

## Checklist of Mediterranean Free-living Dinoflagellates

**F. Gómez**

Department of Aquatic Biosciences, The University of Tokyo, 1-1-1 Yayoi, Bunkyo, Tokyo 113-8657, Japan, fernando.gomez@fitoplancton.com

An annotated checklist of the free-living dinoflagellates (Dinophyceae) of the Mediterranean Sea, based on literature records, is given. The distribution of 673 species in 9 Mediterranean sub-basins is reported. The number of taxa among the sub-basins was as follows: Ligurian (496 species), Balear-Provençal (360), Adriatic (322), Tyrrhenian (284), Ionian (283), Levantine (268), Aegean (182), Alborán (179) and Algerian Seas (151).

### Introduction

The oligotrophic conditions in the Mediterranean Sea could favour the richness of dinoflagellates, typical organisms of oligotrophic waters. Intensive studies have been made by Jörgensen (1920, 1923), Schiller (1931–37) (Adriatic Sea), Pavillard (1905–1937) (Gulf of Lions and Monaco), Halim (1960) (Villefranche and Alexandria), Rampi (1939–1969) (Ligurian Sea) and Margalef (1945–1995) (Spanish coasts). However a catalogue of the dinoflagellate species recorded is not available. The aims of this study are to provide a checklist of the species from each sub-basin and to evaluate the species richness of dinoflagellates in the Mediterranean Sea based on a compilation of published data.

### Material and Methods

This study is based on literature records of free-living dinoflagellates (Table I), grouped in the main sub-basins of the Mediterranean Sea (Fig. 1). References used for the elaboration of this checklist, but not cited in the text, checklist or notes are listed in the Appendix. Species with their nomenclatural authorities are arranged alphabetically in each order according to the classification proposed by Chrétiennot-Dinet *et al.* (1993) with the following modifications: the genera *Parahistioneis* and *Phalacroma* have been added to the Dinophysaceae; *Balechina* Loeblich *et* Loeblich III, *Plectodinium* Biecheler and the recently erected genera *Akashiwo* G. Hansen *et* Moestrup, *Karenia* G. Hansen *et* Moestrup and *Karlodinium* J. Larsen have been added to the Gymnodiniaceae; *Proterothropsis* Kofoid *et* Swezy *in* Kofoid has been added to the Warnowiaceae; *Pavillardinium* De-Toni has been added to the Oxytoxaceae; *Exuviella* Cienkowski has been added to the Prorocentraceae; *Mysticella* Carbonell-Moore has been added to the Podolampadaceae; *Calcigonellum* Deflandre, *Cal-*

*cionellum* Deflandre, *Pentapharsodinium* Indelicato *et* Loeblich III and *Preperidinium* Mangin have been added to the Peridiniaceae.

Synonyms have been tracked down and relocated in order to avoid duplicate entries. Synonyms, which have not been quoted in the world literature during the last decades, are not reported. Because of space limitation, not all the references reporting each species for each area have been included. Only when a taxon is reported in less than 3 of the 9 Mediterranean sub-basins considered, is the source of the record reported. Exceptionally, also in 3 of the Mediterranean sub-basins when the number of citations was low (< 5). In some cases, these scarcely reported taxa can be considered as misidentifications or unreliable records, recently described species or rare species. The results of this study depend on the valid identification by the authors of each reference. In most of the cases, there are not photographs or figures of the taxa and the verification of the records is difficult. Records of unarmoured cells should be considered cautiously due to the difficulties of their identification. Most of these doubtful records are in the studies by Skolka *et al.* (1986) for the Libyan waters and/or Innamorati *et al.* (1986, 1989 a,b) for the Ligurian Sea. Many species of the rare genera *Histioneis* and *Heterodinium*, mainly reported by Rampi (1939–1969) and Halim (1960), were not further recorded after their first description. For recently described taxa, the geographical distribution is still unknown beyond the type locality (e.g., some calcareous dinoflagellates). Parasitic (except *Dissodinium pseudolunula* Swift *ex* Elbrächter *et* Drebes) and symbiotic species (i.e., *Symbiodinium* Freudenthal) have been excluded. Freshwater species have been excluded [e.g., *Peridiniella catenata* (Levander) Balech, *P. danica* (Paulsen) Okolodkov *et* Dodge, etc]. Sometimes these species are reported from offshore waters especially in sub-basins such as the Adriatic or Aegean Seas. Taxa only reported from the identification of cysts have been excluded except

Table I. References considered for each Mediterranean sub-basin (references from the Appendix are excluded).

Alb	Arg	Bal	Tyr	Lig	Ion	Adr	Aeg	Lev
13	52	4	3	12	21	3	59	1–2
33	56	8–9	6	14–18	149	10	73–74	40
56	87–88	24	19	49	151	20	82–83	46
100	127	34	23	51		22	126	65–66
119		47	27–30	57–58		50		81
		60	32	61–64		71–72		83
		68–69	38–39	75–77		141		85–86
		96–99	54–55	84		150		106–107
		101–105	58	89–93		163–167		126
		115–116	70	116		173–176		
		118	95	125				
		120–122	108–113	129–140				
		168–169	117	160–161				
		171–172	128					
			143–144					
			146–148					
			151					
			162					
			177–178					

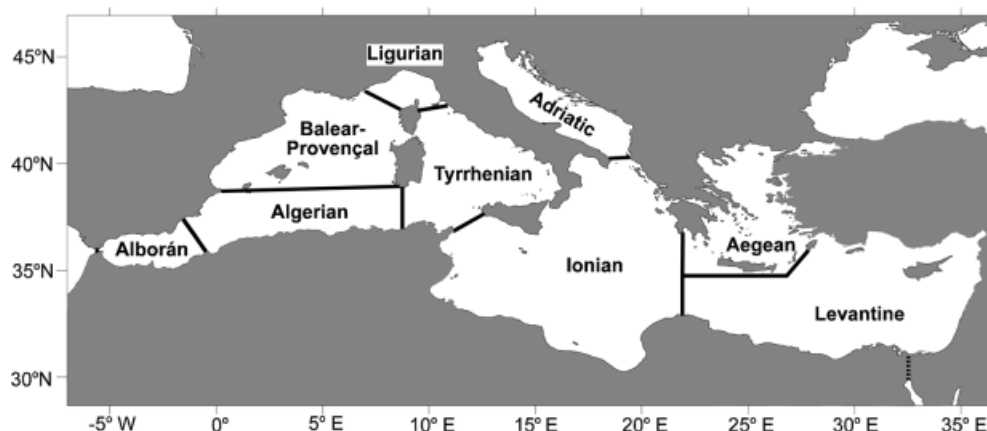


Fig. 1. Map of the Mediterranean sub-basins.

when live cells have germinated from cysts (Ciminiello *et al.* 2000, D'Onofrio *et al.* 1999, Meier *et al.* 2002).

## Results

Mediterranean free-living planktonic dinoflagellates were represented by 673 species with 604 and 480 species reported in the western and eastern basins respectively (Table II). The Ligurian (74%), Balear-Provençal (53%), Adriatic (48%), Tyrrhenian = Ionian (42%) and Levantine (40%) Seas showed the highest number of species whereas the Aegean (27%), Alborán (26%) and Algerian (22%) Seas showed the lowest number of species.

## Acknowledgements

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Table II. List of taxa and their distribution.

Dinophyceae West <i>et</i> Fritsch 1927	Alb	Alg	Bal	Tyr	Lig	Ion	Adr	Aeg	Lev	Reference no.
<b>Actiniscales</b> Sournia 1984										
Actiniscaceae Kützing 1844										
<b>Achradina</b> Lohmann 1903										
<i>Achradina pulchra</i> Lohmann			+		+					76, 116
<b>Actiniscus</b> Ehrenberg 1843										
<i>Actiniscus pentasterias</i> (Ehrenberg) Ehrenberg	+		+	+	+					
<b>Brachydiniales</b> Loeblich III <i>ex</i> Sournia 1984										
Brachydiniaceae Sournia 1972										
<b>Asterodinium</b> Sournia 1972										
<i>Asterodinium gracile</i> Sournia <sup>1</sup>				+	+				+	1, 57
<i>Asterodinium libanum</i> Abboud-Abi Saab <sup>1</sup>					+				+	2, 57, 58
<b>Brachydinium</b> F.J.R. Taylor <sup>2</sup>										
<i>Brachydinium capitatum</i> F.J.R. Taylor			+		+		+		+	
<i>Brachydinium taylorii</i> Sournia			+							102
<b>Desmomonadales</b> Pascher 1914										
Desmocapsaceae Pascher 1914										
<b>Desmocapsa</b> Pascher 1914										
<i>Desmocapsa gelatinosa</i> Pascher <sup>3</sup>					+		+			75, 76, 77, 145
Haplodiniaceae Lindemann 1928										
<b>Haplodinium</b> Klebs 1912										
<i>Haplodinium antjoliense</i> Klebs <sup>4</sup>					+					75
<b>Dinococcales</b> Pascher 1914										
Gloeodiniaceae Pascher <i>ex</i> Schiller 1937										
<b>Gloeodinium</b> Klebs 1912										
<i>Gloeodinium marinum</i> Bouquaheux <sup>5</sup>			+		+					12, 103, 160
Thoracosphaeraceae Schiller 1930										
<b>Thoracosphaera</b> Kamptner 1927										
<i>Thoracosphaera heimii</i> (Lohmann) Kamptner <sup>6</sup>		+	+	+		+		+	+	
<b>Dinophysales</b> Lindemann 1928										
Citharistaceae Kofoid <i>et</i> Skogsberg 1928										
<b>Citharistes</b> Stein 1883										
<i>Citharistes apsteini</i> Schütt									+	81
<i>Citharistes regius</i> Stein				+	+	+				
Dinophysaceae Stein 1883										
<b>Amphisolenia</b> Stein 1883										
<i>Amphisolenia bidentata</i> Schröder	+	+	+	+	+	+	+	+	+	
<i>Amphisolenia bispinosa</i> Kofoid				+						29
<i>Amphisolenia brevicauda</i> Kofoid					+					91, 139
<i>Amphisolenia clavipes</i> Kofoid									+	1, 86
<i>Amphisolenia complanata</i> Kofoid <i>et</i> Skogsberg					+					91
<i>Amphisolenia extensa</i> Kofoid	+			+	+					33, 80, 90
<i>Amphisolenia globifera</i> Stein	+	+	+	+	+	+	+	+	+	
<i>Amphisolenia inflata</i> Murray <i>et</i> Whitting			+		+					91, 105
<i>Amphisolenia lemmermanni</i> Kofoid									+	40, 46
<i>Amphisolenia palaeotheroides</i> Kofoid					+					91
<i>Amphisolenia palmata</i> Stein			+	+	+		+		+	
<i>Amphisolenia quadrispina</i> Kofoid									+	1, 86
<i>Amphisolenia rectangulata</i> Kofoid			+	+						148, 168
<i>Amphisolenia sigma</i> Halim <sup>7</sup>									+	66
<i>Amphisolenia spinulosa</i> Kofoid		+	+	+	+	+	+		+	
<i>Amphisolenia truncata</i> Kofoid <i>et</i> Michener		+	+		+			+	+	
<b>Dinophysis</b> Ehrenberg 1839 (= <i>Phalacroma</i> Stein 1883 <i>partim</i> .)										
<i>Dinophysis acuminata</i> Claparède <i>et</i> Lachmann <sup>8</sup>	+	+	+	+	+	+	+	+	+	
<i>Dinophysis acuta</i> Ehrenberg <sup>9</sup>	+	+	+	+	+	+	+	+		
<i>Dinophysis alata</i> Jörgensen <sup>10</sup>			+	+	+	+	+			
<i>Dinophysis amandula</i> (Balech) Sournia <sup>11</sup>		+	+	+	+	+			+	
<i>Dinophysis apicata</i> (Kofoid <i>et</i> Skogsberg) Abé <i>vel</i> Balech					+					125
<i>Dinophysis apiculata</i> Meunier <sup>12</sup>					+					91
<i>Dinophysis biceps</i> Schiller					+		+			138, 145



Table II. (continued)

Dinophyceae West et Fritsch 1927	Alb	Alg	Bal	Tyr	Lig	Ion	Adr	Aeg	Lev	Reference no.
<i>Ornithocercus francescae</i> (Murray et Whitting) Balech <sup>26</sup>					+		+		+	
<i>Ornithocercus geniculatus</i> Dangeard			+		+				+	
<i>Ornithocercus heteroporus</i> Kofoid	+		+	+	+	+	+		+	
<i>Ornithocercus magnificus</i> Stein	+	+	+	+	+	+	+	+	+	
<i>Ornithocercus quadratus</i> Schütt <sup>27</sup>			+	+	+	+	+	+	+	
<i>Ornithocercus splendidus</i> Schütt <sup>28</sup>			+		+	+			+	
<i>Ornithocercus steinii</i> Schütt <i>emend.</i> Kofoid et Skogsberg <sup>29</sup>					+		+		+	
<i>Ornithocercus thumii</i> (Schmidt) Kofoid et Skogsberg	+		+							33, 115
<b>Parahistioneis</b> Kofoid et Skogsberg 1928 (= <i>Histioneis</i> Stein 1883 <i>partim.</i> )										
<i>Parahistioneis acutiformis</i> Rampi					+					136
<i>Parahistioneis karstenii</i> (Kofoid et Michener) Kofoid et Skogsberg <sup>30</sup>					+					129
<i>Parahistioneis mediterranea</i> Schiller					+	+	+			
<i>Parahistioneis paraformis</i> Kofoid et Skogsberg					+				+	81, 136
<i>Parahistioneis sphaeroidea</i> Rampi					+			+		73, 136
<i>Parahistioneis varians</i> Böhm in Schiller							+			10
<b>Phalacroma</b> Stein 1883 (= <i>Dinophysis</i> Ehrenberg 1839 <i>partim.</i> )										
<i>Phalacroma acutum</i> (Schütt) Pavillard <sup>31</sup>	+		+		+	+	+			
<i>Phalacroma argus</i> Stein	+	+	+	+	+	+	+		+	
<i>Phalacroma bipartitum</i> Kofoid et Skogsberg			+							99
<i>Phalacroma cuneus</i> Schütt		+	+	+	+	+	+		+	
<i>Phalacroma doryphorum</i> Stein	+	+	+	+	+	+	+		+	
<i>Phalacroma expulsum</i> (Kofoid et Michener) Kofoid et Skogsberg <sup>32</sup>			+		+					64, 69, 99
<i>Phalacroma favus</i> Kofoid et Michener			+	+	+	+	+		+	
<i>Phalacroma nasutum</i> Stein <sup>33</sup>	+	+	+	+	+	+	+			
<i>Phalacroma operculatum</i> Stein	+		+		+		+			
<i>Phalacroma ovatum</i> (Claparède et Lachmann) Jörgensen	+	+	+	+	+	+	+		+	
<i>Phalacroma parvulum</i> (Schütt) Jörgensen	+	+	+	+	+	+	+	+	+	
<i>Phalacroma porodictyum</i> Stein			+	+	+		+		+	
<i>Phalacroma praetextum</i> Kofoid et Michener				+						95
<i>Phalacroma pulchellum</i> Lebour	+	+	+	+	+	+		+	+	
<i>Phalacroma striatum</i> Kofoid					+	+	+			80, 125, 173, 175
<b>Triposolenia</b> Kofoid 1906										
<i>Triposolenia bicornis</i> Kofoid			+	+	+	+	+	+		
<i>Triposolenia longicornis</i> Kofoid					+					76
<i>Triposolenia truncata</i> Kofoid	+		+		+		+	+	+	
Oxyphysaceae Sournia 1984										
<b>Oxyphysis</b> Kofoid 1926										
<i>Oxyphysis oxytoxoides</i> Kofoid			+	+			+		+	
<b>Gymnodiniales</b> Lemmermann 1910										
Gymnodiniaceae Lankester 1885										
<b>Akashiwo</b> G. Hansen et Moestrup 2000										
<i>Akashiwo sanguinea</i> (Hirasaka) G. Hansen et Moestrup <sup>34</sup>		+	+	+	+	+	+	+	+	
<b>Amphidinium</b> Claparède et Lachmann 1885										
<i>Amphidinium acutissimum</i> Schiller	+		+		+	+	+			
<i>Amphidinium acutum</i> Lohmann					+	+			+	
<i>Amphidinium carterae</i> Hulburt			+						+	1, 168
<i>Amphidinium conus</i> Schiller					+		+			77, 145
<i>Amphidinium crassum</i> Lohmann <sup>35</sup>		+	+		+	+	+	+		
<i>Amphidinium cucurbitella</i> Kofoid et Swezy						+				149
<i>Amphidinium curvatum</i> Schiller					+	+	+			
<i>Amphidinium extensum</i> Wulff					+	+				75, 76, 149
<i>Amphidinium flagellans</i> Schiller					+	+	+			

Table II. (continued)

Dinophyceae West et Fritsch 1927	Alb	Alg	Bal	Tyr	Lig	Ion	Adr	Aeg	Lev	Reference no.
<i>Amphidinium glaucum</i> Conrad					+					76
<i>Amphidinium globosum</i> Schröder			+		+	+	+		+	
<i>Amphidinium hyalinum</i> Entz					+	+				77, 149
<i>Amphidinium inflatum</i> Kofoid		+								127
<i>Amphidinium kesslitzii</i> Schiller					+		+		+	
<i>Amphidinium lacustriforme</i> Schiller <sup>36</sup>			+			+	+			
<i>Amphidinium lanceolatum</i> Schröder					+	+	+			
<i>Amphidinium latum</i> Lebour			+			+	+			
<i>Amphidinium lissae</i> Schiller					+		+			76, 77, 175
<i>Amphidinium oceanicum</i> Lohmann					+	+				75, 149
<i>Amphidinium operculatum</i> Claparède et Lachmann <sup>37</sup>			+	+			+			145, 177
<i>Amphidinium ovoideum</i> (Lemmermann) Lemmermann					+					76
<i>Amphidinium pellucidum</i> Herdman					+					76
<i>Amphidinium roseolum</i> (Schmarda) Schiller						+				149
<i>Amphidinium schroederii</i> Schiller <sup>38</sup>		+			+	+	+			
<i>Amphidinium sphenoides</i> Wulff <sup>39</sup>					+	+				76, 149
<i>Amphidinium stigmatum</i> Schiller					+	+	+			
<i>Amphidinium turbo</i> Kofoid et Swezy					+				+	77, 81
<i>Amphidinium vasculum</i> Kofoid et Swezy						+				149
<i>Amphidinium vigrense</i> Woloszynska					+					76
<b>Balechina</b> Loeblich et Loeblich III 1966										
<i>Balechina coerulea</i> (Dogiel) F.J.R. Taylor					+	+				76, 149
<i>Balechina marianae</i> F.J.R. Taylor <sup>40</sup>					+					160
<b>Cochlodinium</b> Schütt 1896										
<i>Cochlodinium achromaticum</i> Lebour			+		+					76, 102
<i>Cochlodinium adriaticum</i> Schiller					+		+			77, 145
<i>Cochlodinium brandtii</i> Wulff	+		+		+	+	+			
<i>Cochlodinium citron</i> Kofoid et Swezy						+				149
<i>Cochlodinium constrictum</i> (Schütt) Lemmermann				+					+	81, 147
<i>Cochlodinium faurei</i> Kofoid et Swezy									+	81
<i>Cochlodinium geminatum</i> (Schütt) Schütt				+						147
<i>Cochlodinium helix</i> (Pouchet) Lemmermann <sup>41</sup>			+			+	+			
<i>Cochlodinium polykrikoides</i> Margalef <sup>42</sup>				+						143
<i>Cochlodinium pulchellum</i> Lebour			+		+		+			
<i>Cochlodinium pupa</i> Lebour			+							101, 102
<i>Cochlodinium strangulatum</i> (Schütt) Schütt				+	+	+				
<i>Cochlodinium turbineum</i> Kofoid et Swezy						+				149
<i>Cochlodinium schuettii</i> Kofoid et Swezy							+			141, 145
<b>Gymnodinium</b> Stein 1878 emend. G. Hansen et Moestrup										
<i>Gymnodinium achromaticum</i> Lebour			+							34, 99
<i>Gymnodinium agile</i> Kofoid et Swezy					+	+				76, 149
<i>Gymnodinium agiliforme</i> Schiller			+		+	+	+			
<i>Gymnodinium albulum</i> Lindemann <sup>43</sup>					+					76
<i>Gymnodinium amphora</i> Kofoid et Swezy					+					76
<i>Gymnodinium arcticum</i> Wulff		+			+	+		+		
<i>Gymnodinium attenuatum</i> Kofoid et Swezy					+	+				76, 149
<i>Gymnodinium auratum</i> Kofoid et Swezy					+	+				76, 149
<i>Gymnodinium aureolum</i> (Hulburt) G. Hansen <sup>44</sup>			+	+		+		+	+	
<i>Gymnodinium aureum</i> Kofoid et Swezy			+			+				101, 149
<i>Gymnodinium baccatum</i> Balech			+							34
<i>Gymnodinium biconicum</i> Schiller			+		+	+	+			
<i>Gymnodinium canus</i> Kofoid et Swezy						+			+	86, 149
<i>Gymnodinium caput</i> Schiller				+	+	+	+			76, 145, 149
<i>Gymnodinium carinatum</i> Schilling		+								127
<i>Gymnodinium catenatum</i> Graham <sup>45,46</sup>	+	+								13, 56
<i>Gymnodinium cinctum</i> Kofoid et Swezy					+					76
<i>Gymnodinium conicum</i> Kofoid et Swezy <sup>47</sup>						+	+			22, 149
<i>Gymnodinium corii</i> Schiller				+	+	+	+			
<i>Gymnodinium costatum</i> Kofoid et Swezy			+							99



Table II. (continued)

Dinophyceae West et Fritsch 1927	Alb	Alg	Bal	Tyr	Lig	Ion	Adr	Aeg	Lev	Reference no.
<i>Gymnodinium cucumis</i> Schütt			+	+	+		+			
<i>Gymnodinium diploconus</i> Schütt				+	+	+				
<i>Gymnodinium dissimile</i> Kofoid et Swezy					+	+				76, 149
<i>Gymnodinium elongatum</i> Hope				+		+				144, 149
<i>Gymnodinium flavum</i> Kofoid et Swezy					+				+	76, 81
<i>Gymnodinium fulvum</i> Kofoid et Swezy						+				149
<i>Gymnodinium fuscum</i> (Ehrenberg) Stein		+			+	+				
<i>Gymnodinium galeaeforme</i> Matzenauer									+	81
<i>Gymnodinium gelbum</i> Kofoid									+	81
<i>Gymnodinium gibberum</i> Schiller				+	+	+	+			
<i>Gymnodinium gleba</i> Schütt				+	+					76, 147
<i>Gymnodinium gracile</i> Bergh						+				149
<i>Gymnodinium grammaticum</i> (Pouchet) Kofoid et Swezy <sup>48</sup>				+	+		+		+	
<i>Gymnodinium heterostriatum</i> Kofoid et Swezy <sup>49</sup>				+	+	+	+			
<i>Gymnodinium impudicum</i> (Fraga et Bravo) G. Hansen et Moestrup <sup>46</sup>	+		+	+		+	+		+	
<i>Gymnodinium incertum</i> Herdman					+					76
<i>Gymnodinium incisum</i> Kofoid et Swezy					+					76
<i>Gymnodinium lachmannii</i> Saville-Kent					+					75
<i>Gymnodinium lineatum</i> Kofoid et Swezy						+				149
<i>Gymnodinium lira</i> Kofoid et Swezy					+					76
<i>Gymnodinium lohmannii</i> Paulsen						+			+	40, 149
<i>Gymnodinium maguelonnense</i> Biecheler <sup>50</sup>			+			+				9, 149
<i>Gymnodinium marinum</i> Saville-Kent					+	+			+	
<i>Gymnodinium minor</i> Lebour					+	+	+			21, 22, 76
<i>Gymnodinium mitratum</i> Schiller					+					76
<i>Gymnodinium multilineatum</i> Kofoid et Swezy					+					76
<i>Gymnodinium multistriatum</i> Kofoid et Swezy			+						+	81, 168
<i>Gymnodinium najadeum</i> Schiller				+	+	+	+			
<i>Gymnodinium nanum</i> Schiller			+		+					75, 76, 77, 102
<i>Gymnodinium neapolitanum</i> Schiller			+	+	+	+	+			
<i>Gymnodinium opressum</i> Conrad			+		+					75, 76, 102
<i>Gymnodinium ostefeldii</i> Schiller					+		+			75, 76, 145
<i>Gymnodinium ovulum</i> Kofoid et Swezy					+					75, 76
<i>Gymnodinium paulsenii</i> Schiller					+	+	+			
<i>Gymnodinium pulchellum</i> J. Larsen <sup>51</sup>			+	+						23, 171
<i>Gymnodinium pulchrum</i> Schiller					+		+			
<i>Gymnodinium punctatum</i> Pouchet					+					75, 76
<i>Gymnodinium pygmaeum</i> Lebour					+					76
<i>Gymnodinium ravenescens</i> Kofoid et Swezy					+					76
<i>Gymnodinium rotundatum</i> Klebs		+			+	+	+			
<i>Gymnodinium rubrocinctum</i> Lebour					+					76
<i>Gymnodinium scopulosum</i> Kofoid et Swezy					+					76
<i>Gymnodinium semidivisum</i> Schiller					+		+			75, 76, 77, 145
<i>Gymnodinium simplex</i> (Lohmann) Kofoid et Swezy <sup>43</sup>			+		+	+	+	+		
<i>Gymnodinium situla</i> Kofoid et Swezy						+				149
<i>Gymnodinium sphaericum</i> Calkins						+				149
<i>Gymnodinium sphaeroideum</i> Kofoid					+	+				75, 149
<i>Gymnodinium sulcatum</i> Kofoid et Swezy					+					76
<i>Gymnodinium translucens</i> Kofoid et Swezy					+					75
<i>Gymnodinium tridentatum</i> Schiller						+				149
<i>Gymnodinium variabile</i> Herdman			+		+	+				75, 76, 77, 102, 149
<i>Gymnodinium vestificii</i> Schütt <sup>52</sup>				+	+					76, 147
<i>Gymnodinium voukii</i> Schiller				+	+	+				
<i>Gymnodinium wulffii</i> Schiller					+	+				77, 149
<b>Gyrodinium</b> Kofoid et Swezy 1921 emend. G. Hansen et Moestrup (= <i>Gymnodinium</i> Stein 1878 partim.)										
<i>Gyrodinium acutum</i> (Schütt) Kofoid et Swezy			+	+		+				







Table II. (continued)

Dinophyceae West <i>et</i> Fritsch 1927	Alb	Alg	Bal	Tyr	Lig	Ion	Adr	Aeg	Lev	Reference no.
<b><i>Amphidoma</i> Stein 1883 (= <i>Pavillardinium</i> De-Toni 1936 <i>partim.</i>, <i>Murrayella</i> Kofoid 1907)</b>										
<i>Amphidoma caudata</i> Halldal <sup>75</sup>			+		+		+			
<i>Amphidoma elongata</i> Kofoid <i>et</i> Swezy						+				149
<i>Amphidoma nucula</i> Stein <sup>76</sup>	+	+								33,88
Ceratiaceae Kofoid 1907										
<b><i>Ceratium</i> Schrank 1793</b>										
<i>Ceratium arietinum</i> Cleve	+	+	+	+	+	+	+	+	+	
<i>Ceratium azoricum</i> Cleve	+	+	+	+	+		+	+		
<i>Ceratium belone</i> Cleve	+	+	+	+	+	+		+	+	
<i>Ceratium breve</i> (Ostenfeld <i>et</i> Schmidt) Schröder			+			+		+	+	
<i>Ceratium brunellii</i> Rampi <sup>77</sup>					+					134
<i>Ceratium buceros</i> (Zacharias) Schiller	+	+	+	+	+	+	+	+	+	
<i>Ceratium candelabrum</i> (Ehrenberg) Stein	+	+	+	+	+	+	+	+	+	
<i>Ceratium carriense</i> Gourret	+	+	+	+	+	+	+	+	+	
<i>Ceratium claviger</i> Kofoid <sup>78</sup>	+		+		+					
<i>Ceratium coarctatum</i> Pavillard	+		+	+	+	+		+	+	
<i>Ceratium concilians</i> Jörgensen	+		+	+	+	+	+	+	+	
<i>Ceratium contortum</i> (Gourret) Cleve	+	+	+	+	+	+	+	+	+	
<i>Ceratium contrarium</i> (Gourret) Pavillard <sup>79</sup>	+	+	+	+	+	+	+	+	+	
<i>Ceratium declinatum</i> (Karsten) Jörgensen	+	+	+	+	+	+	+	+	+	
<i>Ceratium deflexum</i> (Kofoid) Jörgensen			+		+		+		+	
<i>Ceratium denticulatum</i> (Jörgensen) Paulsen <sup>80</sup>	+		+					+		82, 119, 168
<i>Ceratium digitatum</i> Schütt			+	+	+	+	+	+	+	
<i>Ceratium egyptiacum</i> Halim <sup>81</sup>									+	1, 65, 86
<i>Ceratium euarctatum</i> Jörgensen <sup>82</sup>	+	+	+	+	+	+	+	+	+	
<i>Ceratium extensum</i> (Gourret) Cleve <sup>83</sup>	+	+	+	+	+	+	+	+	+	
<i>Ceratium falciforme</i> Jörgensen	+		+	+	+				+	
<i>Ceratium falcatum</i> (Kofoid) Jörgensen	+		+	+	+	+	+	+	+	
<i>Ceratium furca</i> (Ehrenberg) Claparède <i>et</i> Lachmann	+	+	+	+	+	+	+	+	+	
<i>Ceratium fusus</i> (Ehrenberg) Dujardin	+	+	+	+	+	+	+	+	+	
<i>Ceratium geniculatum</i> (Lemmermann) Cleve	+	+	+		+					
<i>Ceratium gibberum</i> Gourret	+		+	+	+	+	+	+	+	
<i>Ceratium gravidum</i> Gourret	+		+	+	+	+	+	+	+	
<i>Ceratium hexacanthum</i> Gourret	+		+	+	+	+	+	+	+	
<i>Ceratium horridum</i> (Cleve) Gran <sup>84</sup>	+		+	+	+	+	+	+	+	
<i>Ceratium incisum</i> (Karsten) Jörgensen		+	+	+		+	+	+	+	
<i>Ceratium inflatum</i> (Kofoid) Jörgensen		+	+	+	+	+	+	+	+	
<i>Ceratium kofoidii</i> Jörgensen	+		+	+	+	+	+	+	+	
<i>Ceratium limulus</i> (Gourret <i>ex</i> Pouchet) Gourret	+	+	+	+	+	+	+	+	+	
<i>Ceratium lineatum</i> (Ehrenberg) Cleve			+	+	+					
<i>Ceratium longirostrum</i> Gourret	+	+	+	+	+	+	+	+	+	
<i>Ceratium longissimum</i> (Schröder) Kofoid			+	+	+	+	+	+	+	
<i>Ceratium lunula</i> (Schimper <i>ex</i> Karsten) Jörgensen	+		+	+	+		+		+	
<i>Ceratium macroceros</i> (Ehrenberg) Cleve	+	+	+	+	+	+	+	+	+	
<i>Ceratium massiliense</i> (Gourret) Karsten	+	+	+	+	+	+	+	+	+	
<i>Ceratium minutum</i> Jörgensen			+	+	+				+	
<i>Ceratium paradoxides</i> Cleve <sup>85</sup>	+				+			+	+	
<i>Ceratium pavillardii</i> Jörgensen	+	+	+	+	+	+	+	+	+	
<i>Ceratium pentagonum</i> Gourret	+	+	+	+	+	+	+	+	+	
<i>Ceratium platycorne</i> Daday	+	+	+	+	+	+	+	+	+	
<i>Ceratium praeolongum</i> (Lemmermann) Kofoid <i>ex</i> Jörgensen	+		+	+	+					
<i>Ceratium pulchellum</i> Schröder	+	+	+	+	+	+	+	+	+	
<i>Ceratium ranipes</i> Cleve	+		+	+	+	+	+	+	+	
<i>Ceratium reflexum</i> Cleve							+			150
<i>Ceratium schroeteri</i> Schröder					+	+	+	+		
<i>Ceratium setaceum</i> Jörgensen	+	+	+	+	+	+	+		+	
<i>Ceratium strictum</i> (Okamura <i>et</i> Nishikawa) Kofoid	+		+	+	+	+	+	+	+	
<i>Ceratium symmetricum</i> Pavillard	+	+	+	+	+	+	+	+	+	
<i>Ceratium tenue</i> (Ostenfeld <i>et</i> Schmidt) Jörgensen <sup>86</sup>	+	+	+		+				+	





Table II. (continued)

Dinophyceae West et Fritsch 1927	Alb	Alg	Bal	Tyr	Lig	Ion	Adr	Aeg	Lev	Reference no.
<i>Heterodinium scrippsi</i> Kofoid <sup>114</sup>			+		+		+			64, 89, 90, 91, 124, 175
<i>Heterodinium sinistrum</i> Kofoid et Adamson <sup>115</sup>									+	1
<i>Heterodinium whittingae</i> Kofoid					+					91, 92, 124, 125, 139
Ostreopsidaceae Lindemann 1928										
<b>Coolia</b> Meunier 1919 (= <b>Ostreopsis</b> J. Schmidt 1901 <i>partim.</i> )										
<i>Coolia monotis</i> Meunier <sup>116</sup>			+	+	+		+			
<b>Ostreopsis</b> J. Schmidt 1901										
<i>Ostreopsis ovata</i> Fukuyo				+						162
<i>Ostreopsis siamensis</i> J. Schmidt				+	+					151, 161
Oxytoxaceae Lindemann 1928										
<b>Centrodinium</b> Kofoid 1907 (= <b>Pavillardinium</b> De-Toni 1936 <i>partim.</i> , <b>Murrayella</b> Kofoid 1907 <i>partim.</i> )										
<i>Centrodinium biconicum</i> (Murray et Whitting) F.J.R. Taylor <sup>117</sup>					+				+	81, 138
<i>Centrodinium complanatum</i> (Cleve) Kofoid			+		+				+	
<i>Centrodinium elongatum</i> Kofoid	+									33
<i>Centrodinium eminens</i> Böhm					+		+			91, 138, 175
<i>Centrodinium intermedium</i> Pavillard			+		+	+				
<i>Centrodinium maximum</i> Pavillard	+		+		+				+	
<i>Centrodinium pavillardii</i> F.J.R. Taylor <sup>118</sup>	+		+	+	+			+	+	
<i>Centrodinium splendidum</i> (Rampi) F.J.R. Taylor <sup>119</sup>					+					131, 138
<b>Corythodinium</b> Loeblich et Loeblich III 1966 (= <b>Oxytoxum</b> Stein 1883 <i>partim.</i> )										
<i>Corythodinium belgicae</i> (Meunier) F.J.R. Taylor <sup>103</sup>					+				+	76, 81, 114
<i>Corythodinium compressum</i> (Kofoid) F.J.R. Taylor	+		+		+					
<i>Corythodinium constrictum</i> (Stein) F.J.R. Taylor	+	+	+	+	+	+	+	+	+	
<i>Corythodinium cristatum</i> (Kofoid) F.J.R. Taylor			+		+	+				
<i>Corythodinium curvicaudatum</i> (Kofoid) F.J.R. Taylor			+							168
<i>Corythodinium diploconus</i> (Stein) F.J.R. Taylor		+			+		+			64, 88, 175
<i>Corythodinium elegans</i> (Pavillard) F.J.R. Taylor			+	+	+	+			+	
<i>Corythodinium frenguelli</i> (Rampi) F.J.R. Taylor			+	+	+		+			138, 168, 175
<i>Corythodinium reticulatum</i> (Stein) Loeblich et Loeblich III		+	+	+	+	+	+	+	+	
<i>Corythodinium tessellatum</i> (Stein) Loeblich et Loeblich III	+	+	+	+	+	+	+	+	+	
<b>Oxytoxum</b> Stein 1883										
<i>Oxytoxum aceratum</i> Rampi					+					138
<i>Oxytoxum adriaticum</i> Schiller				+	+	+	+			
<i>Oxytoxum areolatum</i> Rampi			+		+		+			22, 68, 131
<i>Oxytoxum brunellii</i> Rampi <sup>120</sup>			+		+			+		64, 74, 118, 138
<i>Oxytoxum caudatum</i> Schiller			+		+	+	+			
<i>Oxytoxum coronatum</i> Schiller					+	+	+			140, 145, 175
<i>Oxytoxum crassum</i> Schiller			+		+		+	+		
<i>Oxytoxum cribosum</i> Stein					+					140
<i>Oxytoxum curvatum</i> (Kofoid) Kofoid <sup>121</sup>			+		+	+			+	
<i>Oxytoxum depressum</i> Schiller			+		+		+	+		
<i>Oxytoxum elongatum</i> Wood									+	81
<i>Oxytoxum gladiolus</i> Stein		+			+	+	+	+		
<i>Oxytoxum globosum</i> Schiller <sup>122</sup>				+	+	+	+			
<i>Oxytoxum laticeps</i> Schiller			+		+	+	+		+	
<i>Oxytoxum longiceps</i> Schiller <sup>123</sup>	+		+	+	+	+	+	+	+	
<i>Oxytoxum longum</i> Schiller	+		+		+		+			
<i>Oxytoxum milneri</i> Murray et Whitting <sup>124</sup>	+		+	+	+	+	+		+	
<i>Oxytoxum minutum</i> Rampi			+	+	+	+	+			
<i>Oxytoxum obesum</i> Rampi					+					140
<i>Oxytoxum obliquum</i> Schiller					+	+	+			
<i>Oxytoxum ovale</i> Schiller <sup>125</sup>	+		+	+	+	+	+	+		
<i>Oxytoxum pachyderme</i> Schiller ex F.J.R. Taylor							+			145

Table II. (continued)

Dinophyceae West <i>et</i> Fritsch 1927	Alb	Alg	Bal	Tyr	Lig	Ion	Adr	Aeg	Lev	Reference no.
<i>Oxytoxum parvum</i> Schiller <sup>126</sup>			+		+	+	+	+		
<i>Oxytoxum punctulatum</i> Rampi <sup>127</sup>				+	+					55, 138
<i>Oxytoxum radiosum</i> Rampi					+					131, 138
<i>Oxytoxum rampii</i> Sournia <sup>128</sup>				+	+					29, 140
<i>Oxytoxum scolopax</i> Stein	+	+	+	+	+	+	+	+	+	
<i>Oxytoxum sphaeroideum</i> Stein		+	+		+	+	+	+	+	
<i>Oxytoxum spinosum</i> Rampi					+					64, 131
<i>Oxytoxum subulatum</i> Kofoid			+	+	+					29, 91, 105
<i>Oxytoxum turbo</i> Kofoid					+	+			+	
<i>Oxytoxum variabile</i> Schiller <sup>129</sup>	+		+	+	+	+	+		+	
<i>Oxytoxum viride</i> Schiller				+	+	+	+		+	
<b><i>Pavillardinium</i></b> De-Toni 1936 (= <i>Amphidoma</i> Stein 1883 <i>partim.</i> , <i>Murrayella</i> Kofoid 1907)										
<i>Pavillardinium ovale</i> (Pavillard) De-Toni <sup>130</sup>				+						29, 123
<b><i>Schuetiella</i></b> Balech 1988 (= <i>Gonyaulax</i> Diesing 1866 <i>partim.</i> , <i>Oxytoxum</i> Stein 1883 <i>partim.</i> )										
<i>Schuetiella mitra</i> (Schütt) Balech <sup>131</sup>	+	+	+	+	+	+	+			
Peridiniaceae Ehrenberg 1828										
<b><i>Calcigonellum</i></b> Deflandre 1948										
<i>Calcigonellum infula</i> Deflandre <i>emend.</i> Montresor <sup>132</sup>				+						39
<b><i>Calciodinellum</i></b> Deflandre 1947										
<i>Calciodinellum levantinum</i> Meier, Janofske <i>et</i> Willems <sup>133</sup>									+	106
<i>Calciodinellum operosum</i> Deflandre <sup>132</sup>				+						39
<b><i>Diplopelta</i></b> Stein <i>ex</i> Jörgensen 1912 (= <i>Dissodium</i> Abé 1941 <i>partim.</i> )										
<i>Diplopelta bomba</i> Stein <i>ex</i> Jörgensen <sup>134</sup>	+		+	+	+				+	
<i>Diplopelta symmetrica</i> Pavillard <sup>135</sup>			+	+	+					
<b><i>Diplopsalis</i></b> Bergh 1881 (= <i>Dissodium</i> Abé 1941 <i>partim.</i> )										
<i>Diplopsalis lenticula</i> Bergh <sup>136</sup>	+	+	+	+	+	+	+	+	+	
<b><i>Diplopsalopsis</i></b> Meunier <i>emend.</i> Balech 1988										
<i>Diplopsalopsis orbicularis</i> (Paulsen) Meunier <sup>137</sup>							+			150
<i>Diplopsalopsis latipeltata</i> Balech <i>et</i> Borgese				+						28, 144
<b><i>Kryptoperidinium</i></b> Lindemann 1924 (= <i>Glenodinium</i> Ehrenberg 1837 <i>partim.</i> )										
<i>Kryptoperidinium foliaceum</i> (Stein) Lindemann <sup>138</sup>			+			+		+		
<b><i>Oblea</i></b> Balech <i>ex</i> Loeblich <i>et</i> Loeblich III 1966										
<i>Oblea rotunda</i> (Balech) Balech <i>ex</i> Sournia <sup>139</sup>				+		+				32, 149
<b><i>Pentapharsodinium</i></b> Indelicato <i>et</i> Loeblich III 1986 (= <i>Peridinium</i> Ehrenberg 1831 <i>partim.</i> )										
<i>Pentapharsodinium tyrrhenicum</i> (Balech) Montresor, Zingone <i>et</i> Marino <sup>140</sup>				+						6, 111
<b><i>Peridinium</i></b> Ehrenberg 1831 <sup>141</sup>										
<i>Peridinium quinquecorne</i> Abé <sup>142</sup>				+			+		+	
<b><i>Preperidinium</i></b> Mangin 1913 (= <i>Diplopeltopsis</i> Pavillard 1913, <i>Zygabikodinium</i> Loeblich <i>et</i> Loeblich III 1970)										
<i>Preperidinium meunieri</i> (Pavillard) Elbrächter <sup>143</sup>			+	+	+				+	
<b><i>Protopteridinium</i></b> Bergh <i>emend.</i> Balech 1974 <sup>141</sup> (= <i>Peridinium</i> Ehrenberg 1831 <i>partim.</i> , <i>Minuscula</i> Lebour 1925)										
<i>Protopteridinium abei</i> (Paulsen) Balech <sup>144</sup>	+		+	+	+			+	+	
<i>Protopteridinium anthonyi</i> (Fauré-Fremiet) Balech					+					76
<i>Protopteridinium bipes</i> (Paulsen) Balech <sup>145</sup>	+	+	+		+	+	+	+		
<i>Protopteridinium bispinum</i> (Schiller) Balech <sup>146</sup>		+		+	+		+	+		
<i>Protopteridinium brevipes</i> (Paulsen) Balech							+	+	+	
<i>Protopteridinium brochii</i> (Kofoid <i>et</i> Swezy) Balech	+	+	+	+	+	+	+	+	+	
<i>Protopteridinium bulla</i> (Meunier) Balech					+					76
<i>Protopteridinium cerasus</i> (Paulsen) Balech	+	+	+		+	+	+	+	+	
<i>Protopteridinium claudicans</i> (Paulsen) Balech	+	+	+	+	+			+	+	



Table II. (continued)

Dinophyceae West et Fritsch 1927	Alb	Alg	Bal	Tyr	Lig	Ion	Adr	Aeg	Lev	Reference no.
<i>Protooperidinium conicoides</i> (Paulsen) Balech									+	40
<i>Protooperidinium conicum</i> (Gran) Balech	+	+	+	+	+	+	+	+	+	
<i>Protooperidinium crassipes</i> (Kofoid) Balech <sup>147</sup>		+	+	+	+	+	+	+	+	
<i>Protooperidinium curvipes</i> (Ostenfeld) Balech <sup>148</sup>	+	+			+		+		+	
<i>Protooperidinium deficiens</i> (Meunier) Balech									+	86
<i>Protooperidinium depressum</i> (Bailey) Balech	+	+	+	+	+	+	+	+	+	
<i>Protooperidinium diabolus</i> (Cleve) Balech <sup>149</sup>	+	+	+	+	+	+	+	+	+	
<i>Protooperidinium divergens</i> (Ehrenberg) Balech	+	+	+	+	+	+	+	+	+	
<i>Protooperidinium elegans</i> (Cleve) Balech			+		+		+			
<i>Protooperidinium excentricum</i> (Paulsen) Balech			+		+			+		
<i>Protooperidinium exiguipes</i> (Mangin ex Halim) Dodge									+	40
<i>Protooperidinium fimbriatum</i> (Meunier) Balech					+					76
<i>Protooperidinium finitimum</i> Balech <sup>150</sup>			+	+	+			+	+	
<i>Protooperidinium globulus</i> (Stein) Balech <sup>151</sup>	+	+	+	+	+	+	+	+	+	
<i>Protooperidinium grande</i> (Kofoid) Balech	+	+	+	+	+		+	+	+	
<i>Protooperidinium granii</i> (Ostenfeld) Balech	+	+	+	+	+	+	+	+	+	
<i>Protooperidinium heteracanthum</i> (Dangeard) Balech			+		+					77, 99
<i>Protooperidinium hirobis</i> (Abé) Balech				+					+	1, 144
<i>Protooperidinium inclinatum</i> (Balech) Balech			+							99
<i>Protooperidinium inflatum</i> (Okamura) Balech	+		+	+	+	+			+	
<i>Protooperidinium latispinum</i> (Mangin) Balech	+		+		+				+	
<i>Protooperidinium leonis</i> (Pavillard) Balech	+	+	+	+	+		+	+	+	
<i>Protooperidinium ligusticum</i> (Rampi) Balech					+					138
<i>Protooperidinium maranense</i> Tolomio							+			163, 165
<i>Protooperidinium mariebourae</i> (Paulsen) Balech	+		+	+	+		+			
<i>Protooperidinium mediterraneum</i> (Kofoid) Balech	+	+	+	+	+	+	+	+	+	
<i>Protooperidinium minutum</i> (Kofoid) Loeblich III	+	+			+			+	+	
<i>Protooperidinium mite</i> (Pavillard) Balech	+		+		+		+		+	
<i>Protooperidinium nipponicum</i> (Abé) Balech <sup>152</sup>							+		+	40, 150
<i>Protooperidinium nudum</i> (Meunier) Balech <sup>153</sup>			+							98, 99
<i>Protooperidinium oblongum</i> (Aurivillius)	+		+	+	+		+		+	
Parke et Dodge										
<i>Protooperidinium obtusum</i> (Karsten) Parke et Dodge							+			150
<i>Protooperidinium oceanicum</i> (Vanhöffen) Balech	+	+	+	+	+	+	+	+	+	
<i>Protooperidinium oviforme</i> (Dangeard) Balech	+	+	+		+					
<i>Protooperidinium ovum</i> (Schiller) Balech		+	+	+	+	+	+		+	
<i>Protooperidinium pallidum</i> (Ostenfeld) Balech	+	+	+	+	+		+	+	+	
<i>Protooperidinium parthenopes</i> Zingone et Montresor				+						178
<i>Protooperidinium pedunculatum</i> (Schütt) Balech		+	+		+		+	+	+	
<i>Protooperidinium pellucidum</i> (Schütt) Balech	+	+	+	+	+		+	+	+	
<i>Protooperidinium pentagonum</i> (Gran) Balech	+	+	+	+		+	+	+	+	
<i>Protooperidinium punctulatum</i> (Paulsen) Balech	+		+	+	+		+	+	+	
<i>Protooperidinium pyriforme</i> (Paulsen) Balech	+	+	+	+	+	+	+	+	+	
<i>Protooperidinium quarnerense</i> (Schröder) Balech	+		+	+	+		+	+	+	
<i>Protooperidinium schilleri</i> (Paulsen) Balech	+		+		+					
<i>Protooperidinium simulum</i> (Paulsen) Balech	+		+		+				+	
<i>Protooperidinium sinaicum</i> (Matzenauer) Balech					+	+				76, 77, 149
<i>Protooperidinium solidicorne</i> (Mangin) Balech <sup>154</sup>			+	+	+		+		+	
<i>Protooperidinium sphaericum</i> (Murray et Whitting)			+	+	+	+	+		+	
Balech										
<i>Protooperidinium sphaeroides</i> (Dangeard) Balech <sup>155</sup>	+		+		+					
<i>Protooperidinium sphaeroideum</i> (Mangin) Balech <sup>155</sup>						+				149
<i>Protooperidinium steinii</i> (Jørgensen) Balech	+	+	+	+	+	+	+	+	+	
<i>Protooperidinium subinerme</i> (Paulsen) Loeblich III	+		+	+	+		+	+	+	
<i>Protooperidinium thorianum</i> (Paulsen) Balech	+				+	+			+	
<i>Protooperidinium tregouboffii</i> (Halim) Balech <sup>156</sup>					+					63, 64
<i>Protooperidinium tristylum</i> (Stein) Balech			+		+		+			76, 168, 175
<i>Protooperidinium tubum</i> (Schiller) Balech	+		+		+		+			
<i>Protooperidinium tumidum</i> (Okamura) Balech		+			+		+			
<i>Protooperidinium variegatum</i> (Peters) Balech		+								127
<i>Protooperidinium wiesneri</i> (Schiller) Balech <sup>157</sup>			+		+		+			

Table II. (continued)

Dinophyceae West <i>et</i> Fritsch 1927	Alb	Alg	Bal	Tyr	Lig	Ion	Adr	Aeg	Lev	Reference no.
<b><i>Scrippsiella</i></b> Balech <i>ex</i> Loeblich III 1965 <sup>158</sup>										
<i>Scrippsiella lachrymosa</i> Lewis				+						39, 112
<i>Scrippsiella precaria</i> Montresor <i>et</i> Zingone				+						109
<i>Scrippsiella ramonii</i> Montresor				+						39, 108
<i>Scrippsiella rotunda</i> Lewis				+						39, 117
<i>Scrippsiella spinifera</i> Honsell <i>et</i> Cabrini							+			72
<i>Scrippsiella trochoidea</i> (Stein) Balech <i>ex</i> Loeblich III <sup>159</sup>	+	+	+	+	+	+	+	+	+	
Podolampadaceae Lindemann 1928										
<b><i>Blepharocysta</i></b> Ehrenberg 1873										
<i>Blepharocysta hermosillai</i> Carbonell-Moore				+						19
<i>Blepharocysta paulsenii</i> Schiller			+		+	+			+	
<i>Blepharocysta splendor-maris</i> (Ehrenberg) Stein	+	+	+		+				+	
<b><i>Mysticella</i></b> Carbonell-Moore 1994										
<i>Mysticella striata</i> (Schütt) Carbonell-Moore <sup>160</sup>					+					132
<b><i>Podolampas</i></b> Stein 1883										
<i>Podolampas bipes</i> Stein	+	+	+	+	+	+	+	+	+	
<i>Podolampas curvatus</i> Schiller					+		+			76, 145
<i>Podolampas elegans</i> Schütt	+	+	+	+	+	+	+	+	+	
<i>Podolampas palmipes</i> Stein	+	+	+	+	+	+	+	+	+	
<i>Podolampas spinifera</i> Okamura <sup>161</sup>	+	+	+	+	+	+	+	+	+	
Pyrophacaceae Lindemann 1928										
<b><i>Pyrophacus</i></b> Stein 1883										
<i>Pyrophacus horologium</i> Stein <i>emend.</i> Wall <i>et</i> Dale	+	+	+	+	+	+	+	+	+	
<i>Pyrophacus steinii</i> (Schiller) Wall <i>et</i> Dale			+	+	+		+	+	+	
<i>Pyrophacus vancampoae</i> (Rossignol) Wall <i>et</i> Dale <sup>162</sup>			+							96, 160
<b>Peridinales incertae sedis</b>										
<b><i>Ceratoperidinium</i></b> Margalef <i>ex</i> Loeblich III 1980										
<i>Ceratoperidinium mediterraneum</i> Abboud-Abi Saab <sup>163</sup>									+	2
<i>Ceratoperidinium yeye</i> Margalef <i>ex</i> Loeblich III <sup>163</sup>			+						+	1, 99, 169
<b><i>Fragilidium</i></b> Balech <i>ex</i> Loeblich III 1965 (= <i>Helgolandicum</i> von Stosch 1869, <i>Goniodoma</i> Stein 1883 <i>partim.</i> )										
<i>Fragilidium fissile</i> Balech				+						6
<b><i>Heterocapsa</i></b> Stein 1883 (= <i>Cachonina</i> Loeblich III 1968)										
<i>Heterocapsa lanceolata</i> Iwataki <i>et</i> Fukuyo <sup>164</sup>								+		126
<i>Heterocapsa niei</i> (Loeblich III) Morrill <i>et</i> Loeblich III <sup>165</sup>				+		+	+			
<i>Heterocapsa rotundata</i> (Lohmann) G. Hansen <sup>166</sup>		+			+			+	+	
<i>Heterocapsa triquetra</i> (Ehrenberg) Stein		+	+			+	+	+		
<b><i>Micracanthodinium</i></b> Deflandre 1937 (= <i>Cladopyxis</i> Stein 1883 <i>partim.</i> )										
<i>Micracanthodinium bacilliferum</i> (Schiller) Deflandre <sup>167</sup>					+		+			20, 140
<i>Micracanthodinium claytonii</i> (Holmes) Dodge <sup>168</sup>					+		+			22, 140
<i>Micracanthodinium setiferum</i> (Lohmann) Deflandre <sup>169</sup>			+	+	+	+	+			
<b><i>Spiraulax</i></b> Kofoid 1911 (= <i>Gonyaulax</i> Diesing 1866 <i>partim.</i> )										
<i>Spiraulax jolliffei</i> (Murray <i>et</i> Whitting) Kofoid	+		+	+	+		+	+	+	
<b>Prorocentrales</b> Lemmermann 1910										
Prorocentraceae Stein 1883										
<b><i>Exuviella</i></b> Cienkowski 1881 <sup>170</sup>										
<i>Exuviella aperta</i> Schiller <sup>171</sup>			+		+		+			77, 145, 168
<b><i>Mesoporos</i></b> Lillick 1937 (= <i>Porella</i> Schiller 1928)										
<i>Mesoporos globulus</i> (Schiller) Lillick		+	+	+	+	+	+			
<i>Mesoporos perforatus</i> (Gran) Lillick	+	+	+	+	+	+	+	+	+	
<b><i>Prorocentrum</i></b> Ehrenberg 1834 <sup>170</sup> (= <i>Exuviella</i> Cienkowski 1881)										
<i>Prorocentrum aporum</i> (Schiller) Dodge	+		+	+	+	+	+	+		
<i>Prorocentrum arcuatum</i> Issel <sup>172</sup>			+	+	+		+	+		

Table II. (continued)

Dinophyceae West et Fritsch 1927	Alb	Alg	Bal	Tyr	Lig	Ion	Adr	Aeg	Lev	Reference no.
<i>Prorocentrum balticum</i> (Lohmann) Loeblich III	+		+		+	+	+	+	+	
<i>Prorocentrum belizeanum</i> Faust				+		+				151
<i>Prorocentrum cassubicum</i> (Woloszynska) Dodge					+			+		75, 76, 83
<i>Prorocentrum compressum</i> (Bailey) Abé ex Dodge <sup>173</sup>	+	+	+	+	+	+	+	+	+	
<i>Prorocentrum concavum</i> Fukuyo				+		+				151
<i>Prorocentrum cordatum</i> (Ostenfeld) Dodge <sup>174,175</sup>	+		+		+	+	+	+	+	
<i>Prorocentrum dactylus</i> (Stein) Dodge		+	+		+	+	+			
<i>Prorocentrum dentatum</i> Stein <sup>176</sup>	+		+	+	+	+	+	+	+	
<i>Prorocentrum emarginatum</i> Fukuyo			+							172
<i>Prorocentrum gracile</i> Schütt <sup>177</sup>		+	+	+	+	+	+	+		
<i>Prorocentrum lima</i> (Ehrenberg) Dodge		+	+	+	+	+	+	+		
<i>Prorocentrum maximum</i> (Gourret) Schiller <sup>178</sup>			+	+	+	+	+			
<i>Prorocentrum micans</i> Ehrenberg <sup>179</sup>	+	+	+	+	+	+	+	+	+	
<i>Prorocentrum minimum</i> (Pavillard) Schiller <sup>175</sup>			+	+	+	+	+	+		
<i>Prorocentrum nanum</i> Schiller <sup>180</sup>			+		+		+			
<i>Prorocentrum nux</i> Puigserver et Zingone				+						128
<i>Prorocentrum ovum</i> (Schiller) Dodge			+	+	+		+	+		
<i>Prorocentrum rostratum</i> Stein	+		+		+			+	+	
<i>Prorocentrum rotundatum</i> Schiller <sup>181</sup>		+	+	+	+	+	+	+	+	
<i>Prorocentrum scutellum</i> Schröder <sup>182</sup>	+	+	+	+	+	+	+	+	+	
<i>Prorocentrum triestinum</i> Schiller		+	+	+	+	+	+	+	+	
<i>Prorocentrum vaginulum</i> (Stein) Dodge <sup>183</sup>		+	+		+	+	+	+	+	
<i>Prorocentrum venetum</i> Tolomio et Cavolo <sup>184</sup>							+			164
<b>Protaspidales</b> Loeblich III 1970										
Entomosigmataceae Chatton 1952										
<i>Entomosigma</i> Schiller 1925										
<i>Entomosigma peridinioides</i> Schiller <sup>185</sup>				+	+		+			75, 76, 145
<b>Pyrocystales</b> Apstein 1909										
Pyrocystaceae (Schütt) Lemmermann 1899										
<i>Dissodinium</i> Klebs in Pascher emend.										
Elbrächter et Drebes 1978 <sup>186</sup>										
<i>Dissodinium pseudolunula</i> Swift ex Elbrächter et Drebes <sup>187</sup>			+	+	+	+	+	+	+	
<i>Pyrocystis</i> Murray ex Haeckel 1890 <sup>186</sup>										
(= <i>Gymnodinium</i> Stein 1883 partim.,										
<i>Dissodinium</i> Klebs in Pascher emend.										
Elbrächter et Drebes 1978 partim.)										
<i>Pyrocystis acuta</i> Kofoid					+					76, 125
<i>Pyrocystis elegans</i> Pavillard	+		+	+	+	+	+	+	+	
<i>Pyrocystis fusiformis</i> (Wyville-Thomson ex Haeckel) Blackman <sup>188</sup>	+		+	+	+	+	+	+	+	
<i>Pyrocystis gerbaultii</i> Pavillard <sup>189</sup>			+	+	+					
<i>Pyrocystis hamulus</i> Cleve			+		+	+	+		+	
<i>Pyrocystis margalefii</i> Léger <sup>190</sup>			+		+					91, 104
<i>Pyrocystis minima</i> (Matzenauer) Schiller <sup>191</sup>				+	+	+	+			
<i>Pyrocystis noctiluca</i> Murray ex Schütt <sup>192</sup>		+	+	+	+		+		+	
<i>Pyrocystis obtusa</i> Pavillard			+	+	+	+	+	+	+	
<i>Pyrocystis robusta</i> Kofoid			+	+	+	+	+		+	
Dinoflagellates of uncertain identification										
<i>Adinimonas</i> Schiller 1928										
<i>Adinimonas oviforme</i> Schiller <sup>193</sup>		+				+	+		+	
<i>Archaeosphaerodiniopsis</i> Rampi 1943										
<i>Archaeosphaerodiniopsis verrucosa</i> Rampi <sup>194</sup>					+					135
<i>Pachydinium</i> Pavillard 1915										
<i>Pachydinium mediterraneum</i> Pavillard <sup>195</sup>			+		+	+				

## Notes

- <sup>1</sup> Reported in the Western Mediterranean Sea by Gómez and Claustre (2003). These records assigned to *Asterodinium gracile* Sournia presented morphological differences with respect the type species. *Asterodinium libanum* Abboud-Abi Saab requires a more detailed description.
- <sup>2</sup> The type species *Brachydinium capitatum* F.J.R. Taylor (Taylor 1963) was replaced by *Brachidinium capitatum* F.J.R. Taylor due to an etymological error (Taylor 1967). Sournia (1973 p.5) reported that the correction is invalid.
- <sup>3</sup> Rare dinoflagellate epiphytic on Rhodophyceae (see Sournia 1986, p. 36).
- <sup>4</sup> Rare and insufficiently described taxon (Sournia 1986, p. 36).
- <sup>5</sup> According to Taylor (1976 p. 190), the cysts were reported by Margalef *et al.* (1954). *Gloeodinium* Klebs and *Hemidinium* Stein have been considered as the immobile and mobile stage respectively of the life cycle of the same taxa (see Sournia 1986 p. 67). The continental species, *Hemidinium nasutum* Stein and others, are reported in the Mediterranean waters (e.g., Schiller 1935–1937, p. 89–92, Viličić *et al.* 2002).
- <sup>6</sup> *Syracosphaera heimii* Lohmann. This taxon was previously considered to be a coccolithophorid and has been scarcely reported in dinoflagellate checklists (see Tangen *et al.* 1982).
- <sup>7</sup> This taxon resembles *Amphisolenia spinulosa* Kofoid and *Amphisolenia mozambica* Sournia.
- <sup>8</sup> This taxon presents synonyms as *Dinophysis borealis* Paulsen, *D. lachmanni* Paulsen, *D. boehmii* Paulsen or *D. skagii* Paulsen.
- <sup>9</sup> *Dinophysis dens* Pavillard.
- <sup>10</sup> The orthographical similarity of *Dinophysis alata* Jörgensen, *Dinophysis alata* Böhm and *Dinophysis alata* (Wood) Balech is confusing. Viličić *et al.* (2002) reported *Dinophysis alata* (Wood) Balech.
- <sup>11</sup> *Dinophysis amygdala* Balech, *Phalacroma ovum* Schütt, non *Dinophysis ovum* Schütt.
- <sup>12</sup> This taxon resembles *Phalacroma ovatum* (Claparède et Lachmann) Jörgensen.
- <sup>13</sup> *Dinophysis caudata* var. *diegensis* Kofoid.
- <sup>14</sup> *Dinophysis intermedia* Pavillard, *Dinophysis laevis* Pouchet.
- <sup>15</sup> *Phalacroma odiosum* Pavillard.
- <sup>16</sup> *Phalacroma mitra* Schütt, *Phalacroma rapa* Stein, *Phalacroma dolichopterygium* Murray et Whitting.
- <sup>17</sup> Non *Phalacroma ovum* Schütt.
- <sup>18</sup> *Dinophysis infundibula* Schiller.
- <sup>19</sup> *Dinophysis lenticula* Pavillard.
- <sup>20</sup> *Dinophysis reticulata* (Kofoid) Balech.
- <sup>21</sup> *Dinophysis acuminata* f. *reniformis* Pavillard, *D. pavillardii* Schröder, *D. reniformis* (Pavillard) Kofoid et Skogsberg, *D. ventrecta* Schiller.
- <sup>22</sup> *Dinophysis sphaeroidea* (Schiller) Balech.
- <sup>23</sup> *Dinophysis uracantha* Schütt, non *Dinophysis uracantha* Stein.
- <sup>24</sup> *Dinophysis sphaerica* Pavillard
- <sup>25</sup> A possible variety of *Histioneis depressa* Schiller (Taylor 1976, p. 44).
- <sup>26</sup> *Ornithocercus carolinae* Kofoid, *Histiones francescae* Murray et Whitting.
- <sup>27</sup> *Ornithocercus assimilis* Jörgensen, *O. galea* (Pouchet) Abé.
- <sup>28</sup> *Histioneis splendida* Murray et Whitting.
- <sup>29</sup> *Ornithocercus serratus* Kofoid, *O. orbiculatus* Kofoid et Michener.
- <sup>30</sup> *Histioneis karstenii* Kofoid et Michener.
- <sup>31</sup> *Dinophysis acutoides* Balech, *Phalacroma acutum* Pavillard.
- <sup>32</sup> *Phalacroma stenopterygium* Jörgensen.
- <sup>33</sup> *Pseudophalacroma nasutum* (Stein) Jörgensen, *Dinophysis nasuta* (Stein) Parke et Dixon.
- <sup>34</sup> *Gymnodinium sanguineum* Hirasaka, *G. splendens* Lebour.
- <sup>35</sup> *Amphidinium phaeocysticola* Lebour has been considered as a synonym of *A. crassum* Lohmann. However this synonymy is debatable (Elbrächter 1979).
- <sup>36</sup> *Amphidinium lacustre* Stein, *A. schroederi* Schiller and *A. lacustriformis* Schiller are often considered as synonyms. Typically fresh and brackish water species.
- <sup>37</sup> *Amphidinium klebsii* Kofoid et Swezy.
- <sup>38</sup> Considered as a synonym of *Amphidinium lacustriforme* Schiller by Dodge (1982 p. 72).
- <sup>39</sup> *Gymnodinium filum* Lebour.
- <sup>40</sup> Taylor (1976 p. 114) reported this taxon from the Ligurian Sea.
- <sup>41</sup> Non *Cochlodinium helix* Kofoid et Swezy (= *Cochlodinium helicoides* Lebour).
- <sup>42</sup> Confusion possible between *Cochlodinium polykrikoides* Margalef (= *C. heterolobatum* Silva) and *Gymnodinium impudicum* (Fraga et Bravo) G. Hansen et Moestrup (see Cho *et al.* 2001).
- <sup>43</sup> *Gymnodinium albulum* Lindemann and *G. simplex* (Lohmann) Kofoid et Swezy may be synonyms.
- <sup>44</sup> The North European taxon, *Gyrodinium aureolum* Hulburt *sensu* Braarud et Heimdal, is a synonym of *Karenia mikimotoi* (Miyake et Kominami ex Oda) G. Hansen et Moestrup (= *Gymnodinium nagasakiense* Takayama et Adachi) (Hansen *et al.* 2000). See also Note 51.
- <sup>45</sup> According to Bolch and Reynolds (2002) other taxa that also produce microreticulate cysts such as *Gymnodinium nolleri* Ellegaard et Moestrup and *G. microreticulatum* Bolch et Hallegraef are present in the Tyrrhenian and Adriatic Seas based on the cysts reported by Montresor *et al.* (1998) and Rubino *et al.* (2000).
- <sup>46</sup> The records of *Gymnodinium catenatum* Graham by Carrada *et al.* (1991), Giacobbe *et al.* (1995) and Labib (1997) are considered as *G. impudicum* (Fraga et Bravo) G. Hansen et Moestrup.
- <sup>47</sup> *Gymnodinium conicum* Kofoid et Swezy (= *G. viridis* Lebour) is considered as a synonym of *Gyrodinium viridescens* Kofoid et Swezy. Non *Gyrodinium conicum* Schiller.
- <sup>48</sup> *Gymnodinium punctatum* var. *grammaticum* Pouchet.
- <sup>49</sup> *Gymnodinium rhomboides* Schütt, *G. hyalinum* Lebour (= *G. lucidum* Ballantine in Parke et Dixon). *Gyrodinium striatissimum* (Hulburt) G. Hansen et Moestrup has been considered as a synonym until the redescription of *G. heterostriatum* Kofoid et Swezy by Elbrächter (1994).
- <sup>50</sup> This brackish waters taxon appears associated with *Karenia mikimotoi* (Miyake et Kominami ex Oda) G. Hansen et Moestrup (see also Notes 44 and 51).
- <sup>51</sup> According to Faust and Gullede (2002) this taxon was recorded in the Tyrrhenian Sea by Carrada *et al.* (1991). Confusion possible with species of the complex *Karenia*



- mikimotoi* (Miyake *et* Kominami *ex* Oda) G. Hansen *et* Moestrup. *Gymnodinium pulchellum* is distinguished from *K. mikimotoi* by the sigmoid apical groove. See also Note 44.
- 52 This taxon resembles *Katodinium glaucum* (Lebour) Loeblich III.
- 53 *Gyrodinium opinum* (Schütt) Lebour.
- 54 *Gyrodinium dominans* Hulburt.
- 55 “*lacryma*” (= tear-drop) should be the correct epithet of this taxon.
- 56 *Gymnodinium spirale* var. *pepo* Schütt.
- 57 *Gymnodinium spirale* var. *pinguis* Schütt.
- 58 *Gymnodinium breve* Davis, *Ptychodiscus brevis* (Davis) Steidinger.
- 59 Reported as *Gymnodinium galatheanum* Braarud (= *Gyrodinium galatheanum* (Braarud) Taylor *sensu* Taylor). More recently this taxon, unless *Gymnodinium galatheanum* Braarud *sensu* Kite *et* Dodge, is considered as a synonym of *Karlodinium micrum* (Leadbeater *et* Dodge) J. Larsen (Daugbjerg *et al.* 2000).
- 60 *Massartia glauca* (Lebour) Schiller, *Gyrodinium glaucum* (Lebour) Kofoid *et* Swezy, *Gymnodinium minutum* Lebour, *Massartia minuta* (Lebour) Conrad *et* Kufferath, *Massartia tubulata* Rampi.
- 61 *Massartia tubulata* Rampi.
- 62 Related to the genus *Gyrodinium* Kofoid *et* Swezy according to Sournia (1986, p. 57).
- 63 *Gymnodinium teredo* Pouchet.
- 64 *Ptychodiscus inflatus* Pavillard, *P. carinatus* Kofoid.
- 65 *Erythropis agilis* Hertwig. Probably several species are reported as *E. agile* (Hertwig) P.C. Silva according to Elbrächter (1979).
- 66 Elbrächter (1979) considered this taxon as a synonym of *E. agile* (Hertwig) P.C. Silva.
- 67 To the best of my knowledge, never reported after the initial description by Greuet (1968b).
- 68 *Pouchetia armata* Dogiel, *Pouchetia maculata* Kofoid *et* Swezy.
- 69 *Kofoidinium lebourae* (Pavillard) Taylor (= *Gymnodinium lebourae* Pavillard).
- 70 Originally described from the Ligurian Sea as *Leptodinium caudatum* Cachon *et* Cachon.
- 71 *Pratjetella medusoides* (Hertwig) Loeblich *et* Loeblich III. Doubtful taxon (Sournia 1986, p. 53).
- 72 *Abedinium dasypus* (Cachon *et* Cachon) Loeblich *et* Loeblich III.
- 73 Reported from the Ligurian Sea as *Leptospathium navicula* Cachon *et* Cachon-Enjumet (1964) after the description by Margalef (1963). Balkis (2000) reported this taxon from the Marmara Sea.
- 74 Resembles *Pronoctiluca acuta* (Lohmann) Schiller.
- 75 *Oxytoxum margalefii* Rampi, *Oxytoxum tonollii* Rampi.
- 76 *Murrayella spinosa* Kofoid, *Pavillardinium spinosum* (Kofoid) Taylor *ex* Sournia, *Amphidoma spinosa* (Kofoid) Kofoid *et* Michener, *Gonyaulax rouchii* Rampi.
- 77 This taxon resembles *Ceratium incisum* (Karsten) Jörgensen.
- 78 *Ceratium buceros* f. *claviger* (Kofoid) Schiller, *Ceratium horridum* f. *claviger* (Kofoid) Sournia.
- 79 Also reported as *Ceratium trichoceros* var. *contrarium* (Gourret) Schiller.
- 80 *Ceratium horridum* var. *lenticulatum* Jörgensen, *C. buceros* f. *denticulatum* (Jörgensen) Schiller.
- 81 Reported as *Ceratium pulchellum* f. *eupulchellum* by Ghazzawi (1939) in the Canal of Suez. This taxon resembles *C. tripos* var. *pulchellum* (Schröder) López, see Sournia (1967).
- 82 *Ceratium arcuatum* (Gourret) Pavillard, *C. tripos* var. *arcuatum* Gourret, non *C. arcuatum* Cleve.
- 83 *Ceratium fusus* var. *extensum* Gourret.
- 84 *C. tripos* var. *horridum* Cleve, but *C. tenue* (Ostenfeld *et* Schmidt) Jörgensen, *C. intermedium* (Jörgensen) Jörgensen and *C. buceros* (Zacharias) Schiller have not been considered as synonyms.
- 85 This taxon resembles *Ceratium limulus* (Gourret *ex* Pouchet) Gourret.
- 86 *C. tenuissimum* Kofoid.
- 87 *Ceratium carriense* var. *volans* (Cleve) Sournia.
- 88 *Acanthodinium caryophyllum* Kofoid.
- 89 *Micracanthodinium quadrispinum* (Pavillard) Margalef.
- 90 Confusion possible with *Cladopyxis brachiolata* Stein.
- 91 *Heterodinium detonii* Rampi.
- 92 *Crypthecodinium setense* Biecheler.
- 93 *Goniodoma polyedricum* (Pouchet) Jörgensen, *Heteraulacus polyedricum* (Pouchet) Drugg *et* Loeblich, *Triadinium polyedricum* (Pouchet) Dodge, *Goniodoma polyedra* Rampi.
- 94 *Heteraulacus sphaericum* (Murray *et* Whitting) Loeblich III, *Triadinium sphaericum* (Murray *et* Whitting) Dodge.
- 95 Reported as *Pyrodinium schilleri* (Matzenauer) Schiller [= *Pyrodinium bahamense* Plate var. *compressum* (Böhm) Steidinger, Tester *et* Taylor].
- 96 *Alexandrium lusitanicum* Balech.
- 97 Reported as *Goniodoma ostenfeldii* Paulsen by Lecal (1954).
- 98 Reported as *Gonyaulax subulata* Kofoid *et* Michener. This taxon resembles *Amylax triacantha* (Jörgensen) Sournia (Dodge 1982, p. 217).
- 99 Reported as *Gonyaulax? triacantha* Jörgensen by Lecal (1954).
- 100 *Gonyaulax spinifera* *sensu* Schütt.
- 101 *Gonyaulax digitale* Kofoid, *Protoperidinium digitale* Pouchet.
- 102 Resembles *Gonyaulax birostris* Stein.
- 103 Reported by Narusevich and Tokarev (1989) in an undetermined location of the Mediterranean Sea.
- 104 The comments by Schiller (1935–1937, p. 290) on the similarity between *Gonyaulax kofoidii* and *G. pacifica* Kofoid could induce confusion between both taxa (Pavillard 1937, p. 16; Taylor 1976, p. 104).
- 105 *Gonyaulax minima* Matzenauer.
- 106 Resembles *Gonyaulax ovata* Matzenauer (Schiller 1935–1937, p. 289; Taylor 1976, p. 105).
- 107 *Pavillardinium brianii* (Ramp) Sournia (= *Murrayella brianii* Ramp).
- 108 *Gonyaulax levanderi* (Lemmermann) Paulsen, *Ceratocorys spinifera* Schröder.
- 109 *Gonyaulax diacantha* (Meunier) Schiller, *Gonyaulax longispina* Lebour, *Amylax diacantha* Meunier.
- 110 *Gonyaulax milneri* (Murray *et* Whitting) Kofoid, *Goniodoma milneri* Murray *et* Whitting.
- 111 *Gonyaulax polyedra* Stein.
- 112 *Gonyaulax grindleyi* Reinecke, non *G. reticulatum* Kofoid *et* Michener.
- 113 *Heterodinium laticinctum* Kofoid.
- 114 *Heterodinium pulchrum* Böhm, *Heterodinium richardii* Pavillard.
- 115 *Heterodinium mediocre* f. *sinistrum* (Kofoid) Kofoid *et* Adamson.

- 116 *Ostreopsis monotis* (Meunier) Lindemann.
- 117 *Ceratium biconicum* Murray et Whitting, *Murrayella biconica* (Murray et Whitting) Pavillard and *Pavillardinium biconicum* Rampi are considered synonyms.
- 118 *Pavillardinium intermedium* (Pavillard) de Toni (= *Murrayella intermedia* Pavillard), non *Centrodinium intermedium* Pavillard.
- 119 *Pavillardinium splendidum* (Rampi) Rampi (= *Murrayella splendida* Rampi).
- 120 Resembles *Corythodinium reticulatum* (Stein) Loeblich et Loeblich III.
- 121 *Prorocentrum curvatum* Kofoid.
- 122 Non *Corythodinium globosum* (Kofoid) Taylor.
- 123 *Oxytoxum sceptrum* (Stein) Schröder.
- 124 *Oxytoxum challengeroides* Kofoid.
- 125 *Oxytoxum mediterraneum* Schiller.
- 126 *Oxytoxum tenuistriatum* Rampi.
- 127 This taxon resembles *Oxytoxum ovale* Schiller
- 128 *Oxytoxum ligusticum* Rampi.
- 129 *Oxytoxum gracile* Schiller.
- 130 *Murrayella ovalis* Pavillard. See also comments on the genus by Sournia (1986, p. 73).
- 131 *Gonyaulax mitra* (Schütt) Kofoid, *Oxytoxum gigas* Kofoid.
- 132 Based on the germination of recent cysts (D'Onofrio et al. 1999).
- 133 Meier et al. (2002) reported 14 species of calcareous dinoflagellates from recent cysts (4 new species), only this taxon that germinated from one cyst from the Levantine Basin is included.
- 134 *Diplopsalis asymmetrica* (Mangin) Lindeman, *Diplopsalis bomba* (Stein) Dodge et Toriumi, *Dissodium asymmetricum* (Mangin) Loeblich III.
- 135 Considered as a synonym of *Diplopelta bomba* Stein ex Jörgensen by Dodge (1982 p. 157).
- 136 *Dissodium lenticulum* (Bergh) Loeblich III, *Glenodinium lenticula* (Bergh) Schiller.
- 137 *Diplopsalis orbicularis* (Paulsen) Steidinger et Williams.
- 138 Usually a brackish water species.
- 139 *Glenodinium rotundum* (Lebour) Schiller.
- 140 Originally described from the Tyrrhenian Sea as *Peridinium tyrrhenicum* Balech (Balech 1990).
- 141 Nearly all of the marine species of *Peridinium* Ehrenberg have been transferred to *Protoberidinium* Bergh.
- 142 *Protoberidinium quinquecorne* (Abé) Balech.
- 143 This taxon presents synonyms such as *Diplopsalis minor* (Paulsen), *Zygabikodinium lenticulatum* (Manguin) Loeblich et Loeblich III, *Diplopeltopsis minor* (Paulsen) Pavillard, *Diplopsalis lenticula* f. *minor* Paulsen (see Dodge and Toriumi 1993, Elbrächter 1993).
- 144 Non *Protoberidinium biconicum* (Dangeard) Balech.
- 145 *Minuscula bipes* (Paulsen) Lebour.
- 146 *Protoberidinium bimucronatum* (Schiller) Balech. The synonymy between *Peridinium sourniai* F.J.R. Taylor and *Protoberidinium bispinum* (Schiller) Balech is debatable.
- 147 According to Schiller (1935, p. 223) *Peridinium curtipes* Jörgensen is a synonym of *Peridinium crassipes* Kofoid, consequently a confusion could be expected. *Protoberidinium crassipes* (Kofoid) Balech and *Protoberidinium curtipes* (Jörgensen) Balech are different species: 1) *Protoberidinium crassipes* (Kofoid) Balech (= *Peridinium crassipes* Kofoid), 2) *Protoberidinium curtipes* (Jörgensen) Balech (= *Peridinium crassipes* Paulsen 1907, non Paulsen 1930). See also Balech (1988, p. 110).
- 148 *Peridinium decipiens* var. *curvipes* Ostenfeld, *Protoberidinium subcurvipes* (Lebour) Balech.
- 149 *Protoberidinium longipes* (Karsten) Balech.
- 150 According to Balech (1976) this taxon is related to the freshwater species *Protoberidinium achromaticum* (Levander) Balech.
- 151 *Protoberidinium ovatum* Pouchet [= *P. globulus* var. *ovatum* (Pouchet) Schiller, *Peridinium ovatum* (Pouchet) Schütt] have been considered as synonyms.
- 152 This taxon can be confused with *Protoberidinium ovum* (Schiller) Balech.
- 153 Also reported from the Tyrrhenian Sea based on cysts by Montresor et al. (1998).
- 154 *Protoberidinium spiniferum* (Schiller) Balech.
- 155 The orthographic similarity between *P. sphaeroides* (Dangeard) Balech and *P. sphaeroideum* (Mangin) Balech is confusing (Sournia 1978, p. 29).
- 156 This taxon resembles *Protoberidinium brachypus* (Schiller) Balech.
- 157 *Protoberidinium angustum* (Dangeard) Balech.
- 158 Most of the recently described species of *Scrippsiella* Balech ex Loeblich are reported from the germination of cysts (Montresor et al. 1994, D'Onofrio et al. 1999).
- 159 *Scrippsiella faeroense* Dickensheets et Cox, non *Scrippsiella faeroense* (Paulsen) Balech et Soares.
- 160 Reported by Rampi (1941) as *Blepharocysta striata* Schütt (see Carbonell-Moore 1994).
- 161 *Podolampas spinifer* Pavillard.
- 162 *Tuberculodinium vancampoae* (Rossignol) Wall (= *Pterospermopsis vancampoae* Rossignol). Taylor (1976 p. 183) reported the presence of this taxon in the Mediterranean Sea based on Margalef (1948).
- 163 One specimen that resembles *C. yeye* Margalef from the Alborán Sea, one specimen of *C. yeye* and other undetermined species of this genus were observed from the Balearic coasts (unpublished obs.). *Ceratoperidinium mediterraneum* Abboud-Abi Saab requires a more detailed description.
- 164 Iwataki et al. (2002) reported this taxon based on the material from the Aegean Sea by Pennik and Clarke (1977).
- 165 *Cachonina niei* Loeblich III.
- 166 *Katodinium rotundatum* (Lohmann) Loeblich III, *Masartia rotundata* (Lohmann) Schiller, *Amphidinium rotundatum* Lohmann, *Katodinium minutum* (Lebour) Sournia.
- 167 *Cladopyxis bacillifera* Schiller.
- 168 *Cladopyxis claytonii* Holmes.
- 169 *Cladopyxis setifera* Lohmann, *Micracanthodinium bacilliferum* (Schiller) Deflandre.
- 170 The genus *Exuviella* was included in *Prorocentrum* by Dodge (1975). McLachlan et al. (1997) proposed the separation of both genera.
- 171 Schiller (1931–1933, p. 26) reported this taxon as *Exuviella* (?) *aperta* Schiller (described from the Adriatic Sea in 1928). Inadequate description according to Dodge (1975).
- 172 *P. micans* var. *gibbosum* Schiller, *P. gibbosum* (Schiller) Schiller, *P. blatta* Athanassopoulos. Resembles *Prorocentrum micans* Ehrenberg.
- 173 According to Dodge (1975): *Prorocentrum bidens* Schiller, *P. lebourae* Schiller, *Exuviella oblonga* Schiller [= *Prorocentrum oblongum* (Schiller) Taylor], *E. lenticulata* Matzenauer, *E. elongata* Rampi.
- 174 *Prorocentrum pyriformis* (Schiller) Hasle.



- 175 *Prorocentrum minimum* (Pavillard) Schiller and *Prorocentrum cordatum* (Ostenfeld) Dodge may be synonyms (Velikova and Larsen 1999).
- 176 *Prorocentrum obtusidens* Schiller, also *P. monacense* Kufferath described in the Ligurian Sea (Kufferath 1957).
- 177 *P. hentscheli* Schiller, *P. sigmoides* Böhm, *P. macrurus* Athanassopoulos. Resembles *P. micans* Ehrenberg.
- 178 According to Dodge (1975): *Prorocentrum mexicanum* Osorio-Tafall, *P. obtusum* Ostenfeld, *P. brochi* Schiller, *P. ovale* Schiller, *P. ovalis* Rampi, *P. rampii* Sournia.
- 179 *Prorocentrum schilleri* Böhm in Schiller.
- 180 *Prorocentrum nanum* Schiller and *P. pusillum* (Schiller) Loeblich were considered as synonyms until Puigserver and Zingone (2002).
- 181 *Prorocentrum cornutum* Schiller.
- 182 *Prorocentrum sphaeroideum* Schiller, *P. robustum* Osorio Tafall.
- 183 *Prorocentrum adriaticum* Schiller.
- 184 This taxon resembles *Prorocentrum mexicanum* Osorio-Tafall that is here considered a synonym of *Prorocentrum maximum* (Gourret) Schiller.
- 185 Regarded as a doubtful dinoflagellate by Sournia (1986, p. 37).
- 186 *Dissodinium* is a genus of parasitic dinoflagellates with a complicated life cycle including planktonic life cycle stages similar to those of the genus *Pyrocystis*. In contrast, *Pyrocystis* is a permanently free-living phototrophic dinoflagellate with a predominant coccoid stage and a flagellated dinospore stage (e.g., Elbrächter *et al.* 1987).
- 187 *Pyrocystis lunula* (Schütt) Schütt, *Dissodinium lunula* (Schütt) Pascher.
- 188 *Dissodinium fusiformis* (Thompson *ex* Murray) Matzenauer.
- 189 *Dissodinium gerbaultii* (Pavillard) F.J.R. Taylor
- 190 Léger (1973) reported the presence of this taxon in the Spanish Mediterranean coast by Margalef *et al.* (1957). Drebes (1981) reported that *Pyrocystis margalefii* Léger is probably identical with the resting stages of *Dissodinium pseudolunula* Swift *ex* Elbrächter *et* Drebes.
- 191 *Dissodinium minimum* Matzenauer.
- 192 *Pyrocystis pseudonociluca* Wyville-Thomson *ex* Murray, *Dissodinium pseudolunula* Swift *ex* Elbrächter *et* Drebes.
- 193 Regarded as a doubtful dinoflagellate by Sournia (1986, p. 97). Commonly reported as *Adinomonas* Schiller.
- 194 Regarded as a doubtful dinoflagellate by Sournia (1986, p. 97).
- 195 Doubtful taxon (Sournia 1986, p. 98). Also reported from the Sicilian coasts or North-Italian lakes by Andreis *et al.* (1982).

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