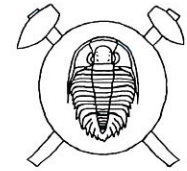


Graptolites of the *Pribylograptus leptotheca* and *Lituigraptus convolutus* biozones of Tmaň (Silurian, Czech Republic)



Graptoliti zón *Pribylograptus leptotheca* a *Lituigraptus convolutus* z Tmaň (silur, Barrandien) (Czech summary)

(11 text-figs, 20 plates)

PETR ŠTORCH

Geologický ústav Akademie věd ČR, Rozvojová 135, 165 00 Praha 6, Czech Republic

The well preserved graptoloid fauna of the middle Aeronian (middle Llandovery) *leptotheca* and *convolutus* biozones comprising 60 species and subspecies is described from Svatý Jiří near Tmaň. The *leptotheca* Biozone has been introduced in the Silurian graptolite zonal scheme of the Barrandian area in place of the lower part of the *convolutus* Biozone of former classifications. A dominance of uniserial rastritid forms (both species and specimen abundance) is documented by quantitative analysis of bulk samples. Seven new species (*Normalograptus? inornatus*, *Petalolithus krizi*, *Neolagarograptus impolitus*, *Monograptus respectabilis*, *M. dracocephalus*, *M. mirificus* and *Campograptus sanctgeorgensis*) and one new genus (*Neolagarograptus*) are erected and ten species are left in open nomenclature. Twenty-three taxa are recorded for the first time in Bohemia.

Key words: graptolites, Silurian, middle Llandovery, taxonomy, biostratigraphy, faunal composition

Introduction

Fields surrounding Svatý Jiří Church near Tmaň, in the western part of the Silurian outcrop area of Barrandian, are rich in loose material of bleached, yellowish or gray siliceous shales with beautiful and abundant black or brown rhabdosomes of middle Llandovery (mid-Aeronian) graptolites. Formerly black siliceous shales were slightly heated by a neighbouring basalt sill of Wenlock-Ludlow age and bleached by late-Tertiary to Pleistocene weathering.

A graptolite fauna comprising 31 species was collected by Bouček and Přibyl and referred to the *convolutus* Biozone by Bouček (1953). He recognized three subzones within the *convolutus* Biozone: in ascending order – a *Monograptus millepeda* Subzone, a *Pristiograptus leptotheca* Subzone, and a *Petalolithus folium* Subzone. Later, examination of several other sections through the *convolutus* Biozone (Štorch 1986) led to abandonment of the three subzones introduced by Bouček (Štorch 1994).

Recent studies on graptolite faunal dynamics (Štorch 1995, Melchin et al. 1998) recorded particularly high diversity in the *convolutus* Biozone assemblages from the Barrandian area of Bohemia and prompted a detailed examination of the biozone and a thorough taxonomic revision of the fauna. New collections, made from loose material and excavations in the field 500 m SE of Svatý Jiří Church, E of Tmaň, comprise more than 10,000 graptolites, about one-quarter of which have been used for detailed taxonomic studies. The rhabdosomes are flattened, rarely preserved in low relief but never tectonically deformed. Even tiny details such as apertural processes, various spines, ancoras and membranous bodies are usually well seen, septa and internal sutures being often preserved through. Species diversity is particularly high, with 60 taxa recorded.

Forty-one (c. two-thirds) of the taxa belong in the Monograptacea, being notably represented by the species with isolated, highly triangulate and rastritiform thecae (14 species of *Rastrites*, *Lituigraptus*, *Torquiraptus* and, in part, *Monograptus*) and spinose hooked thecae (7 species of *Campograptus*). Dorsally curved, arcuate rhabdosomes and rhabdosomes enrolled in loose, commonly helical spirals predominate (29 species). Diplograptacean petalograptids (genera *Petalolithus* and *Cephalograptus*) are diverse, conspicuous but always minor elements of the graptolite fauna. The composition of the fauna and individual species abundance were examined also in four bulk samples (10 kg each) collected in different parts of the section (figures 2 and 3). More than three quarters of the taxa were recorded in these four samples. In the graptoloid taphocenoses some 23–31 % of the rhabdosomes are diplograptacean. Taphocenoses are dominated by monograptacean rhabdosomes which belong to a few species with rastritiform and isolated, highly triangular thecae (41–53 % of the rhabdosomes). Prominent, seemingly common petalograptids (*Petalolithus* and *Cephalograptus*) represent just 1–2 % of the material.

New material allowed recognition of seven new graptolite species and one new genus. Old collections, housed in the Czech Geological Survey and the National Museum in Prague, have been re-examined, including the type material of fifteen taxa erected by Barrande, Perner, Bouček, Přibyl and myself and based wholly or in part upon the material from the *convolutus* Biozone. In addition to the most important locality (Tmaň) other sections in Hlásná Třebaň, Černošice, Karlík, and Velká Chuchle (for explanation see Štorch 1986) were revised. Only seven species recorded by previous authors from the *convolutus* Biozone (in the broad, former sense) have not been identified in the material from Tmaň. These are: *Diplograptus tamariscus* var. *linearis* Perner, 1897 –