
Coston Farm

Around [SO 39 80]

Introduction

This is the eponymous area for the Costonian Substage of the Aurelucian Stage and probably includes the lowest Caradoc strata in the historical type Caradoc area. It is also the type locality for the trilobite *Costonia ultima* (Bancroft) and for four species of brachiopod.

Bancroft (1929a) originally named the lowest stage of the Caradoc the Girvanian, based partly on the succession at Girvan, but subsequently replaced the name with Costonian, without comment and without further reference to Girvan (Bancroft, 1933). He subsequently noted (1945, p. 182) that the stage was 'typified by the grits of Horderley, Hoar Edge and Coston' but did not designate a type locality. Costonian beds rest unconformably, and probably diachronously, on Tremadoc or Precambrian units in the type Caradoc area, a situation that is clearly unsatisfactory for the base of an international standard (see Whittington *et al.*, 1984; Fortey *et al.*, 1991, 1995). To remedy this, Fortey *et al.* (1995, p. 20) redefined the base of the Caradoc at a level much lower than is recognized in recent usage, at the base of the *Nemagraptus gracilis* Zone. In also defining a new set of stages and reducing Bancroft's divisions to substages, Fortey *et al.* made the Costonian the upper substage of their newly proposed Aurelucian Stage and suggested Bryn-banc Quarry (see site report), near Lampeter Velfrey, as its possible basal stratotype section. Coston Farm remains one of the principal sites for the Costonian Substage in the type Caradoc area.

The lithostratigraphical terminology for the beds of Costonian age in south Shropshire was summarized by Dean (1958) and Greig *et al.* (1968). Whereas the Geological Survey (Greig *et al.*, 1968) applied the term 'Hoar Edge Grits' over the whole area, subsequent authors (e.g. Lockley, 1983; Savage and Bassett, 1985; Bassett *et al.*, 1992) have reverted to the usage of Dean (1958) in restricting that term to the northern inlier and using 'Coston Formation' for the southern inlier, though the use of two terms for the same transgressive basal unit seems unduly divisive. As Fortey *et al.* (1995, p. 21) have stressed, the uppermost parts of the Hoar Edge Formation extend up into the Burrellian Stage (Harnagian Substage) in many sections (see the Coundmoor Brook site report).

Dean (in Whittington *et al.*, 1984, p. 25) summarized the geological setting of the Coston area, noting that neither the base of the Costonian nor younger Ordovician rocks are exposed. There is an unconformable relationship with the Llandovery to the east, and the Church Stretton Fault brings the Costonian into juxtaposition with upper Ludlow strata in the west.

Description

The isolated outcrops in the Coston area (Figure 10.11) reveal the threefold division of the SE-dipping 'Coston Beds' described by Dean (1958, 1964, p. 272; Greig *et al.*, 1968, p. 107). The lowest unit comprises over 14 m of conglomerates with white and grey quartz clasts and rarer pebbles of fine-grained pink volcanic rock, thought to be derived from the Uriconian Volcanic Group. These conglomerates are exposed in quarries near The Hollies [SO 387 807], Quarry House (391 804) and south of Upper Coston Farm [SO 386 802]. They pass upwards into the *Harknesella* Beds: at least 7.5 m of brown-grey coarse sandstones with rare quartz pebbles, lenticular shell bands and a few thin quartz conglomerate horizons. This unit is well exposed in the southern quarry near the Hollies [SO 387 806] and in the track section east of Upper Coston Farm [SO 387 803]. The overlying *Costonia ultima* Beds comprise over 10.5 m of medium- and coarse-grained sandstones with rare quartz pebbles and are exposed in and around the quarry south of Upper Coston Farm.

Interpretation

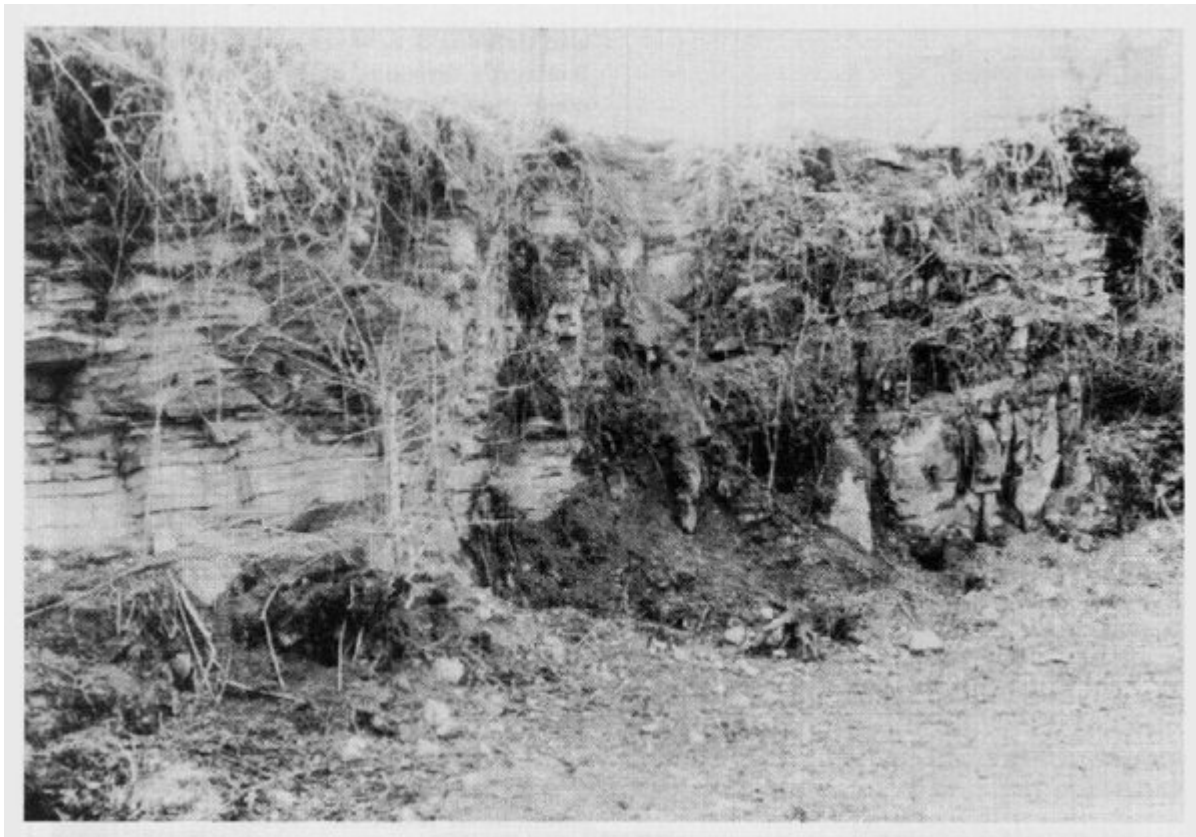
The basal conglomerates seen in the Coston area are unfossiliferous and are not seen elsewhere (see the Coundmoor Brook site report). The lower Caradoc beds in other localities are correlated with levels above the conglomerates at Coston, suggesting that the latter may be the oldest strata above the sub-Caradoc unconformity (Dean, 1958, p. 198). The fossil lentils in the *Harknessella* Beds contain *Harknessella vespertilio* (J. de C. Sowerby), for which this is the type locality (Figure 10.12)a, b. Fossils are more evenly distributed through the *Costonia ultima* Beds; *Dinorthis flabellulum* (J. de C. Sowerby) is typical (Figure 10.12)c, d, and this is also the type locality for the trinucleid trilobite *C. ultima*, also known from the upper part of the Spy Wood Formation in the Shelve area (see the Spywood Dingle site report), which likewise contains the graptolite *Nemagraptus gracilis*, indicating the top of the *gracilis* graptolite zone. As the *Nemagraptus gracilis* Zone has also been recorded from the *Harknessella* Beds in the northern part of the Caradoc area, it seems that the *gracilis*–*multidens* zonal boundary lies near the top of the Costonian Substage (see the Coundmoor Brook site report).

In addition to *Harknessella vespertilio*, three other species of brachiopod have their type locality in the Coston area; Dean (1960, 1963a, b) described trilobites here, Greig *et al.* (1968) listed the whole fauna from the exposures by Coston Farm, and Jones (1986–1987) described the ostracods. The faunas of the Hoar Edge Formation (*sensu lato*) were assigned to the *Dinorthis* association by Williams (1973), and Lockley (1983, fig. 8) also indicated, without giving details, the presence of the *Heterorthis* association. Both these associations are regarded as typical of inshore facies with coarse-grained sediments (Lockley, 1983, fig. 12).

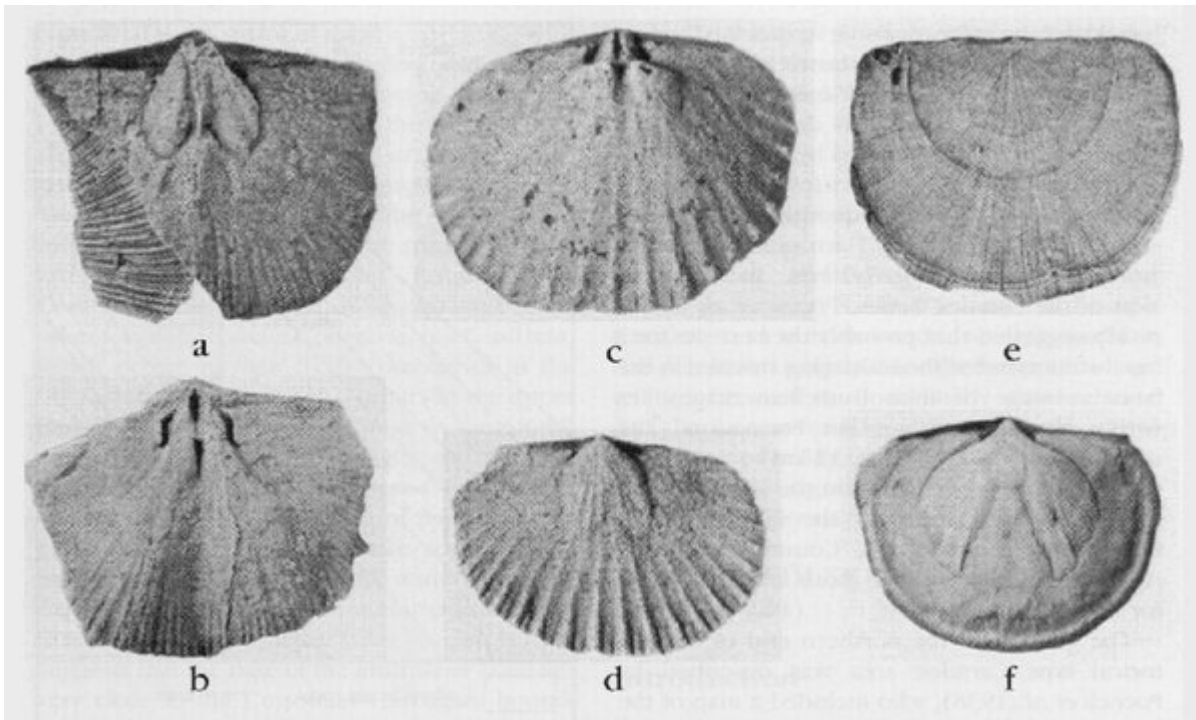
Conclusions

The Coston Farm area lends its name to the Costonian, formerly the lowest division of the historical type Caradoc Series. It exposes the oldest beds in the type Caradoc area, but their base is an unconformity and the base of the Caradoc has been proposed at a lower level in South Wales. The beds at Coston yield fossils that enable correlation with the Shelve area and thus indirect correlation with the graptolitic zonal scheme.

References



(Figure 10.11) Coston Farm. The Coston Formation (the local equivalent of the Hoar Edge Grit Formation) in the old quarry north of Coston Manor. (Photo: J. K. Ingham.)



(Figure 10.12) Brachiopods from the type Caradoc area. (a, b) *Harknessella vespertilio* (J. de C. Sowerby), x2, Coston. (c, d) *Dinorthis flabellulum* (J. de C. Sowerby), x2, Coston. (e, f) *Heterorthis alternata* (J. de C. Sowerby), x 1.5, Soudley.