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# Solva Harbour

[SM 801 241] and [SM 802 240]

## Introduction

Outcrops in the cliffs on either side of Solva Harbour expose rocks of the lower and middle Menevian Group (St David's Series, Middle Cambrian). These beds yield faunas indicative of the *parvifrons* Zone. This site supplements the Porth-y-rhaw site, and together they provide the best-documented faunal sequence in the British Middle Cambrian.

Cambrian rocks exposed in Solva Harbour range from the lower Solva Group up to the 'Lingula Flags', but the succession is disrupted by major faulting along the inlet, which displaces outcrops of 'Lingula Flags' and truncates the igneous intrusions. The locality in the Menevian Group behind the lifeboat house was visited during the Geologists' Association excursion of 1930 (Cox *et al.*, 1930b).

## Description

On the north-west side of Solva Harbour (Figure 4.9), beds of the middle Menevian Group are exposed behind the old lifeboat house, about 10 m from the base of a thick felsite sill. They consist of thinly-bedded grey-green mudstones and silty mudstones, dipping south-west at about 40°. The mudstones are well laminated, with dark-grey laminae up to 5 mm thick, black laminae 1–2 mm thick and pale-grey laminae also 1–2 mm thick that show signs of disruption.

White-weathering phosphate nodules are abundant along certain horizons parallel to bedding, and ferruginous nodules also occur. The rocks are occasionally bleached, resembling the horizons seen at Dwrhyd Pit, and in places appear spotted. Fossils collected include *Eodiscus punctatus punctatus* (Salter), *Meneviella venulosa* (Salter), '*Solenopleura*'*applanata* (Hicks) and species of *Onymagnostus* and *Peronopsis*, with brachiopods such as *Linnarssonina sagittalis* (Davidson) and hyolithids. These indicate the *parvifrons* Zone.

On the south-east side of the harbour, the sections in the Menevian Group occur below the same felsite sill, dipping south-west at about 45°. They consist of thinly bedded, olive-green and grey well-laminated mudstones, with paler layers showing signs of bioturbation. Pyritic layers and lenses, 1–2 mm thick, and phosphate nodules occur and are often associated. The rocks all have a greenish tinge and often appear spotted due to thermal alteration. Faunas similar to those cited above occur about 40 m below the base of the sill. At a higher level, about 20 m below the sill, *Paradoxides davidis* (Salter) has been found (Cox *et al.*, 1930b), indicating the *punctuosus* Zone. Farther east the 'Lingula Flags' are well exposed (Rushton, 1974, pl. 2B).

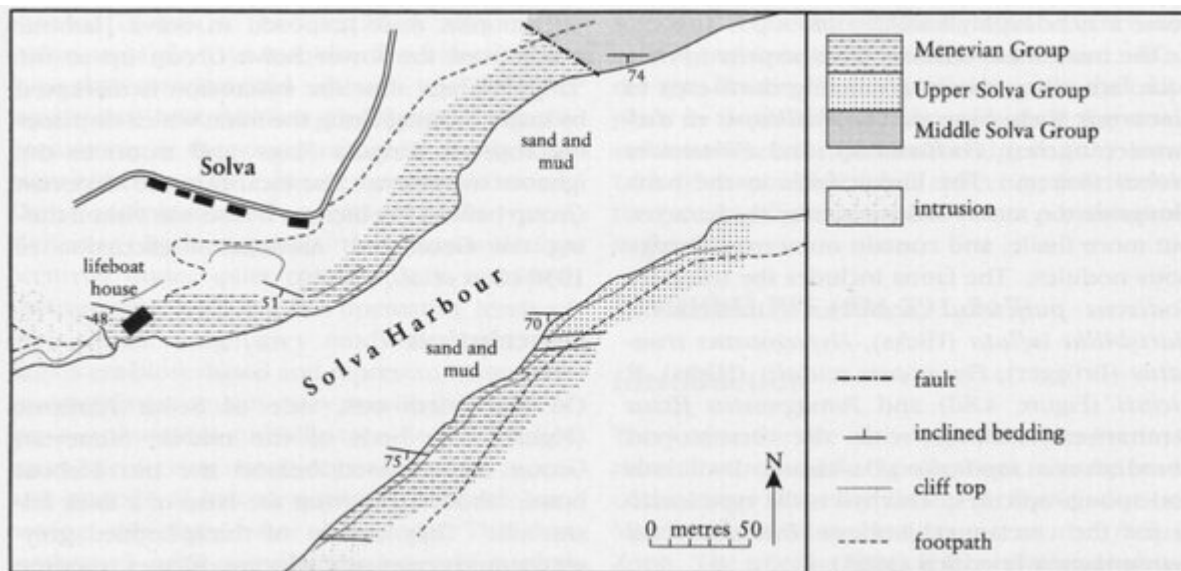
## Interpretation

The middle Menevian strata exposed in Solva Harbour closely resemble those seen in the type section at Porth-y-rhaw, and their depositional environments are considered to have been similar. However, the abnormal greenish colour of the rocks there is probably due to thermal alteration by a large felsite sill (Fearnside in Cox *et al.*, 1930b, p. 417). The continuous sequence from the *parvifrons* Zone into the *punctuosus* Zone resembles that seen at Porth-y-rhaw, and together the two sites form the best standard zonal scheme for correlation of the Middle Cambrian in Britain.

## Conclusions

This site exposes easily accessible fossiliferous middle Menevian mudstones, complementing those of the *parvifrons* Zone at Porth-y-rhaw. They help to provide a standard for correlation of rocks of this age, both in Britain and abroad.

## [References](#)



(Figure 4.9) Geological sketch-map of Solva Harbour, after Lewis (1987, unpublished).