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SUPPLEMENTARY ONLINE MATERIAL FOR

Patterns of spatio-temporal distribution as criteria for the separation of planktic foraminiferal species across the Danian-Selandian transition

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Taxonomic list -in alphabetical order- and diagnostic characters of the D-S planktic foraminiferal species (Arenillas, 1996 modified):

Acarinina arabica (El Naggar, 1966): Trochospiral test, with moderately high spire, 5.5-7 hemispherical chambers in the last spiral whorl, low rate of size increase, axial periphery rounded, aperture intraumbilical, wall surface muricate (Figs. 5L -holotype-, M).

Acarinina hansbollii (Blow and Banner, 1962): Trochospiral test, with low spire, 4 hemispherical chambers in the last spiral whorl, moderate to high rate of size increase, axial periphery rounded, aperture umbilical-extraumbilical, wall surface muricate (Figs. 7A -holotype-, B, C, D).

Acarinina indolensis Morozova (1959): Trochospiral test, with slightly high spire, 4.5-5 hemispherical chambers in the last spiral whorl, low rate of size increase, axial periphery rounded, aperture intraumbilical, low-arched, wall surface muricate (Figs. 5H -holotype-, I).

Acarinina praeaqua Blow (1979): Trochospiral test, with flat spire, 4 subconical chambers in the last spiral whorl, moderate to high rate of size increase, axial periphery subangular to angular, aperture umbilical-extraumbilical, wall surface muricate (Figs. 7E -holotype-, F, G).

Acarinina praecursoria Morozova (1957): Trochospiral test, with low spire, 6.5-8 hemispherical chambers in the last spiral whorl, low rate of size increase, axial periphery rounded, aperture umbilical-extraumbilical, wall surface muricate (Figs. 5J -holotype-, K).

Acarinina praepentacamerata (Shutskaya, 1956): Trochospiral test, with flat spire, 5-6 hemispherical to subconical chambers in the last spiral whorl, moderate rate of size increase, axial periphery subangular to angular, occasionally with an incipient muricocarina, aperture umbilical-extraumbilical, wall surface muricate (Figs. 5J -holotype-, K, L).

Acarinina trinidadensis (Bolli, 1957): Trochospiral test, with low spire, 5-6 hemispherical to spherical chambers in the last spiral whorl, moderate rate of size increase, axial periphery rounded, aperture umbilical-extraumbilical, wall surface muricate except for the last chambers, which are cancellate (Figs. 5E -holotype-, F, G).

Acarinina uncinata (Bolli, 1957): Trochospiral test, with low spire, 5-6 hemispherical chambers in the last spiral whorl, moderate rate of size increase, axial periphery rounded, aperture umbilical-extraumbilical, wall surface muricate (Figs. 5H -holotype-, F).

Chiloguembelina crinita (Glaessner, 1937): Biserial test, 8-14 spherical chambers, moderate rate of size increase, lateral periphery rounded, round-arched aperture basal-lateral and asymmetrical, wall surface ornamented with blunt to sharp pustules (Figs. 8T -holotype-, U).

Chiloguembelina midwayensis (Cushman, 1940): Biserial test, 12-18 frontally widened ovate chambers, moderate to high rate of size increase, lateral periphery slightly to moderately angular; moderately high-arched aperture basal-lateral and asymmetrical, wall surface ornamented with blunt pustules (Figs. 8P -holotype-, Q).

Chiloguembelina cf. *subcylindrica* (= *Chiloguembelina subcylindrica* Beckmann, 1957, sensu Arenillas, 1996): Biserial test, 8-12 frontally widened ovate chambers, moderate to high rate of size increase, axial periphery rounded; moderately high-arched aperture basal-lateral and asymmetrical, wall surface ornamented with blunt to sharp pustules (Figs. 8R -holotype-, S).

Chiloguembelina subtriangularis Beckmann (1957): Biserial test, 10-14 frontally widened subtetrahedral chambers, moderate to high rate of size increase, lateral periphery slightly angular, round-arched aperture basal-lateral and asymmetrical, wall surface ornamented with blunt to sharp pustules (Figs. 8U -holotype-, W).

Chiloguembelina taurica Morozova (1961): Biserial test, 10-18 spherical to ovate chambers, moderate to low rate of size increase, lateral periphery rounded; moderately high-arched aperture basal-lateral and asymmetrical, with a thick imperforate lip; wall surface ornamented with blunt pustules (Figs. 8O -holotype-, P).

Eoglobigerina edita (Subbotina, 1953): Trochospiral test, with lightly high spire, 4.5-5 spherical chambers in the last spiral whorl, low rate of size increase, aperture intraumbilical, wall surface cancellate, spinose (Figs. 4M -holotype-, N).

Eoglobigerina fringa (Subbotina, 1950): Trochospiral test, with low spire, 4 spherical chambers in the last spiral whorl, low to moderate rate of size increase, aperture intraumbilical to umbilical-extraumbilical, wall surface cancellate weakly developed, spinose, (Figs. 4E -holotype-, F).

Eoglobigerina cf. *trivialis* (= *Eoglobigerina trivialis* (Subbotina, 1953), sensu Blow, 1979): Trochospiral test, with lightly high spire, 3.5-4 spherical chambers in the last spiral whorl, low to moderate rate of size increase, aperture intraumbilical, wall surface cancellate, spinose (Fig. 4G -holotype-?, Figs. 4H, I, J).

Eoglobigerina spiralis (Bolli, 1957): Trochospiral test, with moderately high spire, 5-6 spherical chambers in the last spiral whorl, low rate of size increase, aperture intraumbilical, wall surface cancellate, spinose (Figs. 4O -holotype-, P, Q).

Eoglobigerina tetragona Morozova (1961): Trochospiral test, with moderately high spire, 3.5-4 spherical chambers in the last spiral whorl, low rate of size increase, aperture intraumbilical, wall surface cancellate, spinose (Figs. 4K -holotype-, L).

Globanomalina compressa (Plummer, 1927): Trochospiral test, biconvex, 4.5-5.5 slightly to moderately compressed ovate chambers in the last spiral whorl, low to moderate rate of size increase, axial periphery rounded to slightly angular, with imperforate margin poorly developed or absent, aperture umbilical-extraumbilical, wall surface pitted to smooth (Figs. 8A -holotype-, B).

Globanomalina haunsbergensis (Gohrbandt, 1963): Trochospiral test, biconvex, 4.5-6 strongly compressed ovate chambers in the last spiral whorl, low to moderate rate of size increase, axial periphery moderately angular, with imperforate margin moderately to strongly developed, aperture umbilical-extraumbilical, low-arched, wall surface smooth to pitted (Figs. 8C -holotype-, D).

Globanomalina chapmani (Parr, 1938): Trochospiral test, biconvex, 4-4.5 strongly compressed ovate chambers in the last spiral whorl, moderate to high rate of size increase, axial periphery moderately angular, with imperforate margin moderately to strongly developed, aperture umbilical-extraumbilical, wall surface smooth to pitted (Figs. 8E -holotype-, F).

Globoconusa daubjergensis (Bronnimann, 1953): Trochospiral test, with slightly high spire, 3.5-4 spherical chambers in the last spiral whorl, moderate rate of size increase, low-arched perture intraumbilical, wall surface ornamented with blunt to sharp pustules (Fig. 8M).

Globoconusa conusa Khalilov (1956): Trochospiral test, with moderately to strongly high spire, 3.5-4 spherical chambers in the last spiral whorl, low rate of size increase, low-arched aperture intraumbilical, wall surface ornamented with blunt to sharp pustules (Fig. 8N)

Igorina albeari (Cushman and Bermúdez, 1949): Trochospiral test, biconvex to spiroconvex, 6-8 subrhomboidal chambers in the last spiral whorl, very low rate of size increase; sutures masked by muricae; axial periphery angular with circumcameral muricocarina in the last chambers; aperture intraumbilical, wall surface muricate (Figs. 6H -holotype-, I, J?).

Igorina pusilla (Bolli, 1957): Trochospiral test, biconvex to piriform, 5-6 subrhomboidal chambers in the last spiral whorl, very low rate of size increase, sutures generally masked by muricae, axial periphery subangular to angular, occasionally with incipient muricocarina, aperture umbilical-extraumbilical to intraumbilical, wall surface muricate (Figs. 6C -holotype-?, E, F, G).

Igorina tadjikistanensis (Bykova, 1953): Trochospiral test, biconvex, 5-6.5 hemispherical to subrhomboidal chambers in the last spiral whorl, low rate of size increase, axial periphery subangular to angular, occasionally with incipient muricocarina, aperture umbilical-extraumbilical, wall surface muricate (Figs. 6A -holotype-, B).

Luterbacheria ehrenbergi (Bolli, 1957): Trochospiral test, compressed biconvex, 5-6 strongly compressed ovate chambers in the last spiral whorl, low to moderate rate of size increase, axial periphery angular, with faint keel at least in the last chambers, aperture umbilical-extraumbilical, wall surface pitted to smooth (Figs. 8G -holotype-, H).

Luterbacheria troelseni (Loeblich and Tappan, 1957): Trochospiral test, compressed biconvex, 5-6 moderately compressed ovate chambers in the last spiral whorl, moderate rate of size increase, axial periphery angular with well-developed keel, aperture umbilical-extraumbilical, wall surface pitted to smooth (Figs. 8I -holotype-, J).

Luterbacheria pseudomenardii (Bolli, 1957): Trochospiral test, concave-convex, 5-6 strongly compressed ovate chambers in the last spiral whorl, moderate rate of size increase, axial periphery angular with well-developed keel, aperture umbilical-extraumbilical, wall surface pitted to smooth (Figs. 8K -holotype-, L).

Morozovella aequa (Cushman and Renz, 1942): Trochospiral test, umbilicoconvex with flat spire, 3-3.5 angular subconical chambers in the last spiral whorl, high rate of size increase, axial periphery acute with moderate to well developed muricocarina; aperture umbilical-extraumbilical, wall surface muricate (Figs. 5R -holotype-, S).

Morozovella cf. *albeari* (= *M. crosswicksensis* Olsson, 1960, sensu Blow, 1979): Trochospiral test, biconvex, 5-7 angular rhomboidal chambers in the last spiral whorl, moderate to low rate of size increase, axial periphery acute with moderate to well developed muricocarina, aperture umbilical-extraumbilical, wall surface muricate (Figs. 6P -holotype-, Q).

Morozovella angulata (White, 1928): Trochospiral test, umbilicoconvex with low spire, 5-6 angular subconical chambers in the last spiral whorl, moderate rate of size increase, axial periphery acute with moderate to well developed muricocarina, aperture umbilical-extraumbilical, wall surface muricate (Figs. 5N -holotype-, O).

Morozovella conicotruncata (Subbotina, 1947): Trochospiral test, umbilicoconvex with low spire, 6-8 angular subconical chambers in the last spiral whorl, low rate of size increase, axial periphery acute with moderate to well developed muricocarina, aperture umbilical-extraumbilical, wall surface muricate (Figs. 7N -holotype-, O, P?).

Morozovella lacerti (Cushman and Renz, 1946): Trochospiral test, umbilicoconvex with flat spire, 4 angular subconical chambers in the last spiral whorl, moderate to high rate of size increase, axial periphery acute, with moderate to well developed muricocarina, aperture umbilical-extraumbilical, wall surface muricate (Figs. 5P -holotype-, Q).

Morozovella occlusa (Loeblich and Tappan, 1957): Trochospiral test, biconvex, 5-8 angular rhomboidal chambers in the last spiral whorl, moderate to low rate of size increase, axial periphery acute with well developed muricocarina, muricate circum-umbilical rim, aperture umbilical-extraumbilical, wall surface muricate -almost free of muricae- (Figs. 6Q -holotype-, S).

Morozovella simulatilis (Schwager, 1883), sensu Luterbacher (1964): Trochospiral test, planoconvex to biconvex, 5-7 angular subconical to subrhomboidal chambers in the last spiral whorl, low rate of size increase, axial periphery acute with moderate to well developed muricocarina, aperture umbilical-extraumbilical, wall surface muricate (Figs. 6K -holotype-, M, L, N).

Morozovella velascoensis (Cushman, 1925): Trochospiral test, umbilicoconvex with low spire, 6-10 angular conical chambers in the last spiral whorl, low rate of size increase, axial periphery acute with well developed muricocarina, muricate circum-umbilical rim, aperture umbilical-extraumbilical, wall surface muricate -almost free of muricae- (Figs. 7J -holotype-, R).

Parasubbotina pseudobulloides (Plummer, 1927): Trochospiral test, with low spire, 4.5-5 spherical chambers in the last spiral whorl, moderate rate of size increase, axial periphery rounded, aperture umbilical-extraumbilical, wall surface cancellate, spinose (Figs. 4A -holotype-, B).

Parasubbotina quadrilocula (Blow, 1979): Trochospiral test, with low spire, 4 spherical chambers in the last spiral whorl, low to moderate rate of size increase, aperture umbilical-extraumbilical, wall surface cancellate, spinose (Figs. 4C -holotype-, D).

Parasubbotina variospira (Belford, 1984): Trochospiral test, with low spire, 4.5-5 spherical chambers in the last spiral whorl, low to moderate rate of size increase, aperture umbilical-extraumbilical to intraumbilical, wall surface cancellate, spinose (Figs. 5A -holotype-, B).

Praemurica inconstans (Subbotina, 1953): Trochospiral test, with low spire, 5-6 spherical chambers in the last spiral whorl, moderate rate of size increase, aperture umbilical-extraumbilical, wall surface calcellate (Figs. 5C -holotype-, D).

Subbotina triangularis (White, 1928): Trochospiral test, with slightly high spire, 3.5-4 spherical chambers in the last spiral whorl, moderate to high rate of size increase, aperture intraumbilical, wall surface cancellate, spinose (Figs. 4W -holotype-, X).

Subbotina triloculinoides (Plummer, 1927): Trochospiral test, with low spire, 3-3.5 spherical chambers in the last spiral whorl, moderate rate of size increase, aperture intraumbilical, wall surface cancellate, spinose (Figs. 4R -holotype-, S).

Subbotina compressaformis (Khalilov, 1956): Trochospiral test, with low spire, 3-3.5 inflated spherical chambers in the last spiral whorl, high rate of size increase, aperture intraumbilical, wall surface cancellate, spinose (Figs. 4U -holotype-, V).

Zeauvigerina aegyptiaca Said and Kenawy (1956): Biserial test, 12-18 spherical chambers, low to moderate rate of size increase, last chamber smaller and frontally very widened, lateral periphery slightly angular, aperture terminal at the end of a short neck, wall surface smooth to mosaic-granular (Figs. 8Z -holotype-, AA).

Zeauvigerina teuria Finlay (1947): Biserial test, 10-14 ovate chambers, low to moderate rate of size increase, last chamber smaller, periphery slightly angular, aperture terminal, wall surface smooth to mosaic-granular (Figs. 8X -holotype-, Y).

References

Arenillas, I. 1996. *Los foraminíferos planctónicos del Paleoceno-Eoceno inferior: Sistemática, Bioestratigrafía, Cronoestratigrafía y Paleoceanografía*. Ph.D. Thesis, Prensas Universitarias de Zaragoza, Spain, 2000, 1-513.