

***Kirkbyites* Johnson, a valid ostracod genus from the Upper Palaeozoic**

GERHARD BECKER

Geological Palaeontological Institute, Johann Wolfgang Goethe University,
Senckenberg-Anlage 32-34, 6000 Frankfurt am Main, Federal Republic of Germany.

ABSTRACT - *Kirkbyites upsoni* Johnson, 1936 from the Upper Pennsylvanian of North America, type species of the poorly understood genus *Kirkbyites*, corresponds significantly with the well-known species *Kullmannissites? solus* Becker, 1981 from the Upper Devonian of SW Europe. From common, important diagnostic characters, the latter is considered to be a species of *Kirkbyites* Johnson, 1936 which is a valid genus of the Family Amphisitidae Knight, 1928 (Ostracoda, Palaeocopida, Kirkbyacea).

INTRODUCTION

In 1936, W.R. Johnson published detailed studies on ostracod faunas from the Missourian (Upper Pennsylvanian) of Nebraska (USA). Therein (1936, 35), the kirkbyid ostracod genus *Kirkbyites* Johnson was established. The only described species, *K. upsoni* Johnson, 1936, is the type-species (by original designation).

Referring to Johnson (1936, 36; pl.3, figs 4-6), *Kirkbyites* is characterized by an elongate outline with broadly rounded cardinal angles; by a median, subglobular node, small but prominent; by a second small node, subelliptical in outline and located posterodorsally; and by two carinae along the ventral margin which converge at the cardinal angles. A kirkbyan pit was reported, and the carapace surface described as reticulate. These characters are clearly indicative of an ostracod belonging to the Family Amphisitidae Knight, 1928.

Johnson's material, however, is relatively badly preserved and, therefore, the monospecific genus remained little known. Sohn (1961, 128, 130) put *Kirkbyites* Johnson, 1936 in synonymy with *Kegelites* Coryell & Booth, 1933, type-species *Girtyites spinosus* Coryell & Booth, 1933 [= *Amphisites dattonensis* Harlton, 1927] from the Pennsylvanian and Permian of N. America.

RECENT RESEARCH

In connection with the revision of the "Treatise on Invertebrate Paleontology, Part Q, Paleozoic Ostracoda", Johnson's original material was loaned to the present author. The collection, the (supposed) holotype and 12 topotypic paratypes (UNSM 34721-34735; Stanton Formation, Eudora Shale 1; Dyson Hollow, west of La Platte, Nebraska) consists entirely of single, more or less weathered valves, yellowish in colour and belonging to different ontogenetic stages.

Having inspected the original material, it became evident to the present author that the North American species closely resembles in carapace shape and ornamentation an amphisitid species from the Famennian (Upper Devonian) of the Cantabrian Mountains (N. Spain), namely *Kullmannissites? solus* Becker, 1981. This species shows, on the comparatively weak posterodorsal node, a prominent spine which is considered to be a "biotope indicative feature" (Becker & Bless, 1990); the outer

carina curves - as in *Kirkbyites upsoni* - above the dorsum at the anterior cardinal angle (see Fig.1); and the carapace width is narrow (see Becker, 1981, 32, 33; Pl.3, figs 8-15). It is, therefore, considered to be a species of *Kirkbyites*, Johnson rather than of *Kullmannissites*. This European taxon (see also Pl.1, figs 6-9) does not show the anterodorsal spine of *Kullmannissites* Becker, 1981 (Pl.1, figs 5a, 5b). Therein, it resembles *Kegelites* Coryell & Booth, 1933 from which, however, it is clearly distinguished by the anterodorsally located carinal flange and by the narrow carapace width. The amphisitid genus *Sinessites* Becker, 1981 (Pl.1, figs 4a, 4b) has the carina curving at the dorsum at both cardinal angles, but has no lateral nodes or spines.

The characteristic features described in *Kirkbyites solus* (Becker), and not mentioned by Johnson (1936), can be observed in *Kirkbyites upsoni* Johnson (Pl.1, figs 1-3). In several specimens, the outer carina clearly curves above the dorsum at the anterior cardinal angle (see also Fig. 1B). *K. upsoni* is (mainly) distinguished from *K. solus* by the more prominent posterodorsal node, on which was apparently situated a rather delicate spine, and by a transverse ridge on the subcentral node.

PALAEOECOLOGY

Kirkbyites solus (Becker, 1981) comes from nodule-bearing marls. It belongs to the so-called "Thuringian" eco-assemblage, indicative of low-energy environments (Becker, 1982, 164). In *Kirkbyites*, the dorsal spines are considered to be important "biotope indicative features" (Becker & Bless, 1990).

Kirkbyites upsoni Johnson, 1936 is reported from grey shales (Johnson, 1936, 4), but, unfortunately, associated faunas are not given. Referring to Keroher *et al.* (1967, 3708), the dark shales of the Stanton Formation contain some nodular limestones, possibly indicating similar environments. The occurrence of species, some of which have "biotope indicative" spines, belonging to *Kirkbya* Ulrich & Bassler, *Amphisites* Girty, *Ulrichia* Jones, *Roundyella* Knight and *Silenites* Coryell & Booth at the Eudora Shale localities may confirm this assumption.

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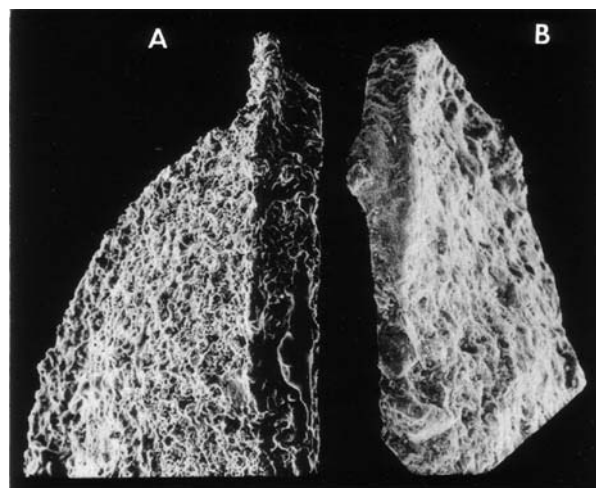


Fig. 1 Characteristic feature in *Kirkbyites* Johnson, 1936 - the anterodorsally located carinal flange; fig. A, *K. solus* (Becker, 1981), holotype SMF Xe 11217, anterior part of left valve, dorsal view (x130); fig. B, *K. upsoni* Johnson, 1936, paratype UNSM 34727, anterior part of right valve, dorsal view (x110).

Explanation of Plate 1

Figs 1-3, Eudora Shale, Stanton Formation, Upper Pennsylvanian; Missouri, USA. Figs 4-9, Vidrieros Formation, Famennian, Upper Devonian; Cantabrian Mountains, N. Spain.

- Fig. 1 *Kirkbyites upsoni* Johnson, 1936, adult left valve, paratype UNSM 34732, external view (length = 1070 μ m).
- Fig. 2 *Kirkbyites upsoni* Johnson, 1936, juvenile right valve, paratype UNSM 34727; fig.2a, external view; fig.2b, ventral view; fig.2c, anterior view (length = 980 μ m).
- Fig. 3 *Kirkbyites upsoni* Johnson, 1936, juvenile right valve, paratype UNSM 34722, dorsal view (length = 840 μ m).
- Fig. 4 *Sinnessites hispanicus* Becker, 1981, adult right valve, holotype SMF Xe 11191; fig.4a, external view; fig.4b, dorsal view (length = 1070 μ m).
- Fig. 5 *Kullmannissites kullmanni* Becker, 1981, adult left valve, holotype SSMF Xe 11204; fig.5a, external view; fig.5b dorsal view (length = 1270 μ m).
- Fig. 6 *Kirkbyites solus* (Becker, 1981), juvenile right valve, paratype SMF Xe 11221; fig.6a, external view; fig.6b, ventral oblique view (length = 760 μ m).
- Fig. 7 *Kirkbyites solus* (Becker, 1981), juvenile right valve, paratype SMF Xe 11219, external view (length = 1170 μ m).
- Fig. 8 *Kirkbyites solus* (Becker, 1981), adult left valve, holotype SMF Xe 11217; fig.8a, external view; fig.8b, dorsal view; fig.8c, anterior view (length 1480 μ m).
- Fig. 9 *Kirkbyites solus* (Becker, 1981), adult right valve, paratype SMF Xe 11220, ventral view (length = 1430 μ m).

