

CORRESPONDENCE

The base of the Ludlow Series in the graptolitic facies

SIR – Among recent decisions made by the Subcommittee on Silurian Stratigraphy, reported as ready for formal submission to the IUGS Commission on Stratigraphy (Holland, 1980), was the naming of the third series of the Silurian System as the Ludlow Series. Furthermore, the Subcommittee designated the quarry at Pitch Coppice [NGR SO 4723 7298], described by Holland, Lawson & Walmsley (1963, figs 8, 11), within the Ludlow type area, as the international boundary stratotype for the base of the Ludlow Series. They also decided that there should be two Ludlow stages instead of the four originally defined by Holland *et al.* (1963). The new stage names were published by Holland *et al.* (1980); these are the Gorstian Stage, combining the former Eltonian and Bringewoodian stages, and the Ludfordian Stage, combining the former Leintwardinian and Whitcliffian stages.

The problem of recognising the base of the Ludlow Series in the graptolite zonal sequence has been discussed most recently by White (1974). At that time, no graptolites had been reported in the type area of Ludlow, Salop from the Lower Elton Formation, the basal formation of the Ludlow Series, except for a single example of *Saetograptus ?varians* (Wood) from the topmost metre (Holland, Rickards & Warren, 1969, p. 676). However, the presence of *Monograptus uncinatus orbatus* Wood from a few metres above the base of the Ludlow Series near Much Wenlock, Salop, indicative of the *nilssoni* Zone, suggested that in the adjacent Ludlow type area, the lowest Ludlow strata were likely to be of *nilssoni* Zone age also (White, 1974).

The purpose of this note is to record the discovery of graptolites in the Lower Elton Formation at two localities in the Ludlow type area. One of these is the international boundary stratotype section in Pitch Coppice, where *?Saetograptus varians* (Wood) was found only 3 cm above the base of the Lower Elton Formation and a specimen of *?Neodiversograptus nilssoni* (Barrande) was also found within the basal 0.23 m of the Formation. The other locality is a forestry track 376 m at 161° from Pitch Coppice quarry [NGR SO 4735 7262] where three fragments of *?N. ex.gr. nilssoni* have been collected at an estimated 20 m above the base of the Lower Elton Formation.

The graptolites are poorly preserved and fragmentary, precluding firm identification (by Dr R. B. Rickards, Cambridge). However, these new records provide a strong indication that the earliest rocks of the Ludlow Series are of *nilssoni* Zone age.

Graptolites are rare in the underlying Wenlock Limestone in the Ludlow area, but Holland, Rickards & Warren (1969) recorded *Monograptus deubeli* Jaeger and *Monograptus ludensis* (Murchison) from the lower third of this formation, indicative of the *ludensis* Zone. The graptolite zone to which the uppermost two-thirds of the Wenlock Limestone belongs remains uncertain.

However, the new records of graptolites from the Lower Elton Formation support the current practice of regarding the Wenlock-Ludlow Series boundary as coincident with the *ludensis-nilssoni* zonal boundary, as advocated by Holland, Rickards & Warren (1969, p. 681).

References

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