

A CONTRIBUTION TO THE REVISION OF CLASSIFICATION OF THE ADRIATIC FORAMINIFERA

PRIOLOG REVIZIJI KLASIFIKACIJE JADRANSKIH FORAMINIFERA

Slobodan Alfirević

Institute of Oceanography and Fisheries, Split

In determination of individual species of the Adriatic foraminifera the problem arose of their classification as described by our and foreign authors in 19th century. However, the author already made a preliminary revision in 1964, taking into account five systematic categories (species, genus, subfamilia, familia, ordo) for the registered species.

The more recent foraminiferological literature gives the division in the classification of foraminifera in more detail on the basis of the criticism of all the earlier classification by different authors. Thus, the classification now has seven categories (species, genus, subfamilia, familia, superfamilia, subordo, ordo). In this connexion the author gives the results of comparison of the earlier made revision with the enlarged, more complete revision of classification of the Adriatic foraminifera, taking into account seven systematic categories.

INTRODUCTION

As it is well known, the taxonomic investigations of the world of living organisms have an exceptional significance and importance both for inventarization and distribution and for the studies of ecological relations of organisms to the living and non-living environment. Therefore, the inventarization of individual species is in very close connexion with the studies of their ecology.

Therefore, to study the ecology it is indispensable to know the taxonomy of individual species the ecology of which is studied. In doing this it is necessary to have available the most recent achievements of taxonomic studies with respect to the classification and nomenclature of organisms. This is very much discussed on world congresses treating these matters.

The most recent investigations and results, as well as methods applied in determination of individual species have caused the revisions of systematics of individual categories for the respective groups of organisms — plant and animal ones — both land and marine ones, to become frequent.

The revision of classification has recently been applied in foraminiferology, as well. A lot of trials aimed to make as better as possible classification

of these protozoa on the basis of two classical works on foraminifera (d'Orbigny, 1826) — one of the first works on foraminifera in which foraminifera were included among cephalopods and Brady, 1884 — one of the first and at the same time most complete works — a monograph on foraminifera of the preceding century. These revisions took into consideration phylogenesis, including also the ontogenesis of some individuals, as well the morphology and physiology.

In doing this it was of particular importance to take into account the distinction between individual forms, since one of the fundamental criteria for determination was of morphological formation. The metagenesis — the alternation of generations with the microspherical form which is rather rare and therefore hard to obtain and the megalospherical form, a frequent one and therefore almost always present in microfaunistic analyses of the foraminiferan associations — had to be taken into account, as well.

The modern methods applied in determination are directed towards the establishing of one or more nuclei in protoplasm (mononucleate and multinucleate forms). The electronic microscopy makes possible the detailed study of the structure of the shell wall.

In determination of individual species of the Adriatic foraminifera the problem arose of their classification as described by our and foreign authors in 19th century. It is, therefore, natural that individual works on foraminifera carried out in this century, have been gradually adjusted to the most recent views and approaches to taxonomy. Thus, different authors dealing with the foraminiferan associations of individual life areas made the revisions of classification in this way.

Since this paper is devoted to the memory of D. Sc. Ante Ercegović (Alfirević, 1970), marked biologist-systematist, its taxonomic character embodies the symbolism.

MATERIAL AND METHODS

The data of the inventory of the Adriatic foraminifera by our and foreign authors, published in 19th century and at beginning of 20th were used (Deželić, 1896, Brusina, 1907, Fornasini, 1899, 1900, 1901, 1902, 1903, Silvestri, 1895, 1896—1897, 1900). The papers by foreign authors published during this century were also available (Cita and Chierici, 1962, d'Onofrio, 1959, 1969, 1972, d'Onofrio and Marabini and Vivalda, 1976) as well as the results of our own investigations of the inventarization of the foraminifera from different Adriatic locations (Alfirević, 1960, 1961, 1962, 1964, 1969, 1979). We also made use of the collection of foraminifera from 19th century kept in the Croatian Zoological Museum and Croatian Geological Museum in Zagreb.

Keys for determination by Cushman (1950) and Loeblich and Tappan (1964) were used and the comparison between these two classifications of 156 benthic and pelagic species of the Adriatic foraminifera carried out. Thus this paper is a contribution to the revision of classification of these protozoa in the Adriatic Sea.

RESULTS AND DISCUSSION

Until recently, one of the world-famous foraminiferologists J. A. Cushman, with his work (1950) was taken as basis for determination of the taxonomy of foraminifera, with special respect to the classification of genera which were classified within the order »FORAMINIFERA« into subfamilies and families. According to the mentioned classification there were distinguished five systematic categories: *species*, *genus*, *subfamilia*, *familia*, *ordo*.

The preliminary revision of the Adriatic foraminifera and their systematics was made according to this key (Alfirević, 1964). It was only an introduction to the more comprehensive study of microfaunistical associations of foraminifera in the Adriatic with respect to their distribution, systematics and ecological relations to abiotic environmental factors (Alfirević, 1980).

The more recent foraminiferological literature, however, shows that the more detailed divisions into more taxonomic categories have been applied in taxonomy of foraminifera. They are the result of phylogenetic investigations. In this connexion the book »Treatise of Invertebrate Paleontology«, edited by R. C. Moore (Loeblich, A. R. Jr and H. Tappan (1964), is of the enormous importance for the systematics of foraminifera. The special chapter of this book is a critical review of all the preceding classifications. This new work also introduces the following seven categories: *species*, *genus*, *subfamilia*, *familia*, *superfamilia*, *subordo*, *ordo*.

It is therefore held that it will be quite natural to carry out an appropriate revision of the Adriatic foraminiferan species inventorized up to now, according to the most recent and world approved and adopted classification. In addition to the seven systematic categories, this classification includes also the data on authors and the year of determination and publishing of each individual category.

The results of taxonomic studies may be evaluated in the scientific world only if they are published in accordance with the most recent results of investigations. These results are in our case the most recent principles of classification used in inventarization.

In the added review of the Adriatic benthic and pelagic foraminifera, the list of the found species, classified according to Cushman (1950) is on the left side, and the parallel list of species classified according to Loeblich and Tappan (1964) is on the right side.

Review of classification of inventorized foraminifera by Cushman (1950)

ORDO	FORAMINIFERA
FAMILIA	SACCAMMINIDAE
SUBFAMILIA	Psammosphaerinae

Review of classification of inventorized foraminifera by Loeblich and Tappan (1964)

SUBORDO	FORAMINIFERIDA Eichwald, 1830
SUBORDO	TEXTULARINA Delage & Hérouard, 1896
SUPERFAMILIA	AMMODISCEA Reuss, 1826
FAMILIA	SACCAMMINIDAE Brady, 1884
SUBFAMILIA	Psammosphaerinae Haeckel, 1894

GENUS	PSAMMOSPHAERA Schulze, 1875
SPECIES	1. <i>Psammospaera fusca</i> Schulze
SUBFAMILIA	Saccammininae
GENUS	SACCAMMINA M. Sars, 1869
SPECIES	2. <i>Saccammina sphaerica</i> M. Sars
FAMILIA	REOPHACIDAE
SUBFAMILIA	Reophacinae
GENUS	REOPHAX Montfort, 1808
SPECIES	3. <i>Reophax atlantica</i> (Cushman) 4. <i>R. scorpiurus</i> Montfort
FAMILIA	AMMODISCIDAE
SUBFAMILIA	Ammodiscinae
GENUS	AMMODISCUS Reuss, 1861
SPECIES	5. <i>Ammodiscus incertus</i> (d'Orbigny)
GENUS	GLOMOSPIRA Rzehak, 1888
SPECIES	6. <i>Glomospira charoides</i> (Jones & Parker)
SUBFAMILIA	Tolypammininae
GENUS	AMMOLAGENA Eimer & Fickert, 1899
SPECIES	7. <i>Ammolagena clavata</i> (Jones & Parker)
FAMILIA	TEXTULARIIDAE
SUBFAMILIA	Spiroplectammininae
GENUS	SPIROPLECTAMMINA Cushman, 1927
SPECIES	8. <i>Spiroplectammina</i> <i>wrighti</i> (Silvestri)
SUBFAMILIA	Textulariinae
GENUS	TEXTULARIA Defrance, 1824
SPECIES	9. <i>Textularia agglutinans</i> d'Orbigny 10. <i>T. conica</i> d'Orbigny 11. <i>T. gramen</i> d'Orbigny 12. <i>T. trochus</i> d'Orbigny

GENUS	PSAMMOSPHAERA Schulze, 1875
SPECIES	1. <i>Psammospaera fusca</i> Schulze
SUBFAMILIA	Saccammininae Brady, 1884
GENUS	SACCAMMINA M. Sars, 1869
SPECIES	2. <i>Saccammina sphaerica</i> M. Sars
SUPERFAMILIA	LITUOLACEA de Blainville, 1825
FAMILIA	HORMOSINIDAE Haeckel, 1894
SUBFAMILIA	Hormosininae Haeckel, 1894
GENUS	REOPHAX Montfort, 1808
SPECIES	3. <i>Reophax atlantica</i> (Cushman) 4. <i>R. scorpiurus</i> Montfort
FAMILIA	AMMODISCIDAE Reuss, 1862
SUBFAMILIA	Ammodiscinae Reuss, 1862
GENUS	AMMODISCUS Reuss, 1861
SPECIES	5. <i>Ammodiscus incertus</i> (d'Orbigny)
GENUS	GLOMOSPIRA Rzehak, 1888
SPECIES	6. <i>Glomospira charoides</i> (Jones & Parker)
SUBFAMILIA	Tolypammininae Cushman, 1928
GENUS	AMMOLAGENA Eimer & Fickert, 1899
SPECIES	7. <i>Ammolagena clavata</i> (Jones & Parker)
FAMILIA	TEXTULARIIDAE Ehrenberg, 1838
SUBFAMILIA	Spiroplectammininae Cushman, 1927
GENUS	SPIROPLECTAMMINA Cushman, 1927
SPECIES	8. <i>Spiroplectammina</i> <i>wrighti</i> (Silvestri)
SUBFAMILIA	Textulariinae Ehrenberg, 1838
GENUS	TEXTULARIA Defrance, 1824
SPECIES	9. <i>Textularia agglutinans</i> d'Orbigny 10. <i>T. conica</i> d'Orbigny 11. <i>T. gramen</i> d'Orbigny 12. <i>T. trochus</i> d'Orbigny

- GENUS **BIGENERINA**
d'Orbigny, 1826
- SPECIES 13. *Bigennerina nodosaria*
d'Orbigny
- GENUS **SIPHOTEXTULARIA**
Finlay, 1939
- SPECIES 14. *Siphotextularia affinis*
(Fornasini)
- FAMILIA VERNEUILINIDAE
- GENUS **PSEUDOCALVULINA**
Cushman, 1936
- SPECIES 15. *Pseudoclavulina*
crustata Cushman
- FAMILIA MILIOLIDAE
- GENUS **QUINQUELOCULINA**
d'Orbigny, 1826
- SPECIES 16. *Quinqueloculina*
bicornis
Walker & Jacob
17. *Q. dutemplei* d'Orbigny
18. *Q. linnaeana*
(d'Orbigny)
19. *Q. pygmaea* Reuss
20. *Q. seminulum* (Linne)
21. *Q. longirostra*
(d'Orbigny)
- GENUS **ADELOSINA** d'Orbigny,
1826
- SPECIES 22. *Adelosina laevigata*
(d'Orbigny)
- GENUS **MILIOLINELLA**
Wiesner, 1931
- SPECIES 23. *Miliolinella subrotunda*
(Montfort)
- GENUS **SPIROLOCULINA**
d'Orbigny, 1826

- GENUS **BIGENERINA**
d'Orbigny, 1826
- SPECIES 13. *Bigennerina nodosaria*
d'Orbigny
- SUBFAMILIA Pseudobolivulininae
Wiesner, 1931
- GENUS **SIPHOTEXTULARIA**
Finlay, 1939
- SPECIES 14. *Siphotextularia affinis*
(Fornasini)
- FAMILIA ATAXOPHRAGMIIDAE
Schwager, 1877
- SUBFAMILIA Valvulininae
Berthelin, 1880
- GENUS **CLAVULINA** d'Orbigny,
1826
- SPECIES 15. *Clavulina crustata*
Cushman
- FAMILIA MILIOLIDAE
Ehrenberg, 1839
- SUBFAMILIA Quinqueloculininae
Cushman, 1917
- GENUS **QUINQUELOCULINA**
d'Orbigny, 1826
- SPECIES 16. *Quinqueloculina*
bicornis
Walker & Jacob
17. *Q. dutemplei* d'Orbigny
18. *Q. linnaeana*
(d'Orbigny)
19. *Q. pygmaea* Reuss
20. *Q. seminulum* (Linne)
21. *Q. longirostra*
(d'Orbigny)
22. *Q. longirostra*
(d'Orbigny)
— megalospherical
form
- SUBFAMILIA Miliolinellinae Vella,
1957
- GENUS **MILIOLINELLA**
Wiesner, 1931
- SPECIES 23. *Miliolinella subrotunda*
(Montagu)
- SUBORDO MILIOLINA Delage &
Héroutard, 1896
- SUPERFAMILIA MILIOLACEA
Ehrenberg, 1839
- FAMILIA NUBECULARIIDAE
Jones, 1875
- SUBFAMILIA Spiroloculininae
Wiesner, 1920
- GENUS **SPIROLOCULINA**
d'Orbigny, 1826

- SPECIES 24. *Spiroloculina*
canaliculata d'Orbigny
25. *S. excavata* d'Orbigny

GENUS **SIGMOILINA**
Schlumberger, 1887

- SPECIES 26. *Sigmoilina*
schlumbergeri Silvestri

27. *S. sigmoidea* (Brady)

28. *S. tenuis* (Czjzek)

GENUS **NUMMOLOCULINA**
Steinmann, 1881

- SPECIES 29. *Nummoloculina*
contraria (d'Orbigny)

GENUS **ARTICULINA**
d'Orbigny, 1826

- SPECIES 30. *Articulina tubulosa*
(Seguenza)

GENUS **TRILOCULINA**
d'Orbigny, 1826

- SPECIES 31. *Triloculina tricarinata*
d'Orbigny

32. *T. trigonula* Lamarck

GENUS **PYRGO** DeFrance, 1824.

- SPECIES 33. *Pyrgo comata* (Brady)
34. *P. depressa* (d'Orbigny)
35. *P. elongata* (d'Orbigny)
36. *P. oblonga* (d'Orbigny)
37. *P. ringens* (Lamarck)

GENUS **PYRGOELLA** Cushman
& White, 1936

- SPECIES 38. *Pyrgoella sphaera*
(d'Orbigny)

GENUS **BILOCULINNELLA**
Wiesner, 1931

- SPECIES 39. *Biloculinella*
cylindrica Todd
40. *B. globula* (Bornemann)
41. *B. inflata* (Wright)
42. *B. labiata*
(Schlumberger)

- SPECIES 24. *Spiroloculina*
canaliculata d'Orbigny
25. *S. excavata* d'Orbigny

FAMILIA **MILIOLIDAE**
Ehrenberg, 1839

SUBFAMILIA **Quinqueloculininae**
Cushman, 1917

GENUS **SIGMOILOPSIS** Finlay,
1947

- SPECIES 26. *Sigmoilopsis*
schlumbergeri (Silvestri)

GENUS **SIGMOILINA**
Schlumberger, 1887

- SPECIES 27. *Sigmoilina sigmoidea*
(Brady)

28. *S. tenuis* (Czjzek)

SUBFAMILIA **Miliolinellinae** Vella,
1931

GENUS **NUMMOLOCULINA**
Steinmann, 1881

- SPECIES 29. *Nummoloculina*
contraria (d'Orbigny)

SUBFAMILIA **Tubinellinae** Rhumbler,
1906

GENUS **ARTICULINA**
d'Orbigny, 1826

- SPECIES 30. *Articulina tubulosa*
(Seguenza)

SUBFAMILIA **Quinqueloculininae**
Cushman, 1917

GENUS **TRILOCULINA**
d'Orbigny, 1826

- SPECIES 31. *Triloculina tricarinata*
d'Orbigny

32. *T. trigonula* Lamarck

GENUS **PYRGO** DeFrance, 1824.

- SPECIES 33. *Pyrgo comata* (Brady)
34. *P. depressa* (d'Orbigny)
35. *P. elongata* (d'Orbigny)
36. *P. oblonga* (d'Orbigny)
37. *P. ringens* (Lamarck)

GENUS **PYRGOELLA** Cushman
& White, 1936

- SPECIES 38. *Pyrgoella sphaera*
(d'Orbigny)

SUBFAMILIA **Miliolinellinae** Vella
1937

GENUS **BILOCULINNELLA**
Wiesner, 1931

- SPECIES 39. *Biloculinella*
cylindrica Todd
40. *B. globula* (Bornemann)
41. *B. inflata* (Wright)
42. *B. labiata*
(Schlumberger)

SUBORDO **MILIOLINA** Delage &
Hérard, 1896

		SUPERFAMILIA		MILIOLACEA	
				Ehrenberg, 1839	
FAMILIA	OPHTHALMIDIIDAE	FAMILIA	FISHERINIDAE	Millett, 1898	
SUBFAMILIA	Cornuspirinae	SUBFAMILIA	Cyclogyrinae	Loeblich & Tappan, 1961	
GENUS	CORNUSPIRA	GENUS	CYCLOGYRA	Wood, 1842	
				Schultze, 1854	
SPECIES	43. <i>Cornuspira foliacea</i>	SPECIES	43. <i>Cyclogyra foliacea</i>	(Philippi)	
				44. <i>C. involvens</i> (Reuss)	
SUBFAMILIA	Nodophthalmidiinae	SUBFAMILIA	Nodobaculariinae	Cushman, 1927	
GENUS	VERTEBRALINA	GENUS	VERTEBRALINA	d'Orbigny, 1826	
				d'Orbigny, 1826	
SPECIES	45. <i>Vertebralina striata</i>	SPECIES	45. <i>Vertebralina striata</i>	d'Orbigny	
				d'Orbigny	
		SUPERFAMILIA		LITUOLACEA	
				de Blainville, 1825	
FAMILIA	PLACOPSILINIDAE	FAMILIA	LITUOLIDAE	de Blainville, 1825	
SUBFAMILIA	Placopsilininae	SUBFAMILIA	Placopsilininae	Rhumbler, 1913	
GENUS	PLACOPSILINA	GENUS	PLACOPSILINA	d'Orbigny, 1850	
				d'Orbigny, 1850	
SPECIES	46. <i>Placopsilina bradyi</i>	SPECIES	46. <i>Placopsilina bradyi</i>	Cushman & McCulloch	
				Cushman & McCulloch	
		SUBORDO		ROTALIINA Delage & Hérourard, 1896	
		SUPERFAMILIA		NODOSARIACEA	
				Ehrenberg, 1838	
FAMILIA	LAGENIDAE	FAMILIA	NODOSARIIDAE	Ehrenberg, 1838	
SUBFAMILIA	Nodosariinae	SUBFAMILIA	Nodosariinae	Ehrenberg, 1838	
GENUS	ROBULUS Montfort, 1808	GENUS	LENTICULINA	Lamarck, 1804	
SPECIES	47. <i>Robulus calcar</i> (Linne)	SPECIES	47. <i>Lenticulina calcar</i> (Linne)		
				48. <i>L. cultrata</i> (Montfort)	
				49. <i>L. curvisepta</i> (Seguenza)	
				50. <i>L. orbicularis</i> (d'Orbigny)	
GENUS	LENTICULINA				
		Lamarck, 1804			
SPECIES	51. <i>Lenticulina peregrina</i> (Schwager)	51. <i>L. peregrina</i> (Schwager)			
GENUS	PLANULARIA	GENUS	ASTACOLUS	Montfort, 1808	
				Defrance, 1824	
SPECIES	52. <i>Planularia crepidula</i> (Fichtel & Moll)	SPECIES	52. <i>Astaculus crepidulus</i> (Fichtel & Moll)		
GENUS	MARGINULINA	GENUS	MARGINULINA	d'Orbigny, 1826	
				d'Orbigny, 1826	
SPECIES	53. <i>Marginulina filicostata</i> Fornasini	SPECIES	53. <i>Marginulina filicostata</i> Silvestri		
				54. <i>M. glabra</i> d'Orbigny	
				54. <i>M. glabra</i> d'Orbigny	

- GENUS **DENTALINA** d'Orbigny, 1826
- SPECIES 55. *Dentalina communis* d'Orbigny
56. *D. consobrina* d'Orbigny
57. *D. inflexa* Reuss
58. *D. leguminiformis* (Batsch)
59. *D. soluta* Reuss
- GENUS **AMPHICORYNE** Schlumberger, 1881
- SPECIES 60. *Amphicoryne scalaris* (Batsch)
- GENUS **SARACENARIA** Defrance, 1824
- SPECIES 61. *Saracenaria italica* Defrance
- GENUS **LINGULINA** d'Orbigny, 1826
- SPECIES 62. *Lingulina seminuda* Hantken
- GENUS **VAGINULINA** d'Orbigny, 1826
- SPECIES 63. *Vaginulina costata* (Cornuel)
- SUBFAMILIA Lageninae
- GENUS **LAGENA** Walker & Jacob, 1798
- SPECIES 64. *Lagena acuticosta* Reuss
65. *L. crenata* Parker & Jones
66. *L. distoma* Parker & Jones
67. *L. globosa* Montagu
68. *L. gracillima* (Seguenza)
69. *L. hexagona* (Williamson)

- GENUS **DENTALINA** Risso, 1826
- SPECIES 55. *Dentalina communis* d'Orbigny
56. *D. consobrina* d'Orbigny
57. *D. inflexa* Reuss
58. *D. leguminiformis* (Batsch)
59. *D. soluta* Reuss
- GENUS **AMPHICORYNE** Schlumberger, 1881
- SPECIES 60. *Amphicoryne scalaris* (Batsch)
- GENUS **SARACENARIA** Defrance, 1824
- SPECIES 61. *Saracenaria italica* Defrance
- SUBFAMILIA Lingulininae Loeblich & Tappan, 1961
- GENUS **LINGULINA** d'Orbigny, 1826
- SPECIES 62. *Lingulina seminuda* Hantken
- SUBFAMILIA Nodosariinae Ehrenberg, 1838
- GENUS **VAGINULINA** d'Orbigny, 1826
- SPECIES 63. *Vaginulina costata* (Cornuel)
- GENUS **LAGENA** Walker & Jacob 1798
- SPECIES 64. *Lagena acuticosta* Reuss
65. *L. crenata* Parker & Jones
66. *L. distoma* Parker & Jones
- FAMILIA GLANDULINIDAE Reuss, 1860
- SUBFAMILIA Oolininae Loeblich & Tappan, 1961
- GENUS **OOLINA** d'Orbigny, 1839
- SPECIES 67. *Oolina globosa* (Montagu)
- FAMILIA NODOSARIIDAE Ehrenberg, 1838
- SUBFAMILIA Nodosariinae Ehrenberg, 1838
- GENUS **LAGENA** Walker & Jacob, 1798
- SPECIES 68. *Lagena gracillima* (Seguenza)
69. *L. hexagona* (Williamson)

- | | |
|---|---|
| 70. <i>L. hispidula</i> Cushman | 70. <i>L. hispidula</i> Cushman |
| 71. <i>L. laevis</i> (Montagu) | 71. <i>L. laevis</i> (Montagu) |
| 72. <i>L. lagenoides</i>
(Williamson) | 72. <i>L. lagenoides</i>
(Williamson) |
| | FAMILIA GLANDULINIDAE
Reuss, 1860 |
| | SUBFAMILIA Glandulininae Reuss,
1860 |
| | GENUS FISSURINA Reuss,
1850 |
| 73. <i>L. marginata</i>
Walker & Boys | SPECIES 73. <i>Fissurina marginata</i>
Walker & Boys |
| 74. <i>L. orbignyana</i>
(Seguenza) | 74. <i>F. orbignyana</i> Seguenza |
| 75. <i>L. marginata</i>
<i>semimarginata</i> Reuss | 75. <i>F. marginata</i>
<i>semimarginata</i> (Reuss) |
| | FAMILIA NODOSARIIDAE
Ehrenberg, 1838 |
| | SUBFAMILIA Nodosariinae
Ehrenberg, 1838 |
| | GENUS LAGENA
Walker & Jacob, 1798 |
| 76. <i>L. ovum</i>
Ehrenberg | SPECIES 76. <i>Lagena ovum</i>
Ehrenberg |
| 77. <i>L. perlucida</i> Williamson | 77. <i>L. perlucida</i> Williamson |
| | FAMILIA GLANDULINIDAE
Reuss, 1860 |
| | SUBFAMILIA Glandulininae
Reuss, 1860 |
| | GENUS FISSURINA Reuss, 1850 |
| 78. <i>L. staphyllearia</i>
(Schwager) | SPECIES 78. <i>Fissurina staphyllearia</i>
Schwager |
| | FAMILIA NODOSARIIDAE
Ehrenberg, 1838 |
| | SUBFAMILIA Nodosariinae
Ehrenberg, 1838 |
| | GENUS LAGENA
Walker & Jacob, 1798 |
| 79. <i>L. striata</i> (d'Orbigny)
d'Orbigny | SPECIES 79. <i>Lagena striata</i>
d'Orbigny, 1839 |
| FAMILIA POLYMORPHINIDAE | FAMILIA POLYMORPHINIDAE
d'Orbigny, 1839 |
| SUBFAMILIA Polymorphininae | SUBFAMILIA Polymorphininae |
| GENUS GUTTULINA
d'Orbigny, 1839 | GENUS GUTTULINA
d'Orbigny, 1839 |
| SPECIES 80. <i>Guttulina lactea</i>
Walker & Jacob | SPECIES 80. <i>Guttulina lactea</i>
Walker & Jacob |
| 81. <i>G. problema</i> d'Orbigny | 81. <i>G. problema</i> d'Orbigny |
| | FAMILIA GLANDULINIDAE
Reuss, 1860 |
| | SUBFAMILIA Glandulininae
Reuss, 1860 |
| GENUS GLANDULINA
d'Orbigny, 1826 | GENUS GLANDULINA
d'Orbigny, 1826 |

- SPECIES 82. *Glandulina laevigata*
(d'Orbigny)
83. *G. rotundata* (Reuss)

FAMILIA NONIONIDAE

GENUS NONION Montfort, 1808

- SPECIES 84. *Nonion granosum*
(d'Orbigny)
85. *N. pompilioides*
(Fichtel & Moll)

GENUS ELPHIDIUM
Montfort, 1808

- SPECIES 86. *Elphidium aculeatum*
(d'Orbigny)
87. *E. advenum* (Cushman)
88. *E. complanatum*
(d'Orbigny)
89. *E. crispum* (Linne)
90. *E. decipiens* (Costa)
91. *E. macellum*
(Fichtel & Moll)

FAMILIA PENEROPLIDAE

SUBFAMILIA Spirolininae

GENUS PENEROPLIS
Montfort, 1808

- SPECIES 92. *Peneroplis pertusus*
Forskål

GENUS SPIROLINA
Lamarck, 1804

- SPECIES 93. *Spirolina arietinus*
(Batsch)

SUBFAMILIA Archaiasinae

GENUS ARCHAIAS
Montfort 1808

- SPECIES 94. *Archaia angulatus*
(Fichtel & Moll)

FAMILIA BULIMINIDAE

- SPECIES 82. *Glandulina laevigata*
(d'Orbigny)
83. *G. rotundata* (Reuss)

SUPERFAMILIA CASSIDULINACEA
d'Orbigny, 1839

FAMILIA NONIONIDAE
Schultze, 1854

SUBFAMILIA Nonioninae
Schultze, 1854

GENUS NONION Montfort, 1808

- SPECIES 84. *Nonion granosum*
(d'Orbigny)
85. *N. pompilioides*
(Fichtel & Moll)

FAMILIA ELPHIDIIDAE
Galloway, 1933

SUBFAMILIA Elphidiinae
Galloway, 1933

GENUS ELPHIDIUM
Montfort, 1808

- SPECIES 86. *Elphidium aculeatum*
(d'Orbigny)
87. *E. advenum* (Cushman)
88. *E. complanatum*
(d'Orbigny)
89. *E. crispum* (Linne)
90. *E. decipiens* (Costa)
91. *E. macellum*
(Fichtel & Moll)

SUBORDO MILIOLINA Delage
& Hérouard, 1896

SUPERFAMILIA MILIOLACEA
Ehrenberg, 1839

FAMILIA SORITIDAE
Ehrenberg, 1839

SUBFAMILIA Peneroplinae
Schultze, 1854

GENUS PENEROPLIS
Montfort, 1808

- SPECIES 92. *Peneroplis pertusus*
Forskål

GENUS SPIROLINA
Lamarck, 1804

- SPECIES 93. *Spirolina arietina*
(Batsch)

SUBFAMILIA Archaiasinae
Cushman, 1927

GENUS ARCHAIAS
Montfort, 1808

- SPECIES 94. *Archaia angulatus*
(Fichtel & Moll)

SUBORDO ROTALIINA Delage
& Hérouard, 1896

SUPERFAMILIA ROBERTINACEA
Reuss, 1850

FAMILIA ROBERTINIDAE
Reuss, 1850

SUBFAMILIA Turrilinae

GENUS **ROBERTINA**
d'Orbigny, 1846

- SPECIES 95. *Robertina bradyi*
Cushman & Parker
96. *R. subteres* Brady

SUBFAMILIA Bulimininae

GENUS **BULIMINA**
d'Orbigny, 1826

- SPECIES 97. *Bulimina aculeata*
d'Orbigny
98. *B. elongata* d'Orbigny
99. *B. etnea* Seguenza
100. *B. inflata* Seguenza
101. *B. marginata* d'Orbigny

GENUS **GLOBOBULIMINA**
Cushman, 1927

- SPECIES 102. *Globobulimina*
pseudospinescens
(Emiliani)

SUBFAMILIA Virgulininae

GENUS **VIRGULINA** d'Orbigny

- SPECIES 103. *Virgulina schreibersiana*
(Czjzek)
104. *V. subsquamosa* Egger

GENUS **BOLIVINA**
d'Orbigny, 1839

- SPECIES 105. *Bolivina alata*
(Seguenza)
106. *B. catanensis*
(Seguenza)
107. *B. difformis*
(Williamson)
108. *B. dilatata* Reuss
109. *B. spathulata*
(Williamson)
110. *B. subaenariensis*
Cushman

GENUS **ROBERTINA**
d'Orbigny, 1846

- SPECIES 95. *Robertina bradyi*
Cushman & Parker
96. *R. subteres* Brady

SUBORDO **ROTALIINA** Delage
& Hérouard, 1896

SUPERFAMILIA **BULIMINACEA**
Jones, 1875

FAMILIA **BULIMINIDAE**
Jones, 1875

SUBFAMILIA **Bulimininae** Jones, 1875

GENUS **BULIMINA**
d'Orbigny, 1826

- SPECIES 97. *Bulimina aculeata*
d'Orbigny
98. *B. elongata* d'Orbigny
99. *B. etnea* Seguenza
100. *B. inflata* Seguenza
101. *B. marginata* d'Orbigny

GENUS **GLOBOBULIMINA**
Cushman, 1927

- SPECIES 102. *Globobulimina*
pseudospinescens
(Emiliani)

SUPERFAMILIA **CASSIDULINACEA**
d'Orbigny, 1839

FAMILIA **CAUCASINIDAE**,
Bykova, 1959

SUBFAMILIA **Fursenkoininae**
Loeblich & Tappan,
1961

GENUS **FURSENKOINA**
Loeblich & Tappan,
1961

- SPECIES 103. *Fursenkoina*
schreibersiana
(Czjzek)
104. *F. subsquamosa* Egger

SUPERFAMILIA **BULIMINACEA**
Jones, 1875

FAMILIA **BOLIVINITIDAE**
Cushman, 1927

GENUS **BOLIVINA**
d'Orbigny, 1839

- SPECIES 105. *Bolivina alata*
(Seguenza)
106. *B. catanensis*
(Seguenza)
107. *B. difformis*
(Williamson)
108. *B. dilatata* Reuss
109. *B. spathulata*
(Williamson)
110. *B. subaenariensis*
Cushman

SUBFAMILIA Reussellinae

GENUS **REUSSELLA**
Galloway, 1933

SPECIES 111. *Reussella spinulosa*
(Reuss)

SUBFAMILIA Uvigerinae

GENUS **UVIGERINA**
d'Orbigny, 1826

SPECIES 112. *Uvigerina auberiana*
d'Orbigny

113. *U. mediterranea*
Hofker

114. *U. peregrina* Cushman

115. *U. pygmaea* d'Orbigny

GENUS **ANGULOGERINA**
Cushman, 1927

SPECIES 116. *Angulogerina angulosa*
(Williamson)

FAMILIA ROTALIIDAE

SUBFAMILIA Discorbiniae

GENUS **DISCORBIS**
Lamarck, 1804

SPECIES 117. *Discorbis advena*
Cushman

118. *D. globularis*
(d'Orbigny)

119. *D. orbicularis*
(Terquem)

GENUS **GYROIDINA**
d'Orbigny, 1826

SPECIES 120. *Gyroidina laevigata*
d'Orbigny

121. *G. soldanii* (d'Orbigny)

SUBFAMILIA Rotaliinae

GENUS **EPONIDES**
Montfort, 1808

SPECIES 122. *Eponides repandus*
(Fichtel & Moll)

123. *E. frigidus granulatus*
di Napoli

FAMILIA BULIMINIDAE

Jones, 1875

SUBFAMILIA Pavonininae Eimer & Fickert, 1899

GENUS **REUSSELLA**
Galloway, 1933

SPECIES 111. *Reussella spinulosa*
(Reuss)

FAMILIA UVIGERINIDAE
Haeckel, 1894

GENUS **UVIGERINA**
d'Orbigny, 1826

SPECIES 112. *Uvigerina auberiana*
d'Orbigny

113. *U. mediterranea*
Hofker

114. *U. peregrina* Cushman

115. *U. pygmaea* d'Orbigny

GENUS **TRIFARINA**
Cushman, 1923

SPECIES 116. *Trifarina angulosa*
(Williamson)

SUPERFAMILIA DICSORBACEA
Ehrenberg, 1838FAMILIA DISCORBIDAE
Ehrenberg, 1838SUBFAMILIA Discorbiniae
Ehrenberg, 1838

GENUS **DISCORBIS**
Lamarck, 1804

SPECIES 117. *Discorbis advena*
Cushman

118. *D. globularis*
(d'Orbigny)

119. *D. orbicularis*
(Terquem)

SUPERFAMILIA CASSIDULINACEA
d'Orbigny, 1839FAMILIA ALABAMINIDAE
Hofker, 1951

GENUS **GYROIDINA**
d'Orbigny, 1826

SPECIES 120. *Gyroidina laevigata*
d'Orbigny

121. *G. soldanii* (d'Orbigny)

SUPERFAMILIA ORBITOIDACEA
Schwager, 1876FAMILIA EPONIDIDAE Hofker,
1951

GENUS **EPONIDES**
Montfort, 1808

SPECIES 122. *Eponides repandus*
(Fichtel & Moll)

123. *E. frigidus granulatus*
di Napoli

		SUPERFAMILIA	ROTALIACEA
			Ehrenberg, 1839
		FAMILIA	ROTALIIDAE
			Ehrenberg, 1839
		SUBFAMILIA	Rotaliinae Ehrenberg,
			1839
GENUS	ROTALIA	GENUS	AMMONIA
	Lamarck, 1804		Brünnich, 1772
SPECIES 124.	<i>Rotalia becartii</i> (Linne)	SPECIES 124.	<i>Ammonia becartii</i> (Linne)
		SUPERFAMILIA	ROBERTINACEA
			Reuss, 1850
		FAMILIA	CERATOBULIMINIDAE
			Cushman, 1927
SUBFAMILIA	Siphonininae	SUBFAMILIA	Epistomininae
			Wedekind, 1937
GENUS	EPISTOMINA	GENUS	HOEGLUNDINA
	Terquem, 1883		Brotzen, 1948
SPECIES 125.	<i>Epistomina elegans</i> (d'Orbigny)	SPECIES 125.	<i>Hoeglundina elegans</i> (d'Orbigny)
		SUPERFAMILIA	DISCORBACEA
			Ehrenberg, 1838
		FAMILIA	SIPHONINIDAE
			Reuss, 1827
GENUS	SIPHONINA Reuss, 1850	GENUS	SIPHONINA Reuss, 1850
SPECIES 126.	<i>Siphonina reticulata</i> (Czjzek)	SPECIES 126.	<i>Siphonina reticulata</i> (Czjzek)
		SUPERFAMILIA	DISCORBACEA
			Ehrenberg, 1838
FAMILIA	AMPHISTEGINIDAE	FAMILIA	ASTERIGERINIDAE
			d'Orbigny, 1839
GENUS	ASTERIGERINA	GENUS	ASTERIGERINA
	d'Orbigny, 1839		d'Orbigny, 1839
SPECIES 127.	<i>Asterigerina mamilla</i> (Williamson)	SPECIES 127.	<i>Asterigerina mamilla</i> (Williamson)
		SUPERFAMILIA	CASSIDULINACEA
			d'Orbigny, 1839
FAMILIA	CASSIDULINIDAE	FAMILIA	CASSIDULINIDAE
			d'Orbigny, 1826
SUBFAMILIA	Cassidulininae	GENUS	CASSIDULINA
GENUS	CASSIDULINA		d'Orbigny, 1826
	d'Orbigny, 1826	SPECIES 128.	<i>Cassidulina crassa</i> d'Orbigny
SPECIES 128.	<i>Cassidulina crassa</i> d'Orbigny		129. <i>C. laevigata carinata</i> Silvestri
		GENUS	GLOBOCASSIDULINA
			Voloshinceva, 1960
		SPECIES 130.	<i>Globocassidulina subglobosa</i> (Brady)
		FAMILIA	NONIONIDAE
			Schultze, 1854
FAMILIA	CHILOSTOMELLIDAE	SUBFAMILIA	Chilostomellinae
			Brady, 1881
SUBFAMILIA	Chilostomellinae	GENUS	CHILOSTOMELLA
			Reuss, 1849
GENUS	CHILOSTOMELLA		
	Reuss, 1850		

- SPECIES 131. *Chilostomella oolina*
Parker & Jones, 1862
- SUBFAMILIA Allomorphinellinae
- GENUS **PULLENIA**
Parker & Jones, 1862
- SPECIES 132. *Pullenia quinqueloba*
(Reuss)
- SUBFAMILIA Sphaeroidininae
- GENUS **SPHAEROIDINA**
d'Orbigny, 1826
- SPECIES 133. *Sphaeroidina bulloides*
d'Orbigny
- FAMILIA **GLOBIGERINIDAE**
- SUBFAMILIA Globigerininae
- GENUS **GLOBIGERINA**
d'Orbigny, 1826
- SPECIES 134. *Globigerina bulloides*
d'Orbigny
135. *G. digitata* Brady
136. *G. eggeri* Rumbler
137. *G. pachyderma*
Ehrenberg
138. *G. quinqueloba* Natland
- GENUS **GLOBIGERINOIDES**
Cushman, 1927
- SPECIES 139. *Globigerinoides*
elongatus (d'Orbigny)
140. *G. gomitulus*
(Seguenza)
141. *G. ruber* (d'Orbigny)
142. *G. sacculifer* (Brady)
143. *G. trilobus* (Reuss)
- GENUS **GLOBIGERINELLA**
Cushman, 1927
- SPECIES 144. *Globigerinella*
aequilateralis (Brady)

- SPECIES 131. *Chilostomella oolina*
Parker & Jones, 1862
- SUBFAMILIA Nonioninae Schultze,
1854
- GENUS **PULLENIA**
Parker & Jones, 1862
- SPECIES 132. *Pullenia quinqueloba*
(Reuss)
- SUPERFAMILIA **BULIMINACEA**
Jones, 1875
- FAMILIA **SPHAEROIDINIDAE**
Cushman, 1927
- GENUS **SPHAEROIDINA**
d'Orbigny, 1826
- SPECIES 133. *Sphaeroidina bulloides*
d'Orbigny
- SUPERFAMILIA **GLOBIGERINACEA**
Carpenter, Parker &
Jones, 1862
- FAMILIA **GLOBIGERINIDAE**
Carpenter, Parker &
Jones, 1862
- SUBFAMILIA Globigerininae
Carpenter, Parker &
Jones, 1862
- GENUS **GLOBIGERINA**
d'Orbigny, 1826
- SPECIES 134. *Globigerina bulloides*
d'Orbigny
- GENUS **BEELLA** Barner &
Blow, 1960
- SPECIES 135. *Beella digitata* (Brady)
- GENUS **GLOBIGERINA**
d'Orbigny, 1826
- SPECIES 136. *Globigerina eggeri*
Rumbler
137. *G. pachyderma*
Ehrenberg
138. *G. quinqueloba* Natland
- GENUS **GLOBIGERINOIDES**
Cushman, 1927
- SPECIES 139. *Globigerinoides*
elongatus (d'Orbigny)
140. *G. gomitulus*
(Seguenza)
141. *G. ruber* (d'Orbigny)
142. *G. sacculifer* (Brady)
143. *G. trilobus* (Reuss)
- FAMILIA **HANTKENINIDAE**
Cushman, 1927
- SUBFAMILIA **Hastigerininae** Bolli,
Loeblich & Tappan,
1957
- GENUS **HASTIGERINA**
Thomson, 1876
- SPECIES 144. *Hastigerina*
aequilataris (Brady)

		FAMILIA	GLOBIGERINIDAE Carpenter, Parker & Jones, 1862
SUBFAMILIA	Orbulininae	SUBFAMILIA	Orbulininae Schultze, 1854
GENUS	ORBULINA d'Orbigny, 1839	GENUS	ORBULINA d'Orbigny, 1839
SPECIES	145. <i>Orbulina bilobata</i> (d'Orbigny)	SPECIES	145. <i>Orbulina bilobata</i> (d'Orbigny)
	146. <i>O. universa</i> d'Orbigny		146. <i>O. universa</i> d'Orbigny
FAMILIA	GLOBOROTALIIDAE	FAMILIA	GLOBOROTALIIDAE Cushman, 1927
		SUBFAMILIA	Globorotaliinae Cushman, 1927
GENUS	GLOBOROTALIA Cushman, 1927	GENUS	GLOBOROTALIA Cushman, 1927
SPECIES	147. <i>Globorotalia inflata</i> (d'Orbigny)	SPECIES	147. <i>Globorotalia inflata</i> (d'Orbigny)
	148. <i>G. scitula</i> (Brady)		148. <i>G. scitula</i> (Brady)
	149. <i>G. truncatulinoides</i> (d'Orbigny)		149. <i>G. truncatulinoides</i> (d'Orbigny)
		SUPERFAMILIA	ORBITOIDACEA Schwager, 1876
FAMILIA	ANOMALINIDAE	FAMILIA	CIBICIDIDAE Cushman, 1927
SUBFAMILIA	Anomaliniinae	SUBFAMILIA	Planulininae Bermudez, 1952
GENUS	ANOMALINA d'Orbigny, 1826	GENUS	HYALINEA Hofker, 1951
SPECIES	150. <i>Anomalina balthica</i> (Schroeter)	SPECIES	150. <i>Hyalinea balthica</i> (Schroeter)
GENUS	PLANULINA d'Orbigny, 1826	GENUS	PLANULINA d'Orbigny, 1826
SPECIES	151. <i>Planulina ariminensis</i> d'Orbigny	SPECIES	151. <i>Planulina ariminensis</i> d'Orbigny
SUBFAMILIA	Cibicidinae	SUBFAMILIA	Cibicidinae Cushman, 1927
GENUS	CIBICIDES Montfort, 1808	GENUS	CIBICIDES Montfort, 1808
SPECIES	152. <i>Cibicides boueanus</i> d'Orbigny	SPECIES	152. <i>Cibicides boueanus</i> d'Orbigny
	153. <i>C. lobatulus</i> (Walker & Jacob)		153. <i>C. lobatulus</i> (Walker & Jacob)
	154. <i>C. pseudoungerianus</i> (Cushman)		154. <i>C. pseudoungerianus</i> (Cushman)
FAMILIA	PLANORBULINIDAE	FAMILIA	PLANORBULINIDAE Schwager, 1877
GENUS	PLANORBULINA d'Orbigny, 1826	GENUS	PLANORBULINA d'Orbigny, 1826
SPECIES	155. <i>Planorbulina</i> <i>mediterraneensis</i> d'Orbigny	SPECIES	155. <i>Planorbulina</i> <i>mediterraneensis</i> d'Orbigny
		FAMILIA	ACERVULINIDAE Schultze, 1854
GENUS	GYPSINA Carter, 1877	GENUS	GYPSINA Carter, 1877
SPECIES	156. <i>Gypsina vesicularis</i> Parker & Jones	SPECIES	156. <i>Gypsina vesicularis</i> Parker & Jones

CONCLUSIONS

This paper gives the review of inventarized species of the Adriatic foraminifera after the revision of their taxonomy.

The works of our and foreign authors carried out from 1826 to 1980 dealing with the taxonomy of this protozoa in the Adriatic were taken into account.

The works prior to 1896 took the classification of foraminifera, used and published within the »Challenger Expedition« (Brady, 1884) for their taxonomic approach. Here count the works from 19th century by Deželić, (1896), Fornasini (1899), Silvestri (1895, 1896—1897) and at beginning of 20th century by Brusina (1907), Fornasini (1900, 1901, 1902, 1903) and Silvestri (1900).

An attempt to determine the systematics and the appropriate revision after Cushman (1950) was made later. On this basis the elements for determination of genera and species were adopted for the Adriatic microfauna.

This paper is a kind of synthesis of investigations into the revision of the Adriatic foraminifera classification carried out up to now. The classifications according to Cushman (1950) and according to Loeblich & Tappan (1964) are simultaneously given for 156 species of the Adriatic benthic and pelagic foraminifera.

REFERENCES

- Alfirević, S. 1960. Recherches sur les composantes biogènes dans les sédiments de la région bathyale de l'Adriatique. Rapp. Comm. int. Mer Médit., 15 (3): 299—311.
- Alfirević, S. 1961. Pregled dostavljenog popisa vrsta foraminifera po njihovoj sistematskoj pripadnosti od Hrvatskog narodnog zoološkog muzeja Zagreb i revizije sistematske pripadnosti izvršene od Instituta za oceanografiju i ribarstvo u Splitu. Manuscript, 1—15.
- Alfirević, S. 1962. Neki rezultati ispitivanja mikrofaunističkih naselja foraminifera Jadranskog mora. II Kongr. biol. Jugosl. Plenarni refer. i rezim. naučnih saopštenja, 183—184.
- Alfirević, S. 1964. Prilog poznavanju sistematske pripadnosti jadranskih foraminifera. Acta Adriat., 11 (12): 19—28.
- Alfirević, S. 1969. Sur la microfaune des Foraminifères Adriatiques et les espèces nouvelles pour cette mer. Rapp. Comm. int. Médit., 19 (4): 651—654.
- Alfirević, S. 1970. Dr Ante Ercegović — život i djelo. In memoriam. Acta Adriat., 13 (8): 1—23.
- Alfirević, S. 1979. Contribution à la connaissance de la distribution des Foraminifères dans les sédiments du large de l'Adriatique. Acta Adriat., 19 (4): 1—11.
- Alfirević, S. 1980. Adriatic Foraminifera — their taxonomy, distribution and ecology. Fauna et flora adriatica. Institut za oceanografiju i ribarstvo, Split, in press.
- Brady, H. B. 1884. Report on the Foraminifera dredged by N.M.S. »Challenger« during the years 1873—1876. »Challenger« Expedition. Rep. Zool., 9: 1—814, pls. 1—115.

- Brusina, S. 1907. Prilog za faunu foraminifera Jadranskog mora. Naravoslovne crtice, dio IV. Rad. Jugosl. Akad. znan. umjetn., 169. Prirodosl. razr., 41: 227—236.
- Cita, M. B. and Chierici, M. A. 1962. Crociera talassografica Adriatica 1955. V-Ricerche sui Foraminiferi contenuti in 18 carote prelevate sul fondo del mare Adriatico. Arch. oceanogr. limnol., 12 (3): 297—359.
- Cushman, J. A. 1950. Foraminifera, Their classification and economic use. 1—478. pls. 1—55. Harvard University Press, Cambridge-Massachusetts.
- Deželić, V. 1896. Foraminifere Jadranskog mora. Glasnik hrvat. naravosl. društva, 9 (1—6): 1—97.
- Fornasini, C. 1899. Globigerine adriatiche. Mem. R. Accad. Sci. Ist. Bologna, (V), 7: 575—586.
- Fornasini, C. 1900. Intorno ad alcuni esemplari di Foraminiferi adriatici. Mem. R. Accad. Sci. Ist. Bologna, (V), 9: 357—402.
- Fornasini, C. 1901. Contributo alla conoscenza delle Bulimine adriatiche. Mem. R. Accad. Sci. Ist. Bologna, (V), 9: 371—381.
- Fornasini, C. 1902. Sinossi metodica dei Foraminiferi sin qui rinvenuti nella sabbia del Lido di Rimini. Mem. R. Accad. Sci. Istit. Bologna, (V), 10: 1—68.
- Fornasini, C. 1903. Contributo alla conoscenza delle Testitarine adriatiche. Mem. R. Accad. Sci. Istit. Bologna, (V), 10: 299—316.
- Loeblich, A. R. and H. Tappan, 1964. Protista. 2. Sarcodina, Chief. »Thecamoebians« and Foraminiferida. Treat. Invert. Paleont., Moore, R. C. Ed. Geol. Soc. America and Univ. Kansas Press, N. Y.: 900 p.
- d'Onofrio, S. 1959. Foraminiferi di una carota sottomarina del medio Adriatico. Giorn. Geol. Annali Mus. Geol. Bologna, 27 (2): 147—190.
- d'Onofrio, S. 1969. Ricerche sui Foraminiferi nei fondali antistanti il delta del Po. Giorn. Geol. Annali Mus. Geol. Bologna (2. a), 36 (1): 284—321.
- d'Onofrio, S. 1972. Foraminiferi di carote e campioni di fondo nell'Adriatico meridionale. Giorn. Geol. Annali Mus. Geol. Bologna, (2. a), 38 (11): 500—511.
- d'Onofrio, S. F. Marabini and P. Vivalda. 1976. Foraminiferi di alcune lagune del delta del Po. Giorn. Geol. Annali Mus. Geol. Bologna, (2. a) 40 (1): 267—274.
- d'Orbigny, A. D. 1826. Tableau méthodique de la Classe des Céphalopodes. Ann. Sci. Natur., (1), 7: 245—314.
- Silvestri, A. 1895. Contribuzione allo studio dei Foraminiferi adriatici. Nota prima. Atti Rendic. Accad. Sci. Lett. Arti Zelanti Arcireale, 8: 1—63.
- Silvestri, A. 1896—1897. Contribuzione allo studio dei Foraminiferi adriatici. Nota seconda. Atti Rendic. Accad. Sci. Lett. Arti Zelanti Arcireale, 8: 1—114.
- Silvestri, A. 1900. Contribuzione allo studio dei Foraminiferi adriatici — appendice I. Atti Rendic. Accad. Sci. Lett. Arti Zelanti Arcireale, 9: 1—46.

Received: October 22, 1980.

PRILOG REVIZIJI KLASIFIKACIJE JADRANSKIH FORAMINIFERA

Slobodan AlfIREVIĆ

Institut za oceanografiju i ribarstvo, Split

KRATKI SADRŽAJ

Najnovija istraživanja i rezultati, kao i metode koje se primjenjuju pri determiniranju pojedinih vrsta, su uvjetovali da je u posljednje vrijeme sve češće prisutna revizija taksonomske pripadnosti pojedinih kategorija za odgovarajuće grupe i skupine organizama — biljaka i životinja — kako kopnenih tako i morskih.

Revizija klasifikacije je našla svog odraza i u foraminiferologiji. Mnogi pokušaji u tom pravcu su nastojali da se na bazi dvaju klasičnih djela o foraminiferama (d'Orbigny, 1826 — u kojemu su foraminifere ubrajane u cefalopode — i Brady, 1844 — monografija o foraminiferama iz prošlog stoljeća) izvrši što idealnija klasifikacija ovih praživotinja.

Sve do nedavno, jedan od svjetskih foraminiferologa, J. A. Cushman je svojim značajnim djelom (1950) o klasifikaciji foraminifera služio kao osnova pri utvrđivanju taksonomije foraminifera, s osobitim obzirom na klasifikaciju rodova koji su bili raspoređeni, unutar reda FORAMINIFERA, na podporodice i porodice. Na taj način je, prema navedenoj klasifikaciji, bilo prisutno pet sistematskih kategorija: *species* (vrsta), *genus* (rod), *subfamilia* (podporodica), *familia* (porodica) i *ordo* (red).

Prema ovakvom ključu bila je izvršena prva preliminarna revizija taksonomske pripadnosti jadranskih foraminifera (Alfirević, 1964), izražene u radovima domaćih i stranih autora, koji su početkom 19. i 20. stoljeća opisivali pojedine vrste ovih praživotinja iz Jadranskog mora. U vezi s navedenom revizijom data je i odgovarajuća inventarizacija jadranskih foraminifera u okviru izučavanja flore i faune Jadranskog mora.

Novija foraminiferološka literatura, međutim, ukazuje da je u taksonomiji foraminifera došlo do detaljnijih raščlambi na više taksonomskih kategorija, kao rezultat filogenetskih istraživanja. U vezi s tim je rad Loeblich & Tappan (1964) od kapitalnog značaja za sistematiku foraminifera, s obzirom da je u tom radu posebno poglavlje posvećeno kritičkom osvrtu svih dosadašnjih klasifikacija, razrađenih po određenim autorima, uz donošenje slijedećih sedam taksonomskih kategorija: *species* (vrsta), *genus* (rod), *subfamilia* (podporodica), *familia* (porodica), *superfamilia* (nadporodica), *subordo* (podred) i *ordo* (red).

Autor u ovom radu iznosi rezultate izvršene revizije klasifikacije jadranskih foraminifera za 156 bentoskih i pelagičnih vrsta po Cushman-u (1964) i po Loeblich & Tappanu (1977).

Pošto je ovaj rad namijenjen uspomeni na dr Antu Ercegovića (Alfirević, 1970), istaknutog biologa-sistematičara, iz tog razloga — priređen za tisak u prigodnom volumenu ACTA ADRIATICA — In memoriam dr Anti Ercegoviću — ima u pogledu simbolike taksonomski karakter.