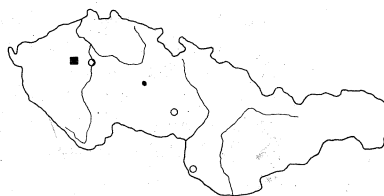


**Promygale janae sp. n., the new anthracomartid (Arachnida)
from the Upper Carboniferous of central Bohemia**

(4 text-figs., 2 pls.)

STANISLAV OPLUŠTIL

Abstract. In the present paper the new very rare find of the anthracomartid spider *Promygale janae* sp. n. is described. It is derived from the tuffogenic interlayer of the Upper Radnice seam (Westphalian B/C) of the Gottwald II Mine (formerly Mayrau) at Vinařice near Kladno. *Promygale janae* sp. n. is closely related to the species *Promygale bohemica* (Fritsch, 1899), however, it differs in wider opisthosoma and in median tergal area that narrows more steeply posteriorly. Furthermore, the species *P. janae* sp. n. bears relations to the species *P. minor* (Kušta, 1884), *P. elegans* (Fritsch, 1899), *Brachylycosa carcinoides* (Fritsch, 1884), and *Cleptomartus denuiti* (Pruvost, 1930). It varies from them for one thing in a different build of prosoma and opisthosoma, for another, except for the species *P. minor* (Kušta), also chronostratigraphically. *Promygale janae* sp. n. is the first anthracomartid described from the Kladno Basin.



Abstrakt. Je popsán nový velmi vzácný nález antrakomartidního pavoukovce *Promygale janae* sp. n. Nález pochází z tufogenního proplátku svrchní radnické sloje (vestfál B/C) dolu Gottwald II (dříve Mayrau) ve Vinařicích u Kladna. *Promygale janae* sp. n. jeví nejužší vztahy k druhu *Promygale bohemica* (Fritsch, 1899), od kterého se však pozná podle širší opistosomy a podle středové tergitové plošky, která se dozadu prudčeji zužuje. Druh *P. janae* sp. n. je dále blízký druhům *P. minor* (Kušta, 1884), *P. elegans* (Fritsch, 1899), *Brachylycosa carcinoides* (Fritsch, 1899) a *Cleptomartus denuiti* (Pruvost, 1930). Odlišuje se od nich jednak rozdílnou stavbou prosomy a opistosomy, jednak — s výjimkou druhu *P. minor* (Kušta) — i chronostratigraficky. *Promygale janae* sp. n. je prvním antrakomartidem popsáním z kladenské pánve.

Introduction

The representatives of the order *Anthracomartida* Karsch, 1882 belong to the important and most often found Upper Carboniferous terrestrial invertebrates. In Bohemia their remains are reported from Nýřany (Westphalian D): *Brachylycosa carcinoides* (Fritsch, 1899), *Oomartus nyranensis* Petrunkevitch, 1953, *Promygale bohemica* (Fritsch, 1899), and *P. elegans* (Fritsch, 1899). From the Rakovník Westphalian B/C the species *Promygale minor* (Kušta, 1884) and *Brachylycosa kustae* Petrunkevitch, 1953 were described. In Radvanice near Trutnov (Stephanian B) the species *Cryptomartus radvanicensis* Opluštil, 1985 was specified. The species *Promygale janae* sp. n. defined below is the first representative of the order *Anthracomartida* Karsch, 1882 referred to the Kladno Basin. No other finds of the arachnids have been reported from this area until recently (Opluštil 1985).

¹ Vaitova 570, 272 04 Kladno IV.

Systematic part*Anthracomartida* Karsch, 1882*Anthracomartidae* Haase, 1890*Promygale* Fritsch, 1899Type species: *Promygale bohémica* (Fritsch, 1889)*Promygale janae* sp. n.

Pls. I, II; text-fig. 2, 3, 4

Type locality: Gottwald II Mine (formerly Mayrau) at Vinařice near Kladno, central Bohemia.

Type horizon: Upper Carboniferous (Westphalian B/C boundary), Kladno Formation, Radnice seam complex, interlayer in the Upper Radnice (main Kladno) seam.

Holotype: The positive and negative of the dorsal part of an almost complete specimen figured herein on pls. I, II; text-fig. 1. The specimen is deposited in collections of the National Museum (Natural History Museum) in Prague under the No. Me 128⁺.

Material: Holotype only.

Description: Arachnid of mid-size (length 14 mm). Prosoma flat, its surface covered with dense fine granules up to 0.1 mm in size. Length of the prosoma predominates over its width (1.22 : 1). Lateral sides of the prosoma are parallel from the posterior edge up to approx. its mid-length, anteriorly, however, they archly converge. The prosomal posterior edge (place of attachment to the opisthosoma) is almost straight and only gently bent forwards. Posterior corners include the angle of 90°. Similarly as in the case of other anthracomarti, eyes are not developed (Petrunkevitch 1953).

The opisthosoma is incomplete, slightly deformed due to press. Both marginal plates of tergites 5–10 and submarginal plates of tergites 7–10 are secondarily broken off. The opisthosoma is almost circular in shape, only slightly greater in width than in length (1.13 : 1). Its margin is smooth, without thorns or denticles. Flat surface is covered with the same granules as that of the prosoma. Intersegmental lines are poorly distinct to indistinct.

The tergite 1 is straight and 2.5 times as short as tergites 4–7. Its lateral limitation, similarly as that of tergites 2 and 3, is distinct. Tergites 2–3 are concreted into one segment 3 times longer than the tergite 1. The following 4 tergites (4–7) exhibit the same length. Within the region of median and marginal plates these tergites are straight, intersegmental lines in the marginal part are indistinct. Neither the boundary between tergites 7–8 has been preserved. Prosoma/opisthosoma length index: 0.58.

Marginal plates are generally narrower than submarginal. As to the features of the ventral side of the opisthosoma, pressed intersegmental lines of sternites 5–10 can be observed. Sternites 5–8 are slightly convex, however, laterally their lines are still more archly turned backwards. The sternite 9 is arched within all its course, the sternite 10 is parabolic. A small circular anal operculum is spaced at its apex.

Legs are mostly incomplete; the tibia, tarsus, and metatarsus prevalently lack. Of the first left leg only the tarsus termination is absent. Its length only slightly exceeds the opisthosomal one. Femur, the biggest in size, is 2.6 times as long as the tibia; metatarsus is shorter than the tarsus. The build of legs in general is typically anthracomartid (legs are shorter and stronger), surface is composed of the same granulation as that of both the prosoma and opisthosoma. The legs are hairless — according to Petrunkevitch (1949) this feature is typical of all the anthracomarti.

Dimensions: Preserved length of a complete specimen is 13 mm (the original one did not exceed 14 mm). The prosoma attains 5 mm in length (originally approx. 5.5 mm), and is 4.5 mm wide. The opisthosoma is 9.5 mm long and 10.5 mm wide (the original width approx. 11 mm). The median tergal area has 4.5 mm in length and 5.5 mm in width at the anterior edge and 3.7 mm at the posterior one. Length of the first left leg (without coxa) 9.7 mm, femur is 4.6 mm long, patella 1.2 mm, tibia 1.9 mm, metatarsus 0.9 mm, and tarsus 1.1 mm.

Remarks: *P. janae* sp. n. displays the closest morphologic relations to the species *P. bohémica* (Fritsch, 1899) from the Nýřany Westphalian D. However, it also stands near to the species *P. minor* (Kuřta, 1884)

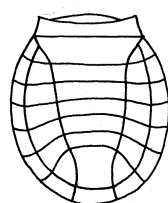
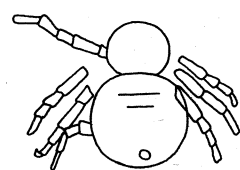
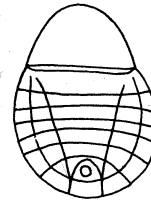
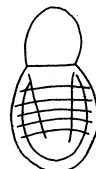
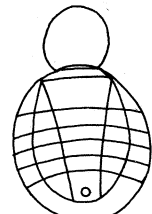
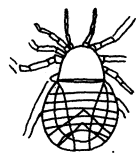
RADVANICE Stephanian B	 <i>Cryptomartus radvanicensis</i>	
NÝŘANY Westphalian D	 <i>Brachylycosa carcinoides</i>	 <i>Oomartus nyranensis</i>
	 <i>Promygale bohémica</i>	 <i>Promygale elegans</i>
RAKOVNÍK Westphalian B/C	 <i>Brachylycosa kustae</i>	 <i>Promygale minor</i>

Fig. 1. Finds of the anthracomarti derived from the Carboniferous Basins of central Bohemia and from the Lower Silesian Basin (after Petrunkevitch 1953, 1955 and Opluštil 1985). Size proportions not preserved

and *P. elegans* (Fritsch, 1899). In some of its morphologic features *P. janae* sp. n. resembles even the species *Brachylycosa carcinoides* (Fritsch, 1899) and *Cleptomartus denuiti* (Pruvost, 1930).

The major difference between *P. janae* sp. n. and *P. bohémica* (Fritsch) consists in the build of the opisthosoma. In the case of *P. bohémica* (Fritsch) the opisthosoma is of a circular outline, and in that of *P. janae* sp. n. its width exceeds the length (in 1.41 : 1 ratio). Furthermore, the difference is also marked in shape of the median tergal area (median plates of tergites 4–8) — in case of *P. janae* sp. n. this area narrows in width from 5.5 mm at the anterior edge to 3.6 mm at the posterior one (anterior/posterior edge length

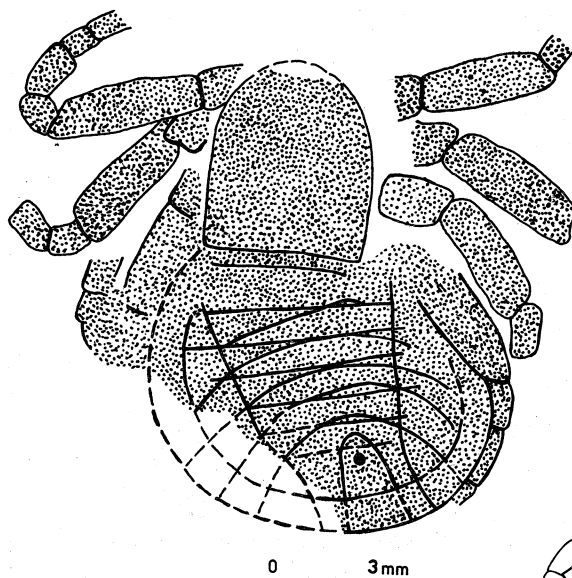


Fig. 2. *Promygale janae* sp. n. The drawing takes the position in which it was fossilized. Westphalian B/C, Vinařice near Kladno

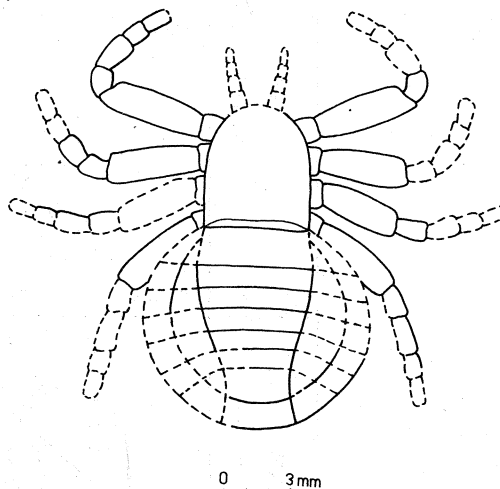


Fig. 3. *Promygale janae* sp. n. Reconstruction with supplement of presumed appearance of unpreserved parts (dash line)

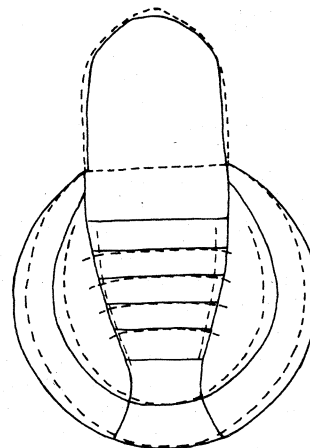
index : 1.53). On *P. bohémica* this narrowing is less distinct (index 1.35). Both species are almost identical in shape of the prosoma; the anterior edge of the prosoma of *P. janae* sp. n. is more bluntly rounded.

The species *P. minor* (Kušta, 1884) derived from the Rakovník Westphalian B/C varies from *P. janae* sp. n. in a parabolic prosoma the width of which prevails over the length. Lateral sides of the new taxon are up to the mid-length of the prosoma parallel, and further they archly converge. Prosomal length outnumbers the width. The course of intersegmental lines on the ventral side of *P. janae* sp. n. is arched, *P. minor* (Kušta) exhibits straight, roof-like bent lines including an angle of 90° – 100° (Petrunkévitch 1953).

P. elegans Fritsch, 1899 from the Westphalian D (the Nýřany locality) is distinguishable from *P. janae* sp. n. by conspicuously narrower opisthosoma and by the prosoma that narrows both anteriorly and posteriorly.

Brachylycosa carcinoides (Fritsch) from the Nýřany Westphalian D differs from *P. janae* sp. n. especially in a circular outline of the prosoma.

Fig. 4. Differences between *P. janae* sp. n. (full line) and *P. bohémica* (Fritsch) in the build of the prosoma



Cleptomartus denuiti (Pruvost) from the Belgian Lower Westphalian can be identified due to tiny denticles placed along the opisthosomal circumference and the large parabolic prosoma. Prosoma/opisthosoma length index: 0.44 (in case of *P. janae* sp. n. 0.58).

Stratigraphic range and geographical distribution: *P. janae* sp. n. comes from the Gottwald II Mine (formerly Mayrau) at Vinařice near Kladno. It has been preserved within the greyish-white volcanogenic rock called "opuka" which forms an interlayer in the Upper Radnice (main Kladno) seam, the Lower Radnice Member, the Kladno Formation. According to Havlena (1964) its age corresponds to the Westphalian B/C boundary, according to Němejc (e. g. 1953), however, to the Westphalian C. On the other hand, Šetlík and Obrhel (oral communication) presume the Lower Radnice Member to be of Upper Westphalian B age as follows from the biostratigraphic research. The representatives of the genus *Promygal* Fritsch, 1899 have hitherto been reported from the Upper Westphalian of Bohemia being firstly described by Kušta (1884) and Fritsch (1899).

Submitted November 19, 1985, received for publication April 2, 1986

Translated by G. Buberlová

References

- Fritsch A. (1899): Fauna der Gaskohle und der Kalksteine der Permformation Böhmens. — Praha.
 Havlena V. (1964): Geologie uhelných ložisek, 2. — Nakl. Čs. akad. věd. Praha.
 Kušta J. (1884): Neue Arachniden aus der Steinkohlenformation von Rakonitz. — Sitz.-Ber. Kön. Böhm. Gesell. Wiss., 26, 398–403. Praha.
 Němejc F. (1953): Úvod do floristické stratigrafie kamenouhelných oblastí ČSSR. — Nakl. Čs. akad. věd. Praha.
 Opluštil S. (1985): New findings of Arachnida from the Bohemian Upper Carboniferous. — Věst. Ústř. Úst. geol., 60, 1, 35–42. Praha.
 Petrunkevitch A. (1949): A study of Paleozoic Arachnida. — Trans. Conn. Acad. Arts and Sci., 37, 69–315. New Haven.
 — (1953): Palaeozoic and Mesozoic Arachnida of Europe. — Mem. Yale Univ., 53, 1–126. New Haven.
 — (1955): Arachnida. — In R. C. Moore: Treatise on Invertebrate Paleontology, 9, 42–162, Geol. Soc. Amer. Lawrence, Kansas.

RECENZE

Dixième Congrès International de Stratigraphie et de Géologie du Carbonifère (Madrid 1983). — *Compte Rendu*, vol. 1, 367 str., Madrid 1985.

Jednou z příčin, proč se v r. 1983 konal X. mezinárodní kongres pro stratigrafii a geologii karbonu v Madridu, bylo, že španělský karbon má řadu společných znaků s karbonem východoevropským, zejména s doneckou pávní. Protože od krefeldského kongresu (1971) vyvíjí Subkomise pro stratigrafii karbonu vytrvalou snahu o vytvoření celoevropského, resp. celosvětového platného dělení karbonu, jevil se z tohoto důvodu španělský karbon jako zvláště vhodný pro uspořádání takového setkání.

Recenzovaný sborník vedle základních informací o kongresu a jeho exkurzích, úvodních a závěrečných projevů a stručných zpráv subkomisí (pro stratigrafii karbonu, pro mikroflóru paleozoika a pro uhelnou petrologii) obsahuje celkem 31 příspěvků I. sekce kongresu, věnovaných problémům stratigrafie a korelace karbonu. Asi pětina článků je věnována studiu fosilních rostlin, přibližně stejný počet se zabývá karbonskou faunou, hlavně konodonty, korály a foraminiferami. Rada

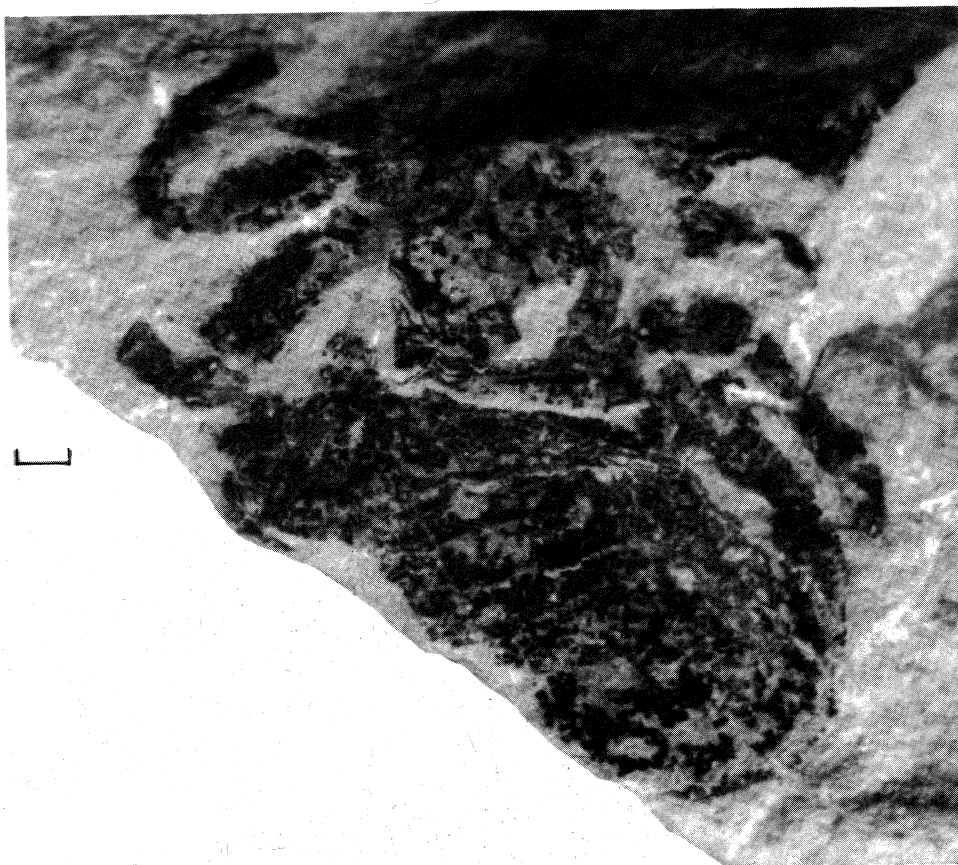
článků pojednává o stratigrafii některých stupňů a podstupňů karbonu (zejména v SSSR). Za pozornost stojí příspěvek J. Doubingerové a P. Vettera o stefanu ve Francii, kteří uvádějí ojedinělé nálezy callipterid dokonce již ze stefanu (!). Pozoruhodná je též práce K. Burgera, věnovaná současnému stavu výzkumů uhelných jílovců (tonsteinů). Pro nás je také zajímavý článek N. J. Riley et al., věnovaný popisu alternativní stratotypové lokality vestfálu C na řece River Doe Lea u Paltertonu na severu Derbyshiru ve Velké Británii. Významné mikrosporové společenstvo lze srovnávat s nálezy známými ze středních a západních Čech.

Nevýhodou recenzovaného sborníku je, že asi polovina článků je publikována ve španělštině. Vydavatelé se za tento fakt autorům i čtenářům omlouvají v úvodu sborníku, protože nebylo možné zajistit původně zamýšlené překlady těchto prací do angličtiny (většina z nich nemá ani anglické abstrakty). Ve srovnání s materiály IX. kongresu pro stratigrafii karbonu (1979) je třeba uvítat, že tyto sborníky vycházejí podstatně dříve, a jejich příspěvky jsou tudíž stále aktuální.

Jiří Pešek

S. Opluštil: *Promygale janae* sp. n., the new anthracomartid
from the Upper Carboniferous of central Bohemia

Pl. I



Promygale janae sp. n., Westphalian B/C, Vinařice near Kladno. The positive of the imprint of the dorsal side (pl. I). Length of the line is 1 mm (analogously in. pl. II)
The negative of the imprint of the dorsal side. Especially the pressed segmental lines of the ventral side are conspicuous (pl. II)

Photos by S. Opluštil

Pl. II

