Gmelin) M. Steentoft, L. M. Irvine & W. F. Farnham
(syn. *Gracilaria verrucosa* (Hudson) Papenfuss)

First record: **M** (LEVRING, 1974) as *Gracilaria verrucosa* (Hudson) Papenfuss.

Specimens: **M** (MADM 3568^{TL}; MADM 3569^{TL}).

Bonnemaisoniaceae*Asparagopsis armata* Harvey

First record: **M, D, S** (LEVRING, 1974).

Specimens: **M** (MADM 2632; MADM 3863; MADM 3254^{TL}; MADM 4355^{TL}; MADM 3256^{TL}; MADM 3257^{TL}; MADM 3258^{TL}; MADM 3259^{TL}).

Falkenbergia rufolanosa (Harvey) F. Schmitz

First record: **M** (NETO *et al.*, 2001).

Specimens: **M** (MADM 2986).

Remarks: This corresponds to the diploid tetrasporophyte stage of *A. armata*.

Asparagopsis taxiformis (Delile) Trevisan de Saint-Léon

First record: **M, D, S** (LEVRING, 1974).

Specimens: **M** (MADM 2556; MADM 3864; MADM 3865^{TL}; MADM 4038; MADM 4039; MADM 4041).

Falkenbergia sp.

Specimens: **M** (MADM 2956; MADM 3866).

Remarks: This corresponds to the diploid tetrasporophyte stage of *Asparagopsis*.

Dumontiaceae

Dudresnaya verticillata (Withering) Le Jolis

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3543^{TL}).

Gloiosiphoniaceae

Thuretella schousboei (Thuret) F. Schmitz

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3564^{TL}; MADM 3565^{TL}; MADM 3566^{TL}).

Peyssonneliaceae

Peyssonnelia rubra (Greville) J. Agardh

First record: **M, D** (LEVRING, 1974), **D** (CABIOCH, 1974).

Specimens: **M** (MADM 3603^{TL}; MADM 3604^{TL}; MADM 3605^{TL}).

Hapalidiaceae

Choreonema thuretii (Bornet) F. Schmitz

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3474^{TL}; MADM 3573^{TL}; MADM 3574^{TL}; MADM 3575^{TL}) **S** (MADM 3570^{TL}; MADM 3571^{TL}; MADM 3572^{TL}).

Melobesia membranacea (Esper) J. V. Lamouroux

(syn. *Epilithon membranaceum* (Esper) Heydrich)

First record: **M, S** (LEVRING, 1974) as *Epilithon membranaceum* (Esper) Heydrich.

Specimens: **M** (MADM 3576^{TL}; MADM 3577^{TL}; MADM 3578^{TL}; MADM 3579^{TL}; MADM 3580^{TL}; MADM 3581^{TL}; MADM 3582^{TL}; MADM 3583^{TL}; MADM 3584^{TL}; MADM 3585^{TL}; MADM 3586^{TL}; MADM 3587^{TL}).

Corallinaceae

Amphiroa beauvoisii J. V. Lamouroux

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3376^{TL}; MADM 3377^{TL}).

Corallina sp.

Specimens: **M** (MADM 2893).

Corallina officinalis Linné

First record: **S** (PICCONE, 1884).

Specimens: **M** (MADM 3885; MADM 3886; MADM 3887; MADM 3378^{TL}; MADM 3380^{TL}; MADM 3381^{TL}; MADM 3382^{TL}; MADM 3385^{TL}; MADM 3387^{TL}; MADM 3388^{TL}; MADM 3389^{TL}) **PS** (MADM 3384^{TL}; MADM 3386^{TL}) **S** (MADM 3379^{TL}; MADM 3383^{TL}).

Hydrolithon farinosum

(J. V. Lamouroux) D. Penrose & Y. M. Chamberlain

(syn. *Melobesia farinosa* J. V. Lamouroux)

First record: **M, S** (PICCONE, 1884) as *Melobesia farinosa* J. V. Lamouroux.

Specimens: **M** (MADM 3427^{TL}).

Jania capillacea Harvey

First record: **S** (WEISSCHER, 1982).

Specimens: **M** (MADM 2916).

Jania pumila J. V. Lamouroux

First record: **M** (LEVRING, 1974).

Specimens: **PS** (MADM 4033).

Jania rubens (Linné) J. V. Lamouroux

First record: **M** (TAYLOR, 1882).

Specimens: **M** (MADM 3398^{TL}; MADM 3399^{TL}; MADM 3406^{TL}; MADM 3407^{TL}; MADM 3409^{TL}; MADM 3412^{TL}; MADM 3413^{TL}; MADM 3416^{TL}; MADM 3418^{TL}; MADM 3419^{TL}; MADM 3420^{TL}; MADM 3423^{TL}; MADM 3424^{TL}; MADM 3425^{TL}) **PS** (MADM 3403^{TL}; MADM 3414^{TL}; MADM 3415^{TL}; MADM 3421^{TL}; MADM 3422^{TL}; MADM 3426^{TL}) **S** (MADM 3400^{TL}; MADM 3401^{TL}; MADM 3402^{TL}; MADM 3404^{TL}; MADM 3405^{TL}; MADM 3408^{TL}; MADM 3410^{TL}; MADM 3411^{TL}; MADM 3417^{TL}).

Jania rubens var. *corniculata* (Linnaeus) Yendo

(syn. *Jania corniculata* (Linné) J. V. Lamouroux)

First record: **PS** (AUDIFFRED & PRUD'HOMME VAN REINE, 1985) as *Jania corniculata* (Linné) J. V. Lamouroux.

Specimens: **C** (MADM 3888).

Lithophyllum corallinae (P. L. Crouan & H. M. Crouan) Heydrich

(syn. *Dermatolithon corallinae* (P. Crouan) Foslie)

First record: **M, PS, S** (LEVRING, 1974) as *Dermatolithon corallinae* (P. Crouan) Foslie.

Specimens: **M** (MADM 3392^{TL}) **S** (MADM 3390^{TL}; MADM 3391^{TL}).

Titanoderma pustulatum (J. V. Lamouroux) Nägeli

(syn. *Dermatolithon pustulatum* (J. V. Lamouroux) Foslie)

First record: **M** (GRUNOW, 1870) as *Melobesia pustulata* J. V. Lamouroux.

Specimens: **M** (MADM 3393^{TL}; MADM 3394^{TL}; MADM 3395^{TL}; MADM 3396^{TL}; MADM 3397^{TL}).

Pneophyllum confervicola (Kützing) Y. M. Chamberlain
(syn. *Melobesia minutula* Foslie)

First record: **M, S** (LEVRING, 1974), **D** (CABIOCH, 1974) as *Melobesia minutula* Foslie.

Specimens: **M** (MADM 3430^{TL}; MADM 3431^{TL}; MADM 3432^{TL}; MADM 3433^{TL}).

Pneophyllum fragile Kützing

(syn. *Melobesia lejolisii* Rosanoff)

First record: **M** (LEVRING, 1974) as *Melobesia lejolisii* Rosanoff.

Specimens: **M** (MADM 3428^{TL}; MADM 3429^{TL}).

Schizymeniaceae

Platoma cyclocolpum (Montagne) F. Schmitz

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3736^{TL}).

Gigartinaceae

Chondracanthus sp.

Specimens: **M** (MADM 2879).

Chondracanthus acicularis (Roth) Fredericq

(syn. *Gigartina acicularis* (Roth) J. V. Lamouroux)

First record: **S** (PICCONE, 1884) as *Gigartina acicularis* (Roth) J. V. Lamouroux.

Specimens: **M** (MADM 2863; MADM 2896; MADM 2913; MADM 2983; MADM 3908; MADM 3561^{TL}; MADM 3562^{TL}; MADM 3563^{TL}; MADM 3988).

Furcellariaceae

Halarachnion ligulatum (Woodward) Kützing

First record: **PS** (AUDIFFRED & PRUD'HOMME VAN REINE, 1985).

Specimens: **M** (MADM 2535).

Cystocloniaceae

Hypnea sp.

Specimens: **M** (MADM 2906; MADM 2907; MADM 2921; MADM 2962).

Hypnea arbuscula P. J. L. Dangeard

First record: **S** (PARENTE *et al.*, 2000).

Specimens: **M** (MADM 2934; MADM 2961).

Remarks: According to the collectors Ana Neto, Mutue Toyota Fujii, Maria Machín-Sanchez and Helena Encarnação the identifications of MADM 2934 and MADM 2961 need to be confirmed.

Hypnea musciformis (Wulfen) J. V. Lamouroux

First record: **M** (MENEZES, 1926).

Specimens: **M** (MADM 2543; MADM 3889; MADM 3890; MADM 3891; MADM 3442^{TL}; MADM 3444^{TL}; MADM 3445^{TL}; MADM 3446^{TL}; MADM 3448^{TL}; MADM 3449^{TL}) **PS** (MADM 3443^{TL}) **S** (MADM 3447^{TL}).

Hypnea spinella (C. Agardh) Kützing

(syn. *Hypnea cervicornis* J. Agardh)

First record: **M, PS, D, S** (LEVRING, 1974) as *Hypnea cervicornis* J. Agardh.

Specimens: **M** (MADM 2542; MADM 2924; MADM 3434^{TL}; MADM 3435^{TL}; MADM 3436^{TL}; MADM 3438^{TL}; MADM 3439^{TL}; MADM 3440^{TL}; MADM 3441^{TL}) **D** (MADM 3437^{TL}) **PS** (MADM 2544; MADM 4035) **S** (MADM 3188; MADM 3237).

Rhodophyllis sp.

Specimens: **M** (MADM 2959).

Remarks: According to collectors Ana Neto, Mutue Toyota Fujii, Maria Machín-Sanchez and Helena Encarnação this identification needs to be confirmed.

Rhodophyllis madeirensis Levring

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3450^{TL}; MADM 3451^{TL}; MADM 3452^{TL}; MADM 3453^{TL}).

Caulacanthaceae

Caulacanthus ustulatus (Mertens ex Turner) Kützing

First record: **M, S** (LEVRING, 1974).

Specimens: **S** (MADM 2750; MADM 3147; MADM 3263^{TL}) **PS** (MADM 4025).

Rhodymeniaceae

Botryocladia botryoides (Wulfen) J. Feldmann

First record: **S** (GAIN & MIRANDE, 1912).

Specimens: **M** (MADM 2629; MADM 3674^{TL}) **S** (MADM 3156).

Botryocladia chiajeana (Meneghini) Kylin

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 2628).

Botryocladia sp.

Specimens: **M** (MADM 2917; MADM 2948; MADM 2977).

Irvinea sp.

Specimens: **M** (MADM 2923).

Champiaceae

Champia parvula (C. Agardh) Harvey

First record: **M, D** (LEVRING, 1974).

Specimens: **M** (MADM 3318 TL).

Lomentariaceae

Lomentaria articulata (Hudson) Lyngbye

First record: **D** (GAIN, 1914).

Specimens: **M** (MADM 2892).

Wrangeliaceae

Anotrichium sp.

Specimens: **M** (MADM 3975).

Anotrichium furcellatum (J. Agardh) Baldock

(syn. *Corynospora furcellata* (J. Agardh) Levring)

First record: **M, D** (LEVRING, 1974) as *Corynospora furcellata* (J. Agardh) Levring.

Specimens: **M** (MADM 2953; MADM 3842^{TL}; MADM 3843^{TL}; MADM 3845^{TL}; MADM 3846^{TL}) **D** (MADM 3844^{TL}).

Anotrichium tenue (C. Agardh) Nägeli

(syn. *Griffithsia tenuis* C. Agardh)

First record: **M, PS, S** (LEVRING, 1974) as *Griffithsia tenuis* C. Agardh.

Specimens: **M** (MADM 3850^{TL}; MADM 3851^{TL}; MADM 3852^{TL}; MADM 3853^{TL}).

Compothamnion thuioides (J. E. Smith) Nägeli

First record: **M** (TAYLOR, 1882) as *Callithamnion gracillimum* C. Agardh.

Specimens: **M** (MADM 3839^{TL}; MADM 3840^{TL}; MADM 3841^{TL}).

* *Gymnophycus hapsiphorus* Huisman & Kraft (Fig. 7).

First record: Present paper.

Specimens: **M** (MADM 2885).

Remarks: Locality: Porto da Cruz, Machico; Date of

collection: 2011/07/06; Collected and identified by Ana Neto, Mutue Toyota Fujii, Maria Machín-Sánchez, Helena Encarnação.

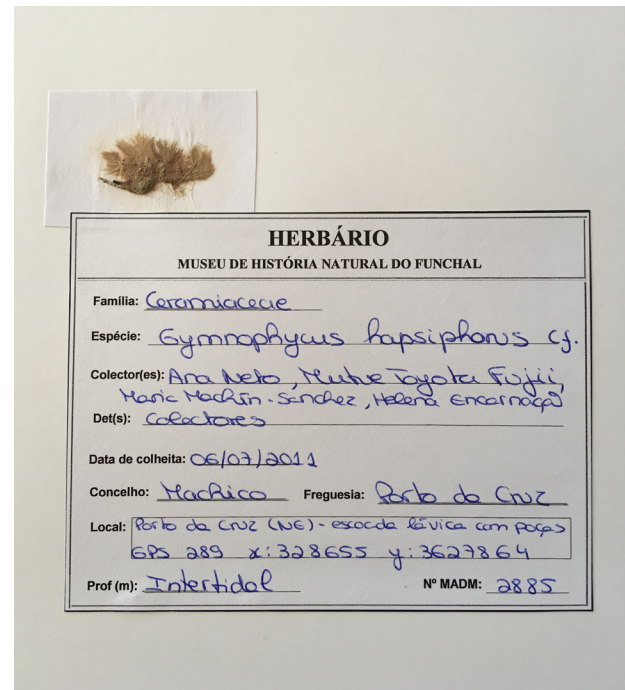


Fig. 7 – *Gymnophycus hapsiphorus* Huisman & Kraft (MADM 2885).

Griffithsia sp.

Specimens: **M** (MADM 2891).

Griffithsia opuntioides J. Agardh

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 2957).

Griffithsia schousboei Montagne

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3847^{TL}; MADM 3848^{TL}; MADM 3849^{TL}).

Pleonosporium borrieri (Smith) Nägeli

First record: **M** (GRUNOW, 1870) as *Callithamnion borrieri* (Smith) C. Agardh.

Specimens: **M** (MADM 2954; MADM 2955; MADM 3854^{TL}; MADM 3855^{TL}; MADM 3856^{TL}).

Monosporus pedicellatus (J. E. Smith) Solier

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3981).

Wrangelia argus (Montagne) Montagne

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3980; MADM 3857^{TL}; MADM 3858^{TL}).

Wrangelia penicillata (C. Agardh) C. Agardh

First record: **M, D** (LEVRING, 1974).

Specimens: **M** (MADM 3859^{TL}; MADM 3860^{TL}; MADM 3861^{TL}; MADM 3862^{TL}).

Ceramiaceae

Antithamnion type

Specimens: **M** (MADM 3873).

Antithamnionella sp.

Specimens: **PS** (MADM 4026).

Antithamnionella spirographidis (Schiffner) Wollaston

(syn. *Antithamnion spirographidis* Schiffner)

First record: **M** (LEVRING, 1974) as *Antithamnion spirographidis* Schiffner.

Specimens: **M** (MADM 3271^{TL}; MADM 3272^{TL}).

Centroceras clavulatum (C. Agardh) Montagne

First record: **S** (GAIN & MIRANDE, 1912) as *Ceramium clavulatum* C. Agardh.

Specimens: **M** (MADM 2898; MADM 2978; MADM 3874; MADM 3273^{TL}; MADM 3274^{TL}; MADM 3275^{TL}; MADM 3276^{TL}; MADM 3277^{TL}; MADM 3278^{TL}; MADM 3279^{TL}; MADM 3280^{TL}; MADM 3281^{TL}; MADM 3282^{TL}; MADM 3283^{TL}; MADM 3284^{TL}; MADM 3286^{TL}).

Ceramium ciliatum (J. Ellis) Ducluzeau

First record: **S** (GAIN & MIRANDE, 1912).

Specimens: **M** (MADM 3875; MADM 3287^{TL}; MADM 3288^{TL}; MADM 3289^{TL}; MADM 3290^{TL}).

Ceramium codii (H. Richards) Mazoyer

First record: **SP** (WEISSCHER, 1983).

Specimens: **M** (MADM 2949).

Ceramium diaphanum (Lightfoot) Roth

(syn. *Ceramium gracillimum* (Kützinger) Zanardini)

First record: **M, D, S** (LEVRING, 1974).

Specimens: **M** (MADM 3292^{TL}; MADM 3294^{TL}; MADM 3295^{TL}; MADM 3296^{TL}; MADM 3297^{TL}; MADM 3298^{TL}) **S** (MADM 3291^{TL}).

Ceramium echionotum J. Agardh

First record: **S** (GAIN & MIRANDE, 1912).

Specimens: **M** (MADM 2958).

Ceramium tenuicorne (Kützinger) Waern

(syn. *Ceramium strictum* Harv.)

First record: **M** (TAYLOR, 1882) as *Ceramium strictum* Harv.

Specimens: **M** (MADM 3299^{TL}; MADM 3312^{TL}; MADM 3313^{TL}; MADM 3316^{TL}; MADM 3317^{TL}) **PS** (MADM 3314^{TL}) **D** (MADM 3315^{TL}).

Spyridiaceae

Spyridia filamentosa (Wulfen) Harvey

First record: **M** (GAIN, 1914).

Specimens: **M** (MADM 3763^{TL}) **S** (MADM 3758^{TL}; MADM 3759^{TL}; MADM 3760^{TL}; MADM 3761^{TL}; MADM 3762^{TL}).

Spyridia hypnoides (Bory de Saint-Vincent) Papenfuss

(syn. *Spyridia aculeata* (C. Agardh ex Decaisne) Kützinger)

First record: **M** as *Spyridia aculeata* (C. Agardh ex Decaisne) Kützinger (LEVRING, 1974).

Specimens: **M** (MADM 3952; MADM 3953; MADM 3954; MADM 3757^{TL}).

Sarcomeniaceae

Cottoniella filamentosa (M. A. Howe) Børgesen

First record: **M** (GAIN, 1914).

Specimens: **M** (MADM 3675^{TL}; MADM 3676^{TL}; MADM 3677^{TL}; MADM 3678^{TL}) **S** (MADM 2639).

Cottoniella fusiformis Børgesen

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3679^{TL}; MADM 3680^{TL}; MADM 3681^{TL}; MADM 3682^{TL}; MADM 3683^{TL}; MADM 3684^{TL}; MADM 3685^{TL}; MADM 3686^{TL}; MADM 3687^{TL}).

Delesseriaceae

Acrosorium ciliolatum (Harvey) Kylin

(syn. *Acrosorium venulosum* (Zanardini) Kylin)

First record: **M** (NETO *et al.*, 2001) as *Acrosorium venulosum* (Zanardini) Kylin.

Specimens: **M** (MADM 2889; MADM 3893).

Apoglossum sp.

Specimens: **M** (MADM 2894).

Apoglossum ruscifolium (Turner) J. Agardh

First record: **M** (LEVRING, 1974), **D** (CABIOCH, 1974).

Specimens: **M** (MADM 3477^{TL}).

Cryptopleura ramosa (Hudson) L. Newton

(syn. *Acrosorium uncinatum* (Turner) Kylin)

First record: **M, D** (LEVRING, 1974).

Specimens: **M** (MADM 3472^{TL}; MADM 3473^{TL}; MADM 3474^{TL}; MADM 3475^{TL}; MADM 3476^{TL}; MADM 3478^{TL}; MADM 3479^{TL}; MADM 3480^{TL}; MADM 3481^{TL}).

Erythrogloussum sandrianum (Zanardini) Kylin

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3482^{TL}).

Haraldia lenormandii (Derbès et Solier) J. Feldmann

First record: **PS, D** (AUDIFFRED & PRUD'HOMME VAN REINE, 1985).

Specimens: **M** (MADM 2960).

Hypoglossum sp.

Specimens: **M** (MADM 2890).

Hypoglossum hypoglossoides

(Stackhouse) F. S. Collins & Hervey

(syn. *Hypoglossum woodwardii* Kutzing)

First record: **M** (TAYLOR, 1882) as *Delesseria hypoglossum* (Woodward) J. V. Lamouroux.

Specimens: **M** (MADM 3483^{TL}; MADM 3484^{TL}).

Nitophyllum punctatum (Stackhouse) Greville

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3485^{TL}).

Dasyaceae

Dasya sp.

Specimens: **M** (MADM 3977).

Dasya corymbifera J. Agardh

First record: **M** (TAYLOR, 1882) as *Dasya venusta* Harvey.

Specimens: **M** (MADM 2897; MADM 3984^{TL}; MADM 3985^{TL}; MADM 3986^{TL}; MADM 3987^{TL}; MADM 3454^{TL}).

Remarks: According to the collectors Ana Neto, Mutue Toyota Fujii, Maria Machín-Sánchez and Helena Encarnação the identification of MADM 2897 needs to be confirmed.

Dasya hutchinsiae Harvey

First record: **S** as *Dasya arbuscula* (Dillwyn) C. Agardh (GAIN, 1914).

Specimens: **M** (MADM 3455^{TL}).

Dasya rigidula (Kützing) Ardissona

First record: **M, S** (WEISSCHER, 1983).

Specimens: **M** (MADM 2979).

Heterosiphonia crispella (C. Agardh) M. J. Wynne

(syn. *Heterosiphonia wurdemanni* (Baillard) Falkenberg)

First record: **M, S** (LEVRING, 1974) as *Heterosiphonia wurdemanni* (Baillard) Falkenberg.

Specimens: **M** (MADM 3456^{TL}; MADM 3457^{TL}; MADM 3458^{TL}; MADM 3459^{TL}; MADM 3460^{TL}; MADM 3461^{TL}; MADM 3462^{TL}).

Rhodomelaceae

Alsidium corallinum C. Agardh

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3620^{TL}; MADM 3621^{TL}).

Chondria capillaris (Hudson) Wynne

(syn. *Chondria tenuissima* (Goodenough et Woodward) C. Agardh)

First record: **S** (GAIN & MIRANDE, 1912) as *Chondria tenuissima* (Goodenough et Woodward) C. Agardh.

Specimens: **S** (MADM 2656; MADM 3189; MADM 3623^{TL}).

Chondria coerulea (J. Agardh) Falkenberg

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3920; MADM 3622^{TL}; MADM 3538^{TL}).

Dipterosiphonia dendritica (C. Agardh) F. Schmitz

First record: **M, PS** (LEVRING, 1974).

Specimens: **PS** (MADM 3624^{TL}).

Erythrocytis montagnei (Derbès et Solier) P. C. Silva

First record: **S** (GAIN & MIRANDE, 1912).

Specimens: **M** (MADM 3971) **S** (MADM 2635; MADM 3170a; MADM 3229a).

Halopithys incurva (Hudson) Batters

First record: **M, PS** (LEVRING, 1974).

Specimens: **M** (MADM 3625^{TL}; MADM 3627^{TL}) **PS** (MADM 3626^{TL}).

Herposiphonia sp

Specimens: **M** (MADM 2912; MADM 3976).

Herposiphonia secunda (C. Agardh) Ambronn

First record: **S** (GAIN, 1914).

Specimens: **M** (MADM 3629^{TL}) **S** (MADM 3628^{TL}).

Herposiphonia tenella (C. Agardh) Ambronn

First record: **M** (LEVRING, 1974), **D** (CABIOCH, 1974).

Specimens: **M** (MADM 3630^{TL}).

Janczewskia verruciformis Solms-Laubach

First record: **M, S** (LEVRING, 1974).

Specimens: **S** (MADM 3631 ^{TL}).

Laurencia sp.

Specimens: **M** (MADM 2625; MADM 3925).

Laurencia obtusa (Hudson) J. V. Lamouroux

First record: **M** (GRUNOW, 1870).

Specimens: **M** (MADM 3922; MADM 3923; MADM 3633 ^{TL}; MADM 3637 ^{TL}; MADM 3638 ^{TL}) **PS** (MADM 3634 ^{TL}; MADM 3639 ^{TL}) **S** (MADM 3635 ^{TL}; MADM 3636 ^{TL}; MADM 3640 ^{TL}).

Laurencia viridis Gil-Rodríguez et Haroun

First record: **PS, S** (GIL-RODRÍGUEZ & HAROUN, 1992).

Specimens: **M** (MADM 2858; MADM 2870).

Lophocladia trichocladus (C. Agardh) J. Agardh

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3644 ^{TL}).

Lophosiphonia obscura (C. Agardh) Falkenberg

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3645 ^{TL}).

Melanothamnus ferulaceus

(Suhr ex J. Agardh) Díaz-Tapia & Maggs

(syn. *Polysiphonia ferulacea* Suhr ex. J. Agardh)

First record: **M, D** (LEVRING, 1974) as *Polysiphonia ferulacea* Suhr ex. J. Agardh.

Specimens: **M** (MADM 3655 ^{TL}; MADM 3656 ^{TL}).

Osmundea sp.

Specimens: **M** (MADM 2859; MADM 2880; MADM 2881; MADM 2882; MADM 4042).

Osmundea hybrida (A. P. de Candolle) K. W. Nam

(syn. *Laurencia hybrida* (A. P. de Candolle) T. Lestiboudois)

First record: **M** (LEVRING, 1974) as *Laurencia hybrida* (A. P. de Candolle) T. Lestiboudois.

Specimens: **M** (MADM 3921; MADM 3932 ^{TL}).

Osmundea pinnatifida (Hudson) Stackhouse

(syn. *Laurencia pinnatifida* (Hudson) J. V. Lamouroux)

First record: **M** (JOHNSON, 1885) as *Laurencia pinnatifida* (Hudson) J. V. Lamouroux.

Specimens: **M** (MADM 3924; MADM 3641 ^{TL}; MADM 3642 ^{TL}; MADM 3643 ^{TL}).

Osmundea truncata (Kützing) K. W. Nam & Maggs

First record: **S** (PARENTE *et al.*, 2000), **M** (MACHÍN-SÁNCHEZ, 2016).

Specimens: **M** (MADM 2900; MADM 2930).

Polysiphonia sp.

Specimens: **M** (MADM 2981; MADM 3927).

Remarks: MADM 3927 was identified as *Polysiphonia devoniensis* Maggs & Hommersand, but according to the collectors this identification needs to be confirmed.

Polysiphonia atlantica Kapraun & J. N. Norris

(syn. *Polysiphonia macrocarpa* Harvey)

First record: **M, S** (LEVRING, 1974) as *Polysiphonia macrocarpa* Harvey.

Specimens: **M** (MADM 3659 ^{TL}).

Polysiphonia brodiei (Dillwyn) Sprengel

First record: **M** (TAYLOR, 1882).

Specimens: **M** (MADM 3926).

Polysiphonia denudata (Dillwyn) Greville ex Harvey

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3928; MADM 3929; MADM 3647 ^{TL}; MADM 3648 ^{TL}; MADM 3649 ^{TL})

Polysiphonia elongata (Hudson) Sprengel

First record: **M** (LEVRING, 1974).

Specimens: **M** (MADM 3650 ^{TL}; MADM 3651 ^{TL}; MADM 3652 ^{TL}; MADM 3653 ^{TL}; MADM 3654 ^{TL}).

Polysiphonia fibrillosa (Dillwyn) Sprengel

(syn. *Polysiphonia nutans* Montagne)

First record: **M** (TAYLOR, 1882) as *Polysiphonia carmichaeliana* Harvey.

Specimens: **M** (MADM 3660 ^{TL}).

Polysiphonia opaca (C. Agardh) Moris & De Notaris

First record: **M, S** (LEVRING, 1974).

Specimens: **M** (MADM 3662 ^{TL}; MADM 3663 ^{TL}; MADM 3664 ^{TL}) **S** (MADM 3661 ^{TL}).

Polysiphonia scopulorum Harvey

(syn. *Lophosiphonia scopulorum* (Harvey) Womersley)

First record: **D, S** (LEVRING, 1974) as *Lophosiphonia scopulorum* (Harvey) Womersley.

Specimens: **D** (MADM 3646 ^{TL}).

Pterosiphonia sp.

Specimens: **M** (MADM 2869; MADM 2887).

Rytiphlaea tinctoria (Clemente) C. Agardh

First record: **M** (JOHNSON, 1885).

Specimens: **M** (MADM 3669^{TL}; MADM 3670^{TL}) **PS** (MADM 3671^{TL}) **S** (MADM 3672^{TL}; MADM 3673^{TL}).

Vertebrata fucooides (Hudson) Kuntze

(syn. *Polysiphonia fucooides* (Hudson) Greville)

First record: **M** (TAYLOR, 1882) as *Polysiphonia violacea* (Roth) C. Agardh.

Specimens: **M** (MADM 3930; MADM 3665^{TL}; MADM 3666^{TL}; MADM 3667^{TL}; MADM 3668^{TL}).

Vertebrata furcellata (C. Agardh) Kuntze

(syn. *Polysiphonia furcellata* (C. Agardh) Harvey)

First record: **M, D** (LEVRING, 1974) as *Polysiphonia furcellata* (C. Agardh) Harvey.

Specimens: **M** (MADM 3658^{TL}) **D** (MADM 3657^{TL}).

DISCUSSION AND CONCLUSION

The first alga record from the island of Madeira was in 1687 when the Irish physician and botanist Sir Hans Sloane stayed in Madeira for three days, on his way to Jamaica, where he collected several species of plants belonging to 38 *taxa*, including a brown seaweed (SEQUEIRA *et al.*, 2010). Sloane described a specimen that is currently in the collection of the Natural History Museum in London, as *Halopteris* sp. In the original publication, the author described it as "*Muscus marinus plumiformis ramulis & foliis densissimis capillaceis*" (SLOANE, 1707). It took almost 120 years for the next algae reference to appear, BUCH (1825), followed by LOWE (1869), GRUNOW (1870), TAYLOR (1882), PICCONE (1884), JOHNSON (1885) and BARTON (1897).

In the 20th century, the first studies were done by GAIN & MIRANDE (1912), GAIN (1914), MENEZES (1926), PICKERING & HANSEN (1969) and CABIOCH (1974). Levring (1974) based on previous investigations and on his own fieldwork, listed 254 species of macroalgae from the archipelago of Madeira, including the Selvagens. Subsequently, between 1975 and 1986 the CANCAP Expeditions took place in the Atlantic Ocean, and targeted the study area between the Azores and Cape Verde archipelagos (VAN DER LAND, 1987). Part of the material collected was examined and several publications were made concerning the marine algal flora of the archipelago of Madeira (AUDIFFRED & WEISSCHER, 1984; AUDIFFRED & PRUD'HOMME VAN REINE, 1985; HAROUN & PRUD'HOMME VAN REINE, 1993; WEISSCHER, 1982, 1983).

The "Macaronesia 2000" expedition in 2000, recorded 75 species of algae from the archipelago of

Madeira (4 Cyanophyta, 35 Rhodophyta, 16 Phaeophyta and 20 Chlorophyta). The collected specimens are deposited in the Herbarium of the University of La Laguna, Tenerife (HAROUN *et al.*, 2002).

Using all the published information, NETO *et al.* (2001), compiled a list of Marine Plants of the Archipelago of Madeira, which is still used as a reference for algal taxonomy on the these islands. This work lists a total of 359 species of algae: 64 Chlorophyta, 64 Phaeophyta and 231 Rhodophyta. This number was significantly lower than the one from the Canary Islands (642 species) and slightly higher than the one from the Azores (307 species, NETO, 1994), placing the archipelago of Madeira on an intermediate position between the Azores and the Canary Islands (NETO *et al.*, 2001).

When considering red algae, Madeira is more closely related to the Canary Islands than to the Azores and when considering green and brown algae, the opposite is true (PRUD'HOMME VAN REINE & VAN DEN HOEK, 1990; NETO *et al.*, 2001).

As foreseen by NETO *et al.* (2001), the number of species recorded for the archipelago of Madeira continued to increase. Seventeen years later, 419 species of algae have been recorded from the archipelago of Madeira (NORTON & PARKES, 1972; LEVRING, 1974; AUDIFFRED & WEISSCHER, 1984; PRICE, JOHN & LAWSON, 1986; PARENTE *et al.*, 2000; NETO *et al.*, 2001; HAROUN *et al.*, 2002; VERLAQUE *et al.*, 2003; JOHN *et al.*, 2004; AFONSO-CARRILLO *et al.*, 2006; VERBRUGGEN *et al.*, 2006; TRONHOLM *et al.*, 2010; GABRIEL, *et al.*, 2011; FERREIRA, 2011; GUIRY, 2012; MACHÍN-SANCHEZ *et al.*, 2014; MACHÍN-SANCHEZ *et al.*, 2016; RIBEIRO *et al.*, 2018).

With the present contribution, 6 species are new records from the archipelago of Madeira (*Ulva pseudorotundata*, *Dictyota adnata*, *Sargassum hystrix*, *Sargassum platycarpum*, *Sargassum polyceratium* and *Gymnophycus hapsiphorus*) and 2, previously recorded from the Selvagens, are new for island of Madeira (*Ulva polyclada* and *Sargassum cymosum*). The list of algae species of the Archipelago of Madeira is updated to 425 species.

The island of Madeira is now the new northernmost limit of distribution in the Eastern Atlantic Ocean for *Ulva polyclada*, *Sargassum platycarpum* and *Gymnophycus hapsiphorus*, and the new southernmost limit of distribution in the Eastern Atlantic Ocean for *Dictyota adnata*, previously only recorded from the Azores archipelago (GUIRY, 2018).

Sargassum hystrix and *Sargassum polyceratium* are not only new for the archipelago of Madeira, but also new records for the whole Macaronesia. *S. hystrix* was

previously known from Senegal, Sierra Leone, the tropical and subtropical Western Atlantic Ocean and Indonesia and *S. polyceratium* from Turkey, Bermuda, the tropical and subtropical Western Atlantic Ocean and Asia (GUIRY, 2018).

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