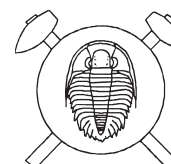


***Lampterocrinus astroferus* sp. n. (Crinoidea, Camerata)
from the Upper Silurian (Ludlow) of the Barrandian area (Czech Republic)**



***Lampterocrinus astroferus* sp. n. (Crinoidea, Camerata)
ze svrchního siluru (ludlowu) Barrandienu**

(1 fig., 2 pls)

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Well preserved remains of the crinoid genus *Lampterocrinus* Roemer, 1860 were found in the Silurian limestones of the upper part of the Kopanina Formation (Ludlow, Ludfordian) of the Barrandian area. Till present, this genus has been recorded only from the Lower and Middle Silurian strata of USA. Type species of the genus was described from the Beech River Formation, Niagaran (= Wenlockian) of Tennessee; several species have been recorded from the different American states (see: Hall, 1879, Weller, 1900 Foerste, 1917, Strimple, 1963 Witzke – Strimple, 1981, etc.) The Bohemian lampterocrinids belong to the new species described herein as *Lampterocrinus astroferus* sp. n.

Key words: Crinoidea; *Lampterocrinus*; Silurian; Ludlow; Barrandian area; Czech Republic

During the palaeontological and stratigraphical research of echinoderm assemblages of the Kopanina Formation in the quarries “Kosov” and “Koledník” near Beroun, abundant crinoid remains of various species were found. Most of these fossils are weathered on the bedding planes of grey, micritic, well bedded limestones, overlain with about 10 cm thick intercalations of shales. On the contrary, fossil remains in fresh quarried limestones are macroscopically almost undistinguishable. All fossiliferous layers belong to the upper Ludlow (Upper Ludfordian) with the index trilobite *Anaspis fecunda*. Apart from various types of very numerous columnals and pluricolumnals, crinoids are represented above all by skeletal remains of *Pisocrinus*, *Dendrocrinus*, *Lecanocrinus*, *Parapisocrinus*, *Pygmaeocrinus*, *Ramacrinus* (*Theloreus*) and a new species of *Lampterocrinus* (*L. astroferus* sp. n.). Remarkable is the occurrence of skeletal ossicles of pygmaeocrinids and ramacrinids recorded till present only from the Devonian strata.

Relatively large and easily distinguishable calyces of *Lampterocrinus astroferus* sp. n., occur in the “Kosov” quarries mostly on bedding planes of limestones exposed in the south-western wall of the eastern (old) quarry and, rarely, in the southern wall of western (younger) quarry. Two almost complete calyces have been found in the near quarry “Koledník” in limestones stratigraphically and lithologically identical to those in the “Kosov” localities.

Systematic part

Subclass *Camerata* Wachsmuth – Springer, 1885
Order *Diplobathrida* Moore – Laudon, 1943
Superfamily *Dimerocrinitacea* Zittel, 1879
Family *Lampterocrinidae* Bather, 1899

Genus *Lampterocrinus* Roemer, 1860

Type species: *Lampterocrinus tennesseensis* Roemer, 1860. Silurian, Niagaran (= Wenlock), USA.

***Lampterocrinus astroferus* sp. n.** (Pl. I, figs 1–4, Pl. II, figs 1–6)

2001 *Lampterocrinus* sp. n.; Prokop, p. 47, text-fig. 1

Holotype: L 30700, almost complete calyx with partly damaged tegmen, isolated from grey, micritic limestone.

Type stratum: Upper Silurian, Ludlow, Ludfordian, Kopanina Formation, *Anaspis fecunda* Horizon.

Type locality: “Kosov” quarries near Beroun, south-west wall of the old (eastern) quarry.

Material: Except the holotype, thirteen calyces in different stage of preservation from the “Kosov” and “Koledník” quarries.

Diagnosis: *Lampterocrinus* with bowl-shaped calyx, that is strongly narrowed to the base. Basals higher than radials, arm facets minute, well developed.

Description: Calyx medium, bowl-shaped, with convex slender base and low, cupuliform tegmen, bulging laterally the posterior interray, so that the whole calyx is conspicuously asymmetrical. The surface of calycinal plates is sculptured by prominent, star-like ribs. Anal tube is not preserved. Base of the calyx is strongly narrowed downward to the minute stem-facet. Infrabasals five, minute, flaring upward and well visible in side view. Basals large, involved nearly to an one-half of calyx. Radials relatively low, less than basals. Arm facets slender, strongly developed. Primibrachials, equally as interprimibrachials minute, weakly visible.

Remarks: Both the morphology and the general calyx shape of *Lampterocrinus astroferus* sp. n., are relatively similar to those of the type-species. Main differences concern the possession of a low tegmen, large basals (that are higher than radials), and slender, but well developed arm facets. The shape and density of ribs on the surface of calycinal plates recall the situation in *Lampterocrinus sculptus* Springer, 1926 from the same strata and locality as the type-species, i.e. *Lampterocrinus tennesseensis* Roemer, 1860.

Occurrence: All specimens of *Lampterocrinus astroferus* sp. n., have been found only at the localities “Kosov” and “Koledník” near Beroun, in grey, micritic lime-

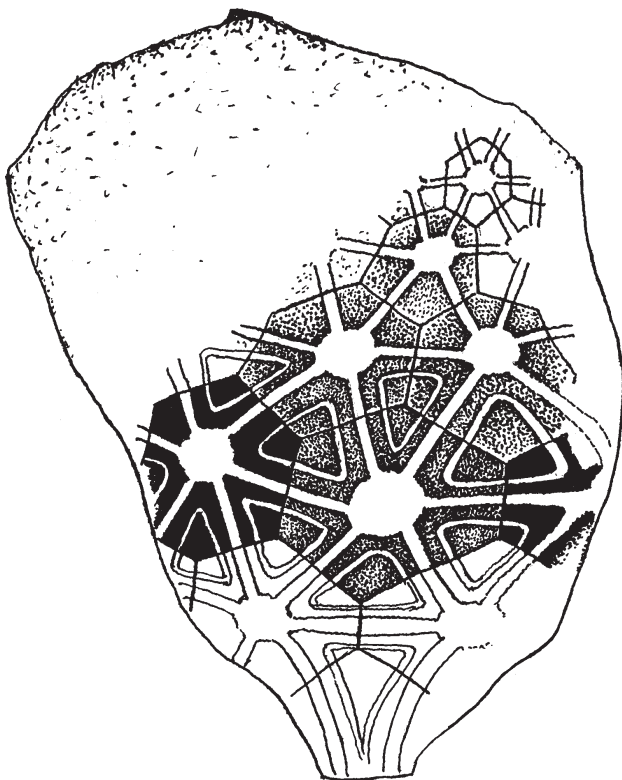


Fig. 1. *Lampterocrinus astroferus* sp. n., schematic drawing of the calyx with sculpture of calycinal plates [based on the holotype, (NM L 30700)]. Black: radials, dotted: anal plates. Orig. V. Petr.

stones of the *Ananaspis fecunda* Horizon (Ludlow, Ludfordian, Kopanina Formation). The new species is stratigraphically younger than the American species.

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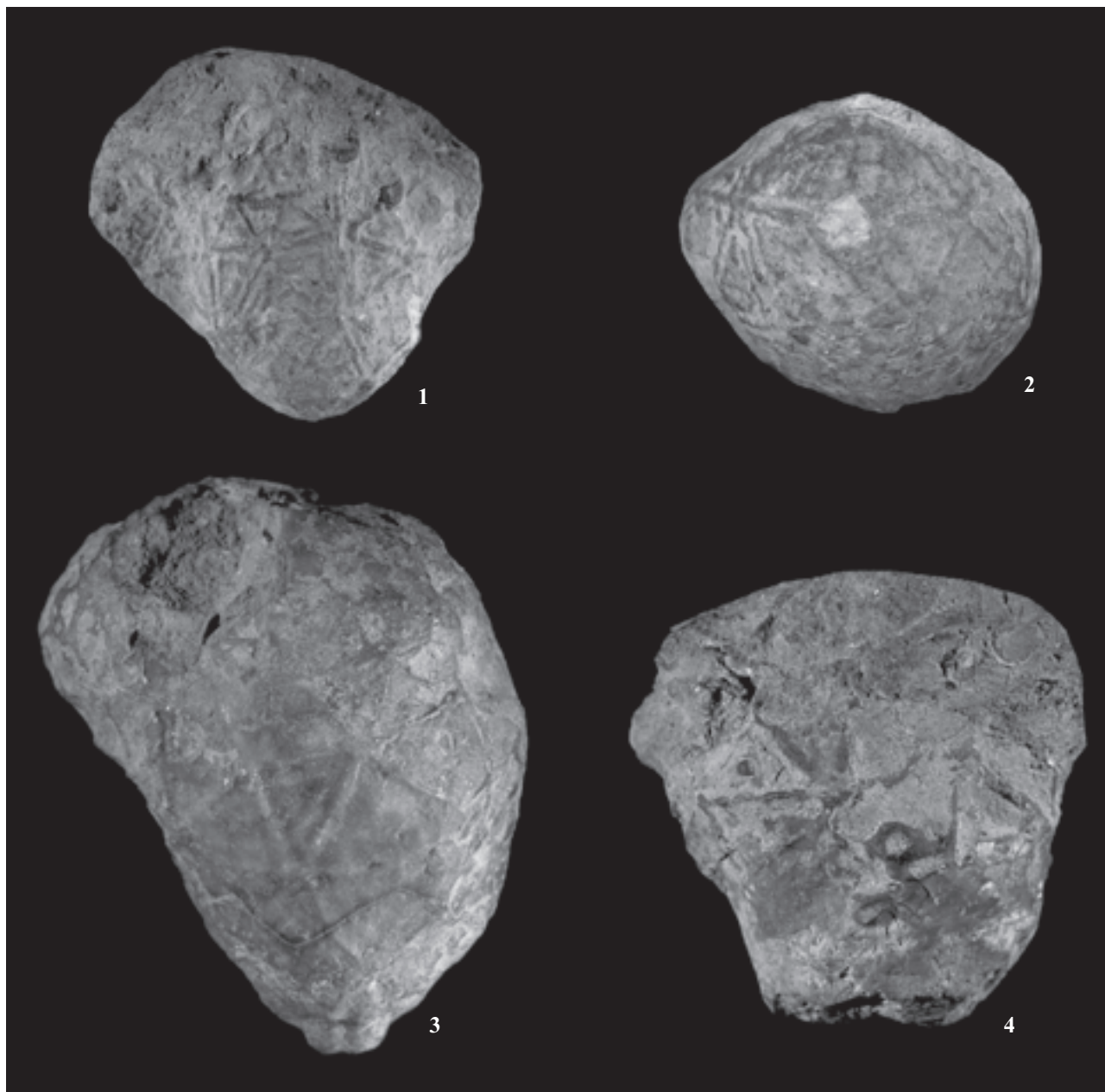
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Lampterocrinus astroferus sp. n. ze svrchního siluru (ludlowu) Barrandienu

V rámci výzkumů ostnokožců Barrandienu posledních let, byly ve svrchnosilurských vápencích kopaninského souvrství (ludlow, ludfordian), odkrytých v lomech „Kosov“ a „Koledník“ u Berouna, nalezeny poměrně četné calyxy kamerálních krinoidů rodu *Lampterocrinus*, dosud známého jen ze spodního a středního siluru USA. Čeští lampterokrinidi (zde popsání jako *Lampterocrinus astroferus* sp. n.), reprezentují nový, stratigraficky nejmladší druh tohoto rodu a jsou zatím jedinní, kteří byli nalezeni mimo území USA.

R. J. Prokop: *Lampterocrinus astroferus* sp. n. (Crinoidea, Camerata) from the Upper Silurian (Ludlow) of the Barrandian area (Pl. I)



Explanation of Plates

Plate I

Lampterocrinus astroferus sp. n.

1. L 30699, calyx with well preserved arm facets, lateral view. “Koledník” quarry. $\times 2.0$. 2. dtto, basal view. $\times 2.0$. 3. L 30700, the holotype, isolated calyx in lateral view. “Kosov”, eastern (old) quarry. $\times 2.3$. 4. L 30698, isolated calyx with the holdfast of a tiny crinoid attached to a calycinal plate. “Koledník” quarry. $\times 2.5$.

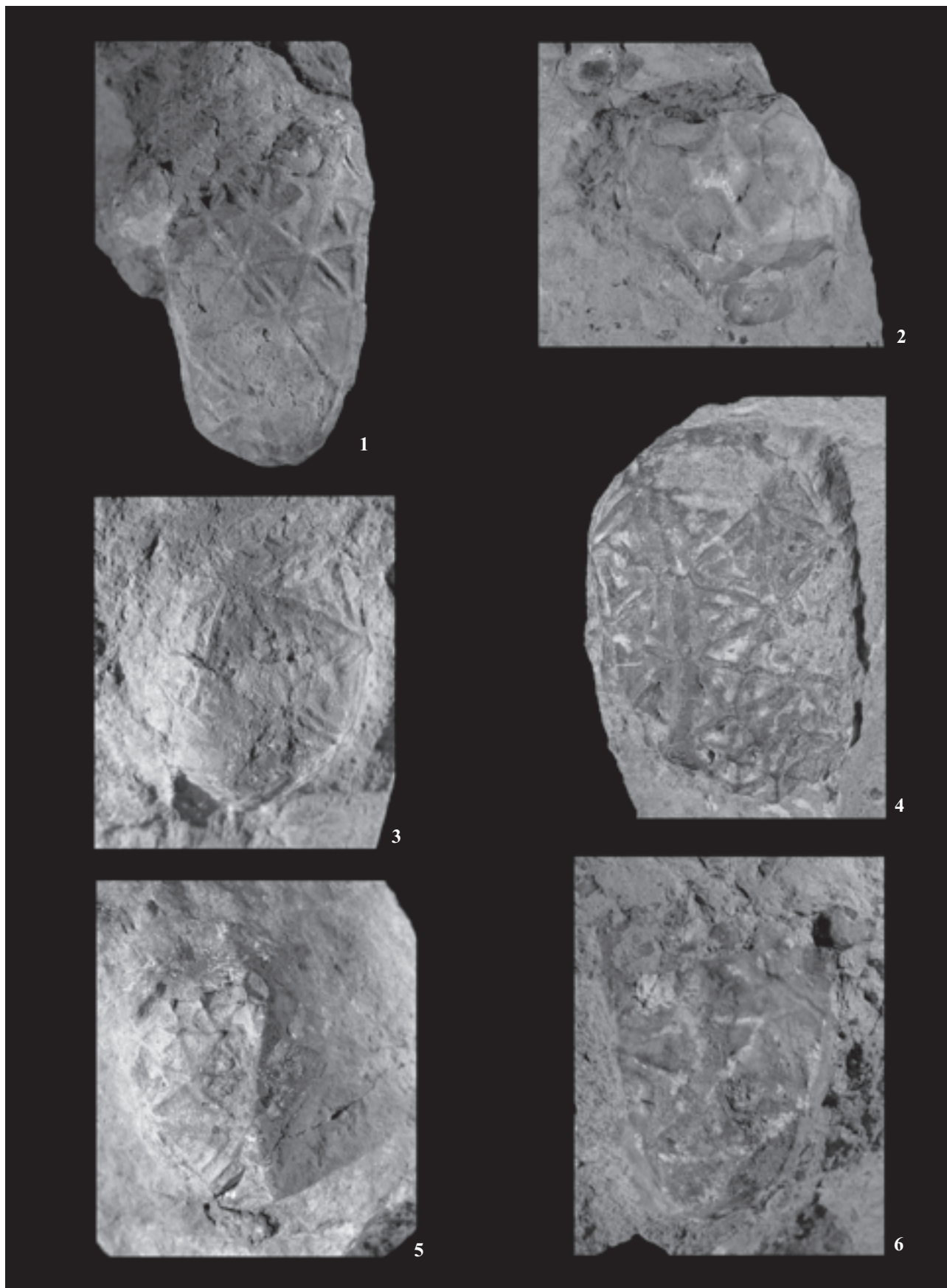
Plate II

Lampterocrinus astroferus sp. n.

1. L 37867, calyx, lateral view. “Kosov”, eastern quarry. $\times 1.3$. 2. L 37863, base of a calyx. “Kosov”, eastern quarry. $\times 2.2$. 3. L 30701, calyx, lateral view. “Kosov”, eastern quarry. $\times 2.0$. 4. L 37866, calyx with excellent preserved surface of plates, lateral view. “Kosov”, eastern quarry. $\times 1.8$. 5. L 37864, calyx with prominent arm facet. “Kosov” western quarry. $\times 1.5$. 6. L 37865, calyx of a young specimen, lateral view. “Kosov”, western quarry. $\times 2.5$.

All specimens are housed in the collections of the Palaeontological Department of the National Museum (Museum of Natural History), Praha, Catalogue L.

R. J. Prokop: *Lampterocrinus astroferus* sp. n. (Crinoidea, Camerata) from the Upper Silurian Ludlow) of the Barrandian area (Pl. II)



For explanation see p. 139