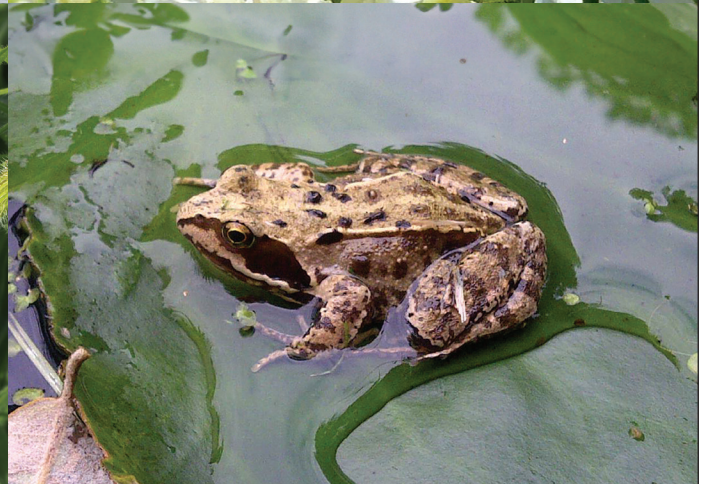


WIGHT STUDIES

**PROCEEDINGS
OF THE
ISLE OF WIGHT NATURAL HISTORY
AND ARCHAEOLOGICAL SOCIETY**



ISLE OF WIGHT NATURAL HISTORY AND ARCHAEOLOGICAL SOCIETY

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The Society was founded in 1919. Its activities include the study and conservation of the flora, fauna, archaeology and geology of the Isle of Wight. General and section meetings, lectures and excursions are arranged throughout the year and advertised on the Society's website. Proceedings and a Bird Report are published annually; Bulletins and Programmes twice a year. A periodic electronic communication is available on request. All these publications are issued without further charge to members.

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Cover photographs

Top left:

An encounter between a White-tailed Eagle (*Haliaeetus albicilla*) and a Grey Seal (*Halichoerus grypus*) on Clamerkin Lake, Newtown Harbour, 3rd January 2022. The seal is clearly disturbed by the presence of the eagle and spits water at it as the bird swoops down.

Photo: Clare L. Jacobs

Top right:

A male Swollen-thighed Beetle (*Oedemera nobilis*) on Hogweed (*Heracleum sphondylium*). This insect feeds on pollen and is active between April and September.

Photo: Mike Cotterill

Bottom left:

Wild Carrot (*Daucus carota*) is widespread on the Island in grassland, roadside verges and around the coast.

Photo: Keith Marston

Bottom right:

Common Frog (*Rana temporaria*) is the *iWatchWildlife* 'Species of the Year' 2024, along with the Common Toad (*Bufo bufo*).

Photo: James Bradley

PROCEEDINGS
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ISLE OF WIGHT NATURAL HISTORY AND
ARCHAEOLOGICAL SOCIETY

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PROCEEDINGS OF THE ISLE OF WIGHT NATURAL HISTORY

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Notes regarding submissions are printed at the end of this volume.

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Editorial

Once more, we are pleased to be able to deliver an issue of *Wight Studies* which reflects the range of our members' interests and demonstrates how the Society continues to fulfil its objectives.

Since the first issue in 1921, there have been annual summaries of the weather from various parts of the Island, often from the gardens of interested observers. Shanklin Weather Station was established in 1947. Clive Cooper has taken daily records from there, submitting them to the Met. Office for inclusion in national datasets since 1997. He has provided annual reports for publication in the *Proceedings* for 27 years, the longest time series from any meteorological contributor.

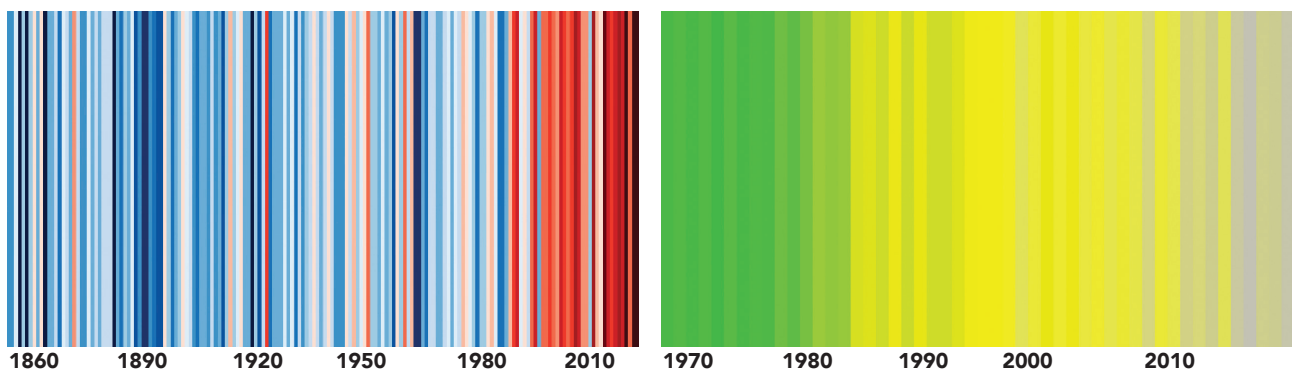
As we well know, the Island, along with the rest of the country, experienced record high temperatures and rainfall in 2023. The effects on the complex geology along the Island's coastline have been severe in some areas and the disruption to people's lives is on-going. Analysis of long-term trends is beginning to be taken more seriously in political circles but still much needs to be done, in terms of policy and behavioural change, to bring about more sustainable actions for investment, infrastructure and lifestyles.

Professor Ed Hawkins of the University of Reading has developed 'Climate Stripes'¹, a highly visual tool to communicate the change in climate which is being observed. Global and local results can be observed. To quote the website,

'No words. No numbers. No graphs. Just a series of vertical coloured bars, showing the progressive heating of our planet in a single, striking image'.

Each stripe represents the average temperature for a single year, relative to the average temperature over the period as a whole. Shades of blue indicate cooler-than-average years, while red shows years that were hotter than average.

Trends in biodiversity are being visualised in a similar way ², using green (higher diversity), yellow, and grey colours.



Left: Temperature change in Portsmouth since 1850s

Right: UK Farmland Birds: 55% decline 1970 - 2019

The underlying data comes from the recording carried out all over the country by individuals and groups such as ours. They inform the annual 'State of Nature' report ³, which notes that, across the UK, the species studied have declined on average by 19% since 1970 and nearly 1 in 6 species are threatened with extinction in Great Britain.

There are ambitious targets set by Governments for progress towards 'net zero', to limit climate warming, and for restoration of nature. How do we both play our part in these processes, and hold Governments to account?

Paul Bingham and Anne Marston
Editors of the Proceedings

¹ <https://www.reading.ac.uk/planet/climate-resources/climate-stripes>

² <https://biodiversitystripes.info/ukfarmlandbirds>

³ <https://stateofnature.org.uk/>

MARGINAL NOTES (MARGINALIA) MADE IN A COPY OF YARRELL'S A HISTORY OF BRITISH FISHES (1836) by DR MARTIN (1806-67) OF BELGRAVE HOUSE, VENTNOR

Peter Holt

Abstract: Dr George Martin, a physician who spent most of his working life in Ventnor in the mid-19th century had a keen interest in the Undercliff of the Isle of Wight and its natural history. He made handwritten notes of the catches of local fishermen in the margins of his copy of Yarrell's 'A History of British Fishes', which give a record of specimens seen in local waters during the period 1847- 1865. His residence provided a meeting point for a number of prominent naturalists of the time. The appendix to this paper is a transcript of his marginalia.

Keywords:

Fish, Belgrave House, Victorian naturalists

Introduction

I recently acquired volumes 1 and 2 of Yarrell's 'A History of British Fishes' (1836), and found these to contain 27 marginal pencil notes, dated mainly in 1848 - and mostly signed 'G.A.M., Belgrave House'.

Dr Martin was a physician who spent most of his professional life in Ventnor. He authored the book 'The Undercliff of the Isle of Wight: its climate, history and natural productions' (1848), and in connection with this, he appears to have used Yarrell's book to identify species and record identifications.

Martin's marginal notes made between 7 July and 14 October 1849, mention local fishermen who brought species to Belgrave House: frequently William Lale of Ventnor (his name occurs in the local rate book for January 1849), less frequently Newnham of Bonchurch, Harvey of St Lawrence and William Jackman of Boldwood. It appears that Martin was not going to meet incoming boats and examine their catches, rather the fishermen were selecting on his behalf and bringing specimens to him. Martin was too busy as a successful physician to seek them out.

A detailed 'parallel' account occurs on page 213 of Martin's book and in his notes pencilled in the margin of page 229 of Yarrell's Volume 1. G.A.M. tells how the Gattoruginous Blenny, now known as the Tompot Blenny (*Parablennius gattorugine*), was caught in a crab pot off St Lawrence and kept alive "in a pan of daily renewed sea-water" from July 7 to the end of September 1848. G.A.M. even sketches the Blenny (p.222).

In 1848, Martin was using "all the means at my command to

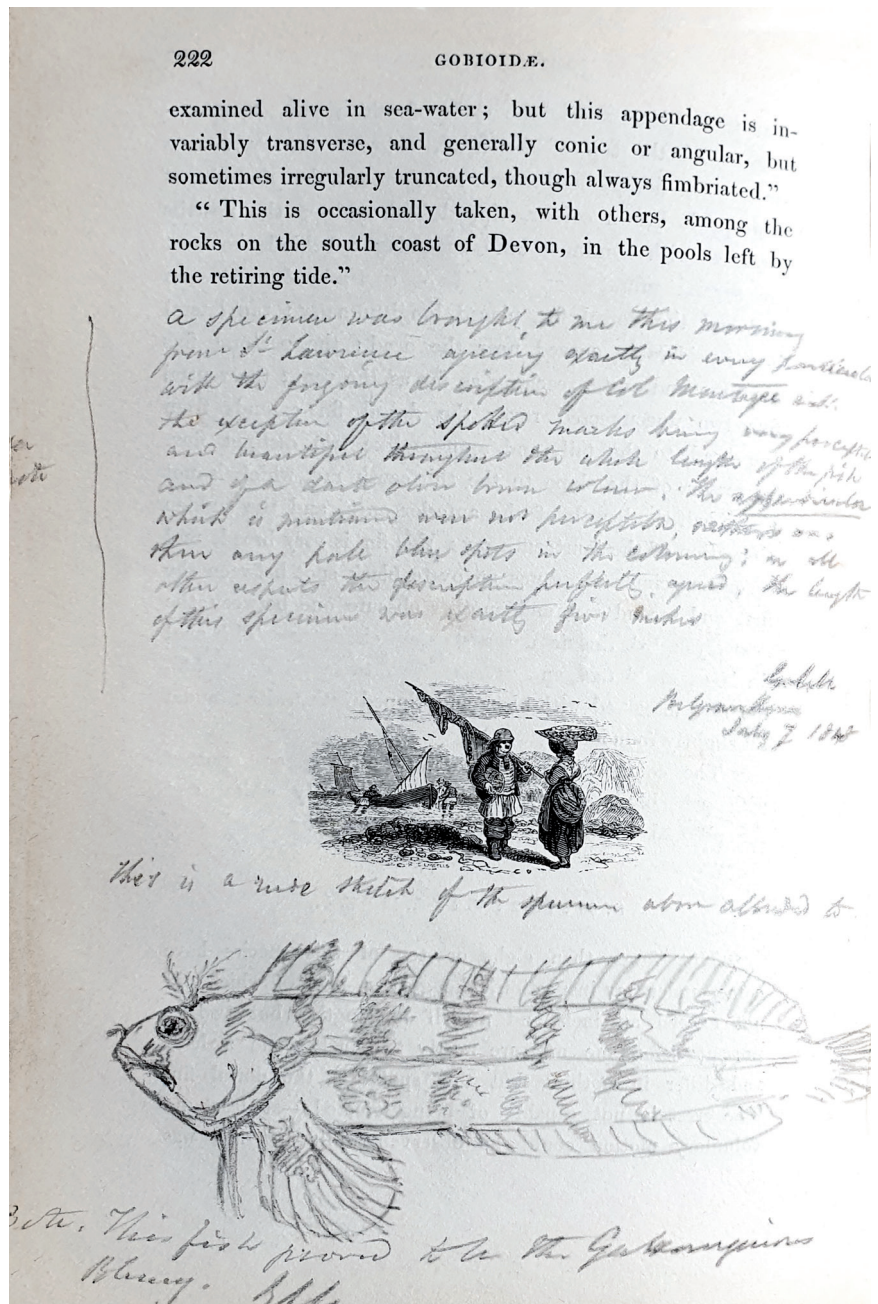


Fig. 1: Marginal note relating to the catch of a Gattoruginous Blenny, now known as the Tompot Blenny, together with a sketch of the specimen by George Martin



Fig. 2: Tompot blenny (*Parablennius gattorugine*), off St Lawrence 3rd October 2022

Photo: Theo Vickers

verify, by personal investigation, the lists (of fishes) with which I had been supplied" (page 209).

He acknowledges the help of Edmund Peel, Esq., of Bonchurch and of William Yarrell of London – but does not mention the fishermen in print; presumably payment was their acknowledgement.

An early marginal note is of a Short Sun-Fish caught at sea off Bonchurch on 29 June, 1841. (This will have been the Sun fish, *Mola mola*)

He comments:

"Have noticed this fish more particularly in my Ichthyology of the Undercliff"

(his note in Yarrell Vol. 2, p. 253).

Apart from the Short Sun-Fish in 1841, and his numerous marginalia over several months in 1848, Martin makes a very few marginal notes at Belgrave House in March and July 1849 and March 1850.

Intriguingly, in the margin of my Yarrell Vol. 2, p.380, there is a last note from 1865, just two years before Dr Martin's death. Uninitialed and in shaky handwriting, it records a Fox Shark (now known as the Thresher Shark, *Alopias vulpinus*):

"One of these fish was caught about 10 miles from the shore (five words illegible) in nets May 26th 1865 and exhibited on the Esplanade. Length 13 feet 4 inches."

How Dr George A. Martin came to Ventnor

George Anne Martin was already a 'fashionable' doctor aged 30 when he came from Enfield to Ventnor in 1836 -- coincidentally the year in which his Yarrell fish volumes were published.

The invigorative benefits of sea air had been set out in a medically influential book by Martin's prestigious patron (Clark, 1830). Indeed, Martin dedicates his own book (1849)

"to Sir James Clark, Bart., F.R.S., who first called the author's attention to the study of climate, and whose kindness and assistance further encouraged him in the pursuit of it."

Sir James became physician to both Queen Victoria and Prince Albert.

Clark (1830) specifically extolled the virtues of the climate of the Undercliff. Hence, the fishing village of Ventnor rapidly developed into a sought-after health resort. Sir James urged his protégé to set up practice there.

Belgrave House links to many naturalists

One ailing sojourner in Ventnor from 24 October, 1849 to 5 July, 1850 was Jane (née Daubeny), accompanied by her husband the Rev. Leonard Jenyns (1800-93). He was a notable naturalist, a lifelong friend of Charles Darwin and a close friend and collaborator of William Yarrell. Jenyns wrote the volume on fishes from Darwin's voyage of the Beagle. He had also joined Yarrell in meeting fishermen at south coast ports, inspecting their catches quayside and even going out with the boats (Jackson, 2022)

On 17 October, 1849, a week before the Jenyns' departure for the Isle of Wight, Yarrell wrote to him from London:

"Dr Martin of Ventnor has called two or three times here, and was kind enough to give me a copy of his book in return for some small hints about species in the Fishes (Yarrell, 1836). Besides being an amiable man, he has the reputation of being the best physician in that locality. You will be quite at home with him" ..." (Jenyns Letter 3061).

The Rev. and Mrs Jenyns did not stay with Dr Martin, but rented Grovehill Cottage, later moving to Promenade House to be nearer the sea. However, Leonard Jenyns fully enjoyed the hospitality of Belgrave House and the company of gentleman naturalists there.

Jenyns reminisces:

"We made several pleasant acquaintances in Ventnor and the neighbourhood. First and foremost was Dr George Anne Martin, the physician of the place and author of an excellent work on 'The Undercliff', in which its climate, history and natural productions are all dealt with in such a way as to make it a valuable guide-book for strangers. It was published the first year (1849) I came into the island, and proved of great use to me."



Fig.3: The location of Belgrave House, Ventnor, now Belgrave Court

Photo: Keith Marston

"Dr Martin's remarks on the climate of the Undercliff are based upon Meteorological Observations, which he had carried on himself at Ventnor for many years. Having been myself an observer in that way a great part of my life, we had naturally much to say to one another on the subject." (Jenyns, 1889).

Jenyns concludes:

"It was at Dr Martin's house, at an evening party, that I first met and got acquainted with Dr (William Arnold) Bromfield (of Ryde), who was then working out the Botany of the Isle of Wight, and getting materials for his 'Flora Vectensis'. This valuable and laborious work he never lived to publish, or thoroughly to complete." Nonetheless, it was published in 1856 by William Pampin of London, having been edited by botanist Sir William Jackson Hooker and biologist Dr Thomas Bell Salter (Ryde). The frontispiece is a portrait of Bromfield."

Bromfield was one of several local naturalists who were in touch with Belgrave House. Indeed, he was the main source of the botany section in George Martin's book.

Bromfield's papers on Hampshire's flora also helped Prof. Thomas Bell prepare his later two-volume edition of White's Natural History of Selborne, (Bell, 1877). In his Preface to Vol.1, Prof. Bell writes,

"(my) frequent botanical rambles with (my) late nephew, Dr Bell Salter, of Ryde, and the contributions to the Selborne flora of his late friend Dr Bromfield ...have furnished much of the information (I have) been able to give respecting the rarer or more noteworthy plants of the district..."

Other Isle of Wight naturalists acknowledged by Martin (1849) are: Rev. J.F. Dawson (birds, quadrupeds and beetles), George Guyon (beetles), Mr Maitland of Ventnor (Lepidoptera), Edmund Peel of Bonchurch (fishes), S.M. Saxby Esq. (geology of the upper greensands) and Rev. C.A. Bury of Bonchurch.

Belgrave House's "metropolitan" contacts were, as already mentioned, through Bromfield and Bell Salter to Prof. Thomas Bell and to Sir William Hooker and additionally to Leonard Jenyns and William Yarrell.

In his Undercliff book (p. 177) Martin says he is *"taking Yarrell (1843) as my guide to birds"*. However, Martin's greatest reliance on Yarrell is clearly about fishes. This is emphasised on page 209 of the Undercliff book: *"I am also greatly indebted to the distinguished author of 'British Fishes', Wm Yarrell, Esq., V.P.Z.S., for the personal assistance he has so kindly afforded me in my researches, as well as to his valuable work, without which I should have failed collecting even the few materials I have been able to bring together."*

Martin, on at least one occasion, sent specimens to Yarrell for authentication; they were of Gattoruginous Blenny (marginal pencil note on p229 of volume 1 of Yarrell's Fishes).

Dr Martin's natural history interests had, of course, a

further 'metropolitan' connection, namely to his publisher, John Churchill (1801-75), already well-known for his issuing of Chambers' then anonymous bestseller 'Vestiges of the Natural History of Creation' (1844). Churchill was predominantly a medical publisher, whose London premises were an informal rendezvous, circulating library and reading room for leading physicians. Perhaps Martin knew him there or was recommended to him by Sir James Clark. An interesting account of John Churchill is given in Secord (2000).

Ending of an era

Dr George Anne Martin died in 1867, but Belgrave House's traditions lived on to the beginning of the 20th century.

The medical practice and the house were taken over by Martin's son-in-law, Dr John Livesay Whitehead (? 1840-1924). Whitehead continued Martin's weather observations, and wrote 'The Climate of the Undercliff, Isle of Wight', issued in 1881.

Moreover, Whitehead compiled 'The Undercliff of the Isle of Wight Past and Present' (1911). He was a member of the Hampshire Field Club, but his book is predominantly an antiquarian survey of the area's human prehistory and history, rather than its natural history. However, there is again a direct link to George A. Martin -- namely Whitehead's chapter XIII on Meteorology, covering 70 years of weather observations at Belgrave House.

As Whitehead neared the end of his life, Belgrave House was auctioned in 1922 *"with vacant possession"*. By the 1930s it had become the Belgrave Private Hotel, advertised in the Town Guide (1938) as *"enjoying one of the most favourable positions in the Town... glorious Sea Views. Large Pleasure Lawn. Bathing Tent. Dance and Recreation Room"*.

Ultimately, Belgrave House was converted in 1989 into flats known as Belgrave Court.

Acknowledgements

For invaluable help and encouragement, I am deeply indebted to: Dr Jeffrey Mazo, secretary, Ventnor & District Local History Society; Rob Randall for Matt Williams, collections manager, Bath Royal Literary and Scientific Institution; Richard Smout, Isle of Wight heritage service manager, Isle of Wight County Record Office. For inspiration, my heartfelt thanks to historian and author Christine E. Jackson.

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APPENDIX 1 Transcription of the marginalia

Current nomenclature from World Register of Marine Species (2024) available at: <https://www.marinespecies.org/> [Accessed 19/5/2024]

Volume 1

| Page No. | Date of Note | Fish (Current common name where different, and Latin name) | Marginal Note |
|----------|--------------|---|--|
| 40 | 16/7/1849 | Red Gurnard, Cuckoo Gurnard (Red Gurnard, <i>Chelidonichthys cuculus</i>) | One brought by Lale 14 inches in length caught off Ventnor Baths July 16 1849. Sig |
| 67 | 7/7/1848 | Father Lasher (Long-spined scorpion, <i>Taurulus bubalis</i>) | A specimen was brought in this day from St. Lawrence. Belgrave House. July 7 1848 |
| 89 | 7/3/1850 | Fifteen spined Stickleback (<i>Spinachia spinachia</i>) | Two specimens one rather more than 6 and the other under 5 inches in length was brought me by Lale; caught off Ventnor March 7. 1850 |
| 206 | 19/9/1848 | Grey Mullet (Grey thin-lipped mullet, <i>Chelon ramada</i>) | A specimen of this fish measuring about 13 inches was brought me this morning by Wm. Lale caught at Steephill Cove sig Belgrave House Sept 19 1848 |
| 218 | 14/10/1848 | The Atherine, or Sand smelt (Sand smelt, <i>Atherina presbyter</i>) | These small specimens of this species were brought me by Lale this morning taken on the shore Oct 14, 1848 Undercliff sig |

Volume 1 (continued)

| Page No. | Date of Note | Fish (Current common name where different, and Latin name) | Marginal Note |
|----------|--------------|---|---|
| 222 | 7/7/1848 | Gattoruginous Blenny (<i>Parablennius gattorugine</i>) The initial identification of Montagu's blenny proved incorrect and the specimen was later confirmed by Yarell as the Gattoruginous blenny, now known as the Tompot. | A specimen was brought to me this morning from St Lawrence agreeing exactly in every particular with the forgoing description of Col. Montagu with the exception of the spotted marks being very perceptible and beautiful throughout the whole length of the fish and of a dark olive brown colour. The appendicule which is mentioned was not perceptible, neither was (sic) there any dark blue spots in the colouring in all other respects the description perfectly agrees. The length of this specimen was exactly five inches. Sig This is a sketch of the specimen above alluded to Note. This fish proved to be the Gattoruginous blenny. Sig Belgrave House July 7 1848 |
| 229 | 7/7/1848 | Gattoruginous Blenny (Tompot blenny <i>Parablennius gattorugine</i>) | The first specimen was brought to me on July 7 1848 having been caught in a crab pot off St Lawrence and kept alive for several weeks. I at first mistook it for Montagu's Blenny in consequence of its great similarity to the drawing of that fish. Several other specimens have been since brought to me and sent to Yarrell who as I imaginedpronounced this the Blennius gattorugine |
| 232 | 2/8/1848 | Shanny <i>Blennius pholis</i> | Several specimens of this fish varying from 2½ to 5 inches were brought in by Lale caught off Ventnor, this day Belgrave House Aug 2 1848 Sig. |
| 242 | 2/8/1848 | Spotted Gunnel or Butterfish (Butterfish, <i>Pholis gunnellus</i>) | Two specimens were brought me this morning by Lale, caught off Ventnor, one measuring 4¾ inches and the other 4¼ Inches. Both fish had only ten spots on the dorsal fin Belgrave House Aug 2 1848 |
| 257 | 2/8/1848 | Double spotted Goby (Two-spot Goby, <i>Gobiusculus flavescens</i>) | Two specimens were brought me this morning by Lale caught off Ventnor measuring from 2 1/8 to 2 ¼ inches Belgrave House August 2 1848 |
| 259 | 2/8/1848 | Spotted Goby (Sand Goby, <i>Pomatoschistus minutus</i>) | A specimen brought this morning by Lale caught off Ventnor measured four inches Bonchurch Aug 2 1848 |
| 278 | 19/7/1848 | Ballan Wrasse (<i>Labrus bergylta</i>) | A specimen of this species was brought to me July 19. 1848 from Newnam of Bonchurch it measured 9 ½ inches in length The length of the head 2 ½ inches which corresponded with the length of the body at its thickest part Belgrave House July 19 1848 The margin of the ... perfectly smooth |

Volume 1 (continued)

| Page No. | Date of Note | Fish (Current common name where different, and Latin name) | Marginal Note |
|-----------------|---------------------|--|---|
| 280 | 7/7/1848 | Green streaked Wrasse (Probably the Cuckoo Wrasse <i>Labrus mixtus</i>) | A specimen of this fish was brought to me this day from St Lawrence agreeing exactly with M Risso description & from its colour and (???) there could be no doubt of the correctness of the account Belgrave House July 7 1848 |
| 290 | 19/7/1848 | Comber Wrasse (Probably the Ballan Wrasse <i>Labrus bergylta</i>) | A specimen (I believe) of this fish was brought me from Bonchurch July 19 1848. The following is the number of fin rays D.20 + 11-P.14._V.5_A3 +7. C14 Length 6 ½ inches. Head 1 ½ inches. Depth of body just behind the pectoral fin 1 ¾ inches. The tail differed in form from that given in the plate |
| 295 | 7/7/1848 | The Gilt-head (Probably the Cork-wing Wrasse <i>Symphodus melops</i>) | A specimen brought to me from St Lawrence this day agreed in every particular with the foregoing description with the exception of the colour which the lad who brought it said had changed since the fish had died Sig Belgrave House July 7 1848 |

Volume 2

| Page No. | Date of Note | Fish (Current common name where different, and Latin name) | Marginal Note |
|-----------------|---------------------|---|---|
| 189 | Not dated | Three-bearded Rockling (Shore Rockling, <i>Gaidropsarus mediterraneus</i>) | Called here (I.Wight) the Red beard. A fine specimen was brought me by Newnham of Bonchurch. |
| 192 | 2-3/8/1848 | Five-bearded Rockling (Five-bearded Rockling, <i>Ciliata mustela</i>) | Four specimens were brought me this morning by Lale, the largest measuring 6 inches and the least 4 ½ inches. They were caught off Bonchurch. Belgrave House Aug. 2 1848. Another specimen August 3 |
| 214 | 5/8/1848 | Plaice (<i>Pleuronectes platessa</i>) | D. 73: P.11: V.6 : A.54 C.17. Largest specimens Aug 5. Several specimens of these fish brought me this morning by Lale the largest measuring 9 ¾ long by 6 inches in breadth Belgrave House August 5 1848 Caught between Ventnor and Bonchurch Sig. |
| 259 | 4/8/1848 | Sole (<i>Solea solea</i>) | Two very small specimens one 2 inches and the other not quite 1 ½ inch were brought me by Lale this morning caught between Bonchurch and Ventnor Belgrave House August 4 1848 Sig. One measuring 1 ft and 1 inch and 6 inches breadth was brought this morning by Lale Fin Rays D.87 P.7. V.5. A.72. C.17 weight 1 lb 1 oz August 6 1848 Caught between Ventnor and Bonchurch. |
| 297 | 2/8/1848 | Sharp nosed Eel (European Eel, <i>Anguilla anguilla</i>) | A young specimen of this species was brought me by Lale this morning having been taken off the shore at Bonchurch it measured 7 inches in length and the fisherman tells me that young eels are not infrequently caught in the sea off the shore Belgrave House August 2 1848 |

Volume 2 (continued)

| Page No. | Date of Note | Fish (Current common name where different, and Latin name) | Marginal Note |
|-----------------|---------------------|--|---|
| 299 | 5/8/1848 | Broad nosed Eel (European eel, <i>Anguilla anguilla</i>) It is now known that variation in head shape morphology is related to diet. Compared to sharp nosed eels, broad nosed eels having a 'stronger bite' to consume larger prey, such as crustaceans and fish (De Meyer, 2018) | Eight eels were brought me this morning by Lale, taken under rocks in <u>the sea</u> between Ventnor and Bonchurch <i>having no river of fresh water near</i> which have a general resemblance to the Grig figured above (Grig is applied by Thames fishermen when any small-sized eel of any species when not longer than eight or nine inches , and of which eight or ten are required to make up a pound weight - Yarrell text) August 5 . 1848 Sig. |
| 341 | 3-4/8/1848 | Worm Pipefish (<i>Nerophis lumbriciformis</i>) | A specimen of this species with the ova attached to the under and external part of the abdomen as mentioned in the text was brought me by Lale this morning: it measured 4 ¼ inches August 31848 Belgrave House 2 more brought by Lale August 4 th 1848 |
| 352 | 29/7/1857 | Sunfish (<i>Mola mola</i>) | A specimen of this fish was caught off St Lawrence July 29 1857 by the 'Lovegood' while employed in landing their crab pots about half a mile off the shore the fish came swimming alongside the boat in an upright position when they succeeded in gaffing it and bringing it into the boat. Length 21 inches breadth 15 inches - Dorsal fin 10 inches. Anal fin 10 inches. Weight not mentioned. |
| 353 | 29/6/1841 | Short Sunfish (This will have been the Sunfish <i>Mola mola</i>) | A specimen of this fish was brought to me to look at June 29 1841 having been caught at sea off Bonchurch by William Jackman fisherman at Boldwood; it was discovered swimming on its side on the surface of the water, made great resistance and took an hour to secure. This individual was 4 ft 9 inches long from the nose to the tail Breadth 3 ft 1 inch and 6 ft 6 inches in the girth Fins 1 ft 10 inches long ? ft wide weight about 350 lbs Belgrave House Have noticed this fish more particularly in my Ichthyology of the Undercliff |
| 372 | 18/7/1848 | Small-spotted Dogfish (Small-spotted Catshark. <i>Scyliorhinus canicula</i>) | An individual of this species was brought to me July 18, 1848 by Harvey of St Lawrence: it measured about 1 ft 11 inches in extreme length Belgrave House, Ventnor July 18. 1848 |
| 380 | 26/5/1865 | The Fox Shark (Thresher Shark, <i>Alopias vulpines</i>) | One of these fish was caught about 10 miles from the shore entangled in some mackerel nets May 26 1865 and exhibited on the esplanade. Length 13 ft 4 inches |
| 383 | 11/6/1840 | Blue Shark (<i>Prionace glauca</i>) | Caught 7 or 8 miles at sea off Ventnor measures 6 feet 6 inches |
| 392 | 19/7/1848 | Common Tope (Tope Shark, <i>Galeorhinus galeus</i>) | A female of this species was brought to me July 19. 1848 which was caught with a trot by Harvey of St Lawrence it measured exactly 2 ft 6 inches the body being 2 ft and the tail 6 inches |
| 438 | 5/8/1848 | The Thornback (Thornback Ray, <i>Raja clavata</i>) | A specimen 8 ¼ inch long by 5 ¼ inch in breadth was brought me this morning by Lale caught on the shore between Bonchurch and Ventnor Belgrave House August 5. 1848. Sig. |

LIMERSTONE: RECONSTRUCTION OF A LANDSCAPE

John Margham

Abstract: Later documentary sources are used to reconstruct the landscape of the manor of Limerstone's demesne (home farm) in the twelfth century. This identifies a series of complementary landscape components whose locations were strongly influenced by physical geography (geology, hydrology, soils and climate). Additional resources to the south of the demesne were shared with neighbouring Brighstone manor and these are outlined. The relative importance of constraints and opportunities provided by physical geography in apparent contrast with the role of human agency in the development of this landscape are explored in relation to recent landscape history research.

Keywords: Medieval landscape, Limerstone

Introduction

The landscape of Limerstone manor can be reconstructed for the twelfth century. This is based on a range of later documentary sources dating to the thirteenth, sixteenth, eighteenth and nineteenth centuries.

The relationship between geomorphology, drainage, geology and soils to the zoning of land used in this reconstruction raises the issue of how much the landscape of medieval Limerstone owes this zoning to physical constraints or to human agency.

Sources

The manor of Limerstone is well documented in late medieval and post medieval sources. An account of the manor survives in a Winchester pipe roll of 1278 (Page, 1998). Clifford Webster, a former county archivist, has reconstructed the topography of Limerstone manor using the bounds and field-names recorded in 1565 (Webster 1975-1999; Webster unpublished; Map 1). The present owners of Limerstone Farm have recently come into the possession of a manorial map of 1778 which includes field-names (Fig. 1). The Brighstone Parish Tithe Apportionment provides field-names recorded in 1841 (IWCRO JER/T/044-045).

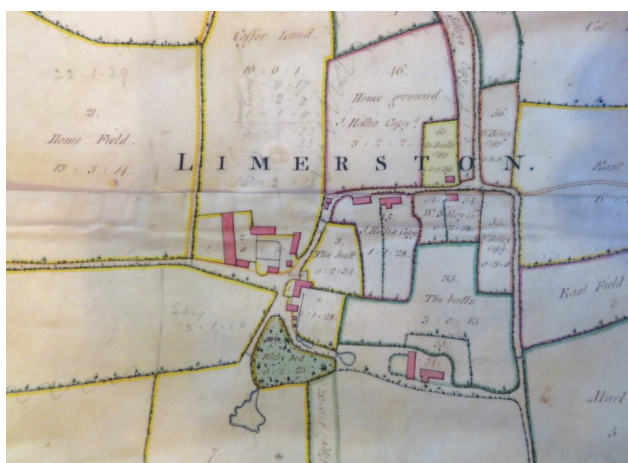
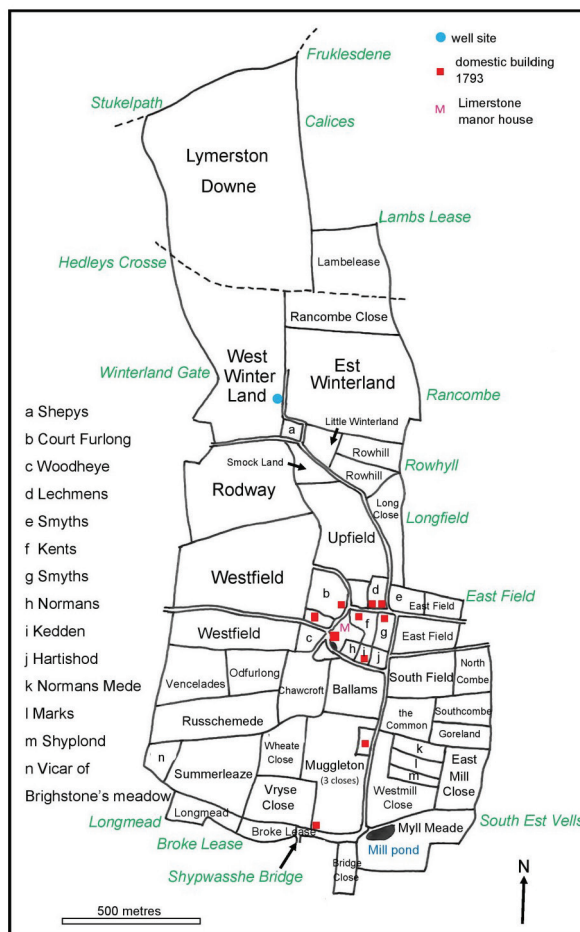


Fig. 1: An extract from the Limerstone manorial map of 1778

The Bishop of Winchester's Estate

During the pre-Conquest period, the Limerstone area was part of an extensive estate held by the bishop of Winchester centred on Calbourne. This



Map 1: Transcription of Clifford Webster's reconstruction of Limerstone's demesne in 1565 from Webster (unpublished) with amendments: 16th century boundary locations, well site and domestic buildings in 1793/4 added by the present author.



Fig. 2: Limerstone farmhouse from the west

was first defined in a charter purporting to be a grant by King Ecgberht in 826 of 30 *mansae* [hides] in *Cawelburnan*, but is probably a tenth-century document concocted by Winchester to validate their holding of the estate (Sawyer, 1968; Edwards, 1988). The boundary clause of this charter defines a landholding extending from the Solent to the English Channel, consisting of the medieval parishes of Calbourne and Brighstone, and part of Mottistone (Margham 2006). The Domesday Book records Winchester's Calbourne estate but by this date (1086) some areas to the south of the chalk ridge were independent manors: Brighstone, Chilton, Coombe and Shate. Three other landholdings in this area were sub-tenancies of Calbourne:

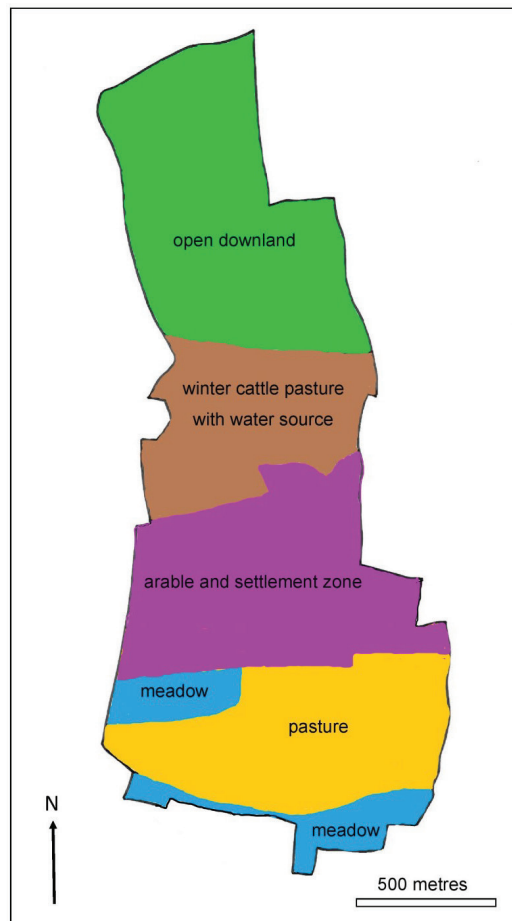
Of this land Robert holds 6 hides, Herpul 2 hides, and Alsige 3½ hides. 7 aloderies held these hides of the bishop, and could not withdraw elsewhere or from him. There are 3½ ploughs; and 3 villans and 22 bordars with 5 ploughs. There are 12 slaves, and 15 acres of meadow (Williams and Erskine 1989, 52v).¹

It is reasonably certain that the largest of these, Robert's 6 hides, can be identified as Limerstone. The two smaller landholdings were plausibly *Uggaton* (to the west of Brighstone) and *Waytes Court* (Page, 1912). Limerstone as a place-name was therefore not recorded in Domesday Book. This first enters the extant documentary record as *Lemerestune* in 1252, meaning 'Lēofmær's or Lēodmær's *tūn*' (Mills, 1996). The Old English personal name suggests the naming of estate by c.1100. The *tūn* element may indicate an earlier origin of the place-name. Wider research indicates that this became a widely used place-name element after c. 750 AD (Gelling, 1992), and some *tūn* names on the Island were of relatively recent origin in 1066 (Margham, 2017).

The process of becoming an independent landholding can thus be traced back to Domesday Book, and apparently before, as suggested by the place-name. The date when Limerstone became totally independent of Winchester is uncertain. The overlordship passed along with Swainston to the crown in 1284 but in 1498 and 1555-6 the manor was said to be held of the bishop of Winchester. The earliest mention of a sub-holding after 1086 was in 1255-6 when Mabel de Tichbourne granted a messuage in Limerstone (Page, 1912). The Tichbourne family held Limerstone until it was sold in 1724 (Webster, 1975-1999).

Limerstone in the Twelfth Century

Limerstone's demesne consisted of approximately 500 acres in the mid-sixteenth century. This was a compact land-holding extending 3km from north to south centred on Limerstone Farm in the preferred settlement zone just to the south of the Island's Lateral Ridge. It thus encompassed two landscape regions (Lateral Ridge and Southern Vale). The field names recorded in 1565, 1778 and 1841 provide



Map 2: A reconstruction of Limerstone's demesne in the twelfth century

evidence for differing zones of land-use from north to south. The following can be inferred from this evidence for the twelfth century (Map. 2):

- Unenclosed chalk downland from the course of *Stukel* path down along *Fruckesdene* within the dissected plateau of the Lateral Ridge, rising up to 199 metres at the summit of Limerstone Down and then down-hill to a lynchet marking the southern extent of the chalk. A stipend was paid to a shepherd in 1278 (Page, 1998; Fig. 3). In 1565 this upland pasture was accessed from the manorial centre via 'the road to the Downs'.



Fig. 3: Limerstone Down: an area of chalk downland sheep pasture'

¹ 'Could not withdraw elsewhere or from him': a similar type of tenure was recorded within Winchester's estate of Downton (Wiltshire) where the holders of various lands in the time of King Edward 'could not separate themselves from the church' (Williams and Martin 1992, 164), and within Glastonbury Abbey's Polden estate (Somerset) where dependent thegns 'could not be separated from the church' (Turner. 2006).

- The area to the south of the chalk ridge and encompassing the subsidiary greensand ridge included 'Winterland' field-names and the location of *Winterland Gate*, adjoining Coombe Tower, the starting point of the 1565 bounds (Map 1; Fig. 4). These names apparently indicate the use of this zone for pasturing cattle during the winter months. Unlike sheep on the downland, cattle needed a water source. One such source was located within this area: the former well between *West Winterland* and *East Winterland* supplied water to Limerstone before being disconnected c.1957 (pers. comm. Mary Case).



Fig. 4: Looking north-westwards to *West Winterland* and *Little Winterland*. Coombe Tower, which adjoins the site of *Winterland Gate*, is on the horizon on the right of the photograph. The well site formerly serving *Winterland* is within this valley below Coombe Tower. The 'road to the Downs' followed the valley up from the manorial centre.

- The field-names *Eastfield*, *South Field*, *Upfield* and *Westfield* adjoining the manorial centre to the south of the greensand (Ferruginous Sands formation) were recorded in 1565. A man was paid to look after the corn (and meadows) in 1278, when eight oxen were kept, sufficient for a plough team, with 38 acres of wheat, 6 acres of oats and 9 acres of peas and vetches (Page, 1998). The field-names and their locations as depicted in later maps suggest the former existence of two, possibly three, fields (Fig. 1). References in 1565 such as 'four acres of land in Southfield between the lands of other tenants there' and 'six acres of land lying in Upfield in separate parcels between the lands of other tenants there' imply that at least some of this area was farmed as open field furlongs. Limerstone also had open field furlongs within Sutton Field to the south of the demesne land. The 1565 field-name *Ballams*, which was to the south of the manorial centre, means 'land on which beans are grown' (Cavill 2018), and this accords with the later thirteenth-century record of arable produce.
- Field-names such as *Summerleaze*, *The Common* and *Common Ground* reflect

pastoral land use on the Atherfield Clay, with some lower-lying meadowland (*Russchmede*). A stipend was being paid to the oxherd and dairymaid in 1278 (Page, 1998). *Summerleaze*, an allusion to 'forage, grazing pasture or tillage, accessible or workable only in summer' (Cavill, 2018) suggests that at least some of this area can be contrasted with *Winterland* in terms of seasonal land-use.

- Meadowland was underlain by alluvial soils (*Long Mead*, *Brokeleaze* and *Millmead*, also *Bridge Close*) at the southern, lowest extremity of the demesne alongside the watercourse either side of *Shypwasshe Bridge* (Fig. 5). This zone included small areas of wathy beds depicted on the Tithe Apportionment map. The manorial watermill was located in this area, adjoining *Westmill Close* and *Millmead*. The issues of the mill were recorded in 1278 (Page, 1998). Although *Marshefield*, to the south-west of *Shypwasshe Bridge*, was within the manor of Brighstone, various Limerstone tenants had use of meadow there in 1565.



Fig. 5: *Shypwasshe Bridge* on the southern bounds of Limerstone's demesne, looking northwards to the slightly elevated area of former pasture, with Limerstone Down on the horizon

Whilst there is no explicit evidence for the zoning of land-use within Limerstone in Domesday Book, the statistics for the three sub-holdings of the bishop's manor of Calbourne to the south of the Lateral Ridge suggest that this was the case. Robert's 6 hides, Herpul's 2 hides and Alsige's 3½ hides had between them 3½ ploughs, 3 villans and 22 bordars with 5 ploughs, 12 slaves and 15 acres of meadow (Williams and Erskine, 1989). Open-field agriculture may not have been fully developed here by 1086, but parallels drawn from the wider English landscape imply that this was happening by or during the twelfth century. The development of a self-contained manor may have been set in motion by the individual recorded in Limerstone's place-name. This process would have been an incentive for the development of more intensive and integrated land-use within the demesne, in contrast to the previous more extensive exploitation of the

estate centred on Calbourne. Such extensive estates were 'based on established connections between broad ecological zones rather than the dynamic exploitation of confined ones' (Blair, 2018), with post-Conquest Limerstone exemplifying the latter. The mutual interrelationships between the various components of such an integrated landholding were illustrated in the late tenth/early eleventh century by Ælfric of Cerne Abbas (Appendix 1).

Beyond the Demesne

The area defined by the 1565 bounds and the 1778 estate map was Limerstone's demesne. The manor also had interests in the area further to the south, in *Marshefield*, Sutton Field and along the coast. This observation is consistent with the late Anglo-Saxon concept of 'inland', i.e. the demesne farm, and the contrasting 'warland', land outside the demesne where villans held land and owed labour services to the land-holder of the demesne (Faith, 1997). In the sixteenth century, the successors to these villans were the copyholders living beyond the bounds of the demesne.

Limerstone manor's interest in the area to the south of the demesne is demonstrated by the holdings of George Trencher in the fifteenth century. He was

'a free tenant for 74 acres of land called Hawkeley in Sutton formerly [held by] John Trencher and William Middlemarsh by military service for half of a quarter of a Knight's fee and suit of court at Limerston and pays annually 2s.6 d. as appears by court roll, dated 1 June 1472, by charter shown there' (Webster, 1975-1999).

Immediately to the south of Limerstone's demesne was *Marshefield*. Whilst this was a constituent of Brighstone manor, Limerstone tenants had pasture rights there in 1565. This meadowland was known as *Common Mead* in 1841 when it was sub-divided into seven unenclosed parcels of varying sizes. This arrangement would appear to have originated with annual apportionment as documented in meadowland adjoining Sutton Field in 1565.

Further to the south was Sutton Field, in the area to the south-east of Thorncross. Sutton formed part of the manor of Brighstone. However, Limerstone copyholders held lands in Sutton Field and the adjoining meadowland, a fine example of evidence from the 1565 Limerstone survey being:

William Currelle held, by copy dated 14 October 1528, for life at rent of 20s.: 26 acres of land lying in the fields of Sutton, viz: in Clay Furlongs Six Acres, and 20 acres lying in Sutton Field of which six acres lie in Horydytche Furlong, and ix acres in Sondihyll and six acres in Lyttecrofte and two acres in Hickatstretes Furlong, one acre of pasture lies in Charell [Carle] Mede running north opposite the common pole between the hedge there and the running doles and abutts upon his own land [running doles being evidence of annual distribution of meadowland] (Webster, 1975-1999).

Other land-holders owing suit to Limerstone in 1565 with lands in Sutton were John Currel (copyholder) 6 acres in a close, John Barron (copyholder) 2 acres abutting Sutton field, John Worsley gent. (free tenant) 1 messuage and 12 acres of land in Sutton,

and George Trencher esquire (free tenant) 74 acres of land in Sutton. None of these provide specific evidence for holding open field strips in Sutton Field. However, Thorncross had 'pieces of arable land' in Sutton Field documented in the 1630 survey of Brighstone manor (Webster 1975-1999). The three small quantities of arable specified to be within Sutton Field of about one acre each suggests that some arable here was farmed in open field strips or furlongs enclosed from former open field land at this date, as does the reference to Clay Furlongs held by William Currelle cited above. The morphology of fields to the west of Sutton as depicted on the 1793/4 Ordnance Survey map suggests that these were enclosed from former open field furlongs.

The 1565 manorial survey also itemises Limerstone's land-holdings within Brighstone's East Field, several of which appear to be open field furlongs or enclosed former open field furlongs. This is exemplified by plot 660 in the 1630 survey of Brighstone manor,

'A piece of arable land, lying in Butts furlong in Eastfield next the land of Mr Wayte on every side',

this instance being held of Brighstone, not Limerstone. It is quite possible that landholdings of Limerstone within Brighstone manor fields originated before the definition of Limerstone's demesne and manor. This impression is supported by a lease of 1680 within Brighstone manor which included part of Longmead Meadow (3 acres), lying in common with Limerstone farm (Webster 1975-1999).

There are several references in the 1630 Brighstone manorial survey to tenants having 'common of pasture for 10 sheep' on Sutton Common, which adjoined the coast (Webster 1975-1999). Sutton Common may have been intercommoned with Limerstone at one time, but there do not appear to have been any instances of Limerstone tenants having rights of common there in manorial surveys from 1565 onwards.

However, further to the west within Brighstone, in the 1565 survey of Limerstone Robert Smyth, a copyholder, held 'One acre in South Marshfield [plot 336 on the tithe map] at *Schrepeledge* Chine [south of Marsh Green] on the west side of the same and on the south side of a certain ditch there' (Webster 1975-1999). Whilst this was not part of Sutton Common, it illustrates the intermixed interests of Brighstone and Limerstone in this coastal strip of rough pasture.

Physical Constraints or Human Agency?

The reconstruction of Limerstone's demesne presents a picture of the zoning of land use from north to south: unenclosed downland; winter cattle pasture; a settlement zone surrounded by arable fields; lowland pasture; and meadowland. This zoning continued southwards from the demesne with Sutton Field and Sutton Common, located on Wealden beds and associated gravels and alluvium, with further meadowland and open field furlongs and rough pasture along the coast. Much of the latter has been lost due to coastal erosion. The example of *Cashyd* illustrates this process. This was a tenement of 30 acres within the tithing of Sutton in

1630, which can be identified with Chine Farm on the Brighstone parish boundary adjoining the Atherfield area. At some time in or after 1680 the nearby tenement

'which stood and belonged to the grounds called Leap Place [Shepherd's Chine] were taken down and set up at Cashyd by reason of the washing away the land within 2 roods, where the said tenement stood' (Margham, 2019).

The influence of the physical background on the development of landscapes has been much debated over the past few decades. Rippon (2008) provided an overview of the debate. Subsequently, Williamson (2013) added to this with the publication of *Environment, Society and Landscape in Early Medieval England*. Although the role of physical factors in landscape history had previously been emphasised, for example in the work of Alan Everitt (1977, 1986), by the 1990s there was a general consensus that it was human actions that were entirely responsible for variations in landscape character, rejecting the notion of 'environmental determinism', that the physical environment dictated settlement patterns and land use (Rippon, 2008). This consensus was challenged by Tom Williamson. His *Shaping Medieval Landscapes* examined the development of open field agriculture in eastern England and identified a correlation between the distribution of 'regular' open fields and heavier clay soils (Williamson, 2003). Simon Draper's (2006) study of the landscape of Roman and early medieval Wiltshire also addresses this issue stating that the physical landscape of a region is fundamental to 'understanding its settlement and society. This may sound obvious to many, but we are only now emerging from a period in landscape studies when it became almost fashionable to downplay environmental factors in favour of social and cultural explanations for change, for fear of being branded an adherent of "environmental determinism"'. Williamson (2013) considered the relative importance of physical conditions and human agency, demonstrating the significance of physical geography, geology, hydrology, soils and climate in the pattern of human interaction with the environment. He does, however, qualify this, identifying a false dichotomy between 'human choice' and 'geographical determinism'. He concludes that choices of where to settle were conditional on everyday practicalities:

'Landscapes are a consequence of human agency, but agency exercised knowledgeably, in a real world' (Williamson, 2013).

The reconstruction of the landscape of Limerstone's demesne in the twelfth century and observations regarding the meadowland, the open field furlongs in Sutton Field and the coastal strip of rough pasture to the south accord with this more mature and nuanced approach to the significance of the physical background in medieval landscape history. Geology, soils, drainage and landforms were important in providing opportunities for the development of a range of complementary land uses. Human agency was also significant in acting within these constraints and exploiting opportunities to provide a productive

and integrated landscape centred on the manorial focus, now known as Limerstone Farm.

Appendix-1 Ælfric's Colloquy

Ælfric the Homilist of Cerne Abbas in Dorset produced his *Colloquy* to help boys in the monastic school there improve their fluency in Latin. This consisted of a series of dialogues outlining various occupations. Three examples are of particular relevance in showing interrelationships between areas of contrasting land use within an estate (Cavill 2001, 42-3):

What do you say, shepherd? Do you have to work hard?

Yes, sir, I do. In the early morning I drive my sheep to their pasture and watch over them with the dogs, whether it is hot or cold, in case wolves attack them. Then I take them back to their folds, and milk them twice a day. I move their folds, and I make cheese and butter. And I am loyal to my lord.

Well, ploughman, what do you say? How do you go about your job?

Oh, sir, I have to work hard! I go out at dawn, driving the oxen to the field, and I yoke them to the plough. No winter is so severe that I dare hide at home, because I am afraid of my lord. But when I have yoked the oxen and fastened the ploughshare and the coulter to the plough, each day I have to plough a full acre or more.

And oxherd, what do you do?

Oh, my lord, I work hard. When the ploughman unyokes the oxen, I lead them to pasture, and all night I watch over them, alert for thieves. And then in the early morning I take them back to the ploughman, well fed and watered.

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I am grateful to Mary Case of Limerstone Farm for the opportunity to peruse and photograph her 1778 estate map, providing a copy Clifford Webster's map reconstructing the demesne in 1565, local topographical information, correspondence about field-names and commenting on a draft of this paper. Becky Loader of the Isle of Wight County Archaeological and Historic Environment Service kindly provided a map showing field-names documented in the Brighstone Tithe Apportionment of 1841.

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THE FRESHWATER MACROFAUNA AND WATER QUALITY OF THE RIVER MEDINA, ISLE OF WIGHT

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Abstract

The freshwater macrofauna of Island rivers is relatively under-recorded and poorly understood. The Medina is the Island's second longest river and over many centuries its course has been highly modified by water mills, the railway and more recently through flood alleviation schemes. Intensive farming practices and discharges of wastewater and urban and agricultural run-off have resulted in pollution and poor water quality for many decades. Parts of the river also suffer from iron-ochre deposits that may also suppress species diversity.

A survey of the Medina in 1992-96 revealed that the variety of aquatic insects and other invertebrates was unremarkable, but that there were 'hot spots' of higher diversity, indicating that the river had greater potential. Over the past 30 years there has been more extreme weather, notably warmer summers, milder winters, and periods of sustained and heavy rainfall. There have also been attempts to improve habitats and water quality generally in rivers throughout the UK and Europe.

In 2022-3, the river was resurveyed, using a similar method, that involved 'kick-sampling' at nine stations between St Catherine's Down and Coppins Bridge, Newport and at a single site on the Merstone Stream, a tributary of the Medina. Across both surveys, a total of 107 species of invertebrate and eight fish were recorded; importantly however, the most recent survey revealed the presence of more pollution-sensitive species including caddisflies and nymphs of Britain's largest mayfly *Ephemera danica*. Biological indices of water quality, Biological Monitoring Working Party (BMWP) and Average Score per Taxon (ASPT) scores, had increased noticeably at sites downstream of Chillerton, however there was no improvement in the upper catchment.

Overall, the study has shown that the Medina has not been reaching its full ecological potential because of poor water quality, and yet recovery is possible. This bucks the general trend of decreasing terrestrial diversity in some areas. However, this is no time for complacency.

Keywords:

Water quality, biological monitoring, kick-sampling, Isle of Wight rivers, iron-ochre, Merstone Stream, invertebrates, fish, birds

Introduction

The diversity of macrofauna in the Island's rivers has long been a topic of discussion. In the past century, Morey (1909) and later Blair (1950) commented that the number of records of some groups of aquatic insects and other invertebrates were disappointingly low but argued that this was most likely because there were few interested observers. Blair also attributed low diversity to a "comparative lack of running streams and large sheets of water". At a workshop on Isle of Wight rivers and streams held at the Medina Valley Centre in 1994, it was suggested that compared to similar mainland rivers, aquatic diversity was suppressed due to relatively high levels of iron-ochre, pollution and poor river management, limited opportunities for recruitment from mainland rivers and a restricted gene pool (Pope, 1994).

In the past decades there has been an increased survey effort and additional information and records have been forthcoming (Herbert, 1991; Cooksley & Herbert, 2008; NBN, 2024). To fully understand the condition of riverine habitats, it is important to broaden the scale of survey and investigate the wider catchment.

Although the estuarine fauna and flora have been described (Withers, 1979; Herbert 1995, 2001; Mallinson and Herbert, 2003), and the flora of the river corridor has been surveyed (Kettell et al., 1979; Chatters, 1985; Environment Agency (EA) 1996)

there have been no published surveys of the freshwater fauna of the River Medina. However, because macroinvertebrates and fish are useful indicators of water quality, the EA and its predecessors have monitored the fauna at specific locations as part of statutory river surveillance programmes (EA, 2024a). From November 1994 to June 1996, we undertook, winter, spring, and summer surveys of the macrofauna of the Medina at ten stations between the source on St Catherine's Down and the tidal limit at Coppins Bridge, including the Merstone Stream tributary (Herbert & Riley, 1998 unpublished report). This information was supplemented by regular surveys of the river at Shide Weir from 1991-1995 (Herbert & Riley 1996). The study concluded that, in common with many of the Island's streams at that time, the invertebrate macrofauna of the Medina was not very diverse and the abundance of organisms was generally disappointing. However, there were local 'hot spots' in relatively undisturbed riffles and pools that yielded higher species richness, indicating that the river had much greater potential.

The past three decades have been characterised by more extreme weather, notably warmer summers, milder winters, and periods of sustained and heavy rainfall. There have also been attempts to improve habitats and water quality generally in rivers throughout the UK and Europe following the implementation of the EU Wastewater Treatment

Directive (1991), EU Water Framework Directive (2000) and other broadscale measures, including Catchment Sensitive Farming launched in 2005, that encouraged the creation of buffer strips between arable fields and rivers to reduce soil erosion and chemicals leaching in to the water. In October 2002, Southern Water's *Seaclean Wight* scheme became operational that transferred wastewater from across the island via a network of pipelines and pumping stations to a new sewage works at Sandown.

It was therefore decided to repeat the earlier survey as a comparison to assess how the macrofauna in the river has changed since the mid-1990s.

The Medina and its catchment area

The Medina is the Island's second longest river. It rises from springs on the slopes of St Catherine's Down, above the village of Chale Green, and flows 17 km north through the middle of the Isle of Wight to Newport where it becomes tidal (Fig 1). The upper stage of the main river, and its main tributary the Merstone Stream, flow across the Cretaceous rocks of the Lower Greensand Group: Ferruginous Sands, Sandrock and Monk's Bay Sandstone. In periods of heavy rain, iron-rich sand and silt are washed into the river, causing the distinctive ochre colour of the alluvium in the channel. The main river also crosses the Selborne Group, made up of the clays of the Gault Formation and sands of the Upper Greensand, part of the ridge that runs west to east across the centre of the Island.

Shortly after the confluence of the Medina and Merstone Stream, the river cuts across the Chalk Group, through a gap near Shide where the central ridge is at its narrowest. The estuarine lower stage of the river crosses a sequence of Palaeogene sands and clays, before entering the Solent at its mouth at Cowes, a further 7 km to the north.

The river has a total catchment area of 36.5 km² (EA 2024b) and is fed by four main tributaries: the Appleford Drain, the Merstone Stream, an un-named stream that has its confluence with the Medina at Pan Mill Meadows in Newport and the Lukely Brook. At Upper Shide, the mean flow discharge is 0.29 m³ s⁻¹; however, compared to chalk streams such as the Lukely Brook, flows fluctuate more on the Medina, due to the underlying greensand soils and run-off (Windrush, 2009). River flows may also vary as a result of water abstraction from boreholes within the Medina catchment. These include transfers into the Merstone Stream and the Medina at Blackwater. Water may also be moved via the Medina-Yar Augmentation scheme that moves water directly from the Medina at Blackwater and groundwater from catchment boreholes to Sandown, where it is utilised to maintain levels in the East Yar (EA, 2019).

Adjacent land-use between Chale and Shide is mainly rural, with arable farming and ley pasture on the sandy soils. Between Chale Green and Cridmore the river flows through a relatively extensive marshy area known as 'The Wilderness' that includes Cridmore Bog Site of Special Scientific Interest, which is one of the last remaining peat bogs on the Island. Downstream of Shide, the river flows beside busy roads through the town of Newport with adjacent residential areas and superstores. There are

five wastewater treatment works between Chale and Blackwater (Southern Water, 2020) where effluent may enter the Medina and Merstone Stream, and there are stormwater discharges into the river from drains close to the growing residential town of Newport.

The river course and channel have been heavily modified over hundreds of years. The construction of water mills resulted in the straightening of some channels and often the formation of large mill ponds, which must have significantly affected fish passage and the dispersal and connectivity of invertebrate and fish populations. A water mill at Gatcombe and four mills at Shide are mentioned in the *Domesday Book* and it appears that other mills at Gatcombe were present at various times. Gatcombe Mill, Blackwater Mill and the Upper Shide Mill, Lower Shide Mill, Pan Mill and Ford Mill in Newport remained operational well into the 20th Century. The railway line connecting Newport and Sandown, built in the 1870s, straightened the river's natural meandering course, and it became divided between Blackwater and Newport. Following heavy rain and severe flooding of Newport in 1960 and 1961, flood alleviation measures were implemented between Blackwater and Coppins Bridge including additional canalisation and the construction of weirs (Solomon & Beach, 2009). This further reduced natural riverine habitat and potential fish passage. Over the past decade, measures to restore habitats in the lower catchment have been attempted by the Newport Rivers Group, including pollarding and coppicing of bankside trees to increase sunlight over the channel, the construction of fish passes for brown/sea trout and eels, and in-stream improvements to restore riffles, pools and bankside vegetation.

Chemical water quality has fluctuated with organic pollutants, including pesticides, metals, and excess nitrate and phosphate arising from agricultural run-off entering the river from the middle and southern part of the catchment. After heavy rainfall, the river in Newport looks very brown-orange due to high levels of iron-rich sediment and soil running off fields from higher up in the catchment. The EA have classified the Medina as a Heavily Modified Water Body (HMWB) of 'Moderate' quality under the EU Water Framework Directive.

Methods

Between November 1994 and June 1996, samples of river macrofauna were taken from nine stations along the main river between the source on St. Catherine's Down above the village of Chale Green, and the tidal limit at Coppins Bridge in Newport (Fig 1.) An additional site on the Merstone Stream (Site 5), a tributary of the Medina, was also sampled near Blackwater. Access which was suitable and safe was the main criterion for selecting sites, together with an appropriate sample separation distance downstream and variety of habitats. Using a standard 1mm mesh pond net, a three-minute kick-sample was obtained at each site and the contents of the net emptied into a plastic bucket for sorting and identification back in the laboratory. Identification was taken to species level where possible although some worms, fly larvae and mites were not identified

on every occasion.

River depth and width were determined using a metre rule and tape measure. Flow rate was measured with an MJP flow meter, or by timing a float over a known distance. Dissolved oxygen, water temperature and conductivity were determined using portable meters (pHOX Systems 62 and YSI). Observations were made of riverbank and aquatic flora, and adjacent land use. Data collected from Shide Weir near Newport was supplemented by more frequent observations made 1991-1995 by field study students from the Medina Valley Centre under the authors' supervision.

At each site, a biological assessment of water quality was made based on the presence of taxa known to be sensitive and tolerant to organic pollution. Using the BMWP scoring system (Hawkes, 1997), species are assigned a value between 1 and 10 according to their tolerance to levels of pollutants and dissolved oxygen, with 10 being given to the most sensitive taxa. A 'site BMWP score' is the sum of all species scores in the sample; in simple terms, the higher the total score, the cleaner and more oxygenated the water. In addition, the average score per taxon (ASPT) was also determined as this is more independent of type and size of river and a more reliable metric for comparing different sites. This is found by dividing the BMWP score by the number of contributing taxa. Taxonomic nomenclature is from UK Centre for Ecology and Hydrology (2011).

In November 2022, March and June 2023, the survey was repeated using the same methods, although the earlier monitoring site immediately below the slope at Shide Weir (Site 8) had become inaccessible, so an additional site 50 m further upstream (Site 7a) was sampled instead.

Results

General observations

Over the two survey periods, a total of 107 species of aquatic invertebrates, eight fish and five waterbirds were recorded in the Medina and Merstone Stream. Over the two main surveys in the 1990s, 54 species taxa across 43 families were recorded, excluding eight water mites which were not systematically identified at all sites. An additional 21 species were recorded anecdotally at the two locations surveyed regularly at Shide Weir from 1991-1995.

In the single 2022-23 survey period, 67 species, excluding three water mites, were identified across 46 families. Species diversity generally increased downstream, though dipped again below Shide as the river became more exposed to urban run-off. A greater variety of species were found in winter and spring samples prior to the emergence of insect nymphs and larvae; however, adult water beetles and bugs were more frequent in summer samples.

Four species of flatworms (Planariidae), oligochaete worms and six species of leech (Hirudinea) were found. Arthropods included ten species of water mite (Hydracarina) of which five were new to the Island (*Hydrodroma torrenticola*; *Hygrobatas calliger*, *H. fluviatilis*, *H. setosus* and *H. longipalpis*). The amphipod crustacean, *Gammarus pulex* (Fig. 2), was

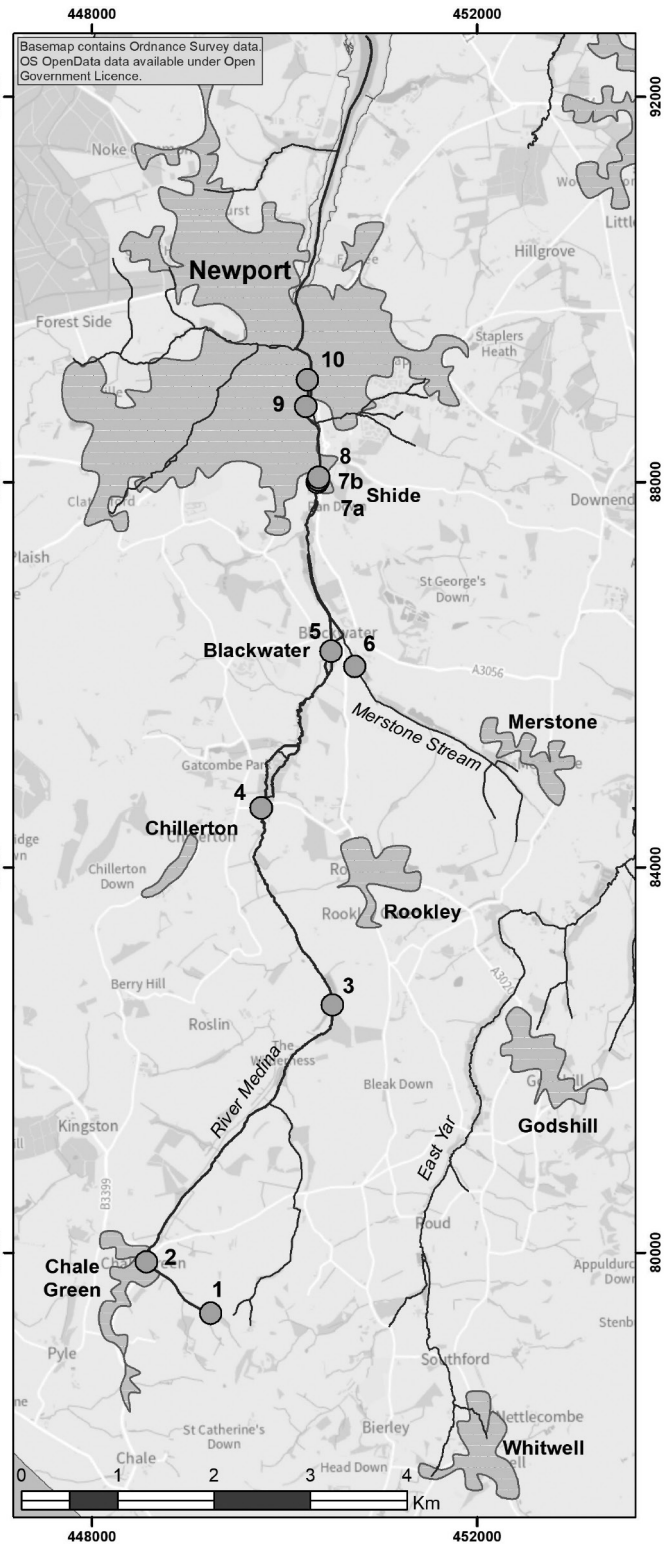


Fig. 1: Catchment of the River Medina showing sampling stations. See text for site details and description.



Fig.2: Pair of freshwater shrimp, *Gammarus pulex*. Merstone Stream 14th July 2023

Photo: Keith Marston

almost ubiquitous in samples; *G. zaddachii* was only recorded north of Shide Weir close to the tidal limit, which is characteristic of the species. The amphipod *Crangonyx pseudogracilis* was just found at Cridmore. This species and the New Zealand mud snail, *Potamopyrgus antipodorum*, were the only non-native invertebrate species found in the river.

A wide variety of insect larvae and nymphs typical of British rivers including caddisflies, mayflies, stoneflies and true flies were recorded along the length of the river, with more found downstream of Chillerton Bridge. Common across most sites was the swimming mayfly *Baetis rhodani/atlanticus*. *B. atlanticus* was described as new to the British mayfly fauna in 2018 (Macadam *et al.* 2018). Morphological differences with *B. rhodani* are very slight and because there is a possibility these have been overlooked, the two species have not been separated. Caddisflies new or uncommon to the island included *Hydroptila sparsa* and *Lepidostoma hirtum*, both at Shide, and *Rhyacophila fasciata* grp. Nymphs of the mayfly *Seratella ignita* (Fig. 3) were found in both survey periods downstream of Chillerton. The larger burrowing nymphs of *Ephemera danica*, known from the East Yar, were first



Fig. 3: Mayfly nymphs **Above:** *Seratella ignita*, (body length 6.5mm) Blackwater Mill Farm 30th June 2023
Below: *Ephemera danica* (body length 30mm) Shide, 26th March 2024. Photos: Keith Marston

seen in the Medina in 2022-23 at Shide (Fig. 3). Stoneflies were represented only by the family Nemouridae, of which *Nemoura avicularis* was found for the first time in 2022, although the species has been sampled previously in the East Yar.

In the 1990s, water bugs such as the lesser water boatmen (Corixidae) and greater water boatman *Notonecta glauca* were commonly seen in slow flowing reaches of the river, particularly above Shide Weir.



Fig. 4: Three-spined Stickleback *Gasterosteus aculeatus* Merstone Stream 30th June 2023

Photo: Keith Marston



Fig. 5: Stone loach *Barbatula barbatula*, Blackwater Mill Farm 30th June 2023

Photo: Keith Marston

Members of the beetle family Helophoridae were mostly found in the upper parts of the catchment near Chale Green whereas riffle water beetles (Elminthidae) were found mainly at stations downstream of Chillerton. Molluscs included the almost ubiquitous *P. antipodorum*, pea shells (Sphaeriidae spp.), the occasional pond snail (*Lymnaea peregra*), and where the river ran swiftly, the river limpet *Ancylus fluviatilis*.

Three-spined Stickleback (*Gasterosteus aculeatus*) (Fig. 4) was the most frequently observed fish and Stone Loach (*Barbatula barbatula*) (Fig.5) and Miller's Thumb (*Cottus gobio*) were occasionally found in the river. Mallard and Moorhen were the most commonly seen waterfowl and observed mostly in the lower reaches of the river.

A full list of species recorded is given in Appendix 1. Selected physical and chemical data collected over the two survey periods is presented in Appendix 2.

Site descriptions

Site 1 St. Catherine's Down (SZ 492794)

The sampling site is about 90m above sea level and is approximately 60m below the river's source, as marked on the Ordnance Survey (OS) map. The channel water width varied between 0.4-0.9 m, and water depth was generally between 3-10 cm, although in June 1995, it was dry. The riverbed is predominantly clay with some gravel and larger stones. There are overhanging oak, willow, blackthorn and hawthorn trees, and the banks are covered with brambles and nettles. A small bridge crossing the stream at this point enabled access for sampling. In the 1990s, the adjacent land use was

predominantly pasture and sheep grazing, with some of the grass cut for making silage and hay, and this was mostly unchanged in 2022-23. In the 1990s survey the New Zealand mud snail *P. antipodarum* were highly abundant, as was the freshwater shrimp *G. pulex* and chironomids, but less so in 2022-23. Small beetles (Helophoridae spp. Helodidae, Hydrophillidae, Elminthidae) were also conspicuous. This was the only site on the Medina where nymphs of the stonefly *Nemoura cinerea* were recorded.

Site 2 Chale Green (SZ 486798)

This sampling site is beside arable fields within a few metres of a road which adjoins the B3399 in the village of Chale Green. The channel water width here varied between 0.9-2.3 m, and water depth between 5-23 cm, although in June 1995 it was dry. The riverbed consists of silt and sand over remains of concrete structures. On the riverbanks there were grasses, nettles, brambles and the occasional blackthorn bush. In the 1990s, there was often an oily film on the surface of the stream and the water and sediments smelled of petrol.

The benthic invertebrate community was dominated by *P. antipodarum* and *G. pulex*. Beetle larvae (Helophoridae and Helodidae) were often frequent and caddisfly larvae of the family Limnephilidae were also found.

Site 3 Cridmore (SZ 505825)

Just above this sampling site is an extensive marshy area known as The Wilderness. The channel water width here varied between 2.2-3.4m, and water depth between 5-51 cm. The riverbed is silty sand and the water was always brown-orange in colour due to colloidal iron hydroxide or 'iron-ochre'. A small concrete ford crosses the river and there are some overhanging willows and oaks. There are also stands of *Phragmites australis* lining the riverbank. In June 1995, there were small clumps of water starwort (*Calitriche* sp.) present by the ford. Surrounding the river is grazing land and at Cridmore Farm, large new reservoirs have been constructed.

Species diversity in the 2022-23 survey was about half that of the 1990s when the community was variable but included flatworms *Polycelis* spp. oligochaete worms, freshwater shrimps, coleoptera



Fig. 6: Early instar nymph of the water scorpion, *Nepa cinerea*, Cridmore 26th June 2023. Photo: Keith Marston

and water boatman *Sigara nigrolineata* and *S. venusta*. In 2023, the stonefly *Nemoura avicularis* was found for the first time. Water beetles *Agabus bipustulatus* and *A. paludodorus* (Dytiscidae) were found here together with scavenger beetles (*Helophorus* sp.). An early instar of the water scorpion (*Nepa cinerea*) (Fig. 6) was sampled in June 2023.

Site 4 Chillerton Bridge (SZ 497846)

Above the bridge on Highwood Lane, the river is straight and narrow and runs through a large open field. In November 1994, this was sown with winter cereals, and in the following years left as sheep pasture and cut for silage. In June 2023, the east bank was pasture and on the west bank, maize had been planted (Fig. 7). The site is completely open with no scrub or trees lining the banks. The channel water width here varied between 2.2-3.6m, and water depth between 25-55 cm. The riverbed is sandy silt along over a concrete base with occasional shoals of fine gravel mixed with large stones in the middle.

By 2022, the channel immediately upstream of the bridge had been canalised with a concrete riverbed and a gauging station constructed. The water is generally clearer than further upstream, and in the 1990s clumps of water-starworts (*Calitriche* sp.) were frequent along this stretch. In the silty margins, Tubificidae were abundant with Diptera larvae Chironomidae, *Pedicia* and *Dicranota*. Larvae of the alderfly *Sialis lutraria* were also found, and nymphs of the mayfly *Baetis rhodani/atlanticus* were common in most samples.



Fig.7: View south (upstream) from the bridge at Highwood Lane, Chillerton. 8th November 2022.

Photo: Keith Marston

Site 5 Blackwater Mill Farm (SZ 505863)

This is a relatively undisturbed section of the river where the water runs swiftly through several small meanders, creating riffles and pools (Fig. 8). The channel water width here varied between 2-4.5 m, and water depth between 7-23 cm. The riverbed mainly consists of coarse gravel and cobbles. There are livery stables adjacent to the river where horses graze in paddocks. On the riverbanks there are mature willows and alders, and upstream of the sampling site is Gatcombe withy bed, an extensive area of wet woodland and marshes. Growing on the steep outer banks of the meanders there are large

patches of liverworts (Bryophyta). This site has a rich diversity of macroinvertebrates with seven families of caddisflies recorded in 2022-23. During the winter and spring, the benthic community is dominated by larvae of the caseless caddisfly *Hydropsyche siltalai*, but following emergence they are virtually absent from the June samples. Nymphs of the mayfly *Baetis rhodani/atlanticus* and amphipod *G. pulex* are also abundant. Other species commonly found in clean fast flowing water included river limpet *A. fluviatilis*, blackfly

larvae *Simulium ornatum*, mayfly nymph *S. ignita*, and damselfly *Calopteryx splendens* (Fig.9).

Site 6 Merstone Stream (SZ 507862)

The river at the sampling site runs through woodland next to a domestic garden and was shaded by alders, ash and sycamore trees. The channel water width here varied between 1.6-2.4 m, and water depth between 7-30 cm. The riverbed is mainly cobbles and shingle with a covering of silt. This tributary of the Medina was included in the sampling programme because of water quality concerns in the 1990s. The catchment of the Merstone stream includes intensive agriculture and the river was always a bright orange in colour, due to iron-ochre suspension and deposits on the stream bed (Fig. 10). Moreover, there were iron-rich sediments oozing out of the soil banks lining the channel. In 2022-23 iron-ochre deposits were still visible but less obvious than in the earlier survey.

The variety and abundance of invertebrate fauna



Fig. 8: Blackwater Mill Farm 30th June 2023.
Photo: Keith Marston



Fig. 10: Merstone Stream 30th June 2023.
Photo: Keith Marston



Fig.9: Beautiful demoiselle damselfly *Calopteryx splendens* **Above:** Nymph at Highwood Lane, Chillerton 8th November 2022. **Below:**Adult male upstream of Blackwater Mill Farm 12th May 2020.
Photos: Keith Marston



Fig. 11: Larvae of cased caddisflies **Above:** *Lepidostoma hirtum* **Below:** Limnephilidae sp. Merstone Stream 30th June 2023. Photo: Keith Marston

found here was generally poor compared to sites on the main river of the Medina.

Site 7a Shide Riffles (SZ 503880)

This site, on the southern outskirts of Newport, was only visited in the 2002-23 survey. It is about 50m upstream of Shide Weir and although the course of the river has been straightened and engineered, this site is characterised by a small fast flowing meander and gravel riffles, that may have been created relatively recently as part of in-stream improvements (Fig. 12).



Fig. 12: Shide Riffles, 26th March 2024.

Photo: Keith Marston

The channel water width here varied between 4.6-5.3 m, and water depth between 15-30 cm. The riverbed consists mainly of gravel with silt on the channel edges. The site is heavily shaded by alder and white willow trees and is diverse with amphipod *G. pulex*, caddisflies *R. dorsalis*, *Sericostoma personatum*, *L. hirtum*, *Mystacides azurea*, *Adicella reducta*, *Silo pallipes* and nymphs of the mayfly *Ephemera danica*, *Seratella ignita* and *Baetis rhodani/atlanticus*.

Site 7b Shide, above weir (SZ 503880)

The 6.5m wide channel was straightened and the river level was lowered here in 1968 to reduce the risk of flooding. A small weir was constructed, above which the river became slow flowing and the water on average was about 50cm deep with a sandy-silt riverbed. To reduce siltation upstream of the weir and to facilitate high winter discharges after heavy rain, the weir boards were removed in November 1994 and in March and November 1995. The river is shaded with alder and willow and to the east is the busy St George's Way. On the west side is a small car park for visitors to the Christmas tree nursery. In the 1990s, both this site and Site 8 were sampled regularly by field study students from the Medina Valley Centre.

Prior to permanent removal of the weir-boards in about 2004, the river had a pond-like community with water boatman (*Sigara* spp.), greater water boatman *Notonecta glauca*, whirling beetles (*Gyrinus* sp.) and diving beetles, Dytiscidae spp. and in June 1996, dense congregations of the ostracod *Herpetocypris reptans* were observed. Fish, including 3-spined stickleback (*Gasterosteus aculeatus*) and stone loach (*Barbatula barbatula*)

were caught frequently along with occasional eels (*Anguilla anguilla*). In 2022-23, the river was generally swiftly flowing with maximum depth varying between 35-50cm and water width 6.1-6.3m over the survey period. The pond-like community was no longer evident but species typical of fast flowing riffles were present including nymphs of the mayfly *E. danica* and *S. ignita* and larvae of cased caddisflies *L. hirtum*, *M. azurea*, *S. personatum* and *Silo pallipes*.

Station 8 Shide, below weir (SZ 503880)

This site was not sampled in 2022-23 as access to the riverbank had been restricted by the growth of dense scrub. Prior to their removal, water flowed over the wooden weir boards and swiftly down a rough concrete slope to a canalised concrete channel 5.8m wide. The slope was colonised with the moss *Amblystegium riparium* (Hedw.) and green algae (*Cladophora* sp.) attached to pebbles and larger stones on the concrete riverbed. Water depth varied between 10-16 cm and a thin layer of silt accumulated on the riverbed a few metres further downstream of the weir where flow rate was reduced. In the mid-1990s, the riverbed below the weir was raised slightly to enable the installation of a new flow-gauge. This increased the depth of water below the weir to between 30-40cm and reduced the flow rate.

Recorded here in the 1990s were *Sigara* spp. (lesser water boatmen) which must have been washed over the weir boards, but the 'below weir' community was distinctly different and dominated by species characteristic of higher flow rates, such as nymphs of the mayfly *Baetis rhodani/atlanticus* and larvae of the caseless caddisfly *Hydropsyche siltalai*. In the spring, the caseless caddis *Tinodes waeneri* was frequently recorded and the cased caddis *Goera pilosa* was occasional.

Site 9 St Georges Approach Bridge (SZ 502888)

This shaded site below the road bridge has been canalised, is 9.5m wide and located just above two stepped weirs with a total head of 1.4m (Fig. 13) Maximum water depth varied between 11-27cm and the substrate above the concrete bed is mixed silt sand and gravel.



Fig. 13: St Georges Approach Bridge 11th April 1996. The sampling site is above the weir and beneath the bridge. The scrub on the east bank has now matured.

Photo: Anne Marston

In the 1990s, on the riverbed just above the weir, there was some water-starwort (*Callitriche* sp.) and a clump of water crowfoot (*Ranunculus* sp.), but this was not seen in 2022-23. Of note is the variety of water mites which have been recorded which must feed on the invertebrates and fish. Although some species sensitive to poor water quality were recorded here in the 1990s, such as the mayfly *S. ignita*, this site was found to be significantly more diverse in 2022-23 with larvae of caddisflies *S. personatum*, *L. hirtum*, *M. azurea*, *Adicella reducta*, *S. pallipes* and nymphs of the mayfly *E. danica*. The shrimp *Gammarus zaddachi* which is commonly recorded elsewhere as estuarine conditions are approached, was recorded in 2022-2023 but not seen in the 1990s surveys.

Site 10 Coppins Bridge (SZ 502891)

Just prior to the main roundabout in the centre of Newport the river flows within a concrete channel between gardens and a small amenity area (Fig.14). Water width ranged between 6.7 -7.7m and maximum depth varied between 17-38cm. The riverbed consists of gravel and some larger cobbles covered by a thin layer of silt.



Fig. 14: Coppins Bridge, 29th March 2024

Photo: Keith marston

The presence of the green algae *Ulva* sp. and *Cladophora* sp. on the riverbed and edges of the channel and the abundance of the amphipod *Gammarus zaddachi* could be indicative of occasional saline incursion. Species richness was lower here compared to Shide at the edge of the town, which could be due to urban run-off and occasionally raised salinity. The amphipod, *Niphargus aquilex*, observed in the 1990s, is often found in drains and may well have entered the river through storm water discharges. Flounder and Common Goby found here are typically estuarine fish but are known to penetrate far beyond tidal limits. In June 2023, a single larva of the uncommon caddisfly *Rhyacophila fasciata* grp was recorded here.

Discussion

The results of surveys in the 1990s, showed that the Medina was characterised by a low diversity and low abundance of freshwater macroinvertebrate fauna. It was thought this was primarily due to the heavily modified and engineered channel, the absence or rarity of floating and emergent vegetation, an

inferior variety of bankside habitats, iron-rich sediments and low flows, and to a variety of pollutants and low oxygen levels.

Except for the reach between Gatcombe and Blackwater Mill, the river remains heavily modified and engineered, yet, at many sites, there have been quite significant changes in the macrofauna assemblages over the past three decades. At Shide Weir the removal of the weir boards, now permanent, has resulted in significantly higher flow rates immediately upstream. Fauna characteristic of slow flowing, almost pond-like conditions has been replaced by species commonly found in fast-flowing riffles such as mayfly nymphs and caddisfly larvae.

Most striking has been an increase in the number of invertebrate families that are sensitive to poor water quality at sites downstream of the bridge at Highwood Lane, Chillerton, and including the Merstone Stream. This suggests that the long-term water quality of this section of the river has improved. Compared to the 1990s, site BMWP scores in the lower section of the river were significantly higher in 2022-3 at nearly all sites in all seasons (Fig. 15). Although this might partially reflect more oxygenated water due to higher flow conditions at Shide Weir, and other habitat enhancements, a similar improvement was observed further upstream at Blackwater Mill Farm and on the Merstone Stream where the river course and flow characteristics have generally remained unchanged. Between Shide and St Georges Approach bridge, pollution sensitive caddisfly families Leptoceridae, Lepidostomatidae, Sericostomatidae and Goeridae have become more widespread, and the presence of the mayfly *E. danica* boosted BMWP scores. For some of these taxa, abundance could be quite high, especially for caddis *M. azurea* and *S. personatum*.

Sites above Chillerton in the upper part of the catchment showed no such improvements, suggesting that the macrofauna here remains exposed to poorer water quality and habitat. Where the river flows through The Wilderness and Cridmore the fauna may be suppressed by iron-ochre. However, surrounding these wetland habitats is intensive arable farming, so there remains the possibility of pollution from run-off and groundwater contamination.

A general comparison of abundance across all taxa is limited as two surveys were carried out in the 1990s and only one survey season in 2022- 2023. However, some insect groups were lower in numbers in the recent survey, notably water bugs (Hemiptera) water beetles of family Dytiscidae, midges (Chironomidae) and blackflies (Simuliidae). This could be partially due to the removal of weir boards at Shide and the loss of slow-flowing habitat that is favoured by some of these species. However, the widespread decline in insect abundance across the UK is a serious concern (Ball *et al.* 2022; Mancini *et al.* 2023). A revised score system (Wallace Hawkes Paisley Trigg index), now employed by the EA (Paisley *et al.* 2014) incorporates changes to some BMWP scores that are dependent on species abundance, so future monitoring may become more sensitive to variations in the faunal assemblages.

An analysis of data collected by the EA (and

Fig. 15: BMWP scores calculated for November, March and June/July at all sampling sites for each survey period. Samples from standard 3-min kick-sample. Higher BMWP scores are generally indicative of better water quality.

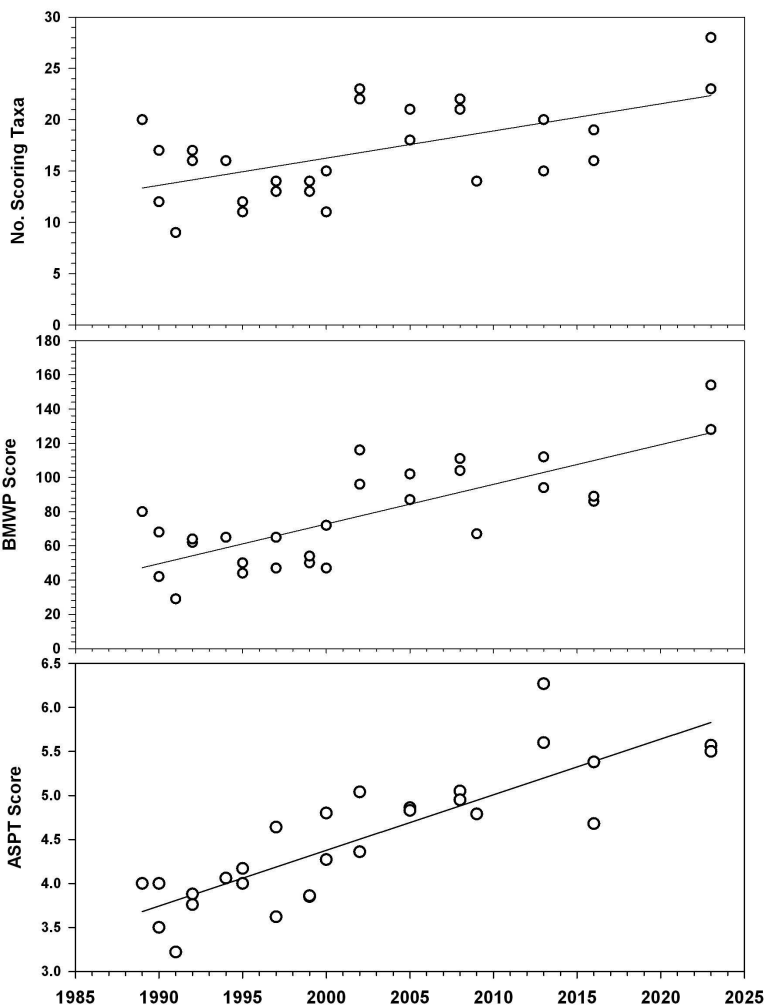
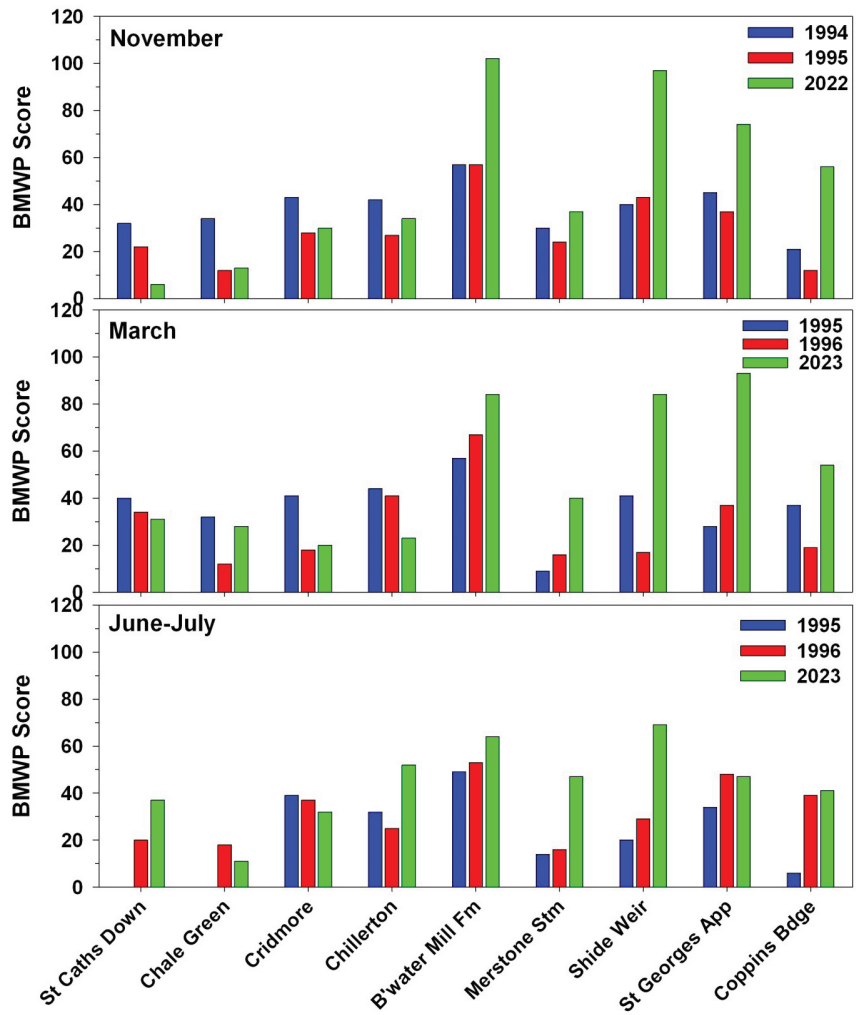


Fig. 16: Biological metrics of water quality obtained for the River Medina at Shide Weir 1989-2023. The linear regression equations show a statistically significant increase in the number of scoring taxa, BMWP and ASPT scores over this period.

Top: Number of Scoring Taxa (linear regression: df 1,26 F 13.3 p=0.001 R^2_{Adj} =0.31);

Middle: BMWP score (linear regression df 1/26 F 38.6 p<0.001 R^2_{Adj} =0.58);

Bottom: ASPT score (linear regression df 1/26 F 66.99 p<0.001 R^2_{Adj} =0.71).

Data extracted from Environment Agency (2024a) Site ID 43254, OS Grid Reference SZ5034788019.

predecessors) at Shide Weir from 1989-2023 supports the assertion that water quality of the lower Medina has generally improved. The significant trend of increasing BMWP and ASPT scores over the past three decades (Figs. 15 & 16) suggest that environmental conditions now offer a more favourable habitat for a wider range of taxa. EA measurements of dissolved oxygen at the monitoring site at Shide Weir have risen and stabilised over the past three decades, and levels of ammonia have fallen. These encouraging data for the Medina are mirrored by recent larger scale time-series analyses of UK and European river macroinvertebrate surveillance data over the same period (Pharaoh *et al.* 2023; Qu *et al.* 2023; Hasse *et al.* 2023).

We also know that there has been an almost concurrent decline in many chemicals of serious concern in English rivers (Whelan *et al.* 2022) and improvements in urban water courses since the introduction of the EU Urban Wastewater Directive (1991). So, the rise in BMWP scores is likely to be due to a general reduction in pollution levels and/or particular pollutant(s) that were previously widespread but now at much lower levels. We may not fully understand the lag time between chemical improvement and the arrival of pollution sensitive taxa, which are likely to vary significantly, and it is possible that the trends reflect quality improvements over a longer time period - perhaps since the 1970s. Yet, a closer examination of the data from the Medina shows that several pollution sensitive taxa started to appear more commonly in EA samples at Shide Weir from the late 1990s and early 2000s and our more recent data has confirmed their continued presence, and some newcomers (Table 1).

All taxa in Table 1 have been recorded in other Island rivers and streams prior to these dates, with the exception of the caddisfly *L. hirtum* which appears to be a recent colonist - possibly from the mainland, where it is widespread. So, we can assume that most new families in the Medina have spread from other Island rivers. For example, the mayfly *Ephemera danica* has been known from the East Yar since the 1980s; it was first recorded in the Lukely Brook at Plaish in 2006 and in EA samples from other parts of the Lukely in 2017.

Yet some sensitive taxa have been lost from Shide Weir over the period, for example larvae of the caddisfly *Goera pilosa* (Family Goeridae) was occasionally recorded in the mid-1990s but was not observed in 2022-23. However, *S. nigricornis*, also of Family Goreridae, has colonised the site, so there may have been a species interaction or other habitat

changes.

There has been a general climatic warming trend in the past 30 years, with some exceptionally hot summers and mild winters. Some species may be responding positively to this, in addition to cleaner water. However, for others, e.g. the mayfly *E. danica*, continued warming could result in changes to shorter life cycles (Everall *et al.* 2015; Macadam *et al.* 2022) that may affect the species fecundity.

No full assessment of fish in the Medina has been made in this study, as the kick sampling method is not appropriate for all species. However, in addition to species listed from our surveys in Appendix 1, electric fishing by the EA at sites north of Blackwater have yielded Brook Lamprey (*Lampetra planeri*), Common Wild Carp (*Cyprinus carpio*), and Brown (sea) Trout (*Salmo trutta*) (EA 2024a).

Waterfowl and other avifauna have not been systematically surveyed along the freshwater section of the river, however the estuary is a site in the British Trust for Ornithology's Wetland Bird Survey.

Iron-Ochre

No discussion of the Medina would be complete without reference to its rusty orange-brown colour, which is a particular feature after heavy rainfall! This is mostly due to the erosion of iron-rich water, soils and sediments in the upper catchment that enter the river because of intensive farming practices. Particular sections of the river also suffer from flocculated iron hydroxide or iron-ochre. This can occur when waterlogged anaerobic soils, such as those present at The Wilderness and Cridmore Bog, containing a high organic content and appreciable amounts of iron sulphides are drained and iron-rich water then flows directly into the river, as these habitats may have formerly acted as a 'sponge' (Pope, 1994). Oxidation of these sulphides by sulphur bacteria (*Thiobacillus*), results in the formation of iron sulphate, which when exposed to more neutral and alkaline conditions is further oxidised to insoluble hydrated ferric oxide, $Fe(OH)_3$, which precipitates as an orange coloured deposit (Gibson, 1996).

The precise biological effects of 'iron-ochre' are unknown, although for some species, interference with respiratory and feeding mechanisms is likely (see stonefly nymph *N. avicularis* Fig. 17).

Smothering of burrows may also suppress the fauna and reduce algal growth on the stream bed which will inhibit grazing herbivorous species. Reduced pH values, which occur during the initial oxidation processes, may also fall outside the tolerance limits of some species and slightly acidic conditions (pH 6.5) were detected in the Merstone Stream in the

Table 1: First appearance of some pollution sensitive taxa in samples from Shide Weir on the River Medina post-1996. EA time-series is 1989-2015.

| Species | Family | BMWP score | First records in samples | Source |
|-------------------------------|------------------|------------|--------------------------|------------|
| <i>Sericostoma personatum</i> | Sericostomatidae | 10 | 1997 | EA |
| <i>Silo nigricornis</i> | Goreridae | 10 | 2000 | EA |
| <i>Lepidostoma hirtum</i> | Lepidostomatidae | 10 | 2008 | EA |
| <i>Rhyacophila dorsalis</i> | Rhyacophidae | 7 | 2022 | This study |
| <i>Ephemera danica</i> | Ephemeridae | 10 | 2022 | This study |



Fig. 17: Nymphs of the stonefly *Nemoura avicularis*
Above: from Cridmore, 4th March 2023, covered in deposits of iron ochre **Below:** From Chillerton 12th March 2023, free of iron-ochre Photos: Roger Herbert

1990s. In the more recent surveys, some iron-ochre remained visible at Merstone, and the river still looks very brown after rain, yet BMWP scores are now generally much higher than previously.

Conclusions

This study has shown that the Medina has not been reaching its ecological potential because of poor water quality, and yet recovery is possible. This will only be sustained if river habitat and catchment management continues to be enhanced and maintained. Further improvements are necessary, particularly in the upper course of the river, which may result in yet higher species diversity along the whole length of the river. If detailed assessments of other rivers are forthcoming, they may provide new insights into the colonisation and dispersal of the Island's aquatic macrofauna.

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APPENDIX 1

Survey 1 is November 1994-June 1996. Survey 2 is November 2022-March 2023.

Values refer to Maximum count in 3 min kick sample with 1mm pond net.

1 = 1-9 individuals (ind), 2 = 10-99 ind, 3 = 100-999 ind. p = present in *ad hoc* samples

See Methods for further details.

| SITE (See Fig. 1) | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7a | | 7b | | 8 | | 9 | | 10 | |
|---------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|----|---|----|---|---|---|---|---|----|---|
| | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 2 |
| SURVEY | | | | | | | | | | | | | | | | | | | | | | |
| SPECIES | | | | | | | | | | | | | | | | | | | | | | |
| PLATYHELMINTHES (Flatworms) | | | | | | | | | | | | | | | | | | | | | | |
| <i>Planariidae</i> | | | | | | | | | | | | | | | | | | | | | | |
| <i>Polycelis nigra/tenuis</i> | | | | | 1 | | | | 1 | 1 | | 1 | | 1 | | p | | 1 | 1 | | | |
| <i>Polycelis felina</i> | | | | | 1 | | 1 | | 1 | 1 | | 1 | 1 | 2 | 1 | 2 | 2 | | | 1 | 1 | |
| <i>Dugesiiidae</i> | | | | | | | | | | | | | | | | | | | | | | |
| <i>Dugesia tigrina</i> | | | | | | | | | 1 | | | | | | p | | | 1 | | | | 1 |
| <i>Dendrocoelidae</i> | | | | | | | | | | | | | | | | | | | | | | |
| <i>Dendrocoelum lacteum</i> | | | | | | | | | | 2 | | | | | | p | | | | | | |
| NEMATOMORPHA (Horsehair worms) | | | | | | | | | | | | | | | | | | | | | | |
| Nematomorpha sp. | | | | | | | | | | | | | | | | p | | p | | | | |
| MOLLUSCA (Snails) | | | | | | | | | | | | | | | | | | | | | | |
| <i>Hydrobiidae</i> | | | | | | | | | | | | | | | | | | | | | | |
| <i>Potamopyrgus antipodarum</i> | 4 | 1 | 3 | 2 | 1 | | 1 | 2 | 2 | 1 | | | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 |
| <i>Lymnaeidae</i> | | | | | | | | | | | | | | | | | | | | | | |
| <i>Lymnaea (Radix) peregra</i> | | | | | | | | | | | | | | | | p | | 1 | 1 | 1 | | |
| <i>Planorbidae</i> | | | | | | | | | | | | | | | | | | | | | | |
| <i>Ancylus fluviatilis</i> | | | | | | | | | 2 | 1 | | | | | | 1 | 2 | | 1 | | | |
| <i>Bathyomphalus contortus</i> | | | | | | | | | | | | | | | | p | | | | | | |
| <i>Gyraulus albus</i> | | | | | | | | | | | | | | | | | p | | | | | |
| <i>Planorbidae</i> sp. | | | | | | | | | | | | | 1 | | | | | | | | | |
| <i>Sphaeriidae</i> | | | | | | | | | | | | | | | | | | | | | | |
| <i>Pisidium milium</i> | | | | | | | | | | | | | | | | p | | | | | | |
| <i>Pisidium subtruncatum</i> | | | | | | | | | | | | | | | | p | | | | | | |
| <i>Pisidium</i> sp. | | 1 | | 1 | | | | | | 1 | | | | | | p | | p | | | | |
| <i>Sphaerium corneum</i> | | | | | | | | | | | | | | | | p | | p | | | | |
| <i>Sphaeridae</i> sp. | 1 | 1 | 1 | | 1 | | 1 | | 1 | | | | | | | 1 | 1 | | | | | |
| ANNELIDA (Oligochaeta - Worms) | | | | | | | | | | | | | | | | | | | | | | |
| <i>Lumbriculidae</i> | | | | | | | | | | | | | | | | | | | | | | |
| <i>Lumbriculus variegatus</i> | 1 | | | | | | 1 | | | | | | | | | p | | p | | | | |
| <i>Naididae</i> | | | | | | | | | | | | | | | | | | | | | | |
| <i>Stylaria lacustris</i> | 1 | 1 | | | | | | | | | | | | | | | p | | | | | 1 |
| <i>Tubificidae</i> | | | | | | | | | | | | | | | | | | | | | | |
| <i>Potamothrix hammoniensis</i> | | | | | | | | | | | | | | | | p | | | | | | |
| <i>Psammoryclides barbatus</i> | | | | | | | | | 1 | | | | | | | | | | | | | |
| <i>Tubifex tubifex</i> | | | | | | | | | | | | | | | | p | | p | | | | |
| <i>Tubificidae</i> spp. | 3 | 1 | 2 | 1 | 1 | 1 | 3 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| <i>Lumbriculidae</i> | | | | | | | | | | | | | | | | | | | | | | |
| <i>Eiseniella tetraedra</i> | 1 | | 1 | | 1 | | | | | | | | | | | | p | | | | | |
| <i>Lumbricidae</i> sp. | | | | | | | | | 1 | 1 | | 1 | 1 | | | 1 | p | | | | | 1 |
| <i>Oligochaeta</i> indet. | 2 | | 1 | | 2 | | 2 | | 2 | | | 1 | | | | 2 | 1 | 1 | 2 | | | 2 |
| ANNELIDA (Hirudinea - Leeches) | | | | | | | | | | | | | | | | | | | | | | |
| <i>Piscicolidae</i> | | | | | | | | | | | | | | | | | | | | | | |
| <i>Piscicola geometra</i> | | | | | | | | | | | | | 1 | 1 | | | | | | | | 1 |

APPENDIX 1 (continued)

| SITE (See Fig. 1) | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7a | 7b | | 8 | 9 | | 10 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|---|---|---|---|----|---|---|
| SURVEY | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | |
| ANNELIDA (Hirudinea - Leeches) | | | | | | | | | | | | | | | | | | | | | |
| <i>Glossiphoniidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Glossiphonia complanata</i> | | | | | 1 | | 1 | | 1 | | | 1 | 1 | 1 | 1 | p | 1 | 1 | 1 | | |
| <i>Helobdella stagnalis</i> | | | | | | | | | 1 | | | | 1 | | 1 | p | | | | 1 | |
| <i>Hemiclepsis marginata</i> | | | | | | | | | 1 | | | | | | | p | | | | | |
| <i>Theromyzon tessulatum</i> | | | | | | | | | 1 | | | | | 1 | | 1 | | | | | |
| <i>Erpobdellidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Erpobdella octoculata</i> | | | | | | | 1 | | 3 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| ARTHROPODA (Hydracarina - Mites) | | | | | | | | | | | | | | | | | | | | | |
| <i>Hydrodroma torrenticola (despiciens)</i> | | | | | | | | | | | | | | | | | | 1 | | | |
| <i>Hygrobatas calliger</i> | | | | | | | | | | | | | | | | | | | | 1 | |
| <i>Hygrobatas fluviatilis</i> | | | | | | | | | | | | | | | | p | | | | 1 | |
| <i>Hygrobatas longipalpis</i> | | | | | | | | | | | | | | p | | | | | | | |
| <i>Hygrobatas setosus</i> | | | | | | | 1 | | | | 1 | | | | | | | | 1 | | |
| <i>Hygrobatas nigromaculatus</i> | | | | | 1 | | | | | | | | | | | | | 1 | | 1 | |
| <i>Lebertia inaequalis</i> | | | | | | 1 | 1 | | 1 | | | | | | | | | | 1 | | |
| <i>Lebertia porosa</i> | | | | | 1 | | | | | | | | | | p | | | 1 | | | |
| <i>Sperchon denticulatus gr.</i> | | | | | | | | | | | | | | | | | | | 1 | | |
| <i>Sperchon hibernicus</i> | | | | | | | | | | | | | | | | | | 1 | | | |
| <i>Sperchon setiger</i> | | | | | | | | | | | | | | | | | | 1 | | | |
| Hydracarina spp. | | | | | 2 | | 2 | 1 | 2 | 1 | | | 1 | 2 | 1 | 3 | 3 | 3 | 3 | 1 | |
| ARTHROPODA (Crustacea) | | | | | | | | | | | | | | | | | | | | | |
| Cladocera | | | | | | | | | | | | | | | | | | | | | |
| Cladocera sp. | | | | | 1 | | | | | | | | | | p | | | | | | |
| Ostracoda | | | | | | | | | | | | | | | | | | | | | |
| <i>Herpetocypsis reptans</i> | | | | | | | | | | | | | | 1 | 1 | p | | | | | |
| Ostracoda indet. | | | | | 1 | | | | 2 | 1 | 1 | 1 | 1 | 4 | 2 | 2 | 2 | 2 | 2 | 1 | |
| Isopoda | | | | | | | | | | | | | | | | | | | | | |
| <i>Asellidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Asellus aquaticus</i> | 1 | | | | 2 | 1 | | 2 | 2 | 1 | | 2 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | |
| <i>Proasellus meridianus</i> | | | | | 2 | | | | | | 3 | 1 | | | | | | | | | |
| Amphipoda | | | | | | | | | | | | | | | | | | | | | |
| <i>Crangonyctidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Crangonyx pseudogracilis</i> | | | | | 1 | | 1 | | | | | | | | | | | | | | |
| <i>Gammaridae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Gammarus pulex</i> | 3 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 2 | | | | |
| <i>Gammarus zaddachii</i> | | | | | | | | | | | | | | | | | | | 2 | 2 | 3 |
| <i>Niphargidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Niphargus aquilex</i> | | | | | | | | | | | | | | | | | | | | 1 | |
| ARTHROPODA (Insecta) | | | | | | | | | | | | | | | | | | | | | |
| Ephemeroptera (Mayflies) | | | | | | | | | | | | | | | | | | | | | |
| <i>Baetidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Baetis rhodani/atlanticus</i> | | | | | | 2 | 1 | | 3 | 2 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |
| <i>Cloeon dipterum</i> | | | | | 1 | | | | | | | | | | p | | | | | | |
| <i>Ephemeridae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Ephemera danica</i> | | | | | | | | | | | | | 1 | | 2 | | | | 1 | | |

APPENDIX 1 (continued)

| SITE (See Fig. 1) | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7a | 7b | | 8 | | 9 | | 10 | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|----|----|---|---|---|---|---|----|---|
| | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | |
| EphemereIIDae | | | | | | | | | | | | | | | | | | | | | |
| <i>Seratella ignita</i> | | | | | | | 1 | 1 | 1 | | | | 2 | | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| Caenidae | | | | | | | | | | | | | | | | | | | | | |
| <i>Caenis luctuosa</i> | | | | | | | | | | | | | | | | p | | | | | |
| Plecoptera (Stoneflies) | | | | | | | | | | | | | | | | | | | | | |
| Nemouridae | | | | | | | | | | | | | | | | | | | | | |
| <i>Amphinemura sulcicollis</i> | | | | | | | | | | | | | | | p | | | | | | |
| <i>Nemoura avicularis</i> | | | | | 1 | | 1 | | | | | | | | | | | | | | |
| <i>Nemoura cinerea</i> | 1 | 2 | | | | | | | | | 2 | | | | | | | | | | |
| <i>Nemoura</i> sp. | | | | | | | | | | | | | | | 1 | | | | | | |
| <i>Nemurella pictetii</i> | | | | | | | | | | | | | | p | | p | | | | | |
| Odonata (Dragonflies) | | | | | | | | | | | | | | | | | | | | | |
| Libellulidae | | | | | | | | | | | | | | | | | | | | | |
| <i>Libellula depressa</i> | | | | | | | | | | | | | | | | p | | | | | |
| Calopterygidae | | | | | | | | | | | | | | | | | | | | | |
| <i>Calopteryx splendens</i> | | | | | | | 1 | | | | | | | | 1 | p | | 1 | | | |
| Hemiptera (Water Bugs) | | | | | | | | | | | | | | | | | | | | | |
| Veliidae | | | | | | | | | | | | | | | | | | | | | |
| <i>Velia</i> sp. | 1 | | | | | | 1 | 1 | | | | 1 | | | | 1 | | | | | |
| Nepidae | | | | | | | | | | | | | | | | | | | | | |
| <i>Nepa cinerea</i> | | | | | 1 | | | | | | | | | | p | | | | | | |
| Notonectidae | | | | | | | | | | | | | | | | | | | | | |
| <i>Notonecta glauca</i> | | | | | | | | | | | | | | | p | | | | | | |
| Pleidae | | | | | | | | | | | | | | | | | | | | | |
| <i>Plea minutissima</i> | | | | | | | | | | | | | | | p | | | | | | |
| Corixidae | | | | | | | | | | | | | | | | | | | | | |
| <i>Sigara dorsalis</i> | | | | | | | | | | | | | | | p | | 1 | | | | |
| <i>Sigara falleni</i> | | | | | | | | | | | | | | | | p | | | | | |
| <i>Sigara nigrolineata</i> | | | | | 1 | | | | | | | | | | | | | | | | |
| <i>Sigara venusta</i> | | | | | | | 1 | | | | | | | | p | | 1 | | | | |
| <i>Sigara</i> sp. | | | | | 2 | | 2 | | 1 | | | | | | 3 | | | | | | |
| Coleoptera (Beetles) | | | | | | | | | | | | | | | | | | | | | |
| Haliplidae | | | | | | | | | | | | | | | | | | | | | |
| <i>Haliphus lineatocolis</i> | | | | | | | | | | | | | | | | | 1 | | | | |
| Dytiscidae | | | | | | | | | | | | | | | | | | | | | |
| <i>Agabus bipustulatus</i> | | | | | | 1 | | | | | | | | | | | | | | | |
| <i>Agabus paludosus</i> | | | | | 1 | | | | | | | | | | | | | | | | |
| <i>Hydroporus erythrocephalus</i> | | 1 | | | | | | | | | | | | | | | | | | | |
| <i>Nebrioporus elegans</i> | | | | | | | | | | | | | | | | | p | | | | |
| <i>Stictotarsus duodecimpustulatus</i> | | | | | | | | | | 1 | | | | | | | p | | | | |
| Dytiscidae indet. | 1 | | 1 | | 1 | | 1 | | | | | | | | 1 | | p | | | 1 | |
| Gyrinidae | | | | | | | | | | | | | | | | | | | | | |
| <i>Gyrinus</i> sp. | 1 | | | | | | | | | | | | | | p | | p | | | | |
| Helophoridae | | | | | | | | | | | | | | | | | | | | | |
| <i>Helophorus brevipalpis</i> | | 1 | | | 1 | | | | | | | | | | | | | | | | |
| <i>Helophorus</i> sp. | 1 | 1 | 2 | | 1 | 1 | | | | | | | | | | | | | | | |

APPENDIX 1 (continued)

| SITE (See Fig. 1) | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7a | 7b | | 8 | | 9 | | 10 | |
|---------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|----|----|---|---|---|---|---|----|---|
| | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | |
| Coleoptera (Beetles) continued | | | | | | | | | | | | | | | | | | | | | |
| <i>Helodidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Elodes</i> sp. | 2 | | 2 | | | | | | | | | | | | | | | | | | |
| <i>Hydrophilidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Anacaena globulus</i> | | 1 | | | | | | | | | | | | | | | | | | | |
| <i>Elminthidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Elmis aena</i> | | 1 | | | | | 1 | 1 | 1 | | | | 1 | 1 | p | | 1 | | | 1 | |
| <i>Oulimnius</i> sp. | | | | | | | | | | | | | | p | | p | | | | | |
| <i>Limnius volkmari</i> | | | | | | | | | | | | | 1 | 1 | | | | | | | |
| Megaloptera (Alderflies) | | | | | | | | | | | | | | | | | | | | | |
| <i>Sialidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Sialis lutaria</i> | | | | | 1 | | 1 | | | | 1 | | | p | 1 | | | | | | |
| Trichoptera (Caddisflies) | | | | | | | | | | | | | | | | | | | | | |
| <i>Rhyacophilidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Rhyacophila dorsalis</i> | | | | | | | | | | 1 | | | 1 | | | | | | | | |
| <i>Rhyacophila fasciata</i> grp | | | | | | | | | | | | | | | | | | | | | 1 |
| <i>Hydroptilidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Hydroptila sparsa</i> | | | | | | | | | | | | | | | | | p | | | | |
| <i>Psychomyiidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Lype reducta</i> | | | | | | 1 | | | | | | | | | | | | | | | |
| <i>Tinodes waeneri</i> | | | | | | | | | | | | | | | | | 1 | | | | |
| <i>Polycentropodidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Plectrocnemia conspersa</i> | | | | | | | 1 | | | 1 | | | | | | | | | | | |
| <i>Polycentropodidae</i> sp. | | | | | | | | | | | | | | | | | 1 | | | | |
| <i>Hydropsychidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Hydropsyche siltalai</i> | | | | | | | | 1 | 3 | 2 | 1 | | 1 | 1 | 1 | 2 | 3 | 1 | 2 | 1 | |
| <i>Lepidostomatidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Lepidostoma hirtum</i> | | | | | | | | | | 1 | | 1 | 1 | 2 | | | 2 | | | | |
| <i>Limnephilidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Glyphotaelius pellucidus</i> | | | | 1 | | | | | | | | | | | | | | | | | |
| <i>Halesus radiatus</i> | | | 1 | | | 1 | 1 | | | 1 | | | | 1 | 1 | p | | | | | |
| <i>Limnephilus lunatus</i> | | | | | | | | | | | | | | p | | p | | | | | |
| <i>Limnephilus marmoratus</i> | | | | | | | | 1 | | | | | | | | p | | | | | |
| <i>Limnephilus</i> sp. | | | 1 | | 1 | | | | 1 | | 1 | | | p | | | | | | | |
| <i>Micropterna lateralis</i> | | | | | | | | 1 | | | 1 | | | | | | | | | | |
| <i>Micropterna sequax</i> | 1 | | 1 | | | | | | | | | | | | | | | | | | |
| <i>Limnephilidae</i> indet. | | 1 | | 1 | 1 | | 1 | | | 1 | | 1 | 1 | | | | | | | | |
| <i>Stenophylax</i> sp. | | | | 1 | | | | | | | | | | | | | | | | | |
| <i>Goeridae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Goera pilosa</i> | | | | | | | | | 1 | | | | | | | | p | | | | |
| <i>Goeridae</i> indet. | | | | | | | | | | | | | | | | | | | | | 1 |
| <i>Silo pallipes</i> | | | | | | | | | | 1 | | | 2 | 1 | | | | 1 | | | |
| <i>Sericostomatidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Sericostoma personatum</i> | | | | | | | | | 1 | 1 | | 1 | 2 | 1 | | | | 2 | p | 2 | |
| <i>Leptoceridae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Adicella reducta</i> | | | | | | | | | | | | | 1 | | | | | | 1 | | |
| <i>Mystacides azurea</i> | | | | | | | | | | | | | 1 | 2 | p | | | 2 | | | |
| <i>Trichoptera</i> indet | | | | | | | | | | | | | | | | | | | | | |

APPENDIX 1 (continued)

| SITE (See Fig. 1) | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7a | 7b | | 8 | | 9 | | 10 | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|----|----|---|---|---|---|---|----|---|
| | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | |
| Diptera (Two-winged flies) | | | | | | | | | | | | | | | | | | | | | |
| <i>Tipulidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Tipula</i> sp. | | | 1 | | 1 | | 1 | | 1 | | | | | | | p | 1 | | | | |
| <i>Tipulidae</i> sp. | | | | | | | | | | 1 | | | | 1 | | | | | | | |
| <i>Limoniidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Elaeophila</i> sp. | | | | | | | | | | | | | | p | | | | | | | |
| <i>Pediciidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Dicranota</i> sp. | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 1 |
| <i>Pedicia</i> sp. | 1 | | | | 2 | | 1 | | | 1 | 1 | 1 | | | | 1 | 1 | | | | |
| <i>Psychodidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Psychodidae</i> sp. | | 1 | | | | | | | | | | | | | | | | | | | |
| <i>Ptychopteridae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Ptychoptera</i> sp. | | | | | | | | | | | | | | | 1 | p | | | | | |
| <i>Dixidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Dixa</i> sp. | | | | | | | 1 | | | | | | | p | | p | | | | | |
| <i>Culicidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Culicidae</i> sp. | | | | 2 | | | | | | 1 | | | | | 1 | | | | | | |
| <i>Simuliidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Simulium ornatum</i> grp. | | | | | 1 | | 1 | | 3 | | 1 | | 1 | 1 | | p | | | | | |
| <i>Simulium</i> sp. | | 2 | | | | 1 | | 1 | 2 | 1 | | 1 | 1 | | 1 | | | | | | |
| <i>Chironomidae</i> | | | | | | | | | | | | | | | | | | | | | |
| <i>Prodiamesa olivacea</i> | | | 1 | | 1 | | 1 | | 1 | | | | | | | 1 | | | | | |
| <i>Chironomidae</i> spp. | 3 | 1 | 2 | 1 | 2 | 2 | 3 | 2 | 2 | 1 | 2 | 1 | 1 | 3 | 2 | 2 | 4 | 2 | 3 | 2 | |
| <i>Muscidae</i> | | | | | | | | | | | 1 | | | | | | | | | | |
| <i>Lymnophora</i> sp. | | | | | | | | | 1 | | | | | | | | | | | | |
| <i>Muscidae</i> indet. | | | | | | | | | | 2 | | | | | | | | | | | |
| VERTEBRATA | | | | | | | | | | | | | | | | | | | | | |
| Pisces (Fish) | | | | | | | | | | | | | | | | | | | | | |
| <i>Anguilla anguilla</i> (Eel) | | | | | | | | | | | 1 | | | | | p | | | | | |
| <i>Gasterosteus aculeatus</i> (3-Spined stickleback) | | | | | | | 1 | 1 | | | | 1 | | 1 | p | | 1 | | | | 1 |
| <i>Cottus gobio</i> (Bullhead) | | | | | | | | 1 | | | | | 1 | | | p | | | | | |
| <i>Cyprinidae</i> sp. (Carp) | | | | | | | | | | | | | | | p | | | | | | |
| <i>Barbatula barbatula</i> (Stone loach) | | | | | 1 | | | | | 1 | | 1 | | p | | 1 | | | | | |
| <i>Leuciscus leuciscus</i> (Dace) | | | | | | | | | | | | | | | | p | | | | | |
| <i>Platichthys flesus</i> (Flounder) | | | | | | | | | | | | | | | | | | | | 1 | p |
| <i>Pomatoschistus microps</i> (Common goby) | | | | | | | | | | | | | | | | | | | | p | |
| Aves (Birds) | | | | | | | | | | | | | | | | | | | | | |
| Grey Wagtail | | | | | | | | | | | | | | p | | p | | 1 | | | |
| Grey Heron | | | | | | | | 1 | | | | | | | | | | | | | |
| Kingfisher | | | | | | | | | | | | | | p | | p | | 1 | | | |
| Moorhen | | | | | | | | | | 1 | | | | p | 1 | p | | 1 | | | 1 |
| Mallard | | | | | | | 1 | | 1 | | | | | p | | p | | 1 | | | 1 |

APPENDIX 2

Physical and chemical data from the 1994-96 surveys was usually obtained over two consecutive days; however data from 2022-23 was collected over two to three weeks. See Fig.1 and text for site details. n/d = not determined.

Water Temperature °C

| Site | Nov-94 | Mar-95 | Jun-95 | Nov-95 | Mar-96 | Jun-96 | Nov-22 | Mar-23 | Jun-23 |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 11.0 | 6.8 | DRY | 11.3 | 4.3 | 13.5 | 12.4 | 4.5 | 14.9 |
| 2 | 9.8 | 6.8 | DRY | 11.3 | 4.0 | 13.5 | 12.2 | 4.4 | 15.5 |
| 3 | 10.3 | 6.9 | 13.6 | 11.3 | n/d | 14.0 | 12.4 | 6.0 | 14.8 |
| 4 | 10.6 | 8.6 | 13.7 | 11.7 | n/d | 14.0 | 12.8 | 7.9 | 13.3 |
| 5 | 10.4 | 7.7 | 13.2 | 11.5 | n/d | 14.0 | 12.8 | 7.8 | 14.0 |
| 6 | 10.7 | 8.1 | 14.7 | 10.6 | n/d | 13.5 | 13.0 | 7.6 | 12.8 |
| 7 | 10.2 | 8.4 | 15.4 | 11.8 | 5.8 | 15.0 | n/d | n/d | n/d |
| 8 | 10.3 | 8.6 | 15.1 | 11.8 | 5.9 | 15.0 | 10.8 | 10.4 | 14.7 |
| 9 | 10.4 | 8.6 | 15.0 | 11.9 | 6.3 | 15.0 | 10.9 | 10.5 | 13.8 |
| 10 | n/d | 8.6 | 14.8 | 12.1 | 6.2 | 15.3 | 10.9 | 10.6 | 15.3 |

Water Conductivity µS

| Site | Nov-94 | Mar-95 | Jun-95 | Nov-95 | Mar-96 | Jun-96 | Nov-22 | Mar-23 | Jun-23 |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 525 | 460 | DRY | 620 | 530 | 650 | 590 | 521 | 641 |
| 2 | 520 | 460 | DRY | 610 | 530 | 570 | 742 | 500 | 638 |
| 3 | 450 | 450 | 435 | 540 | 520 | 460 | 542 | 401 | 421 |
| 4 | 500 | 500 | 490 | 550 | 510 | 440 | 436 | 409 | 496 |
| 5 | 485 | 480 | 530 | 530 | 480 | 460 | 440 | 396 | 471 |
| 6 | 540 | 465 | 450 | 620 | 490 | 430 | 462 | 373 | 423 |
| 7 | 500 | 480 | 510 | 540 | 510 | 470 | 451 | 473 | 539 |
| 8 | 490 | 490 | 480 | 540 | 510 | 470 | n/d | n/d | n/d |
| 9 | 520 | 480 | 540 | 560 | 530 | 490 | 460 | 486 | 633 |
| 10 | 495 | 490 | 490 | 560 | 560 | 490 | 569 | 487 | 603 |

Oxygen % Saturation

| Site | Nov-94 | Mar-95 | Jun-95 | Nov-95 | Mar-96 | Jun-96 | Nov-22 | Mar-23 | Jun-23 |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 98 | 100 | DRY | 91 | 90.0 | n/d | 80 | 100 | 79 |
| 2 | 95 | 100 | DRY | 63 | 97 | n/d | 66 | 87 | 69 |
| 3 | 88 | 100 | 76 | 83 | 98 | n/d | 73 | 92 | 83 |
| 4 | 88 | 100 | 76 | 83 | 98 | n/d | 83 | 92 | 92 |
| 5 | 90 | n/d | 92 | 93 | 96 | n/d | 96 | 98 | 93 |
| 6 | 85 | 101 | 84 | 84 | 86 | n/d | 78 | 88 | 69 |
| 7 | 98 | 100 | 91 | 97 | 101 | n/d | 92 | 97 | 98 |
| 8 | 99 | 100 | 95 | 101 | 101 | n/d | n/d | n/d | n/d |
| 9 | 98 | 101 | 97 | 96 | 100 | n/d | 95 | 96 | 94 |
| 10 | 99 | 102 | 95 | 97 | 96 | n/d | 100 | 100 | 100 |

Flow Rate ms⁻¹

| Site | Nov-94 | Mar-95 | Jun-95 | Nov-95 | Mar-96 | Jun-96 | Nov-22 | Mar-23 | Jun-23 |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 0.33 | 0.42 | DRY | 0.1 | 0.14 | 0.02 | 0.1 | 0.20 | <0.1 |
| 2 | 0.27 | 0.22 | DRY | <0.1 | 0.08 | 0.17 | 0.02 | 0.02 | <0.1 |
| 3 | 0.33 | 1.1 | 0.25 | 0.55 | 0.2 | 0.14 | 0.2 | 0.28 | 0.36 |
| 4 | 0.95 | 0.87 | 0.23 | 0.53 | 0.21 | 0.11 | 1.4 | 0.58 | 0.28 |
| 5 | 1.04 | 1.2 | 1.25 | 1.47 | 1.0 | 0.67 | 1.4 | 0.47 | 0.16 |
| 6 | 0.32 | 2.37 | 0.69 | 1.06 | 0.38 | 0.33 | 1.28 | 0.67 | 0.44 |
| 7 | 0.54 | 0.85 | <0.1 | 0.57 | <0.1 | <0.1 | 0.63 | 0.21 | 0.1 |
| 8 | 0.5 | 3.4 | 0.65 | 0.54 | 0.5 | 0.36 | n/d | n/d | n/d |
| 9 | 0.8 | 1.39 | 0.5 | 0.73 | 0.8 | 0.36 | 0.52 | 0.16 | 0.1 |
| 10 | 0.44 | 0.83 | 0.1 | 0.35 | 0.25 | 0.17 | 1.27 | 0.48 | 0.27 |

A LANDSCAPE HISTORY OF WOOTTON MANOR, WOOTTON DEER PARK, FATTINGPARK AND THE SURROUNDING COMMONS ON THE ISLE OF WIGHT

Vicky Basford

Abstract

This paper traces the landscape history of former heaths and commons to the east of the Medina Estuary from the early Anglo-Saxon period until enclosure in the 17th, 18th and 19th centuries. The relationships between the medieval parishes of Arreton, Whippingham and Wootton are explored. Particular attention is given to Wootton Manor and its deer park and to Fattingspark which belonged to Wootton Manor and lay within a detached part of Wootton Parish. The commons surrounding Wootton Manor within Whippingham Parish and Arreton Parish are described and the enclosure of these commons is documented. Briddlesford Common was often referred to as Wootton Common, although the whole area of the common lay in Arreton Parish: the reason for this anomalous name is discussed. The paper concludes by examining the ecology and archaeology of Fattingspark Copse.

Keywords: Landscape History, Intercommoning, Deer Park, Commons Enclosure, Historical Ecology of Woodland

1. Origins of the Commons east of the Medina Estuary

In the medieval period, a large block of land on the east side of the Medina Estuary formed an area of settlement-free, largely unenclosed grazing land on heavy Hamstead Clays. This was divided between Fairlee Common and Alverstone Common (alias Whippingham Common) in Whippingham Parish; Standen Heath, Lynn Common, Staplers Heath and Briddlesford Common (alias Wootton Common) in Arreton Parish; and Fattingspark in Wootton Parish (Basford 2013, 282-284). These medieval parishes survived largely unchanged into the 19th century and were mapped in 1863 as sheets XC and XCV in the 1st Edition six-inch Ordnance Survey (henceforth OS 1863). Boundaries of Isle of Wight parishes in north-east Wight are shown in Fig. 1.

The heaths and commons of Whippingham, Arreton and Wootton may have had very ancient origins, possibly originating as a single extensive area of clay heath in the prehistoric period, although without clear palaeo-environmental evidence, we cannot be certain when this land was first cleared of woodland. The linear 'Motkin Boundary' on Standen Heath, of possible Iron Age/Roman or Early Medieval date, yielded a few identifiable plant macrofossils, consisting primarily of wild plant taxa from habitats such as waste ground and hedges. Although the creation of the 'Motkin' bank and ditch implied significant contemporaneous human influence, there were no crop plants or other remains to suggest domestic or agricultural activities in the vicinity (Hayes, 2012).

Revealingly, the area containing the heaths and commons of Whippingham, Arreton and Wootton is largely devoid of Old English place-names (Fig. 2). Some archaeological material has been found but this has been mainly prehistoric flint and artefact scatters with a few sub-surface features. However, there has perhaps been less fieldwork than elsewhere on the Island, other than a pipeline watching brief in 2000. This recorded scattered Late Iron Age and Romano-British features indicative of domestic activity about 200m south-west of Briddlesford Lodge Farm, though the sparseness of

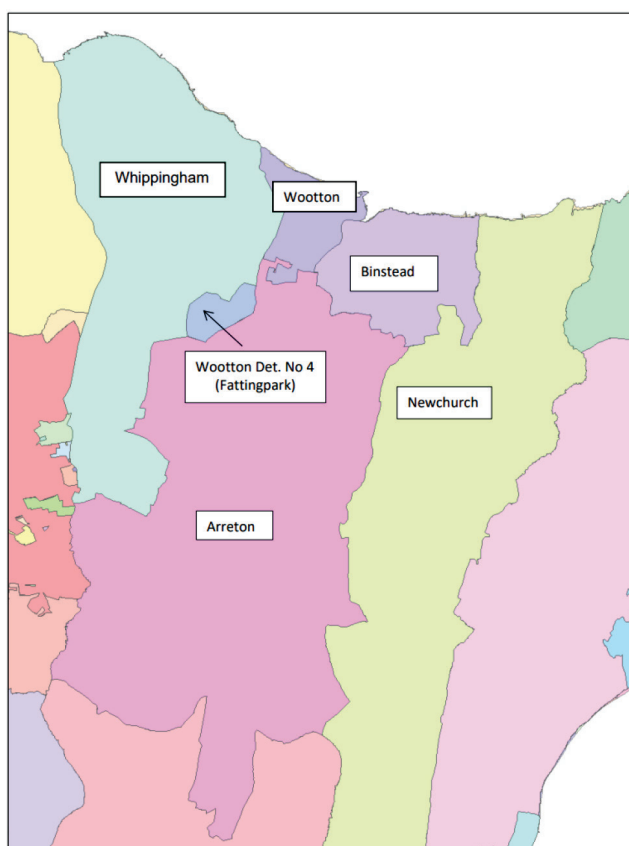


Fig 1: Parishes of North-East Wight with boundaries from six-inch Ordnance Survey 1863

these features suggests that they were not within a substantial settlement (Network Archaeology 2005, 38-40, 48). Data from metal-detecting reveal some discrete clusters of finds within the area devoid of Old-English Place-Names, but many of these are later medieval or post-medieval in date (Portable Antiquities Scheme (PAS), 2014). There are no recorded PAS finds within a significant part of the area, but this may mean only that detectorists have not had access.

Oosthuizen (2013, 43) has written about early 'collective pastures', identifiable as 'empty zones' devoid of prehistoric or Romano-British fields and settlement. The commons of Whippingham, Arreton

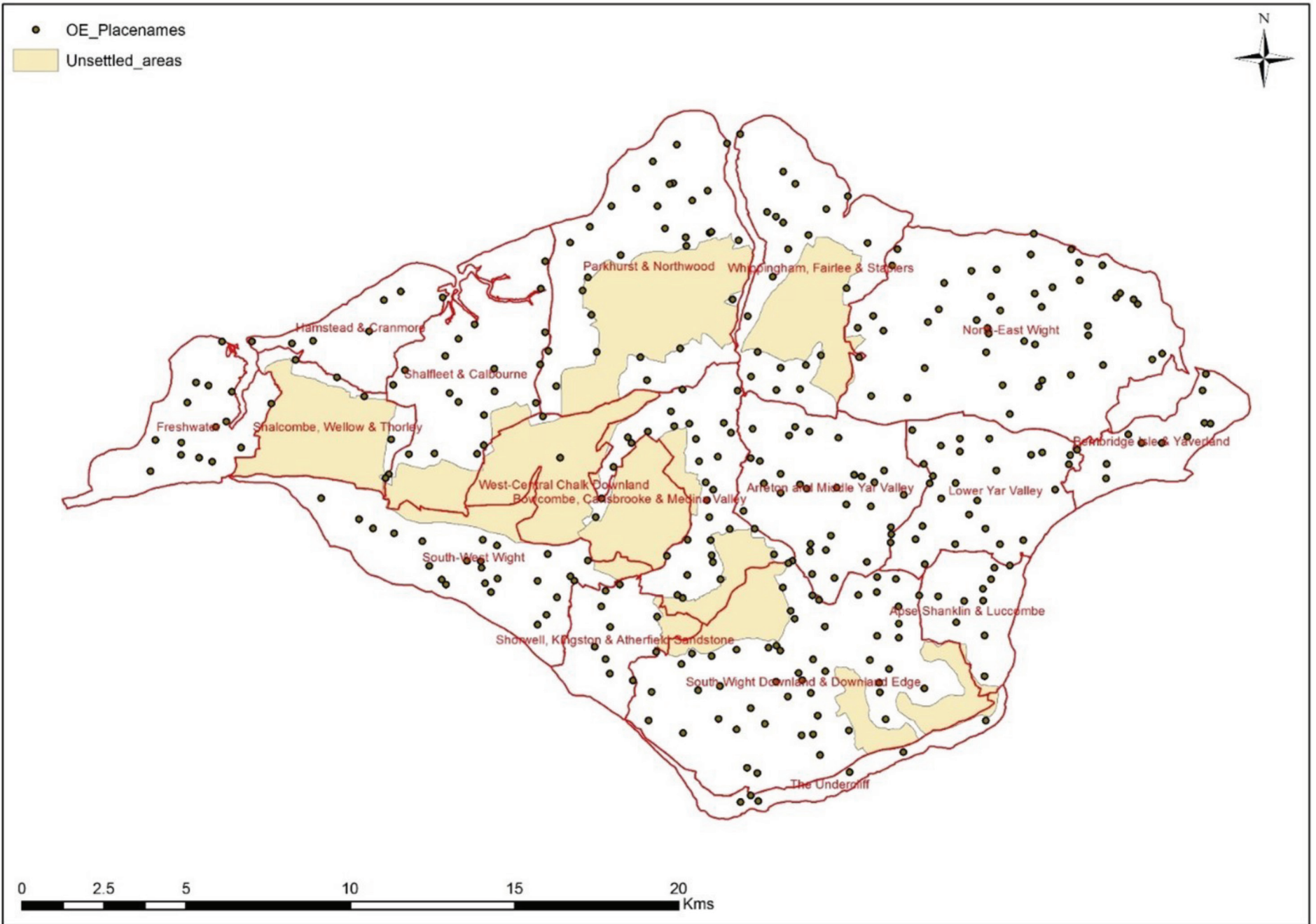


Fig. 2: Areas devoid of Old English Place-Names (from Basford 2013, Fig. 9.12)

and Wootton exemplify this type of land use. The practice of 'intercommoning' continued into the early medieval period. It reflects a period when rights of common pasture existed over extensive areas of 'waste' before parish boundaries became fixed in the 12th century. Early medieval intercommoning has been identified elsewhere on the Isle in certain areas of chalk downland on either side of later parish boundaries e.g. on Bonchurch Down (Margham, forthcoming, Chapter 10) and in lower-lying landscape regions both north and south of the chalk such as the adjoining commons of Thorley and Wellow (Basford 2013, 132).

2. Medieval parishes and manors

In the early Anglo-Saxon period, the area devoid of Old English place-names may have functioned as a single expanse of open grazing, but in the Middle to Later Saxon period, it was divided between the estates of Whippingham and Arreton. It is possible that there was a minster church at Arreton serving the area covered by the later parishes of Whippingham, Arreton, Wootton, Godshill, Niton and Whitwell (Margham, 2000, 122-123). By the time of Domesday Book, in AD 1086, Whippingham and Arreton were distinct parishes, each with a parish church (Hockey, 1982, 2). Wootton still formed part of Whippingham Parish but Wootton Manor was recorded in Domesday Book as Odetone and was in the hands of the king (Page, 1912, 204). The manor of Wootton was probably allotted a part of the open grazing land hitherto shared by Whippingham and Arreton. Wootton's share of this grazing land seems to have comprised an area known as Fattingspark which became a detached part of Wootton Parish and evolved differently from the surrounding common land.

Wootton Manor appears to have been granted to Jordan de Lisle by King Henry I in the early 12th century (Webster 1975-99) and the church at Wootton may have been built at that time as a small manorial chapel for the de Insula, alias de Lisle, family since the earliest fabric of the present building has been dated to the first half of the 12th century (Margham, 1997, 93-94; Margham, nd, 8-9). The medieval parish of Wootton included the lands of the de Lisle family around the manor house and chapel. However, the lands of the family also included the manor of Chillerton some eight miles distant from Wootton, which was in the hands of the de Lises from the 12th century. This formed a detached portion of Wootton Parish and there were two smaller detached areas equally distant from the church. The fourth detached part of the parish was the district of Fattingspark (Fig. 1). This was separated from the nucleus of Wootton Parish by a tongue of Arreton Parish, at one point only some 800 ft wide (Hockey, 1970, 160-161; Hockey, 1982, 3).

Wootton was a 'daughter church', one of a number on the Isle of Wight which started life as manorial chapels after the Norman Conquest. These chapels

NB. The Isle of Wight County Record Office is abbreviated as IWCRO.

¹ The original map is held at the IWCRO/ WHP.2237A. It is on parchment and is signed RMK 1818 in the bottom right-hand corner. A note stitched to the side of the map reads 'Family at Wootton Farm 19 Men Women & Children. Quantity of Acres Coppices Included 620'. A later paper copy held by the IW County Archaeology & Historic Environment Service contains subtle differences from the original map. A note in the bottom right-hand corner of this copy, probably of later date, reads 'PRE 1762' but this must be incorrect as the original map seems to have been drawn up in connection with the Wootton Tithe Dispute of the early 19th century.

were required to pay tithes or other parish dues to the 'mother church'. The mother church of Wootton appears to have been Whippingham, as this parish abutted Wootton Parish to the west. Even in the late 18th century Wootton, still paid an annual fee of ten shillings to Whippingham (Worsley, 1781, 229). However, there is also evidence for an ancient connection with Arreton Parish before the Norman Conquest, in the form of the interlocking boundary with that parish to the north and south of the modern main road from Lushington Hill to Wootton Creek. Some fragments of Arreton Parish abutting the boundary with Wootton Parish corresponded with land that had been granted to Quarr Abbey after its foundation in AD 1132 (Figs. 1 and 3).

The interlocking lands of Wootton, Arreton and Quarr Abbey led to disputes about tithes, the payments in kind which were intended to support the church within each parish (Hockey, 1970, 160-161). There was a dispute in the late 15th century, settled in 1488, which involved the abbot of Quarr and the vicar of Arreton against the parson of Wodyton. This dispute concerned the tithes and certain closes in the manor of Wootton viz:

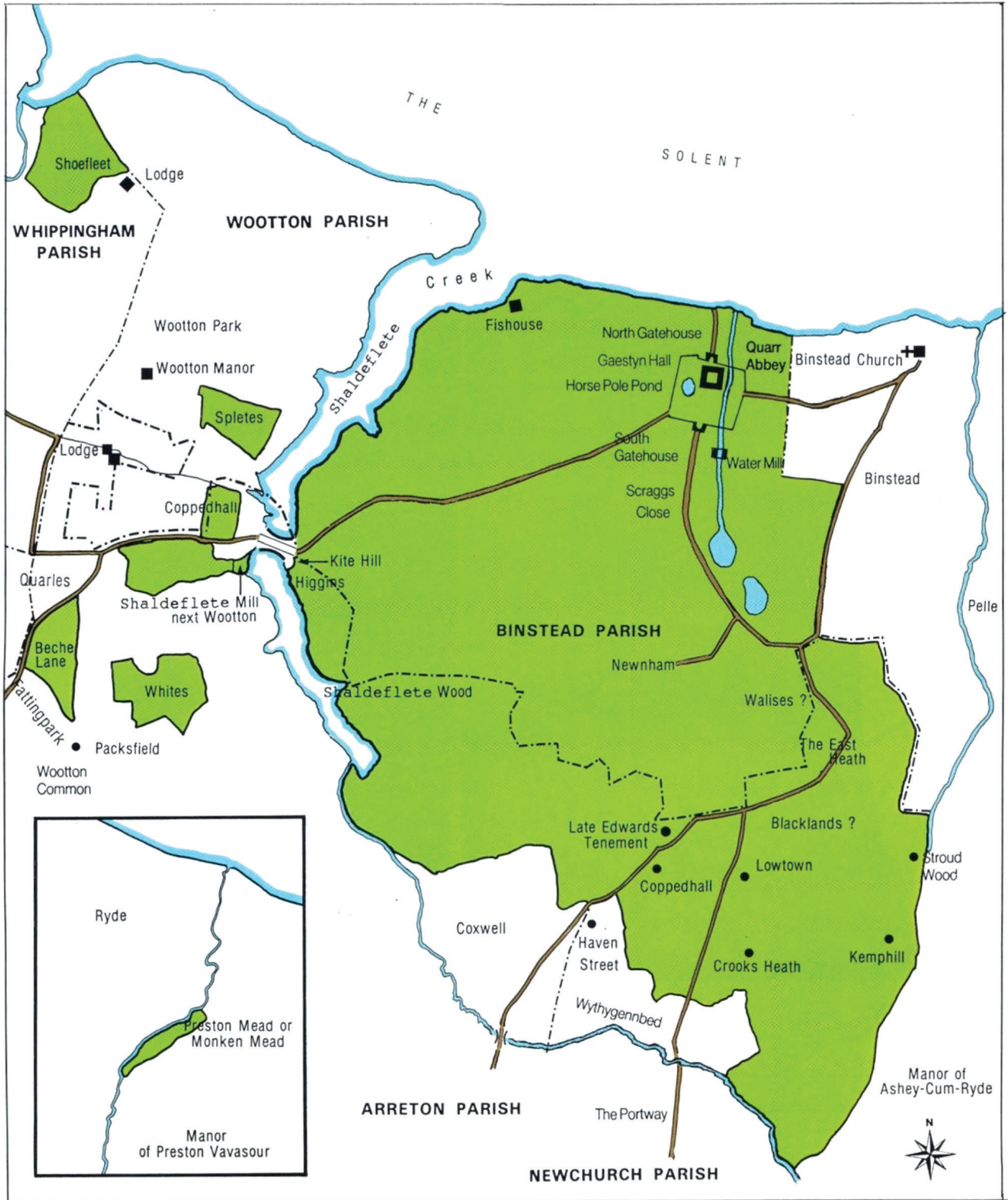
Godyscroft, Smyhes Clos, Style croft, Quarles, Cley clos next to the Abbott's ground called Bech Place, Fattyng Park, all to the north west of the road which lead from the pound of Wootton towards Pakesfield; Also the tithes of Church acre and Splettes held by Robert Hayles. With the advice of Sir Nicholas Lyle, patron of the church of Wootton and other gentlemen set out below it was agreed that the parson of Wootton was to receive all tithes to the north west of the aforesaid road and of other lands of the manor of Wootton, paying a pension of 5s. to the abbey and 5s. to the vicar of Arreton at Easter. (Hockey 1991, Charter No. 117).

3. Wootton Manor and Wootton Park

Wootton Manor was held by the de Lisle family from the 12th century until the early 19th century. Webster (1994) states that 'it is difficult to overestimate the importance of the Lisle family in the development of the Isle of Wight, they being the major family here under the paramount Lord at Carisbrooke Castle'. Wootton itself was a relatively small estate, but the de Lises also held the manors of Appleford, Roud, Chillerton, Shanklin, Bonchurch, Wath, Blackpan, Hardingshute and Westcourt. The manor of Wootton *alias* Wootton Farm was mapped in 1818 in connection with a tithe dispute (Fig. 4).¹ At that date the manor farm included some land in the parishes of Arreton and Whippingham, but most of its land lay in Wootton Parish, comprising a block of land around the manor house and a smaller block of land at Fattingspark.

Hawise, the widow of Jordan de Lisle and their son, Geoffrey fitz Jordan, granted the mill of *Escaudeflot* to the Abbey of Quarr in about 1141 (Hockey 1991; 1, 20). This mill is described in a confirmation charter

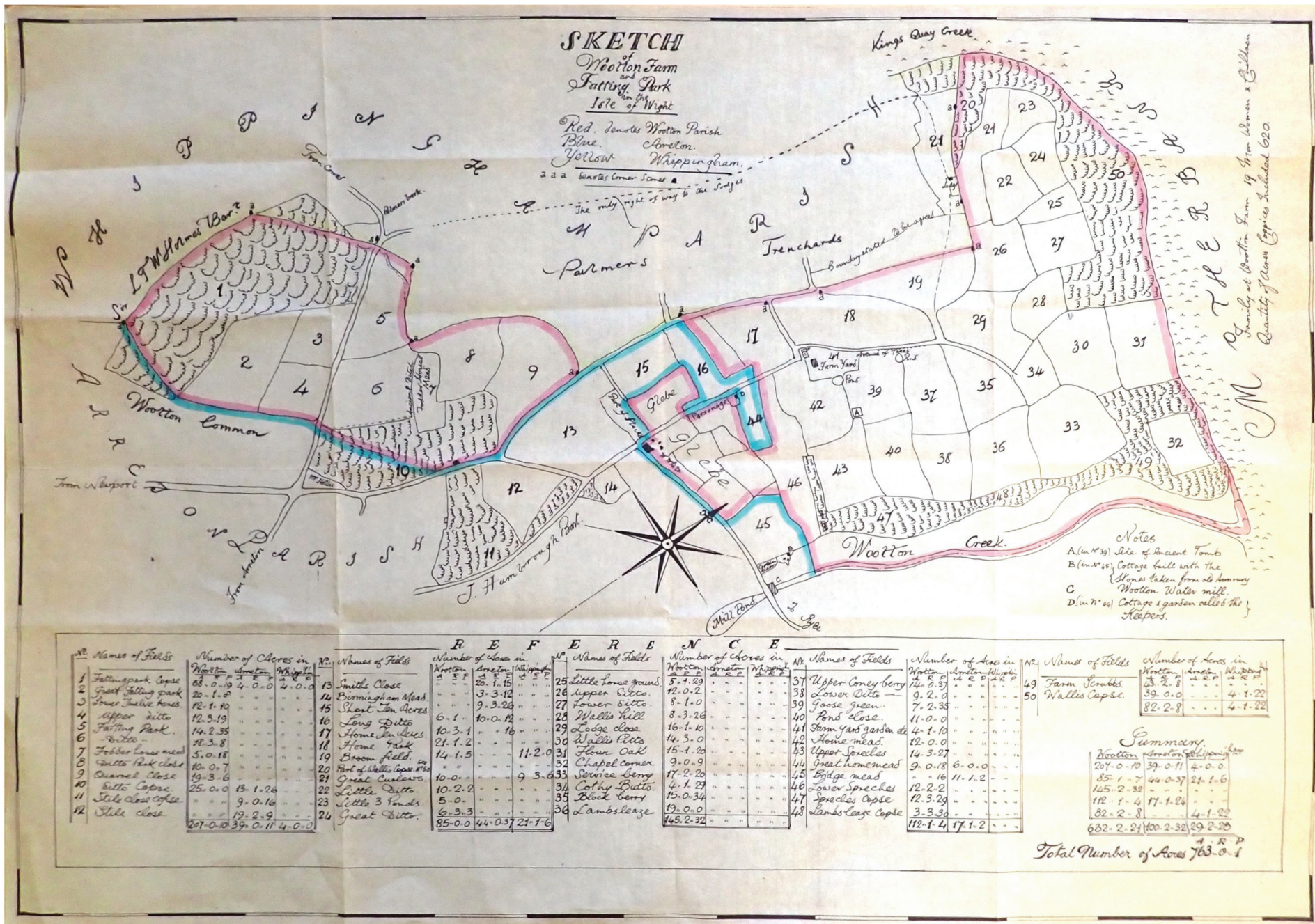
MAP 1



SITE OF QUARR ABBEY Inset PRESTON MEAD OR MONKEN MEAD Scale 1/4 1/2 3/4 1 mile

Fig. 3: Lands of Quarr Abbey. Reproduced from The Charters of Quarr Abbey, Hockey 1991 by permission of the Isle of Wight County Record Office

Fig. 4: 'Sketch of Wootton Farm and Fattingspark in the Isle of Wight' 1818
 Copy held by Isle of Wight County Archaeology & Historic Environment Service.
 Original in Isle of Wight County Record Office (WHP.2237A)



granted to the abbey by Isabella de Fortibus in 1272-1277 as the mill of Schaldeflet next Woditon (Ibid, 3-4). Hockey (1970; 41, 160), makes it clear that it was a tide mill, referred to in 14th and 15th century documents as a *semulle* or *molenindum maritimum*. However, it appears that there may just possibly have been two mills at Wootton, both on the west bank of Wootton Creek, one belonging to Quarr Abbey and the other belonging to Wootton Manor. In 1263, Sir William de Lisle brought an action against the abbot of Quarr with regard to the mill at Wootton which Llewelyn, son of Griffin, with accomplices, had invaded and destroyed (Webster, 1975-1999). In 1331, an inquisition post mortem on the death of John de Lisle stated that the manor of Wodyton contained one mansion house, one water mill, 400 acres of arable, 100 acres of pasture, underwood to the value of 50s per annum, a fishery and a rabbit warren.² Furthermore, a modern map of Quarr Abbey lands (Fig. 3) marks the position of Quarr Abbey's 'Shaldeflete Mill next Wootton' as being to the south of the causeway or bridge over Wootton Creek. In a note on the confirmation charter to the abbey by Isabella de Fortibus, Hockey (1991, 3-4) states:

the de Lisles mill on the north side of Wootton Bridge has only recently been pulled down, but Quarr owned a small plot of land on the south side of the bridge, which is almost

certainly the site of their mill.

In terms of milling technology, it is hard to understand how two mills could have operated in such close proximity to each other. Although Quarr certainly owned the plot of land on the south side of the bridge, Hockey may be incorrect in placing Quarr Abbey's mill in this location. Perhaps there was only one mill site to the north of Wootton Bridge which Wootton Manor leased back from Quarr Abbey. This is a plausible explanation since Hockey (1970, 40) states that by 1215, Cistercians were not permitted to exploit mills directly. Wootton Tide Mill definitely seems to have been located north of the bridge by the late 17th century and the 1818 map (Fig. 4) shows it in this position, marked at position 'C' on the map.³ It is recorded in this position on the Isle of Wight Historic Environment Record (IWHER 1564 - MIW1667).

Another puzzle concerning Wootton Manor is its appearance in the accounts of Isabella de Fortibus, who held the lordship of the Island from 1262 to 1293. Wootton, Appleford and Chillerton are all listed in her accounts, yet these three manors were possessions of the de Lisle family. Hockey (1982, 124-135) analysed the accounts for 1269-70 and pointed out that there was 'no minority of the heir just then which would have created a wardship, yet everything seemed to be completely at the disposal of the

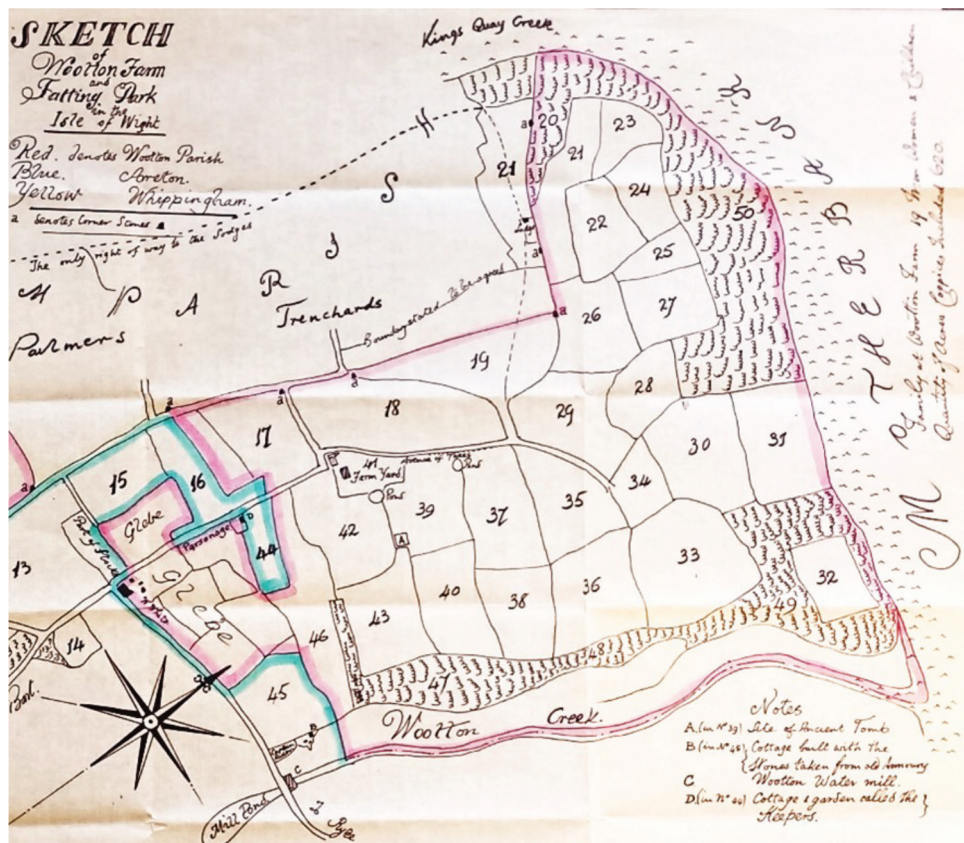


Fig. 5: Extract from 1818 Sketch Map showing Wootton Farm.

² The text of the inquisition is taken from a letter written by William Hearn in connection with the Wootton Tithe Dispute of 1813-1821 (IWCRO/WHP/2213). This entry was originally recorded in Cal. Inq. p.m. 1-9 Edw III, 262 and is cited by Page (1912, 204).

³ Fig.3 indicates that land to the north-west of Wootton Bridge and west of Wootton Mill, called 'Bridge Mead' on the 1818 map, was in Arreton Parish and may have been owned by Quarr Abbey in the medieval period although wrongly identified as Coppedhall on Fig.3. However, the land on which the mill itself stood was possibly not owned by the Abbey. The 1818 map shows a boundary dividing the land on which the mill stood from Bridge Mead. Land to the south of the bridge, bounded by a small tributary stream flowing into Wootton Mill Pond, was held by Quarr Abbey until the Dissolution. It was later known as 'Bulls at Wootton' and from about 1775 was owned by John Cooper, who operated Wootton Tide Mill (Webster 1975-99). This land' is shown on a plan of 1800 (IWCRO/1691/92) but the supposed site of Quarr Abbey's mill indicated in Fig.3 lay just to the east, where a pond is shown on the 25-inch OS of 1898. This pond could conceivably have been the mill pond associated with Quarr Abbey's mill but is much more likely to have been associated with the landscape park of Fernhill.

countess'. The accounts for Wootton include references to its fishpond and to the scouring of the mill pond. The fishpond mentioned in Isabella's accounts may correspond to the 'fishery' recorded in the 1331 inquisition post mortem. Page (1912, 204) states that the fishery 'was in an arm of the sea'. This probably refers to Wootton Creek as suggested by Hockey (1970, 50).

Many features of Wootton Manor are recorded in the Isle of Wight Historic Environment Record (IWHER). The de Lisle family seem to have acquired a grant of free warren at Wootton Manor before 1298, when a John de Lisle complained that 'Robert de Harslade, with a multitude of malefactors, cut down and rooted up his trees in his wood of Woden, and hunted in his free warren there'.⁴

Rights of free warren were grants by the king permitting local lords to hunt small game such as hare, rabbit, woodcock, partridge and pheasant on their estates (Bond, 1994, 116). A grant of free warren was also recorded for Wootton Manor in 1306.⁵ One of the modern meanings of warren, a place for raising rabbits for their meat and fur, was often covered by medieval terms such as *coneygarth* and *coneygre*, since rabbits were known as 'coneyes' in the medieval period. However, the 1331 inquisition post mortem mentioned above refers specifically to a 'rabbit warren'. The 1818 'Sketch of Wootton Farm and Fattening Park in the Isle

of Wight' (Fig. 4) named fields 37 and 38 to the north-east of the manor house as 'Upper Coney berry' and 'Lower Coney berry'. These field names may indicate the area of the rabbit warren which was the precursor of a deer park (IWHER 959 - MIW1011) first recorded in 1492-3 (Page, 1912, 205). Field 18, beside the manor farm, was named 'Home Park'. Deer parks were a status symbol coveted by gentlemen and members of the aristocracy in the medieval period and there is evidence for several on the Isle of Wight (Basford, 1989, 13-17). The chief function of Wootton Park would have been to provide grazing for deer, although it probably also contained other grazing animals such as cattle.

The de Lisle's 'great castellated manor house at Wootton, complete with moat and deer park, was a feature of the Island landscape remembered by old people in the Wootton tithe disputes of 1815 and 1820' (Webster 1994). In October 1815, John Wallis of Whippingham, labourer, aged 82, said on oath:

*That he remembered an old tower standing on Wootton Farm and forming part of the present farm house, in which tower there was an armoury and that he had seen therein helmets, iron caps and boddices, greaves for the legs and armour and curtlasses and warlike instruments.*⁶

The 1818 'Sketch of Wootton Farm and Fattening Park' (Fig. 5) marks 'Site of Ancient Tower' at 'A' to

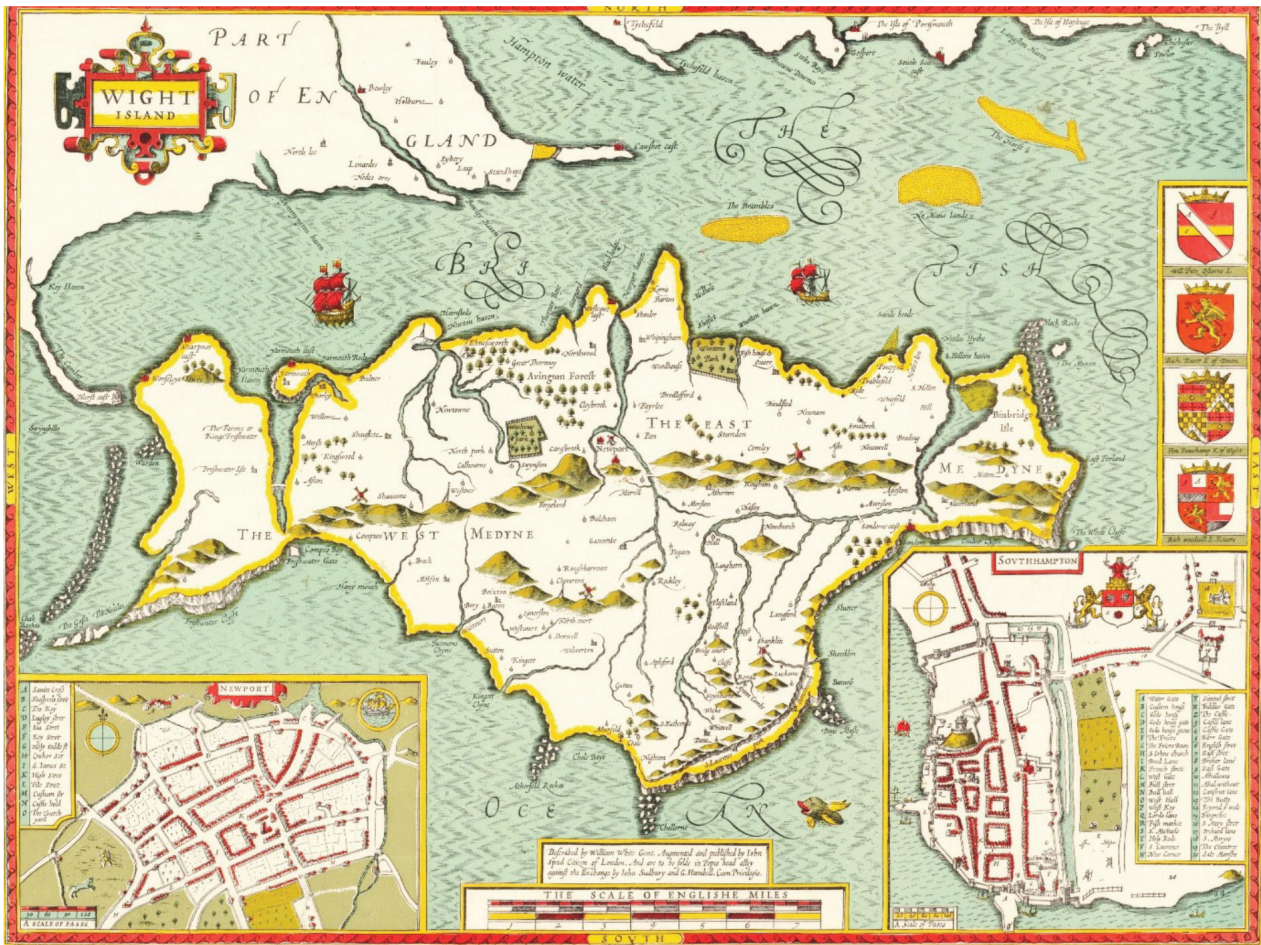


Fig. 6: John Speed's map of 1611 Image reproduced by permission of the Isle of Wight County Record Office

⁴ CAL PR Ed.I, 1292-1300 cited by Webster (1975-1999).

⁵ Cal. Chart. R. 1300-26, 68 cited in Page 1912 (204).

⁶ IWCRO/WHP/2228.

the east of Wootton Manor Farm and this is in the same place as an earthwork marked on the 1860s 25-inch Ordnance Survey as a rectangular platform with a central mound (IWHER 2896 - MIW4411). The OS map also marks another earthwork between the site of the tower and Wootton Manor Farm. This earthwork, identified on the OS map as Plot 58, occupies about a quarter of the garden area to the east of the farmhouse, and appears to be the moated site mentioned by Webster (IWHER 15160 - MIW15797). It corresponds with the position of a pond marked on the 1818 map, and a pond can still be seen in this position on Google Earth. Manor houses were often set within moats in the medieval period but sometimes moats were set around gardens. There are local examples of moated sites at Wolverton Manor in Shorwell and at Stenbury Manor (Basford, 1980, 147). It is curious that the medieval manor house complex at Wootton seems to have included both a moated site and a tower. The tower may have been a place of retreat during French raids in the medieval period or even the beacon site recorded at Wootton in 1324 and 1638 (IWHER 957 - MIW1009), although the 1324 reference to *Woditone* at *La Ode* and the 1638 reference to *Wootton Poynt* suggest that the beacon was near the mouth of Wootton Creek in Woodside Bay (Kökeritz, 1940, lxxvii-lxxix). It is possible that the tower was a watch tower to oversee the medieval rabbit warren, fishery and deer park as a deterrent against poaching.

In the Royal Survey of the Isle of Wight 1559-60, reference is made to the 'manor house of Wutton with the Parke' but the survey also reported that:

Wootton church is without a service, saving a lay man reading epistles and gospels, the patron being the lord of the manor, Thomas Lysley, gent. The parsonage hath been granted out by the lord of the manor and there is belonging to the said parish church but the manor house only, which is now wholly decayed and no abode had there these many years, nor like to be.

The manor was leased out at this time. In fact, the Lises had made Thrupton, in north Hampshire, their chief seat as early as about 1390 (Webster, 1994). The creation of the deer park a hundred years later may indicate that Wootton was treated as a 'recreational' estate. According to Sir John Oglander, when Henry VII visited the Isle of Wight he spent a night at Wootton and the deer park may have been an attraction (Long, 1888, 63). It was Lancelot Lisle who leased out the manor in 1542 and it did not come back into family hands until 1562/3 when Anthony Lisle refurbished or rebuilt the manor house (Webster 1975-99).⁷

John Speed's map of 1611 depicts 'Woottone Park'

enclosed on its south side by a park pale (Fig. 6). His map shows the deer park stretching from Wootton Creek in the east to Palmer's Brook in the west but there is evidence that the park did not extend as far as Palmer's Brook on the west side. The area of Wootton Manor and Wootton Parish only extended a short distance to the west of the manor house with the land beyond being in Whippingham Parish and containing other tenements. However, at the time of the Royal Survey in 1559-60, four of these tenements, including Palmers and Trenchards, were in the hands of Anthony Rogers who had married the widow of Lancelot Lisle and was also holding Wootton Manor. Webster (1975-99) considers that the Lisle family must have owned these four tenements 'from early times'. The holding which lay on the north-east side of Palmer's Brook beside the coast was known as Shoufflete or Shefleet (Fig. 3). This holding in Whippingham Parish was only added to the Wootton estate in 1519, when the abbot of Quarr granted his tenement in Shoufflete to Sir John Lisle for 40 years (Hockey 1991, 92-3). The holding of Shofleet included the land now known as Curlews Copse.⁸

Additional evidence that the park did not extend as far as Palmer's Brook is provided by the 1818 'Sketch of Wootton Farm' (Figs. 4 and 5) which in the paper copy reproduced here includes the legend 'a a a denotes corner stones' although the original map reads 'a. a. a. denote bound Stones'. These stones are positioned roughly along the western and northern boundaries of Wootton Parish and Manor where they abut Whippingham Parish. Furthermore, the 1818 map shows another boundary line between the western edge of Wootton Manor and Trenchards. The attached legend on the paper copy of the map reads 'Boundary stated to be agreed' but on the original map it reads 'Boundary stated to be against the park'. A track further to the west is shown on the 1818 map, running northward from Fattinpark to 'Great Curlews' (Plot 21) and then eastward through Great Curlews. This track is labelled 'the only right of way to the lodges' and seems to have been outside the park.⁹ The lodge itself (IWHER 14588 - MIW13143), lying within Plot 21 and labelled 'Lodge' on the 1818 map, was on the Whippingham side of the northern boundary between the parishes of Whippingham and Wootton as marked by the boundary stones on the 1818 map. It was thus probably just outside the park, forming a controlled entrance. This building is named on the 1793-4 Ordnance Survey drawing (OSD 74) as 'Park Lodge'.¹⁰ The lodge has now been demolished, but a recent study established that it originated as a modest, two bay lobby-entry dwelling of 17th century date (Archaeology South-East, 2022). The evidence

⁷ The present building on the site of Wootton Manor Farm (IWHER 12812 - MIW3678) is described as 'of early C18 date, altered and extended to the south c.1840' THE COTTAGE WOOTTON MANOR WOOTTON MANOR AND THE COTTAGE, Wootton Bridge - 1034468 | Historic England.

⁸ Shofleet had been granted to Quarr in about 1248 by Walter Elof and his brother, Henry, as: *Ten and a half acres in Shoesfleth or Scofflute, with a messuage called Pinnukeshaye, and another on the north side of the said Henry's messuage; with Two acres in Othelle furlong, next to the marl pit, One acre on the east side of Othelle furlong near the dyke, One acre called Broadacre, and Four and a half acres nearby, and Two acres between the dyke of Geoffrey de Lisle, and the road.*

⁹ Part of this track can be traced on the 1793-4 Ordnance Survey drawing (Fig. 10), connecting the north-east corner of Fattinpark with the west side of Lushington Copse then continuing northward beyond Brocks Copse Road along the western edge of a now-vanished piece of woodland called Blankets Copse before continuing to Curlews Copse. Disconnected sections of the track were still shown on the OS 1863.

¹⁰ OSD 74 is available at OSD-074.JPG [Accessed 03 April 2024].

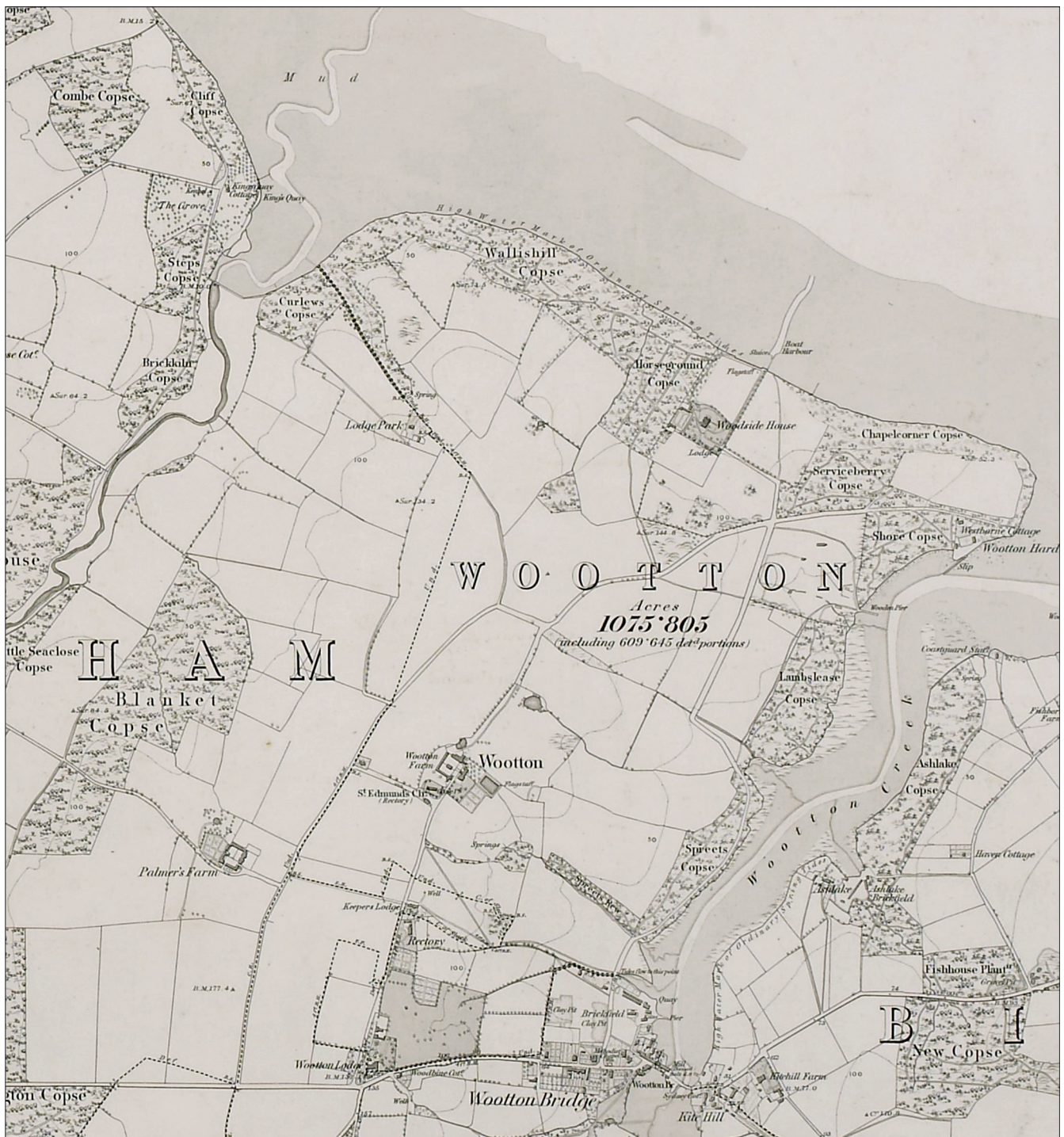


Fig. 7: Extract from six-inch OS 1863 showing area of Wootton Park Not to scale

above suggests that Wootton Park did not extend to Palmer's Brook as indicated on the John Speed map, although the rectangular shape shown on that map would have been the most practical one for a deer park. If the park was restricted almost entirely to the lands of Wootton Manor, as suggested by Figs. 3, 4 and 5, it would have been a less regular shape and more difficult to enclose with a bank, ditch and paling which was the usual practice with medieval parks. The modern landscape offers only partial concordance with parish/manorial/park boundaries and tracks shown on historic maps. The line of the parish/manor boundary on its west side is followed by the southern end of Palmers Road but its course then deviates from Palmers Road and is undefined on the ground as far as the modern Lower Woodside Road. The northern part of the

'Boundary stated to be against the park' is represented today by two wooded field boundaries. A block of woodland represents the projecting north-western part of the parish (plots 21-27 and plot 50 on the 1818 map). The remainder of the northern parish/manor boundary is defined by the coast and the eastern boundary by Wootton Creek. The boundary of Wootton Manor to the south of the manor house and church interlocks with fields belonging to Arreton Parish. In this area, the 1818 map also shows a second lodge controlling access to the park from the south. The lodge is marked at Point D on the 1818 map as 'Cottage and Garden called The Keepers' (Fig. 5). It is named 'Keepers Lodge' on the OS 1863 (Fig. 7) and also on the 25-inch Ordnance Survey of 1898 but is shown as Rectory Cottages on the 1909 and 1946 25-inch OS



Fig. 8: Extract from six-inch OS 1863 showing Wootton Detached No. 4 Not to scale

maps (IWHER 7934 - MIW12486).¹¹ This lodge appears to have been situated on land belonging to Arreton Parish. The southern boundary of the park probably excluded the Wootton Rectory Glebe Land and the Rectory itself, which lay to the south of Keepers Cottage so it may have been very roughly on the line of the present-day Coast Path which follows suburban roads.

Gazey (n.d. 34-39) describes agricultural practices at Wootton Manor from the 18th century to the 20th century. She points out that Wootton Deer Park may have been defunct before 1703, since a lease of that date describes the cultivation of fields within the park boundary. However, one of the 1793-4 Ordnance Survey drawings (OSD 74) seems to record a small remnant of parkland indicated by pasture and trees which corresponds to 'Home Mead' and 'Great Home Mead' (Plots 42 and 44) as shown on the 1818 map. 'Keepers Lodge' is shown in the middle of this remnant area of parkland.

4. Fattingspark and Wootton Manor

Historically, Fattingspark lay within a detached portion of Wootton Parish separated from the rest of Wootton by a thin corridor of land within Arreton Parish. This part of Wootton is shown on the OS 1863 where it is marked 'WOOTTON Det^d No. 4' (Fig. 8).

Fattingspark probably originated as common land belonging to Wootton Manor. During the medieval period, it was surrounded by commons belonging to the manors of Alverstone in Whippingham Parish and Briddlesford in Arreton Parish. John de Lisle acquired the manor of Briddlesford (in Arreton Parish) before 1280. The two manors of Wootton and Briddlesford continued to be held together by the Lisle family for centuries.

Tenants of Alverstone Manor and Briddlesford Manor would have lived in farmsteads away from the manorial home farm (or demesne) and would have pastured their animals on the manorial commons. By the 16th century, these tenants would have held their land by copyhold from the manor. No copyhold tenant farms were recorded in the Royal Survey of 1559-60 for the part of Wootton Manor within Wootton Parish, and so by that date, there would have been no need for common land on which tenants could graze their animals.¹² Fattingspark, although adjacent to the commons of Alverstone and Briddlesford, may therefore have been used for other purposes. Briddlesford Common in Arreton Parish was frequently called Wootton Common in post-medieval documents. This seems to have been because Briddlesford Manor was held by the de Lisle family who also owned Wootton Manor.

¹¹ In October 1815 John Wallis of Whippingham, labourer, aged 82, stated:

That the cottage at the southern extremity of Wootton Park, adjoining the road from Wootton Parsonage towards Wootton Park and another cottage at the northern extremity of Wootton Park, adjoining the road leading from Wootton to the sea at Kings Key, which last mentioned cottage had always been called the Lodge Cottages and that both cottages were lodges of the Park and had stood in the same position as now, as long as he could remember. IWCRO/ WHP/2228.

¹² The Royal Survey stated that there were five copyholds which formed part of the manor of Wootton but a rental in 1687-9 (IWCRO/ OG/120/57) makes it clear that they were actually part of the adjoining manor of Briddlesford, both Wootton and Briddlesford being owned by Thomas Lisle at this time.

The name Fattingspark is first recorded as *Vattyncroft* in 1440 (Kökeritz, 1940, 241). The Survey of English Place-Names by Nottingham University does not record the name 'Fattingspark' but lists 29 names containing the element 'Fattig', including 'Fattig Close', 'Fattig Ground' and 'Fattig Pasture' (English Place-Name Society 2023). There are concentrations of these names in Berkshire, Durham and Gloucestershire, but the national database does not yet contain records for Hampshire and the Isle of Wight, which are still being researched.¹³ The Survey does not give a definition of the place-name element 'Fattig', but it probably relates to the fattening of cattle. Since Fattingspark in Wootton lay on relatively infertile land, the name could possibly have been ironic¹⁴ but it is also quite likely that the lords of Wootton Manor decided to use this area for the fattening of stock. This use would have required the area to be securely fenced, so perhaps Fattingspark became a ring-fenced enclosure in the late medieval period.

The 1818 'Sketch of Wootton Farm and Fattingspark' (Fig. 4) shows all the lands of Wootton Farm and Fattingspark. Fig. 9 is an enlarged extract from this map showing the ten land parcels of Fattingspark. This area, edged in pink and amounting to 197 acres, corresponds to Wootton Parish Detached area No. 4 as shown on OS 1863 when it contained 205.727 acres (Fig. 8). The Sketch map of 1818 shows the Fattingspark area at a late stage in its history, when what may originally have been an unenclosed area of common land within Wootton Parish had been divided into a number of fields with coppice woodland within Fattingspark Copse and Quarrels Copse. Nevertheless, the map provides clues to the earlier history of the area and its evolution through time. The table below uses information from the 1818 map but lists only the lands within Fattingspark.

It is possible that the ring-fenced enclosure at Fattingspark may have occupied only land parcels 1-6 which comprised an area of just over 137 acres

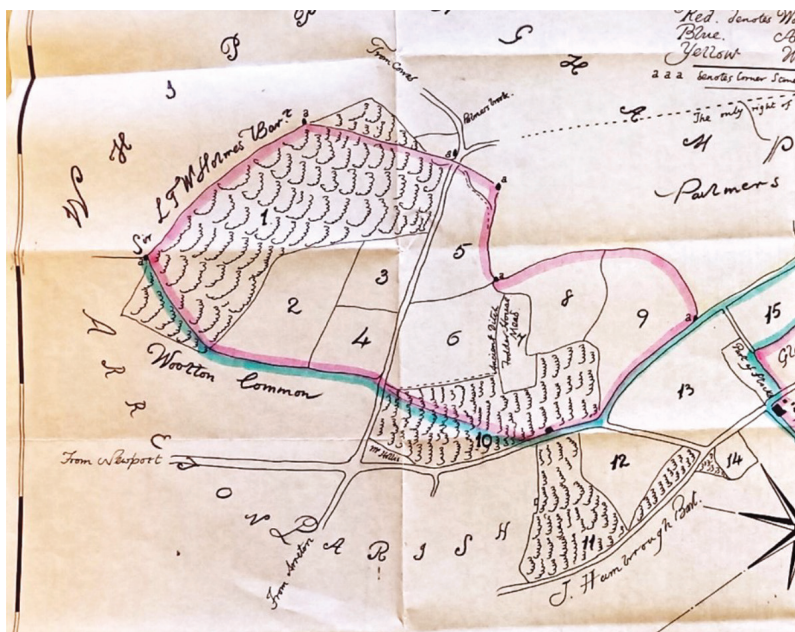


Fig. 9: Extract from 1818 'Sketch of Wootton Farm and Fattingspark' showing Fattingspark area (looking north-west)

Table 1: Fields and Woods within Fattingspark from 1818 Map

| Number | Names of Fields | Wootton | Arreton | Whippingham | Area ¹⁵ |
|--------|--------------------|----------|---------|-------------|--------------------|
| 1 | Fattingspark Copse | 58.0.19 | 4.0.0 | 4.0.0 | 66a 0r 19p |
| 2 | Great Fattig Park | 20.1. 8 | | | 20a 1r 8p |
| 3 | Lower Twelve Acres | 12.1.10 | | | 12a 1r 10p |
| 4 | Upper Twelve Acres | 12.3.19 | | | 12a 3r 19p |
| 5 | Fattig Park | 14.2.35 | | | 14a 2r 35p |
| 6 | Fattig Park | 18.3.8 | | | 18a 3r 8p |
| 7 | Fodder house mead | 5.0.18 | | | 5a 0r 18p |
| 8 | Fodder Park close | 10.0.7 | | | 10a 0r 7p |
| 9 | Quarrel Close | 19.3.6 | | | 19a 3r 6p |
| 10 | Quarrel Copse | 25.0.0 | 13.1.26 | | 38a 1r 26p |
| | TOTAL AREA | 197.0.10 | 17.1.26 | 4.0.0 | 218a1r 36p |

¹³ Two other names on the Isle of Wight with the element 'Fattig' are known to the author. There was a relatively small enclosure called 'Fattig Ground' quite close to Wootton's Fattingspark in the parish of Whippingham. This is parcel number 630 on the Whippingham Tithe Map and lay to the north of Lushington Hill and to the east of Lushington Copse (Whippingham Tithe Appt IWCR0/JER/T/335 1847 & Tithe Map IWCR0/JER/T/336 1845). John Dunne's 1773 Survey of the Nunwell Estate, Brading lists two fields as 'Fattig Lands' (WCR0/OG/PP/13).

¹⁴ A statement taken from John Wallis of Whippingham in October 1815, in connection with a dispute between Richard Walton White, rector of Wootton, and Charles Lisle, owner of Wootton Farm, included his reminiscence of the enclosure of '100 acres called Fattingspark in derision' IWCR0/WHP/2219-2256 catalogue entry.

¹⁵ There are four roods (r) in an acre (a) and forty perches (p) in a rood.

within Wootton Parish. This area included all four 'Fattingspark' field names and would have formed a more coherent sub-oval shape for a ring-faced enclosure than the entire area within the detached part of Wootton Parish. The conjectural enclosure may have excluded the area of Quarrels Copse and Quarrel Close as well as 'Fodder House Pasture'. It is unclear whether it would have included land parcel 7, shown on the 1818 sketch map as 'fodder house mead'. However, the sketch map marks an 'Ancient Ditch' between land parcels 6 and 7 and this may have formed part of the boundary to the putative ring-fenced enclosure, in which case 'fodder house mead' (land parcel 7) would have been outside the enclosure. Fodder House Mead can still be identified on the modern 1:25,000 Ordnance Survey map at SZ 5329 9158 as a small rectangular field with an apsidal north-western side.¹⁶ This is an unusual shape and the field clearly had a specific function, perhaps providing an early 'bite' of spring grass for the cattle pastured in the area.

The planting of woodland in Fattingspark seems to have started in the 17th century. Concrete evidence is supplied by legal documents relating to an action in which Dame Mary Lisle, widow, was sued by her sister-in-law, Dame Alice Lisle, and the latter's son, John, for the restoration, to them, of the manors of Wootton and Chillerton on the Isle of Wight. Sir John Lisle, the husband of Dame Alice Lisle, had supported Oliver Cromwell in the Civil War and shortly after the restoration of the monarchy in 1661 his estates had been confiscated. Charles II gave these estates to his brother James, Duke of York who shortly afterwards granted them to William Lisle, brother of Sir John. William Lisle was knighted in 1665 but died that year, leaving his estates to his widow, Mary. Dame Alice brought her first action against Mary in 1670.¹⁷ This was unsuccessful but she sued again in 1674¹⁸ and Webster (1975-99) states that she must have been successful in recovering Wootton Mansion House and farm because in 1703 her son, John Lisle of Dibden, Esq., leased it for 21 years to Thomas Jolliffe, for £160 a year.¹⁹

The 1674 court case is described in the National Archives catalogue as

Alice Lisle, widow, John Lisle. v. His Royal Highness Jas. Duke of York, Henry Earl of Peterborough, Richd. Earl of Burlington, Lady Mary Lisle, widow.: Capital messuages, &c. of the manor of Wootton alias Wooditon, and of Chellerton Farm, and closes or grounds called "Stileclose Coppice" (in Atherton parish), "Curlews" (in Whippingham parish), "Barnes Coppice," and "Quarles Coppice,; and "Fattings Park Coppice," in Wootton aforesaid; formerly belonging to Sir William Lisle and John Lisle (plaintiff's late husband). Of what kind or nature were the grounds on 1st May

1643, or during the four years immediately preceding 1643, to what manors belonging. By whom inclosed. Metes and bounds, &c., &c.

Statements were taken from various witnesses including David Sanders of Binstead, yeoman, aged 57. The testimony of David Sanders stated:

He doth know a close or ground in Atherton aforesaid called or known by the name of Stileclose Coppice and that the grounds doth containe by estimacion six acres or thereabouts and he doth know another close or ground in Whippingham aforesaid commonly called by the name of Curlews containing by estimation four acres or thereabouts and another Coppice in Wootton aforesaid commonly called or knowne by the name of Barnes Coppice containing by estimacion thirty acres or thereabouts and another close or ground in Wootton aforesaid comonly called or knowne by the name of Quarles Coppice conteyning by estimacion ten acres or thereabouts and one other close or ground in Wootton aforesaid comonly called or knowne by the name of Fattingspark conteyning by estimacion foureteene acres or thereabouts and hath knowne every of the said closes or grounds by the space of five & forty or fifty yeares now last past and this Depon[ent] further saith that about thirty yeares now last past the said close or ground called Quarles Coppice was inclosed and made into a Coppice by the said John Lisle deceased who caused the same to be sowed wth acrons & nutts except onely foure acres thereof wch was coppice ground ever since this Depon[en]t doth remember and that the said ground called Fattingspark coppice was inclosed and made into a Coppice about tenn yeares now last past by Alitia Lisle the Compl[ainan]t to the best of this Depon[en]ts remembrance And this Depon[en]t further saith that the said closes or grounds called Quarles Coppice & fattingspark Coppice on the first Day of May one thousand six hundred forty three and for foure yeares and many more yeares before the twentieth day of Aprill one thousand six hundred forty three were furze heath and feeding grounds except onely (the said foure acres) and were inclosed & made into Coppices as aforesaid and that the said ground called Stileclose Coppice hath been Coppice ground since this Deponents remembrance ...

One apparent problem with the testimony of David Sanders is that he refers to 'Fattingspark coppice' being 'inclosed and made into a Coppice about tenn yeares now last past by Alitia Lisle the Compl[ainan]t' which would correspond with a date of 1664, three years after Wootton Manor had been

¹⁶ Fodder House Mead was fed by a spring on its north side and was surrounded on three sides by a watercourse flowing from Palmer's Brook. The south-eastern end of Fodder House Mead was truncated in the late 19th century and the 25-inch Ordnance Survey of 1898 shows a three-sided embanked earthwork beyond the truncated field edge, encroaching into Quarrels Copse at SZ 5342 9149. This earthwork may possibly be connected with the Isle of Wight Central Railway which had been constructed just to the south of the field.

¹⁷ National Archives C6 145/69.

¹⁸ National Archives E134/25 and 26 Chas.II/Hilary15

¹⁹ IWCRO/WHP/2207.

confiscated from Alice Lisle's late husband in 1661. It is possible that the witness got mixed up with his dates or that his statement was incorrectly recorded.

At first glance, the testimony by David Sanders appears to provide a date for the planting of the

present-day Fattingspark Copse (Plot 1 on the 1818 sketch) but the area of fourteen acres given in his statement is much smaller than the extent of Fattingspark Copse in 1818 when it had an area of 58 acres within Wootton Detached and a total area of 66 acres. There is a possibility that Sanders could



Fig. 10: Extract from six-inch Ordnance Survey drawing of 1793-4 (OSD 73)
Downloaded from the British Library Open Gallery

be referring to Plot 5 on the 1818 sketch map which contained fourteen acres. However, no woodland is shown there on the Ordnance Survey drawing of 1793-4 (Fig. 10), the 1818 sketch map or the OS 1863 map. It is more likely that Fattingspark Copse formerly occupied a much smaller area and that additional planting took place in the late 17th century or 18th century. By the 1790s, the entire 66 acres of Fattingspark Copse is shown on the Ordnance Survey field drawing and on the slightly later finished drawing OSD 73 (Fig. 10). Quarrels Copse also seems to have expanded since the time when it was first planted as coppice woodland in about 1643. In his deposition of 1674, David Sanders stated that 'Quarles Copse' had an area of 10 acres although this may only have been the part of the copse within Wootton Parish. By the time of the Ordnance Survey drawing in 1793-4 Quarrels Copse was much larger and similar in size and shape to the area of copse shown on the sketch map of 1818 and on the OS 1863. In 1818 the copse occupied 25 acres in Wootton Parish and over 13 acres in Arreton Parish. The relationship of the wooded area, (Plot 10) with the small, enclosed field called Fodder House Mead (Plot 7) suggests that the land to the east and north of this field was planted at a later date than the area to the south of the field.

A key part of David Sanders' testimony was his statement that for many years before 1643 the 'closes or grounds called Quarrels Coppice & Fattingspark Coppice' had been 'furze heath and feeding grounds'. It would therefore seem that the mid- 17th century was a period of landscape change when new woodland was being planted in the Fattingspark area. It is clear from the court case between Dame Alice Lisle and Dame Mary Lisle that coppice woodland had become well established in the Fattingspark area by 1674. The court documents refer to 'Stile Close Coppice in Arreton Parish and 'Barnes Coppice' as well as 'Quarles Coppice and Fattingspark Coppice' in Wootton Parish. This local planting was part of a general drive on the part of Island landowners in the 16th and 17th century to establish and manage woodland, which was a valuable resource. The Royal Survey of the Isle of Wight in 1559-60 provides evidence of woodland and trees on several holdings close to Wootton Manor including Palmers, Fernhill, Hayste, Woodhouse, Great Briddlesford and Staplehurst (Webster 1975-99). The Royal Survey also provides evidence for new planting and young timber in the Centon of St Helens (Jones 1978, 15-17). Combley Manor, about 3km south-east of Fattingspark in Arreton Parish, has been well-wooded since at least the 18th century but there is some evidence that there may have been much less woodland in the early 16th century than in the late 17th century. There is also evidence that some new coppice was being created there in the 16th century and perhaps at a later date

(Basford 2014a, 2-4).²⁰ The fashion for woodland plantations was not confined to the Island but was nationwide and accelerated after the publication in 1664 of John Evelyn's *Sylva* which encouraged plantations of this type (Rackham 1976, 96-98).

5.The Enclosure of Fattingspark and Wootton Common *alias* Briddlesford Common

Heathland is associated with 'waste' and common land. Heathland landscapes accounted for a little over 10 % of the Island in about 1600, including acid heathland overlying the chalk downs (Chatters 2021, 39). This had declined by the 1790s when there was an estimated 4.4% of non-downland waste, commons and rough ground (Basford 2013, Table 5.3). Today there is very little heathland as a result of the enclosure of commons, agricultural improvement and the creation of forestry plantations.

The enclosure of commons and open land on the east side of the Medina Estuary started in the early 18th century and was well underway by the end of the century. The agricultural writer, William Marshall (1798, 265), recorded 'a suite of commons in the northeast division between Newport and Wootton Bridge' but in 1791 he had observed that these open lands were:

progressively undergoing the profitable change, from a state of rough, unproductive, wet unhealthy commons, to that of drained and cultivated inclosures: not, however, by calling in costly aid of Parliament; but by general consent (Ibid).

Evidence of this process taking place at Fattingspark is provided in a statement taken from John Wallis of Whippingham, labourer, aged 82 in October 1815, in connection with a dispute between Richard Walton White, rector of Wootton, and Charles Lisle, owner of Wootton Farm.²¹

John Wallis stated:

That about 80 Years since the lands were called the Fattings Park being Plots 1. 2. 3. 4. 5. & 6 in the Plan and composing about 100 acres were first enclosed from the adjoining Common called Wootton Common and their lands broken up and brought to tillage - that he could recollect the Enclosure having torn his first pair of Breeches in getting over the new fence - that he has heard many old people now dead say that the the Lisles bought up the Common Rights on the Fattings Park to add it to Wootton Farm and make two farms of it - that it was made into two farms and Farmer Rd Brown leased one and Farmer John Brown the other - that he recollects after this the Lisles attempted to take in more of Wootton Common but having begun to make their fences the same were thrown down by the Commoners who would not allow these to be enclosed (IWCRO/WHP/2206).

From his evidence we can calculate that Fattingspark

²⁰ However, despite the documentary evidence for there being a much smaller amount of woodland within Combley Manor in the 16th century compared with the late 18th century, landscape evidence hints at an ancient origin for much of the present-day woodland with the shapes of the woods suggesting that they were assarted in the medieval period i.e. eaten into by the creation of fields within formerly wooded areas.

²¹ IWCRO/WHP/2219-2256.

was broken up for agriculture in the 1730s. The area described by Wallis (Plots 1-6) corresponds to the possible ring-fenced enclosure at Fattingspark discussed in Section 4 (Fig. 9). It also appears to be the area over which he alleges that common rights existed before these rights were bought up by the Lises. The two farms he refers to were presumably Wootton Manor Farm and Fattingspark. He recollected that the farms were leased to two separate farmers with the surname 'Brown'. In 1748 and 1758 a 'Farmer Brown' paid poor rates on Curlews and part of Wootton and in 1759, 1766 and 1767 Farmer Brown is listed as paying for Curlews. The holding of Curlews (Plots 21 and 22 on the 1818 map) was in Whippingham Parish but had been leased with Wootton Farm since at least 1748 (Webster 1975-99). It is puzzling that the area said by John Wallis to have been enclosed for agriculture did not include Plots 8, 9 and 10 although these plots were shown on the 1818 map as part of Fattingspark and were definitely included within Wootton Manor and Wootton Parish. Plot 10 was the 38-acre Quarrels Copse, 25 acres of which were in Wootton Parish. Plot 8 (Fodder House Pasture) and Plot 9 (Quarrel Close) may have been cultivated as part of Palmer's Farm in Whippingham Parish. Palmers Farm was adjacent to plots 8 and 9 and had been owned by the Lisle family until sold to Nicholas Pyle in 1728 together with Pratts, Trenchards and Matthews.²² One of the fields belonging to Palmers Farm, located between Quarrels Close and Palmers Farm, was

named 'Fattening Ground' on the Whippingham Tithe Schedule of 1844.²³

John Wallis stated that the Lises had tried to enclose a larger area of Wootton Common but were prevented from doing so by the Commoners. This area must have been common land forming part of Briddlesford Manor which, like Fattingspark, belonged to the Lisle family but was in Arreton Parish. Briddlesford Common was frequently treated as part of Wootton Common in post-medieval documents, on maps and by local people. The area of Briddlesford Common can be reconstructed from evidence for rights of common associated with farms around the common going back as far as the Royal Survey of 1559-60 (Webster, 1975-99). An entry in the Royal Survey for the copyhold tenement of 'Culls' stated that the tenement lay 'on the west side of Wootton Common *alias* Briddlesford Common'. In the 1608 Survey of Crown Lands, under the manor of Arreton, it was stated that 'Edmund Bull holds by copy dated 17 October 1600, a tenement and 12 acres in Wootton', including 'pasture for six cows, a mare and her foal on Wootton Heath'.²⁴ This smallholding, known as Bulls and later as 'Williamses Farm' became part of the Fernhill estate in 1795.²⁵ References from 1608 also include common land associated with the farms of Urries, Littleton and Mousehill (or Mousehold), now on the east side of Briddlesford Road a route upgraded by the Highway Commissioners in 1818.²⁶

The tenants of Mousehill had 'common on Wootton



Des. & Engr. by Geo. Brannon, June 1830

Cottage on Wootton Common, Isle of Wight.

Fig. 11:

Cottage on Wootton Common.
George Brannon 1830
Reproduced by kind permission of
Shanklin & District History Society

²² F.F. Hants. Hilary 1727/8.

²³ National Archives IR 29/31/273.

²⁴ National Archives 315/359.

²⁵ It is represented on the Arreton Tithe Map by plots 50-52, 54-56, and 67-70.

²⁶ I.W. Highway Commission Vol. 1, p. 229.

Common for 4 rudder beasts or 20 sheep yearly and a mare and her colt every third year'.²⁷ 'Rudder beasts' or 'rother beasts' were cattle.

In 1742, Edward Lisle sold the manors of Wootton, Bridlesford, Appleford and Chillerton, with the advowson of Wootton, to Simon Burton, Doctor of Physic of the parish of St. Georges, Hanover Square, London. However, the sale did not include Wootton Manor House and Farm. In 1743 Nicholas Pyle was one of the eight commoners on Wootton Common who surrendered commoners rights there to John

Burton, D.D., lord of the manor of Briddlesford, in return for enclosures on the common.²⁸

The area in Arreton Parish named as 'Wootton Common' on the Ordnance Survey field drawing of 1793²⁹ was the main surviving unenclosed part of Briddlesford Common at that date. The field drawing shows an area of rough ground to the south-west of Quarrels Copse. On the six-inch Ordnance Survey 'fair drawing' of 1793-4 (derived from the field drawing) this part of the common is depicted in a light green wash but is not named (Fig. 10). It looks

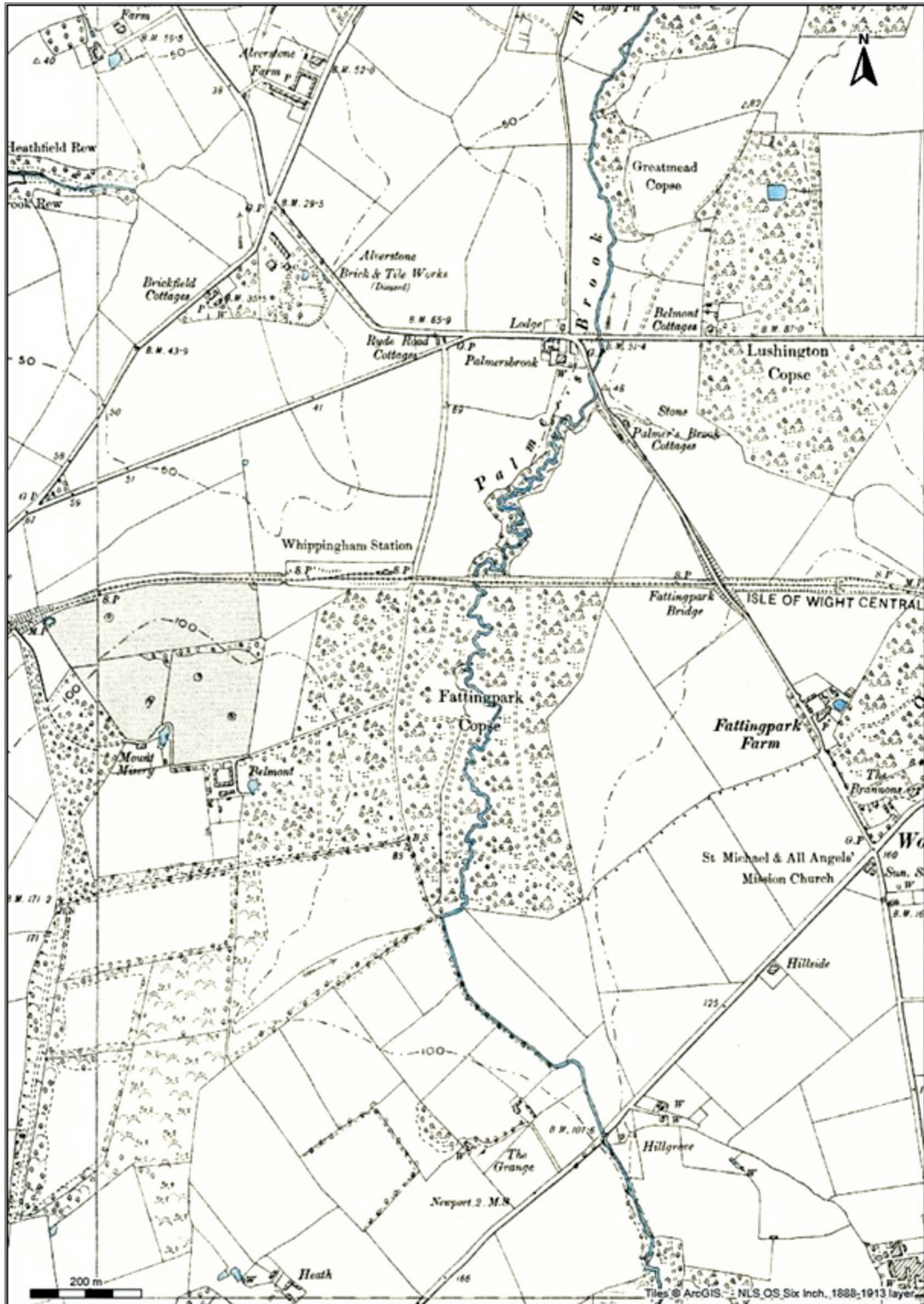


Fig. 12: Hampshire & Isle of Wight XC.SE, Revised: 1896, Published: 1898
 Re-use: CC-BY (NLS). Reproduced with the permission of the National Library of Scotland

²⁷ Hants. RO 1608 B65/1-3; IWCRO Ac/85/89/74.

²⁸ F.F. Hants. Trin. 1743.

²⁹ National Archives MR 1/489.

as if a 'bite' has been taken out of its north-east corner, suggesting that part of the common had been planted up as an extension to Quarrels Copse by the 1790s. Five acres of the remaining common (Plot 216 on the Arreton Tithe Map) were leased by the Rev. Richard Walton in 1794. This is described as:

*formerly part of Wootton Common alias Briddlesford Common, but lately fenced in and added to Dennett's Hurst Farm, which close abutted north and west on to other late parts of Wootton Common, south on to Mousehole, and east on to Packsfield, part of Briddlesford.*³⁰

The eastern boundary of Plot 216 seems to have been an ancient boundary of Wootton Common, preserved today as Littleton Lane (right of way Newport 4).

The 1818 map shows only a small triangle of unwooded land at the south-west corner of Quarrels Copse, bounded by tracks which later became Park Road and Station Road. (Fig. 8). Mrs Hollis had a cottage here in 1818 (Fig. 11) but by 1826 it had become the home of the engraver George Brannon and his family (Thomas, 2020, 9). An engraving by Brannon of his home dated 1 June 1830 is entitled 'Cottage on Wootton Common' (Fig. 11). In the Arreton Tithe Schedule of 1842 just over 10 acres of land are listed under the heading of 'Wootton Common'. This land was divided into seven plots, all belonging to Ann Dennis and all on the east side of Park Road.³¹ Plot 153, comprising about 4 acres, was named 'Common' and lay within the area of Wootton Common shown on the 1793-4 drawing. Plots 145, 152, 154 and 155, adjacent to Plot 153, contained cottages and gardens. Plots 220 and 223, to the east of Wootton Common, were enclosed fields named Packsfield and Lower Packsfield, each of just over two acres.

The process of enclosure and the creation of new farms gathered pace in the early 19th century with the construction of improved roads running from Wootton Common to the top of Staplers Hill and from the Hare and Hounds at Downend to East Cowes. These routes became Whiterails Road and Park Road. Whiterails Road ran diagonally across the former Wootton Common from north-east to south-west. An area to the north-west of Whiterails Road was named as 'Part of Fattingspark' in the 1842 Arreton Tithe Schedule. It comprised plots 156-162 and 199, belonging to Robert Stayner Holford and leased to William Lambert. Holford had purchased the Wootton Farm estate in the parishes of

Wootton, Arreton and Whippingham in 1825.³² Plots 156-160 lay within the area of Wootton Common shown in 1793.³³ A version of the tithe map in the Isle of Wight County Records Office labels this land as 'Pt. of Palmers or Fattingspark'.³⁴ No farmstead is shown on the 1793-4 Ordnance Survey drawing (Fig. 10) or the 1818 map (Fig. 9) but the holding cannot have been worked from Palmer's Farm in Whippingham Parish since James Rolph rather than William Lambert was listed as the tenant of Palmer's Farm in the Whippingham Tithe Schedule of 1844. It must have been worked from Fattingspark Farm in Wootton Parish, which is first shown on the OS 1863 map (Fig. 8) on the right side of Park Road, lying within the field marked as Plot 6 on the 1818 map. The farmstead almost certainly existed by the time of the tithe surveys in the 1840s, but no tithe data is available for Wootton Parish since Wootton Manor Farm and Fattingspark (Wootton Detached) did not pay tithe, being subject to a *modus*.³⁵ William Lambert is recorded as 'Farmer' of Fattingspark in Post Office directories of 1852 and 1855 and as at 'Fattings Farm' in White's Directory of 1859. Today, the farmstead, located at SZ 5316 9125, is known as Park Farm (IWHER 12807 - MIW3673, IWHER 12810 - MIW3676, IWHER 12811 - MIW3677, IWHER 8842 - MIW14316).

Another former area of Wootton Common to the south-east of Whiterails Road also belonged to Robert Stayner Holford, and is shown as plots 212-215 on the Arreton Tithe Map.³⁶ The Tithe Schedule lists these plots as forming part of the new 112-acre farm of Briddlesford Lodge, owned by Robert Stayner Holford and leased to Michael Morgan.³⁷ This farmstead replaced a tenement called 'Culls' lying on the western edge of Wootton Common which belonged to the manor of Briddlesford and was recorded in the Royal Survey of 1559-60. The farmhouse was demolished in 1822 and the new house, Briddlesford Lodge, was built about a quarter of a mile further east on the west side of the upgraded route running from the Hare and Hounds at Downend across Wootton Common to East Cowes (Fig. 8). After the creation of Briddlesford Lodge Farm, the name 'Culls' was transferred to a small portion of the old Culls holdings (2 acres) lying on the south side of the road leading from Wootton Common to the top of Staplers Hill. This little settlement was called Hill Grove on the Arreton Tithe Map and comprised plots 200-208 (Webster, 1975-99).

Fattingspark Farm and Briddlesford Lodge Farm are among the relatively small number of Isle of Wight

³⁰ IWCRO/WHP/612

³¹ National Archives IR 29/31/10.

³² IWCRO/WHP/2060/3.

³³ The Tithe Schedule also lists Plot 10 and Plot 199 as being part of Fattingspark but these were detached from the other plots and lay further to the north.

³⁴ IWCRO/JER/T/27.

³⁵ The *modus* was an arrangement whereby Wootton Manor paid a fixed sum to the Rector of Wootton Parish every year in lieu of tithes.

³⁶ St Michael and All Angels Mission Church was built in 1885 in the north-east corner of Tithe Plot 215. The burial ground was consecrated in 1893. The church was demolished following the opening of St Mark's, Wootton in 1909, although the cemetery appears to have remained in use until the 1930s Wootton Common Cemetery in Wootton Common, Isle of Wight - Find a Grave Cemetery [Accessed 12/04/2024].

³⁷ A history of Briddlesford Lodge Farm is available at Wootton Bridge Historical - North Arreton - Briddlesford Lodge Farm (woottonbridgeiow.org.uk) [Accessed 11/04/2024]. The Farm is at bottom right corner of Fig. 12'.

farmsteads dating from the 'enclosure period' of British agricultural history. Such farms were commonly established in the English Midlands after open fields and common pasture lands were enclosed by Acts of Parliament in the 18th and 19th centuries. However, enclosure on the Isle of Wight was a piecemeal process which took place over many centuries, and most farmsteads have origins pre-dating the 18th century (Basford 2013, 86-110; Basford, 2014b).

Enclosure affected not only Arreton Parish but also the landscape in the area of Whippingham Parish abutting Wootton and Fattingspark. The Whippingham Tithe Map³⁸ shows that by 1845 Lushington Copse had been cut in two by the construction of a road, now the A3054. This ran from the Racecourse up Lushington Hill to the boundary with Wootton Detached No. 4 (Fattingspark) before cutting through its northern end (Figs 7 & 8). The OS 1863 shows that rationalisation of plot boundaries had taken place between 1845 and 1863. A ruler-straight boundary is shown on the 1863 map to the north of the new road up Lushington Hill between the east side of Lushington Copse and the adjacent field. This field, in turn, had a similar ruler-straight north-south boundary dividing it from a field further to the east. The new layout replaced the former arrangement of Plots 623, 629, 630, 631 and 632 shown on the Whippingham Tithe Map. The line of the parish boundary between Wootton Detached and Whippingham marked on the 1863 map now protruded incongruously into these fields. Another ruler-straight line is shown running along the south-east edge of Lushington Copse and this also formed part of the parish boundary between Wootton Detached and Whippingham.

Although the commons surrounding Fattingspark had been enclosed by the 1840s, it is possible to trace a network of surviving ancient boundaries and routes within what would once have been a single interconnecting area of common pasture lying within the medieval parishes of Arreton, Whippingham and Wootton and divided between the manors of Arreton, Staplehurst (a grange of Quarr Abbey), Alverstone and Wootton.

The boundary along the western edge of Fattingspark Copse separating the historic parishes of Wootton and Whippingham survives as an earthwork bank dividing Fattingspark Copse from the late 19th century woodland of Belmont Copse (Fig. 12). A track following this boundary (Rights of Way N111 and N113) does not appear to be shown on the 1793-4 Ordnance Survey drawing (Fig. 10). Equally, the continuation of N113 in a westerly direction to the junction with N116 is not shown on the 1793-4 drawing but both tracks run along historic parish boundary divisions between Wootton, Whippingham and Arreton which are indicated by dashed lines on the drawing. In 1793-4, the former common land through which N113 now runs had

already been enclosed from Whippingham Common *alias* Alverstone Common and Staplers Heath. Right of Way N116 is an ancient route called 'The Ridgeway', running north-south and dividing Staplers or Staplehurst Heath, in Arreton Parish and lying within the grange of Quarr Abbey, from Fairlee Common in Whippingham Parish (Hockey, 1991, map 9). The northern part of 'The Ridgeway' can be seen on Fig. 10 as a wide grassy track. Today, the route of 'The Ridgeway' continues to the south of N116 as 'Mews Lane' which, historically, led onto a part of Staplers Heath to the south of Staplers Road. Even the improved 19th century roads of Briddlesford Road/Park Road and Station Road/Whiterails Road were based on routes traversing and connecting former commons.

6. The Historic Landscape, Archaeology and Ecology of Fattingspark Copse

Fattingspark Copse lies on the heavy clays of the Hamstead Beds. Palmers Brook runs through the length of the copse from south to north. Today, the area of Fattingspark Copse is 46.2 acres or 18.69 ha³⁹ (BCM 2020) but at its greatest extent, just prior to the construction of the Ryde and Newport Railway in the 1870s, it had an area of about 69 acres, mostly in a detached part of Wootton Parish but including seven acres in Arreton Parish and four acres in Whippingham Parish. Today, the modern civil parish boundary between Newport and Wootton Bridge runs through the middle of Fattingspark along Palmers Brook. Fattingspark Copse is classified as a Site of Importance for Nature Conservation.⁴⁰ It contains red squirrels, 150 recorded species of plants, and many different species of butterflies.

Fattingspark Copse lay within the area known as Fattingspark which formed a detached part of Wootton Parish until the late 19th century (Fig. 8). A witness statement by David Sanders in 1674 alleged that in 1643 the whole area was "furze heath and feeding grounds". David Sanders also stated that approximately 14 acres of Fattingspark had been 'inclosed and made into a coppice' in about 1664. This is a much smaller area than the extent of Fattingspark Copse within Wootton Parish in the late 18th century and it seems likely that an initially small area of planted coppice was increased over time (see Section 4). It may have reached its largest extent by 1769 when the first edition of John Andrews' map was published but this map is not accurate in its depiction of woodland.⁴¹ The 1793-4 OS drawing (Fig. 10) and all later maps show the eastern boundary of Fattingspark Copse as being sharply angled with a straight southern section. This eastern boundary may have been first defined in about 1735 when the formerly unenclosed 'furze heath' of Fattingspark was divided up into closes according to a witness statement from John Wallis (see Section 5). The area of woodland shown on the 1793-4 OS drawing corresponds to that shown on the 1818 map (Fig. 4) where the total area of the copse is

³⁸ National Archives IR 30/3/273.

³⁹ In this section, measurements taken from historical sources are given in acres but modern measurements are expressed in metres and hectares.

⁴⁰ Register of Sites of importance for Nature Conservation Available from SINC register August 2015 (wildonwight.co.uk) [Accessed 22 April 2024].

⁴¹ *Topographical Map of the Isle of Wight, in Hampshire on a Scale of 2 Inches to the Mile.* John Andrews 1769. London

given as approximately 66 acres although a slightly larger size of 73.5 acres can be calculated from the 1897-8 25-inch Ordnance Survey.

Fattingpark Copse is included in the Revised Inventory of Ancient Woodland on the Isle of Wight (Brownscombe, 2014). Strictly speaking, 'Ancient Woodland' is classified as such if it has been in existence since 1600, but in the Isle of Wight, all woodland shown on the Ordnance Survey six-inch drawings of 1793-4 is included in the Ancient Woodland Inventory. A 17th century date for the earliest planting within Fattingpark Copse is consistent with the herbaceous and shrub species present. The current structure of the woodland is coppice with oak standards which is the usual form of old enclosed and managed woodlands on the Isle of Wight. The existence of Narrow-leaved Lungwort (*Pulmonaria longifolia*) is generally an indicator of ancient woodland on the Island (Pope *et al*, 2003, 51). Its presence within Fattingpark Copse indicates that the area has been wooded for some considerable time, but documentary evidence and boundary morphology both point to a post-medieval date for the establishment of the copse. Moreover, *Salix repens* or Creeping Willow, a plant typical of damp or the wet heath, was found in abundance on the southern edge of Fattingpark Copse in 1966 (Bevis, Kettell & Shepard, 1978, 63) and a few plants survived within the copse in 1997 (Pope *et al* 2003, 95).⁴²

Colin Pope has provided an updated commentary on Fattingpark for this article:

Fattingpark Copse had an extremely rich woodland flora when actively coppiced, characteristic of an ancient coppice woodland. However, it also has distinctive floral components which are more typically heathland species. These include Creeping Willow (Salix repens), Chaffweed (Anagallis minima), Sneezewort (Achillea ptarmica), Meadow Thistle (Cirsium dissectum), Bristle Club-rush (Isolepis setacea) and Water Purslane (Lythrum portula), although not many of these species are currently present. Narrow-leaved Lungwort is very much a plant of ancient woodlands, but in the New Forest it is also a heathland species and it may have been with us in the past. I could imagine that Fattingpark Copse was an old coppice woodland established over heathland. There would undoubtedly have been ancient woodland fragments already present. Wootton Common cemetery, where Lungwort is present, probably owes its origin to heathland rather than woodland. Staplers Heath, to the immediate south of Fattingpark Copse, had a rich heathland flora up until the 1990s.

The wider area of Fattingpark could have been a partly wooded common originally, until the late medieval period, when it may well have been enclosed by the lord of the manor for cattle grazing.

However, the present area of Fattingpark Copse seems to have originated, at least partly, through deliberate plantation (see Section 4).

In addition to the 58 acres of Fattingpark Copse in Wootton Parish, the 1818 map lists four acres of the copse in Arreton Parish and about four and a half acres in Whippingham Parish (Fig. 4). However, the Arreton Tithe Schedule of 1842 records seven acres of Fattingpark Copse within that parish. The landowner of the seven acres in Arreton was Robert Stayner Holford, who also owned Wootton Manor Farm in the 1840s. Today, the land at the south-west corner of Fattingpark Copse, formerly in Arreton Parish, remains part of the copse. The woodland at the north-west corner of Fattingpark Copse lay in Whippingham Parish although it was shown as part of Wootton Manor Farm on the 1818 map. In the Whippingham Tithe Schedule of 1844, this area of the copse is listed as Plot 648 'Part of Fattingpark Copse' in the ownership of the Reverend Richard Walton White.

The construction of the Ryde to Newport railway line, opened in 1875, seems to have resulted in the clearance of part of Fattingpark Copse to the north of the railway track, as shown on the six-inch Ordnance Survey of 1896 (Fig. 12).⁴³ The land to the north of the railway line amounted to nearly 23 acres and consisted of two fields on either side of a remaining strip of woodland beside Palmers Brook. In November 1959 Newport Borough agreed to construct a crematorium and superintendent's house within the field to the west of the stream. The foundation stone was laid on 19th May 1960 and the first cremation took place in 1961 (Isle of Wight Council, 2024, 3). Today, the road on the western edge of the cemetery defines the earlier boundary of Fattingpark Copse with the cemetery itself lying on land which had been within the copse until the 1870s.

Fattingpark Copse contains several archaeological features. The earliest feature is possibly the earthwork bank which runs along the western edge of the copse. This bank separates the historic parish of Wootton, in which the copse lay, from the adjacent parish of Whippingham and is clearly marked on Fig. 8 (see Section 5). The line of the boundary may date from the medieval period when a previously undivided area of common grazing became divided between manors in different parishes (see Section 2). However, the steep profile of the bank for much of its length suggests that it was modified at a later date, perhaps when a forestry track was laid out between Fattingpark Copse and Belmont Copse in the late 19th century (Fig. 12). The bank is followed by Right of Way N111 for much of its length from the north end of the copse. However, south of the junction with N113, there is no right of way along the western side of the copse and the original woodland edge is no longer clearly defined, due to the presence of some relatively recent secondary woodland between the former copse boundary and a field containing solar panels on its

⁴² A specimen of *Salix repens* or Creeping Willow was found on a nearby heath to the west of Lynn Farm in 1863 and preserved in a herbarium (Hampshire Cultural Trust 2024).

⁴³ This land to the north of the railway track included the four acres of land which had been in Whippingham Parish.

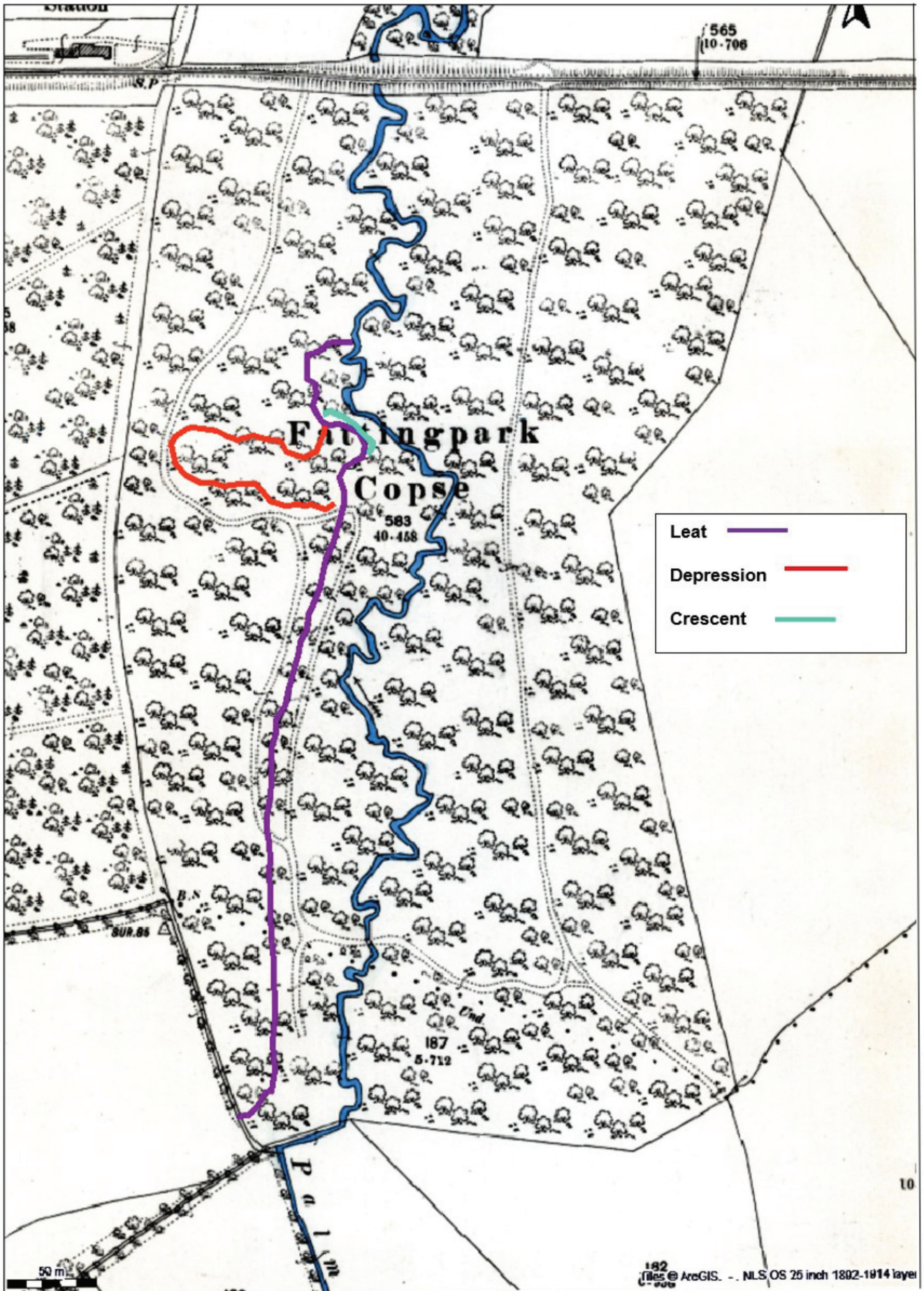


Fig. 13: Archaeological Features in Fatteningpark Copse sketched from LIDAR
 Map Base: Hampshire and Isle of Wight XC.15, Revised: 1896, Published: 1898
 Re-use: CC-BY (NLS). Reproduced with the permission of the National Library of Scotland

western side. The earth bank can still be traced in this southern part of Fattingspark Copse and has a profile that is more typical of the late-medieval or early post-medieval period than the section of boundary bank at the northern end of the copse.

Three features recorded in the Historic Environment Record (IWHER) and sketched in Fig. 13 are somewhat enigmatic in character. These features are a water channel or leat (IWHER 15046 - MIW15682), a crescent-shaped bank at the northern end of the leat (IWHER 15047 - MIW15683) and a possible pond or extractive pit (IWHER 15048 - MIW15684). The leat lies to the west of Palmers Brook and runs from a point near the south-west corner of Fattingspark Copse for about two-thirds of the copse's length. Initially, it runs WNW, but for most of its length it follows a fairly straight course in a northerly direction with a woodland ride on its eastern side. It then passes to the west of the crescent-shaped bank and continues northward for a short distance before joining Palmers Brook. This northern section of the leat is much more sinuous than the long, straight section to the south of the crescent shaped bank. It is unclear whether the leat is connected to the very large, irregular depression to the west of the crescent-shaped bank. The area of the depression is about 2750 m² or 0.275 ha.

It is difficult to date the three features recorded in the HER or to suggest what purpose they served. They are not shown on the 1793-4 OS drawing or the 1818 sketch map, but this does not necessarily mean that they did not exist at that time. The leat is marked on the six-inch and 25-inch Ordnance Survey maps of 1863. It must therefore be earlier than the modern forestry drainage ditches that run from west to east in the western part of Fattingspark Copse. The large depression at the northern end of the leat and on its western side does not seem to be recorded on any maps although it is clearly visible on LIDAR and has been sketch-plotted from LIDAR evidence (Fig. 13). It has been suggested that the leat may have fed a fishpond or a pond providing power for a watermill before Fattingspark Copse existed. However, it has been shown in Section 3 that the manorial lords of Wootton who owned Fattingspark had access to a tide mill and a salt-water fishpond on Wootton Creek. By the late medieval period, Fattingspark appears to have become a ring-fenced enclosure perhaps used exclusively by the lord of the manor for fattening cattle (see Section 4). There are, therefore, historical objections to the suggestion that IWHER 15048 - MIW15684 was a fishpond or millpond but there is also the question of morphology. The shape and size of the depression is not consistent with an artificial pond of either medieval or relatively modern construction. The sides of the depression cannot be interpreted as earthwork banks, such as can be observed at other medieval and post-medieval fishponds on the Island, for instance those near Newnham Farm in Puckers Copse IWHER 1077 - MIW1129 (Basford 2012) or Plaish Farm IWHER 1488 - MIW1591 (Trott, 2023). Rather, it would appear that large quantities

of clay have been excavated from the natural land surface. The edges of the depression have an irregular, ragged profile very dissimilar to that of artificial ponds. One possibility is that there was a pond in this area at some time before the present depression was dug. This hypothetical pond could have been fed by the leat and have been associated with the crescent-shaped feature near the north end of the leat (IWHER 15047 - MIW15683) which might have been a dam to help divert water into the pond. At some later date, the area of this supposed pond could have been destroyed by the extraction of clay, leaving the large, ragged-edged depression visible today. A botanical survey of nearby Briddlesford Woods recorded a scatter of small pits in Hurst Copse, Stockers Hole Copse and Upper Sheepwash Copse which were interpreted as probable clay pits. There was also a feature in the centre of Briddlesford Copse which was interpreted as a possible watering hole for stock before the wood was enclosed (Sanderson, 2008). It is possible that IWHER 15048 - MIW15684 in Fattingspark could have originated as a similar pond, although if that was the case, its present outline suggests later disturbance and enlargement of the area. Alternatively, the leat, crescent-shaped dam and pit could all be of the same period and have been associated with the extraction of clay.

If the depression (IWHER 15048 - MIW15684) is the result of clay extraction, it is necessary to suggest a date for this activity and the use to which the clay was put. One possibility is that clay from the pit was used for brickmaking. 'Brickmaking has taken place on the Isle of Wight for over four hundred years' and over thirty brick houses, stables and barns constructed in the 17th century have been recorded (Gale, 1987, 45). This 'was a period of opportunity for itinerant brickmakers who opened clay pits and established kilns wherever there was a demand for bricks' and 'it is likely that the manors and farmhouses in the rural parishes were constructed of bricks made on site in temporary kilns' (Ibid, 50). The first documented evidence of brick making in Wootton is dated 1703.⁴⁴ It is conceivable that the depression in Fattingspark Copse could have been a very early clay pit associated with Wootton Manor Farm or Briddlesford Manor Farm. However, it cannot be linked with any records for a brick kiln and if bricks were required for the two manor farms then they would surely have been made in the immediate locality, as good clay is available at both sites. The site is also some distance away from where building work was taking place at Wootton in the 19th century. Another explanation might be that the clay was a source of material for roadmaking when the Improved roads were laid out around the Fattingspark area in the early 19th century but, as with possible brick making activity, there would have been good sources of clay on the land over which the roads ran.

A further question to be considered is that any clay extraction must surely have taken place either at a time when trees were not present in this part of

⁴⁴Wootton Bridge Historical - Wootton - Brickmaking (woottonbridgeiow.org.uk) [Accessed 22 April 2024].

Fattingpark Copse, or when they had been cleared from the area of the pit to allow for the work of extraction. Planting at Fattingpark appears not to have started before the 17th century and there may have been tree clearance within certain areas even after the copse reached its greatest extent in the 18th century. Indeed, the surveyors' drawings for the 'fair copy' of the 1793-4 Ordnance Survey appear to show an area of unplanted land roughly in the area of the depression but also extending across much of the copse's width, although this clearing is not shown on the 'fair drawing' (Fig.10). The six-inch Ordnance Survey map of 1896 (Fig. 12) also indicates an area largely devoid of trees in the area of the possible extraction pit although the earlier OS 1863 does not show any differential tree cover. Substantial amounts of hornbeam and poplar are found in the vicinity of the depression and nowhere else in the copse (pers. comm. Luke Davis). This may indicate 19th century clearance of trees in this area and subsequent repopulation or replanting of this part of the woodland with different tree species. A 19th century date for the depression might reinforce the idea that it was created by the extraction of clay. The presence of Alverstone Brick and Tile Works (disused) on the 1896 map, about 500 metres north of Fattingpark Copse, and some distance from a settlement centre, indicates that brick and tile-making could take place away from areas where building work was taking place. A final possible use of clay from an extractive pit might have been in the construction of the Ryde to Newport Railway in the 1870s but the pit is not recorded in any of the documents preserved by the Isle of Wight Steam Railway (pers. comm. Roger Silsbury). Deposited plans of the railway which accompanied the bills presented to parliament are now in the National Archives and have not been examined. However, it is thought unlikely that the depression in Fattingpark Copse was connected with the Ryde and Newport Railway. The 1896 Ordnance Survey map (Fig. 12) shows a track running around the south side of the depression, and then along its western edge before continuing north as far as the railway line. This suggests a possible link between the pit and the railway but the suggestion may be misleading since the OS 1863 records that the track previously continued northward through the part of the copse which was cleared of woodland in the late 19th century.

Ultimately, it would seem that the earthworks recorded as IWHER 15046 - MIW15682, IWHER 15047 - MIW15683 and IWHER 15048 - MIW 15684 must remain as archaeological enigmas. What is not in doubt is the *timedepth* exhibited in Fattingpark Copse. This embraces the early origins of land now within the copse as part of an extensive area of commons, its likely later medieval usage as part of a ring-fenced fatting ground used by the lord of the manor, the planting of coppice from the 17th century, the truncation of the copse in the late 19th century and its present identity as a haven for biodiversity.

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THE FOSSIL SERPULIDAE AND SABELLIDAE FROM THE ISLE OF WIGHT: PART 2 THE CHALK SUPERGROUP

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Abstract: This second part of the review of fossil serpulid worms and their allies from the Isle of Wight describes species found in the Upper Cretaceous Chalk Supergroup. Attached forms from the White Chalk Subgroup are commonly found on echinoid tests, inoceramid shells, and belemnite guards. Serpulids are particularly common in the Glauconitic Marl and are commonly attached to clasts.

Keywords: Serpulidae, Chalk Group, Upper Cretaceous, Isle of Wight.

Introduction

This second part encompasses Annelids, principally serpulids from the Upper Cretaceous Chalk Supergroup of the Isle of Wight. 'The Chalk' is one of the richest sources of worm fossils in the United Kingdom, with both attached and unattached forms found throughout. The Chalk Group is divided into the Grey Chalk and the White Chalk subgroups, where the former equates to the Lower Chalk, and the latter to the Middle and Upper Chalk. The biozones found (and often still used) in older literature are prevalent in the data associated with specimens, and in this paper I have, where possible used both biozones and lithostratigraphy for occurrences. For a synthesis of Chalk stratigraphy see Gale and Kennedy (2002).

Most British Upper Cretaceous forms were first named and/or described in the early nineteenth century by Samuel Woodward (1833) or either J. Sowerby or J. de C. Sowerby in the *Mineral Conchology* (1812-1845). Since then, despite being both abundant and well preserved, they have received scant attention in the UK. However, the significance of the group has not gone overlooked elsewhere. The key references are Brünnich Nielsen (1931), Regenhardt (1961), Lommerzheim (1979) and Jäger (1983). The common UK material is well illustrated by Gale (2002). More recently Kočí and Jäger (2015) and Jäger and Krupp (2023) have provided invaluable updates on forms also found in the UK.

From the White Chalk Subgroup, cemented calcareous tubes are commonly found on the tests of echinoids, inoceramids, and the guards of belemnites, along with other epibionts such as bryozoans. In the Grey Chalk Subgroup, steinkerns and clasts in the Glauconitic Marl are common substrates for attached forms. Rowe (1908) listed the many quarries that dotted the Chalk Downland, listing sixteen species from the Island. Thirteen of these were named species, eight of which are recorded here. Today, with most of these quarries lost, coastal exposures are the remaining places from which to collect. Essentially, collecting is restricted to the Culver Chalk and Portsdown Chalk members at Whitecliff Bay. It is possible to collect from lower parts of the White Chalk Subgroup both sides of Culver Cliff, with extreme care. However, it is impossible to transit the full section from either direction at Alum Bay.

The Grey Chalk is Subgroup is accessible at Culver Cliff and between Bonchurch and west of St Catherine's Point. Other polychaete worms are found in association with sponges and are best known from flint pebbles, whilst the trace fossil *Terebella* (*Lepidenteron lewesiensis*) is found throughout the Chalk Supergroup. Worm tunnels in belemnite guards from the Isle of Wight were described by Munt (2022). Most of the specimens in the Isle of Wight Heritage Service Collection were collected in the 1920's by J. F. Jackson, former curator of the Museum of Isle of Wight Geology.

The descriptive terminology of the tube is simple: *tube shape* describes the cross-section shape, which may be different from the exterior to the interior of the tube; *growth lines* are hiatuses in growth, which may be faint to strong; *ridges* or *carinae* are raised lines running along the tube in the direction of growth; *ribs* are localised swellings of the tube.

Proximal and *distal* are directional terms, with distal being furthest away from the earliest part of the tube.

Growth shape can be *glomerate*, meaning aggregated often into knots, whereas the early whorls can be *trochiform* which is coiled like a snail shell, or conical which is cone shaped; *loops* and *coils* are curves with loops being looser. *Flanges* are flattened extensions to the tube, located at the point of attachment to the substrate.

Institutional abbreviations: IWCMS = Isle of Wight Council Museum Service. MIWG = Museum of Isle of Wight Geology.

Species Descriptions

Phylum ANNELIDA Lamarck, 1809

Class POLYCHAETA Grube, 1850

Subclass SEDENTARIA Lamarck, 1818

Infraclass CANALIPALPATA Rouse and Fauchald, 1997

Order SABELLIDA Dales, 1962

Family SABELLIDAE Latreille, 1825

Subfamily SABELLINAE Latreille, 1825

Genus GLOMERULA Brünnich Nielsen, 1931

Glomerula gordialis (Schlotheim, 1820) Fig. 1

Description. Solitary or forming small colonies. The initial coil is attached to a substrate and may be tight or loose. Planispiral or eccentrically coiled tubes become uncoiled, gently curved, or semiregular

loops. Tube diameter c. 3mm, up to 25 mm long, the tube is thick and smooth, though slightly uneven.

Remarks. Following Hove and Kupriyanova (2009), *Glomerula* is included in the Sabellidae.

Occurrence. Lower Jurassic to Eocene. Cenomanian, Grey Chalk Subgroup, West Melbury Chalk Formation (Glaucanitic Marl), Rocken End, Isle of Wight.

Material. Grey Chalk Subgroup, West Melbury Chalk Formation (Glaucanitic Marl): MIWG. 2222.



Fig. 1: *Glomerula gordialis* (Schlotheim, 1820). West Melbury Chalk Formation, Rocken End, Isle of Wight. MIWG. 252.



Fig. 2: *Glomerula lombricus* (Defrance, 1827). Portsdown Chalk Formation, Alum Bay, Isle of Wight. MIWG. 2468.

Glomerula lombricus (Defrance, 1827)

('Serpula ilium' Goldfuss, 1831) Fig. 2

Description. Typically, small, up to 10mm in length with tube diameter less than 1mm, comprising interlacing knots. The tube surface is smooth.

Remarks. Tubes assigned to *Serpula ilium* (Goldfuss 1831) are common in the White Chalk Subgroup. Jäger (1983) assigned these to *Glomerula gordialis*. Subsequently, Jäger (2012) reviewed these small glomerate tubes found in offshore chalks, such as the White Chalk Subgroup and placed them into the separate species.

Occurrence. Cretaceous Valanginian to Maastrichtian. Turonian White Chalk Subgroup, New Pit Chalk Formation (*Terebratulina lata* Zone), Downend Quarry, Isle of Wight. Coniacian, White Chalk Subgroup, Lewes Chalk Formation (*Sternotaxis plana* Zone), Downend Quarry, Isle of Wight. Coniacian to Santonian, White Chalk Subgroup,

Seaford Chalk Formation (*Micraster coranguinum* Zone), Freshwater Bay, Isle of Wight. Campanian, Culver Chalk Formation (*Goniatoteuthis quadrata* Zone); Culver Cliff, Isle of Wight; Portsdown Chalk Formation (*Belemnitella mucronata* Zone), Alum Bay, Isle of Wight.

Material. New Pit Chalk Formation: MIWG. 380. Lewes Chalk Formation: MIWG. 447. Seaford Chalk Formation: MIWG. 1834. Culver Chalk Formation: MIWG. 3086. Portsdown Chalk Formation: MIWG. 2468.

Glomerula plexus (J. de C. Sowerby, 1829) Fig. 3

Description. Irregular, straight, curved, and coiled tubes forming cemented interlocking masses. Up to 100 mm long and wide, though more typically longer than wide. The tubes are circular in cross section, smooth on the outer surface, and of medium thickness.

Occurrence. Middle Jurassic to Late Cretaceous. Cenomanian, Grey Chalk Subgroup, West Melbury Chalk Formation (Glaucanitic Marl), Rocken End, Isle of Wight.

Material. Grey Chalk Subgroup, West Melbury Chalk Formation (Glaucanitic Marl): MIWG. 252.



Fig. 3: *Glomerula plexus* (J. de C. Sowerby, 1829). West Melbury Chalk Formation, Watershoot Bay, Isle of Wight. MIWG.1523.

Family SERPULIDAE Rafinesque, 1815

Subfamily SERPULINAE Rafinesque, 1815

Genus SERPULA s.l

'Serpula' cf. *vortex* Woodward, 1833 Fig. 4

Description. Small, up to 8mm in diameter, slightly turbiniform attached coil. The surface is highly irregular.

Remarks. This species is based upon a line drawing by Woodward (1833) from either the Campanian or Maastrichtian of Norfolk. It seems never to have been reviewed. The material studied herein could represent a different taxon and resembles juvenile *Neovermilia ampullacea*.

Occurrence. Cretaceous, Cenomanian, Grey Chalk Subgroup, West Melbury Chalk Formation (Glaucanitic Marl), Binnel Point, Isle of Wight.

Material. Grey Chalk Subgroup, West Melbury Chalk Formation (Glaucanitic Marl): MIWG.1524.

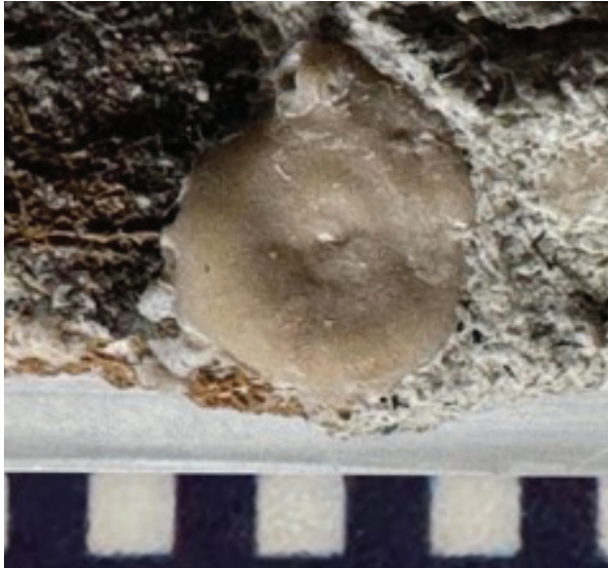


Fig. 4: '*Serpula*' vortex Woodward, 1833. West Melbury Chalk Formation, Binnel Point, Isle of Wight. MIWG. 1524.

Genus FILOGRANULA Langerhans, 1884

Filogranula cf. *cincta* (Goldfuss, 1831) Fig. 5

Description. Short undulating or straight tube around 10mm in length, 1.5mm in diameter. Tube surface with crenulated irregular longitudinal ridges. In section, the outer tube is star shaped, and the inner round. The attachment flange is narrow and the edge denticulate.

Remarks. Found attached to steinkerns in the Glaucanitic Marl.

Occurrence. Jurassic (Oxfordian) to Cretaceous (Maastrichtian). Cretaceous, Cenomanian, Grey Chalk Subgroup, West Melbury Chalk Formation (Glaucanitic Marl), Compton Bay and Ventnor, Isle of Wight.

Material. Grey Chalk Subgroup, West Melbury Chalk Formation (Glaucanitic Marl): MIWG.2689, MIWG. 3422.

Genus NEOVERMILIA Day, 1961

Neovermilia ampullacea (J. de C. Sowerby, 1829) Fig. 6

Description. Medium sized, up to 25 mm in diameter. Variable in shape from slightly trochiform to gently curving. Usually with marked constrictions. The surface with numerous, closely spaced growth lines which vary from fine to coarse. These give the tube a fibrous appearance. Some individuals have a narrow, irregular longitudinal carina.

Remarks. This is a quite variable species, however, the fibrous texture of the shell caused by the growth line is distinctive.

Occurrence. Cretaceous, Cenomanian to Maastrichtian. Cenomanian, Grey Chalk Subgroup, West Melbury Chalk Formation (Glaucanitic Marl), Ventnor and Compton Bay Isle of Wight. ? Zig Zag Chalk Formation (Chalk Marl), Compton Bay, Isle of Wight. Turonian, White Chalk Subgroup, New Pit Chalk



Fig. 5: *Filogranula* cf. *cincta* (Goldfuss, 1831). West Melbury Chalk Formation, Rocken End, Isle of Wight. MIWG.253.



Fig. 6: *Neovermilia ampullacea* (J. de C. Sowerby, 1829). New Pit Chalk Formation, Culver Cliff, Isle of Wight. MIWG. 2718.

Formation (*Terebratulina lata* Zone), Culver Cliff, Isle of Wight.

Material. Grey Chalk Subgroup, West Melbury Chalk Formation MIWG. 3420, 3423, and 5080.

? Zig Zag Chalk Formation (Chalk Marl) MIWG. 3420. White Chalk Subgroup, New Pit Chalk Formation: MIWG. 2718.

Genus PROLISERPULA Regenhardt, 1961

Proliserpula avita (J. de C. Sowerby, 1844) Fig. 7

Description. Colonies of attached curved or looped tubes closely adjacent to one another, sometimes crossing over each other. Colonies can exceed 50 mm in area, with individual tubes up to 3mm in diameter. Irregular growth line with occasional swellings, and a faint longitudinal carina.

Remarks. Can be readily distinguished from other colonial forms as the tubes don't intertwine. Restricted to the Lower Turonian.

Occurrence. Cretaceous, Lower Turonian. Turonian, White Chalk Subgroup, Holywell Chalk Formation (*Mytiloides labiatus* Zone), Culver Cliff, Isle of Wight.

Material. White Chalk Subgroup, Holywell Chalk Formation MIWG. 2715.

Genus ORTHOCONORCA Jäger, 1983

Orthoconorca turbinella (J. de C. Sowerby, 1844) Fig. 8

Description. Small, typically between 5 and 10mm in height. Tightly coiled often almost conical in shape but may vary with less tight coiling. The tube is narrow and circular, smooth.

Remarks. Common almost throughout the White Chalk Subgroup.

Occurrence. Cretaceous, Coniacian to Maastrichtian. Coniacian, White Chalk Subgroup, Seaford Chalk Formation (*Micraster coranguinum* Zone), Watcombe Bay, Isle of Wight. Campanian, Newhaven Chalk Formation (*Marsupites testudinarius* Zone) Freshwater Bay, Isle of Wight; Culver Chalk Formation (*Goniot euthis quadrata* Zone); Downend Quarry, Isle of Wight; Portsdown Chalk Formation (*Belemnitella mucronata* Zone), Whitecliff Bay and Alum Bay, Isle of Wight.

Material. White Chalk Subgroup, Seaford Chalk Formation: MIWG. 1839. Newhaven Chalk Formation: MIWG. 3193. Culver Chalk Formation: MIWG. 465. Portsdown Chalk Formation: MIWG. 1870, MIWG. 3080.

Genus PYRGOOLON De Montfort, 1808

Subgenus SEPTENARIA Regenhardt, 1961

Pyrgopolon (Septenaria) macropus (J. de C. Sowerby, 1829) Fig. 9

Description. Typically, short horn-shaped tubes up to 10mm in length. However, these are parts of longer tubes up to 140mm in length. The outer surface has seven strong longitudinal carinae, the inner tube shape is circular. The sides have many irregularly spaced, variable strength growth lines. At the aperture the carinae are markedly rounded.

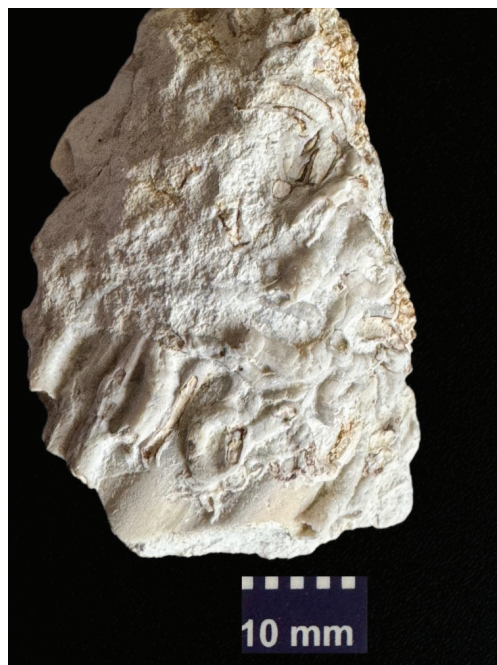


Fig. 7: *Proliserpula avita* (J. de C. Sowerby, 1844). Holywell Chalk Formation, Culver Cliff, Isle of Wight. MIWG.2715



Fig. 8: *Orthoconorca turbinella* (J. de C. Sowerby, 1844). Portsdown Chalk Formation, Whitecliff Bay, Isle of Wight. MIWG. 1870.



Fig. 9: *Pyrgopolon (Septenaria) macropus* (J. de C. Sowerby). West Melbury Chalk Formation, St Catherine's Point, Isle of Wight. MIWG. 2645.



Fig. 9a: *Pyrgopolon (Septenaria) macropus* (J. de C. Sowerby). New Pit Chalk Formation, Culver Cliff, Isle of Wight, MIWG.2717. View of the aperture.

Remarks. Attached to hard substrates such as echinoid tests, but often found as loose broken fragments.

Occurrence. Cretaceous, Upper Turonian to Maastrichtian. Turonian, White Chalk Subgroup, New Pit Formation (*Terebratulina lata* Zone), Culver Cliff, Isle of Wight.

Material. White Chalk Subgroup, New Pit Formation MIWG. 2717.

Family SPIRORBIDAE Chamberlin, 1919

Subfamily SPIRORBINAE Chamberlin, 1919

Genus NEOMICRORBIS Rovereto, 1903

Neomicrorbis crenastriatus (Münster in Goldfuss, 1831) Fig. 10

Description. Small, up to 5mm in diameter planispiral tubes attached to a hard substrate, commonly on echinoid tests.

Remarks. Regenhardt (1961) synonymised *S. granulatus* Sowerby, 1829 with *Serpula crenastriatus*. Herein we include specimens previously assigned to *S. granulatus*. *Neomicrorbis crenastriatus subrugosa* (Münster in Goldfuss, 1831) is a subspecies recognised by Kočí and Jäger (2015) p.40, following Jäger (1983) p. 172 who assigned *S. subrugosa* to *Neomicrorbis*. Recorded from the Isle of Wight by Rowe (1908) as *S. plana*.

Occurrence. Cretaceous, Cenomanian to Campanian. Turonian, White Chalk Subgroup, Holywell Chalk Formation (*Mytiloides labiatus* Zone), Culver Cliff; Campanian, Culver Chalk Formation (*Goniot euthis quadrata* Zone); Culver Cliff, Isle of Wight.

Material. White Chalk Subgroup, Holywell Chalk Formation MIWG. 2716, Culver Chalk Formation: MIWG.3469.



Fig. 10: *Neomicrorbis crenastriatus* (Münster in Goldfuss, 1831). Culver Chalk Formation, Culver Cliff, Isle of Wight. MIWG. 3469.

Genus ROTULARIA Defrance, 1827

Subgenus PRAEROTULARIA Lommerzheim, 1979

Rotularia (Praerotularia) umbonata (J. Sowerby, 1814) Fig. 11

Description. The early whorls are trochiform, then as a short gentle curve. The tube is thick, with an inner diameter of 8 mm and outer of 15mm, it is very irregular with swellings and constrictions. The growth line is faint.

Occurrence. Cretaceous, Albian to Cenomanian. Cenomanian, Grey Chalk Subgroup, West Melbury Chalk Formation (Glaucopitic Marl), Binnel Point, Isle of Wight.

Material. Grey Chalk Subgroup, West Melbury Chalk Formation: MIWG. 4295.



Fig.11: *Rotularia (Praerotularia) umbonata* (J. Sowerby, 1814). West Melbury Chalk Formation, Isle of Wight. MIWG. 4295.

Trace Fossil: LEPIDENTERON Frič, 1878

Lepidenteron lewesiensis (Mantell, 1822) Fig. 12

Description. Up to 300 mm in length, 30 mm in width. Unbounded tube-shaped structure tapering distally, filled with bioclasts of fish scales and bones.

Remarks. The genus *Terebella* probably ranges from the Middle Jurassic to the end of the Cretaceous. *Terebella lewesiensis* is restricted to the Upper Cretaceous of northern Europe Jurkowska and Uchman (2013).

Occurrence. Cretaceous, Cenomanian to Maastrichtian **Material.** White Chalk Subgroup, Brightstone Down, Isle of Wight. IWCMS 1997.301

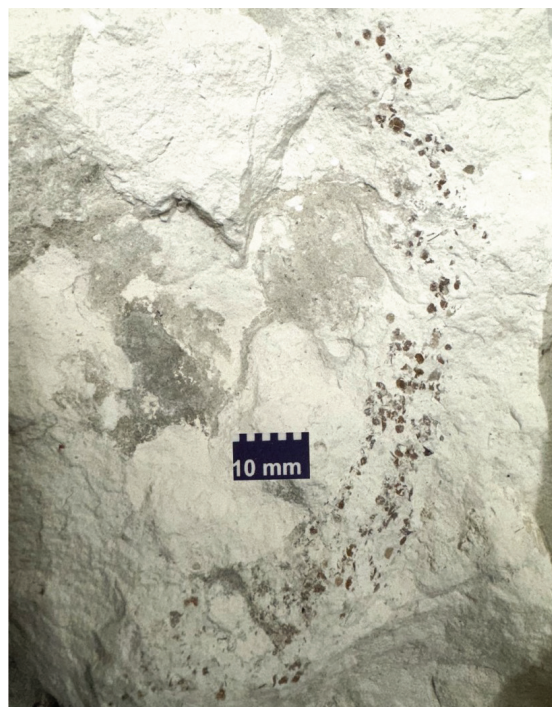


Fig. 12: *Lepidenteron lewesiensis* (Mantell, 1822). White Chalk Group, Brightstone Down, Isle of Wight. IWCMS 1997.301

Notes on additional taxa recorded by Rowe (1908) from the White Chalk of the Isle of Wight.

Serpula pusilla J. de C. Sowerby 1844 recorded as rare in the *Belemnitella mucronata* Zone, now known as *Eoplacostegus pusillus* (J. de C. Sowerby 1844). One or two stacked spirals give rise to a gently twisted tube at almost 90° to the previous whorls, both the inner and outer tubes are circular in cross section. See Jäger (1983).

Serpula canteriata Hagenow, 1840 recorded as rare in the *Belemnitella mucronata* Zone, now known as *Nogrobs (Tetraserpula) canteriata* (Hagenow, 1840). Considered by Jäger (1983) to be restricted to the Maastrichtian. This is a gently curving tube with four broad, rounded longitudinal carinae, the outer cross section being almost square. See Jäger (2012).

Serpula pentagulata S. Woodward, 1833 recorded as rare in the *Sternotaxis plana* Zone, is a junior synonym of *Pentaditrupe subtorquata* (Münster in Goldfuss, 1831). A simple gently curved tube with the outer cross section star shaped. See Jäger (1983).

Serpula fluctuata J. de C. Sowerby, 1829, recorded from *Sternotaxis plana*, *Micraster cortestudinarium* and *Belemnitella mucronata* zones, now known as *Vermiliopsis fluctuata* (J. de C. Sowerby, 1829). A looped tube with a very irregular shaped outer cross section produced by rugose longitudinal carinae. See Jäger (2012).

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YARBURY - NITON'S CASTLE? REALITY OR ROMANTICISM? -

William G. Thurbin MSc. AFRGS

Abstract: Eight kilometres long and no more than 0.6km wide, the 'Undercliff' is a linear zone of coastal instability on the southern coast of the Isle of Wight. Set at the foot of an inland cliff, this unusual terrain has long offered a climatically sheltered environment attractive to human settlement.

This paper examines the surprising incidence of 'castle' and related place-names where the Undercliff forms the coastal boundary of the parish of Niton. For several hundred years, place-names and field names within this parish have offered allusion to one or more possible defended positions that now merit further investigation.

This study reviews pertinent coastal sites and place-names, both above and below the inland cliff-line of the Undercliff. It also considers some comparable mainland place-names where 'castle' and 'burh/bury' names identify ramparted or embanked enclosures of prehistoric or pre-medieval date. After reviewing disparate archaeological evidence recorded in the Isle of Wight Historic and Environment Record (IWHER) and other sources, this study discusses whether allusions to a 'missing castle' in this coastal parish could concern past recognition of pre-medieval earthworks. Of the nine place-named sites identified in this study, attention focusses on the East Cliff plateau where the field names of 'Yarbury', 'Brockenbury' and 'Bulwarks Common' are associated with features now detected by aerial photography and LiDAR (Light Detection And Ranging) imagery.

Keywords: Yarbury, place-names, hillforts, Isle of Wight, Iron Age.

Introduction

This research focuses on the parish of Niton on the southern tip of the Isle of Wight (Fig. 1). Shortly after moving to Niton, I was told a story about a 'castle' that had once existed by the Niton Undercliff around St Catherine's Lighthouse. I started researching whether this was founded in local oral tradition passed down through the generations or merely an echo from a more romantic age, when 19th-century antiquarians mused about our ancient ancestors?

I quickly realised that there had not been a broad analysis of whether a defended position from any period had ever existed in the Niton landscape. I identified that it was probably the local place-names that were the main drivers fuelling the local beliefs that a castle was once situated somewhere along the shoreline. However, the topography of the landscape on the East Cliff Plateau above, with its dramatic and panoramic views over the

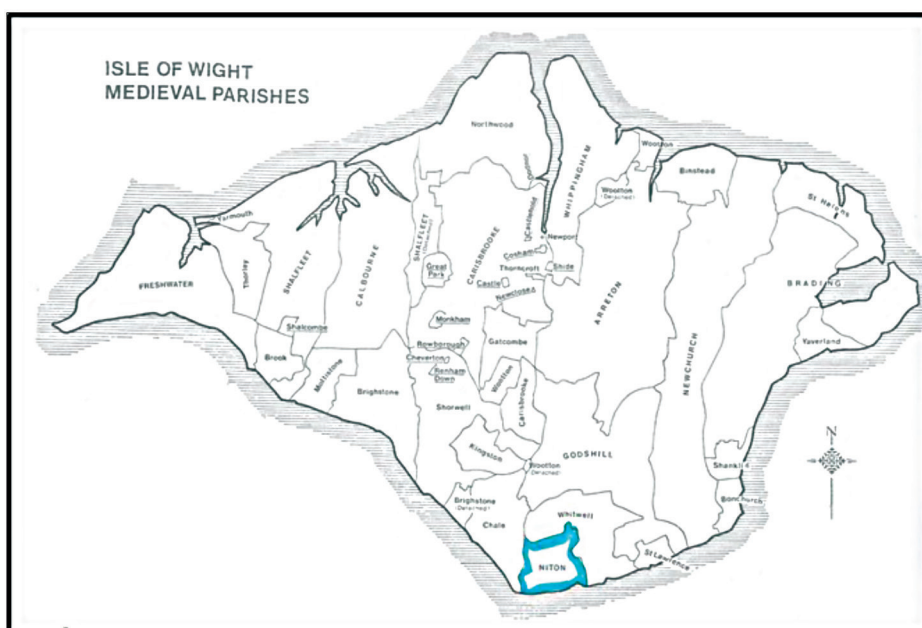
Undercliff 'castle' sites, as well as the English Channel and the Eastern Yar Valley, suggested a better location for a defended position than on the lower lying coastline. Further research revealed other place-names near and surrounding the East Cliff plateau that suggested a possible defended position.

I started to research whether this large promontory plateau of some 35 hectares could have been the location of a pre-medieval defended site hidden in plain sight. Was it a reality or romanticism? This paper is a summary of my findings, with the full report being deposited with the Isle of Wight Historic Environment Record (IWHER), held by the IW County Archaeology Service.

Antiquarian observations and musings

Antiquarian writings were early attempts to make sense of the known archaeology, place names, and broad ancient references that may (or may not) be connected to the Niton landscape.

Fig. 1: Medieval parishes of the Isle of Wight, with the Parish of Niton highlighted in blue



The theory that the Isle of Wight was the 'Ictis' mentioned by Diodorus Siculus as being the centre of the tin trade was formerly adopted by many antiquarians. When John Albin visited Niton Undercliff in 1795 he was shown a large mound called the 'Old Castle', likely to be the mound located near Castlehaven and was told by locals that it was from here that tin was traded. Albin's account seems to mark the first point at which the fanciful story of the tin trade and a castle at Niton are connected in print.

In the mid-1800s, the Rev Edmund Kell (1866) also re-visited the tin trade story, speculating that Puckaster Cove had served as a Roman harbour. Adams (1884) connected Yarbury, a field system with enclosures on top of the East Cliff, above Puckaster, to the tin trade. The Island's ancient tin trade and the 'Ictis question' have now been discredited for many decades (Cunliffe, 1983, Tomalin, 2022).

Other accounts of a castle in Niton Parish include Albin's (1795) suggestion that an ancient earthwork on the northern boundary of the parish called 'Bury' may have been a large barrow with a much larger base than any others found on the downs in the southern counties, along with the 'Old Castle' (on the Undercliff shoreline), would provide some means of defence against invasion, land-based or seawards.

Adams (1884) also describes this earthwork to the north of the parish 'called Bury' (and the 'Old Castle') and notes that the place-name "Bury" means "byrig", a walled or fortified place. It seems

that this might befit the former rectangular beacon enclosure formerly visible close to the Bronze Age burial mound that Dunning (1932) excavated on the Niton down portion of the crest of St Catherine's Hill (Tomalin and Marshall, 2016, 146, fig.4). Whilst speculative and perhaps romantic, the work of the antiquarians provides some useful points of reference in the Niton landscape for this research to focus on.

Methodology

Desk and internet-based resources were initially consulted to extract data. Where possible, fieldwork conducted on the sites of interest. Landowner permission was gained to field-walk some of the accessible slopes and field systems on the East Cliff Plateau. Whilst the limitations of the fieldwalking results are recognised, they did provide an indication of datable human activity in each area. A more detailed analysis of some of these finds will form part of my ongoing research of the East Cliff plateau. This research will be the first time that the Niton land and seascapes have been considered together for the survival of an ancient defended position, using existing knowledge, aerial photographs (APs), LiDAR, maps, topographical and fieldwalking evidence, to provide:

- a An initial point of reference for future study
- b Some initial tentative conclusions on what past references to castles might mean in the Niton landscape.
- c Some proposals for further research.

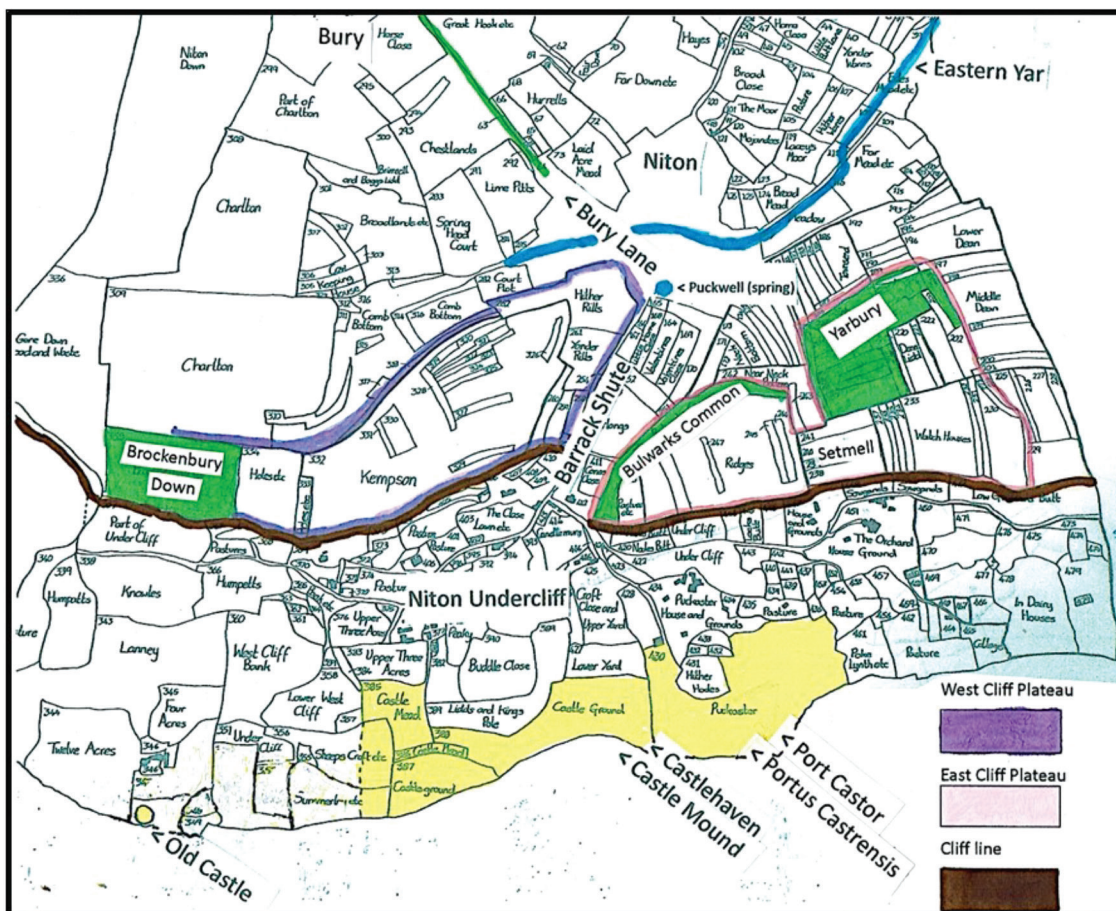


Fig.2: 1840 tithe map of Niton Parish showing the castle names along the Niton Undercliff coastline (yellow) and the place names on the West and East Cliff plateaux (green)



Fig. 3: Gardner map (1793) of the East Cliff Plateau

Potential place-name evidence for defended sites in Niton Parish

Nine local place-names emerged with the potential to indicate defended positions in the landscape. These have been grouped into four areas: The East Cliff, the Undercliff coastline, the West Cliff, and Niton Down:

East Cliff

The East Cliff plateau is 'divided' topographically into two sections, each of which contains a defended place-name:

1 Bulwarks Common: This is a steeply sloping field surrounding the western and northern part of the East Cliff plateau promontory area, closest to Barracks Shute. The Oxford English Dictionary defines a 'bulwark' as 'A substantial defended work of earth, or other material; a rampart, a fortification'. There are Iron Age hillforts in the Cotswolds and Monmouthshire known as 'The Bulwarks' (M.P., RCHME 1976)

The 1793 Gardner map (Fig. 3) shows a linear feature running from an enclosure/field in Ridges (**A** on map), above Bulwarks Common, across Yarbury (**B** on map) and forming the southern boundary of the fields called Yarbury), down its eastern slope and across the field below to join a lynchet (**C** on map). There would appear to be a double linear feature (**D** on the map) below Bulwarks Common. The ramp on the slope of Bulwarks Common (**E** on the map) is also shown on the 1830s Map of Niton Estate. The IWHER records flint debitage and a small number of Neolithic and Late Bronze Age tools on the Bulwarks Common side of the East Cliff Plateau, whilst the Portable Antiquities Scheme (PAS) records

a small amount of Roman coinage on this section of the East Cliff plateau.

2 Yarbury: This comprises the steeply sloping field forming a continuous escarpment on the northern edge of the East Cliff plateau (and part of its eastern side) as well as fields on the plateau itself. This place-name might be interpreted as *fortified place by the River Yar* which rises and runs near to the base of its northern slope). 'Bury' may be derived from the Old English (OE) word 'Byrig', or 'Burh', meaning 'fort or fortified place' (O.E.D.).

The 1793 Gardner map (Fig.3) shows a 'ladder-shaped' enclosure on the northern edge of the East Cliff plateau section called 'Yarbury'. The smaller of 2 cloth maps traced from the 1840 plan of Niton (1859) shows one of the sections of the Yarbury enclosures with intact banks on two of its four sides, which can also be seen on an 1856 map of Niton Common and Head Down. The IWHER records these enclosures and flint debitage and tools from in and around the Yarbury area of the East Cliff Plateau, whilst the PAS records Iron Age and Roman coinage across the same.

Topographical Considerations of the East Cliff

Strategically, the area on top of the East Cliff plateau would better support the siting of a defended structure than on the Undercliff below it. This higher area has been used for defended purposes in the past, including the placement of a 'watch' as part of a medieval beacon warning system. In more recent times, the Royal Observer Corps was also stationed on the East Cliff during WW2 and the Cold War (Wood, 1976).

The East Cliff Plateau provides panoramic views over the English Channel, Barrack Shute (a gap in the cliff

-line) and inland, Puckaster Bay, Castlehaven Bay and Reeth Bay. Its vantage over land, seascapes and Barrack Shute provides a potential strategically important position for defence.

Bronze Age round barrows would have been visible from the East Cliff on the periphery of the landscape, situated on the eastern and northern boundaries of the parish. The viewshed to the west has the Rew Down barrow cluster near Ventnor on the horizon. Further research is required to ascertain whether there is a visual relationship between the East Cliff plateau and the archaeological features within the wider landscape.

A block of strip fields on the edge of the East Cliff between Watch House and Ridges is called 'Setmell' on the 1840 Tithe map (Fig. 2) and overlooks Puckaster. This name may be associated with a former landowner or user, but the etymology of the place name could suggest something else.

In OE (OET), 'set' may be related to 'setl' meaning 'residence, seat, throne', whilst 'mel/l' may mean 'dust' or be related to 'mylen' meaning 'mill; building or machinery'. In Middle English (MEC), 'set' may be related to 'setel' meaning 'a place for sitting, a seat; a special chair reserved for the holder of a position of authority or special dignity', whilst 'mel/l' may be related to 'mēl' meaning 'A fixed time, period of time; an occasion'. If this is the case, 'Setmell' may suggest a meeting place. Further research is required to define a more accurate meaning of 'Setmell'.

Undercliff coastline

Niton Undercliff offers over 1.5km of continuous place-names along its coastline that suggest defended position meanings:

3. *Puckaster*: This is a field adjoining Castle Ground and Puckaster Cove, and sits to the east of Castlehaven and Castle Mound. Kökeritz (1940) says that this place-name had been 'Latinised' in the past to 'Port Castor' and 'Portus Castrensis', but states that these are "preposterous etymologies". He believed the etymology of Puckaster is likely to be from OE 'pūca' meaning 'goblin' and suggests that the second part of the name comes from 'torr' meaning 'high rock, hill' or 'steort', a 'tail, piece of land, promontory' and that the Latinisation of the name is incorrect. Whilst Kökeritz was correct in challenging the 'tin trade' musings of the antiquarians and a castle connection to it, he may have missed the opportunity to consider Puckaster as an indicator of a possible defended site on the cliffs above the site.

4. *Castlehaven*: This is a small harbour situated between Puckaster and Castle Mound. The Oxford English Dictionary describes 'haven' as 'to shelter, protect; to provide with a place of safety or refuge... harbour', deriving from the OE word 'hæfen' (BTASD). Again, it is possible that this Undercliff place-name is an indicator of a cliff-top defended position on the plateau above Castlehaven. However, historic mapping shows that the name Castlehaven only appeared during the late 1800s but this may be because the site was not large enough at the time to be recorded on earlier maps and will require further documentary research.

5. *Castle Mound*: This mound of earth is on the coastal cliff edge, beside Castlehaven harbour. It has been thought locally that this might have been the Motte of a Norman castle but archaeological work on the mound has not provided any physical evidence of this, nor is there any reference to one in medieval records. IWHER 640 records that the site is represented, but not named, on the 1898 and 1908 Ordnance Survey (OS) maps, and is shown as a site of antiquity on the 1939 OS map but does not appear on the 1947 OS map, concluding that it is a 'Probable Non-Antiquity'. The mound was cut into on its northern side in 1989 but the spoil did not contain any archaeological material. Archaeologists visited the site again in 1991 when domestic farm animal bones were found on the eroded western side of the mound, in a context of sandy material, suggesting that the mound was possibly made from spoil with no other archaeological material nearby. A site visit by the author in 2024 to the beach below the exposed southern face of the mound showed that it had suffered from recent erosion, but no finds were present on the shoreline.

6. *Castle Mead and Castle Ground*: These two names are located next to Castlehaven and Puckaster on the coastline. Mead is an OE word meaning, 'Meadow' (mæd), whilst 'Ground' might suggest, 'ground that belongs to or is by the castle'. No archaeological or documentary evidence has been found to show that a defended structure has been built in these fields so, one might speculate that their names originate from the name of the cove and the fanciful attribution of the 'Castle Mound'.

The IWHER records that Roman pottery has been found near this area. Trott and Tomalin's (2003) work on *The Maritime Role on the Island of Vectis* shows that there were Iron Age sites at St Catherine's Point and along the Undercliff, describing the significance of the pottery being traded on and off the Island with the mainland and the continent. There is a raised earthwork platform recorded to the east of St Catherine's but its date and purpose are unknown. Tomalin has commented that ditches were exposed in the cliff face (pers. comm. 2024), but information about the excavation results at this site was not available prior to the publication of this paper.

7. *Old Castle*: 'Old Castle' is shown on the 1759 Blatt's & 1759 Andrew's maps on the western side of St Catherine's Lighthouse. This might suggest that the 'Castle' place-name once extended even further around the Undercliff coastline, although Adams (1856) believed the 'Old Castle' was situated a 'little west of the cove' suggesting perhaps 'Castle Mound' might have been interchangeable with the 'Old Castle' name. The 25" OS map of Niton Undercliff (1862) shows a mound in the approximate 'Old Castle' position shown on earlier maps. This is represented in the same way as Castle Mound at Castlehaven. However, there are no references or archaeological finds to support a castle being located here in this position. A site visit in 2024 revealed that only the northern edge of a mound was present, the rest no doubt lost to the sea. No evidence of finds was seen protruding from the cliff

edge, but the IWHER does record finds in this general area. It includes Iron Age, Roman and medieval pottery, bone and shells.

Currie (2001) suggests that archaeological finds provide considerable evidence to show that there was a farmstead with continuous Late Iron Age to Roman occupation at St. Catherine's Point and that such settlements were probably common along the Undercliff.

A geophysical survey of the area in 2006 showed suggestions of pits, ditches and potential buried remains, mostly by the cliff edge, but there was some suspicion that the soil was not conducive to this type of survey (Lyne, 2007).

Tomalin (2022), when discussing the importance of the Island's role in maritime trade, commerce, communication and productivity during Late Iron Age and Roman times, draws attention to the variety of Roman wares that were found around St. Catherine's including East Gaulish Samian ware, Rhenish beakers, Malvern ware, Nene Valley beakers, Spanish and Mediterranean amphora, New Forest and Hampshire pottery. He speculates that some of these wares may have arrived with military cargoes, noting a single military tile as '*a tantalising suspicion that this site may have fulfilled a coastal military function*', although he does go on to note the impossibility of a landing place on the cliffs and rocks at this location.

Tomalin's maps (2022) suggest that St. Catherine's Point may have accommodated an Iron Age coastal community. If sizeable communities did exist at St. Catherine's Point and along the Undercliff, then some form of defended position would make sense, as indeed the place-names suggest.

In summary, there are no PAS records of finds along the coastline where 'castle' place names are present. However, the IWHER and archaeological reports of the Undercliff coastline around St. Catherine's Point suggest that there may have been significant productive sites located there during Iron Age and Roman times, and these were engaging with the outside world through trade and commerce. Site visits revealed no obvious stable topography or raised vantage point along the base of Niton Undercliff and its sea-level coastline that would indicate a suitable position in which to locate a defended structure. Indeed, a location at the base of the Undercliff would give limited visibility/protection against seaward attack and would be blind to potential landward attacks because of the cliff line. It is possible that such a structure on the Undercliff could have been completely lost to the sea, leaving only associated place-names along its coastline, though there is no archaeological or archival evidence to support this. This being the case, the 'castle' place-names along the coast may just be a destination point for those arriving by sea, referring directly to a prominent defended structure located nearby in the landscape, above the topographical limitations of the sea-level Undercliff.

West Cliff

8. Brokenbury/s Down: This is a sloping field located on the edge of the West Cliff (suggesting it was once part of a hill now eroded on its seaward side), beside

the western edge of the Niton parish boundary. The 'Brocken' element of the place-name Brokenhurst in Hampshire is suggested to mean 'broken up (Watts, 2004) whilst suffix 'Bury' suggests a meaning of '(at the) fortified place'. Brokenbury Down has similar southern views seawards to the East Cliff Plateau sites but has an advantage as it has a viewshed westwards towards 'the back of the Wight'; Castle Hill near Mottistone (Currie, 2003), the possible Iron Age enclosure on Tennyson Down (Bowden *et al.*, 2015), and onwards on a clear day to Hengistbury Head hillfort on the mainland, and beyond.

The place name, prominent location and viewshed, coupled with an interesting nearby ditch and surrounding archaeology are to be covered separately in a detailed research paper.

Niton Down

9. Bury Lane: This lane descends from Niton Down towards Pan Lane and the centre of the village. It is broadly orientated towards the neck of land between Yarbury and Bulwarks Common and starts beside land that is called 'Bury' on the 1815 Alderman Mew map. Oscroft (2015) states that '*Byrig/Burh*' (Bury)...is almost invariably applied to prehistoric camps'. 'Kökeritz (1940) agrees that the name means 'fort, fortified place' and it was recorded in the Royal Survey of 1608 as 'Upper Burege'. There is no visible evidence of a defended structure being situated on this land, nor is one recorded on the IWHER. On the 1830s Dawes map, Bury has been renamed as 'Horse Close' and 'New Ground' and these names are retained on the 1840 Niton tithe map.

In the absence of a defended structure in the fields called Bury, one might speculate that they were named after the lane, rather than the other way round. If this were the case, then the place-name Bury Lane and its orientation towards the East Cliff plateau may suggest the presence of a defended structure elsewhere in the landscape.

The IWHER shows a possible round barrow identified from Aerial Photographs (APs) in the fields once called Bury as well as flint implements and debitage nearby. The PAS records several Roman coins in the vicinity of Bury Lane.

Other locations for defended sites in Niton parish

This initial research has shown that there are more 'castle-related' names in the local landscape than have been previously considered. Three possible scenarios for the location of a defended structure in Niton parish are suggested by the place-name evidence

- a) A cliff-top location on the East Cliff;
- b) A location somewhere on the Undercliff with defence-related place-names;
- c) A location further seaward than the existing Undercliff coastline which has since been eroded away.

The Bulwarks Common and Yarbury place-name areas on the clifftop, run in a staggered parallel, to the 'castle' place-names along the Undercliff coastline below suggesting that there could be a relationship between the land use of the higher plateau and the place-names of the shoreline below. Only the eastern slope of the East Cliff plateau is

without a defended structure place-name. Tithe maps also show the field names called 'Watch Houses' immediately to the south of Yarbury, along the cliff edge, which is covered in some detail in a separate paper by Thurbin (2023) about beacons in Niton's landscape.

The archaeological and topographic evidence suggests that the focus of a search for a pre-medieval defended position should be on the seaward-facing cliffs above the Niton Undercliff. Therefore, the remainder of this paper will focus on the Bulwarks Common and Yarbury areas of the East Cliff promontory plateau, with other areas discussed in the full report to be deposited with the IWHER.

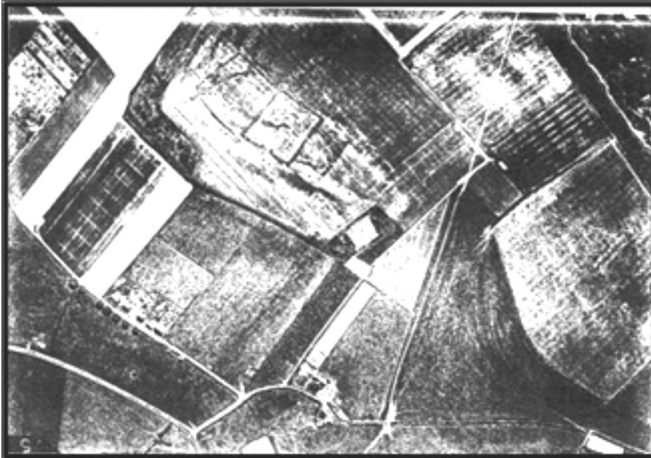


Fig. 4: East Cliff AP taken by O.G.S. Crawford in 1924

East Cliff Yarbury

O.G.S. Crawford, the pioneer of aerial photography with the Ordnance Survey, photographed Yarbury from the air in 1924 (Fig. 4) providing evidence of the Yarbury enclosures on the East Cliff plateau in their most intact form before severe agricultural erosion.

In his book *Wessex from the Air* (1928), Crawford describes a segment of the photograph that focuses on Yarbury's enclosures, stating:

'This photograph is published rather as a warning than as a discovery. The two rectangular enclosures have a remarkable resemblance to a Roman camp with an annexe. Nevertheless, there are some minor features which should put one on one's guard. The corners are not rounded, and the ditch fails to be continued round one. Three of the four sides of the smaller enclosure have no break, whereas if it were a Roman camp there should be some signs of entrances; nor are there any traces of traverses.'

Crawford is correct about being cautious in interpreting this single photograph of Yarbury, yet enlarging the enclosure areas even further would seem to reveal some unnoticed features.

Contrary to Crawford's interpretation of his AP, the central pronounced square enclosure does appear to have entrances on the northern and southern sides of its boundary. The northern opening is

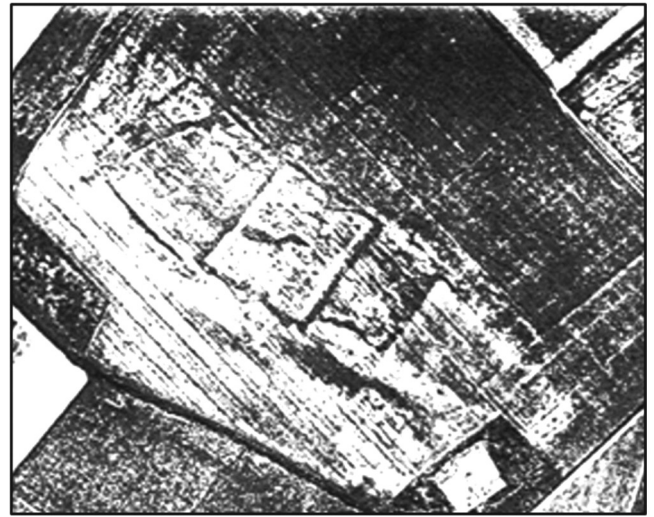


Fig. 5: Close up of the rectilinear enclosures on the Yarbury plateau (photo enhanced)

turned in, perhaps with a 'clavicula' arrangement projecting outside of the enclosure (Fig 5). The smaller southern entrance would also seem to have a similar feature inside the enclosure. Similar features, as described and illustrated by Jones (2012) are often associated with Roman encampments.

Whilst Crawford highlights that the corners of the central enclosure are not rounded, as one might find in Augustan examples, it is worth noting that not all Roman encampments were of 'playing card' design, especially where the local topography was used to advantage.

Crawford also pointed out that this central enclosure may have been altered in the past, 'to serve some different purpose' and the appearance of the central enclosure certainly seems to be more symmetrical and defined than the adjacent wider system of enclosures on the site. The alteration/reuse of ancient defended positions is well documented such as the introduction of a Roman fort within Hod Hill Hillfort (Stuart & Russell, 2017). Thurbin's paper on the Niton Beacon (2023) speculates that this central enclosure may have been re-used for the siting of a later beacon because of its intervisibility with other known beacon points on the Island.

The enclosures conjoin to create an irregular 'ladder-shaped' feature that traverses the width of the northern edge of the Yarbury plateau, extending down its western slope. Ladder-shaped and linear enclosures from the Iron Age are present in other locations in the UK such as in Yorkshire (Giles, 2007). The northern sections of the enclosures would be on the lee side of the plateau giving the area some protection from the wind. On the eastern side of Yarbury, there are parallel linear features running along the slope and also a linear depression running along the slope of the northern side of Yarbury below the enclosures. This being said, caution should be exercised in case they are the remnants of field divisions.

Other APs also provide useful data. The Luftwaffe WW2 APs (c.1943) were taken from a great height making it difficult to see Yarbury's features in detail, although the linear features on the slopes of Yarbury

and parts of the banked enclosures recorded by Crawford can just be seen in places, as can the ramp on Bulwark Common.

The linear feature on the northern slopes of Yarbry can be seen on the OS APs (1969), with an extended line of vegetation on the eastern slope of Yarbry merging into a narrow linear feature at the end. There are also some soil marks suggesting the location of the banked enclosures recorded by Crawford. The Aerofilm APs (1993) show part of these enclosures as dark green crop marks as well as a linear feature on the northern and eastern slopes of Yarbry.

The LiDAR results for the East Cliff plateau area have yielded some interesting features that would seem to corroborate what can be seen from the APs and on the ground. Barrack Shute is perhaps the most accessible southern route from the sea towards any settlements on the East and West Cliffs and the beginning of the Eastern Yar Valley. A defended position on the East Cliff above it would certainly give a strategic advantage over an attacking force.

The view of the plateau from its northern, landward-facing aspect, reveals the two land masses covering nearly 35 hectares rising above the village of Niton and the Eastern Yar, (Fig. 6). The elevated position of the East Cliff plateau gives it a good vantage across the Eastern Yar valley. If linear defences were present on its slopes, they would provide some protection from landward attack.

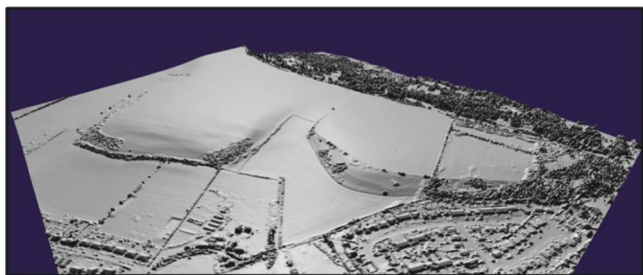


Fig. 6: LiDAR of northern view of the East Cliff plateau showing Yarbry and Bulwarks Common side by side

The LiDAR results of Yarbry show interesting linear features on its slopes as indicated by the white arrows in Fig. 7. The red arrows point out the east-west linear feature that divides the Yarbry fields from the Watch House fields. This can be seen on some old maps and extends across from the eastern slopes of Yarbry into the field above Bulwarks

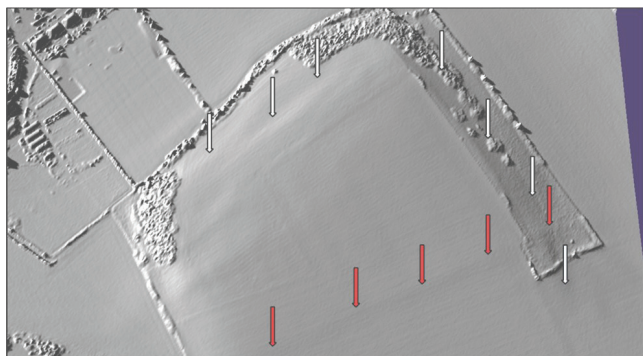


Fig. 7: LiDAR of the Yarbry section of East Cliff plateau showing linear features.

Common. On the Gardner map (1793) it culminates into what appears to be a rectangular enclosure.

Site visits revealed that despite being extensively ploughed, it is still just possible to see some slightly raised areas where the banks of the Yarbry enclosures once stood, as well as a linear feature on its eastern slope. This side of the plateau would perhaps be its weakest point defended as its slope is much shallower closer towards the cliff edge than elsewhere around the plateau. At this point, LiDAR shows that there is a double linear feature, with another linear feature from the steeper part of the eastern slope rising up to join it (Fig. 8). Whilst their positioning might seem suitable as part of a defended feature, caution must be exercised in case they are the remnants of earlier field divisions.

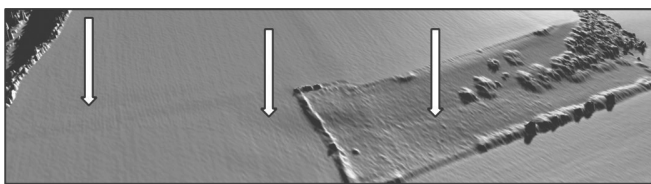


Fig. 8 LiDAR of the linear features on the eastern slope of Yarbry

The raised linear feature that rises up from the bottom of the eastern slope and crosses the plateau to culminate in ridges above Bulwarks Common, could suggest that it once formed part of the Yarbry enclosure's defences.

Another secondary source of information about the Yarbry enclosures is an early 19th-century model referred to by Crawford (1928) as in the possession of Miss E Leith of Lower Niton and studied by Hubert Poole who then described it to him in a letter. This is now on display in the Dinosaur Isle Museum in Sandown (Fig. 9). Although it was repaired and repainted in the early 2000s and, as a result, may have lost some of the Yarbry enclosure details described by Poole, it does agree with LiDAR and fieldwalking evidence.



Fig. 9: Section of the model showing the East Cliff plateau.

Bulwarks Common

Crawford's 1924 AP shows linear features running along the slope of Bulwarks Common (Fig.10) and the ramp that cuts through it. The Alderman Mew

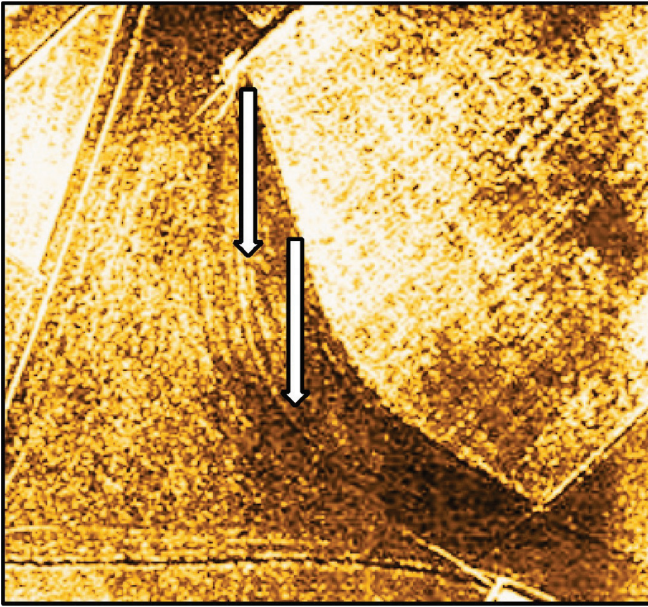


Fig. 10: Crawford AP (1924) (enhanced) showing the linear features

Map (1815) and Niton Tithe Map (1840) did not show any strip farming on its slopes to suggest causation. While Crawford focused in 1928 on the Yarbury enclosures seen in 1924, he did not show or comment on the features on Bulwarks Common beside it.

A 1946 RAF AP (5373 3G/TUD/UK 162 F/12) shows the slope of Bulwarks Common, with a linear feature running along it and a ramp cutting across it to the plateau.

The 1969 OS APs (167, 180, 182) of the East Cliff plateau show the ramp on the side of Bulwarks Common with a square-like feature/rounded right-angles at the top (Fig. 10). It is difficult to tell if these are just the remnants of a stock enclosure, crop/vegetation marks or perhaps an entrance of some description.

The same 1969 OS APs show linear features on the slopes of Bulwark Common, as do the 1986 CUCAP APs (RCT8-IT 273 and RCT8-IT 274-5). The 1971 BKS APs (152466-152688, 152664, 152718, 152714 + 152666) show the ramp crossing the slope of Bulwarks Common. There are some markings in the field called 'Ridges' on the plateau above the slopes of Bulwarks Common that are possibly geological or old field systems. There is a double linear feature running at the base of the slope of Bulwarks Common with lines of vegetation running intermittently around the slope suggesting perhaps soil disturbance beneath. The Aerofilm APs (687-1145) show square markings that are possibly remnants of field systems or enclosures in Ridges above Bulwarks Common. The ramp on Bulwarks Common's slope can be seen. There is a linear feature at the base of Bulwarks Common's slope and another line of vegetation on a bend in the slope, suggesting ground disturbance beneath.

A closer look at Bulwarks Common on the LiDAR data appears to show linear features across its bank (Fig. 12). The earth ramp that links the public footpath to the top of the plateau can also just be seen cutting through the trees, to the right of the LiDAR picture, marked by a red arrow.



Fig. 11: Angular features at the top of the ramp of Bulwarks Common

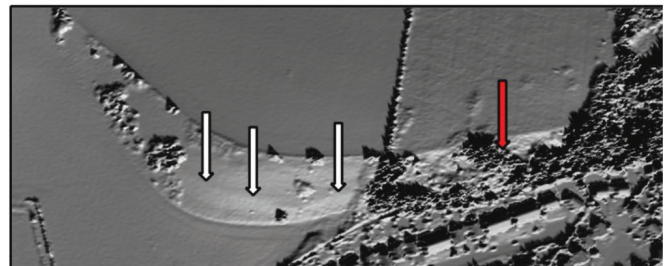


Fig. 12: LiDAR of the slope of Bulwarks Common. The white arrows show the linear feature. The red arrow points to the location of the ramp.

Fieldwalking

Fieldwalking results of the available sections of the East Cliff plateau are interesting. The flint finds were numerous and are likely to date from the Mesolithic to the Early Bronze Age. There were some intensive areas of debitage across the site and a large number of rounded beach pebbles, possibly used as slingshots, were found across the plateau. A small number of pottery sherds, mostly post-medieval, were present with butchered animal bone and fragments of oyster shells, suggesting possible domestic waste from middens or the use of night soil. Some of the linear features shown on the APs and LiDAR data, including the ramp rising up the side of Bulwarks Common can still be seen on the ground.

The AP, LiDAR and fieldwalking results show linear features across the slopes of the Yarbury area, the eastern side of the plateau and Bulwarks Common. Without invasive archaeology or geophysical survey, it is not yet possible to determine with certainty whether these features are geological, or human-made.

West Cliff: Brokenbury Down

There is a possibility that Brokenbury may also have been a pre-medieval defended position. Nearby archaeological evidence suggests pre-medieval occupation in the area, and the place name 'Brokenbury' may indicate a 'broken fort', having been lost to erosion. Had occupation at Brokenbury been concurrent to that at Yarbury, then they may have complimented each other in terms of viewshed and defence across the southern coastline and inland. A full analysis of the archaeology of this site with references will be submitted to the IWHER as part of the complete report.

Hillforts on the Isle of Wight

If Yarbury/Bulwarks Common on the East Cliff and Brockenbury on the West Cliff were pre-medieval defended positions, then they might be regarded as promontory or cliff hillforts. A review of the literature on British prehistoric hillforts/defended structures shows that there are limited or no references and analysis of such structures on the Isle of Wight. Harding (1976, 2012), Avery (1993) and Cunliffe (1995) do not show any such sites on the Island. However, Tomalin (2022) discusses four of the currently known Iron Age hillforts and ramparted enclosures on the Island but does not include the sites at Bonchurch (Historic England Research Records - Monument Number 460949) and Tennyson Down (Bowden, Jamieson and Winton, 2015) which are suggested to be Iron Age and are mentioned later in this paper.

Maddison (2019) includes the hillforts of the Isle of Wight in the distribution maps of hillforts and their features in Britain and Ireland, as do Lock & Ralston (2022) but do not offer a specific analysis of them. The Atlas of Hillforts in Britain and Ireland website shows four possible hillforts sites at Castle Hill, Brighstone; Chillerton Down; Bonchurch, and; Yaverland. The source of this information appears to have been drawn from Wrench's unpublished essay on 'Evidence of Hillforts in the Isle of Wight', (2012). Castle Hill, near Mottistone, is described by Brown (2021) as likely to be a Bronze Age or Iron Age 'defended enclosure...rather than a true hillfort... [but] its unusual shape may belie something different'.

Wrench states (2012) that this site is assumed to be of Iron Age date but that no datable evidence has yet been produced by these earthworks. The research being conducted by IWNHAS at the time of writing may bring clarity as to its age and purpose.

The earthwork on Chillerton Down was described by Dunning (1947). It was shown as a large univallate fort on a distribution map by Forde-Johnston (1976) and included as a promontory or pastoral fort in other publications (Bradley 1971; Hogg 1979; Basford 1980; Cunliffe 2005; Payne *et al* 2006; Waller 2006; OS map of Ancient Britain 2016). Brown (2021) notes that the Chillerton earthwork is unfinished and suggests that a distinctive island population perhaps operated with different structures. Tomalin (2022) says that the date of this unfinished Iron Age earthwork is uncertain and that only one fragment of Vectis Ware

pottery has been found within the hillfort suggesting that it was 'neither completed or permanently occupied'. Trott & Tomalin (2003) postulate that leading up to the Roman conquest, the Island may have been divided into two polities; the west (and the Chillerton site) under the Durotriges and the east (and the Yaverland site) under the Atrebates.

It is possible that the large ditch at Yaverland, revealed by the Time Team excavations in 2001, may have extended all the way around the hilltop but further archaeological research is needed to prove this conclusively.

Of the fourth potential location at Bonchurch, Wrench (2012) says the remains of these earthworks have been suggested to be an Iron Age promontory fort by Historic England that has suffered erosion by the sea and speculates that they may have once extended considerably out to sea. Wrench also says, *'Whether there were other such sites that have already been lost to the sea around the south coast of the Isle of Wight is not possible to say, but there may have been. They would have overlooked, and possibly controlled, coastal and cross-Channel sea-trade routes around the island'*.

The Yarbury/Bulwarks Common and Brockenbury sites are located on cliffs facing the English Channel, as is the enclosure on Tennyson Down. After earthwork analysis on the latter, Bowden, Jamieson and Winton (2015) say that,

'While the possibility that this is a Neolithic enclosure cannot be ruled out, it is more likely to be a later prehistoric feature, probably of late Bronze Age or Iron Age date'.

This enclosure is in the viewshed of the Brockenbury site and is worthy of inclusion in future research into viewsheds between known and purported hillfort (and defended enclosure sites) on the Island. Indeed, further research into the validity of such sites is long overdue. This paper has revealed a possible location for one, possibly two pre-medieval defended sites in the Niton area which will be researched further as part of the wider discussions of such sites on the Island.

Summary

The paper has sought to provide an initial point of reference for potential locations of pre-medieval defended sites within the parish of Niton, identifying nine possible place-names which have potential as indicators of such sites.

The sites of the place-names along the coastline of Niton Undercliff and on Niton Down have no suitable topographic advantages and no archaeological evidence pointing to the direct presence of a former defended site within them at these sea-level locations. These can now be dismissed as indicators of defended sites. Instead, two other place-name locations on the cliff top, Yarbury and Bulwarks Common, have suitable topographic viewsheds, features and a body of archaeological evidence suggesting they could have been possible defended sites in pre-medieval times.

It is possible then, that the line of defended site related place-names along the Niton Undercliff coastline are a reference to the Yarbury/Bulwarks

Common sites above them on the East Cliff plateau, their names perhaps suggesting a destination point for those arriving by sea, a recognition of the most dominating structure in the area. These place-names along the coastline could also be connected to the Brockenbury site on the West Cliff.

It is the East Cliff plateau with its archaeological, topographic advantages and place-name evidence that currently offers the strongest indication that a pre-medieval defended structure, in the form of a coastal promontory hillfort, stood on this site, rather than along the coastline beneath it.

Yarbury has at least three enclosures, identified in Crawford's 1924 AP but not fully investigated. Magnification of Crawford's AP suggests the central square enclosure may have north and south entrances and possible internal features across all the enclosures. This AP, along with later APs and LiDAR, show linear features that might be defended in nature running along Yarbury's slopes and the eastern flank of the East Cliff plateau. Its strategic position, Neolithic to Late Bronze Age flint fieldwalking finds, together with Iron Age and Roman coins on the slopes and the plateau, and the topographic evidence from the secondary source of the 19th Century model, also strengthen the case for a defended position at this site.

The slope of Bulwarks Common is shown to have at least one linear feature and a ramp, and Neolithic to Late Bronze Age flints and Roman coins on the plateau above it. The APs and LiDAR evidence show at least one linear feature running along its slope.

It is suggested that the East Cliff Plateau, containing Yarbury and Bulwarks Common, could be the location for a pre-medieval fortification site, with the nearby Brockenbury Down on the West Cliff remaining of interest to the wider subject.

It is proposed that the evidence researched so far shows that the East Cliff could be the location of a promontory hillfort, in use during the Iron Age, and perhaps later. It is further proposed that for the ease of reference as a hillfort in the landscape, future discussions about the East Cliff site should refer to it as 'Yarbury', that being, 'the fort by the Yar'.

Future recommendations

There are important archaeological questions to be answered by future archaeological fieldwork at the Yarbury and Brockenbury sites in Niton:

The date of the Yarbury enclosures remains uncertain. Further archaeological investigation should focus on defining the date, extent, forms, use, and phasing of these enclosures. The function of the Yarbury enclosures is suggested to be a defended one, however possible trading sea traffic associated with 'castle' place-name sites on the Niton Undercliff and the Iron Age communities along the coastline, should be investigated.

The East Cliff plateau, as far as is permissible and accessible, should be geophysically surveyed to ascertain the extent of any sub-surface remains.

Initial inspection of the surface finds suggests that the East Cliff plateau was occupied or used earlier, in the Mesolithic/Neolithic to Late Bronze Age periods. This should be investigated by further

detailed analysis of those finds.

The slopes of Yarbury and Bulwarks Common require archaeological fieldwork investigation to ascertain their date, function, survival of earthworks and any associated remains;

The potential for a 'lost' defended site on the West Cliff at Brockenbury should continue to be considered in future research to determine its possibility;

Historic England should be asked to undertake a programme of aerial photography and airborne laser scanning (LiDAR) over all of the sites on the East and West Cliffs of Niton over a period of time. The results should be assessed to identify the surviving features and landscape changes of the earthworks in response to the threat of agricultural and coastal erosion.

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SUNDIALS ON THE ISLE OF WIGHT

Peter Ransom

Abstract: This paper describes and depicts some of the sundials on the Isle of Wight which are readily accessible. A description of how to read a sundial is followed by illustrated accounts of the various dials that exist (or existed) on the Isle of Wight and covers some of the many types of sundials can be observed world-wide. The appendix lists open access sundials and there is a recommendation to observe sundials when out and about.

Keywords: Analemmatic sundial, armillary sphere, double horizontal sundial, equation of time, gnomon, heliochronometer, meridian line, noon canon, scratch dial, sundial

My interest in sundials began in Northumberland in 1991 when I co-authored *Mathematical Tradition in the North of England* for The Mathematical Association's Annual Conference. At the time, I taught mathematics to students at Prudhoe County High School, an 13-18 state school in Northumberland. When investigating a local mathematician, William Emerson (1701-1782), I noticed some sundials in his home town of Hurworth in County Durham. They had reputedly been made by him, or his protégé, John Hunter. I was always on the lookout for activities that brought mathematics to life. On reading his book, *Dialling, or the art of drawing dials on all sort of surfaces whatsoever*, I realised that I could bring some practical mathematics into my teaching by calculating where the shadow would fall at different latitudes and seasons of the year.

A sundial consists of a flat plate (the dial) and a gnomon, which casts a shadow on to the dial. As the Sun moves through the sky, the shadow aligns with different hour-lines marked on the dial.

I joined the British Sundial Society and started doing 2½ hour mathematics masterclasses for 13-year-old students on Saturday mornings. A couple of years later, I moved from the North-East to Rownhams when I took up a new job, and the masterclasses continued. From the year 2000, I did these dressed as John Blagrave of Reading (1560s-1611), as I enjoy putting the mathematics into an historical context. Blagrave wrote *The Art of Dyalling in two parts* in 1609, and I like to think students enjoyed the challenge of reading some of the original text and following the geometrical constructions using ruler and compasses.

Reading a sundial

*'I am a sundial and I make a botch,
of what is done much better by a watch.'*

Thus wrote Hilaire Belloc, in *On a Sundial* (1938). This is 'a botch' because rarely does a sundial show the same time as a watch. There are three reasons for this:

- the tilt in the Earth's axis of 23.5° and elliptical orbit around the sun;

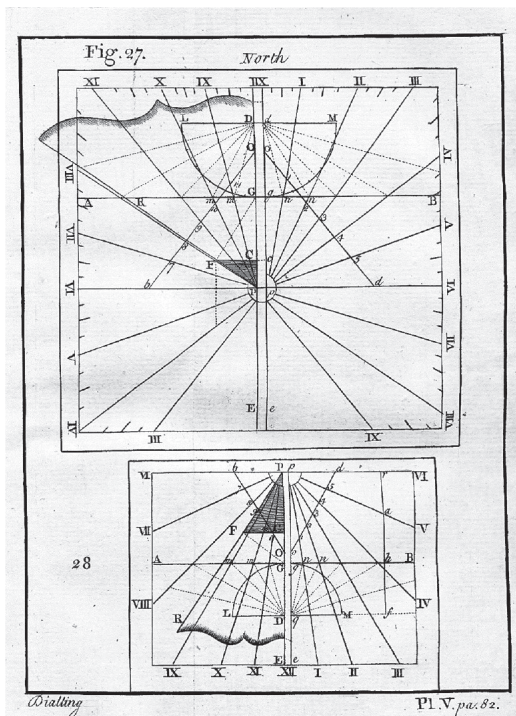
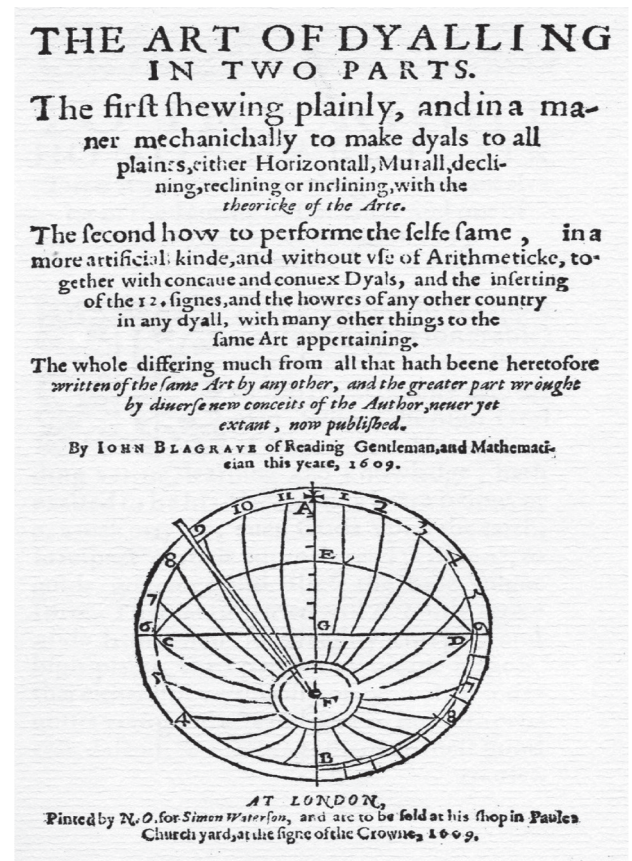


Fig.1 Above: Plate 5 of Emerson's book features the constructions used to make a horizontal dial (27) and a vertical south facing dial (28)

Fig 2 Right: Frontispiece of Blagrave's *The Art of Dyalling in two parts*



- the longitude of the position of the sundial;
- and finally, British Summer Time.

Therefore, three corrections are needed to the time indicated by the shadow on the sundial.

The first is known as the Equation of Time (Here the meaning of the word equation is 'to reconcile a difference'). It is best illustrated by the following graph.

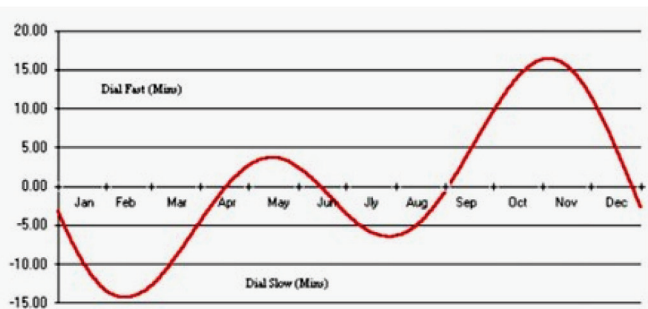


Fig 3: Equation of Time graph

Around the middle of February, the sundial can be about 14 minutes slow, so 14 minutes need to be added to the local solar time. In early November it can be nearly 17 minutes fast, in which case 17 minutes need to be subtracted from the local solar time.

A second correction is required due the Earth's rotation about its axis. Since it revolves through 360° in 24 hours, the Sun appears to us to move through 1° every 4 minutes. Greenwich Mean Time (GMT) is based on when the Sun passes the Greenwich Meridian. Taking an Island example, the longitude of Freshwater is 1.5° West, so the Sun appears to take 6 minutes to travel from Greenwich to Freshwater. This means that 6 minutes needs to be added to a sundial's shadow in Freshwater, in addition to the Equation of Time correction to obtain the time shown on your watch. During the 19th century, as railways spread throughout Britain, a common time system was needed so that people didn't miss their trains, so the UK adopted GMT as its standard time.

The final correction needed arose when British Summer Time (BST) was introduced. If we use a sundial during the period when BST is in use, then we need to add an hour to the time shown on a sundial.

Isle of Wight sundials

The earliest sundial on the Isle of Wight is not a working one, but a mosaic of one (Fig. 4). In the mosaic, the sundial is on top of the pillar and is a representation of the type of Greek sundial shown in Fig. 5. The other two objects are not sundials despite sometimes being featured as such.



Fig 4 The astronomer at Brading Roman Villa



Fig. 5: the Roman sundial at Piraeus, Greece

Interestingly, there is another sundial at the Brading Roman Villa. This is an analematic sundial, sometimes referred to as a human sundial; when a person stands at the appropriate point on a central



Fig 6: The mosaic analematic sundial at Brading Roman Villa.

In the picture you can see that there are two ecliptic rings of mosaic hour markers, the inner ones being used during BST, the outer ones using GMT.

scale and the shadow indicates the local solar time. I am unaware when this excellent sundial was constructed, but I was led to believe the hour tiles were made by local schoolchildren.

Fig. 7 shows a sundial photographed in 1994 in St James's Square Newport. It is an example of an armillary sphere sundial, which is basically a hollow model of the Earth. The gnomon, which is an essential part of a sundial, represents the Earth's axis and its shadow on the broad band that represents the equator indicates the time. Unfortunately, it is no longer there. Today all that remains is the plinth on which it stood (Fig. 8).



Fig.7: The Newport armillary sundial in 1994



Fig.8: The remains of the Newport armillary sundial in 2024

Scratch (or mass) dials are often found on churches. The purpose of these was probably not to tell the accurate time, but to indicate to the local incumbent the time to toll the bell for mass. They are often found near the vestry or porch door, scratched onto quoins. Some are reused consecration crosses, as they would have been nice circles to offer a starting point in which to scratch lines. There is often a central hole or dimple where a rod of wood (or possibly metal) would have been inserted to act as a horizontal gnomon. These no longer exist, as wood rots, and metal would have been too valuable to leave *in situ*. Scratch dials exist on a number of churches on the Isle of Wight and examples are shown in Figs.9 -11. A full list is given in Appendix 1.

Scratch dials



Fig. 9: Holy Cross, Binstead



Fig.10: St John's, Yaverland



Fig.11: St Michael's, Shalfleet

Scientific dials date from the 15th century, as during the Renaissance science made rapid advances and people required more accurate time keeping. Large mechanical clocks and astronomical clocks in churches and cathedrals needed to be set to time if they stopped, as did long case clocks and watches. To do this, peripatetic clock repairers would carry a suitable sundial, or wealthy landowners would have a horizontal sundial in their gardens. These are the types most people recognise as sundials today. They vary in size, from the one at the church in Godshill, to the one at Blackgang Chine.



Fig.12: Horizontal dial at Godshill



Fig.14: The Newchurch sundial today, after restoration by John Davis



Fig.13: Horizontal dial at Blackgang Chine in 1994

One of the most scientific sundials is in the church at Newchurch. This is a type known as a double horizontal sundial because the shadow of the vertical part of the gnomon gives various other astronomical information. A double horizontal sundial is a horizontal sundial with two scales for reading the hours. The first is a standard scale which is used with the inclined edge of the gnomon. The second is formed by the vertical edge of the gnomon (set at the centre of the dial plate) and the lines of projection of the celestial sphere onto the plane of the horizon (the horizontal projection). This projection shows the lines of solar declination, the ecliptic and the right ascension of the Sun. Due to the intricacy of the engraving, this type of sundial is very rare.

Sundials can be horizontal or vertical, but to be accurate their gnomon must be parallel to the Earth's axis and hence point true north close to Polaris, the Pole Star. Vertical sundials are generally

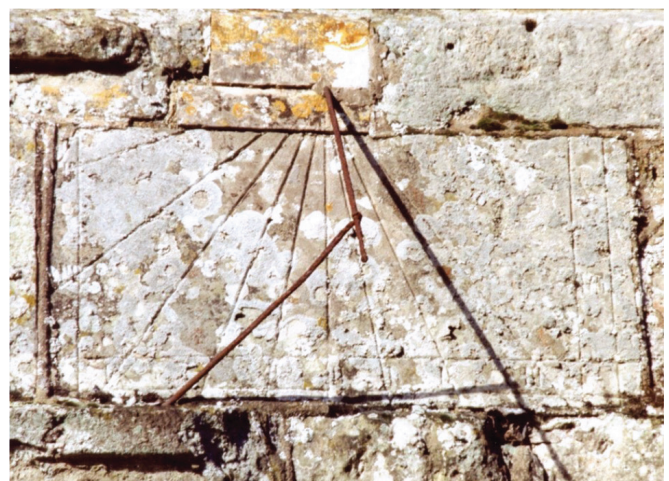
erected on a flat wall and those walls are often declined to the east or west of south, so the hour lines need to be calculated and delineated to take this into account.

Vertical sundials

Fig.15 Left: St Mary's Church, Brighstone



Fig.16 Below: St George's Church, Arreton



On the Promenade at Ventnor is an interesting type of sundial known as a noon dial or meridian line. This is the Brisbane Meridian Obelisk, named after Sir Thomas Brisbane, and is shown in Fig. 17. Unfortunately, it is not complete. The obelisk is there, with part of the meridian line, but the rest of the line and the stone plaque is missing. The plaque

is now in the local history museum at Spring Hill, Ventnor. The history of Sir Thomas Brisbane and the gnomon obelisk are well described on the information board next to the obelisk (Fig. 18).



Fig. 17:The Brisbane Meridian Obelisk The grey flagstones are part of the original noon line.

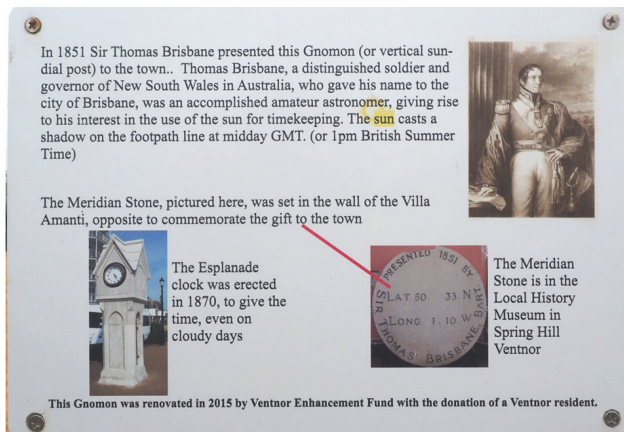


Fig.18: Interpretation board for the Brisbane Meridian obelisk Photo: Keith Marston

In Ryde Cemetery, there is an unusual type of sundial, a heliochronometer, on the grave of John (Jack) William Towers-Clark (Lieutenant). (Fig. 19) These very precise instruments were made by Pilkington & Gibbs and include a mechanism that takes into account the Equation of Time, so that correction does not need to be made. In the early 20th century, every French railway station had one of these heliochronometers so that their clocks could be accurately checked.

Sundials are not always silent timepieces. On a visit to the Isle of Wight in 1997, I saw a noon cannon sundial in a window in Cowes High Street. (Fig.20) The idea behind it is that the Sun's rays are focussed on the touchhole of the cannon at noon, so that it fires at that instant, alerting those in the vicinity to the fact it is local solar noon. This one was



Fig. 19: Ryde heliochronometer on the grave of John (Jack) William Towers-Clark (Lieutenant), who was killed on 1st July 1916.



Fig. 20: A noon cannon sundial, made or sold by "Ling, Chevalier". Optician place du Pont Neuf, Paris Photo: Max Aitken Museum, Cowes

made in Paris, probably in the 19th century.

It is said that the UK contains the greatest density of sundials per square mile of any country. With all the sunshine the Isle of Wight receives, it is well worth looking out for them when out walking. The appendix lists many sundials on the Isle of Wight that have open access: I have not listed any that have restricted access for reasons of privacy. Some of those listed were seen in 1994, so may no longer be in existence.

The British Sundial Society <https://sundialsoc.org.uk> has been promoting the art and science of gnomonics since 1989 and is a society that anyone interested in sundials could benefit from joining.

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Appendix 1

Scratch dials (or remnants of them) can be found on the following churches:

Arreton, St George's Church, in south porch, on stone seat near west side of door.

Binstead, Holy Cross Church, on south-east corner of chancel.

Calbourne, All Saints' Church, two on east jamb of priest's door; two on west jamb of priest's door.

Shalfleet, St Michael's Church, on door jamb of south porch door.

St Boniface Old Church, Bonchurch.

Wootton Bridge, St Edmund's Church, on south-east buttress, facing south.

Yaverland, St John's Church, on west jamb of south doorway in the porch.

Other dials

Arreton, St George's Church. A vertical dial above the porch.

Blackgang Chine, Amusement Park. Large horizontal walk-on dial.

Brading, St Mary's Church. Horizontal dial on the post of a 1714 cross.

Brightstone, St Mary's Church. Vertical dial above porch.

Godshell, St Lawrence and All Saints Church. Horizontal dial.

Newchurch, All Saints' Church. Double horizontal dial inside church.

Niton, St John the Baptist Church. Horizontal dial Ryde, Cemetery. Heliochronometer on grave of John (Jack) William Towers-Clark.

Ventnor, Promenade. Brisbane Meridian Obelisk Wootton, St Edmund's Church. Horizontal dial, probably a modern replica.

FREDERIC ARTHUR STRATTON - A VICTORIAN BOTANIST

John Matthews

Abstract: *Frederic Stratton was a solicitor and notable Island botanist. He held a number of important roles in civic society and ecclesiastical circles and made a major contribution to Frank Morey's Guide to the Natural History of the Isle of Wight.*

Keywords: Frederic Stratton, biography, Wild Flowers of the Isle of Wight

In September 1900 a slim booklet entitled "Wild Flowers of the Isle of Wight" priced 1 shilling, appeared. It was published jointly by the Isle of Wight County Press and Charles William Deacon & Co. a small-scale London publisher which flourished between 1890 and 1910. The author was Frederic Stratton F.L.S. In the Preface he stated: "So many requests come to me every year for information as to the Botany of the Isle of Wight that I thought it might be useful to those visitors to our Island, who are interested in wild flowers to have some fuller account than I could possibly spare time to give them by way of correspondence." Apart from a pen and ink drawing of a wild flower on the last printed page, the sole addition to the text is a contemporary map of the Island with place names, roads and railways drawn by John Bartholomew of Edinburgh. Such itineraries are frequently included in modern floras. The Flora of the Isle of Wight (1975) had a botanical calendar of seasonal highlights and the Island Habitats chapter of the Isle of Wight Flora (2003) details sites of particular interest.

Frederic Arthur Stratton was born on the 16th November 1840, the son of William and Sarah Stratton (née Tucker). William Stratton was a prominent builder in Newport, who was a member of Newport Borough Corporation (Eldridge p.92). His most enduring monument is St John's Church Newport, built between 1835 and 1837, where he acted as stonemason (Matthews p.13).

Little is known of Frederic's early life except that he was educated in private schools in Newport (Who's Who pp84-85). A major influence was his much older brother, William Tucker Stratton (1825-1899) who imparted both a deep knowledge of the Isle of Wight and endurance walking. Whereas William had a passion for historic buildings, Frederic's passion was for wild flowers. Such was his knowledge of flora and its habitat that he was elected a Fellow of the Linnaean Society in 1869. Apart from an encyclopædic knowledge of Isle of Wight Botany, in later life he acquired considerable knowledge of the Alpine flora from annual holidays in Switzerland. His other passion was landscape painting, both in oils and water colours, and he was a member of the Isle of Wight Fine Art Society.

Stratton was an articled clerk to James Eldridge, a leading solicitor of Newport; his articles were completed in 1863. There was no room for him in James Eldridge's firm, as Eldridge had two sons of his own who became his partners. At the age of 23, in 1863, he set up his own practice at 31 Pyle Street Newport. He would have practised mainly in conveyancing and probate, in common with most country solicitors. He was fortunate in obtaining

work from two family sources: his brother Robert was now carrying on his father's building business and his other brother, William, had established an architect's practice which eventually became known as Stratton and Millgate. Both his brothers would have provided him with clients.

Very astutely, he supplemented his private client income with a number of paid public offices. He was Clerk to the Isle of Wight Board of Guardians of the Poor from 1864 to 1903. This body was responsible for the maintenance of the Forest House workhouse, the maintenance of the infirmary and the grant of poor relief. The workhouse building still exists, as part of the South Hospital at St Mary's. A subsidiary body was the Union Assessment Committee which dealt with valuations of properties for rating purposes; Stratton was the paid Clerk. He became Clerk to the Newport and Carisbrooke School Boards which administered elementary school buildings. It provided subsidies to Church schools, ran non-denominational schools and enforced school attendance. The latter function brought Stratton into Court, prosecuting parents who had failed to send their children to school.

He was also Clerk to the Isle of Wight Rural Sanitary District, a rudimentary statutory body dealing with public health issues in rural districts. This developed into the Isle of Wight Rural District Council, Stratton being the first Clerk to the Council between 1894 and 1896. He was also Superintendent Registrar of Births, Marriages and Deaths for the Island.

On his 25th birthday in 1865, Stratton married Ellen Eldridge (1845-1933), the daughter of his old Principal, at St Thomas Church, Newport. Through his wife, Stratton became connected to the Pittis family who dominated the business and administrative life of Newport between 1850 and 1950. (Matthews, Pittis lecture).

He now had family links with three other solicitors' firms. His wife's father and two brothers were the partners of James Eldridge & Sons. Another of his wife's cousins was Richard Roach Pittis, who practised as a sole practitioner. A more distant relative of his wife was William Tucker Way Buckell whose practice eventually became known as Buckell & Drew. Stratton may have already been directly related to him through his mother's family the Tuckers. In addition, his wife's uncle and cousin were partners of the powerful auctioneer's firm of Francis Pittis & Son (later Sir Francis Pittis & Son).

Two members of the extended family, James Eldridge and Richard Roach Pittis, were successively Town Clerks of Newport Borough Corporation, while in the 50 years between 1847 and 1897, the

family provided 19 Mayors. (Matthews, Pittis lecture) The firm of Stratton subsequently became Stratton & Sons when two of his sons, Henry Eldridge Stratton (1868-1949) and George Edward Stratton (1885-1937) joined the practice. Frederic Stratton remained in practice despite health problems until 1914, two years before his death. On the death of H.E. Stratton in 1949, the firm was acquired by the unrelated Eric Angelo McCullagh, and in 1951 it merged with James Eldridge & Sons.

Frederic and Sarah had a very happy marriage and they produced 11 children, four sons and seven daughters. Stratton and three of his sons have entries in *Who's Who in the Isle of Wight* (1913); the 4th son Hugh had died in childhood, aged 4, in 1876. Apart from the two sons who were solicitors, his second son was the Rev. Arthur Carruthers Stratton (1871-1941) who was originally an Assistant Secretary of the Church Missionary Society and then Vicar of St John's Church Newport between 1909 and 1913.

Several of his seven daughters were prominent Church Missionary Society missionaries. Maud (1866-1941) was a missionary to Zenana women in Muttra India between 1892 and 1922; Winifred (1874-1949) served in Freetown Sierra Leone 1899-1905; Theodora (1876-1958) was in India from the late 1890s to 1916 and Constance (1882-1946) served with her husband in Japan between 1908 and 1940 and then in Jamaica 1942-1946. (Matthews pp205-207 and pp210-215)

Stratton was a devout Anglican. He was a Lay Reader at St John's Church Newport and a member of the Winchester Diocesan and the Isle of Wight Rural Deconal Conferences. The extent of his devotion to his faith is depicted in the very eccentric book *"From My Diaries"* by his son H.E. Stratton published by the Isle of Wight County Press in 1946. Looking back to the 1880s (Diaries Preface iv-v), Henry wrote "The Victorian Sunday was one long day of services, teachings and worship commencing at 6 o'clock or perhaps 7 o'clock early service. To many it was a blessed relief when it was over".

The day proceeded with Sunday School class, morning service, afternoon Bible class or Sunday School class, and open-air service at Shide. Frederic and his brother in law, not named but almost certainly James Eldridge, 12 years older than him, would then walk ten miles to and from Cowes to conduct a mission service in a Mission Hall. They were the last to own penny-farthing bicycles in the Island, but did not feel able to use them as it was considered sinful. "(We) had discussed placarding them machines for which they were not on pleasure bent taking their pleasure on God's holy day, but only going on missionary work." But "...even the appearance of evil must be definitely avoided".

Stratton's book on Wild Flowers is a tiny publication, able to be fitted in a pocket. Nominally 20 pages, in reality it contains 17 pages of print, including the Preface on the first page. Although it does not say so, the book concentrates on rare or uncommon flowers. Although he does not set it out as such, the book is a description of a number of walks on the Island of varying lengths, itemising the flowers to be

seen. Current English names have been substituted in this article as Stratton mostly used Latin names, some of which have been superseded. He makes comment on the distribution and abundance for some species and also refers to possible causes of the decline of species where he has not recently seen them.

The first walk starts in East Street Newport, proceeds to Great Pan Farm and Arreton Down and returns via Lynn Common and Staplers; much of the first part of the walk is now covered by the Pan Estate.

He lists Rue-leaved Saxifrage on the walls of Ford Mill, Monk's-hood in a stream near Pan Mill, Gipsywort "*not common*" in Ford Mill pond, and Small-Flowered Buttercup along Pan Lane. Grass Vetchling is described as being "*on a damp corner near the farm-house*" and "*very scarce in the Island*", Ivy-Leaved Crowfoot and Whorl Grass are "*in a pool under some oaks*". Columbine and Sweet Woodruff are in woods on edge of chalk and Dwarf Mouse-Ear "*in ruts and broken ground*". Further on, Fly Orchid is at Combley; Greater Broomrape on Lynn Common "*amongst the Broom and Furze*", Pale Violet at Staplers "*where draining of the land has not banished it*" and Water Starwort and Lungwort in woods near Staplers. Stratton then breaks off to describe Danish Scurvy Grass, Slender Hare's-ear and Knotted Clover at King's Quay.

His second walk starts as a boat ride along the Medina, and then a walk from Cowes to Gurnard and back to Newport. Plants listed along the river are English Scurvy Grass, Celery Leaf Buttercup ("*very rare*") Slender Hare's-ear, Stiff Saltmarsh Grass, Golden Samphire, Townsend's Cord Grass, Small Cord Grass, and Marsh Mallow.

At Gurnard, Sweet Nancy "*plentiful in one field on west side of the bay*", Elecampane "*looking very much at home at the head of the marsh*" and Pale Butterwort ("*much affected by drainage*") are listed. On the return journey he mentions Pale Toadflax on the road to Newport, and in Parkhurst Forest, Narrow-Leaved Lungwort.

The third walk is extremely long and starts from Westminster Mill Newport, then via Carisbrooke Churchyard and Castle and Calbourne to Freshwater Bay returning via Headon Warren, Colwell, Norton, Yarmouth, Thorley and Newtown).

Plants observed by Stratton include Rigid Hornwort at Westminster Mill, the only locality on the Island, Marsh Valerian "*scarce in a withy bed*" and Maidenhair Spleenwort in Carisbrooke Churchyard "*though in great danger of extirpation by thoughtless collectors*". Rustyback fern and Common Calamint were seen at the Castle. English Galingale was in a marshy meadow near Apes Down where "*may yet keep its ground, in spite of draining*", Cat-mint "*on the ridge of the downs*" and "*on the slope of the down at the south of Westover*" was Field Fleawort "*at its only station in Wight*". White Helleborine was to be found in a beechwood nearby and was noted as "*scarce*". At Freshwater Bay, Stratton recorded White Horehound, Common Centaury, Field Gentian ("*very rare*"), Hoary Stock (on chalk cliffs) Rock Samphire, Sea Radish, Clustered Bellflower and Dropwort ("*rare*").

He stated that Freshwater Gate was one of the best localities for wild flowers in the Island "...but it has been sadly ruined...by the advance of civilisation"; nevertheless he recorded Greater Bladderwort, Bog Asphodel, and Marsh Fern and noted that "Flowering Rush has maintained its place near the Rectory for at least the last fifty-four years". Greater Spearwort was also found in the same stream, and Stratton hoped that Blunt-flowered Rush and Marsh Valerian "may still remain."

On Headdon Hill he found Chaffweed, Heath Pearlwort and Sea Stork's-bill. On slipped land near Totland Bay, Marsh Helleborine was growing.

Stratton deals with extinct plants. On Colwell Heath, Field Gentian had been plentiful in 1823 but was last seen in 1879. Pale butterwort was last seen by him in 1869. Reed Sweet-grass had its sole Island locality at Colwell but not seen since 1886. He also noted Allseed and Chaffweed at this site.

At Norton, he found Sea Kale, Sand Cat's-tail and Sea Bindweed "on a small extent of blown sand". At Yarmouth, he lists Nettle-leaved Goosefoot and at Thorley, Oak-leaved Goosefoot and Rat's-tail Fescue.

At Newtown he highlighted the fragility of plant forms. The late A G More had discovered Foxtail Stonewort in 1862 in salt pans, but it was last seen in 1869 by Stratton. The salt pans were abandoned in 1870; it was re-discovered in 1881 by Mr Charles Bailey but not seen since. Newtown was the only British locality. Stratton comments:

"There is much hope that the plant still lingers and the spores may be lying in wait for a favourable opportunity of germinating. Search should always be made for it."

He did however find Slender Hare's-ear and Sea Heath.

The fourth walk was quite short and took in Brading and St Helens. Plants listed are Whorl-Grass (at Brading Railway station), Mare's-tail at its only habitat in the Island, Tuberous Foxtail, and Reticulated Medick (on dry walls of the old Brading Quay). Lesser Fleabane was at St Helens Green; Pennyroyal had previously been seen here but was now considered extinct. A boggy area on the north-west of the Green had Marsh St John's Wort Sundew, Bog Pimpernel, Marsh Willowherb, Marsh Bedstraw, Few Flowered Spike Rush, Slender Club Rush, and Pale Dog Violet.

St Helens Spit he thought was unequalled anywhere else in the British Isles; on one small extent of ground he found 250 species growing. The small plot around the Old Church included Few-flowered Buttercup, Small Mallow, Ray's Knotweed, Sea Pearlwort, Toothed Medick, Birds-foot Clover, Hare's-foot Clover, Rough Clover, Clustered Clover, Suffocated Clover, Parsley Water Dropwort, Autumn Squill, Sea Spurge (sown by Bromfield in 1848) Common Fescue, Bulbous Meadow-grass (a rare grass) Sea Wormwood, Grass Vetchling and Knotted Pearlwort.

Stratton remarked that Ryde was a poor area for Botany, although there had been many rare plants on the Duver, (now known as The Strand) such as Childing Pink, he considered it lost to the Island. He

stated the best places for rare flora in the area were Quarr, Fishbourne and Dame Anthony's Common.

Sandown, on the other hand, was good for plants, particularly rare trefoils. Stratton found Purple Broomrape, Yarrow, Wild Onion, Spring Vetch on Red Cliff; Portland Spurge and Rough Bedstraw were on the chalk cliffs. Walking towards and beyond Brading, he found Yellow Bartsia on rough pasture - the only place on the Island, Yellow Cress at Harding-shoot, (now Hardingshute) a single tree of Juniper at Nunwell, Climbing Fumitory, Marsh Violet, Marsh Willowherb, White Beak Sedge were growing on the marshes of the Eastern Yar. This area was also the only Island habitat of Small Water Pepper.

Starting a walk near Shanklin, he found Thick-leaved Stonecrop on the roof of a cottage at Merry Gardens, Wood Vetch in Luccombe Copse, Wall Lettuce at Cowpit Cliff, and Moonwort ("a very rare plant in Wight"), in a field north of Cook's Castle. Pendulous Sedge was notable in Shanklin Chine. Between Shanklin Down and Ventnor, he noted that Stag's-horn Clubmoss used to grow in its only Island habitat and he "hoped that this rare plant may be re-discovered". On the Landslip, he found Spider Orchid, Bee Orchid and Ivy Broomrape.

In the final walk from Ventnor to Niton and then inland to the Wilderness. he listed Broad Leaved Helleborine, Marsh Helleborine, Italian Arum ("a very rare plant and probably only British habitat"), Field Cow Wheat, Sweet Cyperus, and Hound's-tongue. On the moors between Niton and Chale, he found Royal Fern over 5 feet tall "much diminished in splendour by the ravages of collectors". In The Wilderness, he noted Bog Myrtle, Cranberry, Marsh Fern, Bog Pimpernel, Navelwort (at Bohemia) Birds Nest Orchid, Yellow Birds Nest ("very rare") and the three heaths found on the Island, Bell Heather, Cross Leaved Heath and Common Heather.

His booklet finishes

"From the foregoing brief notes it will be seen that from the earliest days of Spring when the botanist sallies forth to find Hellebore and Butcher's Broom in flower to the last days of the year, when the Spindle-tree is covered with

The fruit,

Which in our winter woodland looks like a flower',

there is ample opportunity for botanising on this favoured Isle....deserves a high place in the list of happy hunting grounds not only for Geologists, Entomologists and Ornithologists but also lovers of wild plants"

In the Preface to the book, Stratton appealed for any records of dates and places of plants not previously known to the Island, as he had an ambition to publish a complete Flora of the Island. He was particularly interested in Brambles and Roses; these critical groups, which are difficult to identify, would need to be included in a Flora.

In 1865, Stratton acquired a copy of William Bromfield's *Flora Vectensis* which he annotated copiously for the rest of his life. This book is now in the Natural History Museum in London (Allen, in Pope et al. 2003). This was a common recording

method of the time. He also built up a herbarium of pressed plant specimens, some of which are now accessible via herbariaunited.org. This was not just for his own interest but enabled a wider range of botanists to share and comment on his discoveries via the London Botanical Exchange Club.

Stratton's dream was realised in 1909 when the monumental "A Guide to the Natural History of the Isle of Wight" edited by Frank Morey appeared. Stratton's health had deteriorated from 1904 but his contribution was acknowledged by Morey who discussed the formation of the book "with my friend Mr Frederic Stratton", the only contributor mentioned in such a way. In his introduction to the contributors, Morey paid a glowing tribute to Stratton

"The list of Flowering Plants and Ferns is compiled by Mr. Stratton whose long experience as an Island botanist rendered him peculiarly fitted for this task" (Morey xvii).

The section on Flowering Plants, at 73 pages, was by far the longest section in the book. (Morey pp 126-199).

In introducing his section, Stratton stated

"Probably there is no place in the British Isles in which the study of Natural History could be more readily pursued than the Isle of Wight. Certainly there are few if any areas the size of the Island which contains so large a number of wild plants." (Morey p126)

The Island with its area of about 93,000 acres recorded 1032 species, not including sub-species, or mosses, liverworts, lichen, fungi and algae. In the whole of Britain, the number of plants calculated in a similar manner was 1958.

The reason for this wealth was the numerous geological strata.

"Though it would not probably be found that each separate stratum has a special flora of its own, we may certainly recognise the characteristic plants of the clays, the chalk and the sands" (Morey p127).

The Island flora was not generally different from that of Hampshire, although Hampshire had 148 plants not found in the Island and the Island had 21 plants not found in Hampshire.

Stratton set out a list of authorities similar to that in his own book, but modestly makes no mention of his book. Then follows a complete listing of Island plants. They are first split into families; then their Latin (Linnaean) name is given, followed by common English names, often more than one for each plant. The date and location of habitats is given, followed by a statement as to whether the plant is abundant or rare. Occasionally, species are recorded as once found, but now extinct.

Stratton's health continued to decline. He died at his home, Mount Pleasant House in Newport on the 4th December 1916 aged 76. The funeral was conducted at St John's Church Newport on the 8th December 1916 conducted by the Vicar Rev. W. H. Mackinnon (who had succeeded his son) the assisted by the Curate, Rev E. W. T. Greenshield, the famous Arctic missionary.

With his overwhelming passion for wild flowers

Frederic Stratton, more than anyone else, brought to public attention the riches of the Island's natural habitat.

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Fig. 1 Headstone of Frederic Stratton and his wife Ellen, in the flower-rich chalk grassland of Mount Joy Cemetery, Newport. Photo: Keith Marston

FLOWERING PLANTS AND FERNS, 2023

Colin R. Pope

2023 has been another relatively quiet year for botanical records. Two non-native species are reported for the first time. However, I am delighted to report that Hampshire botanist Nick Aston has been looking at our Glassworts (*Salicornia* spp.) in saltmarshes. These are a group of critical species which we usually record as aggregate species. Experts often disagree on the precise naming of some collections but, with the assistance of Martin Rand (Botanical Society of Britain and Ireland's (BSBI) referee for *Salicornia* and *Sarcocornia* for SE vice-counties of Britain) we now have some accurately named species. Additionally, Paul Stanley has been recording Dandelion microspecies, a very unrecorded group, and has found some interesting and surprising taxa.

Random surveys this year have shown an alarming lack of arable species in sites which in the recent past have held a rich flora. This would appear to be a country-wide problem, as across England, BSBI county recorders have reported declining arable plant floras. Reasons for this are related to current agricultural practices. In particular, the focus on 'no-till'; planting of cover crops; and the widespread use of glyphosate to kill everything off before direct drilling, which is increasingly used with maize crops for biofuel production. Other previously rich sites are currently under grassland.

The list below covers new records and other interesting records. The records have been divided into those of native species and archaeophytes (plants associated with man's activities that are known or suspected to have occurred in this country since at least Medieval times), and those of non-native species (neophytes), arranged alphabetically by their current Latin name. Nomenclature follows Stace (2022); some of the Latin name changes may be unfamiliar to botanists. I am grateful to everyone who submits their records; all of them are valuable and all records have been stored, whether reported here or not, and have been submitted to the BSBI.

Natives and Archaeophytes

Sneezewort

Achillea ptarmica

Always rare and localised, Sneezewort has proved to be difficult to find as a native species in all its recorded sites in recent years apart from Parkhurst Forest. It is occasionally recorded as a garden escape, usually in its double-flowered form. Therefore, it was encouraging to find a very fine show of flowering plants extending over 14m of south-facing rides, north of Tuckers Gate, SZ473898, CRP. This is a previously known site but the extent of flowering plants was exceptional (Fig.1).



Fig. 1: Sneezewort, *Achillea ptarmica*, Tuckers Gate, Parkhurst Forest.

Marsh-mallow

Althaea officinalis

A characteristic saltmarsh species but found growing as a recent colonist on the east bank of the River Medina between Island Harbour and the Folly Inn (SZ5192), AM, a previously unrecorded site. A Nationally Threatened species.

Babington's Orache

Atriplex glabriuscula

About 6 plants seen on a Botany Group meeting on shingle west of Norton Spit, SZ350897, (mo, conf. Eric Clement). This is one of our less frequent strandline Oraches.

Lesser Water-plantain

Baldellia ranunculoides

As described in the 2022 Flowering Plant report, there has been a catastrophic decline of this species on Brading Marshes and only one or two plants could be found in 2022. The situation was slightly better in 2023 when at least a dozen flowering plants were spotted growing along one southern ditch, SZ631876, LG (Fig. 2). A Nationally Threatened plant.



Fig. 2: Lesser Water-plantain, *Baldellia ranunculoides*, Brading Marshes. Photo: LG

Hybrid Bitter-cress *Cardamine x fringsii*
The hybrid between Wavy Bitter-cress and Cuckooflower was recorded from near Whitwell village hall, SZ522776, PS conf. Tim Rich. First Island record.

Pale Sedge *Carex pallescens*
A single plant found on a damp north/south ride in Fattingspark Copse, SZ5291, CRP. Formerly widespread here, but last recorded in 2004. Fattingspark Copse formerly had an extremely rich woodland ground flora but, due to lack of management, this has declined dramatically. Hopefully, this is being addressed by the current owner. Pale Sedge has declined or been lost from many of its ancient woodland sites due to a lack of management.

Cornflower *Centaurea cyanus*
Six plants found in a fallow arable field on Atherfield Farm, SZ473795, NA & CRP. Last recorded here in 2020. This was encouraging to see; however no plants were found in its former stronghold of Cridmore Farm. These are both genuine arable sites. Cornflower is not infrequent as a garden escape or in wild flower mixes.

Small Toadflax *Chaenorhinum minus*
Five tiny plants scattered on the floor of an old chalk quarry north of the Highdown Inn, Freshwater, SZ324855, NA. There have been few records of this species in recent years.

Meadow Thistle *Cirsium dissectum*
Believed to have been lost from its last stronghold, two conservation rides in Parkhurst Forest, due to inappropriate management by the Forestry Commission. It was a delight in 2023 to discover a small number of non-flowering plants surviving in both rides, SZ473903, CRP.

Hybrid Willowherb *Epilobium x novae-civitas*
The hybrid between American Willowherb and Great Willowherb. Found growing in Asda supermarket carpark, Newport (SZ500890) PS. The second Island record, both from the Newport area.

Broad-leaved Helleborine *Epipactis helleborine*
Still surviving in Bunkers Copse, Rookley, where at least 100 flowering plants were found, SZ587927, SO-M.

Broad-leaved Spurge *Euphorbia platyphyllos*
A single plant in arable field margin at Churchills Farm, Chessell, SZ401866, NA & CRP.

Broad-leaved Cudweed *Filago pyramidata*
A single small plant found on the floor of an old chalk quarry north of the Highdown Inn, Freshwater, its only known extant site, SZ324855, NA. Numbers of this annual plant fluctuate considerably from year to year. Classified as Nationally Endangered .

Corn Marigold *Glebionis segetum*
An incredible display in a wheat crop south of Beckfield Cross, Kingston, where it was the dominant species, SZ478817, CRP. Classified as Nationally Vulnerable (Fig.3).

Smooth Cat's-ear *Hypochaeris glabra*
St Helen's Duver has long been known as a stronghold for this Nationally Vulnerable species. This is a difficult species to spot, as its small yellow flowers only open on sunny mornings. However, I



Fig. 3: Incredible display of corn marigold, *Glebionis segetum*, Beckford Cross.



Fig. 4: Fruiting clocks of Smooth Cat's-ear, *Hypochaeris glabra*, St Helens Duver.

was struck but how noticeable it was when in fruit (Fig. 4). During a period of dry, sunny weather, the spherical seedheads or clocks were very obvious, enabling a much more accurate estimate of the extent of the population, SZ637890, CRP. Frequent on an acid grassland slope at Heath Hill, Shorwell, SZ460822, CRP.

Field Cow-wheat *Melampyrum arvense*
An estimate of 3,190 flowering plants at St Lawrence Bank, SZ536768, TS. The population is currently considered to be declining due to competing vegetation. A Nationally Endangered plant.

Adder's-tongue Fern *Ophioglossum vulgatum*
A dense concentration of fertile plants in a garden meadow at the rear of a property in Kemming Road,



Fig. 5: Striking ripe fertile fronds of Adders tongue, *Ophioglossum vulgatum*, Whitwell.

Whitwell, a previously unrecorded area, SZ517778, CRP. They were seen in late June, unusually late for finding this fern, the fertile fronds looking a bit like little snakes! A large colony on a rear garden lawn in Spencer Road, Ryde, SZ587927, SO-M. Abundant in meadow at Little Thorness Farm, SZ457934, PS & ML.

Early Spider Orchid *Ophrys sphegodes*

Following last year's record flowering, only two flowering plants were found this year, both on Tennyson Down, SZ341855, RP.

Borrer's Saltmarsh-grass *Puccinellia fasciculata*

Several plants growing on Newtown seawall close to the black hut, SZ419911, NA & CRP. The first record for Newtown estuary since 1856! Classified as Nationally Threatened.

Sweet Briar *Rosa rubiginosa*

A very fine plant growing in roadside verge at Gate Lane, Freshwater, SZ341861, NA & CRP. A relatively uncommon plant on the Island (Fig. 6).



Fig. 6. Sweet Briar, *Rosa rubiginosa*, Gate Lane, Freshwater.

Burnet Rose *Rosa spinosissima*

Hedgerow north-east of Staplers, SZ525897, PS. Burnet Rose was a common plant on Staplers Heath in Victorian times but the heath has long since disappeared.

One-flowered Glasswort

Salicornia disarticulata (pusilla)

Confirmed from the saltmarsh below Town Copse, Newtown SZ428909, NA (Fig. 7).

Long-spiked Glasswort *Salicornia doliostachya*

Confirmed from saltmarshes at Newtown estuary; the Old Mill Pond, St Helens; and Western Yar estuary NA.

Common Glasswort *Salicornia europaea*

Confirmed from saltmarshes at Newtown estuary; the Old Mill Pond, St Helens; and Western Yar estuary NA.

Yellow Glasswort *Salicornia fragilis*

Confirmed from saltmarshes at Newtown estuary and the Old Mill Pond, St Helens NA (Fig.8).

Purple Glasswort *Salicornia ramosissima*

Confirmed from the saltmarshes at Newtown estuary NA (Fig. 9).

Prickly Saltwort *Salsola kali*

A few plants seen during a Botany Group meeting on the strandline on Norton Spit, SZ350897, mo. Last recorded from here in 1993.



Fig. 7: One-flowered Glasswort, *Salicornia disarticulata*, saltmarsh at Newtown.



Fig. 8: Yellow Glasswort, *Salicornia fragilis*, St Helens saltmarsh.



Fig. 9: Purple Glasswort, *Salicornia ramosissima*, Newtown saltmarsh.

Small-flowered Catchfly *Silene gallica*

A remarkable display of many thousands of plants seen in a fallow arable field on Atherfield Farm, SZ473795, NA & CRP. First recorded from this site in 2020. Recorded as Nationally Endangered (Fig.10).



Fig.10: Left: Abundant Small flowered catchfly, *Silene gallica*, fruiting at Atherfield. Right: Close-up of flower.

Dandelions *Taraxacum* spp.
Paul Stanley has been busy recording some of the over 100 micro-species of Dandelion. The identity of all of them have been confirmed by the *Taraxacum* expert, John Richards. The following have been confirmed: *T. acutifrons**, *T. arenastrum*, *T. britannicum**, *T. chlorofrugale** *T. chloroticum**, *T. ekmanii**, *T. fulvum*, *T. lacistophyllum*, *T. nordstedtii*, *T. oxoniensis*, *T. pietii-oosterveldii**, *T. pseudoproximum**, *T. stenoglossum** and *T. tortilobum**. Asterisked species are first Island records. *T. britannicum*, *T. chlorofrugale*, *T. pietii-oosterveldii* and *T. pseudoproximum* are considered to be rare U.K. species.

Hare's-foot Clover *Trifolium arvense*
Present in huge quantity on an acid grassland slope by a footpath at Heath Hill, Shorwell, SZ460822, CRP. Possibly the largest Island population (Fig.11).



Fig. 11: Abundant Hare's-foot clover, *Trifolium arvense*, Sandy Lane, Shorwell.

Green Field-speedwell *Veronica agrestis*
Recorded from an arable field margin at Churchills Farm, Chessell, SZ401866, NA & CRP.

Aliens (Neophytes)

Pirri-pirri-bur *Acaena novae-zelandiae*
Well established in the plant propagation area at Ventnor Botanic Garden, SZ549770, CRP.

Bear's-breech *Acanthus mollis*
Established. Lake cliffs SZ593834; secondary woodland adjoining St Helens west green, SZ624892, BG.

Monk's-hood *Aconitum napellus*
Two long-established clumps in secondary wood near Sibbecks Farm, Whitwell, SZ507791, but away from habitation. CRP (Fig.12).

Wild Leek *Allium ampeloprasum* var. *babingtonii*
Casual. 4 plants on Bathingbourne Lane, SZ5483 and 2 plants east of Perreton Farm, SZ536857, PS.

Orange Foxtail *Alopecurus aequalis*
Casual. This is a scarce native plant but the location of a number of plants in a seepage at the base of greenhouses at Medina Garden Centre, Wootton, SZ527906, PS, suggests that these may have been accidentally introduced with plant material.

Green Amaranth *Amaranthus hybridus*
Casual. Arable field near Grange Chine, SZ423820, NA.

Lesser Quaking-grass *Briza minor*
Casual. Dormouse Drive, Staplers, Newport, SZ508885, PS.

Swedish Cotoneaster *Cotoneaster x suecicus*
Casual. The hybrid between Tibetan and Bearberry Cotoneasters. Found during a Botany Group meeting along the upper shore between Fort Victoria and Norton Spit, SZ345898, conf. Eric Clement.

Rough Horsetail *Equisetum hyemale* ssp. *affine*
Casual. At rear of houses at Totland, pushing up through concrete drive, SZ325865, PS. A native species not previously recorded from the Island but it is a popular marginal plant for planting in garden ponds.

Wall Bedstraw *Galium parisiense*
Established. Ashley Way, Brighstone, SZ423828, PS; Busy Bee garden centre, Ryde, SZ6090, PS; Sylvan Drive, Carisbrooke, SZ488891, SB.

Giant-Rhubarb *Gunnera* spp.
Established. In 2015, two samples of naturalised *Gunnera* were collected for a research project investigating the precise identity of large-leaved *Gunnera* growing in the UK and sent to Dr Dawn Edwards, Senior Botanist at RHS Garden, Wisley. We have now received a report of the findings.

It turned out to be an interesting, but complex project, and it was found that what has previously been identified in the UK as *Gunnera manicata* is either *G. tinctoria* or a hybrid between *G. manicata* and *G. tinctoria*, which probably arose not long after the introduction of the two species into cultivation in Europe. The research also produced the unexpected result that genuine Brazilian *G. manicata* appears to have been lost from cultivation not long after its introduction, with the hardier hybrid being mistakenly thought to be *G. manicata* ever since. These results are based on data using verified wild origin material of the two species involved. In a paper published in 2022, the hybrid *G. x cryptica* was described and a paper published in 2023 set out further evidence of its hybrid origin. Other researchers have also found this replacement of *Gunnera manicata* by the hybrid in mainland Europe.



Fig. 12: Monk's-hood, *Aconitum napellus*, Sibbecks.

DNA investigations have shown that the samples collected were:

Sample 1 - Rocken End ledge, St Catherine's Point - *Gunnera tinctoria* (Fig.13).

Sample 2 -Flowers Brook cliff, west of Ventnor - the hybrid *G. × cryptica* (Fig.14).



Fig.13: *Gunnera tinctoria*, Rocken End ledge.



Fig.14: *Gunnera x cryptica*, Flowers Brook.

Gunnera tinctoria is listed in Schedule 9 of the amended UK Wildlife & Countryside Act, 1981 (England and Wales). However, since the project started, it has been listed as a species of Union concern under the EU Invasive Alien Species Regulation (2014). This legislation has been retained in UK law, and species listed as of Special Concern are banned from sale among a range of other restrictions. Arising from the work to clarify the taxonomy of *Gunnera manicata*, we have recently been advised by Defra that, because it contains genetic material of *G. tinctoria*, the hybrid *G. × cryptica* also comes within the scope of this legislation which will have implications for the horticultural industry and plant collections in the UK.

English Iris *Iris latifolia*
Casual. Clump of three flowering plants at entrance to Knighton sandpit, SZ572864, GT. Not previously recorded outside gardens on the Island (Fig. 15).

Round-fruited Rush *Juncus compressus*
Casual. This is a nationally threatened native plant not previously recorded from the Island but the location in a seepage at the base of greenhouses at Medina Garden Centre, Wootton, SZ527906, PS,



Fig.15: English Iris *Iris latifolia* at the entrance to Knighton sandpit
Photo: GT



Fig. 16: Round-fruited rush *Juncus compressus* at Medina Garden Centre
Photo: PS

together with other unexpected species suggests that these may have been accidentally introduced with plant material (Fig.16).

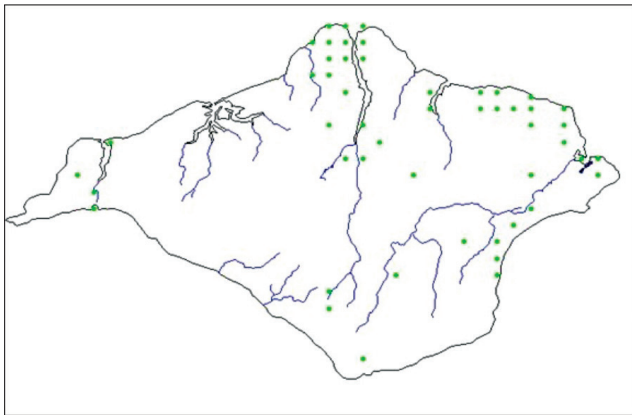
Jersey Cudweed

Laphangium (Gnaphalium) luteoalbum
Established. Jersey Cudweed is a recent arrival to the Island (first recorded in 2018) but it has spread and is on its way to becoming an widespread alien species. Paul Stanley has recorded Jersey Cudweed from 35 x 1km squares in 2023, far in excess of previous records (Fig. 17).



Fig.17: Above: Jersey Cudweed, *Laphangium luteoalbum* at Ryde .

Below: Distribution map of Jersey Cudweed, 2023.



Blue Pimpernel *Lysimachia (Anagallis) foemina*
Casual. One plant in Forest View Garden Centre SZ481898, PS conf. Eric Clement.

Small Tree-mallow *Malva multiflora*
Casual. One plant at edge of compost area, Lynn Bottom, SZ531882, PS & ML.

Bermuda-buttercup *Oxalis pes-caprae*
Casual. One plant growing in waste ground in a garden in Easton Lane, Freshwater. Not planted so must be a relic of previous cultivation, SZ343864, TSl.

Oak-leaved Goosefoot *Oxybasis (Chenopodium) glaucum*
Casual. This is a nationally vulnerable native plant but the location of a number of plants in a seepage at the base of greenhouses at Medina Garden Centre, Wootton, SZ527906, PS, together with other unexpected species, suggests that these may have been accidentally introduced with plant material.

Southern Beard-grass *Polypogon maritimus*
Casual. About 200 plants in Heytesbury Road, Hunnyhill, Newport, SZ496896, PS.

Corn Buttercup *Ranunculus arvensis*
Casual. (EN) Two plants growing on disturbed soil in a garden in Brighstone, SZ426825. Origin unknown, PS.

Spanish Stonecrop *Sedum hispanicum*
Established? Three patches on kerb edge in car park at Seven Acres, Parkhurst, SZ496905, PS.

Red Nightshade *Solanum villosum*
Casual. One plant by outfall building at Egypt Point. Cowes, SZ489966, PS.

Twiggy Mullein *Verbascum virgatum*
Casual. Four plants on south facing bank of Ryde Canoe Lake, SZ602926, NA.

Vervain (cultivar) *Verbena officinalis* var. *grandiflora*
Casual. Four plants in gutter in Victoria Road, Yarmouth. SZ356895, PS.

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Recorders

| | |
|------|----------------------|
| AM | Anne Marston |
| BG | Botany Group |
| CRP | Colin Pope |
| GT | Geoff Toone |
| LG | Luke Gaskin (RSPB) |
| ML | Mark Larter |
| mo | many observers |
| NA | Nick Aston |
| PS | Paul Stanley |
| RP | Roger Powley |
| SB | Sue Blackwell |
| SO-M | Stephen Oakes-Monger |
| TSl | Tim Slade |
| TS | Tony Stoneley |

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NEW AND INTERESTING FUNGI IN 2023

Colin Pope & Jackie Hart

2023 proved to be a rather quiet year for fungi after the many exciting finds of 2022. Nevertheless, seven taxa were recorded for the first time on the Island, indicated by * in the accounts below. A number of species recorded have few previous records. George Greiff continued to discover several previously unrecorded micro-fungi on bryophytes; these are not included here, but will be reported in due course.

AGARICS and other Basidiomycetes (Class: Agaricomycetes)

Amanita ceciliae Snakeskin Grisette
An *Amanita* with distinctive grey scaly, snakeskin-like skin markings on the stipe (Fig. 1). Osborne Estate 7th October mo, det. EJ. Three previous Island records. First for Osborne.



Fig. 1: Snakeskin Grisette (*Amanita ceciliae*), Osborne.

**Boletus luridiformis* var. *immutatus*

Scarletina Bolete

This is a newly described colour form. Osborne Estate 7th October mo, det. EJ.

**Botryobasidium leave*

A resupinate which is not uncommon nationally but not previously recorded from the Island. Osborne Estate 7th October, EJ.

Crepidotus calolepis

An Oysterling

A *Crepidotus* with a rusty brown fibrillose scaly cap, generally on Poplars. Fattingspark Copse 8th October mo, det. EJ. First Island record since 2014.

Gyroporus castaneus

Chestnut Bolete

A warm brown bolete, with yellow spore print, associated with oaks (Fig. 2). This is a generally uncommon bolete with four previous Island records but this year was seen at several sites: woodland at East Cowes Esplanade (EJ); Osborne Estate beneath Holm Oak (mo); and Lynch Copse, Newchurch (mo).

Hygrophorus persoonia

A viscid brown woodwax with a distinctive annular zone on the stipe (Fig. 3). Beneath Holm Oak growing along the old railway track by Bembridge ponds, 21st November CP conf. HFRG. This is the second Island record. It was recorded by Derek Reid from Firestone Copse in 1982 as *H. dichrous*.



Fig. 2: Chestnut Bolete (*Gyroporus castaneus*), Osborne.



Fig. 3: *Hygrophorus persoonia*, Bembridge Ponds..

Lactarius circellatus

A milkcap strongly associated with Hornbeam. Haseley Manor, Arreton 28th September. There has been one previous record in 2001.

Mycena capillaripes

Pinkedge Bonnet

A small pinkish bonnet with reddish gill edges with a strong alkaline smell, in Parkhurst Forest, in needle litter beneath conifers 22nd October CP. There have been a small handful of previous records (Fig. 4)



Fig. 4: Pinkedge Bonnet (*Mycena capillaripes*), Parkhurst Forest.

**Polyporus ciliatus*

A stalked polypore with a mottled, snake-like surface pattern on the stem. On Alder, Haseley Manor, Arreton 28th September mo. Nationally, not a rare species and presumably previously overlooked.

Psathyrella ammophila

A sand dune brittlestem growing on Marram Grass (Fig. 5). Bembridge Point, 21st November, CP. Previously recorded from St Helen’s Duver.



Fig.5: *Psathyrella ammophila*, Bembridge Point.

**Schizopora radula*

A resupinate porecrust not previously recorded from the Island, but presumably overlooked. Osborne Estate 7th October mo, det. EJ.

ASCOMYCETES

Hypocrea auroviridis

Tiny greenish gelatinous blobs on rotten wood. Osborne Estate, 7th October, CP. There has been one previous record, also from Osborne in 2015.

**Peziza arvenensis*

A brown Peziza with particularly large fruit bodies (Fig. 6). Found growing on piles of woodchip at Ventnor Botanic Garden. CK, det. CP.



Fig.6



Fig.8

Fig.6 Top left

Peziza arvenensis, on wood chip, Ventnor Botanic Garden. Photo: CK.

Fig.7: Bottom left

Tarzetta cupularis, Haseley Manor.

Fig. 8: Top right

Verpa conica, Thimble Morel, Dodnor.

Fig.9: Bottom right

Acanthonitschkea tristis on mossy bark, Borthwood Copse.



Fig.7

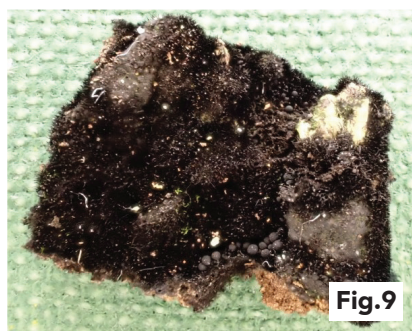


Fig.9

Sarcoscypha austriaca

Scarlet Elf Cup

The winter fruiting Scarlet Elf Cup is found frequently in damp woodlands. Appley Park 22nd March, RH, det. CP. A previously unrecorded site.

Tarzetta cupularis

Toothed Cup

A small, short-stalked cup fungus found growing on damp ground beneath willows. Haseley Manor 28th August, CP. Two previous records; this is the first since 1999. (Fig. 7).

Verpa conica

Thimble Morel

Several specimens at Dodnor, verge of cycleway (Fig. 8). DB, det. CP. This has been a good year for fruiting of this spring morel across southern Britain. There has been one previous Island record, from Whitefield Woods in 2014.

MICROFUNGI

**Acanthonitschkea tristis*

Borthwood Copse 26th November, CP. Not rare but presumably overlooked previously. (Fig. 9).

**Hypoderma rubi*

Growing on dead bramble stems at Newchurch Field of Hope 12th November CP. Not rare nationally, but presumably overlooked previously on the Island .

Recorders

CP Colin Pope; DB David Biggs; RH Roger Herbert; EJ Eric Janke; CK Chris Kidd; HFRG Hampshire Fungus Recording Group; mo many observers (seen at a Society foray meeting).

Abbreviation: det. Determined by

Photographs by the author, unless stated otherwise.

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ODONATA, ISLE OF WIGHT, 2022 AND 2023

Jim R. Baldwin

2022: The 2022 Odonata recording season saw 24 species recorded with the third and fourth records of Southern Migrant Hawker (*Aeshna affinis*) for the Isle of Wight. No records were received of Southern Emerald Damselfly (*Lestes barbarus*) for the first time since it was discovered at Bouldnor in 2017. This is discussed in further detail in the species section.

The summer drought saw a lot of the major ponds on the Island completely dried out and concern was raised over the future populations of our resident species. Dragonflies are resilient, having lived on this planet in various guises for at least 300 million years, so it was not too surprising to see Common Darter (*Sympetrum striolatum*) back at their breeding ponds in decent numbers following the late summer/early autumn rainfall.

Unsurprisingly, Large Red Damselfly (*Pyrrhosoma nymphula*) was the first species reported with a male at Polecat Rise pond, Pan County Park on 10th April. This is within the recent range for a first sighting, with four of the last six years recorded between 8 -10th April.

The final record of the year was a Common Darter (*Sympetrum striolatum*) at Corf on 1st December, the latest ever dragonfly sighting for the Isle of Wight.

2023: A year to remember for Odonata on the Isle of Wight, with a record number of 27 species reported.

The highlights were the first vice-county record of Norfolk Hawker (*Aeshna isosceles*), the fifth and sixth confirmed records of Vagrant Emperor (*Anax ephippiger*), the first sightings of Scarce Blue-tailed Damselfly (*Ischnura pumilio*) on the Isle of Wight since 2005, and the ninth record of Lesser Emperor (*Anax parthenope*), the first reported since 2014.

The first sighting was a dragonfly seen in flight in Ventnor on 16th March. Thought to have been a Vagrant Emperor, the identification could not be confirmed as the recorder was driving at the time! Large Red Damselfly was the first confirmed species of the year, with a male at Laundry Lane on 9th April, the earliest vice-county date for this species since 2020.

The final record of the year was a Common Darter which was seen and photographed at Cranmore on 6th November. This is the earliest final sighting of the year on the Isle of Wight since 2018.

The taxonomic sequence and nomenclature follow Paulson, Schorr et. al. (2024).

Southern Emerald Damselfly *Lestes barbarus*

2022: Despite Peter Hunt making his regular visits to the breeding ponds at Bouldnor, there were no sightings in 2022. It is thought that the above-average rainfall in 2021 was to blame, with the breeding ponds maintaining a higher level of water than they prefer. With only two sightings in 2021, both away from their ponds, they appear to have failed to breed, and the small, fragile colony established in 2017 has been lost. There were similar results at other Southern Emerald Damselfly sites in southern and eastern England. It is possible that this species may re-colonise in the future, but its breeding status will remain dependent upon their ponds drying out in mid-summer.

2023: No records received.

Emerald Damselfly *Lestes sponsa*

2022: The Island population is thought to remain stable, unlike the overall UK population which is in decline. Eight reports received, which is below the five-year mean of 18.

2023: Six records received, although as in 2022, several established sites for this species were not visited during the flight period which would have given a better understanding of the overall population.

Banded Demoiselle *Calopteryx splendens*

2022: An average year with 39 records, in line with the five-year mean. First reported at Thorncross on 21st May with the final sighting of the year at Martin's Wood, Newchurch on 6th August. The East

Yar valley, where they are recorded in their maximum numbers, appears to be the stronghold for this species.

2023: Another average year, with 30 records received. First reported at Borthwood Copse on 26th May, with the final sighting of the year at Brighstone Mill stream on 23rd August, the latest date for this species since 2017. An example of the distance covered by wandering immatures was one at Wheelers Bay revetment on 7th July.



Fig. 1: Banded demoiselle (*Calopteryx splendens*)

Photo: Sue Sibley

Beautiful Demoiselle *Calopteryx virgo*

2022: As with the Banded Demoiselle, it was an average year with 21 records received, in line with the five-year mean. The first sighting was at the Garlic Farm, Newchurch, on 29th May. This is the

latest first report on the Isle of Wight for this species since 2015, as it is normally recorded before the Banded Demoiselle. It is likely to be due to a mixture of the poor weather earlier in May and availability of recorders. The last record was at Wroxall Stream, near the Donkey Sanctuary, and at Shide on 14th August. For the first time for several years, there were no reports from Shalfleet Stream which is one of its major sites; again, likely to be due to recorder availability than a species decline.

2023: An above-average year with 48 records received, which is the highest number in a year for this species on the Island. First recorded at Martin's Wood on 15th May, with the last record at Jersey Camp on 18th August. Most of the sightings came from the East Yar valley, but there were reports of wandering immatures from as far afield as Cranmore and St Lawrence. As in 2022, Shalfleet Stream received no coverage.

Azure Damselfly *Coenagrion puella*

2022: One of the two commonest species of blue damselfly found in England and widespread throughout the Island, frequenting ponds and ditches. The total of 88 records received was in line with the five-year mean. First recorded at Bouldnor on 29th April, with the last record at Dickson's Copse Pond on 27th August, the latest date since 2016.

2023: Another average year for the species, with 70 records received. First recorded at Parsonage Peat Lake on 10th May, with the last record at Haseley Manor on 10th August.

Common Blue Damselfly *Enallagma cyathigerum*

2022: Although not as abundant as the Azure Damselfly, it can be found throughout the Island. 45 records were received which was in line with the five-year mean. First reported at Combley Great Wood on 12th May, with the last record at Atherfield Reservoir on 18th August which was about a month earlier than normal.

2023: Only 19 records of this species were received, which was below-average. No records were received from several established sites, so it is hoped this is due to reduced coverage rather than a decrease in the population. First recorded at Briddlesford Woods NR on 20th May, with the last record at Kemphill Moor Copse on 7th August.

Red-eyed Damselfly *Erythromma najas*

2022: As in recent years, most of the 16 records, which represents an average year, were from the Newchurch area and Medina Valley, which reflects its main breeding populations. There was a report from Atherfield Reservoir which is a new site for this species. There is a known population of Small Red-eyed Damselfly at the site but both species favour similar habitat, so it is hoped there will be further records in the future. First recorded at St James Reservoir, Newchurch on 17th May with the last sighting of the year at Martin's Wood on 5th August.

2023: Another average year, with 12 records received. There was a record at Branstone Farm ponds which was a new site for this species. First recorded at Parsonage Peat Lake on 24th May with the last record at Stag Lane Pond on 2nd September.

Small Red-eyed Damselfly (*Erythromma viridulum*)

2022: 21 records represent an average year for a species which is likely to be under-recorded on the Isle of Wight. The Lakes at Rookley was a new site for the species. First recorded at Stag Lane Pond and the nearby Dickson's Copse Pond on 22nd June, the earliest date since 2017. It was the latter site which reported the final sighting of the year on 27th August.

2023: Only 10 records received which was below average, but likely to be due to reduced coverage rather than a decrease in the population. Branstone Farm ponds was a new site for the species. First recorded at Parsonage Peat Lake on 26th June with the last record at the same site on 4th September.

Blue-tailed Damselfly (*Ischnura elegans*)

2022: It is an abundant species like the Azure Damselfly; 66 records were received which was slightly below the five-year mean of 82. First recorded at Medham on 8th May, with the last sighting at Stag Lane Pond on 27th August.

2023: Another below-average year for this species, with 46 records received, although several sites were not surveyed in 2023. First recorded at Bembridge Lagoons on 7th May with the last record at Havenbridge Farm on 11th September.

Scarce Blue-tailed Damselfly (*Ischnura pumilio*)

2022: No records received.

2023: A male was recorded at Compton Chine ponds on 27th May by a visiting dragonfly recorder, David Phillips. He returned to the site the following day and photographed two adults. There was a further sighting from the same site when Andy Butler and his son David recorded two on 7th June, possibly referring to the same individuals (Fig.2). This is the first sighting since at least 2005; the record from 2005 on the NBN Atlas requires further investigation as it may be a duplicate of a confirmed record in 1980.



Fig.2: Scarce Blue-tailed Damselfly (*Ischnura pumilio*)
Photo: David Butler

Large Red Damselfly *Pyrrhosoma nymphula*

2022: As mentioned at the start of the report, this species is traditionally the first seen each year, and 2022 was no different. 61 records received was in line with the five-year mean. The final sighting of the year was at Brading Marshes RSPB Reserve on 11th August, the latest date for the species since 2012.

2023: Another average year for this species with 70 records received. The first record on 9th April was typical for the species, with the final record at Hungerberry Copse on 6th July.

Southern Migrant Hawker *Aeshna affinis*

2022: Two males were seen and photographed by Luke Gaskin in the "Triangle field" at Brading Marshes RSPB reserve on 2nd August (Fig.3). Subsequent sightings of 2 males on 8th and one on 11th elsewhere on the marshes are thought to relate to the same individuals. A male was recorded coming in off the sea at Wheelers Bay revetment on 5th August (AB) This is the third and fourth records of this species on the Island, after originally being recorded in 2020.

2023: No records received.

Southern Hawker *Aeshna cyanea*

2022: An average year for this species; 31 records were received, in line with the five-year mean. First seen at Brook Down on 28th May with the final report at Wydcombe Manor on 23rd October, making it a longer reporting season than normal.

2023: Another average year with 30 records received. First recorded at Bouldnor on 4th June with the final record at Wheelers Bay on 21st September.

Norfolk Hawker *Aeshna isoceles*

2022: No records received.

2023: A male was recorded and photographed by James Gloyn at Hill Heath, Newchurch on 8th June (Fig. 4). This is a new species for the Island. Despite its vernacular name, the distribution range for this species has spread west over the last two decades from the Broadlands of Norfolk and northeast Suffolk. It will be interesting to see if this was a wandering individual, or whether there will be further records in 2024.

Migrant Hawker *Aeshna mixta*

2022: Another good year for this species with 102 records, which is above the five-year mean of 61 and the most records received since 2007. First recorded at Martin's Wood on 21st July, with an interesting final record at Monks Bay on 20th October which might relate to a genuine migrant individual. Most records came away from their breeding site, with immatures travelling distances to mature.

2023: An average year with 59 records, in line with the five-year mean. First recorded at Firestone Copse and Ventnor Botanic Gardens on 6th July, with the final record at Kempfill Moor Copse and Sandown Water Works on 3rd October, the earliest final sighting of this species since 2016.

Vagrant Emperor *Anax ephippiger*

2022: No records received.

2023: It was the best year for this immigrant species from Africa, with two confirmed sightings and, as mentioned earlier, a probable sighting in March. Robin Edwards recorded one on the outskirts of Brighstone Forest on 13th April. Luckily, he was accompanied by a photographer friend visiting from Canada who managed to get an



Fig. 3: Southern Migrant Hawker (*Aeshna affinis*)
Photo: Luke Gaskin



Fig.4: Norfolk Hawker (*Aeshna isoceles*)
Photo: James Gloyn



Fig. 5: Vagrant Emperor (*Anax ephippiger*)
Photo: B. Hunt

excellent photo of it (Fig.5). Apparently, he was quite bemused at photographing a dragonfly as he spends his time photographing bears! The other sighting of was on 27th May, when a male was seen and photographed by Mark Telfer in his Ventnor garden, a great addition to the garden list. This is the fifth and sixth confirmed records for the Island.

Emperor Dragonfly *Anax imperator*

2022: Another of our abundant dragonfly species, with 101 records received. This is slightly above the five-year mean of 86 for the largest species of dragonfly in Britain. Recorded throughout the Island, it was first seen at Bouldnor on 18th May, the earliest date since 2007. It was a longer reporting season than normal, with the final sighting at St. Catherine's Point on 12th October, the latest date since 1996.

2023: As in 2022, an above-average year with 102 records received. First recorded at Bouldnor on 21st May with the final record at Osborne House on 8th October.

Lesser Emperor *Anax parthenope*

2022: No records received.

2023: A male was photographed by Alex Taylor at the Rocken End lower landslip pond on 20th July, which suggested a migrant (Fig.6). This is the ninth record for the Island and the first since 2014.



Fig.6: Lesser Emperor (*Anax parthenope*)
Photo: Alex Taylor

Hairy Dragonfly *Brachytron pratense*

2022: Ten records were received, which was in line with the five-year mean. It was a lengthy reporting season, with the first record at Alverstone cycle track on 24th April, the second earliest date, and the last sighting at Sandown Meadows Nature Reserve on 16th June, the latest date since 2013.

2023: Another average year with nine records received. First recorded at Bouldnor and Laundry Lane on 7th May with the final record also at the latter site on 15th June.

Golden-ringed Dragonfly *Cordulegaster boltonii*

2022: A good year for this species with 38 records received, which is substantially higher than the five-year mean of 22. Although a lot of the records relate to individuals maturing away from water, it does provide further indication that the species is extending its breeding range on the island. Like some of the other species, it was an extended

recording season with the first report at Walter's Copse on 24th May, the earliest date since 2007. The final sighting of the year was at Mersley Farm on 23rd September, the latest since 1992. (Fig.7.)

2023: Only 13 records received which was below average. As this species can spend up to five years underwater as a nymph, numbers do fluctuate between years. First recorded at America Woods and Apse Heath on 24th June with the final record at the Donkey Sanctuary along Wroxall Stream on 12th August.



Fig. 7: Golden-ringed Dragonfly (*Cordulegaster boltonii*)
Photo: Allan Jackson

Downy Emerald *Cordulia aenea*

2022: A localised species mainly reported from the Eastern Yar and Medina Valleys. Five records were in line with the five-year mean, although there were no reports from the Medina Valley. This is likely to be a result of recorder availability rather than a decline in the small population. The first report was on 11th May and the final sighting on 4th July, both at Newchurch.

2023: Only two records were received, the first on 24th May and the final record on 7th June, both at Newchurch. As in 2022, there were no reports from the Medina Valley, again due to reduced coverage in the flight period.

Broad-bodied Chaser *Libellula depressa*

2022: Typically, this is the first spring dragonfly species to emerge, and this year was no different. 57 records were received which was in line with the five-year mean. First seen at Cranmore on 15th April, the second-earliest date for this species on the Isle of Wight, with the last sighting at Firestone Copse on 24th July.

2023: An above-average year with 75 records received. First recorded at Polecat Rise pond, Pan Country Park on 2nd May with the final record at Bouldnor on 20th July.

Scarce Chaser *Libellula fulva*

2022: A good year for Scarce Chaser with 21 reports, the most ever received for this species (the five-year mean is 13). All came from the Eastern Yar valley, and indicated a typical flight period in length, but with both an earlier start and finish. First recorded at Newchurch on 6th May, the earliest ever date by twelve days, with the final record at Brading

Marshes RSPB reserve on 9th July, around a fortnight earlier than normal.

2023: Fourteen records received, which was in line with the five-year mean. First recorded at Newchurch on 24th May with the final record also at Newchurch on 19th July.



Fig. 8: Scarce Chaser (*Libellula fulva*)

Photo: James Gloyn

Four-spotted Chaser *Libellula quadrimaculata*

2022: After receiving no reports in 2021, a total of eight records was slightly above the five-year mean for this under-recorded species. All sightings came from Brading Marshes RSPB Reserve where the species is known to breed. An immature was seen and photographed on 6th May, the earliest ever date by four days, with the final record on 1st August, the latest date, also by four days.

2023: Only three records received with none from Brading Marshes. A male was seen at Bouldnor on 28th and 30th May, with two males present on 4th June. This species is not known to breed at the site and it is thought the records refer to wandering individuals from the Hampshire population.



Fig. 9: Four-spotted Chaser (*Libellula quadrimaculata*)

Photo: Jim Baldwin

Black-tailed Skimmer *Orthetrum cancellatum*

2022: An average year for this species with 48 records received which is in line with the five-year mean. This species is found throughout the Island where there are bare margins to the ponds for perching. First recorded at Bembridge Lagoons and Brading Marshes RSPB reserve on 20th May with the final sighting at Kemphill Moor Copse on 27th August.

2023: A below-average year with 27 records received. First recorded at Martin's Wood on 1st June with the final record at Bembridge Lagoons on 20th August.

Keeled Skimmer *Orthetrum coerulescens*

2022: Reports of Keeled Skimmer on the Isle of Wight rely heavily on one or two recorders who visit

the challenging habitat of slipped coasts at the southern end of the Island. No records were received from Whale Chine, purely due to recorder availability. Interestingly, on the mainland, Keeled Skimmer prefer wet heathland sites.

2023: 4 males and a female were recorded at Whale Chine on 25th July. This was the only visit possible with no reports from Blackgang Terrace, due to the weather.



Fig. 10: Keeled Skimmer (*Orthetrum coerulescens*)

Photo: Andy Butler

Red-veined Darter *Sympetrum fonscolombii*

2022: Although this migrant species has previously bred on the Isle of Wight, the sightings in 2022 are likely to be wandering individuals from the continent. A male was seen on 18th June and two males on 8th July at the private site in the Atherfield area (AB & PC). There were further reports with 1-2 males in a garden, also on 8th July, at Springvale (J & S M) with the final report of a female along the revetment at Wheelers Bay on 21st July (AB) (Fig.11).

2023: For the first time in four years, the species was back to its previous maxima at the Atherfield reservoir. There was no breeding evidence seen in 2023, but 12 adults were present on 26th May, with a maximum count of 14 on 26th June (AB & PC). The final record of the year was two at the site on 15th September (AB).



Fig. 11: Red-veined Darter (*Sympetrum fonscolombii*)

Photo: Andy Butler

Ruddy Darter *Sympetrum sanguineum*

2022: A total of 25 records for the year was slightly below the five-year mean of 30, but is likely to be the result of recorder availability at some of the prime sites rather than a decrease in the population. First seen at Cranmore on 2nd June, with the last record at Brading Marshes RSPB reserve on 20th September.

2023: An average year, with 35 records received. First recorded at Cranmore on 12th June with the final record at Naturezones, Blackwater, on 30th September.

Common Darter *Sympetrum striolatum*

2022: The most widely reported dragonfly on the Isle of Wight with 151 records received, which was slightly above the five-year mean of 113. First recorded at Newchurch on 5th June with the final record, as mentioned earlier in the report, at Corf on 1st December (VG & EH).

2023: Another above average year with 154 records received, the most for this species since 2003. First recorded at Bouldnor on 30th May with the final record at Cranmore on 6th November.

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Acknowledgements

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METEOROLOGICAL REPORT FOR SHANKLIN, ISLE OF WIGHT, 2023

Clive Cooper

Abstract

Shanklin Weather Station was established in January 1947 for the recording of rainfall, and January 1948 for the recording of temperature and sunshine. The Station is owned by the Isle of Wight Council and is maintained by the Met Office. The station is situated at The Mead, a park area near Shanklin 'Old Village' towards the outskirts of the town and is 50 feet above sea level. The station is a simple one consisting of a 5" standard rain gauge and a Stevenson's Screen equipped with three thermometers. Readings and observations are taken once daily at 09.00GMT. The Campbell Stokes sunshine recorder is located on the roof of Shanklin Theatre, at a height of 180 feet above sea level. All averages refer to the Shanklin climate data set 1991-2020.

The weather for 2023 was yet again remarkable: it was provisionally the warmest year on record and also the wettest year on record. The winter was drier than normal with February being very dry followed by a wet March. The last three months of the year were very wet with October being the wettest October since my records began. The record high temperature for September, 27.6°C, was recorded on the 9th.

JANUARY

2023 started wet and mild, with a colder spell from the 16th of the month. The mean temperature for January was 6.37°C, which was 0.20°C above average. The warmest day was the 4th, when 12.3°C was recorded. The coldest day was the 17th when the temperature only reached 2.9°C. The coldest night was the 23rd with an overnight temperature of -3.7°C, one of the five air frosts recorded in January. This was the lowest January overnight temperature since 2015.

The rainfall total was 131.1mm, 125% of its average. Rain was recorded on 17 days; the average is 18. The highest amount in a 24-hour period was recorded on the 15th and was 25.2mm.



Fig. 1: A mammatus cloud, photographed on 9th January 2023 above Godshill.

This phenomenon occurs after a heavy shower has passed over, and it is caused by turbulence inside the cloud.
Photo: Clive Cooper

FEBRUARY

February was a very mild month. The mean temperature was 6.81°C; this was 0.89°C above the average. The warmest day was the 19th with 12.0°C. The coldest day was the 28th with 7.2°C. The

minimum temperature was recorded on the morning of the 8th, when -1.8°C was logged.

The rainfall total was 10.4mm, which was 14% of the average. In my records, going back to 1983, the driest February was 1991 with 10.3mm. Rain was recorded on 7 days; the average is 14 and there was a period from 26th January to 14th February with no measurable rainfall. The wettest day was the 15th with 3.9mm of rain.

There was a dull, misty period from the 16th – 22nd.

MARCH

March was a mild, wet month, with a mean temperature of 7.80°C; this was 0.6°C above the long-term average. The warmest day was the 17th with 13.2°C. The coldest day was the 10th with 6.0°C. The coldest overnight temperature, recorded on the 15th, was 0.3°C.

Rainfall for March amounted to 132.4mm which was 221% of the average. The wettest day was the 9th with 25.7mm. Rain was recorded on 22 days; the average is 14.

APRIL

April was a wet, cold month. The mean temperature was 8.91°C which was 0.50°C below the long-term average. The warmest day was the 20th with 15.6°C. The coldest day was 14th with 8.9°C. The coldest night was recorded on the morning of 5th when 0.3°C was logged.

The rainfall amounted to 81.7mm, 151% of the average. The wettest day was 27th with 21.9mm of rain.

MAY

May was a mild, dry month. The mean temperature for May was 13.09°C and was 0.78°C above the average. The warmest days in May when a temperature of 20.4°C was recorded were 24th and 28th. The coldest day was 2nd, with a recorded maximum of 13.0°C. The coldest overnight temperature, recorded on the morning of 17th, was 6.7°C.

The rainfall amounted to 45.0mm, which was 86% of the average. The wettest day was 8th, with 21.7mm recorded. Rain was recorded on 9 days; the average is 11. There was no rainfall recorded from the 15th of the month.

JUNE

June was a hot and dry month. The mean temperature for June was 17.24°C, which was 2.30°C above average. The warmest day was the 13th with

26.4°C recorded. This was one of 15 days when the temperature exceeded 21.1°C. The coldest day was the 2nd with 15.9°C recorded. The coldest overnight temperature was recorded on the 3rd, when 8.2°C was logged.

Rainfall totalled 18.2mm and was 34% of average. The wettest day was the 19th with 6.9mm. Rain was recorded on 7 days, compared to the average of 10. The dry spell from May lasted till the 9th June.

Thunder was recorded early on the 20th.

After the first six months of 2023, the total rainfall was 418.8mm. This was 105% of the 1991-2020 average of 399.0mm, indicating so far the year had been slightly wetter than normal.

Temperatures were also higher than normal with five months having an above-average mean temperature. The six-month mean was 10.04°C, against the 1991-2020 average of 9.36°C.

JULY

The month was slightly cooler than average, and wet. The mean temperature for July was 16.82°C, 0.23°C below the average. The warmest day was the 8th with a recorded maximum of 23.6°C, one of 4 days when the temperature exceeded 21°C. The coldest day was the 4th, with a recorded maximum of 17.6°C. The coldest overnight temperature, recorded on the morning of the 18th, was 10.4°C.

July was a wet month with 117.3mm of rain, which was 224% of the average. The wettest day was the 26th with 29.6mm, closely followed by the 22nd with 25.7mm, of rain. Rain was recorded on 15 days; the average is 9.

Gales were recorded on the 22nd.

AUGUST

A wet and slightly cooler than average month. The mean temperature for August was 16.86°C which was 0.32°C below the average. The hottest day was the 10th, with a recorded temperature of 22.8°C. There were 10 days when the temperature reached or exceeded 21.1°C. The coldest day was 2nd with 17.9°C. The lowest overnight temperature was on the 6th, when 10.4°C was recorded.

Rainfall for the month amounted to 120.2mm, 180% of the average. The wettest day was 17th with 34.7mm. Rain was recorded on 18 days; the average is 11.

Thunder was recorded on 24th.

Gales were recorded on 2nd of the month.

SEPTEMBER

Very warm and drier than normal. The mean temperature for September was 17.54°C and was 2.27°C above the average. The warmest day was the 9th with 27.6°C recorded, one of twelve days when the maximum temperature reached or exceeded 21.1°C. The temperature logged on the 9th was the highest September temperature that I have recorded. The coldest day was the 23rd when the temperature was 17.1°C. The lowest temperature overnight was recorded on the morning of the 23rd when 9.5°C was recorded.

Rainfall was 57.6mm, 80% of its average. The wettest days were 17th with 21.8mm and 20th with 19.3mm.

Storm Agnes arrived on the 27th; it was the first named storm of the season.

OCTOBER

Mild and very wet. The mean temperature for October was 14.50°C and was 2.05°C above average. The warmest day was the 8th with 22.9°C; the coldest day was the 15th with 12.2°C. The coldest overnight temperature was recorded on the 15th when the temperature fell to 5.2°C. October 2023 was a mild month and was equal 4th warmest with 2005, since my records began in 1983.

The rainfall for October was 287.3mm, 253% of its average. There were 19 days with rain recorded, compared to the average of 15. The days with the highest rainfall totals were 24th with 69.2mm, 27th with 29.3mm, and 30th with 28.9mm of rain. In total, 205.3mm of rain fell between 21st and 31st. This is the wettest October that I have recorded and the second wettest month that I have recorded. after November 2022, when 298.8mm of rain fell.

Thunder was recorded on the 27th and 31st.

There was one named storm, Babet, on 18th.

NOVEMBER

A very wet and mild month. The mean temperature for November was 9.62°C and was 0.49°C above the average. The warmest day was the 12th when 15.1°C was recorded. The coldest day was the 30th when 4.9°C was recorded. The lowest overnight temperature was recorded on the morning of 26th when -0.1°C was recorded, the first air frost of the autumn/winter. The temperature exceeded 10°C on 24 days.

There was 195.2mm of rain during the month which equated to 165% of the climate average. The wettest days were the 12th with 29.4mm of rain, 1st with 20.1mm, 8th with 19.3mm and 26th with 17.9 mm. There were 21 days with rain recorded; the average is 16.

Gales were recorded on the 13th and the 19th.

Storm Ciaran arrived on 1st persisting into 2nd, and Storm Debi raged between 13th - 15th.

DECEMBER

A cold start, then very wet and mild from 7th. The mean temperature for December was 8.89°C and was 2.00°C above the average. The highest temperature was recorded on the 21st when 13.6°C was recorded. The coldest day occurred on the 1st when the temperature only reached 2.6°C. The lowest overnight temperature was recorded on 2nd and 3rd when the temperature fell to -2.0°C, giving two of the four air frosts recorded during December.

Rainfall amounted to 178.3mm and was 150% of the climate average. The wettest day was 8th with 37.1mm; other high daily totals were recorded on 3rd with 29.6mm, 7th with 20.6mm and 19th with 10.9mm. There were 24 days with rain recorded; the average for December is 16.

There was a very windy spell at the end of the month. In the last nine days of the month, gales were recorded on six of them.

There were three named storms for December: Storm Elin on 9th, Fergus on 10th and Gerrit on 27th.

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Comparisons of 2023 figures with the climate average 1991 - 2020 serve to emphasise the exceptional weather conditions that we have experienced this year

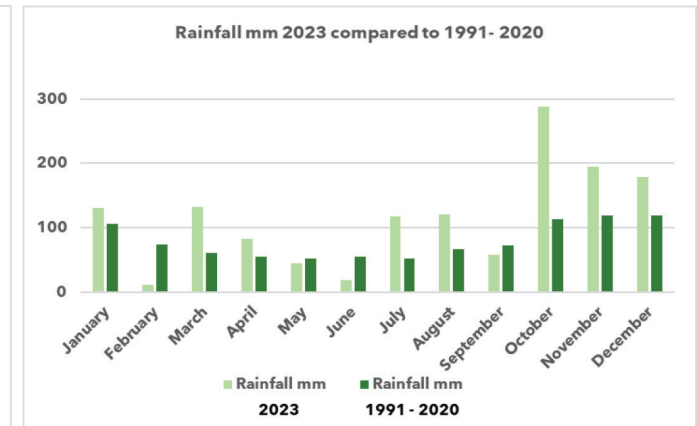
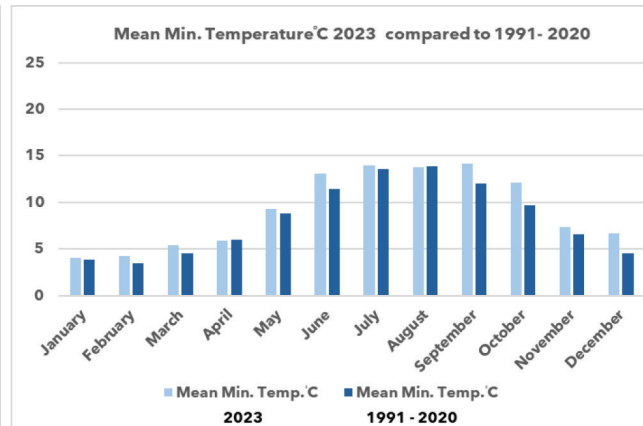
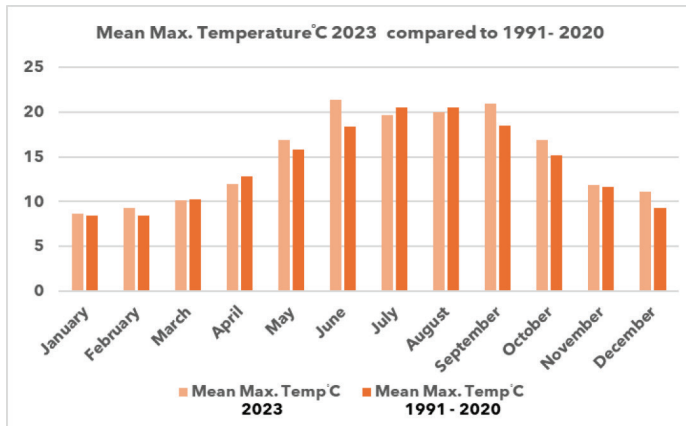
Table 1: Monthly Weather Summary - 2023

| Month | Average Temp °C | Mean Max. Temp °C | Mean Min. Temp. °C | Rainfall mm |
|----------------------|-----------------|-------------------|--------------------|----------------|
| January | 6.37 | 8.72 | 4.02 | 131.10 |
| February | 6.81 | 9.33 | 4.28 | 10.40 |
| March | 7.80 | 10.15 | 5.45 | 132.40 |
| April | 8.91 | 11.97 | 5.85 | 81.70 |
| May | 13.09 | 16.91 | 9.26 | 45.00 |
| June | 17.24 | 21.36 | 13.12 | 18.20 |
| July | 16.82 | 19.63 | 14.00 | 117.30 |
| August | 16.86 | 19.98 | 13.75 | 120.20 |
| September | 17.54 | 20.91 | 14.17 | 57.60 |
| October | 14.50 | 16.84 | 12.16 | 287.30 |
| November | 9.62 | 11.91 | 7.33 | 195.20 |
| December | 8.89 | 11.08 | 6.69 | 178.30 |
| Yearly Figure | 12.04 | 14.90 | 9.17 | 1374.70 |

Table 2: Monthly Weather Averages 1991-2020

| Month | Mean Max. Temp °C | Mean Min. Temp. °C | Rainfall mm |
|----------------------|-------------------|--------------------|--------------|
| January | 8.46 | 3.87 | 105.1 |
| February | 8.41 | 3.42 | 73.57 |
| March | 10.31 | 4.49 | 60.01 |
| April | 12.86 | 5.96 | 53.99 |
| May | 15.85 | 8.78 | 52.19 |
| June | 18.41 | 11.47 | 54.15 |
| July | 20.49 | 13.61 | 52.27 |
| August | 20.53 | 13.84 | 66.81 |
| September | 18.49 | 12.05 | 72.43 |
| October | 15.17 | 9.73 | 113.4 |
| November | 11.69 | 6.57 | 118.4 |
| December | 9.27 | 4.51 | 118.8 |
| Yearly Figure | 14.19 | 8.22 | 941.2 |

NB Hours of sunshine not recorded in 2023



WIGHT STUDIES: NOTES FOR THE GUIDANCE OF AUTHORS REVISED 2023

Wight Studies is published annually in August and papers on all topics within the range of interest of the Isle of Wight Natural History and Archaeological Society (IWNHAS) are welcomed. The managing editor Paul Bingham (iowpaulb@aol.com) welcomes prior discussion with potential authors, especially if longer papers are proposed.

Various types of articles are published:

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Book Pope, C., Snow, L. & Allen, D. 2003. *The Isle of Wight Flora*. Wimborne: Dovecote Press.

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Journal article Margham, J. 2011. Place-names in an Island Landscape: Hills and Valleys Part 1, *Proc. Isle of Wight Nat. Hist. Archaeol. Soc.* **25**:16-51.

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When preparing figures, it would be helpful if they are sized to a width of either 85 mm or 175mm. When the layout is done, the figure will be inserted into the article as considered appropriate by the designer.

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