

An annotated check-list of genera and species of carpoids

Lista anotada de los géneros y especies de carpoides

Patricio DOMÍNGUEZ ALONSO^{1,2}, Richard P.S. JEFFERIES¹ & Dolores GIL CID²

Abstract: This check-list includes the at present valid names of genera and species of the carpoids. It is a provisional attempt to stabilize the names of all formally described carpoids up to date and includes most of the combinations of genera and species that have been used in the scientific literature. It should be especially useful to those reading older papers in which a wide variety of genera and species have been used, and to those interested in biodiversity, evolutionary studies or history of the palaeontology. The check-list is divided into five sections: I. Index of genera; II. Index of species; III. Index of valid specific epithets; IV. Tables of stratigraphical occurrence and V. The most complete and up-to-date list of references on the taxonomy of carpoids.

Key words: check-list, *index nominorum*, Soluta, Cornuta, Mitrata, Ctenocystoidea, Cincta, calcichordates, homalozoans, stylophorans.

Resumen: Esta lista recoge los géneros y especies actualmente válidos de carpoides. La lista incluye la práctica totalidad de las combinaciones de género y especie que han sido empleadas en la literatura científica. No es una lista exhaustiva de sinonimias pero se ofrecen referencias clave para elaborarlas. Este trabajo debería ser de utilidad para aquellos lectores interesados en obras antiguas donde una confusa variedad de formas son descritas o referenciadas y para aquellos interesados en paleodiversidad, procesos evolutivos o historia de la paleontología. La lista se encuentra dividida en cinco secciones principales: I. Índice de géneros; II. Índice de especies; III. Índice de epítetos específicos válidos; IV. Tablas de distribución estratigráfica y V. la más completa y actualizada relación de referencias bibliográficas sobre taxonomía de carpoides.

Palabras clave: índice, *index nominorum*, Soluta, Cornuta, Mitrata, Ctenocystoidea, Cincta, calcicordados, Homalozoa, Stylophora.

INTRODUCTION

The carpoids are an informal grouping of Palaeozoic fossils which have a skeleton of echinoderm-like calcite but lack radial symmetry based on the water vascular system.

They are highly controversial being regarded by some as aberrant echinoderms and by others as members of the stem groups of many of the major subgroups of deuterostomes (craniates, tunicates, acraniates, chordates and conceivably of the echinoderms, hemichordates, ambulacraria and perhaps of the deuterostomes themselves).

The aims of the present work are bibliographical so we do not consider the stem-group position of the various subgroups of carpoids. Instead, we use as groups the Jaekelian orders plus the ctenocystoids and within these groups we arrange the genera and species in alphabetical order.

In this check-list a total of 179 species of carpoids are alphabetically recorded by Classes (including 22 solutes, 52 cornutes, 75 mitrates, 24 cinctans and 6 ctenocystoids). It is a provisional attempt to stabilize the names of all formally described carpoids up to date and includes most of the combinations of genera and species that have been used in bibliography. It should be especially useful for those reading older papers in which a wide variety of genera and species have been used, and to those interested in biodiversity and evolutionary studies. When placing species in particular genera we necessarily express our own personal opinions. No attempt at phylogenetic ordering has been made. The sequence is purely alphabetic. The check-list comprises five main sections:

- I. Index of genera
- II. Index of species
- III. Index of valid specific names
- IV. Tables of stratigraphical occurrence

¹ Department of Palaeontology, The Natural History Museum, London SW7 5BD, UK. patd@nhm.ac.uk; rpsj@nhm.ac.uk

² Departamento de Paleontología & Instituto de Geología Económica (UCM-CSIC), Fac. CC. Geológicas. Universidad Complutense de Madrid, 28040 Madrid, Spain. patricio@geo.ucm.es; gilcid@geo.ucm.es

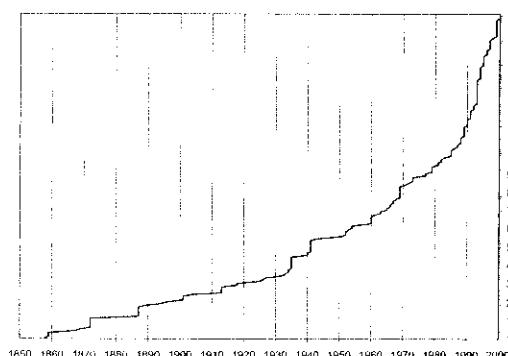


Figure 1.- Cumulative number of at present day valid described species of carpoids per year.

Figura 1.- Número acumulado de especies actualmente válidas de carpoideos descritas al año.

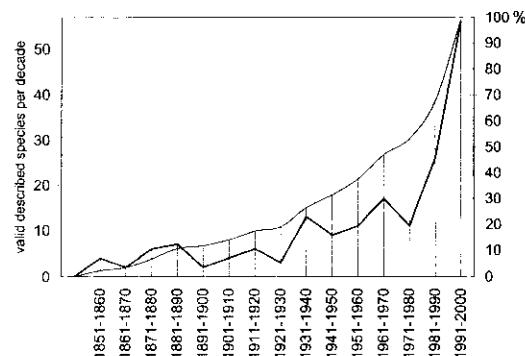


Figure 2.- Valid described species of carpoids per decade (thick line) and cumulative percentage of valid described species per decade (thin line).

Figura 2.- Especies válidas de carpoideos descritas por décadas (en línea gruesa) y porcentaje acumulado de especies válidas descritas por década (línea fina).

The check-list is based upon valid taxonomic literature records and is arranged taxonomically by Class, then alphabetically by Genus and Species within each Class. Entries in the *Index of Genera* (Section I) include: Genus; Author(s) who described the genus; date of the original publication; type species (using the original spelling, check the *Index of species*); number of species; included species (the symbol «*» denotes the type species); stratigraphical occurrence; geographical distribution; key references. Entries in the *Index of Species* (Section II) include: combination of genus and species (scientific binomina); Author(s) who described the species (in parentheses if the species is now assigned to a different genus than when described by author); date of the original publication; author(s) of the new combination; original name; occurrence, distribution, key references. Also included is an *Index of specific names* (Section III), where the valid specific names of all carpoids are listed and referred to the genera. Some specific epithets have been used in several genera. No separation into classes has been attempted in the *Index of Specific names* which is therefore entirely alphabetical.

Suprageneric taxa are not considered here, except those traditionally considered as classes (i.e. the former Jaekelian orders plus the later described ctenocystoids). The recommended names are shown in **bold type**. The old names (incorrect spellings, incorrect gender, *nomina vana*, *nomina dubia*, junior synonyms, etc.) are shown in square brackets «[]». The symbol «=» indicates both a synonym and a cross reference inside the index; please check it for further

data. The symbol «» associated with a name emphasizes the cross-reference that must be followed.

Tables of stratigraphical occurrence (Section IV) list the species ordering them by stratigraphical occurrence and then, within each stage, in alphabetical order. Data for the stages are based on *Fossil Record 2* BENTON, 1993 in order to relate our stratigraphical data with equivalent data of other groups without proposing a new worldwide stratigraphical correlation. The names of the stages are also referred to in Sections I and II. Recently described species are usually not difficult to assign to a particular stage. Older species however, especially those based on historical collections with only a general location in the bibliography or in the labels accompanying the specimens, are difficult to assign stratigraphically. In these cases the species appear in the table with a question mark «?», or in grey stipple.

This Index was compiled from our own notes and bibliographic records and subsequently completed and checked by using external databases such as GeoRef and Zoological Record (both from SilverPlatter Information N.V.) and general searches on the Internet. We did not make an exhaustive search in the complete printed version of the Zoological Record.

In addition to this paper version, this check-list is also available at the web sites of our institutions at Departamento de Paleontología, UCM, Madrid <<http://www.ucm.es/info/paleo/carpos>> and The Natural History Museum <<http://www.nhm.ac.uk/palaeontology/carpoids>> where it will be periodically updated.

Typical entries in the check-list read as follow:

*Example 1, a genus name:****Lagynocystis* JAEKEL, 1918**

TYPE SPECIES: *Anomalocystites pyramidalis* (BARRANDE, 1887)

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Lagynocystis pyramidalis** (BARRANDE, 1887)

STRATIGRAPHICAL OCCURRENCE: Lower-Middle Ordovician (Llanvirn)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia, France, Spain)

REFERENCES: BARRANDE, 1887; CHAUVEL, 1941; CHAUVEL & NION, 1977; JAEKEL, 1918; JEFFERIES, 1973; PARSLY, 2000; UBAGHS, 1991

JAEKEL, 1918 proposed the genus *Lagynocystis* for *Anomalocystites pyramidalis* (BARRANDE, 1887) (which incidentally became type species by monotypy). ***Lagynocystis* JAEKEL, 1918** is in **bold type**, showing a valid genus name; there is only one valid species described (we must search in the *Check-list of the species names*); the species included is *Lagynocystis pyramidalis* (BARRANDE, 1887), the symbol * indicates that this is the type species of the genus; the stratigraphical occurrence and the geographical distribution are given. Finally, some references are listed.

*Example 2, a valid species name:****Sucocystis melendezi* (SCHROEDER, 1973);**

FRIEDRICH, 1993

[= *Gyrocytis? melendezi* SCHROEDER, 1973]

[= *Trochocinctus pardailhanicus* TERMIER & TERMIER, 1973]

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Europe (Spain, France)

REFERENCES: SCHROEDER, 1973; FRIEDRICH, 1993

SCHROEDER, 1973 described *Gyrocytis? melendezi*; but later FRIEDRICH, 1993 proposed the new combination ***Sucocystis melendezi***. *Trochocinctus pardailhanicus* TERMIER & TERMIER, 1973 is a junior synonym. Since ***Sucocystis melendezi* (SCHROEDER, 1973)** is considered valid, it is in **bold type** in the check-list; however both synonyms appear in square brackets «[]». The symbol => previous to the names indicates the synonym as well as a cross in the check-list.

Example 3, a species name no longer used:

[*Dendrocystites Vidali* THORAL, 1935]

= *Minervaecystis vidali* (THORAL, 1935); UBAGHS & CASTER, 1967 →

REFERENCES: THORAL, 1935b; UBAGHS & CASTER in CASTER, 1967

THORAL, 1935 described a new Soluta as *Dendrocystites Vidali*, a combination no longer in use (and therefore quoted in square brackets «[]») since UBAGHS & CASTER, 1967 in the *Treatise on Invertebrate Palaeontology* (CASTER, 1967) proposed the genus *Minervaecystis* for this solute and so the new combination *Minervaecystis vidali* (THORAL, 1935) became available. The symbol => before *Minervaecystis vidali* thus indicates the currently used synonym and acts as a cross reference to the check-list where more information is available. The symbol => emphasizes that cross reference. Note also the capitalised «*Vidali*» as originally described.

CHECK-LIST OF CARPOIDS

I. INDEX OF GENERA

Cincta JAEKEL, 1918***Asturicystis* SDZUY, 1993**

TYPE SPECIES: *Asturicystis jaekeli* Sdzu, 1993

NUMBER OF SPECIES: 2

INCLUDED SPECIES: *Asturicystis jaekeli** SDZUY, 1993; *A. havlicekii* FATKA & KORDULE, 2001

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Europe (Spain: Asturias; Bohemia)

REFERENCES: SDZUY, 1993; FATKA & KORDULE, 2001

[*Cyclocinctus* TERMIER & TERMIER, 1973]

= *Elliptocinctus* TERMIER & TERMIER, 1973 →

REFERENCES: TERMIER & TERMIER, 1973; FRIEDRICH, 1993

[*Cyclocinctus* TERMIER & TERMIER, 1973]

partim = *Elliptocinctus* TERMIER & TERMIER, 1973
[*Elliptocinctus barrandei* (MUNIER-CHALMAS & BERGERON, 1889)] →

partim =? *Sucocystis* CABIBEL, TERMIER & TERMIER, 1959 [*Sucocystis?* *maroccana* (TERMIER & TERMIER, 1973)] →

REFERENCES: TERMIER & TERMIER, 1973; FRIEDRICH, 1993

***Davidocinctus* FRIEDRICH, 1993**

TYPE SPECIES: *Davidocinctus pembrokensis* FRIEDRICH, 1993

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Davidocinctus pembrokensis** FRIEDRICH, 1993

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (UK: Wales)
 REFERENCES: FRIEDRICH, 1993

[*Decucystis* GISLÉN, 1927]
 =*Gyrocystis* JAEKEL, 1918 →
 REFERENCES: FRIEDRICH, 1993; GISLÉN, 1927

Elliptocinctus TERMIER & TERMIER, 1973

TYPE SPECIES: *Trochocystites Barrandei* MUNIER-CHALMAS & BERGERON, 1889
 NUMBER OF SPECIES: 2
 INCLUDED SPECIES: *Elliptocinctus barrandei** (MUNIER-CHALMAS & BERGERON, 1889); *Elliptocinctus vizcainoi* FRIEDRICH, 1995
 STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (Spain, France); Northern Africa (Morocco)
 REFERENCES: MUNIER-CHALMAS & BERGERON in BERGERON, 1889; TERMIER & TERMIER, 1973; FRIEDRICH, 1993

Gyrocystis JAEKEL, 1918

TYPE SPECIES: *Gyrocystis platessa* JAEKEL, 1918
 NUMBER OF SPECIES: 6
 INCLUDED SPECIES: *Gyrocystis badulesiensis* FRIEDRICH, 1993; *G. cruceae* GIL & DOMÍNGUEZ, 1995; *G. erecta* FRIEDRICH, 1993; *G. hispanica* (GISLÉN, 1927), [dubious species]; *G. platessa** JAEKEL, 1918; *G. testudiformis* FRIEDRICH, 1993
 STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (Spain, France)
 REFERENCES: JAEKEL, 1918; FRIEDRICH, 1993; GIL CID & DOMÍNGUEZ, 1994

Ludwigicinctus FRIEDRICH, 1993

TYPE SPECIES: *Ludwigicinctus truncatus* FRIEDRICH, 1993
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Ludwigicinctus truncatus** FRIEDRICH, 1993
 STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (Germany)
 REFERENCES: FRIEDRICH, 1993

Progyrocystis FRIEDRICH, 1993

TYPE SPECIES: *Progyrocystis disjuncta* FRIEDRICH, 1993
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Progyrocystis disjuncta** FRIEDRICH, 1993
 STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (Spain: Asturias)
 REFERENCES: FRIEDRICH, 1993

Sotocinctus SDZUY, 1993

TYPE SPECIES: *Sotocinctus ubaghsii* SDZUY, 1993
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Sotocinctus ubaghsii** SDZUY, 1993;
 STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (Spain: Asturias)
 REFERENCES: SDZUY, 1993

Sucocystis CABIBEL, TERMIER & TERMIER, 1959

TYPE SPECIES: *Sucocystis theronensis* CABIBEL, TERMIER & TERMIER, 1959
 NUMBER OF SPECIES: 7
 INCLUDED SPECIES: *Sucocystis acrofera* FRIEDRICH, 1993; *S. bretoni* FRIEDRICH, 1993; *S. maroccana* (TERMIER & TERMIER, 1973); *S. melendezi* (SCHROEDER, 1973); *S. quadricornuta* FRIEDRICH, 1993; *S. theronensis** CABIBEL, TERMIER & TERMIER, 1959; *S. undata* FRIEDRICH, 1993
 STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (Spain; France); Northern Africa (Morocco)
 REFERENCES: CABIBEL *et al.*, 1959; FRIEDRICH, 1993

[*Trochocystis* nom. van.]

= *Trochocystites* BARRANDE, 1887 →

Trochocystites BARRANDE, 1859

TYPE SPECIES: *Trochocystites bohemicus* BARRANDE, 1887
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Trochocystites bohemicus** BARRANDE, 1887
 STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)
 NOTE: Most early descriptions of Cincta were given as *Trochocystites* or *Trochocystis*
 REFERENCES: BARRANDE, 1859, 1887; JAEKEL, 1918; TERMIER & TERMIER, 1973; FRIEDRICH, 1993; DOMÍNGUEZ, 1999

Trochocystoides JAEKEL, 1918

TYPE SPECIES: *Trochocystoides parvus* JAEKEL, 1918
 NUMBER OF SPECIES: 2
 INCLUDED SPECIES: *Trochocystoides parvus** JAEKEL, 1918; *T. planus* SDZUY, 1993
 STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia, Spain)
 REFERENCES: JAEKEL, 1918; FRIEDRICH, 1993; SDZUY, 1993

Ctenocystoidea ROBISON & SPRINKLE, 1969

Ctenocystis ROBISON & SPRINKLE, 1969

TYPE SPECIES: *Ctenocystis utahensis* ROBISON & SPRINKLE, 1969

NUMBER OF SPECIES: 4

INCLUDED SPECIES: *Ctenocystis colodon* UBAGHS & ROBISON, 1988; *C. jagoi* JELL, BURRET & BANKS, 1985; *C. smithi* UBAGHS, 1987; *C. utahensis** ROBISON & SPRINKLE, 1969

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: North America (USA: Utah, Idaho); Australia (Tasmania); Europe (France)

REFERENCES: ROBISON & SPRINKLE, 1969

Etoctenocystis FATKA & KORDULE, 1985

TYPE SPECIES: *Etoctenocystis bohemica* FATKA & KORDULE, 1985

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Etoctenocystis bohemica** FATKA & KORDULE, 1985

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)

REFERENCES: FATKA & KORDULE, 1985; DOMÍNGUEZ, 1999

Jugoszovia DŽIK & ORŁOWSKI, 1995

TYPE SPECIES: *Jugoszovia archaeocyathoides* DŽIK & ORŁOWSKI, 1995

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Jugoszovia archaeocyathoides** DŽIK & ORŁOWSKI, 1995

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Europe (Poland)

REFERENCES: DŽIK & ORŁOWSKI, 1995; DOMÍNGUEZ, 1999

Soluta JAEKEL, 1901

Belemnocystites MILLER & GURLEY, 1894

TYPE SPECIES: *Belemnocystites wetherbyi* MILLER & GURLEY, 1894

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Belemnocystites wetherbyi** MILLER & GURLEY, 1894

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)

GEOGRAPHICAL DISTRIBUTION: North America (USA)

REFERENCES: MILLER & GURLEY, 1894; PARSLEY, 1972; KOLATA *et al.*, 1977

Castericystis UBAGHS & ROBISON, 1985

TYPE SPECIES: *Castericystis vali* UBAGHS & ROBISON, 1985

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Castericystis vali** UBAGHS & ROBISON, 1985

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: North America (USA)

REFERENCES: UBAGHS & ROBISON, 1985; DALEY, 1996

Coleicarpus DALEY, 1996

TYPE SPECIES: *Castericystis? sprinklei* UBAGHS & ROBISON, 1988

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Coleicarpus sprinklei** (UBAGHS & ROBISON, 1988)

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: North America (USA)

REFERENCES: DALEY, 1996

Dehmicystis CASTER, 1967

TYPE SPECIES: *Dendrocystites (Dendrocystoides?) globulus* DEHM, 1934

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Dehmicystis globulus** (DEHM 1934)

STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Emsian)

GEOGRAPHICAL DISTRIBUTION: Europe (Germany)

REFERENCES: DEHM, 1934; CASTER, 1967

[*Dendrocystis* nom. van.]

= *Dendrocystites* BARRANDE, 1887 →

Dendrocystites BARRANDE, 1887

TYPE SPECIES: *Cystidea sedgwicki* BARRANDE, 1867

NUMBER OF SPECIES: 2

INCLUDED SPECIES: *Dendrocystites barrandi* (BATHER, 1913); *D. sedgwicki** (BARRANDE, 1867)

STRATIGRAPHICAL OCCURRENCE: Europe (Bohemia)

GEOGRAPHICAL DISTRIBUTION: Middle Ordovician (Llandeilo)

REFERENCES: BARRANDE, 1887; BATHER, 1913; JAEKEL, 1918

Dendrocystoides JAEKEL, 1918

TYPE SPECIES: *Dendrocystis scotica* BATHER, 1913

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Dendrocystoides scoticus** (BATHER, 1913)

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Ashgill)

GEOGRAPHICAL DISTRIBUTION: Europe (UK: Scotland)

REFERENCES: BATHER, 1913; JAEKEL, 1918; JEFFERIES, 1990

Girvanicystis CASTER, 1967 [1968]

TYPE SPECIES: *Girvanicystis batheri* CASTER, 1967 [1968]

NUMBER OF SPECIES: 2

INCLUDED SPECIES: *Girvanicystis batheri** CASTER, 1968; *G. casteri* DALEY, 1992

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Ashgill)

GEOGRAPHICAL DISTRIBUTION: Europe (UK: Scotland; South Wales)

REFERENCES: CASTER, 1967; DALEY, 1992

Heckericystis GILL & CASTER, 1960

TYPE SPECIES: *Dendrocystites kuckersiana* HECKER, 1940

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Heckericystis kuckersiana** (HECKER, 1940)

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)
 GEOGRAPHICAL DISTRIBUTION: Europe (Russia: St. Petersburg area)
 REFERENCES: HECKER, 1940; GILL & CASTER, 1960

Iowacystis THOMAS & LADD, 1926

TYPE SPECIES: *Iowacystis sagittaria* THOMAS & LADD, 1926
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Iowacystis sagittaria** THOMAS & LADD, 1926
 STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc-Ashgill)
 GEOGRAPHICAL DISTRIBUTION: North America (USA: Iowa)
 REFERENCES: THOMAS & LADD, 1926; PARSLEY & CASTER, 1965; KOLATA *et al.*, 1977

Maennilia ROZHOV & JEFFERIES, 1996

TYPE SPECIES: *Maennilia estonica* ROZHOV & JEFFERIES, 1996
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Maennilia estonica** ROZHOV & JEFFERIES, 1996
 STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)
 GEOGRAPHICAL DISTRIBUTION: Europe (Estonia)
 REFERENCES: ROZHOV & JEFFERIES, 1996

Minervaecystis UBAGHS & CASTER, 1967

TYPE SPECIES: *Dendrocystites Vidali* THORAL, 1935
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Minervaecystis vidali** (THORAL, 1935)
 STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Tremadoc)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: THORAL, 1935b; UBAGHS & CASTER in CASTER, 1967

Myeinocystites STRIMPLE, 1953

TYPE SPECIES: *Myeinocystites natus* STRIMPLE, 1953
 NUMBER OF SPECIES: 2
 INCLUDED SPECIES: *Myeinocystites crossmani* KOLATA, STRIMPLE & LEVORSON, 1977; *M. natus** STRIMPLE, 1953
 STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)
 GEOGRAPHICAL DISTRIBUTION: North America (USA: Oklahoma)
 REFERENCES: STRIMPLE, 1953; KOLATA *et al.*, 1977

Rutroclypeus WITHERS, 1933

TYPE SPECIES: *Rutroclypeus junori* WITHERS, 1933
 NUMBER OF SPECIES: 3
 INCLUDED SPECIES: *Rutroclypeus junori** WITHERS, 1933; *R. victoriae* GILL & CASTER, 1960; *R. withersi* GILL & CASTER, 1960
 STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Emsian)
 GEOGRAPHICAL DISTRIBUTION: Australia
 REFERENCES: WITHERS, 1933; CASTER, 1967

Scalenocystites KOLATA, 1973

TYPE SPECIES: *Scalenocystites strimplei* KOLATA, 1973
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Scalenocystites strimplei** KOLATA, 1973
 STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)
 GEOGRAPHICAL DISTRIBUTION: North America (USA: Minnesota)
 REFERENCES: KOLATA, 1973a, 1973b; KOLATA *et al.*, 1977

Syringocrinus BILLINGS, 1859

TYPE SPECIES: *Syringocrinus paradoxicus* BILLINGS, 1859
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Syringocrinus paradoxicus** BILLINGS, 1859; *S. sinclairi* PARSLEY & CASTER, 1965
 STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)
 GEOGRAPHICAL DISTRIBUTION: North America (Canada)
 REFERENCES: BILLINGS, 1859; PARSLEY & CASTER, 1965; CASTER, 1967

Cornuta JAEKEL, 1901

Acuticarpus SUMRALL, SPRINKLE & GUENSBURG, 1997
 TYPE SPECIES: *Acuticarpus delticus* SUMRALL, SPRINKLE & GUENSBURG, 1997
 NUMBER OF SPECIES: 2
 INCLUDED SPECIES: *Acuticarpus delticus** SUMRALL, SPRINKLE & GUENSBURG, 1997; *A. republicensis* SUMRALL, SPRINKLE & GUENSBURG, 1997
 STRATIGRAPHICAL OCCURRENCE: Upper Cambrian (Merioneth)
 GEOGRAPHICAL DISTRIBUTION: North America (USA)
 REFERENCES: SUMRALL *et al.*, 1997

Amygdalotheca UBAGHS, 1969

TYPE SPECIES: *Amygdalotheca griffei* UBAGHS, 1969
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Amygdalotheca griffei** UBAGHS, 1969
 STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: UBAGHS, 1969

Ampelocarpus LEFEBVRE & VIZCAÍNO, 1999

TYPE SPECIES: *Ampelocarpus landeyranensis* LEFEBVRE & VIZCAÍNO, 1999
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Ampelocarpus landeyranensis** LEFEBVRE & VIZCAÍNO, 1999
 STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: LEFEBVRE & VIZCAÍNO, 1999

Arauricystis LEFEBVRE & VIZCAÍNO, 1999

TYPE SPECIES: *Cothurnocystis primaeva* THORAL, 1935
 NUMBER OF SPECIES: 2
 INCLUDED SPECIES: *Arauricystis primaeva** (THORAL, 1935); *A. occitana* (UBAGHS, 1994)

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: LEFEBVRE & VIZCAÍNO, 1999

***Archaeocothurnus* SUMRALL, SPRINKLE & GUENSBURG, 1997**

TYPE SPECIES: *Cothurnocystis bifida* UBAGHS & ROBISON, 1984

NUMBER OF SPECIES: 2

INCLUDED SPECIES: *Archaeocothurnus bifidus** (UBAGHS & ROBISON, 1988); *A. goshutensis* SUMRALL, SPRINKLE & GUENSBURG, 1997

STRATIGRAPHICAL OCCURRENCE: Middle-Upper Cambrian (St. David's-Merioneth)

GEOGRAPHICAL DISTRIBUTION: North America (USA)

REFERENCES: SUMRALL *et al.*, 1997

***Babinocystis* ROZHOV, 1990**

TYPE SPECIES: *Babinocystis dilabidus* ROZHOV, 1990

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Babinocystis dilabida** ROZHOV, 1990

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)

GEOGRAPHICAL DISTRIBUTION: Europa (Russia)

REFERENCES: ROZHOV, 1990

***Beryllia* CRIPPS & DALEY, 1994**

TYPE SPECIES: *Beryllia miranda* CRIPPS & DALEY, 1994

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Beryllia miranda** CRIPPS & DALEY, 1994

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: CRIPPS & DALEY, 1994; RUTA, 1999b

***Bohemiaecystis* CASTER, 1967**

[partim =*Thoralicystis* CASTER & UBAGHS, 1967; LEFEBVRE & VIZCAÍNO, 1999]

[partim =*Scotiaecystis* CHAUVEL, 1971; LEFEBVRE & VIZCAÍNO, 1999]

TYPE SPECIES: *Bohemiaecystis bouceki* CASTER, 1967

NUMBER OF SPECIES: 3

INCLUDED SPECIES: *Bohemiaecystis bouceki** CASTER, 1967;

B. jefferiesi GIL CID, DOMÍNGUEZ, SILVÁN & ESCRIBANO, 1996; *B. guilloui* (LEFEBVRE & VIZCAÍNO, 1999)

NOTE: LEFEBVRE & VIZCAÍNO, 1999 did not consider that *Bohemiaecystis* CASTER, 1967 was a useful genus. They referred *Bohemiaecystis jefferiesi* Gil. CID, DOMÍNGUEZ, SILVÁN & ESCRIBANO, 1996 to *Scotiaecystis* CHAUVEL, 1971; *Bohemiaecystis bouceki* CASTER, 1967 to *Thoralicystis* CASTER & UBAGHS, 1967 and placed *Scotiaecystis guilloui* LEFEBVRE & VIZCAÍNO, 1999 in *Scotiacyctis* CHAUVEL, 1971. We consider this synonymy not justified. Both genera share some characters such as the same number and distribution of marginal plates of the head and a similar type of valve in the branchial slits. However, among other characters, the shape of the head (in outline and in dorsoventral convexity), the types of inter-

gumentary plates, the length of the anterior appendices and the ventral spikes of the marginal frame are very different in the two genera.

STRATIGRAPHICAL OCCURRENCE: Middle-Upper Ordovician (Llanvirn-Caradoc)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia, Spain, France)

REFERENCES: CASTER *in* UBAGHS, 1967c; GIL CID *et al.*, 1996; LEFEBVRE & VIZCAÍNO, 1999

***Ceratocystis* JAEKEL, 1901**

TYPE SPECIES: *Ceratocystis perneri* JAEKEL, 1901

NUMBER OF SPECIES: 2

INCLUDED SPECIES: *Ceratocystis perneri** JAEKEL, 1901; *C. vizcainoi* UBAGHS, 1987

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia, France)

REFERENCES: JAEKEL, 1901; UBAGHS, 1967b, 1967c, 1987; JEFFERIES, 1969, 1986

***Chauvelicystis* UBAGHS, 1969**

TYPE SPECIES: *Chauvelicystis spinosa* UBAGHS, 1969

NUMBER OF SPECIES: 3

INCLUDED SPECIES: *Chauvelicystis spinosa** UBAGHS, 1969; *C. ubaghsii* (CHAUVEL, 1966); *C. vizcainoi* DALEY, 1992

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)

GEOGRAPHICAL DISTRIBUTION: Northern Africa (Morocco), Europe (France)

REFERENCES: UBAGHS, 1969; CHAUVEL, 1971; DALEY, 1992

***Cothurnocystis* BATHER, 1913**

TYPE SPECIES: *Cothurnocystis elizae* BATHER, 1913

NUMBER OF SPECIES: 3

INCLUDED SPECIES: *Cothurnocystis courteessolei* UBAGHS, 1969; *C. elizae** BATHER, 1913; *C. fellinensis* UBAGHS, 1969

STRATIGRAPHICAL OCCURRENCE: Ordovician (Arenig-Ashgill)

GEOGRAPHICAL DISTRIBUTION: Europe (UK: Scotland, France)

REFERENCES: BATHER, 1913, 1926; JEFFERIES, 1967, 1968, 1986

***Domfrontia* CRIPPS & DALEY, 1994**

TYPE SPECIES: *Domfrontia pissotensis* (CHAUVEL & NION, 1977)

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Domfrontia pissotensis** (CHAUVEL & NION, 1977)

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: CRIPPS & DALEY, 1994

***Drepanocarpus* SMITH & JELL, 1999**

TYPE SPECIES: *Drepanocarpus australis* SMITH & JELL, 1999

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Drepanocarpus australis** SMITH & JELL, 1999
 STRATIGRAPHICAL OCCURRENCE: Upper Cambrian (Merioneth)
 GEOGRAPHICAL DISTRIBUTION: Australia
 REFERENCES: SMITH & JELL, 1999

***Flabellicystis* MARTÍ MUS, 2002**

TYPE SPECIES: *Flabellicystis rushtonii* MARTÍ MUS, 2002
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Flabellicystis rushtonii** MARTÍ MUS, 2002
 STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Tremadoc)
 GEOGRAPHICAL DISTRIBUTION: Europe (England)
 REFERENCES: MARTÍ MUS, 2002

***Galliaecystis* UBAGHS, 1969**

TYPE SPECIES: *Galliaecystis lignieresi* UBAGHS, 1969
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Galliaecystis lignieresi** UBAGHS, 1969
 STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: UBAGHS, 1969; CRIPPS, 1989

***Hanusia* CRIPPS, 1989**

TYPE SPECIES: *Hanusia prilepensis* CRIPPS, 1989
 NUMBER OF SPECIES: 3
 INCLUDED SPECIES: *Hanusia obtusa* CRIPPS, 1989; *H. prilepensis** CRIPPS, 1989; *H. sarkensis* CRIPPS, 1989
 STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llanvirn-Llandeilo)
 GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)
 REFERENCES: CRIPPS, 1989

***Juliaeacarpus* RUTA, 1999**

TYPE SPECIES: *Juliaeacarpus milnerorum* RUTA, 1999
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Juliaeacarpus milnerorum** RUTA, 1999
 STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Ashgill)
 GEOGRAPHICAL DISTRIBUTION: Northern Africa (Morocco)
 REFERENCES: RUTA, 1999b

***Lobocarpus* UBAGHS, 1998**

TYPE SPECIES: *Lobocarpus vizcainoi* UBAGHS, 1998
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Lobocarpus vizcainoi** UBAGHS, 1998
 STRATIGRAPHICAL OCCURRENCE: Upper Cambrian (Merioneth)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: UBAGHS, 1998

***Lyricocarpus* UBAGHS, 1994**

TYPE SPECIES: *Lyricocarpus courteessolei* UBAGHS, 1994
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Lyricocarpus courteessolei** UBAGHS, 1994
 STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: UBAGHS, 1994

***Milonicystis* CHAUVEL, 1986**

TYPE SPECIES: *Milonicystis kerfornei* CHAUVEL, 1986
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Milonicystis kerfornei** CHAUVEL, 1986
 STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: CHAUVEL, 1986; CRIPPS & DALEY, 1994

***Nanocarpus* UBAGHS 1991**

TYPE SPECIES: *Nanocarpus dolambii* UBAGHS, 1991
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Nanocarpus dolambii** UBAGHS, 1991
 STRATIGRAPHICAL OCCURRENCE: Lower Ordovician
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: UBAGHS, 1991; JEFFERIES, 1986

***Nevadaecystis* UBAGHS, 1967**

TYPE SPECIES: *Cothurnocystis? americana* UBAGHS, 1963
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Nevadaecystis americana** (UBAGHS, 1963)
 STRATIGRAPHICAL OCCURRENCE: Upper Cambrian (Merioneth)
 GEOGRAPHICAL DISTRIBUTION: North America (USA)
 REFERENCES: UBAGHS, 1963, 1967c; JEFFERIES, 1969, 1986;
 JEFFERIES *et al.*, 1987

***Phyllocystis* THORAL, 1935**

TYPE SPECIES: *Phyllocystis Blayaci* THORAL, 1935
 NUMBER OF SPECIES: 3
 INCLUDED SPECIES: *Phyllocystis blayaci** THORAL, 1935; *P. crassimarginata* (THORAL, 1935); *P.? salairica* DUBATOLOVA, 1985
 STRATIGRAPHICAL OCCURRENCE: Lower-Middle Ordovician (Tremadoc-Llandeilo)
 GEOGRAPHICAL DISTRIBUTION: Europe (France); Asia (Siberia)
 REFERENCES: THORAL, 1935a; UBAGHS, 1963; LEFEBVRE & VIZCAÍNO, 1999; DUBATOLOVA *in* ROSOVA, ROSOV & DUBATOLOVA, 1985

***Ponticulocarpus* SUMRALL & SPRINKLE, 1999**

TYPE SPECIES: *Ponticulocarpus robisoni* SUMRALL & SPRINKLE, 1999
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Ponticulocarpus robisoni* SUMRALL & SPRINKLE, 1999
 STRATIGRAPHICAL OCCURRENCE: Middle Cambrian
 GEOGRAPHICAL DISTRIBUTION: America (USA: Utah)
 REFERENCES: SUMRALL & SPRINKLE, 1999

***Prochauvelicystis* DALEY, 1992**

TYPE SPECIES: *Prochauvelicystis semispinosa* DALEY, 1992
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Prochauvelicystis semispinosa** DALEY, 1992
 STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Tremadoc)

GEOGRAPHICAL DISTRIBUTION: Europa (UK: England)

REFERENCES: DALEY, 1992

***Procothurnocystis* WOODS & JEFFERIES, 1992**

TYPE SPECIES: *Procothurnocystis owensi* WOODS & JEFFERIES, 1992

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Procothurnocystis owensi** WOODS & JEFFERIES, 1992

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)

GEOGRAPHICAL DISTRIBUTION: Europe (UK: Wales)

REFERENCES: WOODS & JEFFERIES, 1992

***Progalliacystis* CRIPPS, 1989**

TYPE SPECIES: *Progalliacystis ubaghsii* CRIPPS, 1989

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Progalliacystis ubaghsii** CRIPPS, 1989

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: UBAGHS, 1969; CRIPPS, 1989

***Prokopicystis* CRIPPS, 1989**

TYPE SPECIES: *Prokopicystis mergli* CRIPPS, 1989

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Prokopicystis mergli** CRIPPS, 1989

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)

REFERENCES: CRIPPS, 1989

***Proscothurnocystis* UBAGHS, 1994**

TYPE SPECIES: *Cothurnocystis melchiori* UBAGHS, 1983

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Proscothurnocystis melchiori** (UBAGHS, 1983)

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: UBAGHS, 1994

***Protocystites* HICKS, 1872**

TYPE SPECIES: *Protocystites menevensis* HICKS, 1872

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Protocystites menevensis** HICKS, 1872

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Europe (UK: Wales)

REFERENCES: HICKS in HICKS & JONES, 1872; JEFFERIES *et al.*, 1987

***Reticulocarpus* JEFFERIES & PROKOP, 1972**

TYPE SPECIES: *Reticulocarpus hanusi* JEFFERIES & PROKOP, 1972

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Reticulocarpus hanusi** JEFFERIES & PROKOP, 1972

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llanvirn-Llandeilo)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia, France)

REFERENCES: JEFFERIES & PROKOP, 1972; JEFFERIES, 1986

***Scotiaecystis* CASTER & UBAGHS, 1967**

TYPE SPECIES: *Cothurnocystis curvata* BATHER, 1913

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Scotiaecystis collapsa* CRIPPS, 1988; *S. curvata** (BATHER, 1913)

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Ashgill)
Geographical distribution: Europe (UK: Scotland, Northern Ireland)

REFERENCES: BATHER, 1913; CASTER & UBAGHS in UBAGHS, 1969; JEFFERIES, 1967, 1968, 1986; CRIPPS, 1988

***Thoralicyctis* CHAUVEL, 1971**

TYPE SPECIES: *Scotiaecystis griffiei* UBAGHS, 1969

NUMBER OF SPECIES: 4

INCLUDED SPECIES: *Thoralicyctis griffiei** (UBAGHS, 1969); *T. ubaghsii* LEFEBVRE & VÍZCAÍNO, 1999; *T. zagoraensis* CHAUVEL, 1971

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)

GEOGRAPHICAL DISTRIBUTION: Europe (France), Northern Africa (Morocco)

REFERENCES: UBAGHS, 1969; CHAUVEL, 1971

***Trigonocarpus* UBAGHS, 1994**

TYPE SPECIES: *Trigonocarpus singularis* UBAGHS, 1994

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Trigonocarpus singularis** UBAGHS, 1994

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: UBAGHS, 1994

Mitralia JAEKEL, 1901

***Adoketocarpus* RUTA & JELL, 1999**

TYPE SPECIES: *Adoketocarpus acheronticus* RUTA & JELL, 1999

NUMBER OF SPECIES: 2

INCLUDED SPECIES: *Adoketocarpus acheronticus** RUTA & JELL, 1999; *A. janeae* RUTA & JELL, 1999

STRATIGRAPHICAL OCCURRENCE: Upper Silurian (Přidoli), Lower Devonian (Lochkovian)

GEOGRAPHICAL DISTRIBUTION: Australia

REFERENCES: RUTA & JELL, 1999a

***Allanicytidium* CASTER & GILL, 1967**

TYPE SPECIES: *Allanicytidium flemingi* CASTER & GILL, 1967

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Allanicytidium flemingi** CASTER & GILL, 1967

STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Emsian)

GEOGRAPHICAL DISTRIBUTION: New Zealand (South Island)

REFERENCES: CASTER in UBAGHS, 1967c

***Anatifopsis* BARRANDE, 1872**

TYPE SPECIES: *Anatifopsis bohemica* BARRANDE, 1872

NUMBER OF SPECIES: 18

INCLUDED SPECIES: *Anatifopsis acuta* BARRANDE, 1872; *A. ancora* DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990; *A. armoricana* (CHAUVEL, 1941); *A. balclatchiensis* REED, 1940; *A. barrandei* (CHAUVEL, 1941); *A. bohemica** BARRANDE, 1872; *A. cocaban* KOBAYASHI, 1960; *A. escandei escandei* THORAL, 1935; *A. escandei? thorali* (CHAUVEL, 1966); *A. guichenensis* (CHAUVEL, 1941); *Anatifopsis longa* BARRANDE, 1872; *A. minuta* (CHAUVEL, 1941); *A. papillata* (BASSLER, 1943); *A. punctata* (BASSLER, 1950); *A. spinosa* UBAGHS, 1979; *A. trapeziformis* THORAL, 1935; *A. traveusotensis* (CHAUVEL, 1941); *A. truncata* KOBAYASHI, 1960

STRATIGRAPHICAL OCCURRENCE: Middle-Upper Ordovician (Llanvirn-Ashgill)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia, France, Spain, Sweden, UK), North America (USA), Asia (Korea), Northern Africa (Morocco)

REFERENCES: BARRANDE, 1872; JEFFERIES, 1986; DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990; PARSLEY & PROKOP, 1999

[*Anatiferocystis* CHAUVEL, 1941]

=*Anatifopsis* BARRANDE, 1872 →

REFERENCES: CHAUVEL, 1941; UBAGHS, 1979; DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990

[*Kirkocystis* BASSLER, 1950]

=*Anatifopsis* BARRANDE, 1872 →

TYPE SPECIES: *Enoploura? papillata* BASSLER 1943

REFERENCES: BASSLER, 1950

***Anomalocystites* HALL, 1859**

[=*Basslerocystis* CASTER, 1952 (junior synonym)]

TYPE SPECIES: *Anomalocystites disparilis* HALL, 1859

NUMBER OF SPECIES: 2

INCLUDED SPECIES: *Anomalocystites cornutus* HALL, 1859; *A. disparilis** HALL, 1859

STRATIGRAPHICAL OCCURRENCE: Lower Devonian

GEOGRAPHICAL DISTRIBUTION: North America (USA)

REFERENCES: CASTER, 1952; KOLATA & JOLLIE, 1982

***Aspidocarpus* UBAGHS, 1979**

TYPE SPECIES: *Aspidocarpus boemicus* UBAGHS, 1979

NUMBER OF SPECIES: 2

INCLUDED SPECIES: *Aspidocarpus boemicus** UBAGHS, 1979; *A. riadanensis* (CHAUVEL, 1937)

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)

REFERENCES: UBAGHS, 1979

***Ateleocystites* BILLINGS, 1858**

[=*Ateleocystis* LINDSTRÖM, 1888 (nom. van.)]

[=*Ateleocystis* BATHER, 1889 (nom. van.)]

[=*Ateleocystis* HAECKEL, 1896 (nom. van.)]

TYPE SPECIES: *Ateleocystites huxleyi* BILLINGS, 1838

NUMBER OF SPECIES: 2

INCLUDED SPECIES: *Ateleocystites huxleyi** BILLINGS, 1858; *A. guttengergensis* KOLATA & JOLLIE, 1982

STRATIGRAPHICAL OCCURRENCE: Middle-Upper Ordovician (Llandeilo-Caradoc)

GEOGRAPHICAL DISTRIBUTION: North America (USA)

REFERENCES: HAECKEL, 1896; CASTER in UBAGHS, 1967c; KOLATA & JOLLIE, 1982

***Australocystis* CASTER, 1954**

TYPE SPECIES: *Australocystis langei* CASTER, 1954

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Australocystis langei** CASTER, 1954

STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Emsian)

GEOGRAPHICAL DISTRIBUTION: Australia

REFERENCES: CASTER, 1954a

***Balanocystites* BARRANDE, 1887**

[=*Sagittacystis* PARSLEY, PROKOP & DERSTLER, 2000]

TYPE SPECIES: *Balanocystites lagenula* BARRANDE, 1887

NUMBER OF SPECIES: 2

INCLUDED SPECIES: *Balanocystites lagenula** BARRANDE, 1887; *B. primus* (BARRANDE, 1872)

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llanvirn)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)

REFERENCES: BARRANDE, 1887; JEFFERIES, 1986; PARSLEY & PROKOP, 1999

***Barrandeocarpus* UBAGHS, 1979**

TYPE SPECIES: *Barrandeocarpus jaekeli* UBAGHS, 1979

NUMBER OF SPECIES: 2

INCLUDED SPECIES: *Barrandeocarpus jaekeli** UBAGHS 1979; *B. norvegicus* CRASKE & JEFFERIES 1989

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc-Ashgill)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)

REFERENCES: UBAGHS, 1979; CRASKE & JEFFERIES, 1989; RUTA, 1997d

[*Basslerocystis* CASTER, 1952]

=*Anomalocystites*; HALL 1859 →

REFERENCES: CASTER, 1952; KOLATA & JOLLIE, 1982

***Bokkeveldia* RUTA & THERON, 1997**

TYPE SPECIES: *Bokkeveldia oosthuizeni* RUTA & THERON, 1997

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Bokkeveldia oosthuizeni** RUTA & THERON, 1997

STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Emsian)

GEOGRAPHICAL DISTRIBUTION: Southern Africa (Republic of South Africa)

REFERENCES: RUTA & THERON, 1997

***Chauvelia* CRIPPS, 1990**

TYPE SPECIES: *Chauvelia discoidalis* CRIPPS, 1990

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Chauvelia discoidalis** CRIPPS, 1990

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)

GEOGRAPHICAL DISTRIBUTION: Northern Africa (Morocco)
 REFERENCES: CRIPPS, 1990; LEFEVRE, 2000b

***Chinianocarpos* UBAGHS, 1961**

TYPE SPECIES: *Chinianocarpos thoralii* UBAGHS, 1961
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Chinianocarpos thoralii** UBAGHS, 1961
 STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Tremadoc)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: UBAGHS, 1961, 1967c, 1969; JEFFERIES, 1986

***Dalejocystis* PROKOP, 1963**

TYPE SPECIES: *Dalejocystis casteri* PROKOP, 1963
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Dalejocystis casteri* PROKOP, 1963
 STRATIGRAPHICAL OCCURRENCE: Middle Devonian (Eifelian)
 GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)
 REFERENCES: PROKOP, 1963

***Diamphidiocystis* KOLATA & GUENSBURG, 1979**

TYPE SPECIES: *Diamphidiocystis drepanon* KOLATA & GUENSBURG, 1979
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Diamphidiocystis drepanon** KOLATA & GUENSBURG, 1979
 STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Ashgill)
 GEOGRAPHICAL DISTRIBUTION: North America (USA, France)
 REFERENCES: KOLATA & GUENSBURG, 1979; CHAUVEL, 1982;
 LEFEVRE, 2000a

***Enoploura* WETHERBY, 1879**

TYPE SPECIES: *Anomalocystites (Ateleocystites?) balanoides* MEEK, 1872
 NUMBER OF SPECIES: 5?
 INCLUDED SPECIES: *Enoploura balanoides* WETHERBY, 1879 [MEEK, F.B. 1872]; *Enoploura crustacea* (HAECKEL, 1896); *Enoploura meeki* CASTER, 1952; *Enoploura popei* CASTER, 1952; *Enoploura wetherbyi* CASTER, 1952
 NOTE: The genus *Enoploura* needs revision. Most of the described species must be restricted to the types because they lack diagnostic characters.
 STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)
 GEOGRAPHICAL DISTRIBUTION: North America (USA)
 REFERENCES: WETHERBY, 1879; HAECKEL, 1896; CASTER, 1952; PARSLEY, 1991

***Eumitrocystella* BEISSWENGER, 1994**

TYPE SPECIES: *Eumitrocystella savilli* BEISSWENGER, 1994
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Eumitrocystella savilli** BEISSWENGER, 1994
 STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)
 GEOGRAPHICAL DISTRIBUTION: Northern Africa (Morocco)
 REFERENCES: BEISSWENGER, 1994

***Guichenocarpos* CHAUVEL, 1981**

TYPE SPECIES: *Guichenocarpos nioni* CHAUVEL, 1981
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Guichenocarpos nioni** CHAUVEL, 1981
 STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: CHAUVEL, 1982

***Jaekelocarpus* KOLATA, FREST & MAPES, 1991**

TYPE SPECIES: *Jaekelocarpus oklahomensis* KOLATA, FREST & MAPES, 1991
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Jaekelocarpus oklahomensis** KOLATA, FREST & MAPES, 1991
 STRATIGRAPHICAL OCCURRENCE: Upper Carboniferous (Moscovian)
 GEOGRAPHICAL DISTRIBUTION: North America (USA: Oklahoma)
 REFERENCES: KOLATA *et al.*, 1991; DOMÍNGUEZ *et al.*, 2002

***Kierocystis* PARSLEY, 1991**

TYPE SPECIES: *Kierocystis inserta* PARSLEY, 1991
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Kierocystis inserta** PARSLEY, 1991
 STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)
 GEOGRAPHICAL DISTRIBUTION: North America (USA: Kentucky)
 REFERENCES: PARSLEY, 1991; RUTA, 1999a

***Kopficystis* PARSLEY, 1991**

TYPE SPECIES: *Kopficystis kirkfieldi* PARSLEY, 1991
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Kopficystis kirkfieldi** PARSLEY, 1991
 STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)
 GEOGRAPHICAL DISTRIBUTION: North America (Canada: Ontario)
 REFERENCES: PARSLEY, 1991; RUTA, 1999a

***Lagynocystis* JAEKEL, 1918**

TYPE SPECIES: *Anomalocystites pyramidalis* BARRANDE, 1887
 NUMBER OF SPECIES: 1
 INCLUDED SPECIES: *Lagynocystis pyramidalis** (BARRANDE, 1887)
 STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llanvirn)
 GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia, France, Spain)
 REFERENCES: BARRANDE, 1887; JAEKEL, 1918; CHAUVEL, 1941; CHAUVEL & NION, 1977; JEFFERIES, 1973; UBAGHS, 1991; PARSLEY, 2000

***Milonicystis* CHAUVEL, 1986**

(Sometimes described as mitrata, see *Milonicystis* in the Cor-nuta genera list →)

***Mitrocystella* JAEKEL, 1901**

TYPE SPECIES: *Anomalocystites incipiens* BARRANDE, 1887
 NUMBER OF SPECIES: 2 (and a subspecies)

INCLUDED SPECIES: *Mitrocystella barrandei* JAEKEL, 1901; *M. incipiens** (BARRANDE, 1887); *M. incipiens miloni* (BARRANDE, 1887; CHAUVEL, 1941)

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llanvirn-Llandeilo)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia, France, Spain)

REFERENCES: BARRANDE, 1887; JAEKEL, 1901; UBAGHS, 1967c; JEFFERIES, 1967, 1968, 1986; PARSLEY, 1994

***Mitrocystites* BARRANDE, 1887**

TYPE SPECIES: *Mitrocystites mitra* BARRANDE, 1887

NUMBER OF SPECIES: 1 (and one doubtfully attributed to this genus)

INCLUDED SPECIES: *Mitrocystites mitra** BARRANDE, 1887; «*Mitrocystites*» *styloideus* DEHM, 1934

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llanvirn)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)

REFERENCES: BARRANDE, 1887; JAEKEL, 1918; UBAGHS, 1967c; JEFFERIES, 1967, 1968, 1986; PARSLEY, 1994

[*Mitrocystis* BARRANDE, 1887; CHAUVEL, 1941, incorrect spelling]

=*Mitrocystites* BARRANDE, 1887 →

REFERENCES: BARRANDE, 1887; CHAUVEL, 1941

***Mongolocarpus* ROZHNOV, 1990**

TYPE SPECIES: *Mongolocarpus minzhini* ROZHNOV, 1990

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Mongolocarpus minzhini** ROZHNOV, 1990

STRATIGRAPHICAL OCCURRENCE: Silurian (Ludlow)

GEOGRAPHICAL DISTRIBUTION: Asia (Mongolia)

REFERENCES: ROZHNOV, 1990

***Notocarpos* PHILIP, 1981**

TYPE SPECIES: *Notocarpos garratti* PHILIP, 1981

NUMBER OF SPECIES: 2

INCLUDED SPECIES: *Notocarpos garratti** PHILIP, 1981; *N. praecox* (CHAPMAN, 1904)

STRATIGRAPHICAL OCCURRENCE: Upper Silurian (Ludlow)

GEOGRAPHICAL DISTRIBUTION: Australia (Victoria)

REFERENCES: PHILIP, 1981

***Occultocystis* HAUDE, 1995**

TYPE SPECIES: *Occultocystis koeneni* HAUDE, 1995

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Occultocystis koeneni** HAUDE, 1995

STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Emsian)

GEOGRAPHICAL DISTRIBUTION: South America (Argentina: San Juan)

REFERENCES: HAUDE, 1995

***Ovocarpus* UBAGHS, 1994**

TYPE SPECIES: *Ovocarpus moncereti* UBAGHS, 1994

NUMBER OF SPECIES: 2

INCLUDED SPECIES: *Ovocarpus?* *circularis* UBAGHS, 1994; *O. moncereti** UBAGHS, 1994

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: UBAGHS, 1994

***Paranacystis* CASTER, 1954**

TYPE SPECIES: *Paranacystis petrii* CASTER, 1954

NUMBER OF SPECIES: 2

INCLUDED SPECIES: *Paranacystis petrii** CASTER, 1954; *P. simoneae* RUTA, 1997

STRATIGRAPHICAL OCCURRENCE: Lower Devonian

GEOGRAPHICAL DISTRIBUTION: South America (Brazil: Paraná)

REFERENCES: CASTER, 1954b; UBAGHS, 1967c

***Peltocystis* THORAL, 1935**

TYPE SPECIES: *Peltocystis cornuta* THORAL, 1935

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Peltocystis cornuta** THORAL, 1935

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Trema-doc)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: THORAL, 1935b; UBAGHS, 1969; JEFFERIES, 1986

***Placocystella* RENNIE, 1936**

TYPE SPECIES: *Placocystis africana* REED, 1925

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Placocystella africana** (REED, 1925)

STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Emsian)

GEOGRAPHICAL DISTRIBUTION: Southern Africa (Republic of South Africa)

REFERENCES: RENNIE, 1936

[*Placocystis* HAECKEL, 1896] (nom. van.)

parim = *Placocystites* DE KONINCK, 1869 →

partim = *Placocystella* RENNIE, 1936 →

***Placocystites* DE KONINCK, 1869**

[= *Placocystis* HAECKEL, 1896 (nom. van.)]

TYPE SPECIES: *Placocystites forbesianus* DE KONINCK, 1869

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Placocystites forbesianus** DE KONINCK, 1869

STRATIGRAPHICAL OCCURRENCE: Silurian (Wenlock)

GEOGRAPHICAL DISTRIBUTION: Europe (UK: England)

REFERENCES: JEFFERIES & LEWIS, 1978; RUTA, 1998

[*Promitrocystites* LEFEBVRE, 2000]

= *Mitrocystella* JAEKEL, 1901 →

REFERENCES: JAEKEL, 1918; LEFEBVRE, 2000b

***Protocytidium* RUTA & JELL, 1999**

TYPE SPECIES: *Protocytidium elliotae* RUTA & JELL, 1999

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Protocytidium elliotae** RUTA & JELL, 1999

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Ashgill)

GEOGRAPHICAL DISTRIBUTION: Australia

REFERENCES: RUTA & JELL, 1999b

Pseudovictoriacystis RUTA & JELL, 1999

TYPE SPECIES: *Pseudovictoriacystis problematica* RUTA & JELL, 1999

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Pseudovictoriacystis problematica** RUTA & JELL, 1999

STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Lochkovian)

GEOGRAPHICAL DISTRIBUTION: Australia (Victoria)

REFERENCES: RUTA & JELL, 1999d

Rhenocystis DEHM, 1932

TYPE SPECIES: *Rhenocystis latipedunculata* DEHM, 1932

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Rhenocystis latipedunculata** DEHM, 1932

STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Emsian)

GEOGRAPHICAL DISTRIBUTION: Europe (Germany)

REFERENCES: DEHM, 1932; RUTA & BARTELS, 1998; SUTCLIFFE *et al.*, 2000

[*Sagittacystis* PARSLEY, PROKOP & DERSTLER, 2000]

=*Balanocystites* BARRANDE, 1887 →

REFERENCES: PARSLEY, PROKOP, & DERSTLER, 2000

Spermacystis UBAGHS, 1967

[=*Anomocystis* JAEKEL, 1918]

TYPE SPECIES: *Anomalocystites ensifer* BARRANDE, 1887

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Spermacystis ensifer** (BARRANDE, 1887)

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)

REFERENCES: BARRANDE, 1887; UBAGHS, 1967c

Tasmanicytidium CASTER, 1983

TYPE SPECIES: *Tasmanicytidium burretti* CASTER, 1983

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Tasmanicytidium burretti** CASTER, 1983

STRATIGRAPHICAL OCCURRENCE: Lower Silurian (Llandovery)

GEOGRAPHICAL DISTRIBUTION: Australia (Tasmania)

REFERENCES: CASTER, 1983

Victoriacystis GILL & CASTER, 1960

TYPE SPECIES: *Victoriacystis wilkinsi* GILL & CASTER, 1960

NUMBER OF SPECIES: 2

INCLUDED SPECIES: *Victoriacystis holmensorum* RUTA & JELL, 1999; *V. wilkinsi** GILL & CASTER, 1960

STRATIGRAPHICAL OCCURRENCE: Upper Silurian (Ludlow)-Lower Devonian (Lochkovian)

GEOGRAPHICAL DISTRIBUTION: Australia (Victoria)

REFERENCES: GILL & CASTER, 1960

Vizcainocarpus RUTA, 1997

TYPE SPECIES: *Vizcainocarpus dentiger* RUTA, 1997

NUMBER OF SPECIES: 2

INCLUDED SPECIES: *Vizcainocarpus dentiger** RUTA, 1997; *V. rutai* LEFEBVRE, 2000

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Trema doc-Arenig)

GEOGRAPHICAL DISTRIBUTION: Europe (France, England)

REFERENCES: RUTA, 1997b; LEFEBVRE 2000b

Willmanocystis KOLATA & JOLLIE, 1982

TYPE SPECIES: *Willmanocystis denticulatus* KOLATA & JOLLIE, 1982

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Willmanocystis denticulata** KOLATA & JOLLIE, 1982

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)

GEOGRAPHICAL DISTRIBUTION: North America (USA: Wisconsin)

REFERENCES: KOLATA & JOLLIE, 1982

Yachalicystis HAUDE, 1995

TYPE SPECIES: *Yachalicystis triangularis* HAUDE, 1995

NUMBER OF SPECIES: 1

INCLUDED SPECIES: *Yachalicystis triangularis** HAUDE, 1995

STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Emsian)

GEOGRAPHICAL DISTRIBUTION: South America (Argentina: San Juan)

REFERENCES: HAUDE, 1995; LEFEBVRE, 2000a

II. INDEX OF SPECIES

Cincta JAEKEL, 1918

Asturicystis jaekeli SDZUY, 1993

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Europe (Spain)

REFERENCES: SDZUY, 1993

Asturicystis havlicekii FATKA & KORDULE, 2001

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)

REFERENCES: FATKA & KORDULE, 2001

[*Cephalocinctus labiatus* TERMIER & TERMIER 1973]

=*Elliptocinctus barrandei* (MUNIER-CHALMAS & BERGERON, 1889) →

REFERENCES: TERMIER & TERMIER, 1973; FRIEDRICH, 1993

[*Cyclocinctus subcircularis* TERMIER & TERMIER 1973]

=*Elliptocinctus barrandei* (MUNIER-CHALMAS & BERGERON, 1889) →

REFERENCES: TERMIER & TERMIER, 1973; FRIEDRICH, 1993

[*Cyclocinctus maroccanus* TERMIER & TERMIER, 1973]

=*Sucocystis? maroccana* (TERMIER & TERMIER, 1973) →

REFERENCES: TERMIER & TERMIER, 1973; FRIEDRICH, 1993

***Davidocinctus pembrokensis* FRIEDRICH, 1993**

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (UK: Wales)
 REFERENCES: FRIEDRICH, 1993

[*Decacystis hispanica* GISLÉN, 1927; dubious species]
 [= *Gyrocystis hispanica* (GISLÉN, 1927); dubious species →
 [=? *Gyrocystis platessa* JAEKEL, 1918 →
 STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (Spain)
 REFERENCES: JAEKEL, 1918; GISLÉN, 1927; FRIEDRICH, 1993;
 GIL CID & DOMÍNGUEZ, 1994

[*Decacystis praellipticus* TERMIER & TERMIER, 1973]
 [= *Gyrocystis platessa* JAEKEL, 1918 →
 REFERENCES: FRIEDRICH, 1993

***Elliptocinctus barrandei* (MUNIER-CHALMAS & BERGERON, 1889): TERMIER & TERMIER, 1973**
 STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: MUNIER-CHALMAS & BERGERON in BERGERON, 1889; TERMIER & TERMIER, 1973; FRIEDRICH, 1993

***Elliptocinctus vizcainoi* FRIEDRICH, 1995**
 STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Northern Africa (Morocco)
 REFERENCES: FRIEDRICH, 1995

***Gyrocystis badulesiensis* FRIEDRICH, 1993**
 STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (Spain: Aragón)
 REFERENCES: FRIEDRICH, 1993; GIL CID & DOMÍNGUEZ, 1994

***Gyrocystis cruzae* GIL & DOMÍNGUEZ, 1995**
 NOTE: see Note for *Gyrocystis platessa* JAEKEL, 1918 →
 STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (Spain: Asturias)
 REFERENCES: GIL CID & DOMÍNGUEZ, 1994

***Gyrocystis erecta* FRIEDRICH, 1993**
 STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (Spain: Aragón)
 REFERENCES: FRIEDRICH, 1993; GIL CID & DOMÍNGUEZ, 1994

***Gyrocystis hispanica* (GISLÉN, 1927), dubious species, new combination herein**
 [= *Decacystis hispanicus* GISLÉN, 1927]
 [=? *Gyrocystis platessa* JAEKEL, 1918] →

NOTE: Formally *Decacystis hispanica* is restricted to the holotype. FRIEDRICH 1993 considered it as a probable senior synonym of *Gyrocystis platessa* JAEKEL, 1918. However, although the attribution to *Gyrocystis* is obvious, the attribution to *Gyrocystis platessa* JAEKEL, 1918 is doubtful. (See note on *Gyrocystis platessa* JAEKEL, 1918) →

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (Spain: Castilla-León)
 REFERENCES: JAEKEL, 1918; GISLÉN, 1927; FRIEDRICH, 1993;
 GIL CID & DOMÍNGUEZ, 1994

***Gyrocystis platessa* JAEKEL, 1918**

[=? *Decacystis hispanica* GISLÉN 1927; dubious species]

[= *Decacystis praellipticus* TERMIER & TERMIER, 1973]

Note: In our opinion *Gyrocystis platessa* JAEKEL, 1918, as revised by FRIEDRICH, 1993, is a complex of fossils. Historically, any Cincta with ten marginal plates was described either as *Gyrocystis platessa* JAEKEL, 1918 or as *Decacystis hispanica* GISLÉN 1927 (→). A revision of the material determined by FRIEDRICH, 1993 allowed two of the present authors to propose *Gyrocystis cruzae* GIL & DOMÍNGUEZ, 1995 (→). See however FRIEDRICH, 1995

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (France, Spain)
 REFERENCES: JAEKEL, 1918; FRIEDRICH, 1993; GIL CID & DOMÍNGUEZ, 1994

***Gyrocystis testudiformis* FRIEDRICH, 1993**

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (Spain: Aragón)
 REFERENCES: FRIEDRICH, 1993; GIL CID & DOMÍNGUEZ, 1994

***Ludwigicinctus truncatus* FRIEDRICH, 1993**

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (Germany)
 REFERENCES: FRIEDRICH, 1993

***Progyrocystis disjuncta* FRIEDRICH, 1993**

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (Spain: Asturias)
 REFERENCES: FRIEDRICH, 1993

***Sotocinctus ubaghsi* SDZUY, 1993**

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
 GEOGRAPHICAL DISTRIBUTION: Europe (Spain: Asturias)
 REFERENCES: SDZUY, 1993

***Sucocystis acrofera* FRIEDRICH, 1993**

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: FRIEDRICH, 1993

Sucocystis bretoni FRIEDRICH, 1993

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: FRIEDRICH, 1993

Sucocystis? maroccana (TERMIER & TERMIER, 1973)

[=*Cyclocinctus maroccanus* TERMIER & TERMIER, 1973]

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Northern Africa (Morocco)

REFERENCES: TERMIER & TERMIER, 1973; FRIEDRICH, 1993

Sucocystis melendezi (SCHROEDER, 1973)

[=*Trochocinctus pardailhanicus* TERMIER & TERMIER, 1973]

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Europe (Spain, France)

REFERENCES: SCHROEDER, 1973; FRIEDRICH, 1993

Sucocystis quadricornuta FRIEDRICH, 1993

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Northern Africa (Morocco)

REFERENCES: FRIEDRICH, 1993

Sucocystis theronensis CABIBEL, TERMIER & TERMIER, 1959

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: CABIBEL *et al.*, 1959; FRIEDRICH, 1993

Sucocystis undata FRIEDRICH, 1993

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Northern Africa (Morocco)

REFERENCES: FRIEDRICH, 1993

[*Trochocinctus pardailhanicus* TERMIER & TERMIER, 1973]

=*Sucocystis melendezi* (SCHROEDER, 1973) →

REFERENCES: SCHROEDER, 1973; TERMIER & TERMIER, 1973; FRIEDRICH, 1993

[*Trochocystites Barrandei* MUNIER-CHALMAS & BERGERON, 1889]

=*Elliptocinctus barrandei* (MUNIER-CHALMAS & BERGERON, 1889) →

REFERENCES: MUNIER-CHALMAS & BERGERON *in* BERGERON, 1889; FRIEDRICH, 1993

[*Trochocystis bohemica*]

=*Trochocystites boemicus* BARRANDE, 1887 →

REFERENCES: HAECKEL, 1896; FRIEDRICH, 1993

Trochocystites boemicus BARRANDE, 1887

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)

REFERENCES: BARRANDE, 1887; JAEKEL, 1918; FRIEDRICH, 1993; DOMÍNGUEZ, 1999

[*Trochocystites longifossatus* JAEKEL, 1918]

=*Trochocystites boemicus* BARRANDE, 1887 →

REFERENCES: JAEKEL, 1918; GISLÉN, 1930; FRIEDRICH, 1993

[*Trigonocystis ovalis* HAECKEL, 1896]

=*Trochocystites boemicus* BARRANDE, 1887 →

REFERENCES: HAECKEL, 1896; FRIEDRICH, 1993

[*Trigonocystis trigona* HAECKEL, 1896]

=*Trochocystites boemicus* BARRANDE, 1887 →

REFERENCES: HAECKEL, 1896; FRIEDRICH, 1993

Trochocystoides parvus JAEKEL, 1918

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)

REFERENCES: JAEKEL, 1918; UBAGHS, 1967a; FRIEDRICH, 1993; SDZUY, 1993

Trochocystoides planus SDZUY, 1993

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Europe (Spain)

REFERENCES: SDZUY, 1993

Ctenocystoidea ROBISON & SPRINKLE, 1969

Ctenocystis colodon UBAGHS & ROBISON, 1988

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: North America (USA: Utah)

REFERENCES: UBAGHS & ROBISON, 1988; DOMÍNGUEZ, 1999

Ctenocystis jagoi JELL, BURRET & BANKS, 1985

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Australia

REFERENCES: JELL *et al.*, 1985; DOMÍNGUEZ, 1999

Ctenocystis smithi UBAGHS, 1987

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: UBAGHS, 1987; DOMÍNGUEZ, 1999

Ctenocystis utahensis ROBISON & SPRINKLE, 1969

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: North America (USA: Utah, Idaho)

REFERENCES: ROBISON & SPRINKLE, 1969; UBAGHS & ROBISON, 1988a; DOMÍNGUEZ, 1999

***Etoctenocystis bohemica* FATKA & KORDULE, 1985**

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)

REFERENCES: FATKA & KORDULE, 1985; DOMÍNGUEZ, 1999

***Jugoszovia archaeocyathoides* DŽIK & ORŁOWSKI, 1995**

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Europe (Poland)

REFERENCES: DŽIK & ORŁOWSKI, 1995; DOMÍNGUEZ, 1999

Soluta JAEKEL, 1901

***Belemnocystites wetherbyi* MILLER & GURLEY, 1894**

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)

GEOGRAPHICAL DISTRIBUTION: North America (USA)

REFERENCES: MILLER & GURLEY, 1894; PARSLY, 1972; KOLATA *et al.*, 1977

***Castericystis vali* UBAGHS & ROBISON, 1985**

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: North America (USA)

REFERENCES: UBAGHS & ROBISON, 1985, 1988; DALEY, 1995; JEFFERIES, 1997

[*Castericystis?* *sprinklei* UBAGHS & ROBISON 1988]

= *Coleicarpus sprinklei* (UBAGHS & ROBISON, 1988) →

REFERENCES: UBAGHS & ROBISON, 1988; DALEY, 1996

***Coleicarpus sprinklei* (UBAGHS & ROBISON, 1988); DALEY, 1996**

[= *Castericystis?* *sprinklei* UBAGHS & ROBISON, 1988]

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: North America (USA)

REFERENCES: UBAGHS & ROBISON, 1988; DALEY, 1996; JEFFERIES, 1997

***Dehmocystis globulus* (DEHM 1934); CASTER, 1967**

[= *Dendrocystites globulus* DEHM 1934]

STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Emsian)

GEOGRAPHICAL DISTRIBUTION: Europe (Germany)

REFERENCES: DEHM, 1934; GILL & CASTER, 1960; CASTER, 1967; KUTSCHER, 1975; BARTELS *et al.*, 1998; HAUDE, 1983

***Dendrocystites barrandei* (BATHER, 1913)**

[= *Dendrocystites barrandei* BATHER, 1913; nom. van.]

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)

REFERENCES: BATHER, 1913

***Dendrocystites sedgwicki* (BARRANDE, 1867); BARRANDE, 1887**

[= *Cystidea sedgwicki* BARRANDE, 1867]

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)

REFERENCES: BARRANDE, 1887

[*Dendrocystites Vidali* THORAL, 1935]

= *Minervaecystis vidali* (THORAL, 1935); UBAGHS & CASTER 1967 →

REFERENCES: THORAL, 1935b; UBAGHS & CASTER in CASTER, 1967

***Dendrocystoides scoticus* (BATHER, 1913); JAEKEL, 1918**

[= *Dendrocystis scotica* BATHER, 1913]

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Ashgill)

GEOGRAPHICAL DISTRIBUTION: Europe (UK: Scotland)

REFERENCES: BATHER, 1913; JAEKEL, 1918

«*Dendrocystites*» *rossicus* JAEKEL 1901

[= *Dendrocystites rossica*]

NOTE: the generic attribution is doubtful because only tail ossicles from historical collections are known.

STRATIGRAPHICAL OCCURRENCE: Lower-Middle Ordovician (Arenig-Llanvirn)

GEOGRAPHICAL DISTRIBUTION: Europe (Russia, Estonia)

REFERENCES: JAEKEL, 1901; BATHER, 1913; HECKER, 1940; ROZHNOV & JEFFERIES, 1996

***Girvanicystis batheri* CASTER, 1968**

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Ashgill)

GEOGRAPHICAL DISTRIBUTION: Europe (UK: Scotland)

REFERENCES: CASTER, 1967; DALEY, 1992

***Girvanicystis casteri* DALEY, 1992**

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Ashgill)

GEOGRAPHICAL DISTRIBUTION: Europe (UK: South Wales)

REFERENCES: DALEY, 1992

***Heckericystis kuckersiana* (HECKER, 1940); GILL & CASTER, 1960**

[= *Dendrocystites kuckersianus* HECKER, 1940]

STRATIGRAPHICAL OCCURRENCE: Ordovician (Llandeilo)

GEOGRAPHICAL DISTRIBUTION: Europe (Russia)

REFERENCES: HECKER, 1940; GILL & CASTER, 1960; ROZHNOV & JEFFERIES, 1996

***Iowacystis sagittaria* THOMAS & LADD, 1926**

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc-Ashgill)

GEOGRAPHICAL DISTRIBUTION: North America (USA: Iowa)

REFERENCES: KOLATA *et al.*, 1977; PARSLEY, 1972; THOMAS & LADD, 1926

***Maennilia estonica* ROZHOV & JEFFERIES, 1996**

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)

GEOGRAPHICAL DISTRIBUTION: Europe (Estonia)

REFERENCES: ROZHOV & JEFFERIES, 1996

***Minervaecystis vidali* (THORAL, 1935); UBAGHS & CASTER 1967**

[=*Dendrocystites Vidali* THORAL, 1935]

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Tremadoc-Arenig)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: THORAL, 1935b; UBAGHS & CASTER in CASTER, 1967

***Myeinocystites crossmani* KOLATA, STRIMPLE & LEVORSON, 1977**

[=*Myeinocystites natus* STRIMPLE, 1953 (pars); in KOLATA, 1975: p. 15; pl. 2 figs. 8-10]

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)

GEOGRAPHICAL DISTRIBUTION: North America (USA)

REFERENCES: KOLATA, 1975; KOLATA *et al.*, 1977

***Myeinocystites natus* STRIMPLE, 1953**

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)

GEOGRAPHICAL DISTRIBUTION: North America (USA: Oklahoma)

REFERENCES: STRIMPLE, 1953; PARSLEY, 1972; KOLATA, 1975; KOLATA *et al.*, 1977

***Rutroclypeus junori* WITHERS, 1933**

NOTE: Described in WITHERS, 1933 as a xiphosuran or king crab

STRATIGRAPHICAL OCCURRENCE: Lower Devonian

GEOGRAPHICAL DISTRIBUTION: Australia

REFERENCES: WITHERS, 1933; JELL & HOLLOWAY, 1982

***Rutroclypeus victoriae* GILL & CASTER, 1960**

NOTE: GILL & CASTER, 1960 described the first carpoids recorded from Australia, including *Victoriacystis wilkinsi*, *Rutroclypeus victoriae* and *Rutroclypeus withersi*. They also proposed a new classification for the Carpoidea involving two new subclasses and two new superorders.

STRATIGRAPHICAL OCCURRENCE: Lower Devonian

Geographical distribution: Australia (Victoria)

REFERENCES: GILL & CASTER, 1960; JELL & HOLLOWAY, 1982

***Rutroclypeus withersi* GILL & CASTER, 1960**

NOTE: see note for *Rutroclypeus victoriae* GILL & CASTER, 1960

STRATIGRAPHICAL OCCURRENCE: Lower Devonian

GEOGRAPHICAL DISTRIBUTION: Australia (Victoria)

REFERENCES: GILL & CASTER, 1960; JELL & HOLLOWAY, 1982

***Scalenocystites strimplei* KOLATA, 1973**

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)

GEOGRAPHICAL DISTRIBUTION: North America (USA: Minnesota)

REFERENCES: KOLATA, 1973a, 1973b; KOLATA *et al.*, 1975; KOLATA *et al.*, 1977

***Syringocrinus paradoxicus* BILLINGS, 1859**

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)

GEOGRAPHICAL DISTRIBUTION: North America (Canada: Quebec, Ontario)

REFERENCES: BILLINGS, 1859; PARSLEY & CASTER, 1965; CASTER, 1967

***Syringocrinus sinclairi* PARSLEY & CASTER, 1965**

STRATIGRAPHICAL OCCURRENCE: Middle-Upper? Ordovician

GEOGRAPHICAL DISTRIBUTION: North America (Quebec)

REFERENCES: PARSLEY & CASTER, 1965; CASTER, 1967

Cornuta JAEKEL, 1901***Acuticarpus delticus* SUMRALL, SPRINKLE & GUENSBURG, 1997**

STRATIGRAPHICAL OCCURRENCE: Upper Cambrian (Merioneth)

GEOGRAPHICAL DISTRIBUTION: North America (USA)

REFERENCES: SUMRALL *et al.*, 1997

***Acuticarpus?* republicensis** SUMRALL, SPRINKLE & GUENSBURG, 1997

STRATIGRAPHICAL OCCURRENCE: Upper Cambrian (Merioneth)

GEOGRAPHICAL DISTRIBUTION: North America (USA)

REFERENCES: SUMRALL *et al.*, 1997

***Amygdalotheca griffei* UBAGHS, 1969**

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: UBAGHS, 1969; CRIPPS, 1989

***Ampelocarpus landeyranensis* LEFEBVRE & VIZCAÍNO, 1999**

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: LEFEBVRE & VIZCAÍNO, 1999

***Arauricystis primaeva* (THORAL, 1935); LEFEBVRE & VIZCAÍNO, 1999**

[=*Cothurnocystis primaeva* THORAL, 1935]

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: THORAL, 1935a; UBAGHS, 1969; LEFEBVRE & VIZCAÍNO, 1999

Arauricystis occitana (UBAGHS, 1994); LEFEBVRE & VIZCAÍNO, 1999[=*Cothurnocystis occitana* UBAGHS, 1994]

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: UBAGHS, 1994; LEFEBVRE & VIZCAÍNO, 1999

Archaeocothurnus bifidus (UBAGHS & ROBISON, 1988); SUMRALL, SPRINKLE & GUENSBURG, 1997[=*Archaeocothurnus bifida* (UBAGHS & ROBISON, 1988); SUMRALL, SPRINKLE & GUENSBURG, 1997 (incorrect gender)][=*Cothurnocystis bifida* UBAGHS & ROBISON, 1988]

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: North America (USA)

REFERENCES: UBAGHS & ROBISON, 1988; SUMRALL *et al.*, 1997***Archaeocothurnus goshutensis*** SUMRALL, SPRINKLE & GUENSBURG, 1997

STRATIGRAPHICAL OCCURRENCE: Upper Cambrian (Merioneth)

GEOGRAPHICAL DISTRIBUTION: North America (USA)

REFERENCES: SUMRALL *et al.*, 1997***Beryllia miranda*** CRIPPS & DALEY, 1994

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: CRIPPS & DALEY, 1994; RUTA, 1999b; LEFEBVRE, 2000a

Babinocystis dilabida ROZHNOV, 1990

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)

GEOGRAPHICAL DISTRIBUTION: Europa (Russia: Saint Petersbourg)

REFERENCES: ROZHNOV, 1990

Bohemiaecystis bouceki CASTER, 1967[=*Thoralicyctis bouceki* CASTER, 1967; LEFEBVRE & VIZCAÍNO, 1999]NOTE: See note in the entry of *Bohemiaecystis* CASTER, 1967 under the section «Check-list of Genera» (→)

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llanvirn-Llandeilo?)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)

REFERENCES: CASTER *in* UBAGHS, 1967c; GIL CID *et al.*, 1996; LEFEBVRE & VIZCAÍNO, 1999***Bohemiaecystis jefferiesi*** GIL CID, DOMÍNGUEZ, SILVÁN & ESCRIBANO, 1996[=*Scotiaecystis jefferiesi* (GIL CID, DOMÍNGUEZ, SILVÁN & ESCRIBANO, 1996); LEFEBVRE & VIZCAÍNO, 1999]NOTE: See note in the entry of *Bohemiaecystis* CASTER, 1967 under the section «Check-list of Genera» (→)

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)

GEOGRAPHICAL DISTRIBUTION: Europe (Spain: Castilla-La Mancha)

REFERENCES: GIL CID *et al.*, 1996; LEFEBVRE & VIZCAÍNO, 1999***Bohemiaecystis guilloui*** (LEFEBVRE & VIZCAÍNO, 1999); new combination herein[=*Scotiaecystis guilloui* LEFEBVRE & VIZCAÍNO, 1999]NOTE: LEFEBVRE & VIZCAÍNO, 1999 described this species under *Scotiaecystis* CASTER & UBAGHS, 1967 (→). See note in the entry for *Bohemiaecystis* CASTER, 1967 under the section «Check-list of Genera» (→)

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: LEFEBVRE & VIZCAÍNO, 1999

Ceratocystis perneri JAEKEL, 1901

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)

REFERENCES: JAEKEL, 1901; UBAGHS, 1967b, 1967c; JEFFERIES, 1969, 1986

Ceratocystis vizcainoi UBAGHS, 1987

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: UBAGHS, 1987

Chauvelicystis spinosa UBAGHS, 1969partim =*Chauvelicystis vizcainoi* DALEY, 1992 (→)

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: UBAGHS, 1969, 1983; DALEY, 1992

Chauvelicystis ubaghsii (CHAUVEL, 1966); UBAGHS, 1969[=*Cothurnocystis ubaghsii* CHAUVEL, 1966]

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)

GEOGRAPHICAL DISTRIBUTION: Northern Africa (Morocco)

REFERENCES: CHAUVEL, 1966a, 1971; UBAGHS, 1969; DALEY, 1992

Chauvelicystis vizcainoi DALEY, 1992

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: UBAGHS, 1983; DALEY, 1992

[=*Cothurnocystis? americana* UBAGHS, 1963]*Nevadaecystis americana* (UBAGHS, 1963); UBAGHS, 1967 (→)REFERENCES: UBAGHS, 1963, 1967c; JEFFERIES, 1986; JEFFERIES *et al.*, 1987[=*Cothurnocystis? bifida* UBAGHS & ROBISON, 1988]=*Archaeocothurnus bifidus* (UBAGHS & ROBISON, 1988);

SUMRALL, SPRINKLE & GUENSBURG, 1997 →
 REFERENCES: UBAGHS & ROBISON, 1988; SUMRALL *et al.*, 1997

***Cothurnocystis courtoissolei* UBAGHS, 1969**

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: UBAGHS, 1969

[*Cothurnocystis curvata* BATHER, 1913]

=*Scotiacycstis curvata* (BATHER, 1913); CASTER & UBAGHS, 1967 →
 REFERENCES: BATHER, 1913; CASTER & UBAGHS in UBAGHS, 1969

***Cothurnocystis elizae* BATHER, 1913**

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Ashgill)
 GEOGRAPHICAL DISTRIBUTION: Europe (UK: Scotland)
 REFERENCES: BATHER, 1913, 1926; UBAGHS, 1963; JEFFERIES, 1986; JEFFERIES *et al.*, 1987; WOODS & JEFFERIES, 1992

***Cothurnocystis fellinensis* UBAGHS, 1969**

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: UBAGHS, 1969; JEFFERIES *et al.*, 1987

[*Cothurnocystis melchiori* UBAGHS, 1983]

=*Proscotiaecystis melchiori* (UBAGHS, 1983); UBAGHS, 1994 →
 [=*Thoralyctysts melchiori* (UBAGHS, 1983)]
 REFERENCES: UBAGHS, 1983, 1994; CRIPPS, 1991; GIL CID *et al.*, 1996

[*Cothurnocystis occitana* UBAGHS, 1994]

=*Arauricyctis occitana* (UBAGHS, 1994), LEFEBVRE & VIZCAÍNO, 1999 →
 REFERENCES: UBAGHS, 1994; LEFEBVRE & VIZCAÍNO, 1999

[*Cothurnocystis owensi* (WOODS & JEFFERIES, 1992), LEFEBVRE & VIZCAÍNO, 1999]

=*Procothurnocystis owensi* WOODS & JEFFERIES, 1992 →
 REFERENCES: WOODS & JEFFERIES, 1992; LEFEBVRE & VIZCAÍNO, 1999

[*Cothurnocystis primaeva* THORAL, 1935]

=*Arauricyctis primaeva* (THORAL., 1935), LEFEBVRE & VIZCAÍNO, 1999 →
 REFERENCES: THORAL, 1935a; UBAGHS, 1969; LEFEBVRE & VIZCAÍNO, 1999

[*Cothurnocystis ubaghsi* CHAUVEL, 1966]

=*Chauvelicyctysts ubaghsi* (CHAUVEL, 1966) →
 REFERENCES: CHAUVEL, 1966a; CHAUVEL, 1971; DALEY, 1992

***Domfrontia pissotensis* (CHAUVEL & NION, 1977); CRIPPS & DALEY, 1994**

[=*Reticulocarpus pissotensis* CHAUVEL & NION, 1977]

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)

GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: CHAUVEL & NION, 1977; CRIPPS & DALEY, 1994; LEFEBVRE, 2000a

***Drepanocarpos australis* SMITH & JELL, 1995**

STRATIGRAPHICAL OCCURRENCE: Upper Cambrian (Merioneth)
 GEOGRAPHICAL DISTRIBUTION: Australia
 REFERENCES: SMITH & JELL, 1995

***Flabellicyctysts rushtonii* MARTÍ MUS, 2002**

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Trema-doc)
 GEOGRAPHICAL DISTRIBUTION: Europe (England)
 REFERENCES: MARTÍ MUS, 2002

***Galliaecystis lignieresi* UBAGHS, 1969**

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: UBAGHS, 1969; CRIPPS, 1989

***Hanusia obtusa* CRIPPS, 1989**

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llanvirn)
 GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)
 REFERENCES: CRIPPS, 1989

***Hanusia prilepensis* CRIPPS, 1989**

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)
 GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)
 REFERENCES: CRIPPS, 1989

***Hanusia sarkensis* CRIPPS, 1989**

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llanvirn)
 GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)
 REFERENCES: CRIPPS, 1989

***Juliaeacarpus milnerorum* RUTA, 1999**

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Ashgill)
 GEOGRAPHICAL DISTRIBUTION: Northern Africa (Morocco)
 REFERENCES: RUTA, 1999b

***Lobocarpus vizcainoi* UBAGHS, 1998**

STRATIGRAPHICAL OCCURRENCE: Upper Cambrian (Merioneth)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: UBAGHS, 1998

***Lyricocarpus courtoissolei* UBAGHS, 1994**

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: UBAGHS, 1994

***Milonicystis kerfornei* CHAUVEL, 1986**

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)
GEOGRAPHICAL DISTRIBUTION: Europe (France)
REFERENCES: CHAUVEL, 1986; CRIPPS & DALEY, 1994

***Nanocarpus dolambi* UBAGHS, 1991**

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)
GEOGRAPHICAL DISTRIBUTION: Europe (France)
REFERENCES: UBAGHS, 1991

***Nevadaecystis americana* (UBAGHS, 1963); UBAGHS, 1967**

[=Cothurnocystis? americana UBAGHS, 1963]
STRATIGRAPHICAL OCCURRENCE: Upper Cambrian (Merioneth)
GEOGRAPHICAL DISTRIBUTION: North America (USA)
REFERENCES: UBAGHS, 1963, 1967c; JEFFERIES, 1986; JEFFERIES *et al.*, 1987

***Phyllocystis blayaci* THORAL, 1935**

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Tremadoc-Arenig)
GEOGRAPHICAL DISTRIBUTION: Europe (France)
REFERENCES: THORAL, 1935a; GIGOUT, 1954; UBAGHS, 1963, 1969

***Phyllocystis crassimarginata* (THORAL, 1935)**

[=Phyllocystis Blayaci varieté crassimarginata THORAL, 1935]
STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Tremadoc-Arenig)
GEOGRAPHICAL DISTRIBUTION: Europe (France)
REFERENCES: THORAL, 1935a; UBAGHS, 1969

***Phyllocystis? salairica* DUBATOLOVA, 1985**

[=Phyllocystis? salairicus DUBATOLOVA, 1985 (incorrect gender)]
STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)
GEOGRAPHICAL DISTRIBUTION: Asia (Siberian Russia: Salair)
REFERENCES: DUBATOLOVA *in* ROSOVA, ROSOV & DUBATOLOVA, 1985

***Ponticulocarpus robisoni* SUMRALL & SPRINKLE, 1999**

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian
GEOGRAPHICAL DISTRIBUTION: America (USA: Utah)
REFERENCES: SUMRALL & SPRINKLE, 1999

***Prochaavelicystis semispinosa* DALEY, 1992**

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Tremadoc)
GEOGRAPHICAL DISTRIBUTION: Europa (UK: England)
REFERENCES: DALEY, 1992

***Procothurnocystis owensi* WOODS & JEFFERIES, 1992**

[=Cothurnocystis owensi (WOODS & JEFFERIES, 1992); LEFEBVRE & VIZCAÍNO, 1999]
STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)
GEOGRAPHICAL DISTRIBUTION: Europe (UK: South Wales)
REFERENCES: WOODS & JEFFERIES, 1992; LEFEBVRE & VIZCAÍNO, 1999

***Progalliecytis ubaghsii* CRIPPS, 1989**

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)
GEOGRAPHICAL DISTRIBUTION: Europe
REFERENCES: UBAGHS, 1969; CRIPPS, 1989

***Prokopicytis mergli* CRIPPS, 1989**

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)
GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)
REFERENCES: CRIPPS, 1989

***Proscotiaeacytis melchiori* (UBAGHS, 1983); UBAGHS, 1994**

[=Cothurnocystis melchiori UBAGHS, 1983]
[=Thoralicytis melchiori (UBAGHS, 1983)]
STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)
GEOGRAPHICAL DISTRIBUTION: Europe (France)
REFERENCES: UBAGHS, 1983; UBAGHS, 1994; CRIPPS, 1991; GIL CID *et al.*, 1996

***Protocystites menevensis* HICKS, 1872**

STRATIGRAPHICAL OCCURRENCE: Middle Cambrian (St. David's)
GEOGRAPHICAL DISTRIBUTION: Europe (UK: Wales)
REFERENCES: HICKS *in* HICKS & JONES, 1872; JEFFERIES *et al.*, 1987

***Reticulocarpus hanusi* JEFFERIES & PROKOP, 1972**

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llanvirn)
GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)
REFERENCES: JEFFERIES & PROKOP, 1972; JEFFERIES, 1986; CRIPPS, 1989

[*Reticulocarpus pissotensis* CHAUVEL & NION, 1977]

=*Domfrontia pissotensis* (CHAUVEL & NION, 1977)
REFERENCES: CHAUVEL & NION, 1977

***Scotiaeacytis collapsa* CRIPPS, 1988**

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Ashgill)
GEOGRAPHICAL DISTRIBUTION: Europe (UK: Northern Ireland)
REFERENCES: CRIPPS, 1988

***Scotiaeacytis curvata* (BATHER, 1913); CASTER & UBAGHS, 1967**

[=Cothurnocystis curvata BATHER, 1913]
STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Ashgill)

GEOGRAPHICAL DISTRIBUTION: Europa (UK: Scotland)
 REFERENCES: BATHER, 1913; CASTER & UBAGHS in UBAGHS, 1969; JEFFERIES, 1967, 1968, 1986; CRIPPS, 1988

[=*Scotiaecystis griffei* UBAGHS, 1969]
 =*Thoralicystis griffei* (UBAGHS, 1969); CHAUVEL, 1971 →
 REFERENCES: UBAGHS, 1969; CHAUVEL, 1971

[*Scotiaecystis guilloui* LEFEBVRE & VIZCAÍNO, 1999]
 =*Bohemiacystis guilloui* (LEFEBVRE & VIZCAÍNO, 1999), new combination herein →
 REFERENCES: LEFEBVRE & VIZCAÍNO, 1999

[=*Scotiaecystis jefferiesi* (GIL CID, DOMÍNGUEZ, SILVÁN & ESCRIBANO, 1996); LEFEBVRE & VIZCAÍNO, 1999]
Bohemiacystis jefferiesi GIL CID, DOMÍNGUEZ, SILVÁN & ESCRIBANO, 1996 →
 REFERENCES: GIL CID et al., 1996; LEFEBVRE & VIZCAÍNO, 1999

[=*Thoralicystis bouceki* (CASTER, 1967), LEFEBVRE & VIZCAÍNO, 1999]
Bohemiacystis bouceki CASTER, 1967 →
 REFERENCES: CASTER in UBAGHS, 1967c; GIL CID et al., 1996; LEFEBVRE & VIZCAÍNO, 1999

Thoralicystis griffei (UBAGHS, 1969); CHAUVEL, 1971
 [=*Scotiaecystis griffei* UBAGHS, 1969]
 STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: UBAGHS, 1969; CHAUVEL, 1971

[*Thoralicystis melchiori* (UBAGHS, 1983)]
 [=*Cothurnocystis melchiori* UBAGHS, 1983]
 =*Proscotiaecystis melchiori* (UBAGHS, 1983); UBAGHS, 1994 →
 REFERENCES: UBAGHS, 1983, 1994; CRIPPS, 1991; GIL CID et al., 1996

Thoralicystis ubaghsii LEFEBVRE & VIZCAÍNO, 1999
 STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: LEFEBVRE & VIZCAÍNO, 1999

Thoralicystis zagoraensis CHAUVEL, 1971
 STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)
 GEOGRAPHICAL DISTRIBUTION: Northern Africa (Morocco)
 REFERENCES: CHAUVEL, 1971

Trigonocarpus singularis UBAGHS, 1994
 STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: UBAGHS, 1994

Mitrata JAEKEL, 1901

Adoketocarpus acheronticus RUTA & JELL, 1999

STRATIGRAPHICAL OCCURRENCE: Upper Silurian (Pridoli)
 GEOGRAPHICAL DISTRIBUTION: Australia (Victoria)
 REFERENCES: RUTA & JELL, 1999a

Adoketocarpus janeae RUTA & JELL, 1999

STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Lochkovian)
 GEOGRAPHICAL DISTRIBUTION: Australia
 REFERENCES: RUTA & JELL, 1999a

Allanicytidium flemingi CASTER & GILL, 1967

STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Emsian)
 GEOGRAPHICAL DISTRIBUTION: New Zealand (South Island)
 REFERENCES: CASTER & GILL in UBAGHS, 1967c; FLEMING, 1970; RUTA & JELL, 1999a

Anatifopsis acuta BARRANDE, 1872

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)
 GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)
 REFERENCES: BARRANDE, 1872

Anatifopsis ancora DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)
 GEOGRAPHICAL DISTRIBUTION: Europe (Spain: Castilla-la Mancha)
 REFERENCES: DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990

Anatifopsis armoricana (CHAUVEL, 1941); DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990

[=*Anatiferocystis armoricana* CHAUVEL, 1941]
 STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: CHAUVEL, 1941; DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990

Anatifopsis balclatchiensis REED, 1940

[=? *Anatifopsis barrandei* (CHAUVEL, 1941); JEFFERIES & DALEY, 1996]
 STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Ashgill)
 GEOGRAPHICAL DISTRIBUTION: Europe (UK: Scotland)
 REFERENCES: REED, 1940; JEFFERIES & DALEY, 1996

Anatifopsis barrandei (CHAUVEL, 1941); DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990

[=*Anatiferocystis barrandei* CHAUVEL, 1941]
 STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llanvirn)
 GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)
 REFERENCES: CHAUVEL, 1941; DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990

***Anatifopsis bohemica* BARRANDE, 1872**

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc-Ashgill?)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)

REFERENCES: BARRANDE, 1872

***Anatifopsis cocaban* KOBAYASHI, 1960**

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician

GEOGRAPHICAL DISTRIBUTION: Korea

REFERENCES: KOBAYASHI, 1960; DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990

[*Anatifopsis curtus* HADDING, 1913]

=?*Solenocaris?* *vomer* (HADDING, 1913)

NOTE: originally described as cirripeds (*Anatifopsis* was then considered crustacean remains) but probably are isolated plates of a polyplacophoran mollusc. See also *Anatifopsis elongatus* (HADDING, 1913) (→) and *Anatifopsis vomer* (HADDING, 1913) (→)

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician

GEOGRAPHICAL DISTRIBUTION: Europe (Sweden)

REFERENCES: HADDING, 1913, 1915; DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990

[*Anatifopsis elongatus* HADDING, 1913]

=*Solenocaris elongatus* HADDING, 1913; SMITH & HOARE, 1987

NOTE: originally described as *Anatifopsis*, *Solenocaris elongatus* consists of isolated plates of a septemchitonid (Mollusca Polyplacophora). See also *Anatifopsis curtus* (HADDING, 1913) (→) and *Anatifopsis vomer* (HADDING, 1913) (→)

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician

GEOGRAPHICAL DISTRIBUTION: Europe (Sweden)

REFERENCES: HADDING, 1913, 1915; SMITH & HOARE, 1987; DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990

***Anatifopsis escandei escandei* THORAL, 1935**

[=*Balanocystites escandei* (THORAL, 1935); VIZCAÍNO & LEFEBVRE, 1998]

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: THORAL, 1935a; CHAUVEL, 1941; JEFFERIES, 1987; DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990; VIZCAÍNO & LEFEBVRE, 1998

***Anatifopsis escandei? thorali* (CHAUVEL, 1966); DOMÍNGUEZ & GUTIERREZ-MARCO, 1990**

[=*Anatiferoscystis escandei?* *thorali* CHAUVEL, 1941]

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician

GEOGRAPHICAL DISTRIBUTION: Northern Africa (Morocco)

REFERENCES: CHAUVEL, 1941, 1966b; DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990

***Anatifopsis guichenensis* (CHAUVEL, 1941); DOMÍNGUEZ & GUTIERREZ-MARCO, 1990**

[=*Anatiferoscystis guichenensis* CHAUVEL, 1941]

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: CHAUVEL, 1941; DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990

***Anatifopsis longa* BARRANDE, 1872**

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)

REFERENCES: BARRANDE, 1872

***Anatifopsis minuta* (CHAUVEL, 1941); LEFEBVRE, 2000**

[=*Anatifopsis barrandei minuta* (CHAUVEL, 1941); DOMÍNGUEZ & GUTIÉRREZ-MARCO 1990]

[=*Anatiferoscystis barrandei minuta* CHAUVEL, 1941]

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: CHAUVEL, 1941, 1982; DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990; LEFEBVRE, 2000a

***Anatifopsis papillata* (BASSLER, 1943)**

[=*Kirkocystis papillata* (BASSLER, 1943)]

[=*Enoploura?* *papillata* BASSLER, 1943]

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician

GEOGRAPHICAL DISTRIBUTION: North America (USA)

REFERENCES: BASSLER, 1943, 1950; PARSLEY, 1991

***Anatifopsis punctata* (BASSLER, 1950)**

[=*Enoploura punctata* BASSLER, 1950]

[=*Kirkocystis punctata* BASSLER, 1950]

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician

GEOGRAPHICAL DISTRIBUTION: North America (USA: Tennessee)

REFERENCES: BASSLER, 1950; PARSLEY, 1981

[=*Anatifopsis prima* BARRANDE, 1872]

[=*Anatifopsis primus* BARRANDE, 1872 (incorrect gender)]

[=*Sagittacystis prima* BARRANDE, 1872; PARSLEY, PROKOP, &

DERSTLER, 2000]

[=*Balanocystites primus* BARRANDE, 1887 →

REFERENCES: BARRANDE, 1872, 1887; JEFFERIES, 1986; PARSLEY, PROKOP, & DERSTLER, 2000

***Anatifopsis spinosa* UBAGHS, 1979**

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)

REFERENCES: UBAGHS, 1979; PETR, 1984

***Anatifopsis trapeziformis* THORAL, 1935**

[=*A. triapeziformis* THORAL, 1935 in DOMÍNGUEZ & Gutierrez, 1990, p. 135 (incorrect spelling)]

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician

GEOGRAPHICAL DISTRIBUTION: Europe (France)

REFERENCES: THORAL, 1935a; DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990

Anatifopsis traveusotensis (CHAUVEL, 1941);
DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990
[=*Anatiferoscystis traveusotensis* CHAUVEL, 1941]
STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llanvirn)
GEOGRAPHICAL DISTRIBUTION: Europe (France)
REFERENCES: CHAUVEL, 1941; DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990

Anatifopsis truncata KOBAYASHI, 1960
[=*Anatifopsis truncatum* KOBAYASHI, 1960, incorrect gender]
STRATIGRAPHICAL OCCURRENCE: Lower Ordovician
GEOGRAPHICAL DISTRIBUTION: Asia (Korea)
REFERENCES: KOBAYASHI, 1960; DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990

[*Anatifopsis vomer* (HADDING, 1913)]
= *Solenocaris?* *vomer* HADDING, 1913; DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990
NOTE: originally described as *Anatifopsis* these are isolated plates of a polyplacophoran mollusc. See also *Anatifopsis curtus* (HADDING, 1913) (→) and *Anatifopsis elongatus* (HADDING, 1913) (→)
STRATIGRAPHICAL OCCURRENCE: Upper Ordovician
GEOGRAPHICAL DISTRIBUTION: Europe (Sweden)
REFERENCES: HADDING, 1913, 1915; DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990

Anomalocystites cornutus (MILLER 1889; Subsequent designation) HALL, 1859
STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Lochkovian)
GEOGRAPHICAL DISTRIBUTION: North America (USA: New York)
REFERENCES: HALL, 1859; CASTER in UBAGHS, 1967c

Anomalocystites disparilis HALL, 1859
[=*Basslerocystis disparilis* (HALL, 1859)]
STRATIGRAPHICAL OCCURRENCE: Lower Devonian
GEOGRAPHICAL DISTRIBUTION: North America (USA)
REFERENCES: HALL, 1859; SCHUCHERT, 1904; KIRK, 1911;
CASTER, 1952

[*Anomocystis ensifer* (BARRANDE, 1887); JAEKEL, 1918]
= *Spermacystis ensifer* UBAGHS 1967
[=*Anomalocystites ensifer* BARRANDE, 1887]
STRATIGRAPHICAL OCCURRENCE: Ordovician
GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)
REFERENCES: BARRANDE, 1887; JAEKEL, 1900, 1918; CHAUVEL, 1941; UBAGHS, 1967c

[=*Anomalocystites incipiens* BARRANDE, 1887]
Mitrocystella incipiens (BARRANDE, 1887); JAEKEL, 1901 →
REFERENCES: BARRANDE, 1887; JAEKEL, 1901

[*Anomalocystites pyramidalis* BARRANDE, 1887]
= *Lagynocystis pyramidalis* (BARRANDE, 1887); JAEKEL, 1918 →
REFERENCES: BARRANDE, 1887; JAEKEL, 1918

Aspidocarpus bohemicus UBAGHS, 1979
STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)
GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)
REFERENCES: UBAGHS, 1979

Aspidocarpus riadanensis (CHAUVEL, 1937);
LEFEBVRE, 2000
[=*Mitrocystites riadanensis* CHAUVEL, 1937]
STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)
GEOGRAPHICAL DISTRIBUTION: Europe (France)
REFERENCES: CHAUVEL, 1937, 1941; LEFEBVRE, 2000b;
LEFEBVRE, 2000a

[*Aspidocarpus discoidalis* (CRIPPS, 1990); LEFEBVRE 2000]
= *Chauvelia discoidalis* CRIPPS, 1990 →
REFERENCES: CRIPPS, 1990; LEFEBVRE, 2000b

Ateleocystites huxleyi BILLINGS, 1858
NOTE: This is the first carpoid described.
STRATIGRAPHICAL OCCURRENCE: Middle Ordovician
GEOGRAPHICAL DISTRIBUTION: North America (Canada)
REFERENCES: BILLINGS, 1858; CASTER in KOLATA & JOLLIE, 1982

Ateleocystites guttenbergensis KOLATA & JOLLIE, 1982
STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)
GEOGRAPHICAL DISTRIBUTION: North America (USA: Wisconsin)
REFERENCES: KOLATA & JOLLIE, 1982

Australocystis langei CASTER, 1954 [1956]
STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Emsian)
GEOGRAPHICAL DISTRIBUTION: South America (Brazil: Paraná)
REFERENCES: CASTER, 1954a, 1954b

[*Balanocystites escandei* (THORAL, 1935); VIZCAÍNO & LEFEBVRE, 1998]
= *Anatifopsis escandei escandei* THORAL, 1935 →
REFERENCES: THORAL, 1935a; CHAUVEL, 1941; JEFFERIES, 1987; DOMÍNGUEZ & GUTIÉRREZ-MARCO, 1990; VIZCAÍNO & LEFEBVRE, 1998

Balanocystites lagunula BARRANDE, 1887
STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llanvirn)
GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)
REFERENCES: BARRANDE, 1887; CHAUVEL, 1941

Balanocystites primus (BARRANDE, 1872); JEFFERIES, 1986
[=*Anatifopsis prima* BARRANDE, 1872]
[=*Anatifopsis primus* BARRANDE, 1872 (incorrect gender)]
[=*Sagittacystis prima* BARRANDE, 1872; PARSLEY, PROKOP, & DERSTLER, 2000]

- STRATIGRAPHICAL OCCURRENCE:** Middle Ordovician (Llanvirn)
GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)
REFERENCES: BARRANDE, 1872; JEFFERIES, 1986; PARSLEY, PROKOP, & DERSTLER, 2000
- [*Basslerocystis disparilis* (HALL, 1859)]
 [= *Anomalocystites disparilis* HALL, 1859] →
 REFERENCES: HALL, 1859; SCHUCHERT, 1904; KIRK, 1911;
 CASTER, 1952
- Barrandeocarpus jaekeli** UBAGHS 1979
 STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)
 GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)
 REFERENCES: UBAGHS, 1979; RUTA, 1997d
- Barrandeocarpus norvegicus** CRASKE & JEFFERIES 1989
 STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Ashgill)
 GEOGRAPHICAL DISTRIBUTION: Europe (Norway)
 REFERENCES: CRASKE & JEFFERIES, 1989
- Bokkeveldia oosthuizeni** RUTA & THERON, 1997
 STRATIGRAPHICAL OCCURRENCE: Devonian (Emsian)
 GEOGRAPHICAL DISTRIBUTION: Southern Africa (South Africa)
 REFERENCES: RUTA & THERON, 1997
- Chauvelia discoidalis** CRIPPS, 1990
 [= *Aspidocarpus discoidalis* (CRIPPS), LEFEVRE, 2000]
 STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)
 GEOGRAPHICAL DISTRIBUTION: Northern Africa (Morocco)
 REFERENCES: CRIPPS, 1990; LEFEVRE, 2000b
- Chinianocarpos thorali** UBAGHS, 1961
 STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Tremadoc)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: UBAGHS, 1961, 1969; JEFFERIES, 1986
- Dalejocystis casteri** PROKOP, 1963
 STRATIGRAPHICAL OCCURRENCE: Middle Devonian (Eifelian)
 GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)
 REFERENCES: PROKOP, 1963; HAUDE, 1980, 1983
- Diamphidiocystis drepanon** KOLATA & GUENSBURG, 1979
 STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Ashgill)
 GEOGRAPHICAL DISTRIBUTION: North America (USA: Illinois)
 REFERENCES: KOLATA & GUENSBURG, 1979; LEFEVRE, 2000a
- Enoploura balanoides** WETHERBY, 1879 [MEEK, 1872]
 [= *Anomalocystites (Ateleocystites?) balanoides* MEEK, 1872]
- STRATIGRAPHICAL OCCURRENCE: Upper Ordovician
 GEOGRAPHICAL DISTRIBUTION: North America (USA: Ohio)
 REFERENCES: MEEK, 1872; WETHERBY, 1879; WOODWARD, 1880
- Enoploura crustacea** (HAECHEL, 1896); CASTER, 1952
 [= *Placocystis crustacea* HAECHEL, 1896]
 [= *Enoploura balanoides* WETHERBY, 1879 (MEEK, 1872)]
 STRATIGRAPHICAL OCCURRENCE: Upper Ordovician
 GEOGRAPHICAL DISTRIBUTION: North America (USA: Indiana)
 REFERENCES: HAECHEL, 1896; CASTER, 1952
- Enoploura meeki** CASTER, 1952
 STRATIGRAPHICAL OCCURRENCE: Upper Ordovician
 GEOGRAPHICAL DISTRIBUTION: North America (USA: Ohio)
 REFERENCES: CASTER, 1952
- [= *Enoploura? papillata* BASSLER, 1943]
 [= *Anatifopsis papillata* (BASSLER, 1943)] →
 [= *Kirkocystis papillata* BASSLER, 1950]
 REFERENCES: BASSLER, 1943, 1950; PARSLEY, 1991
- Enoploura popei** CASTER, 1952
 STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)
 GEOGRAPHICAL DISTRIBUTION: North America (USA: Ohio)
 REFERENCES: CASTER, 1952a, 1952b; RUTA & JELL, 1999b
- [= *Enoploura punctata* BASSLER, 1950]
 [= *Anatifopsis punctata* (BASSLER, 1950)] →
 [= *Kirkocystis punctata* BASSLER, 1950]
 REFERENCES: BASSLER, 1950; PARSLEY, 1981
- Enoploura wetherbyi** CASTER, 1952
 STRATIGRAPHICAL OCCURRENCE: Upper Ordovician
 GEOGRAPHICAL DISTRIBUTION: North America (USA: Indiana)
 REFERENCES: CASTER, 1952
- Eumitrocystella savilli** BEISSWENGER, 1994
 STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)
 GEOGRAPHICAL DISTRIBUTION: Northern Africa (Morocco)
 REFERENCES: BEISSWENGER, 1994
- Guichenocarpos nioni** CHAUVEL, 1981
 STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)
 GEOGRAPHICAL DISTRIBUTION: Europe (France)
 REFERENCES: CHAUVEL, 1982
- Jaekelocarpus oklahomensis** KOLATA, FREST & MAPES, 1991
 STRATIGRAPHICAL OCCURRENCE: Upper Carboniferous (Moscovian)
 GEOGRAPHICAL DISTRIBUTION: North America (USA: Oklahoma)
 REFERENCES: KOLATA *et al.*, 1991; DOMÍNGUEZ *et al.*, 2002

Kierocystis inserta PARSLEY, 1991

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)
GEOGRAPHICAL DISTRIBUTION: North America (USA: Kentucky)
REFERENCES: PARSLEY, 1991; RUTA, 1999a

Kopficystis kirkfieldi PARSLEY, 1991

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)
GEOGRAPHICAL DISTRIBUTION: North America (Canada: Ontario)
REFERENCES: PARSLEY, 1991; RUTA, 1999a

Lagynocystis pyramidalis (BARRANDE, 1887); JAEKEL, 1918

[=Anomalocystites pyramidalis BARRANDE, 1887]
STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llanvirn)
GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia, France, Spain)
REFERENCES: BARRANDE, 1887; JAEKEL, 1918; CHAUVEL, 1941; JEFFERIES, 1973; UBAGHS, 1991; PARSLEY, 2000; LEFEVRE, 2000a

Milonicystis kerfornei CHAUVEL, 1986 [Cornuta] →

NOTE: originally described as a mitrate but later was interpreted as a cornute; See *Milonicystis kerfornei* CHAUVEL, 1986 under Cornuta →
REFERENCES: CHAUVEL, 1986; CRIPPS & DALEY, 1994

Mitrocystella barrandei JAEKEL, 1901

[=Promitrocystites barrandei (JAEKEL); LEFEVRE, 2000]
STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llanvirn)
GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)
REFERENCES: JAEKEL, 1918; CHAUVEL, 1941; LEFEVRE, 2000b

Mitrocystella incipiens (BARRANDE, 1887); JAEKEL, 1901

[=Anomalocystites incipiens BARRANDE, 1887]
STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)
GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)
REFERENCES: BARRANDE, 1887; JAEKEL, 1901, 1918; UBAGHS, 1967c; JEFFERIES, 1967, 1968, 1986; PARSLEY, 1994; LEFEVRE, 2000a

Mitrocystella incipiens miloni (BARRANDE, 1887; CHAUVEL, 1941)

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llandeilo)
GEOGRAPHICAL DISTRIBUTION: Europe (France, Spain)
REFERENCES: CHAUVEL, 1941, 1982; GUTIÉRREZ MARCO & MELÉNDEZ, 1987

Mitrocystites mitra BARRANDE, 1887

[=Mitrocystis mitra BARRANDE, 1887, CHAUVEL, 1941, incorrect spelling]

STRATIGRAPHICAL OCCURRENCE: Middle Ordovician (Llanvirn)

GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)
REFERENCES: BARRANDE, 1887; JAEKEL, 1918; CHAUVEL, 1941; UBAGHS, 1967c; JEFFERIES, 1967, 1968, 1986; PARSLEY, 1994

[*Mitrocystites riadanensis* CHAUVEL, 1941]

=*Aspidocarpus riadanensis* (CHAUVEL, 1941); LEFEVRE, 2000 →
REFERENCES: CHAUVEL, 1941; LEFEVRE, 2000b

«Mitrocystites» styloideus DEHM, 1934

NOTE: «*Mitrocystites» styloideus DEHM, 1934 from the Hunsrück slate (Germany) is a species related with stem-group tunicates such as *Anatifopsis* or *Balanocystites*. It is not a stem group craniate such as *Mitrocystella*.*

STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Emsian)
GEOGRAPHICAL DISTRIBUTION: Europe (Germany)
REFERENCES: DEHM, 1934; KUTSCHER, 1975; BARTELS *et al.*, 1998

Mongolocarpos minzhini ROZHNOV, 1990

STRATIGRAPHICAL OCCURRENCE: Silurian (Ludlow)
GEOGRAPHICAL DISTRIBUTION: Asia (Mongolia)
REFERENCES: ROZHNOV, 1990; RUTA, 1999a

Notocarpos garratti PHILIP, 1981

STRATIGRAPHICAL OCCURRENCE: Upper Silurian (Ludlow)
GEOGRAPHICAL DISTRIBUTION: Australia (Victoria)
REFERENCES: PHILIP, 1981; JEFFERIES, 1982; RUTA & JELL, 1999c

Notocarpos praecox (CHAPMAN, 1904); JELL, 1999

[=*Dithyrocarpis praecox* CHAPMAN, 1904]
NOTE: Originally described as a Crustacea Phyllocarida
STRATIGRAPHICAL OCCURRENCE: Upper Silurian
GEOGRAPHICAL DISTRIBUTION: Australia (Victoria)
REFERENCES: CHAPMAN, 1904; ROLFE, 1969; JELL, 1999

Occultocystis koeneni HAUDE, 1995

STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Emsian)
GEOGRAPHICAL DISTRIBUTION: South America (Argentina: San Juan)
REFERENCES: HAUDE, 1995; RUTA & JELL, 1999b; RUTA, 1999a

Ovocarpus? circularis UBAGHS, 1994

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)
GEOGRAPHICAL DISTRIBUTION: Europe (France)
REFERENCES: UBAGHS, 1994

Ovocarpus moncereti UBAGHS, 1994

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)
GEOGRAPHICAL DISTRIBUTION: Europe (France)
REFERENCES: UBAGHS, 1994

***Paranacystis petrii* CASTER, 1954**

STRATIGRAPHICAL OCCURRENCE: Lower Devonian
GEOGRAPHICAL DISTRIBUTION: South America (Brazil: Paraná)
REFERENCES: CASTER, 1954a, 1954b; CASTER & EATON, 1956;
UBAGHS, 1967c; RUTA, 1997a

***Paranacystis simoneae* RUTA, 1997**

STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Pragian)
GEOGRAPHICAL DISTRIBUTION: Southern Africa (Republic of
South Africa)
REFERENCES: RUTA, 1997a

***Peltocystis cornuta* THORAL, 1935**

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Tremadoc)
GEOGRAPHICAL DISTRIBUTION: Europe (France)
REFERENCES: THORAL, 1935b; UBAGHS, 1969; JEFFERIES,
1986; PARSLEY & PROKOP, 1999

***Placocystella africana* (REED, 1925); DEHM, 1932**

[= *Placocystis africana* REED, 1925]
[= *Placocystella capensis* RENNIE, 1936]
STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Emsian)
GEOGRAPHICAL DISTRIBUTION: Southern Africa (Republic of
South Africa)
REFERENCES: DEHM, 1932; RUTA & THERON, 1997; RUTA,
1999a

[*Placocystella capensis* RENNIE, 1936]

= *Placocystella africana* (REED, 1925); DEHM, 1932 →
STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Emsian)
GEOGRAPHICAL DISTRIBUTION: Southern Africa (Republic of
South Africa)
REFERENCES: RENNIE, 1936; RUTA & THERON, 1997

[*Placocystis bohemicus* (BARRANDE, 1887)]

[= *Anomalocystites bohemicus* BARRANDE, 1887]
REFERENCES: BARRANDE, 1887; CHAUVEL, 1941

[*Placocystis crustacea* HAECKEL, 1896]

[= *Enoploura crustacea* (HAECKEL, 1896); CASTER, 1952]
REFERENCES: HAECKEL, 1896; CASTER, 1952

***Placocystites forbesianus* DE KONINCK, 1869**

STRATIGRAPHICAL OCCURRENCE: Silurian (Wenlock)
GEOGRAPHICAL DISTRIBUTION: Europe (UK: England)
REFERENCES: CASTER, 1952; CHAUVEL, 1971; JEFFERIES &
LEWIS, 1978; JEFFERIES & LEWIS, 1978; JEFFERIES, 1984;
SAVazzi *et al.*, 1982; KOLATA & JOLLIE, 1982; RUTA, 1998;
RUTA & BARTELS, 1998

[*Promitrocystites barrandei* (JAEKEL, 1901); LEFEBVRE, 2000]

= *Mitrocystella barrandei* JAEKEL, 1901 →
REFERENCES: JAEKEL, 1918; LEFEBVRE, 2000b

***Protocytidium elliotiae* RUTA & JELL, 1999**

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Ashgill)
GEOGRAPHICAL DISTRIBUTION: Australia
REFERENCES: RUTA & JELL, 1999b

***Pseudovictoriacystis problematica* RUTA & JELL, 1999**

STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Lochkovian)
GEOGRAPHICAL DISTRIBUTION: Australia
REFERENCES: RUTA & JELL, 1999d

***Rhenocystis latipedunculata* DEHM, 1932**

STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Emsian)
GEOGRAPHICAL DISTRIBUTION: Europe (Germany)
REFERENCES: DEHM, 1932, 1934; KUTSCHER, 1975; HAUDE,
1983; KOLATA & JOLLIE, 1982; RUTA & BARTELS, 1998; BARTELS
et al., 1998; SUTCLIFFE *et al.*, 2000

***Spermacystis ensifer* (BARRANDE, 1887)**

[= *Anomocystis ensifer* (BARRANDE, 1887)]
[= *Anomalocystites ensifer* BARRANDE, 1887]
STRATIGRAPHICAL OCCURRENCE: Middle Ordovician
GEOGRAPHICAL DISTRIBUTION: Europe (Bohemia)
REFERENCES: BARRANDE, 1887; JAEKEL, 1900; JAEKEL, 1918;
CHAUVEL, 1941; UBAGHS, 1967c

***Tasmanicytidium burretti* CASTER, 1983**

STRATIGRAPHICAL OCCURRENCE: Lower Silurian (Llandovery)
GEOGRAPHICAL DISTRIBUTION: Australia (Tasmania)
REFERENCES: CASTER, 1983; RUTA & JELL, 1999c

***Victoriacystis holmensorum* RUTA & JELL, 1999**

STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Lochkovian)
GEOGRAPHICAL DISTRIBUTION: Australia (Victoria)
REFERENCES: RUTA & JELL, 1999d

***Victoriacystis wilkinsi* GILL & CASTER, 1960**

NOTE: see note for the solute *Rutroclypeus victoriae* GILL &
CASTER, 1960
STRATIGRAPHICAL OCCURRENCE: Silurian (Ludlow)
GEOGRAPHICAL DISTRIBUTION: Australia (Victoria)
REFERENCES: GILL & CASTER, 1960; RUTA, 1997c

***Vizcainocarpus dentiger* RUTA, 1997**

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Arenig)
GEOGRAPHICAL DISTRIBUTION: Europe (Africa)
REFERENCES: RUTA, 1997b; LEFEBVRE, 2000b

***Vizcainocarpus rutai* LEFEBVRE, 2000**

STRATIGRAPHICAL OCCURRENCE: Lower Ordovician (Tremadoc)
GEOGRAPHICAL DISTRIBUTION: Europe (France)
REFERENCES: LEFEBVRE, 2000b

***Willmanocystis denticulata* KOLATA & JOLLIE, 1982**

STRATIGRAPHICAL OCCURRENCE: Upper Ordovician (Caradoc)
GEOGRAPHICAL DISTRIBUTION: North America (USA)
REFERENCES: KOLATA & JOLLIE, 1982

Yachalicystis triangularis HAUDE, 1995

STRATIGRAPHICAL OCCURRENCE: Lower Devonian (Emsian)
 GEOGRAPHICAL DISTRIBUTION: South America (Argentina: San Juan)
 REFERENCES: HAUDE, 1995; RUTA, 1999a; LEFEVRE, 2000a

III: INDEX OF VALID SPECIFIC NAMES

- acheronticus:** Adoketocarpus
acrofera: Sucocystis
acuta: Anatifopsis
africana: Placocystella
americana: Nevadaecystis
ancora: Anatifopsis
archaeocyathoides: Jugoszovia
armoricana: Anatifopsis
australis: Drepanocarpos
badulesiensis: Gyrocystis
balanoides: Enoploura
balclatchiensis: Anatifopsis
barrandei: Dendrocystites, Elliptocinctus, Mitrocystella, Anatifopsis
batheri: Girvanicystis
bifidus: Archaeocothurnus
blayaci: Phyllocystis
bohemica/us: Anatifopsis, Etoctenocystis, Trochocystites, Aspidocarpus
bouceki: Bohemiaecystis
bretoni: Sucocystis
burretti: Tasmanicytidium
casteri: Girvanicystis, Dalejocystis
circularis: Ovocarpus?
cocaban: Anatifopsis
collapsa: Scotiaecystis
colodon: Ctenocystis
cornuta/us: Peltocystis, Anomalocystites
courtessolei: Cothurnocystis, Lyricocarpus
crassimarginata: Phyllocystis
crossmani: Myeinocystites
crustacea: Enopleura
cruzae: Gyrocystis
curvata: Scotiaecystis
delticus: Acuticarpus
denticulata: Willmanocystis
dentiger: Vizcainocarpus
dilabida: Babinocystis
discoidalis: Chauvelia
disjuncta: Progyrocystis
disparilis: Anomalocystites
dolambii: Nanocarpus
- drepanon:** Diamphidiocystis
elizae: Cothurnocystis
elliottae: Protocytidium
ensifer: Spermacystis
erecta: Gyrocystis
escandei: Anatifopsis
estonica: Maennilia
fellinensis: Cothurnocystis
flemingi: Allanicytidium
forbesianus: Placocystites
garrai: Notocarpos
globulus: Dehmecystis
goshutensis: Archaeocothurnus
griffei: Thoralicystis, Amygdalotheca
guichenensis: Anatifopsis
guilloui: Bohemiaecystis
guttenbergensis: Ateleocystites
havlicekii: Asturicystis
hanusi: Reticulocarpus
hispanica: Gyrocystis
holmensorum: Victoriacystis
huxleyi: Ateleocystites
incipiens: Mitrocystella
inserta: Kierocystis
jaekeli: Asturicystis, Barrandeocarpus
jagoi: Ctenocystis
janeae: Adoketocarpus
jefferiesi: Bohemiaecystis
junori: Rutroclipeus
kerfornei: Milonicystis
kirkfieldi: Kopfycystis
koenenii: Occultocystis
kuckersiana: Heckericystis
lagenula: Balanocystites
landeyranensis: Ampelocarpus
langei: Australocystis
latipedunculata: Rhenocystis
lignieresii: Galliaeocystis
longa: Anatifopsis
maroccana: Sucocystis?
meeki: Enoploura
melchiori: Proscotiaeocystis, Sucocystis
menevensis: Protocystites
mergli: Prokopycystis
miloni: Mitrocystella
milnerorum: Juliaecarpus
minuta: Anatifopsis
minzhini: Mongolocarpus
miranda: Beryllia
mitra: Mitrocystites
moncereti: Ovocarpus

- natus:** *Myeinocystites*
nioni: *Guichenocarpos*
norvegicus: *Barrandeocarpus*
obtusa: *Hanusia*
occitana: *Arauricystis*
oklahomensis: *Jackelocarpus*
oosthuizeni: *Bokkeveldia*
owensi: *Procothurnocystis*
papillata: *Anatifopsis*
paradoxicus: *Syringocrinus*
parvus: *Trochocystoides*
pembrokensis: *Davidocinctus*
perneri: *Ceratocystis*
petrii: *Paranacystis*
pissotensis: *Domfrontia*
planus: *Trochocystoides*
platessa: *Gyrocystis*
popei: *Enoploura*
praecox: *Notocarpos*
prilepensis: *Hanusia*
primaeva: *Arauricystis*
primus: *Balanocystites*
problematica: *Pseudovictoriacyctis*
punctata: *Anatifopsis*
pyramidalis: *Lagymocystis*
quadricornuta: *Sucocystis*
republicensis: *Acuticarpus?*
riadanensis: *Aspidocarpus*
rossicus: «*Dendrocystites*»
rushtonii: *Flabellicyctis*
rutai: *Vizcainocarpus*
salairica: *Phyllocystis*
sagittaria: *Iowacystis*
sarkensis: *Hanusia*
savilli: *Eumitrocystella*
scoticus: *Dendrocystites*
sedgwicki: *Dendrocystites*
semispinosa: *Prochauvelicystis*
simoneae: *Paranacystis*
sinclairi: *Syringocrinus*
singularis: *Trigonocarpus*
smithi: *Ctenocystis*
spinosa: *Chauvelicystis, Anatifopsis*
sprinklei: *Coleicarpus*
strimplei: *Scalenocystites*
styloideus: «*Mitrocystites*»
testudiformis: *Gyrocystis*
theronensis: *Sucocystis*
thorali: *Chinianocarpos, Anatifopsis*
trapeziformis: *Anatifopsis*
traveusotensis: *Anatifopsis*
triangularis: *Yachalicystis*
truncatum/us: *Anatifopsis, Ludwigicinctus*
ubaghsi: *Chauvelicystis, Progalliecyctis, Thoralicyctis, Sotocinctus*
undata: *Sucocystis*
utahensis: *Ctenocystis*
vali: *Castericystis*
victoriae: *Rutroclypeus*
vidali: *Minervaecystis*
vizcainoi: *Chauvelicystis, Elliptocinctus, Ceratocystis, Lobocarpus*
wetherbyi: *Belemnocystites, Enoploura*
wilkinsi: *Victoriacyctis*
withersi: *Rutroclypeus*
zagoraensis: *Thoralicyctis*

IV. TABLES OF STRATIGRAPHICAL OCURRENCE

Stage	Cambrian	Ordovician	Silurian	Devonian	Carboniferous
	CRF OCERAFAI STD MER	TRE ARG LLN LLO CRD ASH	WEN LUD PRO	PRA EMS EIF GIV FRS FAM	VIS SPK BSH MOS KAS CZE
Duration	515.5/34.0/CAERFAI 517.0/19.0/ST. DAVID'S 513.6/7.0/MERIONETH	501.5/17.0/TRE/MOC 484.5/17.0/ARENIG 422.3/7.5/LLANVIRN 466.3/4.0/LLANDELO 453.5/21.0/CARADOC 441.0/4.0/ASHGILL	434.7/8.5/LANDOVERLY 427.2/6.5/SWENLOCK 417.4/13.0/LUDLOW 409.6/2.0/PRIDOLI	383.4/6.0/PRAEAGIAN 386.2/4.0/DEVONIAN 383.4/6.0/EFELIAN 379.1/3.0/GISETIAN 372.2/10.0/FASNIAN 364.8/5.0/AMENNAN	366.0/13.0/TOURNASIA/TOU 341.2/17.0/VISEAN 327.8/10.0/SERPUKHOV 316.9/11.5/BASHKIRIAN 307.2/8.0/MOSCOWIAN 299.1/8.0/KASHIMOVIAN 202.5/5.0/GZELIAN
Midpoint					
SOLUTA					
<i>Colecarpus spinifer</i> (Ubags & Robison, 1988)					
<i>Casterocystis valli</i> Ubags & Robison, 1985					
<i>Minervacystis vidali</i> (Thorl, 1935)					
" <i>Dendrocystites</i> " <i>rossicus</i> Jaekel, 1901					
<i>Dendrocystites barrandei</i> (Bather, 1913)					
<i>Hockenycystis kuckersiana</i> (Hecker, 1940)					
<i>Dendrocystites sandwicensis</i> (Barrande, 1867)					
<i>Symnococcus suncanus</i> Parsley & Caster, 1965					
<i>Symnococcus paradoxus</i> Billings, 1859					
<i>Maemnia estonica</i> Rozhnov & Jeffries, 1996					
<i>Myeinocystites crassmanni</i> Kolata et al., 1977					
<i>Myeinocystites ratus</i> Strimple, 1953					
<i>Boltennycystis wellneri</i> Miller & Gurtet, 1894					
<i>Scalenocystites strimpeli</i> Kolata, 1973					
<i>Iowacyctis sagittata</i> Thomas & Ladd, 1926					
<i>Dendrocystoides scopulus</i> (Bather, 1913)					
<i>Girvanicyctis batheri</i> Caster, 1968					
<i>Girvanicyctis castrensis</i> Daley, 1992					
<i>Rutrocypterus junonis</i> Wilhers, 1933					
<i>Rutrocypterus victorae</i> Gill & Caster, 1960					
<i>Rutrocypterus wilhersi</i> Gill & Caster, 1965					
<i>Dohmicyctis gkhalus</i> (Dohm, 1934)					
CORNUTA					
<i>Archaeocothurnus bifidus</i> (Ubags & Robison, 1988)	1				
<i>Ceratocyrtis pemeni</i> Jaekel, 1901	1				
<i>Ceratocyrtis virginae</i> Ubags, 1987	1				
<i>Ponticulicarpus robisoni</i> Sumrall & Sprinkle, 1990	1				
<i>Protocyrtides menetriesi</i> Hicks, 1872	1				
<i>Acucarpus delicatulus</i> Sumrall et al., 1997	1				
<i>Acularcarpus? republicensis</i> Sumrall et al., 1997	1				
<i>Archaeocothurnus goshulensis</i> Sumrall et al., 1997	1				
<i>Drepanocarpus australis</i> Smith & Jell, 1995	1				
<i>Lobocarpus vizzainoi</i> Ubags, 1988	1				
<i>Nevadacyctis americana</i> (Ubags, 1963)	1				
<i>Flabellicyrtis rushtonii</i> Marti Mus, 2002	1				
<i>Prochonetocyctes semispinosa</i> Daley, 1996	1				
<i>Phyllocystis blayaci</i> Thorl, 1935	1				
<i>Amygdaletictica griffeti</i> Ubags, 1969	1				
<i>Ampullocarpus landeyranensis</i> Lefebvre & Vizcano, 1999	1				
<i>Arauncyctis primula</i> (Thorl, 1935)	1				
<i>Arauncyctis occitana</i> (Ubags, 1994)	1				
<i>Batmocystis dilatata</i> Rozhnov, 1950	1				
<i>Chauvelicyctis spinosa</i> Ubags, 1969	1				
<i>Chauvelicyctis ubaghi</i> (Chauvel, 1966)	1				
<i>Chauvelicyctis vizzainoi</i> Daley, 1992	1				
<i>Cothurnocystis courtoisieri</i> Ubags, 1969	1				
<i>Cothurnocystis fellinensis</i> Ubags, 1969	1				
<i>Gallacyctis lignoresi</i> Ubags, 1969	1				
<i>Lynccarpus courtoisieri</i> Ubags, 1964	1				
<i>Nanocarpus dolambe</i> Ubags, 1991	1				
<i>Phyllocystis crassimarginata</i> (Thorl, 1935)	1				
<i>Procothurnocystis ovensis</i> Woods & Jeffries, 1992	1				
<i>Prosciliencyctis melchiori</i> (Ubags, 1993)	1				
<i>Progaleocyctis ubaghi</i> Cripps & Daley, 1989	1				
<i>Thoralicyctis griffeti</i> (Ubags, 1969)	1				
<i>Thoralicyctis ubaghi</i> Lefebvre & Vizcano, 1999	1				
<i>Thoralicyctis ragorensis</i> Chauvel, 1971	1				
<i>Trigonocarpus singularis</i> Ubags, 1994	1				
<i>Nanocarpus dolambe</i> Ubags, 1991	1				
<i>Schemericyctis bouceki</i> Caster, 1967	1				
<i>Hanusa obtusa</i> Cripps, 1989	1				
<i>Hanusa sarkensis</i> Cripps, 1989	1				
<i>Petculocarpus hanusi</i> Jeffries & Prokup, 1972	1				
<i>Berylla miranda</i> Cripps & Daley, 1994	1				
<i>Bohemiacystis guilloui</i> (Lefebvre & Vizcano, 1999)	1				
<i>Domfrontia pissoensis</i> (Chauvel & Nion, 1977)	1				
<i>Hanusa pifponense</i> Cripps, 1989	1				
<i>Mitonicystis korfmeri</i> Chauvel, 1986	1				
<i>Phyllocystis salinaria</i> Dubalova, 1985	1				
<i>Prokopocystis megalii</i> Cripps, 1989	1				
<i>Bohemiacystis jeffreysii</i> Gil Cid et al., 1996	1				
<i>Cothurnocystis eliae</i> Bather, 1913	1				
<i>Julhaecarpus minorense</i> Ruta, 1999	1				
<i>Scutocyctis collapsa</i> Cripps, 1988	1				
<i>Scutocyctis curvata</i> (Bather, 1913)	1				

Stage	Cambrian	Ordovician	Silurian	Devonian	Carboniferous
Duration	ICRF STD MBR	TRE ARG LLN LLO GRD ASH	WEN LUD PRD	PHA ENS EIF GIV	VIS SERPIKHOV BKH MDS KAS GZ
Midpoint	555.5/34.0/CAERFAI 527.0/19.0/ST. DAVIDS 513.6/7.0/MERIONETH	501.5/17.0/TREMADOC	524.7/8.5/LANOVERLY 427.2/6.5/WENLOCK 417.4/13.0/LUDLOW 409.6/2.0/PRIDOL	412.4/12.0/COCHROWAN/LOK 353.4/6.0/PRAGIAN 348.2/4.0/EMSIAN 343.4/6.0/EIFELIAN 339.1/3.0/GIVETIAN 336.8/5.0/FAMENNIAN 336.0/13.0/TOURNASIANTOU	341.2/17.0/VISEAN 327.8/18.0/SERPILKHOV 316.9/11.5/BASHKRIAN 307.2/8.0/MOSCOWIAN 299.1/8.0/KASIMOVIAN 232.5/5.0/GZELIAN
MITRATA					
<i>Chinianocarpus thorai</i> Ubags, 1961		1			
<i>Peltocystis cornuta</i> Thorai, 1935		1			
<i>Vizcarriocarpus rufa</i> Lelebvre, 2000		1			
<i>Anatilopsis trapezidiformis</i> Thorai, 1935		1			
<i>Anatilopsis escandens</i> escandens Thorai, 1935		1			
<i>Anatilopsis escandens?</i> <i>thorai</i> ? (Chauvel, 1966)		1			
<i>Anatilopsis craciana</i> Kobayashi, 1960		1			
<i>Anatilopsis truncata</i> Kobayashi, 1960		1			
<i>Ovocarpus monocoreti</i> Ubags, 1994		1			
<i>Ovocarpus? circulans</i> Ubags, 1994		1			
<i>Vizcarriocarpus dentiger</i> Ruta, 1997		1			
<i>Anatilopsis traverzofolius</i> (Chauvel, 1941)		1			
<i>Anatilopsis barnardi</i> (Chauvel, 1941)		1			
<i>Balanocyrtites lagena</i> Barrande, 1887		1			
<i>Balanocyrtites primus</i> (Barrande, 1872)		1			
<i>Lagynocystis pyramidalis</i> (Barrande, 1887)		1			
<i>Mitrocystella baranderi</i> Jaekel, 1901		1			
<i>Mitrocystella mitra</i> Barrande, 1887		1			
<i>Anatilopsis punctata</i> (Bassler, 1950)		1			
<i>Atelecyrtites bivalvis</i> Billings, 1855		1			
<i>Spermacytis ensifer</i> (Barrande, 1887)		1			
<i>Anatilopsis armicana</i> (Chauvel, 1941)		1			
<i>Anatilopsis guthenensis</i> (Chauvel, 1941)		1			
<i>Anatilopsis minuta</i> (Chauvel, 1941)		1			
<i>Anatilopsis ancora</i> Domínguez & Gutiérrez, 1990		1			
<i>Chauvelia discoidalis</i> Cripps, 1959		1			
<i>Eumitrocystella striata</i> Blaisswenger, 1994		1			
<i>Guthenocarpus nunc</i> Chauvel, 1981		1			
<i>Mitrocystella incipiens</i> (Barrande, 1887)		1			
<i>Mitrocystella incipiens minor</i> (Chauvel, 1941)		1			
<i>Anatilopsis acuta</i> Barrande, 1872		1			
<i>Anatilopsis longa</i> Barrande, 1872		1			
<i>Anatilopsis spinosa</i> Ubags, 1979		1			
<i>Atelecyrtites guitarbergenensis</i> Kolata & Jollié, 1982		1			
<i>Aspidocarpus bohemicus</i> Ubags, 1979		1			
<i>Aspidocarpus radicans</i> (Chauvel, 1941)		1			
<i>Barrandocarpus jaekeli</i> Ubags, 1979		1			
<i>Enoploura popis</i> Caster, 1952		1			
<i>Kierovsitsa inserta</i> Parsley, 1991		1			
<i>Khondyle kirkaldyi</i> Parfrey, 1991		1			
<i>Wittmannocystis dentifolata</i> Kolata & Jollié, 1982		1			
<i>Anatilopsis bohemica</i> Barrande, 1872		1			
<i>Anatilopsis papillata</i> (Bassler, 1943)		1			
<i>Enoploura fulminans</i> Wetherby, 1879 [Mesh. F.B. 1872]		1			
<i>Enoploura crustacea</i> (Hauskell, 1896)		1			
<i>Enoploura wetherbyi</i> Caster, 1952		1			
<i>Enoploura meeki</i> Caster, 1952		1			
<i>Anatilopsis batchachienensis</i> Reed, 1940		1			
<i>Barrandocarpus norvegicus</i> Craske & Jeffries, 1989		1			
<i>Dermaphidocystis drepanon</i> Kolata & Guensburg, 1979		1			
<i>Protocyrtidium effusum</i> Ruta & Jell, 1999		1			
<i>Tasmancystidium buratti</i> Caster, 1957		1			
<i>Placocyrtites fortis</i> de Koninck, 1869		1			
<i>Monoleptocarpus canyholi</i> Rozhnov, 1980		1			
<i>Notocarpus garrettii</i> Philp, 1981		1			
<i>Victorinacytis wilsoni</i> Gill & Caster, 1960		1			
<i>Notocarpus praecox</i> (Chapman, 1904)		1			
<i>Adakotocarpus achenanthicus</i> Ruta & Jell, 1999		1			
<i>Adakotocarpus janiae</i> Ruta & Jell, 1999		1			
<i>Anomatoctyrtites curvulus</i> (Miller 1889) Hall, 1859		1			
<i>Probactroctinacytis problematica</i> Ruta & Jell, 1999		1			
<i>Victorinacytis holmstromi</i> Ruta & Jell, 1999		1			
<i>Paranacytis petra</i> Caster, 1954		1			
<i>Anomatoctyrtites disparilis</i> (Hall, 1859)		1			
<i>Paranacytis simoneae</i> Ruta, 1997		1			
<i>Placocyrtites africana</i> (Reed, 1925)		1			
<i>Australocyrtites tangeri</i> Caster, 1954		1			
<i>Occulocyrtida koeneni</i> Haude, 1985		1			
<i>Yachachocystis triangulata</i> Haude, 1995		1			
<i>Borkoveckia austriacae</i> Ruta & Theron, 1997		1			
<i>Alaniacyrtidium florinii</i> Caster & Gill, 1967		1			
" <i>Mitrocystites</i> " <i>stylodus</i> Demn., 1934		1			
<i>Rhenocystis latipedunculata</i> Dehm, 1932		1			
<i>Daleycyrtida costata</i> Prokop, 1963		1			
<i>Jaeckelocarpus oklahomensis</i> Kolata, 1991		1			

Stage	Cambrian	Ordovician	Silurian	Devonian	Carboniferous
Duration	[CFF] 536.5-34.0 527.0-19.0 ST. DAVID'S 513.6-7.0 MERIONETH	TRE ARG LLN LLO CHD ASHI	WEN WENLOCK LUO LUDLOW PRD	PRA ENIS EIF GIV FRS	TOURNASANTOU VIS VISEAN SERPUKHOV BASHKIRIAN BH MOSCOWIAN MOS KASIMOVIAN KAS GE
Midpoint	501.5-17.0 TREMADOC 484.5-17.0 ARENG 472.3-7.5 LLANVYN 466.3-4.5 LLANDEilo 453.5-21.0 CARADOC 441.0-4.0 ASHIGILL 434.7-8.5 LANDOVER/LLY 427.2-6.5 WENLOCK 417.4-13.0 LUDLOW 409.6-2.0 PRIDOL 402.4-12.0 LOCHKOVIAN/LL 393.4-6.0 PRAGIAN 388.2-4.0 OEMSIAN 383.4-6.0 EIFFELIAN 379.1-3.0 GIVETIAN 372.2-10.0 FRASNIAN 364.8-5.0 FAMENNIAN				
CINCTA					
<i>Astuncycsis jaekeli</i> Sdzuy, 1993	1				
<i>Astuncycsis havelocki</i> Fata & Kordule, 2001					
<i>Davidocinctus pembrokeensis</i> Friedrich, 1993	1				
<i>Elliptocinctus barrandei</i> (Münier-Chalmas & Bergeron, 1889)	1				
<i>Elliptocinctus vizcaínai</i> Friedrich, 1995	1				
<i>Gyrocystis badulescensis</i> Friedrich, 1993	1				
<i>Gyrocystis cruzae</i> Gil & Domínguez, 1995	1				
<i>Gyrocystis erecta</i> Friedrich, 1993	1				
<i>Gyrocystis hispanica</i> (Giesen, 1927)	1				
<i>Gyrocystis platessa</i> Jaekel, 1918	1				
<i>Gyrocystis festucliformis</i> Friedrich, 1993	1				
<i>Ludwigocinctus truncatus</i> Friedrich, 1993	1				
<i>Progrycysis disjuncta</i> Friedrich, 1993	1				
<i>Solenocinctus ubaghsii</i> Sdzuy, 1993	1				
<i>Succocystis acrofera</i> Friedrich, 1993	1				
<i>Succocystis bretoni</i> Friedrich, 1993	1				
<i>Succocystis? maroccana</i> (Terrier & Termier, 1973)	1				
<i>Succocystis malendezi</i> (Schroeder, 1973)	1				
<i>Succocystis quadricornuta</i> Friedrich, 1993	1				
<i>Succocystis theronensis</i> Cabello et al., 1959	1				
<i>Succocystis undata</i> Friedrich, 1993	1				
<i>Trochocystoides bohemicus</i> Bairande, 1887	1				
<i>Trochocystoides parvus</i> Jaekel, 1918	1				
<i>Trochocystoides planus</i> Sdzuy, 1993	1				
CTENOCYSTOIDEA					
<i>Ctenocystis colodon</i> Ubaghs & Robison, 1988	1				
<i>Ctenocystis jagoi</i> Jell et al., 1985	1				
<i>Ctenocystis smithi</i> Ubaghs, 1987	1				
<i>Ctenocystis utahensis</i> Robison & Sprinkle, 1969	1				
<i>Ectenocystis bohemica</i> Fata & Kordule, 1985	1				
<i>Jugoszovia archaeocyathoides</i> Dzik & Orlowski, 1995	1				
TOTALS					
Solita	2	1 1 3 8 4		3 1	
Cornuta	5 6	3 23 4 7 1 4	1 1 4 1	4 3 8 1	1
Mirata		5 7 7 12 17 4			
Cincta	24				
Ctenocystoidea	6				
Total/stage	37 6	8 31 12 22 26 12	1 1 4 1	4 6 9 1	1
Solita	2	16		4	
Cornuta	11	41		16	
Mirata		51	7		1
Cincta	24				
Ctenocystoidea	6	108	7	20	
Total/serie	43				

ACKNOWLEDGEMENTS

We thank referee E. MORENO, an anonymous referee and P. SEVILLA, Directora of Coloquios de Paleontología, for useful suggestions to improve the text.

P. DOMÍNGUEZ was supported by the Spanish Government (Ministerio de Educación Cultura y Deportes) through the *Programa Nacional de Formación de Personal Investigador, Becas en el Extranjero y, excepcionalmente, en España, Secretaría de Estado de Educación y Universidades*.

Recibido el día 15 de marzo de 2002
Aceptado el día 9 de septiembre de 2002

V. REFERENCES

- BARRANDE, J. 1859. État actuel des connaissances acquises sur la faune primordiale. *Bulletin Société géologique de la France*, 2: 516-546.
- 1872. *Système Silurien du centre de la Bohème. 1ere Partie: Recherches paléontologiques. Supp. Vol. I. Trilobites, Crustacés divers et Poisins*, 647 págs. Praga-Leipzig.
- 1887. *Système Silurien du centre de la Bohème. Vol. VII. Classe des échinodermes, ordre des Cystidées*. 233 págs. Praga-Leipzig.

- BARTELS, C., BRIGGS, D.E.G. & BRASSEL, G. 1998. *The fossils of the Hunsrück Slate. Cambridge Paleobiology Series*. 3. 309 págs. Cambridge University Press. Cambridge.
- BASSLER, J. 1950. New genera of American Middle Ordovician «Cystoidea». *Journal of the Washington Academy of Sciences*, **40**(9): 273-277.
- BASSLER, R.S. 1943. New Ordovician cystidean echinoderms from Oklahoma. *American Journal of Science*, **241**(11): 694-703.
- BATHER, F.A. 1913. Caradocian Cystidea from Girvan. *Transactions of the Royal Society of Edinbourg*, **XLIX**, II(6): 359-529.
- 1926. *Cothurnocystis*: A study in Adaptation. *Paläontologische Zeitschrift*, **7**: 1-15.
- BEISSWINGER, M. 1994. A calcichordate interpretation of the new mitrate *Eunitrocystella savilli* from the Ordovician of Morocco. *Paläontologische Zeitschrift*, **68**(3-4): 443-462.
- BENTON, M.J. 1993. *The Fossil Record 2*. 529-535 págs. Chapman & Hall. Londres.
- BERGERON, J. 1889. Etude géologique du Massif ancien situé au Sud du Plateau Central. *Annales Sciences géologiques*, **22**: 1-361.
- BILLINGS, E. 1858. On the Cystidea of the Lower Silurian rocks of Canada. Figures and descriptions. *Canadian Organic Remains*, **3**: 9-74.
- 1859. On the Crinoidea of the lower Silurian rocks of Canada. *Canadian Organic Remains*, **4**: v-vi+7-66.
- CABIBEL, J., TERMIER, H. & TERMIER, G. 1959. Les échinodermes mesocambriens de la Montagne Noire (sud de la France). *Annales de Paléontologie*, **44**: 281-294.
- CASTER, K.E. 1952. Concerning *Enoploura* of the Upper Ordovician and its relation to other carpoid Echinodermata. *Bulletin of American Paleontology*, **34**(141): 5-47 + 120-127.
- 1954a. Brazilian Devonian carpoids. *Journal of Paleontology*, **28**(4): 511.
 - 1954b. A new carpoid echinoderm from the Paraná Devonian. *Anais da Academia Brasileira de Ciencias*, **26**(1): 123-147.
 - 1967. Homioosteola. In: *Treatise on Invertebrate Paleontology*. (S) Echinodermata 1(2). R.C. MOORE, Ed. S581-S623. Geological Society of America (and Univ. Kansas Press). New York.
 - 1983. A new Silurian carpoid echinoderm from Tasmania and a revision of the *Allanicystidiidae*. *Alcheringa*, **7**(3-4): 321-335.
- CASTER, K.E. & EATON, J.T.H. 1956. Microstructure of the plates in the carpoid echinoderm *Paranacystis*. *Journal of Paleontology*, **30**(3): 611-614.
- CHAPMAN, F. 1904. New or little known Victorian fossils in the National Museum, Melbourne. Part 4- Some Silurian Ostracoda and Phyllocarida. *Proceedings of the Royal Society of Victoria*, **17**: 298-319.
- CHAUVEL, J. 1937. Les Heterostélées armoricaines. *Compte Rendu sommaire de la Société Géologique et Minéralogique de Bretagne*, **2**: 1-3.
- 1941. Recherches sur les cystoïdes et les carpoides armoricains. *Société Géologique et Minéralogique de Bretagne*, **5**: 1-286.
- 1966a. *Echinodermes de l'Ordovicien du Maroc*. *Cahiers de Paléontologie*, 1-120.
 - 1966b. Présence du genre *Anatifopsis* Barrande (crustaces) dans l'ordovicien du Maroc. *Compte Rendu sommaire des Séances de la Société Géologique de France*, **8**: 301-302.
 - 1971. Les Echinodermes Carpoides du Paléozoïque inférieur marocain. *Notes et Mémoires du Service Géologique du Maroc*, **237**: 49-60.
 - 1982. Etude critique de quelques Echinodermes Stylophores du Massif armoricain. *Bulletin de la Société Géologique et Minéralogique de Bretagne. Série C*, **13**(2): 67-101.
 - 1986. *Milonicystis kerfornei* n. gen. n. sp.; un nouvel Echinoderme homalozoaire de l'Ordovicien armoricain. *Hercynica*, **2**(1): 79-81.
- CHAUVEL, J. & NION, J. 1977. Echinoderms (Homalozoa: Corntuta et Mitrata) nouveaux pour l'Ordovicien du Massif Armorican et conséquences Paléogéographiques. *Géobios*, **10**(1): 35-49.
- CRASKE, A.J. & JEFFRIES, R.P.S. 1989. A new mitrate from the Upper Ordovician of Norway, and a new approach to subdividing a plesiomorph. *Palaeontology*, **32**(1): 69-99.
- CRIPPS, A.P. 1988. A new species of stem-group chordate from the upper Ordovician of Northern Ireland. *Palaeontology*, **31**(4): 1053-1077.
- 1989. A new genus of stem chordate (Cornuta) from the Lower and Middle Ordovician of Czechoslovakia and the origin of bilateral symmetry in the chordates. *Géobios*, **22**(2): 215-246.
 - 1990. A new craniate from the Ordovician of Morocco and the search for the sister group of the craniata. *Zoological Journal of the Linnean Society*, **100**: 27-71.
 - 1991. A cladistic analysis of the cornutes (stem chordates). *Zoological Journal of the Linnean Society*, **102**: 333-366.
- CRIPPS, A.P. & DALEY, P.E.J. 1994. Two cornutes from the Middle Ordovician (Llandeilio) of Normandy, France, and a reinterpretation of *Milonicystis kerfornei*. *Palaeontographica Abteilung A: Palaeozoologie-Stratigraphie*, **232**(4-6): 99-132.
- DALEY, P.E.J. 1992. Two new cornutes from the Lower Ordovician of Shropshire and southern France. *Palaeontology*, **35**(1): 127-148.
- 1995. Anatomy, locomotion and ontogeny of the solute *Castericystis vali* from the Middle Cambrian of Utah. *Géobios*, **28**(5): 585-615.
 - 1996. The first solute which is attached as an adult: a Mid-Cambrian fossil from Utah with echinoderm and chordate affinities. *Zoological Journal of the Linnean Society*, **117**: 405-440.
- DEHM, R. 1932. Cystoideen aus dem rheinischen Unterdevons. *Neues Jahrbuch für Mineralogie, Geologie und Paläontologie*, **B69**: 63-93.
- 1934. Untersuchungen an Cystoideen des rheinischen Unterdevons. *Sitzungsberichte der Bayerischen Akademie der Wissenschaften für 1934*: 19-43.
- DOMÍNGUEZ, P. 1999. The early evolution of echinoderms The class Ctenocystoidea revisited. In: *Echinoderm Research proceedings of the European Conference on Echinoderms*. C.

- CARNEVALLI & F. BONASORO, Eds. págs. 263-268, A.A. Balkema Rotterdam.
- DOMÍNGUEZ, P. & GUTIÉRREZ-MARCO, J.C. 1990. Primeros representantes ibéricos del género *Anatifopsis* Barrande, 1872. (*Homalozoa Stylophora*; Ordovícico) y su posición sistemática. *Acta Saltanicensia*, **68**(1990): 121-131.
- DOMÍNGUEZ, P., JACOBSON, A.G. & JEFFERIES, R.P.S. 2002. Paired gill slits in a fossil with a calcite skeleton. *Nature*, **417**: 841-844.
- DŽIK & OREŁOWSKI, S. 1995. Primitive ctenocystoid echinoderm from the earliest middle cambrian of Poland. *Annales de Paléontologie (Vert.-Invert.)*, **81**: 17-35.
- FATKA, O. & KORDULE, V. 1985. *Etoctenocystis bohemica* gen. et sp. nov., new ctenocystoid from Czechoslovakia (Echinodermata, Middle Cambrian). *Vestnik Ustredniho Ustavu Geologickeho*, **60**(4): 225-230.
- 2001. *Asturicystis havlicekii* sp. nov. (Echinodermata, Homostelea) from the Middle Cambrian of Bohemia. *Casopis České Geologické Společnosti (=Journal of the Czech Geological Society)*, **46**
- FLEMING, C.A. 1970. The Reefton carpoid; a unique fossil of world interest. *Newsletter Geological Society of New Zealand*, **28**: 45-46.
- FRIEDRICH, W.P. 1993. Systematik und Funktionsmorphologie mittelkambrischer Cincta (Carpoidea, Echinodermata). *Beringeria*, **7**: 3-190.
- 1995. Neue Nachweise mittelkambrischer Cincta (Carpoidea, Echinodermata) aus Marokko, Sardinien und Süd-Wales. In: *Morocco '95 - The Lower-Middle Cambrian standard of western Gondwana; introduction, field guide, abstracts, and proceedings of the First conference of the Lower Cambrian Stage Subdivision Working Group and I.G.C.P. Project 366 Ecological Aspects of the Cambrian Radiation*. G. GEYER & E. LANDING, Eds. *Beringeria, Sonderheft 2*: 255-269
- HECKER, R.F. 1940. Carpoida, Eocrinoida und Ophiocistia des Ordoviziums des Leningrader Gebietes und Estlands. *Academy of Sciences of the URSS, Institute of Paleontology, Tr. t., 9(4)*: 5-82.
- GIGOUT, M. 1954. Sur un hétérostélé de l'Ordovicien marocain. *Bulletin de la Société des Sciences Naturelles du Maroc*, **34**: 3-7.
- GIL CID, M.D. & DOMÍNGUEZ, P. 1994. Nueva especie de *Gyrocystis* Jaekel, 1918 (equinodermo cincta) del Cámbrico Medio de Asturias. In: *Comunicaciones de las X Jornadas de Paleontología*. S. FERNANDEZ LOPEZ, Ed. págs. 96-98. Universidad Complutense de Madrid, Madrid.
- GIL CID, M.D., DOMÍNGUEZ, P., SILVÁN POBES, E. & ESCRIBANO-RÓDENAS, M. 1996. *Bohemiaecystis jefferiesti*, n. sp., primer Cornuta para el Ordovícico español. *Estudios geológicos*, **52**(5-6): 313-326.
- GILL, E.D. & CASTER, K.E. 1960. Carpoid echinoderms from the Silurian and Devonian of Australia. *Bulletins of American Paleontology*, **41**(185): 1-71.
- GISLÉN, T. 1927. A new Spanish carpoid. *Arkiv zoologi*, **19** B(2): 1-3.
- 1930. Affinities between the Echinodermata, Enteropneusta and Chordonia. *Zoologiska Bidrag från Uppsala*, **12**: 199-304.
- GUTIÉRREZ-MARCO, J.C. & MELÉNDEZ, B. 1987. Nuevos hallazgos de Estilosforos (Homalozoa) en los materiales ordovícicos de la zona centroibérica. *Coloquios de Paleontología*, **41**: 41-50.
- HADDING, A. 1913. Undre Dicellograptusskeffern i Skane jämte nagra därmed ekvivalenta bildningar. *Lunds Universitet Årsskrift n. f. 2*, **9**(15): 1-91.
- 1915. Der mittlere Dicellograptusschiefer aus Bornholm. *Lunds Universitet Årsskrift n. f. 2*, **11**(4): 1-39.
- HAECKEL, E. 1896. *Die Amphoridien und Cystoideen. Beiträge zur Morphologie und Phylogenie der Echinodermen. Festschrift zur Siebzigsten Geburtstage von Carl Gegenbaur*, I. Engelmann, Leipzig, 32-45, Pl. 32 págs.
- HALL, J. 1859. Crinoids of New York. *American Journal of Science and Arts; Scientific intelligence, II, geology*, **4**(25): 277-279.
- HAUDE, R. 1980. A new mitrate from the Lower/Middle Devonian, and evolutionary reconstruction of carpoid echinoderms. In: *Echinoderms; present and past*. M. JANGOUX, Ed. págs. 25-28. A.A. Balkema. Rotterdam.
- 1983. Kaum bekannte und seltene Echinodermen aus dem Mitteldevon des rechtsrheinischen Schiefergebirges. *Der Aufschluss*, **34**(2): 101-110.
 - 1995. Echinodermen aus dem Unter-Devon der argentinischen Präkordillere. *Neues Jahrbuch für Geologie und Paläontologie, Abhandlungen*, **197**(1): 37-86.
- HICKS, H. & JONES, T.R. 1872. On some undescribed fossils from the Menevian Group. By Henry Hicks. With a note on Entomostraca from the Cambrian rocks of St. David's. By Prof. Rupert Jones. *Quaternary Journal of the Geological Society of London*, **28**: 173-185.
- JAEKEL, O.
- 1901. Über Carpoideen, eine neue Klasse von Pelmatozoen. *Zeitschrift der Deutschen Geologischen Gesellschaft*, **52**: 661-677.
 - 1918. Phylogenie und System der Pelmatozoen. *Paläontologische Zeitschrift*, **3**(1): 1-128.
- JEFFERIES, R.P.S. 1967. Some fossil chordates with echinoderm affinities. *Symposium zoological Society of London*, **20**: 163-208.
- 1968. The subphylum Calcichordata (Jefferies, 1967) – primitive fossil chordates with echinoderm affinities. *Bulletin of the British Museum (Natural History): Geology*, **16**: 243-339.
 - 1969. *Ceratocystis perneri* Jaekel, a Middle Cambrian chordate with echinoderm affinities. *Palaeontology*, **12**(3): 494-535.
 - 1973. The Ordovician fossil *Lagynocystis pyramidalis* (Barrande) and the ancestry of amphioxus. *Philosophical Transactions of the Royal Society of London series B, Biological*, **265**(871): 409-469.
 - 1982. The calcichordate controversy; comments on *Notocarpus garratti* Philip. *Alcheringa*, **6**(1-2): 78.
 - 1984. Locomotion, shape, ornament, and external ontogeny in some mitrate calcichordates. *Journal of Vertebrate Paleontology*, **4**(3): 292-319.
 - 1986. *The ancestry of the vertebrates*. 376 págs. British Museum, Natural History. London.

- 1987. The chordates - a preliminary note. In: *The Arenig series in South Wales*. R.A. FORTEY & R.M. OWENS, Eds. *Bulletin British Museum of Natural History (geology)*, **41**: 285-290.
- 1990. The solute *Dendrocystoides scoticus* from the Upper Ordovician of Scotland and the ancestry of chordates and echinoderms. *Paleontology*, **33**(3): 631-679.
- 1997. How chordates and echinoderms separated from each other and the problem of dorso-ventral inversion. In: *Geobiology of Echinoderms*, J.A. WATERS & C.G. MAPLES, Eds. *The Paleontological Society Papers*, **3**: 249-266.
- JEFFRIES, R.P.S. & DALEY, P.E.J. 1996. Calcichordates. *Paleontological Association Field Guides to Fossils*, **7**: 268-276.
- JEFFRIES, R.P.S. & LEWIS, D.N. 1978. The English Silurian fossil *Placocystites forbesianus* and the ancestry of the vertebrates. *Philosophical Transactions of the Royal Society (B)*, **282**: 205-323.
- JEFFRIES, R.P.S., LEWIS, M. & DONOVAN, S.K. 1987. *Protocystites menevensis*; a stem-group chordate (Cornuta) from the Middle Cambrian of South Wales. *Paleontology*, **30**(3): 429-484.
- JEFFRIES, R.P.S. & PROKOP, R.J. 1972. A new calcichordate from the Ordovician of Bohemia and its anatomy, adaptations and relationships. *Journal of the Linnean Society. Biology*, **4**(2): 69-115.
- JELL, P.A. 1999. *Dithyrocaris praecox* is a carpoid. *Memoirs of the Queensland Museum*, **43**(1): 452.
- JELL, P.A., BURRITT, C.F. & BANKS, M.R. 1985. Cambrian and Ordovician echinoderms from eastern Australia. *Alcheringa*, **9**(3): 183-208.
- JELL, P.A. & HOLLOWAY, D. 1982. Anal structure in *Rutroclypeus* Withers, 1933. *Alcheringa*, **6**(1-2): 42.
- KIRK, E. 1911. The structure and relationships of certain eukaryotic Pelmatozoa. *United States National Museum Proceedings*, **41**: 1-137.
- KOBAYASHI, T. 1960. The Cambro-Ordovician formations and faunas of South Korea, part VI. *Journal of the Faculty of Science University of Tokio Section II Geology, Mineralogy, Geography, Geophysics*, **XII**(2): 217-275.
- KOLATA, D.R. 1973. Paleoecology and systematics of the echinoderm faunas of the middle Ordovician Platteville and lower Galena groups of north-central Illinois and south-central Wisconsin. 1973 Doctoral Thesis, University of Illinois, Urbana, IL, United States. 237 págs. [Diss. Abstr. Int., **34**(12, Part 1): 6137b]
- 1973. *Scalenocystites strimplei*, a new middle Ordovician belemnocystitid solute from Minnesota. *Journal of Paleontology*, **47**(5): 969-974.
- 1975. Middle Ordovician echinoderms from northern Illinois and southern Wisconsin. *Journal of Paleontology*, **49**(3 Suppl., Part 2): 1-74.
- KOLATA, D.R., FREST, T.J. & MAPES, R.H. 1991. The youngest carpoid; occurrence, affinities, and life mode of a Pennsylvanian (Morrowan) mitrate from Oklahoma. *Journal of Paleontology*, **65**(5): 844-855.
- KOLATA, D.R. & GUENSBURG, T.E. 1979. *Diamphidiocystis*, a new mitrate "carpoid" from the Cincinnati (Upper Ordovician) Maquoketa Group in southern Illinois. *Journal of Paleontology*, **53**(5): 1121-1135.
- KOLATA, D.R. & JOLLIE, M. 1982. Anomalocystitid mitrates (Stylophora-Echinodermata) from the Champlainian (Middle Ordovician) Guttenberg Formation of the Upper Mississippi Valley region. *Journal of Paleontology*, **56**(3): 631-653.
- KOLATA, D.R., STRIMPLE, H.L. & LEVORSON, C.O. 1975. Morphologic variation in the solutan carpoid family Iowacystidae (Echinodermata). *Geological Society of America, Abstracts with Programs, North-central Section, 9th annual meeting, Waterloo, Ontario*. 799.
- 1977. Revision of the Ordovician carpoid family Iowacystidae. *Paleontology*, **20**(3): 529-557.
- KUTSCHER, F.R. 1975. Beiträge zur Sedimentation und Fossilführung des Hunsrückschiefers; 41 "Cystoideen"-Arten im Hunsrückschiefer. *Notizblatt des Hessischen Landesamtes für Bodenforschung zu Wiesbaden*, **103**: 43-52.
- LEFEVRE, B. & VIZCAÍNO, D. 1999. New Ordovician cornutes (Echinodermata, Stylophora) from Montagne Noire and Brittany (France) and a revision of the order Cornuta Jaekel 1901. *Géobios*, **32**(3): 421-458.
- LEFEVRE, B. 2000a. Les echinodermes Stylophores du Massif Armoricain. *Bulletin Société Sciences Naturelles Ouest de la France*, **22**(3): 101-122.
- 2000b. A new mitrate (Echinodermata Stylophora) from the Tremadoc of Shropshire (England) and the origin of the Mitrocystitida. *Journal of Paleontology*, **74**(5): 890-906.
- MARTÍ MUS, M. 2002. The Ordovician cornute *Flabelliscystis rushtonii* n. gen. n. sp. (Stylophora, Echinodermata) and its phylogenetic position within the group Cornuta. *Paläontologische Zeitschrift*, **76**(1): 99-116.
- MEEK, F.B. 1872. Descriptions of two new starfishes and a crinoid from the Cincinnati group of Ohio and Indiana. *American Journal of Science*, **3**(3): 257-262.
- MILLER, S.A. & GURLEY, W.F.E. 1894. New genera and species of Echinodermata. *Illinois State Museum, Natural History Bulletin*, **5**: 5-53.
- PARSLEY, R.L. 1972. The Befemnoscystitidae; solutan homeomorphs of the Anomalocystitidae. *Journal of Paleontology*, **46**(3): 341-347.
- 1981. Echinoderms from Middle and Upper Ordovician rocks of Kentucky. *United States Geological Survey Professional Paper*. 9 págs.
- 1991. Review of selected North American mitrate stylophorans (Hornalozoa: Echinodermata). *Bulletins of American Paleontology*, **100**: 1-57.
- 1994. Mitrocystitid functional morphology, evolution and their relationships with other primitive echinoderm classes. In: B. DAVID, A. GUIILLE, J.-P. FERAL & M. ROUX, Eds. *Echinoderms through time. Proceedings of the Eighth International Echinoderm Conference, Dijon, France, 6-10 September 1993*. págs. 167-172. A.A. Balkema, Rotterdam & Brookfield.
- 2000. Morphological and paleoecological analysis of the Ordovician ankyroid Lagynocystis (Stylophora; Echinodermata). *Journal of Paleontology*, **74**(2): 254-262.

- PARSLEY, R.L. & CASTER, K.E. 1965. North American Soluta (Carpoidea, Echinodermata). *Bulletins of American Paleontology*, **49**(221): 109-174.
- PARSLEY, R.L. & PROKOP, R. 1999. Phylogeny and functional morphology of kirkocystid ankyroids (Stylophora, Echinodermata). *Abstracts with Programs - Geological Society of America*, **31**(7): 43.
- PARSLEY, R.L., PROKOP, R.J. & DERSTLER, K. 2000. Kirkocystid ankyroids (Stylophora: Echinodermata) from the Sarka Formation (Ordovician) of Bohemia. *Vestnik Ceskeho Geologickeho Ustavu*, **75**(1): 37-47.
- PETR, V. 1984. Zpusob zivotu «karpoida» druhu *Anatiferocystis spinosa* Ubaghs, 1979 (Homalozoa, Stylophora) z Ceskeho stredniho Ordoviku. *Cesky Kras*, **10**: 75-79.
- PHILIP, G.M. 1981. *Notocarpos garratti* gen. et sp. nov., a new Silurian mitrate carpoid from Victoria. *Alcheringa*, **5**(1-2): 29-38.
- PROKOP, R.J. 1963. *Dalejocystis* n.gen., the first representative of the Carpoidea in the Devonian of Bohemia. *Journal of Paleontology*, **37**(3): 648-650.
- REED, F.R.C. 1940. New Ordovician fossils from Girvan. *Annals and Magazine of Natural History, Series 11*, **6**: 154-160.
- RENNIE, J.V.L. 1936. On *Placocystella*, a new genus of cystids from the lower Devonian of South Africa. *Annals of the South African Museum*, **31**: 269-275.
- ROBISON, R.A. & SPRINKLE, J. 1969. Ctenocystoidea. New class of primitive echinoderms. *Science*, **166**: 1512-1514.
- ROLFE, W.D.I. 1969. Phyllocardia. In: *Treatise on Invertebrate Paleontology, R, Arthropoda (4) 1*. R.C. MOORE, Ed. págs. R296-331. Geological Society of America & University of Kansas (Boulder, Colorado & Lawrence, Kansas).
- ROSOVA, A.V., Rosov, S.N. & DUBATOLOVA, Y.A. 1985. Stratigraphy and fauna of the Ordovician of the north western Salair. *Sovietskaya Akademiya Nauk Sibirskoe Otdelenie Trudy Instituta Geologii i Geofiziki*, **637**: 1-159.
- ROZHNOV, S.V. 1990. New representatives of the class Stylophora (echinoderms). *Paleontological Journal*, **24**(4): 34-45.
- ROZHNOV, S.V. & JEFFERIES, R.P.S. 1996. A new stem-chordate solute from the Middle Ordovician of Estonia. *Géobios*, **29**(1): 91-109.
- RUTA, M. 1997a. First record of a paranacystid mitrate from the Bokkeveld Group of South Africa. *Palaeontologia Africana*, **34**: 15-25.
- 1997b. A new mitrate from the Lower Ordovician of Southern France. *Palaeontology*, **40**(2): 363-383.
- 1997c. Redescription of the Australian mitrate *Victoriacystis* with comments on its functional morphology. *Alcheringa*, **21**(1-2): 81-101.
- 1997d. First record of the mitrate *Barrandeocarpus* from England. *Paläontologische Zeitschrift*, **71**(1-2): 97-105.
- 1998. An abnormal specimen of the silurian anomalocystitid mitrate *Placocystites forbesianus*. *Palaeontology*, **41**(1): 173-182.
- 1999a. A Cladistic analysis of the anomalocystitid mitratees. *Zoological Journal of the Linnean Society*, **127**: 345-421.
- 1999b. A new stylophoran echinoderm, *Juliaeacarpus milnerorum*, from the Late Ordovician upper Ktaoua Formation of Morocco. *Bulletin of the Natural History Museum. Geology Series*, **55**(2): 47-79.
- RUTA, M. & BARTELS, C. 1998. A redescription of the anomalocystitid mitrate *Rhenocystis latipedunculata* from the Lower Devonian of Germany. *Palaeontology*, **41**(4): 771-806.
- RUTA, M. & JELL, P.A. 1999a. *Adoketocarpus* gen. nov., a mitrate from the Ludlovian Kilmore siltstone and Lochkovian Humevale Formation of Central Victoria. *Memoirs of the Queensland Museum*, **43**(1): 377-398.
- 1999b. *Protocytidium* gen. nov., a new anomalocystitid mitrate from the Victorian latest Ordovician and Evolution of Allanicystidiidae. *Memoirs of the Queensland Museum*, **43**(1): 353-376.
- 1999c. Revision of Silurian and Devonian Allanicystidae (Anomalocystitida: Mitrate) from Southeastern Australia, Tasmania and New Zealand. *Memoirs of the Queensland Museum*, **43**(1): 431-451.
- 1999d. Two new anomalocystitid mitrates from the Lower Devonian Humevale Formation of Central Victoria. *Memoirs of the Queensland Museum*, **43**(1): 399-422.
- RUTA, M. & THERON, J.N. 1997. Two devonian mitrates from South Africa. *Palaeontology*, **40**(1): 201-243.
- SAVazzi, E., JEFFERIES, R.P.S. & SIGNOR, P.W.I. 1982. Modification of the paradigm for burrowing ribs in various gastropods, crustaceans and calcichordates. *Neues Jahrbuch für Geologie und Paläontologie. Abhandlungen*, **164**(1-2): 206-217.
- SCHROEDER, R. 1973. Carpoideen aus dem Mittelkambrium Nordspaniens. *Palaeontographica. Abteilung A: Palaeozoologie Stratigraphie*, **141**(5-6): 119-141.
- SCHUCHERT, C. 1904. On Siluric and Devonian Cystidea and Camarocrinus. *Smithsonian Miscellaneous Collections*, **47**: 201-272.
- SDZUY, K. 1993. Early Cincta (Carpoidea) from the Middle Cambrian of Spain. *Beringeria*, **8**: 189-207.
- SMITH, A.B. & JELL, P.A. 1999. A new cornute carpoid from the upper Cambrian (Idamean) of Queensland. *Memoirs of the Queensland Museum*, **43**(1): 341-350.
- SMITH, A.G. & HOARE, R.D. 1987. Palaeozoic Polyplacophora: a checklist and bibliography. *California Academy of Sciences, Occasional Papers*, **146**: 1-71.
- STRIMPLE, H.L. 1953. A new carpoid from Oklahoma. *Washington Academy of Sciences Journal*, **43**(4): 105-106.
- SUMRALL, C.D. & SPRINKLE, J. 1999. *Ponticulocarpus*, a new cornute-grade stylophoran from the Middle Cambrian Spence Shale of Utah. *Journal of Paleontology*, **73**(5): 886-891.
- SUMRALL, C.D., SPRINKLE, J. & GUENSBURG, T.E. 1997. Systematics and paleoecology of Late Cambrian echinoderms from the Western United States. *Journal of Paleontology*, **71**(6): 1091-1109.
- SUTCLIFFE, O.E., SÜDKAMP, W.H. & JEFFERIES, R.P.S. 2000. Ichnological evidence on the behaviour of mitrates; two trails associated with the Devonian mitrate *Rhenocystis*. *Lethaia*, **33**(1): 1-12.
- TERMIER, H. & TERMIER, G. 1973. Les Échinodermes Cincta du Cambrien de la Montagne Noire (France). *Géobios*, **6**(4): 243-266.

- THOMAS, A.O. & LADD, H.S. 1926. Additional cystoids and crinoids from the Maquoketa shale of Iowa. *Iowa University Studies, new series no. 104, Studies in Natural History*, **11**(8): 5-18.
- THORAL, M. 1935a. Contribution à l'étude géologique des Monts de Lacaua et des terrains cambriens et ordoviciens de la Montagne Noire. *Bulletin du Service de la Carte Géologique de France*, **192** (38): 318 págs.
- 1935b. *Contribution à l'étude paléontologique de l'ordovicien inférieur de la Montagne Noire*. 363 págs. Imprimerie de la Charité.
- UBAGHS, G. 1961. Un echinoderme nouveau de la classe des carpoides dans l'ordovicien inférieur du département de l'Hérault (France). *Comptes Rendus de l'Académie de Sciences*, **253**(22): 2565-2567.
- 1963. *Cothurnocystis* Bather, *Phyllocystis* Thoral and an undetermined member of the order Soluta (Echinodermata, Carpoidea) in the uppermost Cambrian of Nevada. *Journal of Paleontology*, **37**(6): 1133-1142.
- 1967a. Homostelea. In: *Treatise on Invertebrate Paleontology*. (S) Echinodermata 1(2). R.C. MOORE, Ed. págs. S565-S581. Geological Society of America and University of Kansas Press. New York.
- 1967b. Le genre *Ceratocystis* Jaekel (Echinodermata, Stylophora). *University of Kansas Paleontological Contributions, Paper*, **22**: 1-16.
- 1967c. Stylophora. In: *Treatise on Invertebrate Paleontology*. (S) Echinodermata 1(2). R.C. MOORE, Ed. págs. S495-S565. Geological Society of America and University of Kansas Press. New York.
- 1969. Les echinodermes «Carpoides» de l'Ordovicien inférieur de la Montagne Noire (France). *Cahiers de Paléontologie, Éditions du CNRS*: 112 págs.
- 1979. Trois Mitrata (Echinodermata: Stylophora) nouveaux de l'Ordovicien de Tchécoslovaquie. *Paläontologische Zeitschrift*, **53**(1-2): 98-119.
- 1983. Echinodermata. Notes sur les Échinodermes de l'Ordovicien de la Montagne Noire (France). In: *Calymenina, Echinodermata et Hyolitha de l'Ordovicien inférieur de la Montagne Noire (France méridionale)*. R. COURTESSOLE, L. MAREK, J. PILLET, G. UBAGHS & D. VIZCAÍNO, Eds. págs. 33-35. *Mémoires de la Société d'Etudes Scientifiques de l'Aude*.
- 1987. Echinoderms nouveaux du Cambrien moyen de la Montagne Noire (France). *Annales de Paléontologie*, **73**: 1-27.
- 1991. Deux Stylophora (Homozoa, Echinodermata) nouveaux pour l'Ordovicien inférieur de la Montagne Noire (France méridionale). *Paläontologische Zeitschrift*, **65**(1-2): 157-171.
- 1994. Échinodermes nouveaux (Stylophora, Eocrinoidae) de l'Ordovicien Inférieur de la Montagne Noire (France). *Annales de Paléontologie (Invert.-Vert.)*, **80**(2): 107-141.
- 1998. Echinoderms nouveaux du Cambrien supérieur de la Montagne Noire (France méridionale). *Géobios*, **31**(6): 809-829.
- UBAGHS, G. & ROBISON, R.A. 1985. A new homiostelean and a new eocrinoid from the Middle Cambrian of Utah. *University of Kansas Paleontological Contributions, Paper*, **115**: 1-24.
- 1988a. Homalozoan echinoderms of the Wheeler Formation (Middle Cambrian) of western Utah. *University of Kansas Paleontological Contributions, Paper*, **120**: 1-17.
- VIZCAÍNO, D. & LEPEVRE, B. 1998. Les echinoderms du Paléozoïque Inferieur de Montagne Noire: Biostratigraphie et Pâleodiversité. *Géobios*, **32**(2): 353-364.
- WETHERBY, A.G. 1879. Description of a new family and genus of Lower Silurian Crustacea. *Journal of the Cincinnati Society of Natural History*, **1** (4): 162-166.
- WITHERS, R.B. 1933. A new genus of fossil king-crab. *Royal Society of Victoria Proceedings*, **45**: 18-22.
- WOODS, I.S. & JEFFRIES, R.P.S. 1992. A new stem-group chordate from the Lower Ordovician of South Wales, and the problem of locomotion in boot-shaped conules. *Palaeontology*, **35**(1): 1-25.
- WOODWARD, H.P. 1880. Notes on the Anomalocystidae, a remarkable family of Cystoidea found in the Silurian rocks of North America and Britain. *Geological Magazine*, **7**: 193-201.