

SUPPLEMENTARY DATA 1

A new Barremian (Early Cretaceous) ichthyosaur from Western Russia

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ORGANIC MICROFOSSIL ASSEMBLAGE

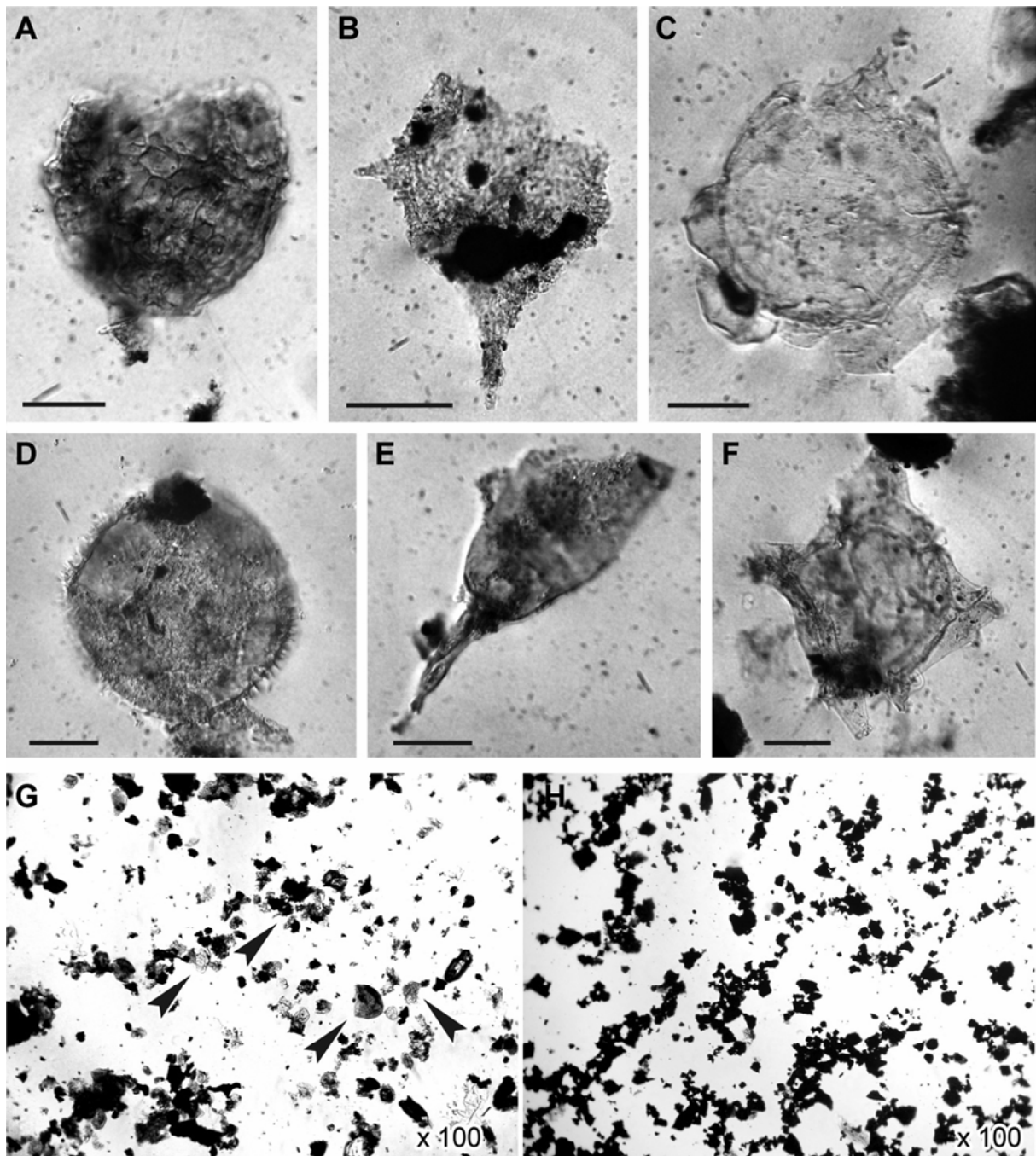


FIGURE 1S. Selected dinocyst taxa extracted from IRSNB R269. **A**, *Cassiculosphaeridia magna*, cyst without operculum, 56 μm , slide 67174 (rostrum). **B**, *Pseudoceratium pelliiferum*, cyst without operculum, 64 μm , slide 67654 (phalange). **C**, *Sirmiodinium grossii*, cyst with operculum, 80 μm , slide 67176 (indet. bone). **D**, *Trichodinium speetonense*, general view, 68 μm , slide 67174 (rostrum). **E**, *Batioladinium longicornutum*, cyst without operculum, 90 μm , slide 67176 (indet. bone). **F**, *Phoberocysta neocomica*, cyst with operculum, 88 μm , slide 67646 (neural arc). **G**, typical palynofacies: matrix with clear organic mater and dinoflagellate cysts (arrows), slide 67174 (rostrum). **H**, unusual palynofacies from the dismissed centrum: matrix with only black particles, slide 67177 (centrum 3). Scale bars equal 20 μm .

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TABLE 1S. Organic microfossil assemblage extracted from IRSNB R269. See Fensome and Williams (2004) for the systematical authorship references.

Organic microfossil assemblage	
Dinocysts	
<i>Achomosphaera neptunii</i> (Eisenack, 1958a) Davey and Williams, 1966	<i>Kleithriasphaeridium corrugatum</i> Davey, 1974
<i>Apteodinium granulatum</i> Eisenack, 1958 emend Sarjeant, 1985 emend. Lucas-Clark, 1987	<i>Kleithriasphaeridium eoinodes</i> (Eisenack, 1958) Davey, 1974 emend. Sarjeant, 1985
<i>Batioladinium cf. pelliferum</i> (Alberti, 1961) Brideaux, 1975	<i>Kleithrisphaeridium fasciatum</i> (Davey and Williams, 1966) Davey, 1974
<i>Batioladinium longifurcatum</i> (Alberti, 1961) Brideaux, 1975 emend. Below, 1990	<i>Meiourogonyaulas stoveri</i> Millioud, 1969
<i>Batioladinium longicornutum</i> (Alberti, 1961) Brideaux, 1975 emend. Below, 1990	<i>Odontochitina operculata</i> (Wetzel, 1933) Deflandre and Cookson, 1955
<i>Cassiculosphaeridia magna</i> Davey, 1974 emend. Harding, 1990	<i>Oligosphaeridium abaculum</i> Davey, 1979
<i>Chlamydophorella nyei</i> Cookson and Eisenack, 1958	<i>Oligosphaeridium dividum</i> Williams, 1978
<i>Circulodinium distinctum</i> (Deflandre and Cookson, 1955) Jansonius, 1986	<i>Phoberocysta neocomica</i> (Gocht, 1957) Millioud, 1969
<i>Coronifera oceanica</i> Cookson and Eisenack, 1958.	<i>Pseudoceratium pelliferum</i> Gocht, 1957
<i>Cribroperidinium palla</i> (Sarjeant, 1966) Helenes, 1984	<i>Rhynchodiniopsis fimbriata</i> (Duxbury, 1980) Sarjeant, 1982
<i>Cribroperidinium sepimentum</i> Neale and Sarjeant, 1962	<i>Scriniodinium campanula</i> subsp. <i>campanula</i> (Goch, 1959) Vozzhennikova, 1967
<i>Dapsilidinium warrenii</i> (Habib, 1976) Lentin and Williams, 1981	<i>Sepispinula</i> sp.
<i>Downiesphaeridium</i> sp.	<i>Sirmiodinium grossii</i> (Alberti, 1961) Warren, 1973
<i>Dingodinium cerviculum</i> Cookson and Eisenack, 1958.	<i>Taniosphaeridium boletus</i> Davey, 1974

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TABLE S1. Continued.

<i>Dissiliodinium</i> sp.	<i>Trichodinium speetonense</i> Davey, 1974
<i>Hystriochodinium pulchrum</i> Deflandre, 1935	<i>Wrevittia helicoidea</i> (Eisenack and Cookson, 1960) Helenes and Lucas-Clark, 1997
<i>Isthmocystis distincta</i> Duxburry, 1979	<i>Spiniferites</i> sp.
<i>Kiokansium unituberculatum</i> (Tash in Tasch et al., 1964) Stover and Evitt, 1978	
Prasinophyta	
<i>Pterospermella</i> sp. Eisenack, 1972	

DIFFERENTIAL DIAGNOSIS

Sveltonectes insolitus is also characterized by a unique combination of features: broad premaxilla-lacrima contact ventrally to the external naris (shared with *Mollesaurus*, *Aegirosaurus*, *Caypullisaurus*, and *Platypterygius* [except *P. americanus* and *P. australis*]: Romer, 1968; Kear, 2005; Fernández, 2007); extremely reduced maxilla extending anteriorly as far as the anterior border of nares (shared with some European specimens of *Platypterygius*: Sirotti and Papazzoni, 2002; VF, pers. obs.; *Plutoniosaurus bedengensis*: Efimov, 1997; *Aegirosaurus*: Bardet and Fernández, 2000); slender snout (snout depth ratio: 0.47, in between *P. americanus* (0.43) and *O. natans* (0.54); McGowan, 1976); moderately large orbit (mean orbital ratio: 0.18; similar to *Brachypterygius*: McGowan, 1976); prefrontal participates in the posterodorsal border of the external naris (shared with *Aegirosaurus*: Bardet and Fernández, 2000); flat, vertically-oriented anterior surface of the basioccipital (shared with *Brachypterygius*: McGowan and Motani, 2003; *Arthropterygius*: Maxwell, 2010; *P. australis*: Kear, 2005); dental roots with squared cross-section (shared with *Undorosaurus*: Efimov, 1999, *Platypterygius*: Bardet, 1990; *Maiaspondylus*: Maxwell and Caldwell, 2006); very high number of “cervical” centra (22, as in “*Otschevia*” *alekseevi*: Arkhangelsky, 2001); no haemapophyseal facets on apical (shared with *Ophthalmosaurus natans*: Gilmore, 1905; *Platypterygius hercynicus*: Kolb and Sander, 2009) and postflexural centra; humerus with two distal facets, for radius and ulna (shared with *Nannopterygius*: Hulke, 1871; McGowan and Motani, 2003; *Platypterygius platydactylus*: Broili, 1907; Maxwell and Kear, 2010; *P. campylodon*: Kiprijanoff, 1881; Kear and Barrett, 2007; Kolb and Sander, 2009; Maxwell and Kear, 2010; VF, pers. obs.); humerus with very prominent dorsal and ventral trochanters (shared with *Platypterygius*: Kuhn, 1946; McGowan, 1972; Wade, 1984, 1990; Choo, 1999; Kolb and Sander, 2009); tightly packed, brick-like phalanges (shared with *Platypterygius*: McGowan and Motani, 2003, *Maiaspondylus*: Maxwell and Caldwell, 2006; *Caypullisaurus*: Fernández, 2001); relatively long hindfins, being two-third the size of the forefin (shared with *Undorosaurus*: Efimov, 1999; Maisch and Matzke, 2000); presence of one preaxial accessory digit in the hindfin (shared with *P. australis*: Zammit et al., 2010).

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