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SHORT NOTE – NOTA BREVE

REVISION OF THE *MICROSARAEA* SPECIES FROM THE MONTI D'OCRE AREA (SCLERACTINIA; EARLY CRETACEOUS)

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Abstract. Two coral species from the Early Aptian of the Monti d'Ocre area (Abruzzi) originally assigned to the genus *Microsaraea* Koby, 1889 are revised on the basis of their type material. Both are assigned to the genus *Polyphylloseris*. They are considered synonymous. The senior synonym, *Microsaraea distefanoi* Prever, 1909, was formerly assigned to the genus *Microsolena* and has a wide geographical and stratigraphical distribution. Since *Microsaraea distefanoi* Prever belongs to a different genus, the citations in the literature of this species are critically reviewed and, where possible, assigned to the proper *Microsolena* species.

Riassunto. Due specie di coralli provenienti dall'Aptiano inferiore dei Monti d'Ocre (Abruzzi) sono stati assegnati originariamente al genere *Microsaraea* Koby, 1889. Esse sono riviste sulla base del materiale topotipico, sono considerate sinonime e assegnate al genere *Polyphylloseris*. La specie considerata prioritaria, *Microsaraea distefanoi* Prever, 1909, venne formalmente assegnata al genere *Microsolena.* Essa ha un'ampia distribuzione geografica e stratigrafica. Poichè *Microsaraea distefanoi* Prever appartiene ad un genere diverso da *Microsolena*, vengono riviste criticamente le citazioni di questa specie fatte in letteratura.

Introduction

In the voluminous monograph on the early Aptian (formerly Cenomanian) corals from the Monti d'Ocre area, Pietro Lodovico Prever (1909) established two species of the genus *Microsaraea*: *M. minima* and *M. distefanoi*. Whereas *Microsaraea minima* was rarely cited in the literature, *Microsaraea distefanoi* was frequently mentioned. Morycowa (1964) assigned the species on the basis of material from Poland to the genus *Microsolena* and gave a detailed description of her material, which was later taken as a scale for the species. Morycowa had obviously not seen the type material of *M. distefanoi,* which differs from the Polish material.

In subsequent literature, the species was cited more than 50 times, making it appear to be a very common species, which reached a wide stratigraphical and geographical distribution (Löser et al. 2002). Authors who reported *Microsolena distefanoi* apparently compared their material to the description provided by Morycowa (1964) and not to the description and illustration in Prever (1909), or even the type material.

The study of the type material of both *Microsaraea* species established by Prever (1909) revealed that both belong to the genus *Polyphylloseris* de Fromentel, 1857, which is closely related to *Microsolena*. The present small contribution will provide data on *Microsaraea distefanoi,* and discuss the taxonomy of the *Microsolena* material previously assigned to this species.

Material

The material discussed here comes exclusively from the Monti d'Ocre area in the Abruzzi (Italy), which is commented and provided with additional references in Löser et al. (2005). For details and discussion of the stratigraphy see Löser (2010).

The *Microsaraea* material comes from two different sample locations (Parona 1909):

Abruzzi, L'Aquila, Monti d'Ocre, Fossa Cerasetti (I. 1734 in Löser et al. 2005); early Aptian. Sample: PU 18095.

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Abruzzi, L'Aquila, Monti d'Ocre, Sotto Colle Pagliare (I. 1733); early Aptian. Sample: PU 18096.

Abbreviations

The following abbreviations are used:

PU, Università degli studi di Torino, Dipartimento di Scienze della Terra, Italy,

TMM, Texas Memorial Museum, Austin, Texas, USA,

c, calicular diameter (mm),

ccd, distance of calicular centres (mm),

s, number of septa,

sd, density of septa,

sdt, density of trabeculae in a transversal section,

n, number of measurements,

min-max, range (mm),

μ, arithmetic mean (mm),

σ, standard deviation (mm),

v, coefficient of variation according to K.Pearson (%),

μ±σ, first interval (mm).

The abbreviations used in the synonymy lists follow Matthews (1973):

*, earliest valid publication of the species name,

?, the assignation of this description to the species is doubtful,

non, the described material does not belong to the species concerned,

p, the described material belongs only in part to the species concerned,

v, the specimen was observed by the author.

An italicized year indicates a citation without description and illustration.

Systematic description

Dimensions given for *Microsaraea distefanoi* are based on systematic measurements using the computer program PaleoTax/Measure (www.paleotax.de/measure). For the calicular diameter, 25 values were taken, for the distance, 30 values. The type of *Microsaraea minima* is too small for this kind of analysis and only the lowest and highest values are given.

Order **Scleractinia** Bourne, 1900

Suborder Microsolenina Morycowa & Roniewicz, 1995

Family Microsolenidae Duncan, 1884

Remarks. Author of the family is not Koby (1889) but Duncan (1884: 199). The supra-generic taxon Microsolenoida applied to various genera is valid according to IRZN Art. 11.7.1.2.

Polyphylloseris de Fromentel, 1857

Remarks. The discussed material was originally established within the genus *Microsaraea*. This genus was established by Frédéric Koby in a key to the genera of the Microsolenidae family of the Swiss Jura (Koby 1889: 569). In his short differentiating diagnosis, Koby (1889) mentioned that *Microsaraea* is distinguished by its papillose columella from *Microsolena*.

Koby (1889: 562-563) assigned seven species to the new genus [*Microsolena bruntrutana (*Etallon, 1864); *Microsolena cavernosa* Koby, 1888; *Microsolena dubia* Koby, 1888; *Microsolena jaccardi* Koby, 1888; *Microsolena rotula* Koby, 1887; *Microsolena studeri* Koby, 1887; *Microsolena sinuata* (Etallon, 1864)]. The type species is *Microsolena rotula* Koby, 1887 mentioned by Wells (1986). *Microsaraea* was never applied to species other than those described by Prever and in systematic compilations the genus is considered a synonym of *Microsolena* (Wells 1956, Vaughan & Wells 1943).

Polyphylloseris distefanoi (Prever, 1909)

Pl. 1, fig. 1-4

*v 1909 *Microsarea Distefanoi* Prever, p. 71, pl. 2, fig. 6

v 1909 *Microsarea minima* Prever, p. 70, pl. 2: 5

v p 1932 *Polyphyllastrea simondsi* Wells, p. 250 [paratype]

v 1963 *Polyphylloseris conophora* (Felix) - Reyeros Navarro, p. 15, pl. 4: 1-6

v non 1964 *Microsolena distefanoi* (Prever, 1909) - Morycowa, p. 86, pl. 25, fig. 2, pl. 26, fig. 1, 2 [= *Microsolena guttata*]

non 1966 *Microsolena distefanoi* (Prever, 1909) - Morycowa & Lefeld, p. 536, pl. 32, fig. 7 [=? *Microsolena guttata*]

non 1968 *Microsolena* aff. *distefanoi* Prever - Turnšek, p. 21, pl. 9, fig. 1

v non 1976 *Microsolena distefanoi* (Prever) 1909 - Turnšek & Buser, p. 23, 45, pl. 17, fig. 1, 2 [= *Microsolena haldonensis*]

non 1980 *Microsolena distefanoi* Prever 1909 - Kuzmicheva, p. 103, pl. 38, fig. 1 [= *Microsolena guttata*]

1981 *Polyphylloseris convexa* Fromentel 1857 - Turnšek & Mihajlovic, p. 36, pl. 42, fig. 1-4

non 1984 *Microsolena distefanoi* (Prever, 1909) - Scott, p. 342, pl. 2, fig. 9, 10 [= *Microsolena texana*]

non 1985 *Microsolena distefanoi* (Prever, 1909) - Sikharulidze, p. 48, pl. 22, fig. 3 [= *Periseris crassisepta*]

non 1987 *Microsolena distefanoi* (Prever, 1909) - Kuzmicheva, p. 250, pl. 6, fig. 2 [= *Microsolena guttata*]

non 1988 *Microsolena distefanoi* (Prever, 1909) - Kuzmicheva & Aliev, p. 171, pl. 6, fig. 3 [= *Microsolena guttata*]

v non 1989 *Microsolena distefanoi* (Prever, 1909) - Morycowa, p. 65, pl. 27, fig. 4, 5 [= *Microsolena guttata*]

v non 1992 *Microsolena distefanoi* (Prever 1909) - Turnšek et al., p. 217, pl. 6, fig. 4-6 [= *Microsolena guttata*]

v non 1996 *Microsolena distefanoi* (Prever, 1909) - Baron-Szabo & Steuber, p. 24, pl. 14, fig. 6 [= *Microsolena* sp.]

non 1996 *Microsolena distefanoi* Prever 1909 - Császár & Turnšek, p. 434, fig. 11 [= *Microsolena texana*]

v non 1997 *Microsolena distefanoi* (Prever, 1909) - Baron-Szabo, p. 82, pl. 13, fig. 5 [= *Microsolena guttata*]

v non 1999 *Microsolena distefanoi* (Prever, 1909) - Baron-Szabo & González León, p. 486, fig. 5f [= *Microsolena guttata*]

v non 2001 *Polyphylloseris distefanoi* (Prever 1909) - Löser, p. 47, pl. 3, fig. 6 [= *Polyphylloseris kobyi*]

2002 *Polyphylloseris distefanoi* (Prever, 1909) - Löser et al., p. 561 [here more detailed synonymy]

v non 2003 *Microsolena distefanoi* (Prever, 1909) - Baron-Szabo & González León, p. 214, fig. 8C [= *Polyphylloseris kobyi*]

non 2003 *Microsolena distefanoi* (Prever, 1909) - Turnšek et al., p. 179, fig. 12c,d,e,f [= *Microsolena guttata*]

non 2004 *Microsolena distefanoi* (Prever, 1909) - Gameil & Aly, p. 276, pl. 3: 6, 7 [=? *Microsolena* sp.]

v non 2005 *Polyphylloseris distefanoi* (Prever 1909) - Götz et al., p. 129 [= *Polyphylloseris* sp.]

v non 2006 *Polyphylloseris distefanoi* (Prever, 1909) - Löser & Ferry, p. 484, fig. 6.7, 6.8 [= *Polyphylloseris kobyi*]

non 2006 *Microsolena distefanoi* (Prever, 1909) - Morycowa & Decrouez, p. 812, pl. 10: 3 [= *Microsolena* sp.]

v non 2008 *Polyphylloseris distefanoi* (Prever, 1909) - Tomás et al., p. 530, fig. 14K, L [= *Polyphylloseris kobyi*]

v non 2009 *Polyphylloseris distefanoi* (Prever, 1909) - Morycowa & Masse, p. 111, fig. 8d-f [= *Polyphylloseris*? *icaunensis*]

Type. PU 18095 is the holotype by monotypy. It is a large and very well preserved specimen that provided two superficial slabs.

Dimensions

	n	min-max	μ	σ	*v*	μ±σ
c	25	5.05-6.9	5.99	0.58	9.6	5.41-6.56
ccd	30	5.48-9.17	7.19	1.14	15.8	6.04-8.32
s		60 - 70				
sd		7/2 mm				
sdt		4/1 mm				

Description. Colonial coral. Calices in a plocoid arrangement. Calices slightly erect. Septa between calices sub-confluent or non-confluent. Septa completely perforated and their lateral faces bear pennulae. The septa are numerous and arranged in a radial symmetry without regular cycles, but generations can be distinguished, which differ in length. A wall does not exist between the calices. The columella is poorly defined; it can be considered spongy, but because of the highly perforated septa, it cannot be distinguished from the inner margin of the septa. Probably only a small papilla marks the columella. Endotheca not developed. Budding extratentacular, in the coenosteum.

Remarks. Very closely related is *Polyphyllastrea simondsi* Wells, 1932, which has only slightly smaller dimensions and a lower number of septa (holotype TMM UT-11441; c: 5 - 6 mm, ccd: 6.5 - 8 mm, s: 50 - 60, s: 5 / 1 mm, sdt: 5 / 1 mm; the paratype belongs to *P. distefanoi*).

Range. Aptian to early Albian.

Palaeobiogeography. Central Tethys and Caribbean (Comanche platform, Puebla basin).

Polyphylloseris minima (Prever, 1909)

Dimensions

ccd	7 - 8 mm
s	60 - 70 mm
sd	3 / 1 mm

Type. PU 18096 is the holotype by monotypy. It is a very small spherical colony with a diameter of about 10 mm.

Remarks. The type has almost the same dimensions as the holotype of *Microsarea distefanoi,* which makes it a junior synonym of this species.

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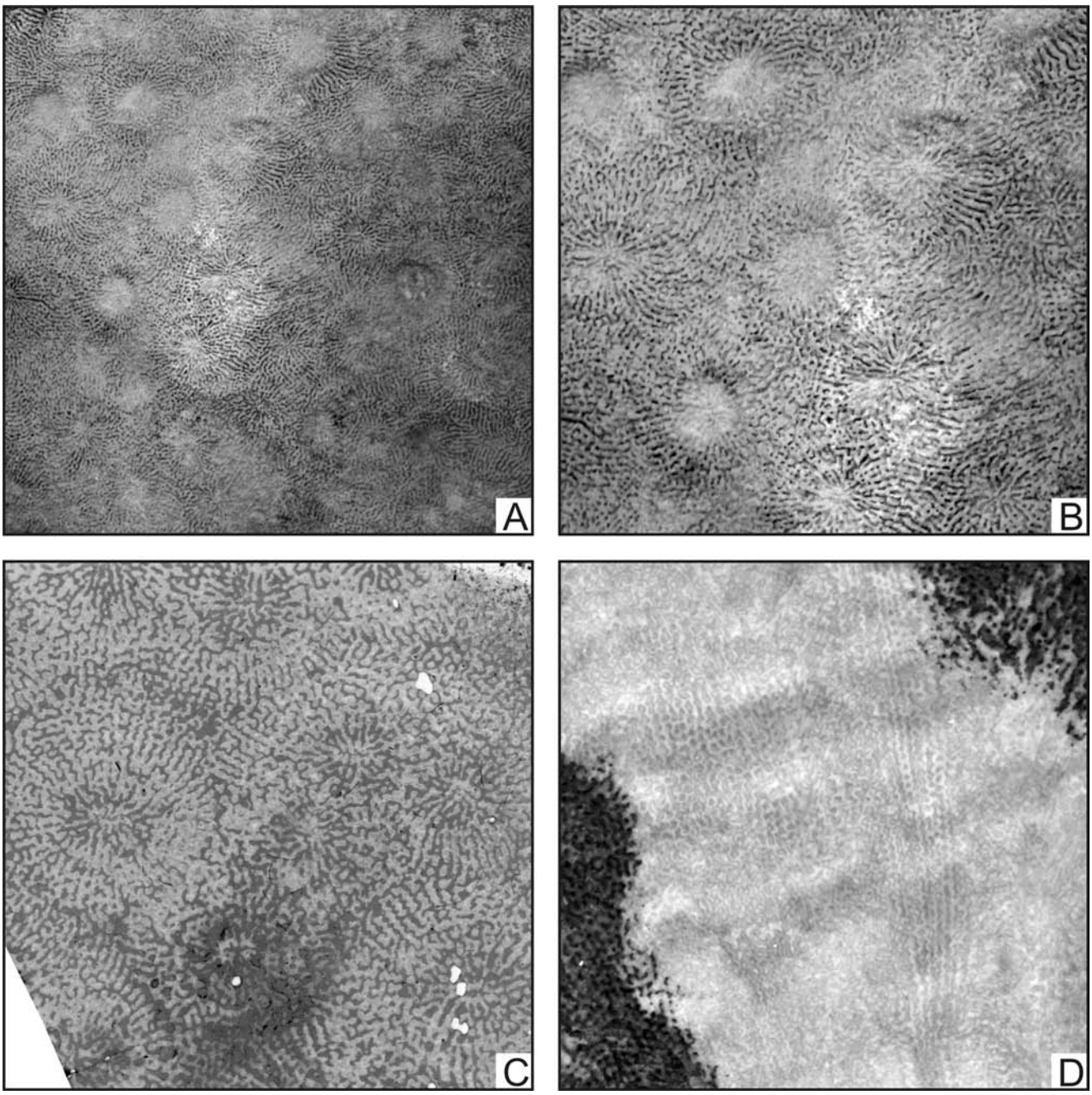

Fig. 1 - *Polyphylloseris distefanoi* (Prever, 1909). PU 18095 (holotype). A, general view of the colony surface, x 1.6; B, detail of the colony surface, x 2.8; C, transversal section, skeleton in white, acetate peel, x 3.7; D, longitudinal section, skeleton in light gray, polished slab, x 3.7.

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