



Hitch Wood Chalk Pit, Hill End: An example of how past history simply increases significance.

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By Haydon Bailey

The Hitch Wood Chalk Pit at Hill End (TL 197239) does not make it into "*The Cretaceous Rocks of Britain*" (Jukes–Browne, 1903) and since a major contributor to this milestone of Chalk stratigraphy and palaeontology was Hitchin resident, William Hill, then we must presume that, at the beginning of the twentieth century, the pit did not exist.

The earliest published record of Hitch Wood comes from the work of Stanley Billingham (1927) who was for five years a master at Hitchin Grammar School. During this time he studied the chalk from Hitch Wood, which he described as being very fossiliferous, and from it he recorded two new ammonite species, *Prionocyclus hitchinensis* and *Prionotropis cristatus*. The macrofauna from the Hitch Wood pit continued to attract palaeontological interest and between 1954 and 1964 Robert Reid recorded a number of sponges from the site, including a new form which he recorded as a new genus – *Hillendia*.

During the early 1950's the palaeontological finds from the location came to the attention of three local schoolboys at Hertford Grammar School, namely Richard Bromley, Jack Doyle and Christopher Wood. From 1954 onwards they would regularly cycle to the chalk pit in order to examine the sequence present in it and to see what fossils they might find to increase their personal collections. The story might have ended when they left school to go to university and pursue their individual geological careers; however they were all destined to return to Hitch Wood.

Richard Bromley was the first to publish on the site, which he did in 1982 with Andy Gale, in their classic paper on *The lithostratigraphy of the English Chalk Rock* (Bromley & Gale, 1982); by this time Bromley was Curator of the Institut for Historisk Geologi og Paleontologi in Copenhagen. Christopher Wood had also maintained his interests in Chalk fossils by becoming the Senior Palaeontologist in the British Geological Survey and working throughout the United Kingdom, specialising in Cretaceous macrofaunas.

Chris Wood never lost his early fascination with the Chalk of Hertfordshire and he became a dedicated member of the Hertfordshire RIGS team which produced "*A Geological Conservation Strategy for Hertfordshire*" in 2003. He was also a co-author of "*The Upper Cretaceous Chalk*" chapter in "*Hertfordshire Geology and Landscape*" (Bailey & Wood, in Catt, 2010) in which the Hitch Wood Chalk pit is described as follows:

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The small **Hill End Farm Pit (Hitch Wood Pit)** (TL 197239) is of national stratigraphic and palaeontological importance, but it has become very degraded in recent years and has lost its original SSSI status. It is the type locality of the Hitch Wood Hardground at the top of the Chalk Rock. The pebble bed associated with this hardground is extremely fossiliferous at this location and is considered to have yielded more fossils of all groups, including ammonites, bivalves and gastropods, than any other Chalk Rock locality in the county (Bromley and Gale, 1982, Gale, 1996).

The currently poorly exposed section of the Lewes Nodular Chalk Formation, spans the *Plesiocorys (Sternotaxis) plana* Zone and the base of the *M. cortestudinarium* Zone. It comprises the Chalk Rock (0.7 m thick excluding the overlying pebble bed) and extends to 1.6 m above the Top Rock (Hopson *et al.*, 1996). The underlying beds are covered by talus and need to be exposed by trenching, but they are known to include the Reed (Caburn) Marl and probably the Southerham Marl (pers. comm., Jack Doyle).

The fossiliferous topmost pebble bed of the Hitch Wood Hardground provides the type locality of the siliceous sponge genus *Hillendia*, which forms part of the rich sponge fauna described by Reid (1962). The occurrence of very well preserved ammonites was first recorded by Billinghamurst (1927), a local schoolmaster, who described as new species *Prionocyclus* (now *Subprionocyclus*) *hitchinensis* and *Prionotropis cristatus* (now *Subprionocyclus branneri*). These figured specimens are housed in the Natural History Museum, London, and Billinghamurst's plate of these ammonites was reproduced by Bloom in Hine (1934).

Many fossils from Hill End are in the Natural History Museum or held by the British Geological Survey. It has yielded 22 different ammonite species of the 24 described from the Chalk Rock, including the holotype and paratypes of *Allocrioceras strangulatum*, the holotype of *Anisoceras reidi* [now *Allocrioceras schlueteri*], the holotype of *Lewesiceras woodi*, a paratype of *Otoscaprites reidi* [now *Yezoites bladenensis*], paratypes of *Scaphites diana*, the holotype of *Scaphites kieslingwaldensis doylei* and figured specimens of the rare species *Pseudojacobites farmeryi* and *Tongoboryoceras rhodanicum* (see Wright, 1979; Kaplan *et al.*, 1987; Kaplan, 1989).

Hopson *et al.* (1996) recorded the recovery of a non-mineralized specimen of *Micraster cortestudinarium* from immediately above the Top Rock hardground. This morphotype is typical of those noted elsewhere from high in the *M. cortestudinarium* Zone, implying considerable condensation of section at the hardground surface.

The record of the type specimen of the ammonite *Scaphites kieslingwaldensis doylei* brings us to the third member of the schoolboy triumvirate who first visited Hitch Wood in 1954. Jack Doyle maintained his geological career by becoming a schoolteacher in Essex, teaching Geology at A level for several decades. He continued to visit Hitch Wood and maintained the site for years with the assistance of willing sixth form students.

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In 1980 a dispute arose over the ownership of the chalk pit site, as a claim was made on it by a local farmer. Jack Doyle, acting as a witness on behalf of the Hertfordshire and Middlesex Wildlife Trust, gave evidence to the Commons Commissioner. In a ruling dated 26th March 1982, the Commons Commissioner stated that:

“I am not satisfied that any person is the owner of the land, and it will therefore remain subject to protection under Section 9 of the (Commons Registration) Act of 1965.”

The site was thereby designated as Common Land and came under the management of the Hertfordshire and Middlesex Wildlife Trust.

During the 1980's the site was kept in good condition by Jack Doyle and his sixth form volunteers, and fossil collection continued on the site (see the following short write-up of Hertfordshire Geological Society's last visit to the site in 1981). However, over the following two decades the Wildlife Trust showed more interest in the butterflies, snails and rare chalk meadow plants which thrived on the site, rather than its important fossil content and the conservation of the chalk face proved difficult to maintain.

The loss of SSSI status and the publication of the 2003 *A Geological Conservation Strategy for Hertfordshire* recognised the RIGS status of the site, by both the Hertfordshire RIGS Group and the Hertfordshire Geological Society. However, despite several approaches to the Hertfordshire and Middlesex Wildlife Trust, the local geological community found it difficult to establish a working relationship with the Trust through which this important site could be conserved. During the period 2003 to 2018 the site continued to degrade and by the time the present author first visited Hill End in 2006, it was effectively completely overgrown.

In 2016 management of the Hitch Wood site passed back from the Wildlife Trust to the North Hertfordshire District Council and several attempts to establish contact between the new site manager and the Hertfordshire Geological Society failed. The District Council did not have the resources to maintain a site such as Hitch Wood and they passed the responsibility for this to the Hertfordshire County Council Countryside Management Services team.

Early in 2018 Hertfordshire Countryside Management Services made contact with Hertfordshire Geological Society, asking if the Society would wish to be involved in the restoration and conservation of the Hitch Wood Chalk Pit. After two decades of neglect, the answer had to be positive.

Plans were made during 2018 for the clearance of bushes and scrub vegetation through the following winter. Hertfordshire Geological Society applied to the Geologists' Association Curry Fund for financial assistance with the excavation of the chalk section and also for the information boards to be located at the adjacent car park and by the site itself. The Curry Fund application was successful and in March 2019 a small excavator was on site to remove loose rubble from the chalk face and to excavate into the underlying Chalk Rock (Hitch Wood Hardground) section. All the material excavated from the site was piled up so that visiting

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geological parties and groups of local school children can collect fossils safely.

The excavation was followed rapidly by Hertfordshire conservation volunteers visiting the site to clear a large amount of scrub vegetation and to build a new set of steps into the chalk pit. During this visit Jack Doyle was welcomed back on site to show the volunteers some of the important fossils which had been discovered there.

In June 2019, Hertfordshire Geological Society held its first conservation visit to the site during which a very large amount of overhanging vegetation was removed and the chalk face was returned to what it had been during the early 1980's [Figs. 4 (before) & 5 (after)].



Fig. 4: Hill End before [Photo: Nick Pierpoint]

The information boards for the site have been drafted, edited and completed and will be located on site by the end of 2019. With these in place a one hundred year turnaround for this site “of national stratigraphic and palaeontological importance” (Bailey & Wood, 2010) will have been completed. It is almost a century since the Hitch Wood Chalk pit was actually worked for chalk, and since that time it has yielded numerous new ammonite species, a new genus of sponge and a new name to English lithostratigraphy, the Hitch Wood Hardground. Fortunately, one of those three 1950's Hertford schoolboys, Jack Doyle, is still with us to celebrate the restoration of the Hitch Wood Chalk Pit at Hill End.



Fig. 5: Hill End after [Photo: Chris Hoy]

REFERENCES

BAILEY, H. W. & WOOD, C. J. 2010. The Upper Cretaceous Chalk. In Catt, J. (Editor) *Hertfordshire Geology and Landscape*. Hertfordshire Natural History Society, Welwyn Garden City, Hertfordshire, 36-60.

BILLINGHURST, S. A. 1927. On some new Ammonoidea from the Chalk Rock. *Geological Magazine*, 64, 511–518.

BLOOM, E. F. D. 1934. Geology. 26-52 In: Hine, R. L. (ed.) *The Natural History of the Hitchin region*. Hitchin and District Regional Survey Association.

BROMLEY, R. G. & GALE, A. S. 1982. The lithostratigraphy of the English Chalk Rock. *Cretaceous Research*, 3, 273–306.

GALE, A.S. 1996. Turonian correlation and sequence stratigraphy of the Chalk in southern England. In: *Sequence Stratigraphy in British Geology*, (eds. Hesselbo, S.P. & Parkinson, D. N.), *Geological Society of London Special Publication*, No. 103, 177-195.

HERTFORDSHIRE RIGS GROUP, 2003. A geological conservation strategy for Hertfordshire.

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Unpubl. Report for Hertfordshire County Council Environment Department.

HOPSON, P. M., ALDISS, D. T. and SMITH, A. 1996. Geology of the country around Hitchin. *Memoir of the British Geological Survey*, Sheet 221 (England and Wales), HMSO, London, 153pp.

JUKES-BROWNE, A. J. and HILL, W. 1903. The Cretaceous Rocks of Britain, volume 2: The Lower and Middle Chalk of England. *Memoir of the Geological Survey of the United Kingdom*, HMSO, London, 568 pp.

KAPLAN, U. 1986. Ammonite stratigraphy of the Turonian of NW-Germany. *Newsletters in Stratigraphy*, 17, 9–20.

KAPLAN, U. 1989. Die heteromorphe Ammonitengattung *Allocrioceras* SPATH aus dem Turon von Nordwestdeutschland. *Geologie und Paläontologie in Westfalen*, 15, 71–105

KAPLAN, U., KENNEDY, W. J. & WRIGHT, C. W. 1987. Turonian and Coniacian Scaphitidae from England and Northwestern Germany. *Geologisches Jahrbuch*, Reihe A, 103, 5–39.

MORTIMORE, R. N., WOOD, C. J. & GALLOIS, R. W. 2001. *British Upper Cretaceous Stratigraphy*. Geological Conservation Review Series, No. 23, Joint Nature Conservation Committee, Peterborough.

REID, R. E. H. 1962. Sponges and the Chalk Rock. *Geological Magazine*, 99, 273-278.

WOODS, H. 1912. *A Monograph of the Cretaceous Lamellibranchia of England, Volume 2, part 8: Inoceramus*. Monograph of the Palaeontographical Society, London, 285–340.

Wright, C. W. 1979. The ammonites of the English Chalk Rock (Upper Turonian). *Bulletin of the British Museum (Natural History). Geology Series*, 31, 281-332.