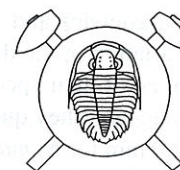


## A new species of *Neodiplograptus* from the Middle Llandoverly of the Rheidol Gorge, Wales



### Nový druh rodu *Neodiplograptus* ze středního llandoverly lokality Rheidol Gorge (Wales) (Czech summary)

(1 text-fig.)

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*Neodiplograptus peggyae* n. sp. is described from the *N. magnus* Biozone of the Rheidol Gorge, Wales. It occurs here with the biozonal index species, from which it may be distinguished by its lesser rate of increase in dorso-ventral width and in the maximum (2 mm) attained. Like many *Neodiplograptus* species, *N. peggyae* appears to have had a restricted geographical distribution. The British biozonal index species, *Neodiplograptus magnus*, is recognized from Bohemia for the first time.

**Key words:** Graptolithina, Silurian, Llandoverly, Wales

### Introduction

The Silurian graptoloid genus *Neodiplograptus* Legrand, 1987 is the subject of ongoing study, involving both the examination of chemically isolated material to elucidate the pattern of early astogeny (Melchin and Mitchell 1991), and the description of new species (Štorch 1983, Štorch and Serpagli 1993), many of which appear to have had a restricted geographical distribution.

Until now, the only *Neodiplograptus* species known from the Aeronian (Middle Llandoverly) of Britain was *N. magnus* (Lapworth, 1900). Recent collections made from the Rheidol Gorge, Wales have revealed the presence of another (new) species, which is described below.

### Systematic Palaeontology

Superfamily Diplograptioidea Lapworth, 1873

Family Normalograptidae Štorch and Serpagli, 1993

Genus *Neodiplograptus* Legrand, 1987

Type species (by original designation): *Diplograptus magnus* H. Lapworth, 1900, from the Llandoverly of Ddôl Farm, near Rhayader, Wales.

**Diagnosis** (after Štorch and Serpagli, 1993): Rhabdosome ovoid to nearly rectangular in cross section, more or less tabular. Thecae strongly sigmoidal (almost climacograptid) with almost semicircular apertural excavations proximally. Distal thecae become glyptograptid, with much less pronounced genicula. Rhabdosome usually septate. Sricula simple, often possessing a prominent nema. Th2<sup>1</sup> is dicalycal.

### *Neodiplograptus peggyae* n. sp.

Text-fig. 1, figs. 1-4

1907 *Diplograptus* (*Mesograptus*) *magnus*, H. Lapworth, Elles and Wood, 1907, p. 266, pl. 31, fig. 14c (*non* 14a, b, text-fig. 183).

**Etymology:** After Mrs Peggy Knight (1913-1989), grandmother of the senior author.

**Holotype:** BGS DKL2806 (text-fig. 1, fig. 2), housed at the British Geological Survey, Keyworth; from the *magnus* Band (O. T. Jones, 1909, locality F17), Derwenlas Formation, Rheidol Gorge, Wales.

**Material:** 20 specimens, preserved in low to full relief as pyrite internal moulds, all from the *Neodiplograptus magnus* Band of the Rheidol Gorge, Wales.

**Diagnosis:** Neodiplograptid in which dorso-ventral width increases gradually from 0.5-0.6 mm at th1' to 1.1-1.25 mm at th5', to a distal maximum of 2 mm, attained at approximately the 15th thecal pair.

**Description:** The rhabdosome is straight and bears thecae of typical neodiplograptid morphology, approaching climacograptid proximally, more nearly glyptograptid distally. Details of proximal dorso-ventral width and thecal spacing are given in Table 1. Distally, a dorso-ventral width of 2 mm is maintained from the 15th thecal pair onwards. The sricula is exposed for 1.4 mm. The median septum is complete on the obverse side of the rhabdosome.

**Remarks:** *Neodiplograptus peggyae* n. sp. is similar in rhabdosome morphology to *N. magnus* (H. Lapworth, 1900), but is conspicuously narrower and augments its dorso-ventral width at a lesser rate.

Zalasiewicz and Tunncliff (1994) noted considerable variation in the dorso-ventral width of *N. magnus*, but none of their specimens is as narrow proximally as *N. peggyae* (they quote dorso-ventral width at th5 as 1.4-2.0 mm for *N. magnus*). Specimens of *N. magnus* from the Rheidol Gorge are illustrated herein (text-fig. 1, figs. 5-13) and dorso-ventral width and 2TRD measurements given in Table 1 for comparison with those for *N. peggyae*.

Table 1. Measurements (in mm) of proximal dorso-ventral width (DVW) and thecal spacing (expressed as a two theca repeat distance, 2TRD, sensu Howe 1983) for *Neodiplograptus peggyae* n. sp. and *N. magnus* (H. Lapworth, 1900)

<i>Neodiplograptus peggyae</i> n. sp.							
Specimen no.		th1 <sup>1</sup>	th2 <sup>1</sup>	th3 <sup>1</sup>	th5 <sup>1</sup>	th7 <sup>1</sup>	th10 <sup>1</sup>
BGS DKL2799	DVW	0.6	0.8	0.9	1.2	1.35	1.5
	2TRD		1.35	1.4	1.65	1.95	1.95
BGS DKL2801	DVW	0.55	0.85	0.95	1.1	1.35	1.75
	2TRD		1.5	1.6	1.75	1.85	
BGS DKL2802	DVW	0.55	0.95	1.0	1.25	1.5	1.7
	2TRD		1.5	1.6	1.7	1.8	
BGS DKL2804	DVW	0.5	0.9	1.05	1.25	1.5	1.7
	2TRD		1.5	1.65	1.8	1.95	2.05
BGS DKL2806	DVW	0.5	1.0	1.15	1.25	1.4	1.5
	2TRD		1.5	1.6	1.75	1.85	
BGS DKL2807	DVW	0.55	0.9	1.1	1.25	1.35	1.5
	2TRD		1.3	1.25	1.45	1.5	1.55
<i>Neodiplograptus magnus</i> (Lapworth, 1900)							
Specimen no.		th1 <sup>1</sup>	th2 <sup>1</sup>	th3 <sup>1</sup>	th5 <sup>1</sup>	th7 <sup>1</sup>	th10 <sup>1</sup>
BGS DKL2796	DVW	0.7	1.0	1.2	1.45	1.8	
	2TRD		1.3	1.6	1.7	1.8	
BGS DKL2800	DVW	0.55	0.8	0.9	1.45	1.7	
	2TRD		1.5	1.65	1.75	1.85	
BGS DKL2803	DVW	0.55	0.9	0.95	1.4	1.8	2.25
	2TRD		1.4	1.55	1.65	1.75	
BGS DKL2805	DVW	0.65	1.0	1.25	1.5	1.75	
	2TRD		1.5	1.6	1.7	1.8	
BGS DKL2808	DVW	0.6	0.75	0.95	1.45	1.7	1.85
	2TRD		1.5	1.55	1.75		
BGS DKL2809	DVW	0.6	0.95	1.1	1.55	1.75	
	2TRD		1.55	1.6	1.8	2.0	
BGS DKL2810	DVW	0.55	1.0	1.15	1.5	1.75	
	2TRD		1.1	1.15	1.35	1.4	1.55
BGS DKL2811	DVW	0.55	0.85	1.05	1.5	1.75	
	2TRD		1.4	1.5	1.6	1.75	1.75
BGS DKL2812	DVW	0.65	0.95	1.1	1.45	1.75	
	2TRD		1.4	1.6	1.7	1.8	
BGS DKL2813	DVW	0.75	1.1	1.25	1.6	1.8	1.85
	2TRD		1.2	1.25	1.4	1.5	
BGS DKL2814	DVW	0.65	0.85	1.1	1.45	1.75	1.8
	2TRD		1.4	1.5	1.6	1.65	1.75
BGS DKL2815	DVW	0.75	1.2	1.3	1.65	1.75	1.8
	2TRD		1.2	1.2	1.25	1.35	
BGS DKL2816	DVW	0.75	1.1	1.35	1.6	1.8	
	2TRD		1.35	1.4	1.5	1.65	
BGS DKL2817	DVW	0.7	0.95	1.15	1.5	1.75	1.85
	2TRD		1.25	1.3	1.4	1.5	1.6
BGS DKL2818	DVW	0.65	0.95	1.1	1.5	1.85	
	2TRD		0.9	1.0	1.1	1.35	
BGS DKL2819	DVW	0.65	0.95	1.15	1.45	1.75	1.9
	2TRD		1.25	1.35	1.55	1.65	1.85

Only one specimen assignable to *N. peggyae* has been illustrated previously. This was by Elles and Wood (1907, explanation to pl. 31, fig. 14c) who described a specimen from the Rheidol Gorge as a 'narrow specimen probably referable to' *N. magnus*. The species is not known from outside Wales.

In the Rheidol Gorge section *N. peggyae* is restricted to the *N. magnus* Biozone. At a comparable level in Bohemia Štorch (1983) recorded *Diplograptus* sp. This material may now be assigned to *N. magnus* on the basis of its identical rhabdosome and thecal morphology and dimensions. This is the first time that *N. magnus* has been recognized from Bohemia.

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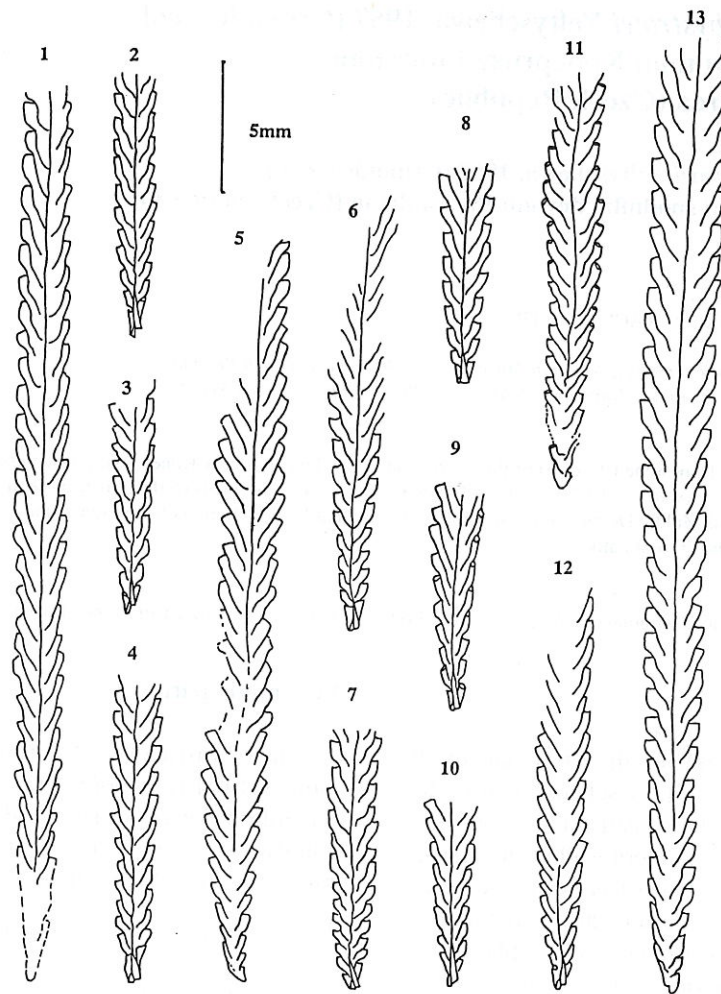


Fig. 1. 1-4: *Neodiplograptus peggyae* n. sp. 1 - BGS DKL2797, 2 - BGS DKL 2806, holotype, 3 - BGS DKL2804, 4 - BGS DKL2802; 5-13: *Neodiplograptus magnus* (H. Lapworth, 1900), 5 - BGS DKL2803, 6 - BGS DKL2819, 7 - BGS DKL2813, 8 - BGS DKL2809, 9 - BGS DKL2800, 10 - BGS DKL2796, 11 - BGS DKL2814, 12 - BGS DKL2811, 13 - BGS DKL2805.  
All from the *magnus* Biozone, Rheidol Gorge, Wales

### Nový druh rodu *Neodiplograptus* ze středního llandovery lokality Rheidol Gorge (Wales)

Z biozóny *N. magnus* (Llandovery) lokality Rheidol Gorge z Walesu (Velká Británie) je popsán *Neodiplograptus peggyae* n. sp. Vyskytuje se společně s vůdčím druhem biozóny *N. magnus*, od kterého se liší užším (2 mm) pozvolna se rozšiřujícím rhabdosomem. Velšský vůdčí druh *Neodiplograptus magnus* je poprvé doložen z Barrandienu, *N. peggyae* n. sp. zde však chybí. Podobně jako řada jiných druhů rodu *Neodiplograptus*, měl pravděpodobně omezené paleogeografické rozšíření.