names	central body size (W x L), R excluding antapical processes	central body shape (ambitus)	apical protrusion or boss	central body wall structure	central body surface	septa	processes structure	processes morphology	processes surface	intergonal processes	distinct apical process(es)	apical septa more developed	distinct antapical processes	antapical septa more developed
Achomosphaera andalousiensis Jan du Chêne 1977	35-44 x 40-50 µm R = 0.36-0.59	« The cyst […] has an ovoidal body…»(orig. descript.); « Cyst […] with an ellipsoidal central body… »(emendat.)	no	« …the wall is composed of a […] endophragm, and a periphragm […]. The endophragm and periphragm are strongly adpressed one to another… »(emendat.)	« …very fine and smooth endophragm, and a periphragm, thicker, smooth to shagreenate. »(emendat.)	« …the parasutural septa are absent… »(emendat.)	« …processes are long, […] hollow, sometimes fenestrated at their base. »(emendat.)	« Gonal processes are long, usually slim, with a subconical or tapered stem, straight […]. Processes emerging from two close triple junctions, for example those bordering the apical paraplates or the cingular paraplates, are often linked proximally, or part or all of their length. These processes appear more massive than the others and their distal end is much more complex. » (emendat.)	« …periphragm […] smooth to shagrinate… »(emendat.)	no	« Processes emerging from two close triple junctions, for example those bordering the apical paraplates or the cingular paraplates, are often linked proximally, or part or all of their length. These processes appear more massive than the others and their distal end is much more complex. »(emendat.)	no	no	no
Achomosphaera callosa Matsuoka 1983	36-45 x 36-53 µm R = 0.33-0.41	« The […] cyst […] is spherical to ovoidal in shape. »	no	« …thick wall […]. It consists of two layers, periphragm and endophragm adpressed between processes. »« …thickness of wall up to 3 µm… »	« The surface of the periphragm is coarsely granular. »	« Parasutural septa are hardly visible and are developped incompletely… »	« Processes […] solid, steady… »	« Processes […] steady […] sometimes with membranous basal part. »	« The surface of processes is smooth without any ornamentation. »	no	no	no	no	no
"***Achomosphaera granulata***" Mao 1989 now ***Hafniasphaera granulata*** comb. nov.	37-45 x 45-53 µm R = 0.27-0.29	« …egg-shaped central body… »	yes; « It often has a short apical horn… »	« The wall is thick (about 2 µm) separated into two layers: the outer layer is relatively thick with a dense ornamentation of large granules. »	« …dense ornamentation of large granules. These granules form short segments that make the surface is not flat. »	no; « Between neighbouring granules bases, there is almost no ridges, and therefore no clear display of grid pattern. »	vesicular	« Spiniferate cyst […]. …processes which separate into three main parts and then sometimes in two parts. […] There is an angle between the sub-branch and the main branch often 90°. »	« …dense granulate ornamentation on the […] processes. »	no	yes; « It often has a short apical horn… »	no	no	no
Achomosphaera ramosasimilis (Yun 1981) Londeix et al. 1999	30-36 x 32-42 µm R = 0.50-0.53	« …ovoid to sphaerical central body… »	no	« Wall: thick »	« …granular or smooth endophragm and a smooth periphragm… »	low; « Paratabulation partially developed »	« …hollow, distally closed processes. »	« Usually, the processes taper distally and are trifurcate then bifurcate. »	smooth	no	« There is always a thin, simple apical process, sometimes with a terminal hooklet. »	no	no	no
Cyst of ***Gonyaulax baltica*** Ellegaard et al. 2002 sensu lato	22-40 x 28-45 µm R = 0.05-0.42	« The central body is spherical to ovoid. »	sometimes; « An apical boss is sometimes present. »	compact	« The outer wall layer is thin and smooth to slightly granulate and the inner wall is smooth. »	yes, smooth; « Tabulation […] defined by low septa, except on cysts lacking processes. […] degree of septal development is extremely variable… »	solid, often hollow at their base; « Fully developed processes are hollow and trifid, with each trifurcation ending by a bifid termination, whereas shorter processes often end bluntly. »	« The processes are usually gonal, rarely intergonal, and sometime missing. Process length […] is extremely variable […]. Fully developed processes are hollow and trifid, with each trifurcation ending by a bifid termination, whereas shorter processes often end bluntly. »	smooth to scabrate	usually no; « The processes are […] rarely intergonal… »	yes sometimes; « Where tabulation is sufficiently well developed, there is apparently also contact between the anterior sulcal plate and the fourth apical homolog in the cyst… »	no	yes sometimes	yes sometimes; « High septa joining the antapical processes are common. »
Cyst of ***Gonyaulax baltica*** Ellegaard et al. 2002 'B'	28-31 x 28-34 µm R = 0.09-0.23	« The central body is spherical to ovoid. »	sometimes; « An apical boss is sometimes present. »	compact	« The outer wall layer is thin and smooth to slightly granulate and the inner wall is smooth. »	yes, smooth; « Tabulation […] defined by low septa… »	solid, may be hollow at their base	spiniferate	smooth to scabrate	usually no; « The processes are […] rarely intergonal… »	no	no	no	yes; « High septa joining the antapical processes are common. »
Cyst of ***Gonyaulax baltica*** Ellegaard et al. 2002 'E'	28 x 31 µm R = 0.17-0.22	« The central body is spherical to ovoid. »	no	compact	« The outer wall layer is thin and smooth to slightly granulate and the inner wall is smooth. »	yes, smooth; « Tabulation […] defined by low septa… »	solid	spiniferate	smooth to scabrate	no	no	no	no	no
Cyst of ***Gonyaulax baltica*** Ellegaard et al. 2002 'F'	22 x 27 µm R = 0.30-0.42	« The central body is spherical to ovoid. »	no	compact	« The outer wall layer is thin and smooth to slightly granulate and the inner wall is smooth. »	yes, smooth; « Tabulation […] defined by low septa… »	solid, may be hollow at their base	spiniferate	smooth to scabrate	no	no	no	yes	no
Cyst of ***Gonyaulax baltica*** Ellegaard et al. 2002 'K'	31-40 x 35-45 µm R = 0.05-0.13	« The central body is spherical to ovoid. »	sometimes; « An apical boss is sometimes present. »	compact	« The outer wall layer is thin and smooth to slightly granulate and the inner wall is smooth. »	smooth, very low, sometimes disrupted	solid	truncated	smooth to scabrate	no	no	no	no	no
Spiniferites alaskensis Marret et al. 2001	23-32 x 26-37 µm R = 0.32-0.40	« ovoid-pear shape in lateral view and circular in polar view. »	yes; « The apical region is characterized by a short pronounced boss. »	« The central body wall is thin (less than 1 µm)… »	« The central body […] has a finely granulate to scabrate surface. »	low, well expressed (parasutural ridges); « Low parasutural and smooth septa »	solid	« …relatively long (one third of the body cyst), relatively broad (2 µm)… »	smooth	no	« broader processes are observed at the junction of paraplates 4'-1'/as […], possibly due to the fusion of closely spaced processes. »	no	« broader processes are observed at the junction of paraplates 6'''/1'''' […], possibly due to the fusion of closely spaced processes. »	no
Spiniferites asperulus Matsuoka 1983b	45-64 x 48-69 µm R = 0.25-0.33	« subspherical to ovoidal in shape »	no	« …consists of two layers, periphragm and endophragm. The endophragm is relatively thick and smooth. »	« The periphragm is thin and granular. »	well expressed; « The parasutural septa are weak but almost complete. » «At the proximal base of these [gonal] processes, parasutural septa become membraneous. »	n/a	« conical »	« Their surface has small grana. This ornamentation is especially well developed in both apical and antapical areas. »	no	no	no	no	yes (cf. holotype)
Spiniferites belerius Reid 1974	28-37 x 35-42 µm R = 0.25-0.27	« Test oval […] at times constricted towards the poles to give a rounded diamond shape »	yes; « Test […] with a clear apical node. »	« …thin […] wall… »	« …smooth surfaced wall… » to very finely granular	yes; « sutural septae. »	solid	n/a	smooth	no	yes sometimes	yes sometimes	yes, longer, with flange; « high antapical 'trumpet' shaped processes which characterises the species »	yes; « Septae form the high antapical 'trumpet' shaped processes […] and may also form high membranous flanges. »
Spiniferites bentorii (Rossignol 1964) Wall & Dale 1970	45-63 x 60-73 µm R = 0.32-0.33	pear-shaped	yes; « apical protuberance »	« The test is composed with two layers of variable thickness; the inner one contributes to the apical protuberance […]; the external one gives rise to processes and to very slight crests forming the 'sutures' at plate boundaries. »	shagreenate to scabrate	low, well expressed « [processes] linked by slight veils at their base, because of the raising of the crests doing the plates boundaries. »	solid	« The processes are generally long, slim, slender »« The processus are subject to variations; they are sometimes very short (5 to 8 µ, and 10 to 12 µ for long antapicals). »« the distal ends of adjacent processes can be interconnected by trabeculae more or less anastomosed, without forming a complete network throughout the hystrichosphere. […] we consider these trabeculae as accidents or variations of growth. »	smooth	yes sometimes; « Sometimes appear supernumerary bifurcate processes along meridian sutures of the wide plates pre- and post-cingular. »	yes sometimes; « The process which stands at the top of the apical protuberance seems only bifurcated; actually, the third branch is lateral and reduced. The process located on the suture of the first apical plate, the ventral plate and the triangular precingular 6'' results of the coalescence of three processes, it is wide and complex. »	no	yes; « the two antapical dorsal processes, at the base of the plate 3''', are always fairly more developed, longer and wider than all the others. »	no
Spiniferites bentorii (Rossignol) var. ***globus*** Morzadec-Kerfourn 1979	60 x 62 µm R = 0.20-0.33	« …globular… »	« …with a […] apical boss… »	« …with a thick wall strongly taking the staining. »	smooth	yes	solid	« …longer processes, more slender,… »	smooth	occasionally	n/a	no	no	no
Spiniferites bentorii subsp. ***truncata*** (Rossignol 1964) Wall & Dale 1970	50 x 60 µm R = 0.08-0.16	pear-shaped	yes; « apical protuberance »	« The test is composed with two layers of variable thickness; the inner one contributes to the apical protuberance […]; the external one gives rise to processes and to very slight crests forming the 'sutures' at plate boundaries. »	shagreenate to scabrate	low, well expressed « [processes] linked by slight veils at their base, because of the raising of the crests doing the plates boundaries. »	solid	« processes reduced: they are truncated at their basis as if their development has been interrupted or as if they have been cut. »	smooth	yes sometimes; « Sometimes appear supernumerary bifurcate processes along meridian sutures of the wide plates pre- and post-cingular. »	yes sometimes; « The process which stands at the top of the apical protuberance seems only bifurcated; actually, the third branch is lateral and reduced. The process located on the suture of the first apical plate, the ventral plate and the triangular precingular 6'' results of the coalescence of three processes, it is wide and complex. »	no	yes; « the two antapical dorsal processes, at the base of the plate 3''', are always fairly more developped, longer and wider than all the others. »	no
Spiniferites bulloideus Deflandre & Cookson 1955	30-37 µm R = 0.33-0.41	« Shell small, spherical or nearly so »	no	« …membrane rather thin and delicate… »	smooth	low (parasutural ridges)	solid	« Processes always trifurcate, the 3 branches being widely separated… »	smooth	no	no	no	no	no
Spiniferites cruciformis Wall & Dale in Wall et al. 1973	34-56 x 46-65 µm R = 0.03-0.55	« …diagnostically cruciform shape and shows moderate dorsoventral compression. Its anterior, posterior and lateral equatorial points are broadly rounded… »	no	« The individual elements of the microstructure are less than one micron in size and appear as irregular, closely packed corrugations with a breaded texture under the scanning electron microscope. »	« The fine-scale texture of the test and septa is scabrate, and varies relatively little intraspecifically or from place to place on an individual test. »	from low parasutural ridges to conspicuous membranaceous flanges (that may be entire or perforated); « …ornamented by sutural septa […]. It shows great intraspecific variation, both in the nature of its ornamentation and in the extent to which its reflected tabulation is developed. The elements of ornamentation include very low sutural septa, and sometimes conspicuous membranous flanges. The latter may be entire or extensively perforate, and distal margins are often deeply indented. […] The height of the ornamentation above the central body is variable, both from specimen to specimen and from one part of an individual's test to another. »	from solid to hollow at the base of the processes	« …the flanges become progressively more process-like, and the specimens then appear to be more spinose than membranous. The tips of these processes are generally bifurcate or trifurcate and have a wide angle of divergence… »	scabrate to finely granulate	no	no	yes sometimes; « The ornamentation characteristically is most pronounced at the apex… »	no	yes sometimes; « The ornamentation characteristically is most pronounced at the […] antapex… »
Spiniferites delicatus Reid 1974	35-54 x 40-60 µm R = 0.42-0.54	« Circular to ovoidal cysts… »	yes; « An apical node or low boss may be found at the head of 1' and 4'. »	« The cyst wall is thick, with radial 'columellae' or fibres in the endophragm and with a much thinner granular periphragm. »	« The surface is microgranular to microreticulate. »	yes; « High granular membranous sutural flanges which vary greatly in their development in individual specimens. […] In most specimens the sutural flanges are of equal height over the whole test… »	rods + septa	« In plan view process tips have a characteristic petaloid shape. »« Processes are supported by thin skeletal rods which trifurcate and then bifurcate in the process tips. »	scabrate	no	yes; « An apical node or low boss may be found at the head of 1' and 4'. »	no	usually not	yes sometimes; « …a few [specimens] may have high antapical flanges surrounding 1''''. »
Spiniferites elongatus Reid 1974	26-42 x 40-59 µm R = 0.19-0.29	« Elongate ellipsoidal […] cyst… »« In polar view the test is circular. »	no; « …no evidence of an apical boss. »	« …thin, 0.8-1 µ wall… »	« …with a smooth surface… »	from low to high; « …wide flaring sutural septae. […] Septae varying in height… »	hollow at the base then solid	« …at the junctions of 5''', 4''', 1'''' and 1p, 2''', 1'''' two high, hollow, trumpet shaped processes are found. »	smooth	no	no; « A short complex process is found at the head of the sulcus. »	yes often; « …high sutural flanges at the apex… »	yes; « …high complex processes at the antapex… »« At the junction of 1'''' and 3''' high membranous septae join two stout simple processes… »	yes; « At the junction of 1'''' and 3''' high membranous septae… »
Spiniferites firmus Matsuoka 1983b	38-50 x 40-45 µm R = 0.42-0.46	« …cyst is subsphaerical to ovoidal in shape… »	no	« …consists of two layers, periphragm and endophragm. The endophragm is relatively thick and smooth. »	« The surface of the periphragm is finely granular. »	low (parasutural ridges)	mainly hollow	« The stout processes are slightly tapering and composed of gonal type only. Their extremities are bifid. The proximal base of the processes becomes membraneous and faintly granular. »	« The proximal base of the processes becomes membraneous and faintly granular. »	no	no	no	no	yes; « The parasutural septa are occasionally formed by incomplete membrane on the dorsal side in the antapical area. »
"***Spiniferites frigidus***" Harland & Reid in Harland et al. 1980 now ***Spiniferites elongatus*** Reid 1974	19-50 x 50-87 µm R = 0.32-0.52	« …elongate, […] cyst… »	yes sometimes; « This cyst possesses a slight apical boss… »	« …is made up of a ?two-layered thin and membranous wall. […] There is some differentiation between the thinner periphragm and somewhat thicker endophragm. »	« Endophragm is smooth but the periphragm may be smooth, rough, microgranulate or micropunctate. »	yes, well developed membranous crests; « A paratabulation […] outlined by tall membranous crests […]. The parasutural membranes are variable in height, to as much as half the cyst diameter, and are always conspicuous all over the cyst. They are present on nearly all parasutures except those dividing paracingulum and parasulcal plates from one another and in those separating paraplates 4' from 1'. The parasutural membranes are not constant in height […] are smooth to micro-ornamented and may be striate, have entire margins and may be slightly more prominent on the hypocyst than on the epicyst. »	hollow; « Processes […] hollow… »	discrete; « Processes […] included as part of the parasutural crests. »« Processes […] may be seen as discrete structures with a shaft and tip or may only be recognised by the presence of their distal structure surmounting a parasutural crest in a gonal position. The process shafts appear to form as a coalescence of the parasutural crests… »	« The parasutural membranes […] are smooth to micro-ornamented… »	no	no	« The parasutural membranes […] are present on nearly all parasutures except […] in those separating paraplates 4' from 1'. »	no	« …some [specimens] develop a 'skirt' like structure around the antapex… »
Spiniferites hainanensis Sun & Song 1992	35-42 x 43-49 µm R = 0.25-0.30	« Body ellipsoidal. »	no	« Endophragm and periphragm appressed between processes and parasutural ridges. »	« Surface smooth or finely granulate. »	yes (parasutural ridges); « …low parasutural ridges wich are uniformly perforated at the distal ends. »	solid; « Processes solid […]. One or two small holes are generally seen in the base or middle part of each process. »	cylindrical with triangular base	« …one or two small holes are generally seen in the base or middle part of each process. »	yes; « Process tips […] bifurcate (intergonal). »	no	no	no	no
Spiniferites hyperacanthus (Deflandre & Cookson 1955) Cookson & Eisenack 1974	54 x 59 µm R = 0.24-0.34	« Shell globular, spherical or almost spherical. »	no	compact	smooth to scabrate	no or very faint; « …fine, sometimes almost indistinguishable outlines… »	hollow to solid	« Stalks of processes long, stiff, often slender… »	smooth to scabrate	yes; « …processes […] inserted both at the angles of the fields and along their sides, the usual arrangement being 1 process to each angle of the field and 2 along each side. »	no	no	usually not	generally no
Spiniferites lazus Reid 1974	31-42 x 44-58 µm R = 0.39-0.43	« Test elongate… »« The test is ovoid in polar view… »	yes; « A clear node or boss is found at the junction of plates 3', 2' and 1'. »	« …thick wall 1-1.5 µ which is made up of two layers of equal thickness. »	« Surface microgranular to reticulate… »	yes; « Sutural septae increase in height towards the processes… »	« Bases of processes are hollow, but do not pass through the test wall. »	« …process tips like wide petals in plan view. »	« Surface microgranular to reticulate and ornamented by […] processes with fenestrate bases. »	usually no, but; « Surface […] ornamented by gonal and sutural processes… »	« Processes surrounding the apical plates, 3' and 2' are in the form of a crown connected by clear fenestrate sutural septae. »	no	sometimes; « At the junction of the postcingular and antapical plates stout simple processes are found. […] A clear geminal process with a high fenestrate flange is found along the junction of 6''' and 1''''. »	no
Spiniferites ludhamensis Head 1996a	34-41 x 38-49 µm R = 0.29-0.31	« …cyst with egg-shaped central body. »	no	« Pedium thin (ca. 0.1 µm) […]. Luxuria consists of tegillum (< 0.3 µm thick) which, across intratabular areas, has funnel-shaped invaginations whose solid, rod-like bases connect with pedium. »	« …appearing as closely spaced dots in surface view. »	suturocavate; « …unsupported tegillum forms parasutural folds about 1-2 µm high… »	« …hollow along their entire length including distal terminal branches. »	dagger-like to ruban-like	« Surface of processes finely and faintly granulate. »	yes sometimes; « Gonal and intergonal processes arise from folds. »	yes; « A tapering, spine-like apical process with smaller side branches, also present. »	no	no	no
Spiniferites membranaceus (Rossignol 1964) Sarjeant 1970	50 x 57 µm R = 0.40-0-44	ovoidal	usually not	compact	smooth to scabrate, rarely microgranulate	yes; « The folds of the outer layer of the test, which define the plates, arise and connect in a continuous curve two neighbouring processes at or below the trifurcation; when the processes are very close, the veils merge them together on most of their length. »	« The outer layer of the test is almost completely peeled off from the inner layer. »	conical elongate to membranous	smooth	no	sometimes	sometimes	yes; « …the two major antapical dorsal processes can merge on their entire length up to the trifurcation… »	yes; « …the two major antapical dorsal processes can merge on their entire length up to the trifurcation, as well as the four others of the same plate on a lesser length. »
Spiniferites mirabilis (Rossignol 1964) Sarjeant 1970	35-60 x 40-70 µm R = 0.43-0.50	subspherical	usually not	« The wall is thin, two layered. »	smooth to scabrate, rarely microgranulate	faint; « The "sutures" plates are not discernible… »	hollow at the base then solid, except for antapical processes	triangular, tappering ± rapidly	smooth to scabrate	yes; « …large number of processes which stand to them [sutures]. »	sometimes	no	yes; « At the antapical pole, where rise […] the two high dorsal processes, the series of the 5 to 7 processes inserted on the back side… »	yes; « At the antapical pole, […] the 5 to 7 processes inserted both on the back side and the lateral ones of the antapical plate are embedded in a common veil which coats them up to the branching; it is constituted as the processes themselves, of the outer layer of the test, peeled from the inner layer; […] in lateral view, their common base looks like the fingers of a glove lined up behind each other »

names	central body size (W x L), R excluding antapical processes	central body shape (ambitus)	apical protrusion or boss	central body wall structure	central body surface	septa	processes structure	processes morphology	processes surface	intergonal processes	distinct apical process(es)	apical septa more developed	distinct antapical processes	antapical septa more developed
"**Spiniferites multisphaerus**" Price & Pospelova 2014 now **Hafniasphaera multisphaera** comb. nov.	36-51 x 41-63 µm R = 0.04-0.16	« oval to pear-shaped [...]. Often in lateral view the central body has pronounced 'shoulders' on the epicyst »	yes; « with [...] a pronounced apical protuberance »	« wall thick (~1.0-2.1 µm) and consists of two layers. SEM images show the pedium connected to the tegillum via columellae, forming small cavities between the two layers [...]. The cavities between the two layers in brightfield microscopy give the cyst wall a pseudoreticulate appearance in plan view. »	« In SEM images the upper surface of the tegillum is irregularly bumpy or wavy, with a pitted or reticulate surface. »	« ...low to moderately high (approximately half the process length) sutural septae [...]. In some specimens, high (up ~3.5 µm) septa have muri that are both proximally and distally hiate with canna that are compartmented transversely, ranging in diameter from ~0.5–2.0 µm, giving the appearance of spheroidal to ovoidal bubble-like elements. In many specimens, muri appear to be absent or very reduced, with only the bubble-like elements evident... »	« Processes are hollow »	« Processes [...] commonly stubby or reduced in appearance. The stems are parallel-sided to tapering [...]. The tips of the processes are highly variable in morphology between specimens as well as on a single specimen. [...] processes are rigid, and generally hold their shape well »	« Processes [...] are also composed of the bubble-like elements. »	yes, irregularly; « Processes are predominantly gonal, but are occasionally intergonal. »	n/a	n/a	n/a	n/a
Spiniferites nanus Matsuoka 1976	35-54 x 41-55 µm R = 0.14-0.20	« The cyst [...] has rounded conical epitract and half spherical hypotract. »	no	« The cyst composed of two layers, peri- and endophragms... »	« The surface of cysts is smooth or very fine granular. »	yes	solid	« The short processes with bifurcate, trifurcate or acuminate tips are [...] formed from sutural septae. The short acuminate processes with wide base are formed from membraneous sutures. »	smooth	yes sometimes; « ...processes [...] are gonal or sometimes intergonal... »	no	no	no	no
Spiniferites nodosus (Wall 1967) Sarjeant 1970	28-52 x 31-62 µm R = 0.16-0.23	« The test is ovoid with weakly truncated apices. »	usually not	compact	smooth	low (parasutural ridges); « ...distinct but low (1 µ or less) sutural septa... »	solid	« The characteristic processes [...] are small, either bifurcate or trifurcate and recurve strongly towards their own bases or lie along the test surface so that there appears to be a small pad or sclerotium of tissue at each junction. Only rarely do the spines project more than a few microns above the test wall. »	smooth	no; « ...processes are restricted to the corners of plate-areas. »	no	no	no	no
Spiniferites pachydermus (Rossignol 1964) Reid 1974	50-52 x 60-61 µm R = 0.33-0.36	ovoidal	yes sometimes	« The test wall is considerably thickening (3 µ); the inner layer and the outer one have a radially fibrillated structure. »	« the surface of the test is punctuated-reticulated. »	yes, low (parasutural ridges) to membranous	solid, may be hollow at their base	slender	smooth to scabrate	no	sometimes	sometimes	sometimes	sometimes
Spiniferites pacificus Zhao & Morzadec-Kerfourn 1994	26-34 x 29-36 µm R = 0.32-0.42	« ...cyst is subspherical to ovoid in shape. »	no	« The wall consists of two layers... »	« ...the periphragm is ornamented by microgranules evident with SEM. »	faint to low (parasutural ridges); « The base of the processes is [...] connected by a parasutural membrane. [...] The paratabulation is pointed out by low ridges joining the processes. »	hollow; « Processes are hollow... »	« Processes are hollow, straight, rigid. Their base is wider than the end. [...] The base of the processes is slightly enlarged... »	« The gonal or intergonal processes are ornamented by very fine or smooth microgranules. »	yes; « A process is intercalated between two gonal processes. The end of this intergonal process is only bifurcated. »	no	no	yes; « The two antapical processes are longer and thicker than the others. They are hollow and their distal termination is open, with trifurcated edges. Each of the branches is long and finely bifurcated. The basis of these processes is wide and connected by a low membrane. »	no
Spiniferites pseudofurcatus subsp. **obliquus** (Wall 1967) Lentin & Williams 1973	40-50 µm R = 0.24-0.26	« The test is ovoid... »	yes sometimes; « ...sometimes with a rudimentary apical boss... »	compact	« The test [...] has a smooth to weakly microgranular wall... »	yes; « ...longitudinal septa. »	hollow?	« The spines are characteristic: the most complex closely resemble those of H. tertiaria as figured by Eisenack (1954)[now Spiniferites pseudofurcatus][...]. They are trifurcate with secondary branchlets which tend to remain parallel and often are connected by delicate membranes as they flare. »	smooth to scabrate	yes sometimes; « ...bifurcate spines occasionally ornament longitudinal septa. »	no	no	« The two antapical spines are particularly prominent... »	no
Spiniferites ramosus (Ehrenberg 1838) Mantell 1854 emend. Davey & Williams 1966a sensu lato	30-58 x 41-61 µm R = 0.16-0.55	ovoidal	usually not	« ...thin walled central body... »	« ...central body, smooth, reticulate or granular. »	yes; « ...processes [...] connected by a well developed membrane. »	solid or hollow, distally closed; « Gonal ± sutural processes [...], solid or hollow, the latter closed distally. »	« Typical gonal processes trifurcate... »	smooth to scabrate	yes sometimes; « ...sutural processes bifurcate... »	rarely; « A distinctive simple apical process is commonly present. »	no	sometimes longer	no
Spiniferites ramosus subsp. **multiplicatus** (Rossignol 1964) Lentin and Williams 1973 [sensu Londeix]	40 x 44 µm R = 0.37-0.50	« ...shape, dimensions and tabulation are those of the type-species [S. ramosus]. »	usually not	« This variety may have a wall thickness similar to the variety pachyderma [now S. pachydermus]. »	smooth, scabrate to microgranulate	yes, low but distinctly expressed	solid, sometimes hollow and distally closed	typically spiniferate	smooth to scabrate	yes; « Additional processes, one or two, appear along the ridges delimiting the plates, between the processes located at the corners. [...] These additional processes are bifurcated. »	rarely	no	sometimes; « The two main dorsal antapical processes are particularly visible. »	no
Spiniferites ramosus subsp. **ramosus** (Ehrenberg 1838) Mantell 1854 emend. Davey & Williams 1966a	30-50 x 40-55 µm R = 0.30-0.55	ovoidal	usually not	compact	smooth, scabrate to microgranulate	yes, low but distinctly expressed	solid, sometimes hollow and distally closed	typically spiniferate	smooth to scabrate	usually no	rarely	no	sometimes longer	no
Spiniferites "ramuliferus" sensu Reid 1974 non Achomosphaera ramulifera (Deflandre 1937b) Evitt 1963	33-38 x 42-50 µm R = 0.36-0.66	« ...ellipsoidal shape... »	no	« two layered and 1 µm thick. »	« ...microgranular... »	« No sutural traces were observed in any of the specimens examined [...] but the process bases were frequently elongated in the direction of sutures. »	« ...hollow [...] gonal spines »; « The processes appear to extend through the endophragm but are not open to the interior. »	« ...wide based, sturdy... »	smooth	no	yes; « The apex has a distinct process with two short extensions projecting from the distal end as well as the bifurcating tips. »	no	« two large processes are joined together at their base to form a low flange. »	yes; « At the junction of plates 1'''' and 4'''' two large processes are joined together at their base to form a low flange. »
Spiniferites rhizophorus Head in Head and Westphal 1999	32-43 x 38-51 µm R = 0.28-0.40	« Central body broadly ovoidal... »	n/a	« Wall between processes unstratified under light microscopy. »	« ...with finely and faintly punctate/granulate surface appearing nearly smooth. »	yes; « Sutures may be indicated by faint lines on surface of central body, or by low, solid ridges linking process bases, and may be expressed between closely adjacent process bases by adjoining trabeculae, often supported by stilt-like columns. »	hollow at the base then solid; « Process shafts solid, some arising from unbranched bases, others branched proximally so process is supported by numerous stilt-like columns. »	« Processes gonal and trifurcate [...] Process shafts solid, some arising from unbranched bases, others branched proximally so process is supported by numerous stilt-like columns. »« This species is distinguished by pronounced proximal branching of some process stems, although most specimens have some processes that are unbranched. In some areas of the cyst, particularly in lateral and ventral areas, closely adjacent process stems may be replaced by a single complex of columns or subvertical strands, which may be interlinked to form an irregular latticework. »	smooth	no	no	no	no	no
Spiniferites ristingensis Head 2007	39-49 µm R = 0.28-0.35	« ...ovoid central body. »	sometimes present; « A short apical protuberance up to 1.0 µm is sometimes present... »	« The pedium is smooth, and the tegillum forms small, densely distributed blisters and hollow undulations over the surface, a feature clearly seen in transverse optical section. The blisters have a maximum diameter of about 1.8 µm. [...] The pedium and tegillum are each less than 0.3 µm thick, and the wall is between 1.0 and 1.8 µm in total thickness. »	« In plan view, the wall may appear granular, with dots (less than 0.3 µm wide and mostly spaced 1.0 µm or less apart) representing points of contact between pedium and tegillum. »	yes; « They are joined by sutural crests that are mostly low (less than 2 µm), but may be higher where processes are closely adjacent, especially along the cingulum. [...] a low (c. 1.0 µm) sutural crest occurs along the archeopyle margin. »	« Processes are gonal and membranous. [...] The processes and sutural crests are formed of the tegillum and are distinctly bilayered, with a space of up to about 0.5 µm between layers caused by the undulating nature of the tegillum. »	« Processes are either truncated distally or expanded to form irregularly polygonal platforms, some of which typically extend outwards at right angles to the process stem. [...] Claustra occasionally occur on the processes and sutural crests... »	« The surface of the processes and sutural crests appears granulate. »	no	yes; « The apex may have one or more narrow, spine-like processes. »	no	no	no
Spiniferites? rubinus (Rossignol 1962) Sarjeant 1970	44 x 52 µm R = 0.33-0.44	«...ovoid test. »	no	« The test wall is bilayered... »	smooth to scabrate	yes; « ...elevation of the outer layer of the test [...] along the plates as if it had been pinched and stretched. [...] It is difficult to distinguish whether the two layers are continuous or interrupted by a slit at the distal edge of the veil; However, the second arrangement seems to occur. »	« Each veil has a twofold wall, whose two layers are tightly adpressed. »	« At the corners of the plates, where usually stand the processes, the veils are cylindrical and distally open. »	smooth	no	no	no	no	no
Spiniferites scabratus (Wall 1967) Sarjeant 1970	45-53 x 48-55 µm R = 0.21-0.31	« The theca is ovoid with broadly rounded apices... »	no	« The test wall is thin... »	shagreenate to scabrate	compact; « ...its outer layer forming microgranular sutural septa. Their outline in optical section is undulate and their height equivalent to one-third of the test diameter. »	solid, may be hollow at their base	« ...spine-like processes with trifurcate or further subdivided tips with strongly divergent angles. »	smooth	no	yes; « A complex process occurs at the head of the longitudinal furrow, above which, the two ventral apical plates (1', 4') are situated. »	no	no	no
Spiniferites septentrionalis Harland 1977b	27-38 x 34-48 µm R = 0.37-0.43	« Cyst although ovoidal to spheroidal [...]. Where the cyst is ovoidal the epitract is more conical than the hypotract. »	sometimes; « ...may or may not carry a small boss. »	« The two wall layers are closely adpressed over the entire cyst and are thick (approx 1.0—2.0 µ)... »	« The two wall layers are [...] smooth. »	sometimes; « Tabulation generally not present except for outlining reflected plate 3''... »	« Processes are made up of periphragm alone and do not connect to the interior of the cyst. »	« Processes [...] are tapering, latispinous to slender, erect and fairly long (1/3—1/2 cyst diameter) [...]. The shafts of the more membranous processes are often somewhat perforate and distally the processes vary from being trifurcate with bifid tips to being trifurcate with perforate or reticulate tips... »	smooth	no; « Processes [...] are gonal in position. »	no	no	no	no
"**Spiniferites serratus**" Matsuoka 1983b now **Spiniferites mirabilis** subsp. **serratus** (Matsuoka) Limoges et al. this volume	47-50 x 45-54 µm R = 0.15-0.19	« ...cyst shows polygonal to pentagonal outline in equatorial view... »	no	« ...consist of two layers, periphragm and endophragm. »	shagreenate to scabrate	yes; « Parasutural septa... »« ...denticulate parasutural septa. »	hollow at the base then solid	« The processes are gonal and intergonal, which are equal in length. [...] Processes of both types are membraneous and conical to subconical. The gonal type is trifurcate [...]. Both types bear bifid distal tips.. »	smooth to scabrate	yes; « Three or more intergonal processes observed between two adjacent gonal processes.[...] Processes of both types are membraneous and conical to subconical.[...] the intergonal type is bifurcate. Both types bear bifid distal tips. »« ...many short conical to subconical intergonal processes. »	no	no	no	yes; « Parasutural septa become distinctly membraneous and are well developed on the dorsal side of the antapical paraplate as observed on Spiniferites mirabilis (Rossignol). »
Spiniferites spinatus (Song in Song et al. 1985) Lentin & Williams 1989	35-56 x 47-60 µm R = 0.09-0.14	« Cyst ovoid to subspherical, epicyst and hypocyst equal in size... »	no	« Cyst wall probably consists of two layers, relatively thin... »	« ...surface coarse to granular. »	« Plates demarcated by subtle ridges 2-3 µm high... »	n/a	« There are short tubular processes at the junctions of ridges, which are narrow or hollow with trifurcate or bifurcate branches in the distal ends. »	smooth to scabrate?	yes; « There are ca. 2 spiny processes in the middle of the ridges whose bases are wide and taper abruptly with pointed distal end. »	no	no	no	no
Spiniferites strictus Matsuoka 1983b	50-62 x 53-67 µm R = 0.20-0.23	« ...cyst is subspherical to ovoidal in shape... »	« Some specimens have a small apical boss, but not always. »	« ...cyst [...] consists of two layers, moderately thick periphragm [...] and endophragm, adpressed between processes. »	« ...periphragm with a smooth to granular surface... »	yes; « The parasutural septa are distinctive and somewhat membraneous. »	« Small perforations are sometimes observed near the proximal base of the processes. »	« The processes comprise relatively short tapering gonal and intergonal types. They have bi- or trifurcate second branches with bifid tips. »	smooth	often; « The processes comprise [...] gonal and intergonal types. »« ...in having many short intergonal processes. »	no	no	no	no
Spiniferites? tripodes (Morzadec-Kerfourn 1966) Lentin & Williams 1973	45 x 45 µm R = 0.44	« The shell is spherical... »	no	compact	« The shell is [...] smooth... »	« The shell is [...] devoid of fields. »	solid	« The appendages seem formed by the combination of several projections: usually three. The base and the top of these projections, however, remain free and some cavities remain in the central part. »	smooth	no	no	no	no	no
"**Rottnestia amphicavata**" Dobell & Norris in Harland et al. 1980 now **Spiniferites elongatus** Reid 1974	32-42 x 50-68 µm R = 0.38-0.41	« elongate, ellipsoidal »	no?	« ...the periphragm is in contact with the endocyst in the central region but extends beyond both apically and antapically... »	« Periphragm membranous, thin and delicate, smooth to microgranular [...], having the appearance of being draped over the inner body... »	« Longitudinal folds in the periphragm are present especially in the region of the antapical extension. [...] The ridges outlining the sulcus are prominent; the ridge delimiting the anterior edge of both RS and LS within the sulcus is also prominent. The tabulation within the sulcus is indicated by very fine ridges as well as by the positioning of some of the trifurcate process tips. »	n/a	n/a	smooth to shagreenate	no	« the apical extension is smaller than the antapical extension »	« The apical pericoel is small, triangular [...]. The apical pericoel is variable in size and is sometimes entirely absent. »	« The antapical extension is elaborately folded delimiting two pericoels. The pericoels are triangular in shape in dorsoventral view, the left usually being larger than the right. In lateral view each pericoel extends from front to back of the cysts and has a square shape with the lower corners being rounded. »	« The centre of plate 1'''' is the site of a funnel-like invagination of the periphragm which separates the two pericoels from each other. »
"**Rottnestia amphicavata** var. **B**" Dobell & Norris in Harland et al. 1980 now **Spiniferites elongatus** Reid 1974	38 x 56 µm R = 0.36	« elongate, ellipsoidal »	no?	« ...the periphragm is in contact with the endocyst in the central region but extends beyond both apically and antapically... »	« Periphragm membranous, thin and delicate, smooth to microgranular [...], having the appearance of being draped over the inner body... »	« Longitudinal folds in the periphragm are present especially in the region of the antapical extension. [...] the ridge outlining the sulcus are prominent; the ridge delimiting the anterior edge of both RS and LS within the sulcu is also prominent. The tabulation within the sulcus is indicated by very fine ridges as well as by the positioning of some of the trifurcate process tips. »	n/a	n/a	smooth to shagreenate	no	« the apical extension is smaller than the antapical extension »	« The apical pericoel is small, triangular [...]. The apical pericoel is variable in size and is sometimes entirely absent. »	yes	« This variety [...] lacks the distinctive pair of antapical pericoels [...]. The antapical extension is not invaginated; thus only one large antapical pericoel is present [...]. Two hydropyles are present in the right and left posterior portion of the antapical extension and connect the one large pericoel to the exterior. »
"**Rottnestia amphicavata** var. **C**" Dobell & Norris in Harland et al. 1980 now Spiniferites elongatus Reid 1974	36 x 52 µm R = 0.19	« elongate, ellipsoidal »	no?	« The endocyst is enclosed by a pericyst... »	« ...pericyst bearing much reduced nubs and strands of material defining small sutural ridges... »	« ...small sutural ridges which outline tabulation... »	n/a	n/a	smooth to shagreenate	no	« the apical extension is smaller than the antapical extension »	« The apical pericoel is small, triangular [...]. The apical pericoel is variable in size and is sometimes entirely absent. »	« The antapical extension is elaborately folded delimiting two pericoels. The pericoels are triangular in shape in dorsoventral view, the left usually being larger than the right. In lateral view each pericoel extends from front to back of the cysts and has a square shape with the lower corners being rounded. »	« The centre of plate 1'''' is the site of a funnel-like invagination of the periphragm which separates the two pericoels from each other. »