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A pamphlet giving advice on presentation and layout for articles intended for the *Proceedings* may be obtained from the Editor, Mr. W. G. Putnam, at Dorset Institute of Higher Education, Cranford Avenue, Weymouth, Dorset DT4 7LQ (telephone Weymouth 72311 extension 266). Contributors are strongly urged to prepare material for publication in the light of this advice; failure to do so will lead to extra work and delay.

Articles should normally be submitted by 31st December for inclusion in the volume printed approximately a year later.

This edition of the *Proceedings* of the Dorset Natural History and Archaeological Society is the one hundredth to be published in an annual sequence which even two wars failed to interrupt.

On a Tuesday in March, 1875, about 20 persons sat down to dinner at the Digby Hotel, Sherborne. After the cloth was cleared a paper was read on 'Aims and Objects of Natural History Field Clubs'. It was at this meeting that the Dorset Natural History and Antiquarian Field Club was born. The first Annual Meeting was held in March of the following year. The Club had its base at the Sherborne Grammar School where it was hoped to establish a small museum. The County Museum and Library had already been founded at Dorchester some thirty years earlier, its aims 'to set forth the richness of the county in Natural History, British and Roman Antiquities, etc.'. After a few years the Field Club moved its headquarters from Sherborne and from 1883 held its Annual and Winter Meetings in the County Museum.

The two continued along similar lines but maintained their individual identities so that in 1892 the retiring secretary of the Field Club was able to report, 'the cooperation which has been extended to us from the Museum officials, particularly the Secretary and Curator, has enabled these two institutions, the Field Club and Museum, whilst remaining theoretically distinct, to become almost inseparable'. Despite this closeness another thirty years were to pass before the two were brought together to form the Dorset Natural History and Archaeological Society.

Thus, of the one hundred volumes published to date, the first forty-nine were concerned solely with the Field Club. Amalgamation with the Museum brought a complication in the sequence in 1928. The Club's year had run from June to May, the Museum's from January to December. The overlap was absorbed by publishing two volumes for that year, No. 49 covering the last year of the Field Club and No. 50 the affairs of the new Society from June to December.

The first octavo volume, published in 1877, was cased in the now familiar dark green and gold, establishing a pattern unbroken for the next fifty years. In those days the Secretary of the Field Club was also the Editor. Thus it fell to James Buckman to present the first volume. In his preface he wrote, 'the papers are for the most part subjects which have occupied the attention of the Club'. With an eminent botanist as President and an eminent geologist as Secretary bias in those directions was not surprising. Archaeology was still in its infancy. The Society's attitude towards it was perhaps summed up by the Editor—'The few papers referring to archaeological matters may serve to show the direction being taken by the Society in this subject. Much delving and poking about in odd corners are found necessary to unearth the riches of antiquity and our papers show that, at least, the Society has commenced work in an honest and liberal spirit'. Illustration of papers was, as ever, expensive. The lithographic plates were of a high standard and the Editor could thank the writer of a paper on Brachopodia who, 'in the handsomest manner, and for the love of his subject, drew them on stones with his own hands'. Volume 1 proudly carried a photograph of the President (J. C. Mansel-Pleydell) as frontispiece—'a good specimen of photography and a faithful likeness'.

Professor Buckman died in 1884 and was succeeded as Editor by Morton G. Stuart. From then on the 'Meeting and Transactions' of the Club were fully recorded in the *Proceedings*. By the twelfth volume the number of pages had increased to two hundred. The cost of printing and binding three hundred copies was £88. The annual membership fee was, as it always had been, 10 shillings which included a copy of the *Proceedings*. The closing years of the century were marked by steady growth. As the membership of the Club increased so did the number of pages in its publication. Field meetings became very popular and lengthy papers read on sites visited were printed in full as was the President's address to the Annual General Meeting. Sectional Committees had been formed and their activities were duly reported.

The momentum in archaeology initiated by General Pitt Rivers was reflected in the early volumes of the present century. The first excavation report proper being that on 'Barrow Digging at Martinstown' by H. St. George and Charles S. Prideaux in the volumes for 1905 'on the lines of Pitt Rivers with text, plan and photos. The healthy state of the Club and its *Proceedings* continued up to, and even during, the first years of the 1914-18 war. The 1918 volume, however, reflected the exhaustion of the country in both men and materials, the Editor explaining 'its diminished size (113 pp.) and late appearance is due to the greatly enhanced price of printing which has caused this volume to be more costly in production than those of double the size of ten years ago'. A paper had to be postponed because 'under present conditions the printers felt unable to face the Latin'.

Nineteen-hundred-and-twenty saw the beginning of a revival and an important change. Up to that date all but the first few volumes had been printed at the office of the *Dorset County Chronicle*. From then on the work was undertaken by the Dorchester firm of H. G. Longman, an association continuing right up to the present day. In 1925 the Field Club took over the Turret Room of the Museum to house its archive and two years later the first steps were taken towards the amalgamation of Club and Museum. Thus, in 1928, the Society as we know it today was formed and henceforth the affairs of the Museum appeared in the *Proceedings*.

When, in 1931, Canon Fletcher retired having edited sixteen volumes, he noted 'the early promoters of the Society were especially interested in Natural History. Earlier volumes trend towards Natural History rather than Archaeology. In latter years much more interest has been taken in the study of Archaeology and in that of History and General Subjects'. This interest was stimulated by the appointment of Lt.-Col. C. D. Drew as Curator and Secretary. At this time, too, the Society was collaborating with the Society of Antiquaries of London in the now classic excavation of Maiden Castle in which Lt.-Col. Drew played an important part both in organisation and excavation.

In 1934, after fifty-five consecutive volumes of identical size and appearance which sat nicely on the shelves of the collector the *Proceedings* grew to 'super royal octavo' (approximately 10 by 7 inches). This size had been recommended for archaeological reports by the Congress of Archaeological Societies in 1931. It was, perhaps, more than coincidence that the first volume in the new size carried the Interim Report on the Maiden Castle Excavations, reprinted from the *Antiquaries Journal*.

With the enlarged volume and increased archaeological activity to report, accounts of Field and Winter Meetings were considerably curtailed though at the same time short papers by members increased. The outbreak of World War II soon had its effect though annual publication was maintained. With no archaeological excavation to report the war-time volumes were noteworthy for the number of local history papers by members. Despite severe printing restrictions Volume 66 for 1944 was able to carry a coloured plate.

Again the post-war years saw a marked growth in membership coupled with steep rise in the production costs of the *Proceedings*. With the the appointment of R. A. H. Farrar as Editor in 1949 a section on Archaeological Field Work (later to become Archaeological Notes and News) was introduced. By now the cost of publication was making great inroads on the Society's income—to such an extent that printer and member H. G. Longman produced the volume for 1951 without profit to himself.

In 1959 the Council, on the recommendation of the new Editor J. Stevens Cox, introduced a radical change in the format of the *Proceedings*. In spite of protests from the archaeological world the size was once again reduced to octavo with a corresponding reduction in type size, line spacing and weight of paper. The object 'to produce more words more economically' was successful. By 1961 the Editor was able to announce a saving of £1,000 over three volumes without loss of content. Although the small size, with its inadequate reproduction of archaeological illustration, met with much criticism it continued over twelve volumes only to be ousted by the introduction of metric paper sizes.

Thus, to the delight of the archaeologists the 1972 volume appeared in A4, considerably larger than super royal octavo. Such a size was, however, ill adapted to the flimsy paper and thin card cover used and was often likened to a glossy magazine, hardly becoming the *Proceedings* of a County Society. By now the word '*Proceedings*' was becoming something of a misnomer. With the introduction of the new size the annual volume no longer contained accounts of meetings of the Society or of its activities generally. The Financial Statements too were omitted. These were all covered by a separate '*Newsletter*'. The problem of the timing of

the Bird Report was also solved by making it available as a separate production. The flimsy A4 volume with its small print continued for four years although generally disliked.

In 1975 James Stevens Cox resigned having completed sixteen years as the longest serving Editor in the history of the *Proceedings*. The Editorial Committee, anxious to ensure that its publication compared favourably in presentation with that of other Societies, agreed to a radical change in everything but size. The result was the appearance in 1976 of the first volume of the *Proceedings* in its present form, edited by W. G. Putnam with the help of a team of Sub-editors. As such may it long continue!

C.J.B.

ONE HUNDRED YEARS OF NATURAL HISTORY IN THE *PROCEEDINGS*

‘I shall endeavour to lay before you a general view of the results of the various physical changes of the earth in past ages affecting the climates of Europe and the distribution of plant-life. I am aware of the difficulty of the task, both on account of my own inability as well as the mass of matter to be examined and epitomised into a short address such as this.’

So wrote J. C. Mansel-Pleydell in the President’s Anniversary Address for 1879. His first sentence speaks not only of his task but points clearly to much of what the Club stood, and still does, stand for and aimed to do. The second is particularly apposite to this note; one hundred volumes of this Society’s *Proceedings* (two yards if measured cover to cover) is a lot to ‘examine and epitomise’.

Natural History contributions to the *Proceedings* were in the first fifty-five years slightly more numerous than those of an ‘historical’ or literary kind. This fairly even balance has not persisted and the number of natural history papers appearing in the next forty-four volumes show a steady decline. The style of their presentation has also changed dramatically; gone is the leisurely pace of the last and early part of this century. The Gentleman of Leisure is almost a memory. The contributor has become increasingly the specialist and often with an academic base to work from. Publication is part of the job, and with this comes a tighter and more economical style; no longer is a visit to a member’s house and collection couched in such terms as ‘. . . was literally crammed with some of the choicest geological treasures of the Lias formation, which were descanted upon and explained by Mr. Montefiore in a manner which showed that he had made a loving acquaintance with them’. Buckman, *J.* 1879, p. 141. Into the more specialist and academic bracket, but certainly not narrowminded, fall such authors as Dr. W. J. Arkell and Dr. W. D. Lang. The former was a Fellow of New College, Oxford and later was elected to a Senior Research Fellowship at Trinity College, Cambridge. Among other things he wrote on the Corallian Beds of the Dorset coast, 1935. His was an encyclopaedic knowledge of the Jurassic system and he published two monumental works on the same. Dr. W. D. Lang, one time Keeper of Geology at the British Museum (Natural History) and President of this Society from 1938-1941 was another regular contributor and his own wide interests are reflected in what he wrote.

The very wide interests of the members of the Natural History and Antiquarian Field Club is and always has been plain to see. Professor J. Buckman wrote on ‘The Ennobling of Beets and Parsnips’, 1879, ‘On the Potatoe Disease’, 1881, and ‘The Dotterel’ along with many geological papers. There are three prolific contributors in those early years. The President for the first twenty-five years, J. C. Mansel-Pleydell, N. M. Richardson, President shortly after, and O. Pickard Cambridge contributed over eighty-five papers excluding Presidential Addresses and other reports. Among these publications are some of considerable importance. Octavius Pickard Cambridge was an arachnologist par excellence (one idly wonders if his Christian name may not have been contributory to this), and twenty of his thirty-six contributions are on new and rare species. Richardson described new species of moth and Mansel-Pleydell an Ichthyosaurid. The validity of this latter has since been questioned. The

art of illustration that went with some of these papers is unrivalled in later volumes. O. Pickard Cambridge was responsible for his own illustrations and Helen Morewood (nee Rogers), the wife of Nelson Moore Richardson produced several exquisite colour plates for her husband's papers.

Then as now there was a considerable interest in the landforms of the county. In the last decade of the nineteenth century A. J. Jukes Browne produced papers on the origin of the valleys in the Chalk downs of North Dorset, and on the development of the Marshwood Vale. Coastal erosion was of similar concern to the local population as now, and papers appeared frequently discussing the nature of the processes, and the results. The Chesil Bank also caught the limelight and one article arrived at a conclusion very close to that accepted today. (Posthumous Presidential Address of W. R. G. Bond, 1951).

The *Proceedings* in the early days often consisted of numerous short papers. This encouraged the inclusion of articles which today would probably be unacceptable. Two memorable papers were produced on short lived phenomena, both events taking place at Bloxworth, the home of O. Pickard Cambridge. Space does not permit more than the briefest extracts, the first on a flash of lightning and the second on a whirlwind.

'The day on which this flash occurred, the 9th of April last, was of the ordinary "March" character, blustering storms of rain, hail, and snow from the north and north-west, with bright sunshine in the intervals. In one of these short storms at three p.m., without any premonitory flash or growlings, a sudden burst or diffused blaze of light occurred, accompanied instantaneously by an explosion like that of an enormous gun, rather than that of an ordinary peal of thunder, in fact the pealing was of very short duration. No other flash or peal of any kind followed, and the mixed rain and hail (nearly as large as thrushes' eggs) falling at the time suddenly ceased, the wind dropped, the sun shone out, and all was quiet and fine'. The reader is treated to a detailed account of the immediate after effects and a reasoned hypothesis on the nature of the strike which was responsible for damage to eight trees.

Of the whirlwind we read, 'At just quarter of an hour later above the normal noise of the gale I heard a rushing sound as of many goods trains approaching; it roared by and in five minutes had quite passed away. The gale almost immediately slackened and in half an hour or so all was still and quiet. On going the next morning into my orchard, I was little prepared for the scene of devastation that presented itself; half the orchard comprising an area of 2½ acres, was as complete a wreck as a dozen or score of men could have made it in a week's work'.

While on such ethereal matters, one W. R. Waugh deserves mention as the only member who supplied papers on astronomical subjects. On 13th December, 1900, his paper, 'Notes on Some of the Markings on Jupiter', was read, and from this the following lines are taken on the nature of the red spot.

'Here we may well pause, for the theories of its origin are too numerous to detail, the writer inclines to the idea that it is matter ejected from a lower atmospheric stratum floating in the Jovian envelope . . . '.

How Mr. Waugh would have marvelled at the photos and data transmitted back to earth by Voyagers 1 and 2, only seventy-nine years later. His own thoughts seem to be largely born out by these latest events in space exploration.

This is the furthest from Dorset we are taken, but there are still occasional articles which would now be excluded for being too exotic. C. E. Radclyffe wrote on 'The Natural History of Alaska', 1904, and C. W. H. Dicker, 'The Naturalist in Australia'; the latter may qualify for some consideration on the strength of our county's own social history.

The *Proceedings* have always been more than just a collection of papers. From the curatorial point of view they have a significant documentary contribution to make. The Curator's Report which first appears in Vol. IX as the 'Annual Report of the Curator of the County Museum' had been preceded in 1886 by the President 'calling attention to the late additions to the Dorset County Museum' and in 1887 Mr. H. J. Moule, the Curator of the County Museum reading a report of the 'additions to the collection'. These reports provide a further back-up to the Accession Registers, which gave for many years, a complete list of specimens coming into the collections. On rare occasions a collection in the Museum provides the basis for a paper. An example is one by A. J. Jukes Browne 'On a Collection of Fossils from the Upper Greensand in the Dorset County Museum', not that everyone appreciated such

articles. A reprint in the museum has on the cover '1896, Sad, very sad, in fact painful!'

From the earliest days the *Proceedings* have been a record of at least some of the fauna and flora of Dorset. However it is only latterly that the full subdivided Natural History Report has become an annual feature. For some years prior to 1935 an incomplete list of records for some groups was printed. Since 1952 the various major groups have been taken over by recorders. Through them a year by year account of the rise and fall of our flora and fauna is put on permanent record. Of the reports one has special claim to a place of honour. In Vol. X, 1889, the first Report on the Returns of Rainfall was produced, and it has been there ever since. With this comes an indispensable guide for the natural historian, puzzled by the fluctuations in the numbers of one species or another. Of these ninety reports, the last twenty-five are the work of the Rev. D. J. Paxman.

Over the years the Geological Notes have most benefited from the number of research students and academics working on the Dorset succession, both in times past and present. The reports of Drs. W. D. Lang, M. R. House and latterly J. C. W. Cope provide a remarkable list of postgraduate students who in several cases have gone on to take high accolades in their chosen profession. The same students have often contributed to the *Proceedings*.

The Natural History Report has in the past provided a niche into which records of a more historical nature have been slotted. In 1955 Enid Benham, wrote a note on the sightings of Cetaceans on the Dorset Coast, and here to close is an extract from a letter which she reproduces in her account. It is worthy of mention as an example of how records are often made, and a reminder that the natural history of Dorset which we so often take for granted, does provide us with sights to make us catch our breath.

'My Dear Nephews,

I find your Aunt Harriet wrote to you a day or two ago, but I cannot resist the inclination of giving you a pennyworth, to tell you what the late tempestuous weather has produced on the Charmouth Coast, although not the great Leviathan that swallowed up Jonah of old, yet an animal of such magnitude, as to strike the beholder with astonishment.'

I thank Mr. R. F. Dalton and Mr. R. N. R. Peers for reading the first draft of this note, and making many helpful comments.

P.C.E.

ONE HUNDRED YEARS OF ARCHAEOLOGY IN THE *PROCEEDINGS*

It would be surprising if the archaeological work described in the first hundred numbers of the *Proceedings* failed to reflect those changes in attitudes and methods which have immensely widened our understanding of the way our ancestors lived and died. The path from Victorian collecting to the precision of a Maiden Castle excavation took sixty years and it is the reports in the *Proceedings* from that period of time which make the most illuminating reading. The last forty years, after a lull during the Second World War, have simply underlined the lessons taught earlier by General Pitt-Rivers (though his Dorset results were published independently), H. St. George Gray, Mortimer Wheeler and our own Charles Drew.

A critical view is easy with hindsight and the Society's first President ('I opened four barrows in Milborne last autumn') and the first Secretary of the Field Club ('having sent men to work with pickaxe and spade, we now bring the results before the members of the Club') were energetically pursuing enquiries in a manner generally approved in the seventies and eighties. Yet, in the face of discoveries, these early reports breathe a freshness and enthusiasm which it is pleasant to recapture—members were urged to watch for worked flints as they were 'a source of surprise and pleasure'. In those days, we should remember, most papers dealing with antiquities in the *Proceedings* were read out on the site to a sizeable proportion of the total membership, who had gone thither in 'brakes and carriages' from the nearest

railway station. At a time when place-name study was in its infancy, there was an abundance of speculative inference based on shaky etymology. We may smile, for example, at the confidence with which Kingston Down, near Bere Regis, according to one writer, 'is now accepted by all antiquaries as a fact that it was the lost Ibernio'. Few archaeologists today would dare to make such positive assertions on behalf of fellow-workers. But the field meetings did show that careful observations and sound conclusions were being made. Concerning the chambered long barrow, the 'Hell Stone' at Portesham, it was stated in 1878 that the remains 'can no longer be considered otherwise than as ancient catacombs, erected by a remote people'. Hill-forts were being accepted as British earthworks rather than Roman, although until 1900 at least some held that the latest phase at Maiden Castle was of Roman construction, an opinion which aroused friendly controversy. Of the pits within, it was suggested with unusual foresight in 1893 that they were 'where the British stored their grain', and not British dwelling places, 'a common supposition'. There is sometimes unconscious humour, when we look back at the thoughts of respectable Victorians and wonder why the following visit was really postponed: 'About 1.30, the party left Cerne, passing the figure of a giant . . . inspection of this was deferred until the proprietor, General Pitt-Rivers, should have undertaken the work of cleaning it up'.

It was during the eighties that the Field Club began to consider the scheduling of ancient monuments, following the initial legislation on the subject. Details of action were sent to the incumbents of more than 250 Dorset parishes, but sadly only 20 per cent made returns. In case this gives an impression of clerical indifference to local antiquities, it should be noted that clergymen played an important role in the Field Club and amongst them the Rev. William Barnes, the Dorset poet, and his son the Rev. W. Miles Barnes were prominent in archaeological matters. The father helped to ensure that the Great Western Railway built a tunnel passing below Poundbury to avoid damage to that hill-fort, while the son always displayed good sense, whether discussing the defences of Dorchester, the Poxwell circle or the Roman aqueduct, shown to be leading down the Frome Valley to *Durnovaria*. Indeed the paper identifying much of the course of the aqueduct in 1901 must have been an object lesson to the old-time antiquaries. Here was an army officer using ordnance maps, survey and field observation to trace a monument which only in 1895 had been explained as part of the perimeter of a 'pastoral camp'.

With the first decade of the twentieth century, realisation grew that accurate records were paramount in archaeological investigation. Despite its outmoded title, 'Barrow-Digging at Martinstown', published in 1903, specifically 'on the lines of Pitt-Rivers', was the first excavation report in the *Proceedings* to possess a contoured plan with trenches indicated and accompanied by detailed sections and illustrations, both photographic and engraved. Even as late as 1909, the sadly inadequate report on the Hemsworth villa with its enigmatic sketch-plan carried an apology from its latest investigator who conceded that the work had 'not added much to our knowledge'. An outsider to the county, he too referred to the 'methodical pains of your great Dorset example, General Pitt-Rivers'. But the Field Club was becoming aware of its responsibilities. An excavation committee was set up in 1908 to arrange work at Maumbury Rings, the director appointed being H. St. George Gray, who had been principal assistant to Pitt-Rivers and had shared in the dig at Martinstown. Over the next few years, until the eve of the First World War, the *Proceedings* contained interim reports on Maumbury which are models of their kind, based on the most detailed field-books. It says much for the excavator that his notes have formed the basis, more than half a century later, of a recent reappraisal of this important Neolithic and Roman site.

Progress, however, was not uniform. In the same year that Maumbury was opened up, a 'Catalogue of Sepulchral Pottery' appeared in the *Proceedings*, useful enough in giving descriptions of burial urns, but lacking any illustrations. Yet the same volume presented an article on 'Dorset Tokens' with excellent photographs . . .

After the hiatus created by the 1914-18 War, a significant development in Dorset archaeology was the increase in the number of scheduled ancient monuments. A special Ancient Monuments Committee of the Field Club (until amalgamation with the Museum) suggested likely candidates to the Office of Works. In 1927 Vere Oliver complained that 'the Board refuses to schedule long barrows in arable, which are the ones most liable to damage and destruction'. By the end of the decade around one hundred sites were protected,

compared with the present figure of well over eight hundred. It is true that since Vere Oliver's time many monuments have been scheduled which lie on ploughed ground, yet damage by machine has remained a major problem, only marginally alleviated by the acknowledgements payment scheme introduced a few years ago.

In 1925, the upper course of the Roman aqueduct to Dorchester was traced back to Notton Mill and once again it was the skill and patience of a military man, Major P. Foster, which established a line still accepted today. But the advent of another ex-army officer, Lt.-Col. C. D. Drew, successively Field Secretary, then Curator and Secretary of the newly combined Club and Museum, was to be 'a milestone in the history of the Society', as we read in his obituary (1956). If, at an earlier date, academic scholarship, particularly classical, had formed the framework into which archaeological conclusions often had to fit, the emphasis by Drew and his contemporaries was on observation and enquiry in the field, which had to be co-ordinated with, and not subordinate to, work in the study. In his paper (1931) 'On writing a Parish History . . .' archaeological features—old banks, sunken lanes, potsherds and their location—are shown to be potentially as important as formal documentary evidence in unravelling the past. How right he was and how well he followed his precepts, whether in Dorchester, at West Parley or in the Iwerne Valley!

In the half-century or so up to 1930, a brief survey like this must necessarily omit some noteworthy contributions, but mention must be made here of Heywood Sumner's inimitable sketch-plans (1913 and 1930) and H. P. Smith's discoveries at Hamworthy (1930). From that year onward, archaeological material was being published notable for its quantity and quality. The interim reports from Maiden Castle and Colliton Park (1934-38) immediately provided more evidence than any other excavations reported in the *Proceedings* since Poundbury.

After the Second World War, the last thirty years have brought a vast mass of information. The 'Archaeological Notes' inaugurated by R. A. H. Farrar in 1948 provide an invaluable mine of details about discoveries, while J. B. Calkin compiled a number of important syntheses for various periods, prehistoric and Roman. The most significant development in the fifties was the government-financed rescue excavation, involving habitation sites threatened by quarrying, as at Marnhull, or the ever-vulnerable round barrow. This is perhaps the keynote on which to end. While the amateur archaeologist continues to publish significant results (Studland, Walls-Puncknowle, Halstock), an increasing role has been played by the professional (Waddon Hill, Dewlish). It is true that refined techniques and complex interpretation may be making reports difficult for the casual reader, but we can be sure that there is emerging a more secure knowledge of what happened in Dorset long ago than our antiquarian forebears could have predicted one hundred years back.

N.H.F.

PROPHET IN THE WILDERNESS—REV. WILLIAM BARNES AS AN ADULT EDUCATOR

PATRICK KEANE

When William Barnes commenced his work as an adult educator in 1851, many of the early antipathies and ambitious objectives of the ‘useful knowledge’ movement had moderated. The movement began in the 1820s as an attempt to spread a knowledge of scientific principles among the literate skilled working men, known generally as ‘mechanics’. Such men were expected to become master craftsmen or foremen in the new factories, and, in the euphoria of the period, were expected to make significant personal contributions toward the nation’s technological development. Lord Bacon’s dictum that ‘Knowledge is Power, Wealth, and Happiness’ became the motto of the literary, scientific, and mechanics’ institutes wherein the lore of the new scientific age was to be dispensed. These institutes developed first in the industrial North and Midlands, and in the London area, where tangible rewards for sustained evening study were popularised by the careers of such folk heroes of the age as James Watt. Supporters included factory owners eager to have an efficient and disciplined work force; radical and whig politicians anxious to direct the reforming enthusiasm into politically acceptable channels; philanthropists keen to promote the education of the poor; and some working class leaders scenting a possible avenue of social emancipation. Opposition came from an equally mixed group, varying from those who feared that such education would upset the prized *status quo*, to others who considered that the concept of ‘useful knowledge’ was too narrowly utilitarian to benefit other than the employers. The priorities of an educational programme intended to stress the sciences and to exclude religion were clearly at variance with established thought, and the early institutes ‘received the most direct opposition from that powerful section of the community, the clergy of the Established Church’¹. That Unitarian ministers were to prove stalwart champions of the new institutes even further alienated Anglican support. Despite the variety of handicaps encountered, by the mid-nineteenth century the institutes had proliferated, and some were able to provide broad educational and recreational programmes, to enroll diverse groups of men and women, and even to establish schools for members’ children. Institutes were now to be found not just in the shadows of cotton mills and counting houses, of steelworks and shipyards, but nestling amid the villages of the Lincoln Wolds, the Lake District, the Wye Valley, and the chalk uplands of Dorset.

In reflecting local needs, aspirations, conflicts, and resources, the institutes understandably differed markedly in their vitality and programmes. At one extreme were some major urban institutes offering graduated programmes of lectures, classes, a library, reading room, museum, and nascent laboratory, in their own spacious premises. Such institutes might be staffed by a mixture of paid and volunteer officials, whose duties included the holding of examinations and granting of certificates, the provision of recreational facilities, and the holding of public exhibitions. At the other extreme lay some small rural institutes, often short-lived and painfully poor, offering, in cramped accommodation, such assorted lectures as well-wishers might give without charge, and such miscellaneous books as might be donated for reasons either noble or perverse. By the mid-nineteenth century, some of the more affluent institutes were providing a fairly regular income to peripatetic lecturers and class teachers, and the latter were being accorded the title of ‘professional’. Most, however, were involved as adult educators only insofar as their other career interests permitted, and they expected no more than expenses or overnight accommodation in return for their visits. Staffing became a particularly critical matter for relatively isolated rural institutes with scant resources and a membership having limited formal education. The degree of expertise needed for such tasks as supervising a library, balancing income and expenditure, or planning future programmes was such as to render some middle class support highly desirable. Similarly, while there were to be instances when working class members delivered lectures, the events were considered truly exceptional. Cases of mechanics’ institutes developing under (radical) working class management were therefore quite rare, and middle class support was urged as a social obligation or Christian duty. As the clergy

¹ J. W. Hudson, *The History of Adult Education* (London, 1851), 201.

were frequently the major sources of professional talent in rural areas, their relationship to such institutes could clearly be a critical factor in the latter's survival. By the 1840s, evangelical fervour was drawing the Church increasingly into such fields as adult education, although the nature of some commitments did not escape criticism. First came the establishment of church institutes, wherein religious teaching enjoyed an established place, and then the local branches of the YMCA, established after 1844. Thomas Coates, secretary of the Society for the Diffusion of Useful Knowledge, expressed the views of many early adult educators, when he criticized this trend. He argued that it had a divisive effect on the limited resources available to adult education, and facilitated that religious intolerance which the earlier institutes had consciously sought to avoid². That increasing numbers of the clergy also contributed their talents to the literary, scientific, and mechanics' institutes suggested that early suspicions of radicalism had moderated. Even the continuing secular curriculum, less scientific than intended originally, was clearly not held to exclude some beneficial Church influence. It was in such a context that the Rev. William Barnes came to make his contributions as an adult educator.

Barnes' career was itself an illustration of the social mobility that many expected from adult education, and he was proud of his humble origins. He was born on 22nd February, 1800 (or 1801), the son of a tenant farmer in the village of Bagber. His multifaceted career was to embrace being an Anglican priest, a schoolteacher, a linguist, an engraver, an artist, and an author. His contributions were at once local, in the study and teaching of the West Saxon dialect, and yet sufficiently noteworthy to merit his inclusion in the American supplement of the *Encyclopedia Britannica* and for the Northwestern Literary and Historical Society of Sioux City, Iowa, to elect him to honorary membership in 'appreciation of your beautiful verse and in recognition of your great learning'³. In Britain he was recognised by the grant of a Civil List Literary Pension in 1861, and by the friendship of such poets as Alfred Lord Tennyson, Coventry Patmore, Thomas Hardy, Francis Palgrave, and Edmund Gosse, and, as a result of an interest in philology, of Prince Louis Napoleon Bonaparte. Barnes was a Cambridge graduate, yet essentially a self-educated man who had begun work in a lawyer's office around the age of thirteen, and started his own school at the age of twenty-two, with ten pupils. He went on to learn to play the violin, flute, and piano, and recorded that 'I took up in turn Latin, Greek, French, Italian, and German. I began Persian with Lee's Grammar, and for a little time Russian, which as being wanting in old lore, I soon cast off'⁴. He read widely in fields as diverse as law and astronomy, and even contemplated developing his proficiency as an engraver with a view to a career in that field.

The catholicity of his growing interests was to find expression in publishing, as also did the pastoral contentment of an early life spent in the secluded and idyllic beauty of the Blackmore Vale. He was to have some of his English verse published as early as 1820, and thereafter his writings were to encompass a broad field from art to geography and from mathematics to the social conditions of the poor. He was a regular contributor to such journals as the *Gentleman's Magazine*, the *Retrospective Review*, *Macmillan's Magazine*, the *National Review*, and *Fraser's Magazine*; the author of several books; and a contributor of written evidence to the Royal Commission on the Employment of Children, Young Persons and Women in Agriculture (1869). In 1838, he enrolled as a part time student at St. John's College, Cambridge, but it was not until 1847, following his ordination as a deacon and stipendiary curate of Winterborne Whitcombe that he made the first of a series of obligatory residences in college. There he managed to combine his studies in divinity with a course on mineralogy, but found college life irksome. Ordained priest in 1848, he went on to graduate as a bachelor of divinity two years later, but at 'a more trying cost of time in residence in Cambridge than even of money'⁵. Thereafter he was to lead an active life, supervising his Dorchester boarding school, ministering to his parishioners, publishing both prose and poetry, acting as honorary secretary of the Dorset County Museum, of which he was a co-founder, and as chairman of the Dorchester Total Abstinence Campaign.

² Thomas Coates, *Report on the State of Literary, Scientific, and Mechanics' Institutes*, ed. W. H. J. Traice (London, 1841), 15.

³ William Barnes, Manuscript Scrapbook [hereafter cited as SB], no. 5. J. M. Stoddart & Co., letter to Barnes, 17th May, 1882; Ben W. Austin, letter to Barnes, 12th April, 1886. Apart from references in the many published works on his career, documentation of William Barnes' adult education contributions may be found in the Dorset County Museum collection of his manuscript scrapbooks and letter files, and the Dorchester Public Library newspaper files. Permission to view such material is gratefully acknowledged, as is the Dalhousie University research grant which facilitated this study.

⁴ Quoted in Lucy Baxter, *The Life of William Barnes: Poet and Philologist* (London and New York, 1887), 24.

⁵ Quoted in Giles Dugdale, *William Barnes of Dorset* (London, 1953), 134.

Despite this hectic existence, he was to find time to make a substantial contribution to the development of adult education, becoming as his daughter Lucy noted ‘one of the most earnest supporters of the new movement, and . . . willing at any time to lecture or to teach the young men’⁶. His involvement was the natural outcome of his own conception of one of the manifold duties of a priest—‘good work of an educational kind for older minds in night schools, and the now wonted readings and music’⁷ . . .’. It was a view shared by the Rev. J. J. Blunt, author of a much reprinted contemporary work, which identified adult education as one of the specific obligations of the priesthood⁸. The Dorset scene, in any case, seems to have lacked any such foundations as the nearby Bath Mechanics’ Institute, which specifically excluded the gentry from any share in its management⁹. Rather, the model was the Corfe Castle Mutual Improvement Society, which rather incongruously proclaimed that it was ‘patronised by the earl of Eldon, the clergy and gentry of the neighbourhood’¹⁰. This was quite a departure from the traditional mutual improvement society, whose informal meetings, often in members’ homes, ‘knew no master and acknowledged no limitations’¹¹. Clearly, amid the social conservatism of a county remembered for its Tolpuddle Martyrs (1834), a proclaimed adherence to the *status quo* was considered necessary for the society’s survival. Barnes himself had remained silent on that trial despite a concern he had expressed for the pervasive misery of the ‘landfolk’ in his first eclogues in the Dorset dialect, published in 1833-34 in the *Dorset County Chronicle*. Similarly, despite demonstrating a definite interest in the physical sciences during his career, Barnes avoided any controversy between science and religion, and was to make his contributions as an adult educator almost entirely in the arts and social sciences. The Church’s suspicion of scientific studies had been sharpened when, in 1859, Charles Darwin proposed an idea of evolution supported by natural selection, and Herbert Spencer argued for a primacy in scientific studies¹². While Barnes rejected such primacy, his daughter Lucy credits him with recognising their importance ‘long before Herbert Spencer had written his *Essays in Education*’¹³. That the controversy led to a priest in Barnes’ own Salisbury diocese being condemned for heresy in 1862 may also have influenced his reticence¹⁴. However, Barnes was by nature a mild, gentle man, given more to study than to controversy and conflict.

Explicit social criticism, however, was not such a theme of Barnes’ writings and lectures as was his advocacy of the good Christian life, with its obligations to one’s fellow men. Considering the success which attended the publication of the first collected edition of his dialect poems in 1844, one might have expected him to have delivered some public readings of his poetry before mid-century, but, whether from overwork or reticence, he does not appear to have done so. Instead, the way was prepared for him by the Rev. Edward Nares Henning, vice-president of the Sherborne Literary Institution, who gave the first reading before that Institution’s members in January, 1856, and, encouraged by a second collection in 1859, was still giving such readings to them in 1878¹⁵. Despite a succession of personal difficulties, among which we may note the death of his wife, Julia Miles Barnes, on 21st June, 1852, Barnes decided to take in his ‘sadness to constant work out of school, as well as in it’¹⁶ Part of this energy was channelled into more writing, and part into adult education. The pace of his subsequent lecturing may be gauged from an entry in his daughter Laura’s diary for 1861, when she recorded having packed his overnight carpet bag for a tour embracing

⁶ Baxter, 117.

⁷ SB, no. 4, undated newspaper report.

⁸ J. J. Blunt, *The Acquirements and Principal Obligations and Duties of the Parish Priest* (London, 1856; 5th ed. 1865).

⁹ *Keene’s Bath Journal and General Advertiser*, 20th June, 1825.

¹⁰ SB, Salisbury Poster, 1860-1861 session, and Corfe Poster, 8th Jan., 1857.

¹¹ A. E. Dobbs, *Education and Social Movements 1700-1850* (London, 1919), 216.

¹² Charles Robert Darwin, *Origin of Species* (London, 1859). Herbert Spencer published four journal articles on education between 1854 and 1859, and these were collected and published as *Education, Intellectual, Moral and Physical* in 1861.

¹³ Baxter, 48.

¹⁴ Bishop Samuel Wilberforce had promptly labelled Darwin’s thesis as both atheistical and illogical. The controversy was exacerbated in 1860 when a group of seven writers, mainly Anglican clergy, published their *Essays and Reviews*, arguing for a more liberal interpretation of the Bible. One of the writers, the Rev. Rowland Williams of the Salisbury diocese, was condemned by the Court of Arches in 1862 for heresy, and the book itself was condemned two years later by both houses of convocation.

¹⁵ William Barnes, *Poems of Rural Life in the Dorset Dialect* (London, 1844); *Hwomely Rhymes* (London, 1859); William Barnes, letter file; Rev. E. N. Henning, letter to Barnes, 12th Feb., 1862; Henning, letter to Barnes, Jan., 1856, quoted by Baxter, 162; Henning, letter to Barnes, SB, no. 2, 10th May, 1878.

¹⁶ SB, no. 2, note, 21st June, 1852.

'Tonight at Wimborne, tomorrow Blandford, Wednesday at Salisbury, Thursday at Shaftesbury, Friday at Mere, our first home'¹⁷.

Barnes' contributions as an adult educator were to span a West Country circuit from Bristol to the Isle of Wight, to be valued at the national (1865) congress of the Archaeological Institute of Great Britain and Ireland, and to be proposed in 1858 for a London meeting at which Queen Victoria was expected. Because of the often vague or conflicting use of institute titles, lecture titles, and even lecture dates, in the many writings about and by Barnes, we shall probably never have a completely accurate record of his many contributions to adult education. There are references to his visits to such geographically separate bodies as the Bristol Literary Institution, the Somerset Archaeological and Natural History Society (Taunton), Frome Mechanics' Institution, Devizes Literary and Scientific Institution, Mere Literary Institution, Christchurch Working Men's Institute, the Hartley Institution (later the University of Southampton), and Ryde YMCA. There are similar records of contributions to a broad range of both religious and secular bodies in Dorset. These include the Beaminster Church Institute; the Powerstock Archdeaconry; Wareham YMCA; Poyntington, 'in aid of Mr. Heale's fund for building his chancel'; the Dorchester Temperance Society; Fordington United Benefit Society; the Mowlem Institute, Swanage; a selection of village reading rooms and schoolrooms; the Dorset County Museum; the supporters of Blandford Industrial School for Girls; Hinton Martell Cooperative Society; and the men of the Dorset County Militia. The list is almost endless, and his notes often incomplete and cryptic. There is also a tantalizingly brief reference to his establishing a night school in his Winterborne Came rectory in 1863, but we learn nothing of the students or their studies¹⁸. It was not, however, in such cities as Bristol or Southampton that the frequency and impact of Barnes' visits were most apparent. Rather, he became a prophet of enlightenment among more isolated rural communities such as Wareham, set amid the 'heathy, furzy, briary wilderness' to be immortalised by his young friend Thomas Hardy¹⁹. Indeed, both Barnes and Hardy were saddened by the migration of the 1870s, when Dorset labourers left home in increasing numbers in search of better opportunities in the towns. For this reason, our exploration of Barnes' activities will concentrate on those among the 'landfolk' of his own country. It will be convenient to treat of these on an institutional or geographic basis, beginning with the first known visits.

The earliest recorded request for Barnes' participation in adult education came after his ordination and graduation. It came from Weymouth, which had grown into a fashionable seaside resort under the patronage of George III. Asking for a lecture on 26th November, 1861, the secretary of the Weymouth Literary and Scientific Institution wrote that 'the subject of course we leave to you . . . We are not in a position to offer you any remuneration . . . bring a few friends with you from Dorchester in the Fly, which can wait for your returning, the expenses of which we shall gladly defray'. The resultant two-hour lecture on the Anglo-Saxons, delivered in a lecture room adjoining the institution's geological museum above the Royal Baths, marked the beginning of a long series of engagements at Weymouth²⁰. In 1859, a year in which Barnes twice delivered readings of his poetry to the institution's members, a reviewer noted 'a dash of quiet sarcasm' in the content²¹. In the same year, the members' conscience had apparently been troubled also by Clara L. Balfour, a lecturer on temperance and women's issues. An invitation for her to lecture on the 'Female Poets of England' had 'excited so much controversy'—whether because of hostility to the evolving women's movement, and/or because of the expense of her journey from London, we know not²². Sarcasm apart, Barnes continued to be invited to deliver poetry readings and lectures on such subjects as the 'Origin, Progress, and Benefits of Trial by Jury' and the

¹⁷ Diary of Laura Barnes, 14th Jan., 1861, quoted in Trevor Hearl, *William Barnes, 1801-1886: the Schoolmaster* (Dorchester, 1966), 296.

¹⁸ Hearl, 312.

¹⁹ Thomas Hardy, *The Return of the Native* (London, 1952), 6.

²⁰ SB, no. 2, letter to Barnes, 18th Nov., 1851. It is not, however, until 1858 that Barnes again records a lecture delivered in Weymouth—*ibid.*, no. 3, note, 10th Feb., 1858. The institution's premises in St. Mary's and St. Thomas' Streets housed both a lecture room and a small geological museum—Kelly's *Post Office Directory of Dorsetshire* (London, 1868), 118.

²¹ SB, no. 3, Note, 2nd Mar., 1859. Poster, 10th Nov., 1859. *D[orset] C[ounty] C[hronicle]*, 24th Nov., 1859.

²² *DCC*, 27th Jan., 1859. In the same year was published a proposal for adult education classes for working women—Fanny Hertz, 'Mechanics' Institutes for Working Women', *Transactions*, National Association for the Promotion of Social Science (London, 1859), 347-354.

'Source of the English Language'²³. The secretary was to compliment Barnes' efforts as inducing people to join the institution, and the mayor was to preside at some gatherings, but by the late 1860s the public enthusiasm had waned. Thus 'Readings in the Vernacular', delivered in November, 1869, were reported as follows:

We found about half a dozen sleepy adults and a dozen wide wake and unruly boys in the room . . . We had expected a treat, but were cruelly disappointed. We could just hear sufficient to know that Dr. [*sic*] Barnes was reading well, but we could hear so little that we knew not what it was all about, the reader himself being the only one in the room who appeared to enjoy the selection²⁴.

Barnes, if disappointed at such responses, must have been doubly perturbed at the title 'doctor', something that the University of Cambridge declined to award him. Nevertheless, he was back a week later, and despite the commendation received, it was felt necessary to refer to the competition of a lecture being delivered in the nearby National Schoolroom, to explain his small audience²⁵.

Another Weymouth institution that sought and received Barnes' support was the Weymouth Working Men's Club, founded in late 1862. It was, indeed, in that year that Henry Solly, a Unitarian minister formerly of Yeovil, Somerset, and Henry Brougham, the great champion of popular adult education, had combined to launch the Working Men's Club Institute Union²⁶. In contrast to the original 'useful knowledge' ideal, such clubs accorded recreation and refreshments a regular place in their programmes, although they still adhered to temperance principles. Many of the literary, scientific, and mechanics' institutes had likewise bowed to a demand for some recreational provision, and Barnes himself facilitated such a transition by often following his institute lectures with some poetry readings. The Weymouth club had been established on the North Quay, under the presidency of George E. Eliot, a member of the Weymouth Literary and Scientific Institution. It sought to provide an educational and recreational programme for working men (particularly the 'navvies' who came with the railway in 1856), a meeting place for their wives and mothers, and Sunday religious services. A library, a reading room, an adult literacy class, and weekly readings and entertainments were among the facilities available. Eliot, in requesting Barnes to read some of his poetry to the members in 1863, described them as 'working men and navvies, of whom we have a great number in the town just now'²⁷. Barnes was to oblige with readings on several occasions in the club's 'room in one of the lowest parts of the town', and on occasion members might be joined by 'a large number of friends'—the last recorded request for his participation was for November, 1873²⁸.

To his boyhood home in the Blackmore Vale, Barnes returned in January, 1852, to lecture on the Anglo-Saxons to the members of Sturminster Newton Literary and Scientific Institution. This institution, founded in 1841, was providing formal class instruction, a newsroom, a library of some five hundred volumes, and a lecture programme which, for this session, encompassed astronomy, heat, music, early drama, the Anglo-Saxons, and witchcraft—a general rather than utilitarian programme, and yet supported by a membership of only forty people²⁹. The facilities were 'freely offered to all in return for a payment of less than 1½d. per week'³⁰. Barnes' two-hour contribution was acclaimed as an 'intellectual treat' by 'a full and respectable audience', and it was followed in later years by such lectures as 'Britain and the Britons', 'The Early History of the West', 'Random Notes and Some Readings From My Scrapbook', and 'English Speech, with Readings of the Dorset Poems'³¹. 'Unwavering attention' and 'genuine and hearty admiration' were the kind of response credited to such of his lectures as that on 'Britain and the Britons', which surveyed

²³ SB, no. 3, Posters, 9th Jan., 1861, and 12th Feb., 1862; SB, no. 4, H. T. Hallett, letter to Barnes, 8th Oct., 1867; note of 18th Oct., 1867; Poster, 10th Feb., 1869; and a note of 13th Dec., 1867 refers to readings 'at the schoolroom, Weymouth'.

²⁴ *Weymouth and Portland Guardian*, 20th Nov., 1869.

²⁵ *The Telegram*, 26th Nov., 1869.

²⁶ B. T. Hall, *Over Sixty Years: The Story of the Working Men's Club and Institute Union* (London 1922).

²⁷ SB, no. 3, George E. Eliot, letter to Barnes, 30th Jan., 1863.

²⁸ SB, no. 4, note, 19th Feb., 1866; Poster, 10th Dec., 1866; Poster, 18th Jan., 1869; George E. Eliot, letter to Barnes, 1st Sept., 1873; *DCC*, 28th Jan., 1869. Fees in 1866 were: front seats, 3d.; back seats, 1d.; members, free. Fees in 1869 were: front seats, 1s.; back seats, 6d.; members, free.

²⁹ Hudson, 224. Membership fees were 1s. 6d. per quarter.

³⁰ SB, no. 2, Poster, 1851-1852 session.

³¹ SB, no. 2, note, 12th Jan., 1852; Poster and note, 6th Jan., 1857; SB, no. 3, Poster, 24th Feb., 1864, and poster, 4th Dec., 1866; *DCC*, 15th Jan., 1857. To this institution, members had the privilege of admitting a lady free of charge, while non-members were admitted to lectures on payment of 6d.

‘the laws, language, and literature of the early inhabitants of our island, together with such instructive information on the state of our country before the Saxon rule, the mode of government, the official character and calling of the bard, the druid, &c., the poetry of the Britons, the wisdom contained in the triads . . .’ This institution, lacking a permanent home of its own, was obliged to hold its functions in the neighbouring boys’ school, or girls’ school, as circumstances dictated. Despite its precariousness, it maintained its links with Barnes at least until 1874, when it was noted that many local spots were ‘immortalised in his far-famed poems’³².

Elsewhere in the vicinity of the Blackmore Vale, Barnes lectured also to such bodies as Stalbridge Literary Institution and Gillingham Literary Institution. A lecture to the former on the ‘Rise, Changes, and Present State of the English Language’ in 1869 was followed the next year by one to the latter on the ‘History of the West English People and their Folk Speech’³³.

Rather surprisingly, the county town of Dorchester appears not to have participated noticeably in the early movement for popular adult education, but the coming of the railway line from Southampton in 1847 brought a wind of change! After mid-century, Barnes was to be associated with three separate adult education ventures there—the Dorset County Museum, the Dorcheser Working Men’s Mutual Improvement Society, and the Dorset County Militia. Concern to protect local historic sites from railway development had led Barnes and others to establish the museum in 1845, and by mid-century it had a membership of 91 and a library of 300 volumes³⁴. It then sought to reach a wider public, and in 1852 it initiated a series of free public lectures. Barnes’ own contribution was a lecture on ‘Light and Heat’ in that autumn, and one on ‘Gold and Social Welfare’ in the following spring—incursions into physics and economics that were also represented in his publishing activities³⁵. His views of the preferred economic order were of one based on the principles of Christian charity, rather than on the exploitation and oppression he saw increasingly around him, and it was in such lectures that his roles as priest and adult educator fused most clearly.

In 1855-56 Barnes, along with his co-founders of the Dorset County Museum—Canon C. W. Bingham and the Rev. Henry Moule, Vicar of Fordington—joined to promote the establishment of the Dorchester Working Men’s Mutual Improvement Society. Accommodation was quickly found in South Street for a reading room and a hurriedly assembled library of 400 volumes, and the use of the town hall was arranged for an evening lecture programme. To meet the needs of a working class membership, the library and reading room were opened from 9.00 a.m. to 10.00 p.m. daily, and a selection of London and local newspapers was obtained. The extent of early clerical support may be gauged from the fact that seven of the nine lectures in the 1856-57 session were delivered by local clergymen. The breadth of their contributions was little suggestive of the early ‘useful knowledge’ movement; it embraced the ‘Ancient Britons’, ‘Rome’, ‘a new translation of the Bible’, ‘Longfellow’s Poetry’, and ‘Industry’³⁶. Barnes’ own contributions included the delivery of a series of lectures, chairmanship of a debating class, and apparently the first public reading of his poetry. Beginning in March, 1856, his lectures here during the next decade included such topics as ‘The Saxons in England, Especially in Dorset’, ‘Ancient Britain and the Britons’, ‘Labour and Gold’, ‘The Beautiful and Art’, and ‘Marriage, Treated on Grounds Historical, Social, and Divine’³⁷. The attendance and interest appear to have been uniformly high, judging from newspaper reports. Phrases such as ‘a large and respectable audience’ recur, as do such commendations as an ‘intellectual treat’, ‘lucidity and depth of research’ and ‘excellent discourse’.

While the ‘magic-lantern’ was a fairly common visual aid at this time, Barnes instead made occasional use of such items as ‘rare paintings’ or a collection of old wedding rings to

³² SB, no. 5, note, 7th Dec., 1874. *DCC*, 10th Dec., 1874.

³³ SB, no. 4, posters, 5th Jan., 1869 and 19th Jan., 1870. Admission to Stalbridge was either 3d. to front seats or 1d. to back seats. Admission to Gillingham was 6d. to reserved seats, 4d. to front seats, and 2d. to back seats.

³⁴ Hudson, 224. Annual fees were 10s.

³⁵ Baxter, 128 and SB, no. 2, for lectures on 30th Nov., 1852 and 8th Feb., 1853. Barnes notes that ‘subscribers and their friends admitted free’—the latter, a more liberal dispensation than associated with the literary, scientific, and mechanics’ institutes. The publications were *Exercises in Practical Science* (London, 1844), and *Views of Labour and Gold* (London, 1859).

³⁶ SB, no. 2, poster, 1856. While members enjoyed free admission, visitors had to pay 1s. for a front seat, 6d. for a second seat, or 3d. for a back seat.

³⁷ *DCC*, 3rd Apr., 1856; 11th Dec., 1856; 29th Jan., 1857; 3rd Dec., 1857; 18th Mar., 1858; 14th Dec., 1865. SB, no. 2, 28th Oct., 1856; poster, 8th Dec., 1856; note, 27th Jan., 1857; poster, 17th Mar., 1858. SB, no. 3, poster 29th Nov., 1864; poster, 12th Dec., 1865.

illustrate his lectures to the Dorchester working men. Their appreciation of his efforts was made apparent in February, 1857, after he had chaired one of the society's debating classes, on the subject of 'Dreams, Clairvoyance, &c.'. The members presented him with a framed testimonial and a silver pencil case, and 'spoke of his kindness in giving them lectures and instruction when [the society] was first begun and looked down on by many people'. Barnes, in acknowledging the gesture, said he 'was, like themselves, a working man, so he cheered them on in the path they had chosen of cultivating their minds and refining their tastes'³⁸. His daughter Lucy, who recorded the occasion, was to recall one of the participants—'one of the working men named Cole', and she credited him speaking 'wonderfully well, every word showing a refined mind and good feeling'. The incident is instructive in a number of ways. That Barnes should proclaim himself a working man was hardly an encouragement for the Victorian middle class parents to support his school. That he should encourage the cultural, rather than the much publicised utilitarian goals of popular adult education underlined his apprehensions about much of the new competitive industrial era. That the society had been 'looked down on' suggests that many feared it would indeed serve goals other than the much proclaimed one of 'making a man a better mechanic'—Barnes seems to have been encouraging the mechanic to become a better man! While the venture was certainly not a radical working class one, it was perhaps suggestive of the Christian Socialism that had given birth to the London Working Men's College in 1854.

Even as parents were withdrawing their sons from his school, plans were being made in 1858-1859 for Barnes to give a reading of his poetry in the London home of the Duchess of Sutherland, and with the possible attendance of Queen Victoria³⁹. Though the project did not materialise, it was illustrative of the rising prestige of his poetry. Certainly, when in October, 1858 he gave a reading to the Dorchester Working Men's Mutual Improvement Society, he noted the presence of a 'throng of people'⁴⁰. His daughter Lucy gave a fuller account:

The hall was thronged almost to suffocation with rich and poor, and seldom has an audience been more excited by various emotions. At one moment the whole mass of people would be breathless with interest at such descriptive poems as 'Jeäne's Wedden'-day in Mornen', 'Grammer's Shoes'; the next, the women would be sobbing audibly over 'Meäry Ann's Chile', or 'My Love's Guardian Angel'; then *hey presto!* sorrow would flee away, and the multitude of faces relax into smiles, with now and then a burst of hearty laughter at 'What Dick an' I Done', or 'A Bit o' Sly Courten'. It seemed to one of the poet's children that the crowd of human beings was a magic harp on which he played, bringing forth at his will the emotions he chose⁴¹.

References to the presence of men and women, and of 'rich and poor', clearly suggest the attendance of a wider public than in membership of the society. Similarly, a reading given here by Barnes the following September attracted an audience 'both numerous and select', and led to him being called 'the Dorset Burns' and one whose poetry displayed the 'homely artistic touches of the Rev. George Crabbe'⁴².

At the close of the 1860s, the society could review its progress and identify its weaknesses and strengths. It still had the support of such volunteers as Barnes, as evidenced in his presiding, in 1868, over a 'Humorous Lecture on Lecturing'⁴³. It retained as late as 1869 the services of W. J. W. Pike, credited with having been 'honorary treasurer for the past fifteen years'⁴⁴. The society's fourteenth annual meeting that January witnessed 'a numerous attendance', and recorded the members' regular use of the circulating library and reading room. On balance, the secretary reported the financial situation as unsatisfactory. The income from donations was falling, and the lecture programme had sustained a loss. There were insufficient funds to purchase new library books, and difficulty was being experienced in sustaining an evening class programme with volunteer instructors. The discrepancy between members' interests and available resources was particularly apparent in the lectures, which

³⁸ DCC, 26th Feb., 1857 and Baxter, 163.

³⁹ SB, no. 1, Caroline Norton, letter to Barnes [undated], confirming the Duchess of Sutherland's support.

⁴⁰ SB, no. 3, note, 5th Oct., 1858.

⁴¹ Baxter, 167.

⁴² DCC, 22nd Sept., 1859.

⁴³ SB, no. 4, poster, 31st March 1868.

⁴⁴ DCC, 21st Jan., 1869. Apparently his services are dated from before the formal establishment of the society in 1855.

the secretary implored the members to support, ‘especially when local gentlemen gave them gratuitously’.

Perhaps more susceptible to such encouragement were the members of the Dorset County Militia, who attended readings of Barnes’ poetry in the Dorchester Corn Exchange between 1866 and 1869. Temperance and moral improvement appear to have been the guiding principles behind an adult education programme instituted for these men by Harriet Bingham of Bradford Peverill, wife of the their regimental colonel. The programme included religious services, a Bible class, a (religious) reading room serving tea and coffee, evening lectures by a domestic missionary, and readings by the ‘Bard of Dorset’. It was hoped that by participation in this programme, the militiamen would retain a ‘quiet and orderly demeanour’, and avoid the attractions ‘of the beerhouses where so much valuable time was formerly worse than wasted’⁴⁵. Certainly, some 300 militiamen participated in the venture in 1866, and attested to the popularity of Barnes’ contributions. On the occasion of a reading in 1869, it was not just the date that Mrs. Bingham selected, but the actual readings too! It is worthy of note that when the Dorchester Corn Exchange, in which these militia readings had first been delivered, was replaced by a new structure in 1867, Barnes was prevailed upon to participate in the commemorative *soiree* and *conversazione* with yet more poetry readings—the ‘working man’ was now a figure of some civic consequence⁴⁶.

In December, 1855, Barnes began an association lasting at least fourteen years with the Blandford Institution. Founded in 1831 as the Blandford Forum Literary and Scientific Institution, this body had fifty members by mid-century⁴⁷. It affiliated with the Society of Arts after 1852, enabling it to benefit from the experience and expertise of other such bodies, and to receive new materials for its library⁴⁸. As the institution lacked its own premises, Barnes’ contributions of lectures and poetry readings were held in such venues as the Crown Hotel, under the presidency of the mayor, or the Belle Vue Assembly Rooms. His lectures included such topics as ‘The Saxons’, ‘The Beautiful and Good in Nature and Art’, ‘Ancient Britain and the Britons’, and ‘The Dorset Dialect’⁴⁹. His dialect poetry readings appear to have been particularly popular, and one in 1860 was followed by the institution’s president, Lord Sidney Osborne, thanking Barnes ‘in as broad a Dorset dialect as he could select’⁵⁰. Similarly, a ‘very good’ audience in 1869 expressed appreciation both for the poetry and his general delivery⁵¹.

Another Blandford venture to attract Barnes’ support was the Blandford Working Men’s Club, whose meetings were held in the town hall. He read some of his poetry here in 1863, and three years later ‘the attendance was very large’ for a ‘capital lecture’ on ‘Pickings from my Notebook’⁵². If dillitantism is suggested by the title of the last lecture, it is at least balanced by another contemporary venture of this club—an adult evening class in physical geography. A month after Barnes’ visit, this class ‘was inspected by J. F. Helm, one of the class inspectors of the Science and Art Department, with which the class is associated’⁵³. This government body originated as a department of the Board of Trade in 1852. In 1859, the Department instituted a new system of ‘payment by results’, encouraging the development of a gradually broadening category of technical education by making grants to teachers of students who passed its examinations. While such government support came too late to sustain much of the early evening class provision of the voluntary institutes, it did lead to a substantial increase in technical studies, if at the expense of some examination ‘cramming’.

Wareham Mutual Improvement Society was established ‘chiefly through the exertions of the Rev. A. M. Walker’, and at mid-century its 97 members boasted a newsroom, a library of 264 volumes, an evening lecture programme, and an evening class programme with 26 students⁵⁴. By the 1860s the library in North Street was to increase to some 400 volumes and

⁴⁵ SB, no. 4, notes, 1st May, 1866; 8th May, 1866; 7th May, 1867. Undated letters from Harriet Bingham referring to readings for 7th May, 1869; *DCC*, 9th May, 1867. Admission to Barnes’ readings was 1s., or 6d., to reserved seats.

⁴⁶ SB, no. 4, poster, 19th Dec., 1867.

⁴⁷ Hudson, 224.

⁴⁸ Society of Arts, *General Memorandum on the Union of Provincial Institutions* (London, 1852).

⁴⁹ SB, no. 2, note, 18th Dec., 1855; SB, no. 3, posters, 6th Jan., 1859; 15th Jan., 1861; 21st Jan., 1862. *DCC*, 6th Jan., 1859.

⁵⁰ SB, no. 2, note, 5th Jan., 1860, and *DCC*, 12th Jan., 1860.

⁵¹ SB, no. 4, unidentified newspaper report, Nov., 1869.

⁵² SB, no. 3, note, 21st Dec., 1863. SB, no. 4, note and poster, 12th Nov., 1866. Non-members were admitted to reserved seats at 6d., and second seats at 3d., and ‘the working classes were admitted to the back seats at 1d.’. *DCC*, 15th Nov., 1866.

⁵³ *DCC*, 13th Dec., 1866.

⁵⁴ Hudson, 224. Membership fees ranged from 2s. 6d. to 2s. per quarter.

was to remain open to the members until 10.00 p.m. daily.⁵⁵ The Society's lecture program for 1855-1856 included seven evening lectures—four coming from clergymen, including Barnes. The subjects comprehended astronomy, chemistry, rivers, vehicles, the steam engine, Wordsworth's poetry, and, from Barnes, 'Glimpses of the Saxons in England, but Especially in Dorset'⁵⁶. Lacking adequate premises of its own, the society held its lectures in the town hall. It was there that Barnes was first introduced to the members, by the chairman, the Rector, Rev. S. R. Capel, as the author of some 'much eulogised' writings. Barnes' subsequent lectures in that decade included 'Ancient Britain and the Britons', 'The Atmosphere', 'The Beautiful and Art', and 'The Dorset Dialect', followed by an unidentified one in 1864⁵⁷. Some hint of 'useful knowledge' is indicated in his lecture and experiments on 'The Atmosphere', in its treatment of the 'composition of the air, its elasticity, weight, and offices, rain bearing trade winds, land and sea breezes, mechanical action, breathing, etc.'. Perhaps less in keeping with the 'useful knowledge' movement's original objectives was his discourse on 'The Beautiful and Art'. Here the members, under the presidency of their mayor, heard of the 'theory of the beautiful, beauty of fitness, beneficence of divine work, proportion, curves, motion, color, sound, landscape, moral beauty of feeling and action, art, architecture, painting'. The support for Barnes' lectures here appears to have been of modest proportions, and the response elicited seems to have been attentive, if restrained. More enthusiasm followed his 1859 lecture on the Dorset dialect, when he accompanied it with some of his poetry readings and generated 'repeated applause'⁵⁸.

A decade later, Barnes' contributions in Wareham were to be under the auspices of its branch of the YMCA⁵⁹. Again meeting in the town hall, the mayor presided over a lecture on the 'Rise, Changes, and Present State of the English Tongue'. Two weeks later, Barnes returned to lecture on 'Poetry'. Both lectures appear to have been well attended.

Between 1856 and 1861, Barnes also delivered a number of lectures to members of the Wimborne Minster Society for the Acquirement of Useful Knowledge⁶⁰. Rather inauspiciously, the society's secretary in April, 1856 offered Barnes 'personal expenses, travelling, &c.' if he would lecture on the Saxons to 'fill up the week after next'. Such impromptu planning of programmes reflected the realities of this rural institute, and was some measure of Barnes' success in delivering that same lecture some months earlier to the twelve mile distant society at Wareham. Subsequent lectures by Barnes in 1856, 1860, and 1861, and a poetry reading in 1858 are mentioned, and the secretary's comment in 1858 that 'beggars must not be choosers' testifies to the society's dependence on such voluntary services. The notion of paying 'professional' lecturers appears to have been explored, for one member was to retort in 1860:

Where are our young and old townsmen who could give us as good and attractive results of their studies as strangers and at less cost? But we blunder and forget—'No honor for prophets in their own country'. The Working Men's Club numbers more members than this society⁶¹.

Barnes was clearly regarded as a 'prophet in his own country', even if some might consider it an intellectual wilderness. It was perhaps apt that his lecture in the following year was on 'Labour and Gold'—a fair price for one's labour!

April, 1856 marked also the beginning of a brief association of Barnes with the Corfe Castle Mutual Improvement Society, which at mid-century had thirty members⁶². This institution, on whose 'respectable' patronage we have previously commented, heard from Barnes on such diverse subjects as 'The Anglo-Saxons in England, and Especially in Dorset', and on 'The Atmosphere', plus some of his poetry⁶³. While the public were admitted without charge to the lectures, a charge was levied for the popular readings. The latter were even supplemented, as

⁵⁵ *Kelly's*, 1867, 114.

⁵⁶ SB, no. 2, poster, 16th Jan., 1856. *DCC*, 24th Jan., 1856. Non-members were admitted to reserved seats on payment of 3d. in 1856. Two years later the charge was 6d. to front seats and 3d. to second seats.

⁵⁷ SB, no. 2, posters, 19th Nov., 1856; 4th Feb., 1857; 14th Jan., 1858; 10th Jan., 1859, and note, 7th Mar., 1864.

⁵⁸ *DCC*, 13th Jan., 1859.

⁵⁹ *DCC*, 11th Mar., 1869; 25th Mar., 1869.

⁶⁰ Hudson, 224. SB, no. 2, J. Horsedell, letters to Barnes, 5th Apr., 1856 and 21st Sept., 1858; note, 17th Jan., 1860. SB, no. 3, poster, 14th Jan., 1861. Members had the privilege of introducing a friend to the lectures, but otherwise non-members were asked to pay 1s. for a front or reserved seat, or 6d. for a back seat.

⁶¹ *DCC*, 26th Jan., 1860. The report mentions Wimborne Mechanics' Institute, but this appears to be no more than the generic term for such bodies.

⁶² Hudson, 224.

⁶³ SB, no. 2, note, 26th Apr., 1856; note and poster, 8th Jan., 1857; SB, no. 3, poster, 3rd Jan., 1859. Admission to the readings varied from 1s. 6d. to 3d.

in 1859, by another stimulant to the emotions—music: ‘In order to increase the pleasure of the evening, the Corfe Castle band will attend and occasionally play some favourite pieces of secular music’.

Sherborne Literary Institution was to have one of the longest and closest associations with Barnes. Originating as Sherborne Mechanics’ Institute in 1835, and refounded as the Literary Institution in 1850, it was later retitled the Macready Institute after one of its most active and noted supporters—the Shakespearian actor W. Charles Macready. The institution had a circulating library, a lecture programme, and, under Macready’s stimulus, an adult evening class programme from 1856. Macready was an ardent advocate of adult education, though some resented the connection with the theatre, as had been apparent when he gave a reading of *Macbeth* to members of Manchester Mechanics’ Institution. Though ‘immense enthusiasm was aroused and a handsome addition made to the funds’, some feared the encouragement of ‘a taste and desire for the unhallowed pleasures of the theatre’⁶⁴. Macready, who retired briefly to Sherborne, persuaded his friend Charles Dickens to visit him in 1854, and the latter then delivered one of his famous readings to members of Sherborne Literary Institution⁶⁵. Their enthusiasm for readings suitably whetted, the members were in January, 1856 ‘quite delighted at hearing from a platform the dialect peculiar to the rural districts of their own county’⁶⁶. The occasion was a reading of Barnes’ dialect poetry, delivered by their vice president, the Rev. E. N. Henning. Twelve months later, Barnes himself came, and delivered the first of a series of lectures that was to continue at least until 1879. The topics included ‘Britain and the Ancient Britons’, ‘The Anglo-Saxons in England’, ‘The Dorset Dialect’, ‘The Sources, Changes, and Present State of the English Language’, ‘How Our Words Are Made’, ‘The House and House Life’, ‘The Beautiful and Art’, ‘The Rise and Progress of Trial by Jury in England’, ‘Labour and Gold: A Subject of Political Economy and of the Welfare of Working Men’, and ‘Education’⁶⁷. Barnes’ breadth of treatment is indicated in the lecture on ‘The House and House Life’, which comprehended ‘the sundry forms of house in other times and lands—forms of social life—pile houses—store houses of ancient Bosham—kinds of house light—inhealthy and healthy abodes—house life—marriage—mission of women’.

Attendance and interest appear to have been generally good in the early years, with Barnes being credited with ‘originality of thought’, ‘great accuracy of observation’, and ‘clear perspicuous language’. He was warmly encouraged by Henning, who had initially said: ‘I will undertake that your expenses shall be paid. The train will bring you to Yeovil, and the omnibus to Sherborne—yea, even to my very door, and of course you will be my guest’. While confessing that he ‘did not approve of riding willing horses to death’, Henning was to make repeated, and usually successful requests for Barnes’ assistance, and the latter became a frequent house guest in the wintery evenings. It was not long however before Henning was apologising for the poor attendance, and ascribing it to such factors as ‘snow and cold on the one hand and public meetings and evening parties on the other’. As early as 1859, the institution’s committee even debated the feasibility of continuing with a lecture programme, in view of a rising preoccupation with ‘penny readings and halfpenny concerts and suchlike unintellectual entertainments’. Whatever this institution’s misgivings about entertainment and recreation, the Sherborne Working Men’s Club was clearly of a different mind, and at its ‘annual amusements’ in 1862, it was noted that ‘dancing was kept up till a late hour’⁶⁸.

The situation in Sherborne, compounded by information that it was also prevalent in comparable institutions in Dorchester, Weymouth, and Yeovil, dismayed Henning almost to

⁶⁴ J. Roberts Dautrey, *Theatrical Representations Incompatible with the Objects of Mechanics’ Institutions, &c.* (Manchester, 1839), cit. Mabel Tylecote, *The Mechanics’ Institutes of Lancashire and Yorkshire Before 1851* (Manchester, 1957), 151.

⁶⁵ P. A. W. Collins, ‘Dickens and Adult Education’, *BJES*, III, no. 2 (May, 1955), 117. Dickens’ readings in aid of adult education began with that of 1853 for the proposed Birmingham and Midland Institute. He had, however, been a speaker at such institutions much earlier, and records onward from his 1840 speech at the Southwark Literary and Scientific Institution will be found in K. J. Fielding (ed.) *The Speeches of Charles Dickens* (London, 1960).

⁶⁶ SB, no. 1. Unidentified report on this reading delivered by Henning.

⁶⁷ There is too much material to list here on Barnes’ relations with the Sherborne Literary Institution, with Rev. Edward Nares Henning, its vice president, and with W. C. Macready, its president. This material is located in the Scrapbooks nos. 2, 3, 4, 5, and the unnumbered one; in Barnes’ letter files; and the *DCC*, *Sherborne Journal*, and *The Telegram*. The Sherborne Literary Institution began with fairly typical charges for the use of its library and attendance at its functions, but by 1858, those had expanded to constitute the following scale: Ordinary membership, 8s. for men, and 4s. for ladies, non-residents and youths. One guinea for a patron, entitling himself and lady to two reserved seats at public lectures; 10s. for a gentleman lecture patron; and 5s. for a lady lecture patron, entitling them to reserved seats.

⁶⁸ *DCC*, 9th Jan., 1862.

resignation. Had he realised that it was a national problem, he might indeed have resigned⁶⁹. Barnes' views are not stated explicitly, but perhaps an 1869 report on another of his Sherborne lectures epitomises his aims, as 'combining amusement with instruction of the best kind'. To this end, he supplemented his lecture programme at Sherborne with a number of poetry readings, and remained a regular contributor when the institution was obliged to discontinue hiring even occasional 'professional' lecturers after 1864, and he was told that it was at its 'wit's end' for volunteers. Macready endeavoured to enlist Barnes' support for his scheme of developing a union of Dorset and Somerset Institutes in which students in their adult evening classes would sit a regional examination and qualify for book prizes⁷⁰. Writing to Barnes, he said 'I should *very* much wish to have your name associated with this "little" effort'. Barnes, however, proved elusive, but the scheme was indeed launched in 1858 in association with the Society of Arts, and an examination was then held in Sherborne. We may conjecture just why Barnes was diffident by referring to his later Sherborne lecture on Education in 1870—topical in view of the new Elementary Education Act. Here, apart from rejecting state interference in education, he argued that it was 'bad that the word "education" should be confined to book knowledge', and that it was untrue that 'a man unschooled is wholly uneducated'. He maintained that 'there is always holden among the people, and especially among the land folk, a body, and a great body of knowledge'. Fundamentally, he argued in favour of a broad education, stressing self-fulfilment as much as any vocational preparation, and he believed the social obligations he personally espoused were a more practical way of achieving this than any government-enforced system. The tenor of his remarks was contrary to the contemporary concern for examinations, as it was to much of the utilitarianism and 'efficiency' of the age. The sincerity of his convictions could not be gainsaid, however, for in November, 1879, when almost in his eightieth year, he was still lecturing to the now retitled Macready Institute, while his friend Henning still delivered readings of the dialect poetry and provided overnight accommodation.

Over in the south east of the county, Barnes in January, 1858 began a lecturing association with the Poole Town Library Literary and Scientific Institution, founded a decade earlier and presided over by Sir Ivor Bertie Guest. At mid-century, its 220 members had a newsroom and a library of 900 volumes in their High Street premises. Its lecture programme was usually conducted in the town hall, and was open without charge to members of the Poole Mechanics' Institute⁷¹. Barnes' topics included 'Ancient Britain and the Britons', 'The Dorset Dialect', followed by readings of his *Poems of Rural Life*. Reports describe them as a 'rare treat', and 'the pathos and true poetical sentiment' of the readings was said to have brought forth much laughter and appreciation. In 1859, the institution's directors decided to bow to those pressures for recreation we have noted in Sherborne, and plans were made to replace the lecture programme with an entertainment programme. The Poole Mechanics' Institute in Hill Street, however, continued to have a lecture programme, and a noteworthy speaker in January, 1858 was J. W. Cole, a working man, commended earlier by Lucy Barnes for his refinement. Here, Cole not only lectured on Longfellow's poetry, but afterward distributed printed copies of his lecture in aid of the funds of Dorchester Working Men's Mutual Improvement Society⁷². As late as 1869, this institute was in correspondence with Barnes, to arrange a lecture. Its dependence on such volunteers is apparent in the secretary's request for a lecture 'at a time and on a subject convenient'⁷³. At the close of the 1860s, both the literary and scientific institution and the mechanics' institute of Poole were said to be 'well supported'⁷⁴.

Barnes' twenty-year association with the Shaftesbury Literary Institution in the High Street was inaugurated by the secretary's request in October, 1858 for a lecture⁷⁵. This institution, with its 'newsroom and library was established in 1852 under the patronage of the

⁶⁹ The situation was clearly identified by James Hudson, an influential and experienced adult educator, in his *History of Adult Education*, *op. cit.* ix.

⁷⁰ Details of the Union and its examinations will be found in the Minute Book of Sherborne Literary Institution.

⁷¹ Hudson, 224. Membership fees were 10s. p.a. SB, no. 3, poster, 19th Jan., 1858. *DCC*, 28th Jan., 1858, and 20th Jan. 1859. The public were admitted to the lectures on payment of 6d.

⁷² *DCC*, 21st Jan., 1858.

⁷³ SB, no. 4, J. H. Potter, letter to Barnes, 18th Oct., 1869.

⁷⁴ Kelly's, 79.

⁷⁵ SB, no. 3, George E. Norton, letters to Barnes, 13th Oct., 1858 and 12th Feb., 1859; poster, 14th Jan., 1859; notes, 17th Jan., 1861, 9th Jan., 1862; undated, but early 1863 note on a poetry reading; 4th Jan., 1864. SB, no. 4, poster, 18th Jan., 1870. SB, no. 5, George Norton, letter to Barnes, 12th Sept., 1878; poster, 11th Dec., 1878. *DCC*, 27th Jan., 1859; 24th Jan., 1861; 12th Jan., 1865. Admission charges varied slightly, but the maximum was 1s. for reserved or front seats.

marquis of Westminster and [was] well supplied with newspapers and periodicals and . . . a good library'⁷⁶. Barnes was to lecture to the members in the town hall on such topics as 'The Dorset Dialect', 'The English People and Language', 'Labour and Gold', and to deliver some of his poetry readings. He appears to have generally attracted a good attendance, and commendation for a 'masterly style', all the more appreciated because it was in 'the mother tongue of many of the audience'. One of them, who became the Rev. J. J. Lias, was to recall a one and a half hour presentation by Barnes, as 'though perfectly simple and unaffected, was most effective, not a point humorous or pathetic being missed, and the cadences of his voice were perfectly adapted'⁷⁷.

In 1859, Barnes was lecturing to yet another body—Portland Breakwater Mechanics' Institute. Daughter Laura could not but note that the visit entailed his spending a second consecutive evening away from home—'Poor dear Father, having promised some time ago, felt obliged to go to Weymouth [Literary and Scientific Institution], and returned this morning at 8 o'clock in time for his school duties, and has to go to Portland this evening'⁷⁸. His topics there varied from a lecture in 1859 on the recently published 'Labour and Gold' to one in 1855 on 'South Western English, Accompanied by Poetry Readings'⁷⁹. While the lecture on economics is credited with being well supported and appreciated, that on South Western English was said to have been 'admirable' but with an attendance that was 'not so numerous as could have been desired'. In amplifying this comment, the reporter clearly indicated some very high expectations from Barnes—'not more than 150 [were] present', and 'not more than 70 or 80 persons availed themselves of tickets of membership!'

Between 1859 and 1877, Barnes was also to be a frequent lecturer in Bridport, which the railway had reached in 1857. He was to be a regular overnight guest of Mr. T. Colfox of Rax, president of the Bridport Literary and Scientific Institute. Founded in the busy rope-making town in 1831 as Bridport Mechanics' Institute, this body was fortunate enough to be provided with new premises of its own three years later by Henry Warburton, a mathematician and local MP. By 1839, a survey indicated that it was one of only nineteen such bodies in England and Wales providing adult evening classes⁸⁰. Its members then numbered 111, of whom only 20 were classed as 'mechanics', and this out of the total population of 4,342. Average attendance at lectures was then as high as 150, while the library contained a total of 1,050 volumes. By mid-century, another survey found the membership unchanged, though the library had increased to 1,500 volumes⁸¹. There is mention of Barnes lecturing on such topics as 'The Dorset Dialect', 'The English Language', and 'Notes on Dorsetshire', and to frequent readings of his poetry⁸². Noting that some of his gallery audience in the previous year complained of not having heard him clearly, Barnes was in 1861 accepting the 'thanks of a large audience' and hoping 'that their laughter had not been at the holy, nor at what they did not understand.' In time, his audiences thinned, and the secretary wrote tactfully to Barnes in 1870 suggesting that a proposed lecture might 'not be so generally acceptable to our members as a reading of your own poems, which no audience of Bridport folks ever tires of listening to'. Nevertheless, the lecture programme as such was continued, and in that session it included such topics as 'The Unity and Complexity of the Human Body', 'The Chemistry of the Stars', 'The Moral Significance of Tennyson's Poems', and for some light relief 'Seaside Jottings—Musical and Descriptive Entertainment'. Indeed, as late as 1877, Barnes was asked to deliver a lecture on local antiquities, complemented (or mitigated) by some poetry readings!

Poetry would seem to have enjoyed a central place in Barnes' contributions as adult educator. As early as 1844, he had indicated that the aim of his poetry was 'to teach his rustic brethren to draw pure delight from the rich but frequently overlooked sources of nature

⁷⁶ *Kelly's* (1867), 91.

⁷⁷ Rev. J. J. Lias, in *The Times Literary Supplement*, 23rd Jan., 1903, cit. Hearl, 291.

⁷⁸ Laura Barnes' Diary, 17th Nov., 1859, cit. Hearl, 290.

⁷⁹ William Barnes, *Views of Labour and Gold*. SB, no. 3, note, 16th Nov., 1859; poster, 17th Nov., 1859; poster, 14th Feb., 1865; and *DCC*, 24th Sept., 1859 and 23rd Feb., 1865.

⁸⁰ Coates, 96.

⁸¹ Hudson, 224.

⁸² SB, no. 3, Richard Pinney, letter to Barnes, 1st Feb., 1859; notes, 18th Dec., 1860; poster and note, 8th Jan., 1861; 13th Jan., 1862; 23rd Dec., 1862; 8th Nov., 1864. SB, no. 4, note and poster, 15th Dec., 1868; F. W. Matterface, letter to Barnes, 6th Aug., 1870; note and poster, 8th Nov., 1870. SB, no. 5, F. W. Matterface, letter to Barnes, 26th Nov., 1877. Not all of his lecturing visits to Bridport can be traced to the Literary and Scientific Institute, and the existence there of a Working Men's Club may be noted also. References to a 'working men's institute' typify the contemporary confusion of identity.

within their own sphere of being⁸³. The ideal of self-fulfilment, rather than any narrow goal of 'useful knowledge' is apparent also in lectures on such themes as 'The Beautiful and Good in Nature and Art'. Thus Barnes wrote that 'one good of the study of art is that it helps us to perceive the higher or more lovely truths'⁸⁴. His idealism is visible also in his lectures on economics and education, and in his busy schedule as an adult educator both inside and outside his own county. If some of his Dorset audiences grew less responsive with time, there were others outside the county who walked miles to hear him, or recalled his contributions in ripe old age. Thus, Alfred Cockrell Taylor of Westbury, in writing to compliment Barnes on 'a very interesting lecture' on the Dorset dialect, delivered at the Warminster Athenaeum in 1862, said 'I walked about nine miles to hear it, and should like to walk nine miles to hear you again tomorrow'⁸⁵. Similarly, Bessie Rhoda Pafford was in 1948 to recall from her childhood a poetry reading by Barnes at the Trowbridge Mechanics' Institute in 1872: 'Although seated in the gallery, I heard every word, and although I never saw it in print until years later, I have always been able to recite it myself, and now at this age [86] I can recite it from beginning to end'⁸⁶. While such friends as the Rev. E. N. Henning had scoffed at penny readings as 'unintellectual', Barnes was not averse to delivering them. Indeed, one such town hall reading for the Langport Penny Reading Society in 1868 almost led to a calamity. Prompted by Barnes' popularity, the committee decided to 'raise the usual charges for admission to threepence and sixpence', but this did not deter the citizens. Instead,

both stairs were crowded long before the time announced for opening the doors, and such was the crush on the market house stairs that the committee found it impossible to open the door and sell tickets on the landing as usual. As many as the room would comfortably hold were admitted on the other side and afterwards the number that remained was augmented by a rush from the market house. The bannisters were broken and the policeman was pressed so closely upon the dilapidated railings, that he and a number of other persons had a narrow escape of being precipitated on the stones in the passage beneath⁸⁷ . . .

Despite the confusion, the committee concluded that about 230 people attended, many more were refused admission, and a profit of £4 13s. was realised! Barnes was clearly as capable of interesting such a large and boisterous audience, as he was 'a most respectable and attentive audience including many of the gentry' as attended his lecture on the 'West English Speech' at Lymington Literary Institution in 1864⁸⁸. That one who regarded himself as representative of 'the lower half of Dorsetshire life' could gain this degree of acceptance in Victorian England is some measure of his abilities.

That Barnes' single lectures and readings contributed to the *ad hoc* nature of many institute programmes is undeniable, and yet understandable in the light of his total commitments. Thus, in 1867 he lectured in the town hall on 'Arts, Manners, and Welfare' to members of the Crewkerne Literary and Scientific Institution and Crewkerne Mutual Improvement Society, discoursing on 'the useful and fine arts; essentials of excellence in painting and poetry; likeness of poetry to painting; bearing of the arts on refinement and manners; civilities of sundry nations'⁸⁹. That his lecture was preceded here by one on Iceland, and followed by one on Abyssinia, lends substance to the charge that the institutes often failed to provide for 'systematic and continuous study'. Yet Barnes, not having succumbed to Macready's charm in the matter of systematic study and examinations, may have been quite content to learn that 'the Crewkerne people truly appreciate your lectures'. Possibly of more significance to him was the assurance of the Rev. Robert Harkness, rector of St. Giles Church, Salisbury, that his proposed poetry readings were not 'at all inconsistent with the season of Lent'⁹⁰.

⁸³ William Barnes, *Poems of Rural Life in the Dorset Dialect* (1844), 37.

⁸⁴ Ms. notes on poetry.

⁸⁵ SB, no. 3, Alfred Cockrell Taylor, letter to Barnes, 29th Jan., 1862.

⁸⁶ Letter from Bessie Rhoda Pafford, 3rd Nov., 1948, cit. W. T. Levy, *William Barnes: The Man and His Poems* (Dorchester, 1960), 67.

⁸⁷ *Langport Herald*, 22nd Feb., 1868.

⁸⁸ SB, no. 3, Poster, 1st Nov., 1864; and *Hampshire Independent*, 5th Nov., 1864.

⁸⁹ SB, no. 4, John Perry, letter to Barnes, 4th Oct., 1867; and poster, 5th Nov., 1867.

⁹⁰ SB, no. 4, Rev. Robert Harkness, letter to Barnes, 3rd Feb., 1869; note, 18th Feb., 1869.

Being about eighty years of age when he retired as an adult educator (and eighty-three when he retired from regular walks to visit his parishioners), this genial and scholarly Victorian earned broad support for his manifold services to his fellow men. His neighbour Thomas Hardy believed that Barnes was gratified more by the enthusiasm of his live audiences than by all the admiration of his British and American reading public⁹¹. In the course of his peripatetic lecturing, this reputedly shy man with relatively few friends stayed regularly as the overnight guest of a great many local supporters of the literary, scientific, and mechanics' institutes—each family, in turn, making their own usually unheralded contributions to 'enlightenment'. Barnes' contributions to adult education may not have been unique, but they were certainly on a par with those of the more enlightened and dedicated men of his age. He was truly a 'willing horse' as innumerable institute committees discovered, and being largely self-taught himself, he had unquenchable faith in the ability of his beloved 'land folk' to follow suit. Willing to speak before railway 'navvies' in the 'the lowest parts of the town', or to interject some 'quiet sarcasm' in a lecture to their more affluent townsfolk, Barnes prided himself on being 'a working man' of independent mind. Being very much the product of 'self-help', he extolled the benefits of voluntary co-operation in such interrelated fields as adult education, the co-operative movement, and the temperance movement. Remote from the social climbing clergy in the novels of Jane Austen or Anthony Trollope, Barnes' freely dispensed services were often 'to fill up an evening' for impoverished institutes of villages and small market towns, claiming to be at their 'wits end'. He was truly a prophet in the wilderness.

Popular adult education provided but one outlet for Barnes' manifold talents and his concept of priestly obligation, and it served to highlight the inconsistencies of a man who rejected so much of the competitive industrial age which brought the movement into being. Even the movement's gospel that 'Knowledge is Power, Wealth, and Happiness' was surely not in accord with his gentle convictions. Rather, he should be viewed as a Victorian who proclaimed what he saw to be the virtues of an earlier age, and who worked long and hard to demonstrate their continuing validity. In this context, 'Happiness' alone marks the extent of the common commitment—in place of 'Power' and 'Wealth' Barnes had substituted 'culture' and 'refinement'. His aims here, like much of his poetry, thus seem to have been influenced more by the Classical tradition than by the materialism of the Victorian Age.

⁹¹ Thomas Hardy, 'The Rev. William Barnes, BD', *Athenaeum*, 16th Oct., 1886, p. 502.

JOHN AND JASPER HORSEY—TWO TUDOR OPPORTUNISTS

PETER WEBB

Part II

In the last edition we saw how Jasper Horsey prospered in the service of the Marquis of Exeter and subsequently of the King, whilst his elder brother John was prominent in the King's service in Somerset and Dorset. We can now give closer scrutiny to some facets of John Horsey's career in the turbulent 1530s and 1540s.

Documents relating to the period April, 1534 to April, 1536 show the fears of the country. The loyalty of the gentry is seen to be crucially important as the government manoeuvred to resolve the King's 'Great Matter'.

Writing to Cromwell on 11th April, 1534, Sir Giles Strangways refers to accusations made to him by certain persons regarding words spoken against the King and Queen Anne during the previous year by Sir John Horsey and Sir William Brownsoppe, parson of Holwall, seven miles east of Clifton Maybank. Sir Giles enclosed the accusation and commented on the case¹. In his view the priest's importance was minimal, since he was 'a simple person of no great wit'. However, Strangways had taken sureties for his appearance before the Council and he remarks that the situation justified such an action. It would be of interest to discover whether John Horsey was examined at this time. Quite possibly such a rumour was totally discounted on the strength of his own and his family's tradition of service, and more particularly, on the strength of his recent knighthood. Such allegations against a local parson and a prominent county figure closely associated with the Crown and Cromwell in particular, can be interpreted as a vain attempt by local conservative elements to discredit an agent of the Crown's radical policies. At the end of the letter Sir Giles's plea for the pardon of his erring kinsman, William, 'now in sanctuary at Westminster', stresses the links between Cromwell and those who would implement his revolution in their 'countries'.

In the spring of 1536, popular unrest around Bridgwater brought Sir John to a commission of oyer and terminer at Taunton² attended by many other gentlemen of Somerset and Dorset. Trouble had been presaged the previous August³ when John Horsey of Bridgwater (possibly Sir John's cousin by his uncle Thomas⁴) reported that an Irishman had uttered sedition against Queen Anne. On 20th April Sir John Fitzjames reported to Cromwell that twelve ringleaders had been executed, that the country was now quiet and that the loyalty of the gentry was unquestioned. Fitzjames' reference to a scarcity of corn suggests an economic, as well as a religious, reason for the unrest. Cromwell's relationships with his local agents had not been found wanting as tension rose prior to the Pilgrimage of Grace.

Danger threatened once more during Henry VIII's swansong as a warrior king. His invasion of Normandy and siege of Boulogne drew a counter-attack against the Isle of Wight on 19th July, 1545⁵. Warning fires and panic flashed across England. The French evacuated the island on 9th August but only returned home after raiding the Sussex coast and clashing indecisively with the English off Beachy Head.

At such a time Sir John's duties were, as we have seen, predictably heavy. Apart from raising forces for service at home and abroad and providing the money to pay for them, Sir John was involved in pressing mariners for the King's service. At a Privy Council meeting at Windsor on 14th October, 1546, the Treasurer of Augmentations was authorised by warrant to pay Sir John Horsey £12 15s. 10d. for prest and conduct of mariners to Portsmouth 'at the King's last being there'. Payment was made on 10th November⁶. Sir John's apparently

¹ *Letters and Papers, Foreign and Domestic of the Reign of Henry VIII 1509-1547*, ed. Brewer, Gairdner and Brodie (1862-1910, 1920) (L and P) VII 480.

² *L and P* Add 1063.

³ *L and P* IX 136.

⁴ Visitation of Dorset Pedigree 1623.

⁵ Scarisbrick—*Henry VIII* (1967), Eyre & Spottiswoode, p. 455.

⁶ *L and P* XXI Pt. II 266 and 775.

unprecedented role as a naval recruiter seems to reflect the peculiar and serious situation arising from the French invasion. However, the problems of manpower and money were not the least facing the King's servants; equally important was the suppression of rumour and panic.

Sir John Russell, formerly a member of Cromwell's short-lived Council in the West, was fully occupied in stilling rumour and stifling panic inspired by fear of invasion from without, and of subversion from within. Writing from Exeter to Paget in London on 18th August, before the outcome of the clash off Beachy Head was known, Russell reported his state of vigilance and the daily improving condition of his preparations against the arrival of the French⁷. He mentioned the receipt of a letter that morning from Sir John Horsey signifying that 'about Sherborne commandment was brought by men of honesty as is supposed' to constables and tithingmen to search the houses of priests and to put all 'weapons, books, letters and spits wherewith they roast their meat' in safe keeping. As it was not known that the King or Council had commanded this, Russell reported that he had instructed Sir John to discover those who had begun the searches. Russell closed by quoting the rumours and 'false lies' current at the time for which he had pilloried the authors. Ironically, these referred to the capture and pillage of the Isle of Wight and the government's intention to raise the siege of Boulogne, and thus bore more relation to truth than to fiction. The writer's plea for the truth of such news seems entirely justified.

Sir John Horsey's letter to Russell from Sherborne on 21st August (in reply to Sir John's of 19th August) shows that the latter had acted promptly, not only in enquiring the origin of the searches, but in ordering their cessation. Bailiffs, constables, tithingmen were to trace the beginning of the matter within Somerset and Dorset. Should they pursue the trail out of the county, they were to report the matter to the Sherriff or nearest JP. Sir Thomas Arundell 'being at my cousin Sydenham's house Brympton' was sent a copy of Russell's letter at this stage.

Events had, however, moved with greater speed. Russell had written to Sir John once more on Wednesday, 19th August, presumably in reply to a further letter from Sherborne reporting that a second wave of searches was by then sweeping Somerset and Dorset. Russell's second letter, sent from Exeter on 19th August, apparently arrived at Sherborne at 3 a.m. on Friday, 21st August, during what must have been a period of frantic activity for Sir John. He gave his version of the crowded events of the previous three days in his reply sent from Sherborne at 11 p.m. the following evening⁸.

Having attempted to stabilise the situation around Sherborne, Sir John then proceeded to Dorchester. Here he found the justices led by Sir Giles Strangways and Sir Thomas Trenchard much exercised by the searches. Resourcefully they had placed a number of the searchers under bond for £100 to appear before the Council or the Dorsetshire JP's if so required. Sir John enquired of Russell whether he should take similar bonds for the rest of Somerset and Dorset, 'which will be very tedious'.

Opinion at Dorchester on Friday was that the searches had started beyond the county borders and that the whole shire was 'thoroughly perused with the like searches'. Somerset too had been affected. Sir John referred to a letter from Sir Francis Bryant at Petherton who had 'discreetly stayed the town of Bridgewater' and examined the leaders of the search from the area around Huntspill and Burnham. Bryant had asked Horsey—presumably in his role of sheriff—to send for Robert Mydelham, the tithingman of Huntspill, and his fellow of Burnham. Sir John then requested instructions regarding the handling of inventories taken of the priests' goods, their weapons and books, some of which had been returned to their owners by the JPs. The latter's sympathies seem to have been with the priests who suffered the attentions of constables and tithingmen patiently, believing that they acted in the King's name.

Finally, Sir John informed Russell that Sir Giles Strangways, Sir Thomas Trenchard and other Justices of Dorset and some of Somerset had 'appointed to be at my house Melcombe next Sunday trusting to know your Lordship's pleasure and to certify our doings'. Details of Sir John's orders stopping the first and second searches and a copy of the bond imposed on the Dorset tithingmen were enclosed with the letter.

⁷ *L and P XX Pt. II 159.*

⁸ *L and P XX Pt. II 186.*

On the following day Russell wrote to the Council from Exeter sending Sir John Horsey's letters and enclosures⁹. The Privy Council, meeting at Oking¹⁰, had already discussed the problems arising from suspicions and panic in the country. As a result of their deliberations 'sundry letters had been written to divers parts of the realm' for 'stay of search of priests' houses if the case so required'. Quite clearly they viewed the activity as commencing in the Western Counties where 'lewd persons had attempted such searching and making inventories in Somerset, Wells and those parts'. In his letter, Russell reported the situation in Somerset and Dorset. Responsibility for the affair, in his mind, lay with the constables and tithingmen who had acted precipitately on the supposition, rather than on the substance, of King's command. These, 'being ignorant people took no advice of justices or gentlemen' and had run as headlong a search 'as Russell had ever heard of'. The next day, 23rd August, probably before they had received Russell's report, the Council allowed themselves time to 'peruse writings brought by one Brynkburne, Justice of the Peace in Wiltshire, touching search of priests' houses and certain lewd writings of priests', and then to order the parties according to law¹¹.

Although further research is necessary, it seems likely that once the situation had been contained, the more pressing needs of war fully occupied the minds of the Council and that the affair was allowed to drop. A number of points of interest arise from the narrative of events as it stands at the moment. The episode stresses the importance of such a man as Sir John whose authority as a sheriff of two counties extended beyond that of the individual justices. In particular, the vital role of the gentry's leadership of those inferior officers—the constables and the tithingmen—is emphasised, as is the difficulty of speedily communicating with them. From the point of view of the Horsey family, the apparent absence of Sir John's elder son may be associated with the hostility implied towards him in his father's will the following year. However, it may also be that young John Horsey, who was known to have entered the King's service at the time of the Pilgrimage of Grace, was then actively involved in France. No mention is made of Roger Horsey (d. 1551) in the correspondence between Sir John and Russell. Certainly, Sir John appears to have been short-handed at Sherborne in August. His fellow justices at Dorchester seem to have acted more resourcefully in placing certain tithingmen and constables in bond. His isolation may explain why he viewed similar action throughout the shire as a very tedious prospect.

In a wider context, the affair underlines the tensions created by the religious changes of the previous decade; to the obvious fear of invasion was now added the more insidious threat of subversion from within. In the new situation this particular episode seems to be one example, albeit at a time of great national danger, of the type of localised anti-Catholic panic which frequently beset individual areas during the century and a half following the Reformation. Finally, the reaction of Russell and the Council to the situation, perhaps reflects the ambiguous and intermediate stage reached in the progress towards Reformation in England. The wish to see the country at peace with itself is totally understandable. However, the obvious sympathy shown to a harrassed priesthood must seem in large measure to have been inspired by the doctrinal conservatism of a king currently the ally of the papal champion, Charles V.

As the servant of the Crown in his locality one might naturally expect that Sir John would have maintained the close contacts with the Court enjoyed by his father. An examination of the son's career suggests that the relations he forged with Cromwell were particularly close. We have noted the gifts presented ostensibly to Wolsey¹²; possibly the donor's intention was to ensure the friendship of Wolsey's chief administrative agent. While it is perhaps naïve to suppose that in the summer of 1529 the gentry were insufficiently perpicacious to predict Wolsey's imminent fall, it must surely have been a riskier gamble to support Cromwell as his successor. Some evidence however exists to suggest that Cromwell's hurried election for Taunton in November, 1529 may not have been entirely the work of Sir William Paulet¹³. The Pardon Roll of 1510 describes Robert Horsey of Taunton as merchant and clothier. Three persons surnamed Horsey—John, Robert and Margaret—all of Taunton had wills

⁹ *L and P* XX Pt. II 190.

¹⁰ *L and P* XX Pt. II 188.

¹¹ *L and P* XX Pt. II 196.

¹² *L and P* II Pt. III 5746. *L and P* V 1139 (29). *L and P* VII 480.

¹³ A. G. Dickens, 'Thomas Cromwell and the English Reformation', 1959. The English Universities Press, p. 34.

proved at Canterbury in 1524, 1537 and 1542 respectively¹⁴. Conceivably, Sir John Horsey and his possible kinsmen assisted Paulet in the election. Whatever may be the case regarding his early connections with Cromwell, John Horsey's knighthood on the occasion of Anne Boleyn's coronation confirms the existence of close links by June, 1553¹⁵. Moreover we are able to piece together a record of John Horsey's service to the Crown in the extraordinary events set in train by its first minister. They are, of course, the natural corollary to, and only explanation of, the territorial gains he was to achieve by 1540.

In July, 1532, the year of Cromwell's emergence as first minister following his arrival on the Council in January, 1531, John Horsey and Sir Giles Strangways were instructed by the King to assist Doctor Lee in the election of a new prior at Montacute¹⁶. This can be seen as an attempt to prepare the ground for a possible dissolution by installing an abbot willing to surrender the house. Such was the case at Sherborne. Doctor Lee must surely be the colleague of Doctors Tregonwell, Layton, London, Bedyll and Ap Rice who were Cromwell's commissioners in the general visitation which began in 1535.

In July, 1533, the King ordered John Horsey, Thomas Trenchard, Thomas Baskett and John Rogers to make inquisition post-mortem into the lands and heir of Henry Stafford, late Earl of Wiltshire, and Cecilia, his wife¹⁷. This would seem of merely routine in significance were it not for the fact that the title was to be bestowed on Anne Boleyn's father. In January, 1535, as noted earlier, Horsey, by now Sir John, appears as a commissioner for Tenths of Spiritualities¹⁸. His letter to Cromwell of May, 1535¹⁹, regarding the election of a new abbot of Sherborne provides more than circumstantial evidence of the close relations between the two. Tregonwell's letter of November, 1538²⁰, informing Cromwell of his quarrel with Sir John over the spoils of Milton Abbey confirms this impression. Following the crisis year of 1536, Sir John is found listed amongst those present at the christening of Prince Edward on 12th October, 1537²¹. This was a subdued affair, held at Hampton Court because of the plague²². It is, therefore, the more noteworthy that Sir John was present. Further intimations of his standing at Court came in November, 1539, when his name appears amongst the knights and esquires expected to attend Anne of Cleves' arrival at Greenwich. More specifically, his services were required as one of fourteen 'Whiffers for order keeping' at that great and climactic event in Cromwell's career. Such a responsibility seems fully in keeping for one who had that same year been appointed to the new Council in the West²³. It is known that Sir Thomas Wyatt (1503-42) was a friend of Sir John. A strong tradition exists that the courtier poet is buried near the tomb of Sir John and his son in Sherborne Abbey church²⁴. There are good grounds therefore, to credit Sir John Horsey with close links with Cromwell and the Court. Whether or not he and his father supported Cromwell's candidature at Taunton in 1529, Sir John, as he was soon to become, was the active and well-rewarded agent of Cromwell. In an area of strategic importance such as Somerset and Dorset, where the church held as high a proportion of land as in any similar area in the country, his loyal help was doubly valuable. Following Cromwell's removal in 1540, Sir John's links with the Court would seem to run via his neighbour, and eventual overseer of his will, Sir John Russell²⁵. At present the extent of relations with his brother, Jasper, who by 1540 had become steward to Anne of Cleves, is open to speculation.

In examining the rewards of Sir John's loyalty to the Court, it is insufficient merely to assess the increase of his estates. From the various sources it is possible to see some of the

¹⁴ *Prerogative Court of Canterbury Wills*, Index. *L and P* Vol. I Pt. 1 438.

¹⁵ S. E. Lehmborg, *The Reformation Parliament*, p. 179 and 42. Quotes *L and P* VI Pt. I 601 (4).

¹⁶ *L and P* V 1163.

¹⁷ *L and P* VI g. 929 (4).

¹⁸ *L and P* VIII g. 149 (59, 79).

¹⁹ *L and P* VIII 693.

²⁰ *L and P* Add 1372.

²¹ *L and P* XII Pt. II 911 (ii).

²² W. Walder, *Henry VIII*, Octopus, 1973, p. 47. *L and P* XIV 572, XV 14.

²³ *L and P* XI Pt. I 398.

²⁴ *The History and Antiquities of the County of Dorset*, John Hutchins, MA, 1870, IV, p. 427. *Calendar of State Papers Domestic*, 1547-1580, 58. Subsequently Sir John's nephew, Edward, and the poet's son, Thomas, were involved in the rebellion of 1554. Repercussions were felt in Sherborne, for on 30th January Sir John Rogers of Bryanston and others reported to Secretary Petre that they had proclaimed the Duke of Suffolk, the Carews and Sir Thomas Wyatt as traitors at Sherborne Market, and published the articles of the Queen's marriage. Finally, they vouched for the younger Sir John's fidelity. The loyalty of an inheritor of such monastic spoils, who was at the same time a family friend of one of the traitors, could hardly have been less than suspect.

²⁵ *Abbey Church, Sherborne, Guide*. Will of Sir John Horsey quoted Hutchins IV, p. 427-429.

manoeuvring which brought such rich rewards, to discover Sir John acting as a middle man in the dispersal of monastic lands, and to come to some conclusions regarding the value of lands required in relation to the sums paid for them.

Briefly, Sir John inherited the manors of Horsey, Clifton Maybank and Melcombe, a moiety of the manor of Charlton Mackerell, and some other parcels of land from his father. We also know that the Maybank inheritance brought estates in Sussex which, as we shall see, were of value in his dealings with Cromwell and the Court of Augmentations. At his death, Sir John's estates in Somerset and Dorset showed the addition of nine more manors—Armingwell, Wyke, Pynford, Thornford, Over Compton, Nether Compton, Bradford, Dollaford and the other part of Charlton Mackerell, as well as sundry other lands²⁶.

The first acquisitions emphasise the close relationship between Sir John and Sir John Russell. In 1538 they were jointly granted the manors of Stoke-sub-Hamdon and Curry Mallett²⁷. In February, 1540, Sir John, by then Lord Russell, was licensed to alienate the manor of Cary Fitzpaine, the moiety of the advowson of the parish church of Charlton Mackerell and all lands there to Sir John Horsey²⁸. In fact, 1540 was the year of great rewards. In February of that year, Sir John received Yarlinton manor, several miles north of Bruton, with some specified lands at Shipton Moor, on a 21-year lease at a rent of £14 2s. 8d.²⁹. This property had been part of the lands of the attainted Countess of Salisbury who was to be executed in April, 1541, following the discovery of the Neville conspiracy. The first substantial instalments of Sir John's rewards appeared in March, 1540, and were drawn from the dissolved houses of Sherborne, Henton, Cannington and Bindon.

From Sherborne Sir John was granted the house and site of the former monastery with its demesne lands in fee of reversion for £1,242 13s. 9d. The site of the church, steeple and churchyard of the monastery which were included in the demesne were later sold by Sir John to the townspeople of Sherborne for £320. The demesne territory lay principally between Sherborne and Clifton Maybank, and comprised 'a mill within and near the said site and all woods on the premises, the wood called Iverwood near the meadow called Ivermead, the manors of Bradford and Wyke, the lands called Trill in the parish of Clifton, a watermill and all messuages, lands, etc., belonging to the later monastery'. The land was to be held 'with all its appurtenances in as full a manner as John Barstable the last abbot of Sherborne held them³⁰'.

Simultaneously he received three 21-year leases on properties which had belonged to Sherborne Abbey. The rent for Corsecombe Grange is not mentioned in Augmentation records; for the site of the manor of Wyke he paid £16 10s. 6d. and for certain lands there belonging to the monastery £5 10s. 4d. in rent³¹. Additionally Sir John was granted the rectory and advowson of Bradford at certain stated rents. To complete his control of Bradford he received lands in that parish formerly belonging to Cannington Priory, Somerset, comprising a tenement and lands there whose tenant, one George Rede, had paid a rent of 8s. to his previous landlords.

By these grants from Sherborne Abbey and Cannington Priory, Sir John had gained sole control of the Manor of Clifton and became the master of the north side of the Yeo Valley between his seat and the town of Sherborne. Although these were handsome and convenient gains indeed, more Sherborne lands were to come in 1543³². In July of that year, Sir John, described in the grant as the King's servant, received in fee for £1,451 2s. 9¹/₄d. the lordship and manors of Thornford, Over Compton and Nether Compton (with Stowell Court, Nether Compton) and the chief messuage, farm and manor of Pynford on the north bank of the Yeo to the east of the town. In the same grant he received the lordship and manor of Prymsley in Dorset, which had belonged to Buckland nunnery, Somerset. His acquisition of Thornford extended the Horsey territory along the south bank of the River Yeo to within a mile of Sherborne. Acquisition of Nether Compton and Over Compton took the family estates north from Bradford across the Sherborne-Yeovil Road. The net effect was to create a compact estate dominating the Yeo Valley between Sherborne and Yeovil.

²⁶ Will quoted Hutchins IV, p. 427-429.

²⁷ *L and P* XIII Pt. 1 g. 1115 (61).

²⁸ *L and P* XV g. 282 l. 5.

²⁹ *L and P* XV g. 282 73.

³⁰ *L and P* XV Vol. XV 436 (54).

³¹ *L and P* XV 1032 56B.

³² *L and P* Vol. XVIII Pt. I 981 (78).

However, the Grant of March, 1540 was not solely concerned with the lands of the late Abbey of Sherborne³³. From Henton Priory near Warminster Sir John received the ‘mansion called Longleat, in Wiltshire, and all the houses thereto belonging, and divers lands in the parishes of Longbridge Deverill, Longleat and Horningsham, the lands called Baycliff in the nearby parish of Maiden Bradley, and a close of land called Chantry Close and 60 acres of land in certain fields in Hill Deverill parish’. From Bindon Abbey in Dorset he received the manor or Grange of Creech in the Isle of Purbeck ‘lately in the tenure of Oliver Lawrence’. After two months Sir John was licensed to alienate the Longleat Estate to John Thynne of London, ancestor of the present Marquis of Bath, whilst in May he received a similar licence to alienate the Creech estates to its tenant Oliver Lawrence³⁴. Although we have no figures for the prices on resale, his brief tenure of the estate suggests that Sir John was engaging in land speculation with the approval of Cromwell and the Court of Augmentations. Indeed the opportunity for a profit on resale would seem to be the sole reason for these particular grants, since both properties were too distant from the family’s existing estates to be managed conveniently. Although these gains were obviously ample reward for loyal service to the Crown during a time of particular danger, documentary evidence illustrates some of the exertions necessary to ensure that they materialised. The grants of March, 1540 and July, 1543 show that, King’s servant though he was, Sir John had to pay the most inconsiderable sum of £2,793 6s. 6¹/₄d. to the Chancellor of the Court of Augmentations³⁵. To put this sum into context, we learn from Sir John’s will that the annual value of four manors, Melcombe, Armingwell, Wyke and Horsey, amounted to £144 6s. 7d. It seems likely that the profits of his speculations over Longleat and Creech helped cover his outlay. However, it would be of interest to ascertain the arrangements made for payment to the Court of Augmentations. Despite the inevitable lowering of the price of monastic lands on a buyer’s market, liquidity must have been a problem for its purchasers. Its solution may be found partly in Sir John’s sale of his manor of Horton Maybank in Sussex, with its associated lands, for the sum of £410. This sale, for which Cromwell’s accounts show that full payment was made in December, 1538, no doubt provided useful cash in hand³⁶. The fact that Cromwell subsequently sold the property at a profit of £150 to one Richard Bellyngeham might suggest that the initial deal was so strongly in Cromwell’s favour as to be considered a bribe.

Direct evidence of bribery exists in two letters to Cromwell, one in 1535 by Sir John, the other in 1538 by his neighbour and member of the King’s learned counsel, the lawyer Dr. John Tregonwell. The first letter, written nearly four years before the dissolution of Sherborne Abbey, gives clear indications of Cromwell’s careful preparation for his attack on Church property and some of the realities of his links with the gentry. On 9th May, 1535, Sir John wrote to Cromwell to thank him for offering his friend, Dean John Barstable, the appointment of Abbot of Sherborne, the previous incumbent, Dean John Mere, having resigned. Such a communication seems innocent enough³⁷. Sir John was, after all, chief steward of the monastery. However, having explained that he was unable to come to Cromwell since he was appointed to look to the taxing of the clergy, he promised to come shortly ‘to make payment secretly between your mastership and me unto you of 500 marks according to my promise’. Obviously, Sir John, as a member of the Commission of Tenths and Spiritualities for Dorset, Somerset and City of Bath, was not undertaking a disinterested survey. Rather he was preparing the ground so that the dissolution of Sherborne when it came in March, 1539 would be to his benefit. We know that Sir John’s preparations were successful in that he was able to receive the abbey lands at what must have been a very reasonable price. His friend, John Barstable, whose compliant surrender of his house must have been appreciated by Cromwell, was shortly appointed to the rectory of Stalbridge. This living, which handsomely supplemented Barstable’s pension, may well have been in the gift of William Thornhill of Thornhill in that parish—a close associate of Sir John’s. A letter of 31st July, 1539 from John Harres to Lady Lisle gives evidence of a close relationship between Sir John and William Thornhill³⁸. Having been imprisoned at Salisbury as a captured

³³ *L and P* XV 611 (47).

³⁴ *L and P* XV 733 (29).

³⁵ *L and P* XVIII Pt. I 981 (78).

³⁶ *L and P* XVI Pt. II 782. *L and P* XV 1027 (30).

³⁷ *L and P* VIII 693.

³⁸ *L and P* XIV Pt. II 1336.

outlaw, Harres wrote that 'there will be a session of three weeks of deliverances by the procurance of Sir John Horse and Master Thornelle, who will spend £100 to hang me unless you help me'. The affair requires further investigation. In 1546, both Thornhill and Barstable were nominated amongst the overseers of Sir John's will. Former steward and late abbot had thus enjoyed a mutually rewarding relationship.

The prospect of the Sherborne windfall did not entirely satisfy Sir John, nor was the effect of 500 marks upon Cromwell easily forgotten. On 22nd November, 1538, following a heated exchange with Sir John, an anxious John Tregonwell addressed himself to Cromwell. The quarrel originated over the anticipated spoils of the demesne lands belonging to Milton Abbey. These bordered Sir John's most southerly manor of Melcombe Horsey. In Tregonwell's eyes they were to be the reward for the work which he was to undertake with William Petre during the early months of 1539 in securing the surrender of monastic houses in Gloucestershire, Wiltshire, Dorset, Somerset, Devon and Cornwall. The 40 surrenders that he achieved were such that 'he hardly left a house standing in the whole south-west'³⁹.

Understandably, therefore, Tregonwell felt great concern about Sir John's challenge⁴⁰. His neighbour (wrote Tregonwell) had, on the previous evening, suggested that they divide the Milton Abbey demesne between them. Tregonwell replied that he was powerless since Cromwell had offered him the entire demesne and had sent instructions to this effect to the abbot in the King's name. Infuriated by these stonewalling tactics, Sir John blustered that he would secure the whole estate for himself, even if it would cost him 500 marks. Furthermore, he continued, Tregonwell was both unkind and ill-mannered to interfere in an area 'so near his nose' which he clearly considered his own preserve. Tregonwell concluded that although he was reluctant to trouble Cromwell with such a complaint, he feared that his rival's money and influence might prevail.

At present it is impossible to say whether Sir John pursued the affair. If he did so, he was unsuccessful. The Milton Abbey lands passed into Tregonwell's possession⁴¹. Such disputes were doubtless repeated throughout the country as the impropropriating jackals anticipated their prey and nervously eyed their rivals. On a question of political morals this particular episode is of interest in that Tregonwell's suggestion that his patron and master might be open to crude financial influence seems less than tactful to our eyes. The frankness with which he wrote clearly underlines the truth that bribery and its ilk were the accepted lubricants of political and administrative activity in the sixteenth century.

Despite his failure at Milton, Sir John had, by zealous service and thrusting ambition, achieved a fourfold increase in the number of the family's manors. On his death in 1564, his son's estate, which was largely identical to the one he had inherited from his father, was reckoned to amount to at least 20,000 acres—a handsome testimony to Sir John's opportunism. Such estates required careful disposal. Sir John's will, dated 20th December, 1546, and proved a month later, was of exceptional length and is a valuable source of information on his family, employees and friends⁴².

Sir John made handsome provision for his wife, Joan. She received, for her lifetime, the manors of Horsey and Wyke. These were given to her 'in full recompense and satisfaction of her whole jointure and dower'. On her death in 1552 they would pass to her eldest son, John, as head of the family. As her residence, Joan was to receive the parsonage of Bradford during her natural life. Sir John had, in fact, only recently obtained this property. In a grant of 1546, William Beryff and John Molton were licensed to alienate the rectory and advowson of the vicarage of Bradford, Dorset, to Sir John Horsey⁴³. Joan was allowed a substantial share of the accoutrements of Clifton Maybank for her widowhood. The will provides that this shall be a third of 'all and singular my household stuff' and includes 'my feather bed, bolsters, my pillows of down' and 'my pair of sheets'. To support her in her widowhood Joan was also to receive 'twenty kine and one bull and all my stock and store of sheep going and being in or upon my manors of Wyke in the county of Dorset and also the moiety of my stock of sheep in or upon my manor of Clifton'⁴⁴.

³⁹ Reference to G. W. O. Woodward, *Dissolution of the Monasteries*, Blandford, London, 1966.

⁴⁰ *L and P* Add 1372.

⁴¹ Hutchins IV, p. 427-429.

⁴² Prerogative Court of Canterbury Wills, Alen 40, Hutchins IV, p. 427-429.

⁴³ *L and P* XXI 717 (13).

⁴⁴ Visitation of Dorset 1623.

To his young son, Roger, and his lawful heirs was bequeathed the manor of Charlton Mackerell in Somerset. He was also to share the advowson with his elder brother who was given the right to present to the living when it next became vacant. Roger did not live long to enjoy his estate since he died in July, 1551⁴⁵. To his daughter, Eleanor, Sir John left no specific bequest. Instead, amongst the debts and legacies payable from the profits from the manor of Melcombe, he included the dowry of 200 marks he owed Sir Thomas Trenchard on Eleanor's marriage. His other daughter, Elizabeth, had secured her future by adopting the religious life and, like her Aunt Anne, a nun at Barking, had become a victim of the dissolution. Elizabeth Horsey, who received a pension of £5 when the convent at Shaftesbury was dissolved in March, 1539, was left a legacy of £40. To his cousin and neighbour, John Leweston, he bequeathed Crown leases on certain lands formerly the property of Sherborne Abbey which adjoined the Leweston estates.

To his eldest son and executor, Sir John left the remainder of his estate. Chiefly, this comprised the manors of Prymsley, Pinford, Thornford, Over Compton and Nether Compton, Sherborne, Bradford, Clifton and Dollaford. Once his father's debts and legacies had been paid, the manor of Melcombe would be his as well. On his mother's death in 1552 her estates reverted to him as did his brother's manor of Charlton Mackerell in 1551. The will suggests a certain estrangement between father and son. Young John Horsey was of adult years on his father's death. Although he has no doubt profited from his father's prominence at Court, he seems to have developed a career of his own occupying him beyond the confines of Somerset and Dorset. During the Pilgrimage of Grace he was involved in arranging purveyance at Nottingham⁴⁶. In 1538 his name appears in a memorandum by Cromwell 'of the gentlemen of my Lord Privy Seal's mete to be preferred the King's Majesty's service'. In December of the same year, Cromwell's accounts indicate that 20s. were paid to 'Mr. Horsey for bringing two geldings'. The same person is recorded as having given Cromwell a New Year's Gift of £5 in January, 1539. Although the possibility of confusion between father and son exists, the difference in rank between knight and esquire appears significant. Moreover, Cromwell's accounts make the distinction between Sir John and Mr. Horsey. Although he was nominated as a JP for Dorset in 1540, and as a commissioner for Gaol Delivery at Dorchester in 1542, his attentions seem to have been elsewhere. In 1543 he was included in the Commission of the Peace in Nottinghamshire; in the following year he was listed as a commissioner for Gaol Delivery at Nottingham Castle. His absence from his father's side during the alarms of August, 1545, has already been mentioned⁴⁷.

The will clearly indicates that Sir John doubted whether his son would honour his intentions. Accordingly, he was to be bound within one month after his father's decease in a bond of £5,000 to the overseas of the will 'for the true performance of the same'. Should he refuse either to act as executor or to enter into the bond required of him, Sir John required that the manors of Armingwell and Melcombe should be sold along 'with the stock and store and increase in or upon the same'. The residue was then to be distributed to his widow, his younger son and two daughters under the direction of his overseers or of any six of them.

Every member of Sir John's household was to receive a half-year's wages after his death. Some, possibly men of long service, were bequeathed rent-free tenure of land for their life-times. Others, whose services were obviously greatly valued, were offered annuities dependent upon their continued service. Amongst smaller bequests Richard, the undercook, received £1 6s. 8d. in money.

Whilst his will gives information regarding Sir John's successful stewardship of the family estates, the absence of a comparative study of the estates of his neighbours and contemporaries precludes the use of acreages as a yardstick of his wealth and influence amongst them. His eminence in local affairs however suggests that his estates were at least comparable with those of his most powerful neighbours. Whilst physical comparison based upon acreage would be desirable, it is currently easier to assess political power than it is to quantify the landed property upon which that power was based. Indubitably the overseers to Sir John's will bear full testimony to his status. Amidst a brace of esquires Sir Thomas Trenchard and Sir William Paulet gave precedence to Lord Russell, the Lord Privy Seal.

⁴⁵ Visitation of Dorset 1623.

⁴⁶ *L and P* XI 1155 (5). *L and P* XIII Pt. II 1184. *L and P* XIV Pt. II 782.

⁴⁷ *L and P* XV 831 (34). *L and P* XVII g. 1012 (22). *L and P* XVIII Pt. I 226 (48). *L and P* XX Pt. I 622 (314).

Finally, his particular achievement as head of the family is symbolised by the transference of the Horsey's place of sepulture from Yetminster to Sherborne, and by the handsome tomb in the north aisle of the abbey raised after 1564 in his own and his son's memories.

The two sons of John Horsey illustrate contrasting examples of routes to fortune seized by many in the turmoil of Henry VIII's later years. As eager and able opportunists, their circumstances enabled them to exploit the exceptional chances for profit offered in two distinct, though ultimately connected, areas. Jasper progressed from his post as a gentleman in a noble household to a similar appointment in the King's household. John, the King's and more particularly Cromwell's servant, reaped in his own 'country' the handsome rewards attracted by loyalty and service at that time. His achievement laid the basis for the immense wealth and influence enjoyed by the Horseys until their sudden and apparently irrevocable decline in the 1630s. If John's gains were immeasurably greater than his brother's, so too were his initial assets and opportunities. To Jasper, as the younger son, must be accredited the accumulation of an estate which, however modest, served as a foundation for his son, George, to make prosperous marriages and, thereby, to acquire considerable estates in Hertfordshire⁴⁸. The final statement of the two brothers' achievements came in 1588 when Jasper's grandson, Ralph, united the family's Hertfordshire and West Country estates.

⁴⁸ Visitation of Dorset 1623.

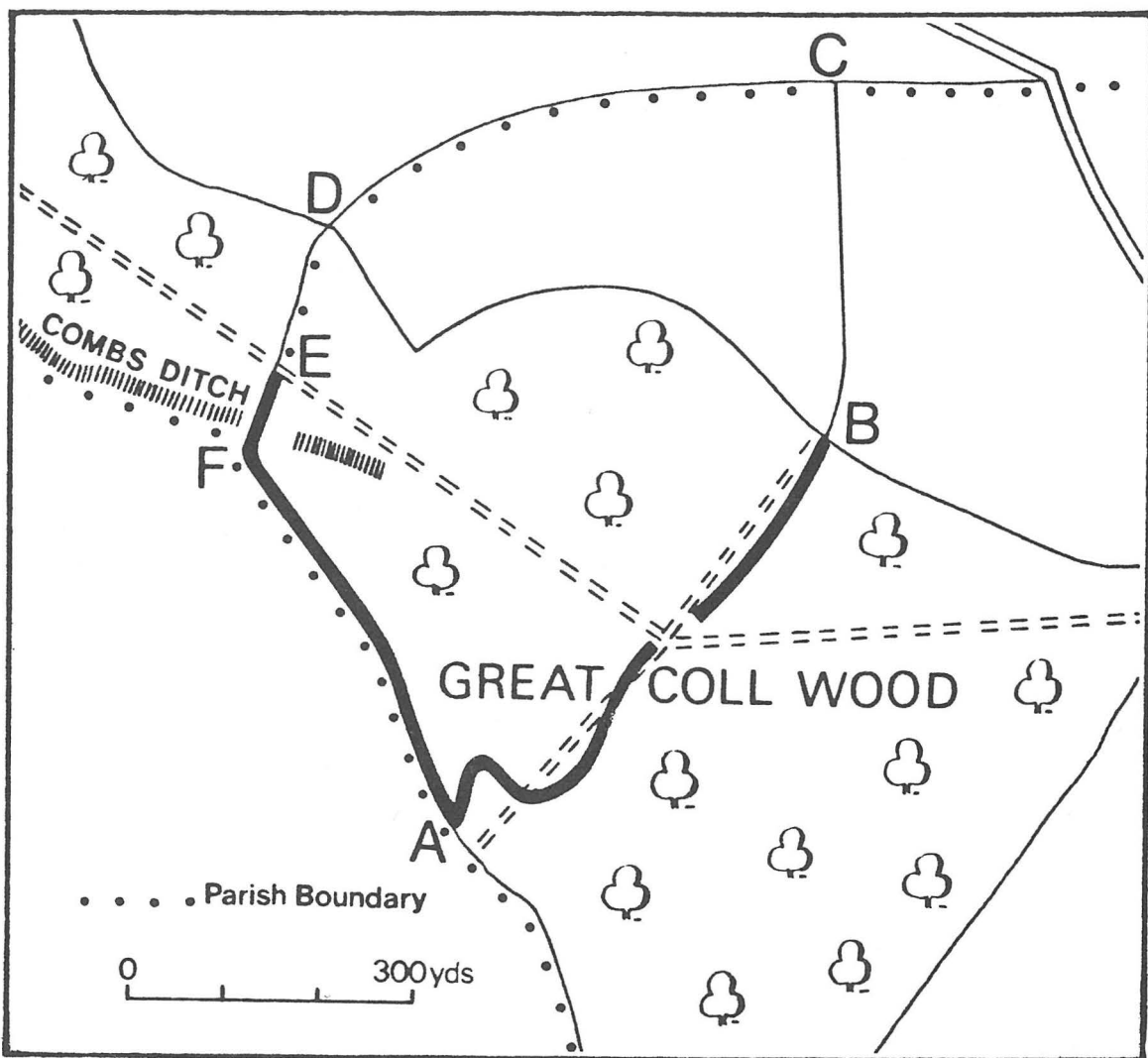


Fig. 1. Sketch map of Sturminster Marshall Park.

THE MEDIAEVAL DEER-PARKS OF DORSET XVII

J. D. WILSON

Authorities

Cal CR	Calendar of Close Rolls.
Cal PR	Calendar of Patent Rolls.
Clegg	A. Lindsay Clegg, <i>A History of Wimborne Minster and District</i> , 1960.
Drew	Col. C. D. Drew, <i>The Forests of Blackmoor and Gillingham</i> , article in <i>The Marn'ull Book</i> , 1952.
Fry	Fry's Typescript in the Dorset County Museum.
Hutchins	J. Hutchins, <i>The History and Antiquities of Dorset</i> , 3rd Edition, 1861-70.
RCHM	<i>Inventory of Historical Monuments in Dorset</i> , 1952-76.

This paper completes the survey of all the known or suspected mediaeval deer-park sites in Dorset. Of the sites dealt with here only Sturminster Marshall presented convincing earthwork evidence and this is described first, the other sites following in alphabetical order. Most of these were added to the list of 'possible' park sites (denoted by the prefix P to the check-list reference number) since they were not supported by documentary reference but were suggested by place-name or other evidence. Many of them proved negative and will be deleted from the revised check-lists which it is intended to include in a final paper summarising the whole survey. Comments on any specific or general points arising from the survey would be appreciated by the writer.

STURMINSTER MARSHALL (37)

Only one contemporary reference to the park at Sturminster Marshall has been found: the Close Rolls for 1244 record the King's gift of twelve deer from the Forest of Blackmore to William Marshall, Earl of Pembroke, for his park at Sturminster (Cal CR, Henry III, 1242-1247, p. 271). Though no place-names give a clue, it is suggested that the park lay in the extreme western corner of the modern parish, where a good specimen of deer-park bank and ditch survives in Great Coll Wood, 1½ miles west-north-west of Almer.

The rounded bank is not of exceptional size, being 11ft.-13ft. wide and rising 4ft.-5ft. above the inner ditch but is impressively well-preserved and consistent in size and shape throughout the line A-B on the sketch map (fig. 1), except for a gap where several rides cross and a cottage once stood. North of the wood, no sign of bank or ditch remains along the narrow hedge from B to C, though this can confidently be taken to represent the line of the park boundary. The hedge from C to D has been slightly less interfered with, though many of the trees shown on early editions of the 6in. OS map have disappeared; the bank and ditch too have been largely obliterated, but enough remains of them to show that they ran along this line to point D. Within the wood, no trace of the earthwork could be found through a plantation of young conifers between D and E. South of the ride at E it reappears, much eroded but recognisably similar to that along the line A-B, with inner ditch as before. A short distance further on it crosses Combs Ditch. The RCHM description of the Ditch mentions the park earthwork, describing it simply as 'a small bank and ditch of later date' (RCHM III, Pt. 2, p. 313). South of the Ditch it is better preserved than at point E. From F to G it runs along the edge of the wood and though bank and ditch are clear enough the bank is somewhat eroded, rising little more than 3ft. above the ditch. However, when at A it turns back at an angle into the wood it immediately becomes the well-preserved earthwork already described.

The re-entrant angle at the southern tip of the park is uncharacteristic and can be compared with abrupt changes in direction of the bank at Harbins Park, described in *Proceedings*, Vol. 86. The cause, presumably some conflicting land use at this point, can only be conjectured. The area of the park as described amounts to some 66 acres; it will be noticed that the park boundary follows the parish boundary, adjoining Anderson on the west and Spetisbury on the north.

ABBOTSBURY (P.13)

No positive reference to a mediaeval park at Abbotsbury has been found. Hutchins mentions that land in Abbotsbury granted to Sir Giles Strangways in 1544 included 'East and West Park' (II, p. 714). The 6-in. OS map shows 'Parks Withy Bed' and 'Long Parks Withy Bed', two narrow strips of woodland just south of the Portesham road and half a mile east of the Abbey site. South of these two enclosures, fields called 'Long Park' and 'Symons Park Meadow' are marked on an estate map of 1758 in the County Record Office. The area of the park fields is bounded on the south by a bridleway running eastwards to Elworth. Along its course as far as Elworth this track has on its northern side a continuous line of bank and ditch, an earthwork which extends back westwards, beyond the point where the track turns off to run down to the road, to the corner of Oddens Wood. The bank is as much as 13ft. wide, though never more than 3ft. high. Close to the south-eastern corner of Oddens Wood the earthwork runs across an open field and is very similar in appearance to the bank at Frome St. Quintin park illustrated in *Proceedings*, Vol. 90, p. 247.

As a park boundary, however, the bank presents problems. No park field names occur south of it, yet the ditch is on the south side. This survey has shown that it is unusual, though not unknown, for a deer-park boundary to have an outer, rather than an inner ditch. But if Abbotsbury is an example of such, where was the northern side of the park? Surely it must have extended north of the B3157 road, which Prof. Good in *The Old Roads of Dorset* suggests may be of comparatively recent date. In default of any more likely line it is suggested that the stream running down from Portesham to Abbotsbury could have formed the northern boundary; where a stream forms a park boundary, no embankment would be expected. A much eroded bank, some 17ft. wide with traces of a ditch on both sides, runs from the north-eastern corner of Oddens Wood, first north-west, and then north-eastwards down to the road. This may perhaps be taken for the western end of the park. As to the eastern end, the line of parish boundary which meets the road north of Elworth is not embanked; indeed, the fact that this parish boundary runs along the road, partially bisecting the suggested park area, is a further reason for regarding Abbotsbury park as no more than a possibility.

BRECHE (P.14)

Hutchins (III, p. 704) quotes a document of 1283 mentioning 'land in Hamme-Preston except the park of Breche'. No other reference to such a park has been found. The Tithe Apportionment Roll gives two park field names between the A31 road and the Stour which are immediately adjacent to Leigh Park (*Proceedings*, Vol. 98) and presumably named by association with it. A nearby field is called 'Breach'. The name Breche seems otherwise to have disappeared and there can scarcely have been a separate deer-park here.

BROADWINDSOR, PARK WATER LANE (P.47)

In the description of Broadwindsor Park (*Proceedings*, Vol. 92) mention was made of a suggestion that there were two parks at Broadwindsor. A possible site for the second is at Park Water Lane, which runs west from Broadwindsor past Burstock Grange to Blackdown. South of this lane are fields called Great and Little Park Mead. No significant embankments were found and the existence of a park here remains problematical.

HARTLEY (20)

Hartley, in Minterne Magna parish half a mile north of High Stoy hill, was included in the list of Dorset parks by virtue of a reference in the Close Rolls of 1238. It records a gift of oak trees from 'the King's wood of Hartley, outside the park'. (Cal. CR, Henry III, 1237-1242, p. 31). This is enigmatic, since no other reference to a park here has been found and there are no characteristic earthworks in the locality. Moreover, Col. Drew demonstrated that Hartley formed the remaining nucleus of the Forest of Blackmore after Edward I drastically reduced it in 1299-1330, and the perambulation which he quoted makes no mention of a park (Drew, p. 34). It therefore seems unlikely that a mediaeval deer-park existed at Hartley.

HOLDITCH (21)

The only documentary reference which has been found to a park at Holditch is from the Patent Rolls for 1397. 'Licence for Thomas Brook, knight, to strengthen with a wall of stone

and lime his mansion-house within his manor of Holditch, co. Devon, and enclose and make a park of 200 acres of pasture and wood belonging to the manor, and hold the premises, including a deer-leap in the park, to him and his heirs for ever' (Cal PR, Richard II, 1396-1399, p. 85). The ruined tower of Thomas Brook's mansion can still be seen, but the location of the park can only be conjectured. The most likely position appears to be south-west of the Court, between Holditch Court Lane and the Blackwater River, where there is a suitable area conspicuously free of roads and other rights of way. No field names offer a clue and no convincing line for the park boundary could be identified, though this is an area where many hedge lines are heavily embanked. It was suggested in the sixth paper in this series (*Proceedings*, Vol. 88, p. 177) that parks created after the middle of the fourteenth century were unlikely to be embanked owing to the reduction of the rural population caused by the Black Death. Holditch appears to support this suggestion.

HORN PARK (24)

The position of Horn Park, on the southern slopes of Horn Hill a mile north-west of Beaminster, is clear enough, and indeed its actual boundary can be conjectured with some degree of confidence. Hutchins (II, p. 128) quotes from a survey drawn up in about 1628 for Sir John Strode of Chantmarle, who had succeeded to the Parnham estates. 'Another part of the demesne lands belonging to Parnham . . . but lying detached, was the park of deer called Parnham park or Horn park, paled in with cleft pales of oak, and containing about 70 acres . . . and having a good park lodge in it . . . above the park were two great pasture-grounds of demesne called Horn-hill . . .'. A roughly square area of approximately 70 acres, with its southern tip close to Horn Park Farm, can probably be identified as Sir John Strode's park. Its eastern side follows a parish boundary for some 700 yards, running north-north-east from a little north of the farm to a wood called Clay Coppice. The suggested boundary then turns to run north-west for a similar distance, the first half still following the parish boundary. Quite close to the ancient road which runs over Horn Hill to Broadwindsor the boundary is taken to turn left down a stream which flows along the north-western and then the south-western sides of a wood called Horn Park Coppice, and so back to Horn Park Farm. The position of the 'good park lodge' is not clear; a possibility lies half-way along the north-eastern side, where just inside the boundary the 1904 6-in OS map marked 'Foxholes Cottages', long since demolished. This is a comparatively well-drained position and is close to the site of East Hewstock manor where the Strodes lived in mediaeval times.

Apart from some insignificant banks along the parish boundary, the suggested line is not embanked—and indeed no bank would be expected beside the stream on the north-west and south-west. In the absence of typical park earthworks and of an earlier reference than 1628, the question as to whether or not Horn Park was a true mediaeval park must remain unanswered.

KINGSTON LACY (25)

The extensive mediaeval manor of Kingston Lacy included the parish of Holt and it was suggested in the ninth paper in this series (*Proceedings*, Vol. 91) that the deer park at Holt, rather than the parkland surrounding Kingston Lacy house, was the mediaeval park of the manor. Mediaeval documentary references to the park were quoted in that paper. This suggestion was first made by Professor Good, who pointed out that the area of Kingston Lacy park was crossed by several roads of some importance during the mediaeval period. No evidence to refute the suggestion has come to light and the conclusion is that the present Kingston Lacy park is not of mediaeval origin.

LULWORTH (P.5)

It appears unlikely that there was a true mediaeval park at Lulworth. The earliest reference to Lulworth park is in Gerard's Survey of Dorset (1625-1634) and nothing was found here to suggest the existence of an earlier embanked park.

MELBURY SAMPFORD (30), UDDENS (40) AND WIMBORNE ST. GILES (P.11)

In the first paper in this series, the term 'mediaeval deer-park' was taken to mean any park which existed between the Norman Conquest and the year 1600. The latter date now appears to be much too late, as these three parks illustrate. They show the nature of the park changing

from the utilitarian enclosure sited in an outlying part of the manor where it did not interfere with agriculture, to the amenity area surrounding the manor house. Thus at Wimborne St. Giles it was suggested in paper no. VIII (*Proceedings*, Vol. 90) that the earthworks near Deer Park Farm may have been the original park of the manor, since no reference to Wimborne St. Giles park as such has been found earlier than that in Leland's Itinerary of 1546. At Melbury Sampford the evidence is clearer: Hutchins quotes from a document of 1546 granting Sir Giles Strangways land '2 feet in breadth and 233 perches in length . . . to set his park pales in' (II, p. 672). A comment which seems incidentally to rule out the construction of bank and ditch. At Uddens the earliest reference to a park is the mention of 'Uddens Park Corner' in a parish perambulation dated 1590 (Clegg). No physical evidence has been found to suggest the existence of an earlier park at any of these three sites. As the amenity park is not the proper subject of the present survey, they will not be included in the revised list of parks to appear in the concluding paper, where a more accurate definition of 'mediaeval deer-park' will be attempted.

MILBORNE ST. ANDREW (P.29)

Isaac Taylor's map of 1765 shows a park south-west of the village and park field names occur close to the site of the manor house on its southern edge. However, no topographical or documentary evidence has been found to confirm the existence of a mediaeval park.

PURSE CAUNDLE (P.39)

An eighteenth-century map in the County Record Office shows a group of fields called Park or Parks Hill, mostly within the triangle formed by the A30 road, the by-road to Stalbridge and the county boundary. No significant embankment was found; a mediaeval park seems improbable here since the area lay within the boundary of the Forest of Blackmoor.

RYME INTRINSECA (47)

A manorial survey of 1511 in the County Record Office of lands belonging to the Arundell family, mentions 'the park of Ryme' (CRO ref. D54). Ryme Park is also referred to in Court Rolls and other documents during the reign of James I. Mr. J. H. Bettey kindly passed on the these references, including the mention of 'certaine Lands Knowne by ye name of the parke' from a survey of 1612. It seems probable that the park lay somewhere south of the church, but nothing suggesting a park boundary has been discovered in the neighbourhood, and it appears unlikely that a true mediaeval deer-park existed there.

SHAFTESBURY (P.8) AND SHAFTESBURY OUT-PARK (P.46)

Shaftesbury was listed as only a possible mediaeval park since no documentary reference was found to it earlier than that in Hutchins. 'On the south side of the town, near which formerly stood the abbey and the church, was a park belonging to the abbey, which still retains the name of Park-Hill. At the east end, where it abuts upon the ascent up to Gold Hill, remains part of the wall which enclosed it . . .' (III, p. 38). This wall is without doubt the best-known park boundary in Dorset and is dated by the RCHM to the late fourteenth century or early fifteenth century (IV, p. 69). For a mediaeval park the site is exceptional for its small size—though the west end is hard to define, the area could not have been more than 8 or 10 acres at the most—and its close proximity to the abbey. No doubt the site was chosen because the steepness of the slope precluded other use. The restriction in size perhaps explains the comment which Hutchins makes in the same passage: 'There was another park, called the Out-Park, near the old water-works below the hill on the north-west, containing 100 acres. The marks of fish-ponds are still visible in it'. The location of the Out-Park seems to have been forgotten; it is suggested that it lay west of the Castle and immediately north-west of Breach Common. Here, a parish boundary runs north-westwards downhill beside a sunken track to meet the A30 road. In part the boundary is marked by a bank some 10ft. wide, but the earthwork is not impressive. This line is however taken as the south-western side of the Out-Park; the A30 road, the lane from St. John's Church to Breach Common and the northern edge of the common are suggested as completing the circuit, though no convincing earthworks can be found to support the suggestion. The area enclosed

is about 115 acres; the size would be nearer to Hutchins' 100 acres if the northern boundary followed a lane which seems to have run westwards from Long Cross to cut off a loop in the main road. The site is certainly suitable for a deer-park in consisting, at least in the upper slopes, of poor and ill-drained soil: a series of ponds still exists and could well be those mentioned by Hutchins.

WESTFORD (P.34)

A group of park place names on the eastern slopes of the Axe Valley a mile and a half south-west of Forde Abbey suggests that it may have been the site of the abbey deer-park. A document of 20th April, 1605, in the County Record Office, includes the following reference: 'Peter Fowler of Holdyche, husbandman, one close of pasture ground with the appurts called Fowler's Parke (12 acres) . . . bordering upon Smythlonge meadow on the south parte, upons Westforde Parke on the west and north parts . . .' (DCRO, No. 8778, Thorncombe). Westforde Park is a seventeenth-century farmhouse just under a mile south-south-west of Chard Junction. North-east of the farm are four fields with 'Old Park' names and 600 yards due east is an isolated barn named 'Little Park'. On the northern side these park fields are bordered by a right-of-way running roughly north-west/south-east to meet the metalled road near Herridge Farm. This right-of-way follows a continuous bank, with a ditch on its southern side, which is taken as the northern boundary of Westford Park. Bank and ditch have been much damaged on the slopes down to the Axe Valley, but are quite impressively continuous, though at most the bank measures no more than 11ft. wide and 3ft. high. A bridle road runs southwards from Herridge Farm to Holditch and this is taken as the eastern side of the park, though only one short length of similar bank and ditch, just south of the farm called James Lears, has survived. Immediately beyond this bank a stream runs westwards to the Axe; this stream seems a probable line for the southern side of the park. A right-of-way north-westwards from Holditch to Westford Park Farm, together with the lane from the farm northwards towards Chard Junction, is suggested for the western side of the park, but no earthworks could be found to confirm the suggestion.

WITCHAMPTON (42)

In 1294 the De Banco Roll records that 'William de Brideport, John, son of the same William and Robert le Keu are attached to answer to John Mautravers for breaking his park at Wykhampton and taking game to the value of 40s. They come and deny it all' (Fry, Vol. G. 3, p. 615, m. 82d.). Hutchins quotes a Decree of 1633 concerning rights of access to Chitred Walk, Cranborne Chase, saying that keepers of the walk 'did use to walk the said ground called Deane's Leaze, and over certain other grounds in Wich Hampton aforesaid, called Wich Hampton Park and Sley Yates . . .' (III, p. 417-9). Deans Leaze Farm is less than a mile west of Witchampton church, and this appears to be the most likely area for the park. Investigations have however failed to locate it; any further information or suggestions would be welcome.

J. S. WACHER

The excavations on Bowden's Hill took place in advance of ploughing, by kind permission of the owner, Mr. T. R. Horsington of Nettlecombe Farm. Apart from areas of 'Celtic' fields, enclosed by well-marked lynchets, the ridge was also crossed, from east to west, by a dyke which faced north; it was proposed to level these features before ploughing took place. Unfortunately time was short and permitted no more than a limited excavation of the dyke and one of the associated lynchets.

The area of hills surrounding Lyscombe Bottom possesses a number of similar dykes, an Iron Age hill-fort on Nettlecombe Tout and an extensive Romano-British settlement lower-down the shoulder of Bowden's Hill. All these features have been surveyed by the Royal Commission on Historical Monuments, and an appreciation has been published in *Dorset III* (Central, Part 2).¹ In view of this, a lengthy introduction and analysis has been considered unnecessary, and this report will be confined to a description of the excavations.

THE EXCAVATIONS

The Dyke

The dyke was examined at two places: a full section, 8 ft. wide across both bank and ditch, was cut some 120 ft. from its east end (Trench A). Another was cut at the western termination of the ditch, where the bank had been almost completely reduced (B I, II, III).

The bank had been erected over the old ground surface (layer A, II) which contained many very small fragments of charcoal and pottery, few large enough to recover. Cut through this layer and sealed by the bank were two small post holes.

The base of the bank appeared to be a tip of turf (see p. 39) or surface soil (layer 11) which had been spread at its front and then covered by alternating layers of compacted chalk rubble and brownish loam mixed with small chalk fragments (layers A, 8-10, 15). Nothing was recovered from these layers. Both the front and back of the surviving tips of the bank were covered by a uniform layer of chalk rubble mixed with soil (layer A, 3), apparently formed by their erosion. In front of the bank, this layer dipped down into the ditch.

The bank survived in Trench A to a height of about 3 ft., and its width was about 18 ft. 6 in. No sign of revetment was observed at either the front or the back.

The ditch in Trench A was somewhat unusual in shape, and there must be a slight suspicion that it represents two phases, although no absolute proof could be obtained. The central part had nearly vertical sides; it was about 9 ft. deep, as measured from the old ground surface, and about 4 ft. wide (see p. 41 for report on the snails). The upper part, however, widened out to give an overall funnel-shaped profile some 22 ft. wide at the top. The underlying chalk at this point was loose and broken, and contained quite large fissures. It may be that its soft nature caused slightly deeper digging than occurred at the west end.

The lower part of the ditch was filled almost entirely with clean chalk rubble (layers A, 7, 13), although a thin spread of finely compressed chalk and yellow loam covered the bottom (layer A, 14), which was rounded in profile. A considerable quantity of small pottery fragments was recovered from layer A, 7, together with an iron ring. The pottery, too fragmentary to be worth illustrating, appeared to belong to vessels of Bronze Age type.² Layer A, 3 dipped down from the eroded bank to cover layer A, 7 on the south side. On the north side it was replaced by a layer of yellow loam (layer A, 6), probably derived from weathering of lynchet 3.

¹ Hereafter referred to as *Central 2*: pp. 172-5, 330-1. The Dyke is No. 15 in the Commission's inventory.

² I am grateful to Mr. A. G. McCormick for this opinion (see p. 40). Sixty-two sherds were recovered.



Fig. 2. Area plan. Republished from RCHM. *Dorset III (Central)* p. 330, by permission of The Commissioners. Crown copyright.

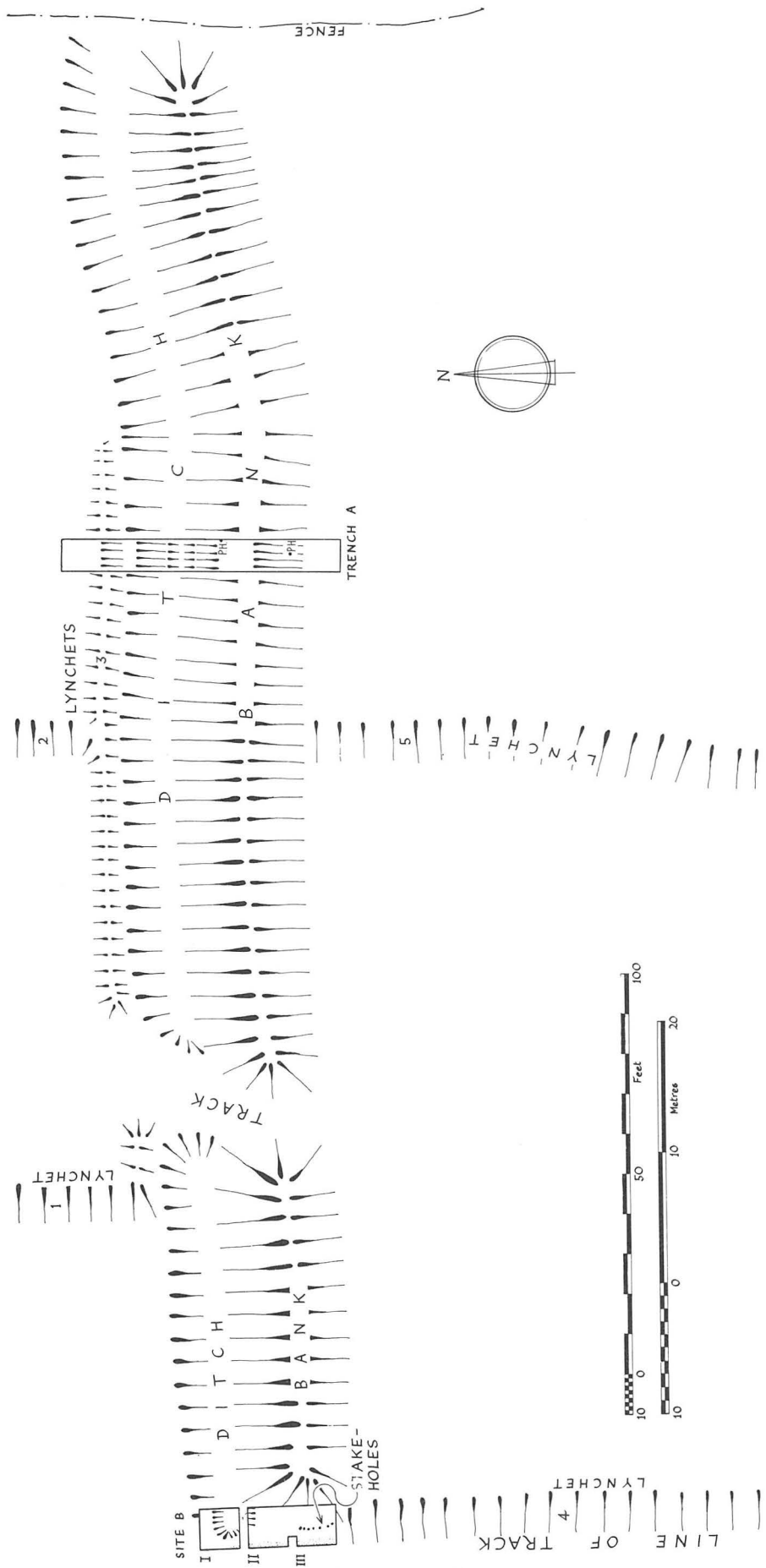


Fig. 3. Plan of trenches.

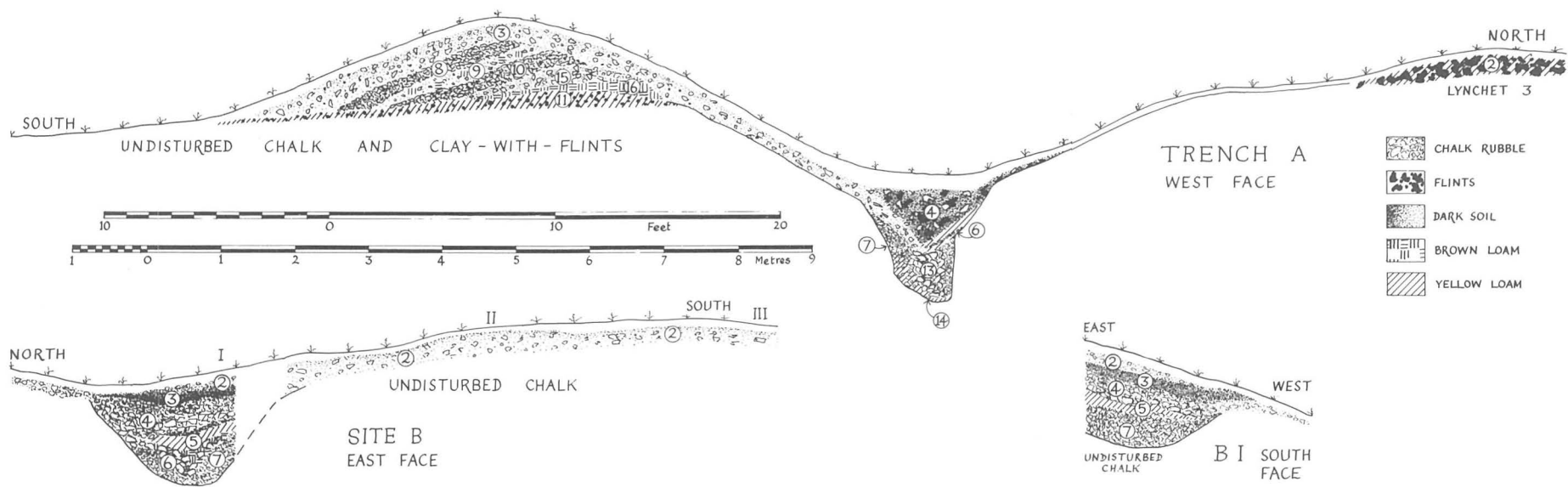


Fig. 4. Cross sections.

Nothing except eroded remnants (layer 2) of the bank survived in B II or III. There was, however, some evidence to show that its west end had been revetted with timber and a line of seven small post-holes was observed in B III. They varied from 6-8 ins. in diameter, and from 7-12 ins. in depth. The shallowness of their settings would suggest that, to have acted as a stable revetment, they must have been tied into the bank with horizontal beams. The filling of the holes was a uniform yellowish-brown loam mixed with small chalk lumps.

The butt end of the ditch in B I, II did not show the same depth as in Trench A, being only just over 4 ft. deep. The filling was, however, remarkably similar: two thickish layers of chalk rubble fill (layers B I, 4 and 6, 7) being separated by a layer (B I, 5) of yellowish, chalky loam. The only marked difference between the two sections was seen in the upper layers of B I, where, in addition to the modern humus, a slightly earlier turf layer (B I, 3) existed below it, and was separated from it by a layer (B I, 2) of dirty chalky rubble derived from the bank. It would seem therefore that the last disturbance of the bank material occurred in comparatively recent times.

The Tracks

Some 90 ft. from its west end a breach had been made in the dyke, and also in Lynchet 3 beyond it. It seems certainly to be secondary to both features, although its date is unknown.

Another track, flanked by a ditch on one side and a lynchet on the other, leaves the settlement south of the dyke and appears to be aiming for its western end, where it would have run parallel with Lynchet 4. However, it was not clear on the ground whether the track did, in fact, come that far. It is useful, therefore, to be able to record that, along the west sides of B II and III, and to a lesser extent along B I, the surface of the chalk had been worn away to leave a marked depression about 6 in. deep in B III. It would appear to be the eastern edge of the track. However, north of the dyke all traces of the track died out.

The Lynchets

There is no doubt that the dyke had been superimposed on an existing field pattern, with Lynchet 2 almost certainly being the continuation of Lynchet 5; the latter runs into the tail of the bank and the crest of the bank drops to reflect the underlying Lynchet.³ Unfortunately this point could not be confirmed by excavation, but no other interpretation is really feasible.

Lynchet 3 was sectioned at the north end of Trench A. The bank, about a foot high at its centre and more spreading than appeared on the ground, was made up entirely of large flint nodules intermixed with some yellowish loam; there were also many voids (layer A, 2). The old ground surface seemed to have been stripped away from beneath the bank, which stood on undisturbed clay-with-flints.

It is unfortunate that no satisfactory dating material was obtained from the cross dyke, which so clearly post-dates the field system, since the latter are notoriously difficult to date.

THE FINDS

The Prehistoric Pottery by A. G. McCormick

About a hundred fragments of pottery were examined, the majority having a surface area of less than 1 sq. cm. From the fabric, form and fill, it seems that three separate vessels are indicated. The majority of the sherds were found among collapsed chalk towards the base of the ditch (layer A, 7). The fabric was filled with large flint grits, up to 10 mm and some rare shell fragments, together with a small amount of stone particles of less than 1 mm; hard brown lumps, up to 3 mm, were thought to be siliceous inclusions in the clay itself. In general, the clay matrix was very soft.

The outer surface varied from light to dark red-brown; the break progressed from dark red-brown to black towards the inner surface, which was itself black. The outer surface was reasonably smooth and closed. The inner surface was quite smooth and generally no grits protruded out of it.

In general, the sherds had split, leaving the inner and outer surface separate, but a thickness of 13 mm was determined from the few complete fragments. Reconstruction from the sherds was not possible, but it is likely that they represent a reasonably large diameter, straight-sided vessel. A few sherds appear to be fragments of a simple straight rim. A small sherd of an identical fabric was found incorporated in the lynchet (layer A, 2).

A small group of the sherds from the ditch, together with some from the old ground surface beneath the bank (layer A, 11) seemed to belong to another vessel. The fabric and fill was similar to that

³ *Central 2*, 331.

described above; however, the outer surface was very dark brown and the inner surface varied from dark brown to black. The sherds were 9 mm thick.

Both sets of sherds are almost certainly Bronze Age, the fabric of the first comparing well with that of the urn found in the Oakley Down Bowl Barrow.⁴

Finally, some larger and finer sherds were found among the heavily ploughed topsoil at the back of the bank (layer A, 1). They belonged to a vessel with a simple everted rim of about 20 cm diameter. The fabric was heavily filled with small 2 mm burnt flints and was hard. The surface was very dark brown, the break and inner surface being blue-black. The pot was 5.5 mm thick. The surfaces and break were heavily eroded, making reconstruction impossible. No parallel to this fabric could be found, but from its hardness and comparative fineness, an Iron Age bracket is indicated.

Iron Object (Fig. 5.)

An iron ring, approximately 38 mm diameter, with an oval cross-section. Use uncertain, but, coming from layer A, 7 in the ditch, should be of Iron Age date.

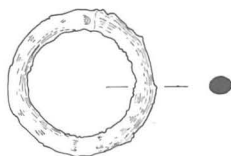


Fig. 5. Iron Ring.

The Animal Bones by Clare Thawley

1. A, 5. Long bone fragment, too heavy for sheep. Probably ox, but in too bad a condition for reliable identification.
2. A, 7. Right mandible fragment (the two fragments join to form one) of a large dog or wolf. All teeth missing, but tooth sockets characteristically a dog family.
3. A, 4. Seven fragments in all, three of which can be identified. Pig/Boar canine, lower jaw type, probably from right-hand side. Broken and split open and decaying. From a pig older than a year (based on size). Fragment of ox rib, from small animal, smaller, than the modern ox; left-hand side, fragment broken out from middle of rib shaft. Ox right mandible, fragment of posterior end of diastema. Broken and rather decayed. Small size, probably young animal or smaller breed than modern ox.

The other four fragments of bone are badly decayed, as if they had been boiled (rendering them 'chalky' or powdery).

4. B I, 4. One sheep tooth, from left mandible (lower jaw) molar I. Not very worn, and of fairly small size, probably from young animal.

One sheep tooth, from left mandible. Premolar III. Again small size with high crowns, probably young animal. Broken across base of tooth.

Fragment of left mandible, probably associated with above two teeth.

Fragment from base of mandible below cheek teeth, consisting of the buccal (mouth) part only and extending forward to the area where the two mandibles would have joined.

A fourth fragment consists of a mandible fragment from the outside part of the jaw below the cheek teeth and is probably associated with the above three fragments.

5. A, 11. This small fragment of bone appears to have been worked. It is polished and has six-seven facets all tapering down to a point. Appears not to be part of a tooth, but part of a small hollow bone. Due to the polishing it is impossible to identify it properly.

Land Snails by John Evans

A (7)

- Pomatias elegans* (Müller) 3
- Helicigona lapicida* (Linné) 1
- Arianta arbustorum* (Linné) 1
- Cepaea hortensis* (Müller) 2
- Marpessa Laminata* (Montagu) 1

B I (4)

- Pomatias elegans* (Müller) 9
- Cepaea hortensis* (Müller) 2
- Cepaea nemoralis* (Linné) 1
- Helicella itala* (Linné) 2
- Discus rotundatus* (Müller) 1
- Oxychilus cellarius* (Müller) 2

With the exception of *Helicella itala*, these shells indicate conditions of shade—woodland or scrub, or perhaps extremely tall, dank herbaceous vegetation such as grasses, nettles, etc. *H. itala*, on the other hand, is a species of very dry, open habitats and I suspect that there has been some mixing, perhaps by rodents or badgers, etc. It is, however, difficult to say very much about the inferred habitat from such small samples; one generally needs about 150 shells.

⁴ D. A. White and R. Reed. *Proceedings*, XCII (1970).

The Charcoals by G. C. Morgan

From: A, 7	<i>Quercus</i> sp.	at least 40 mm diameter.
A, 11	<i>Quercus</i> sp.	40 mm plus in diameter.
	<i>Fraxinus excelsior</i>	about 10 mm diameter.
B, I, 6	<i>Fraxinus excelsior</i>	about 10 mm diameter.
	<i>Corylus avellana</i>	about 10 mm diameter.

The samples probably represent brushwood.

The Soils by G. C. Morgan

Two samples were submitted for consideration. Sample 1 came from the modern topsoil (A, 1) and Sample 2 from the suspected old ground surface (A, 11) beneath the rampart.

Ignition tests were carried out on both samples and showed the following results:

Sample 1	Low Iron	High Organic
Sample 2	High Iron	Medium Organic

Sample 1 appears very similar to Sample 2, but showing, with 1 a tendency to leaching, and with 2 a tendency to iron pan formation. The excavator's surmise as to the position of the old ground surface is therefore probably correct.

THE EXCAVATION OF A ROUND BARROW AT LONG BREDY, DORSET

GEORGE EOGAN

Introduction

This barrow, a scheduled monument, was situated alongside the A35 Dorchester-Bridport road at grid reference SY 570914. In the early 1960s the Dorset County Council drew up plans for improving the road. According to these plans it was intended to widen and realign the road in the neighbourhood of the barrow, in fact the barrow would be in the line of the altered road. Accordingly the County Council informed the Inspectorate of Ancient Monuments of the then Ministry of Public Building and Works, now the Department of the Environment. Subsequently the Inspectorate decided that the barrow should be excavated. This work was undertaken by the Inspectorate, under the immediate direction of the writer, during August-September, 1964. The excavation was carried out on the quadrant method.

The site is situated in south-west Dorset about four miles inland from the coast. It is at the extreme western end of the Dorset ridgeway, and the surrounding countryside is undulating chalkland. In the immediate vicinity of the site, the maximum height of the hills is only slightly over 600 ft. The site itself is situated at a height of 453 ft. OD. From the site there is a fairly extensive view to the west and south-west. Lyme Bay is visible as is the Devon coast across the bay to the south-west. In the other direction, however, the chalk hills restrict the view. The area in the vicinity of the site was intensively settled during prehistoric times. It is rich in barrows; overlooking the site is Long Barrow Hill, Martin's Down, with its immensely large, long barrow and several round barrows (for good air photograph of area, see Forde-Johnston, 1976, Pl. 12). Before excavation the site appeared as a very well preserved example of a bowl barrow and it had been listed by the Royal Commission on Historic Monuments as Long Bredy, 9a.

The Site (Fig. 6.)

Basically, the barrow structure, as revealed by excavation, consisted of a chalk mound with a cairn core. This mound was delimited by a ditch at the base and there were other ditches out from it. The pre-excavation regular appearance of the mound was to a great extent the result of subsequent interference. Along the southern side nearly a third of the barrow had been removed and a large pit had been dug into the centre. The pit measured 7 ft. by 9 ft. at the mouth and it penetrated the mound and cairn to the old ground surface. In addition, part of the original surface of the soil and part of the subsoil were removed along the western side to form what appears to have been a path. A portion of the mound on the southern side was removed when the Long Bredy Hut, a toll-house, was constructed by the Harnham, Blandford and Dorchester Trust after 1753 or 1754. Buildings are shown on maps of 1765, 1811, 1826, etc. (Good, 1966, *passim*). In addition to the removal of a part of the mound, some of the natural chalk was also dug away to form a level surface. Most, if not all, of the material removed was thrown up on the existing mound. Apart from a few postholes and a pit, structural evidence for the toll-house had completely disappeared: it appears to have been a flimsy structure. After its demolition, presumably after 1879 when the Trust expired, the area occupied by it was filled up with rubble.

The central cairn was made from flints (Figs. 7 and 8). Along the western side its edge was regularly rounded but on the eastern side there was an extension with irregular edges. There was no formal kerb. The cairn measured 19 ft. east-west by 14 ft. north-south; it was 3 ft. in maximum height. A flint end scraper was found in the cairn (see p. 50). The cairn was covered by a chalk mound, which survived to a maximum height of 6 ft. and was 35 ft. in diameter.

The remains of at least six individuals were found in the pit (see report p. 51). They were unburnt and occurred in three main groups, Burials 1, 2 and 3. There were also a few scattered bones. It may be assumed that these bones came from a burial, or burials, but their

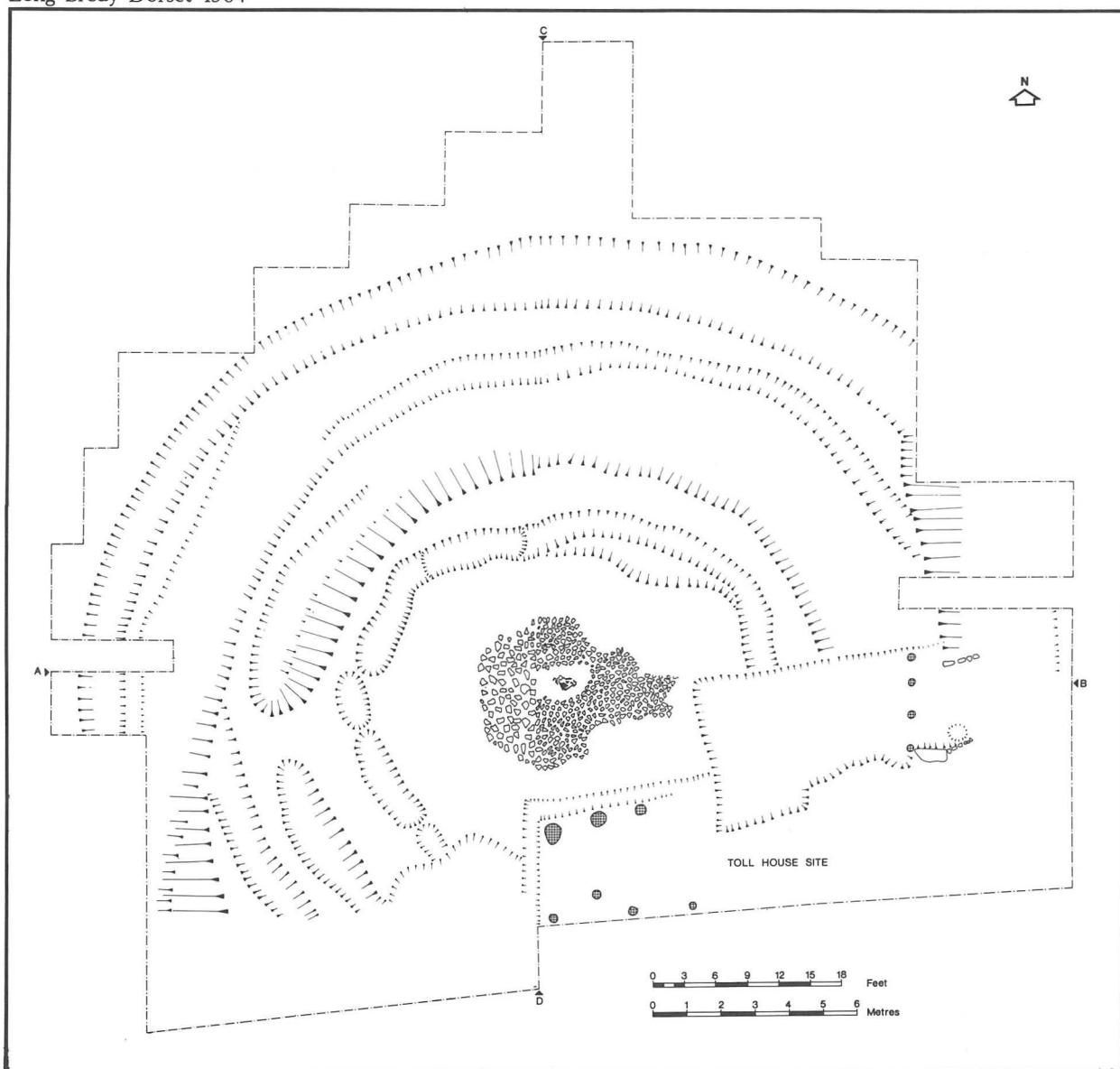


Fig. 6. Round barrow at Long Bredy; trench plan.

nature cannot be determined. The bones in Burials 1 and 2 (Fig. 9) were disturbed and were in a secondary position. Burial 3 (Fig. 10) was also disturbed but the bones of the juvenile, aged about 10 years, may have been *in situ*. They could have been the remains of a crouched burial lying on the left side with the legs to the south. There were also the remains of three other individuals, two adults and a young child aged about five years.

The collection of bones forming Burial 2 were parts of the remains in Burial 3. The remains of the adult in Burial 1 may also have come from Burial 3.

The mound was surrounded by a ditch at its base. The filling consisted of stones, mostly flint, and light brown loose soil. There were a few localised patches of darker earth but these were not confined to any particular section or level of the ditch. A sherd of Bronze Age pottery was found in the base of the ditch. The ditch was not dug regularly and along the south-western side there were three well-defined causeways. The causewayed section of the ditch maintained a fairly uniform width of 3 ft. 3 ins. but the uncausewayed stretch was narrower and it ranged in width from 1 ft. 8 ins. to 2 ft. 3 ins. The ditch averaged 2 ft. 8 ins. in depth and it was approximately 42 ft. in external diameter. On the inner edge, on the north-eastern side there was a step.

At a distance that varied from 4 ft. 6 ins. to 1 ft. 6 ins. out from the outer edge of the ditch the surface of the soil sloped downwards. This was caused by scarping. On the western side



Fig. 7. View of the cairn area from the south.



Fig. 8. The central cairn from the west.

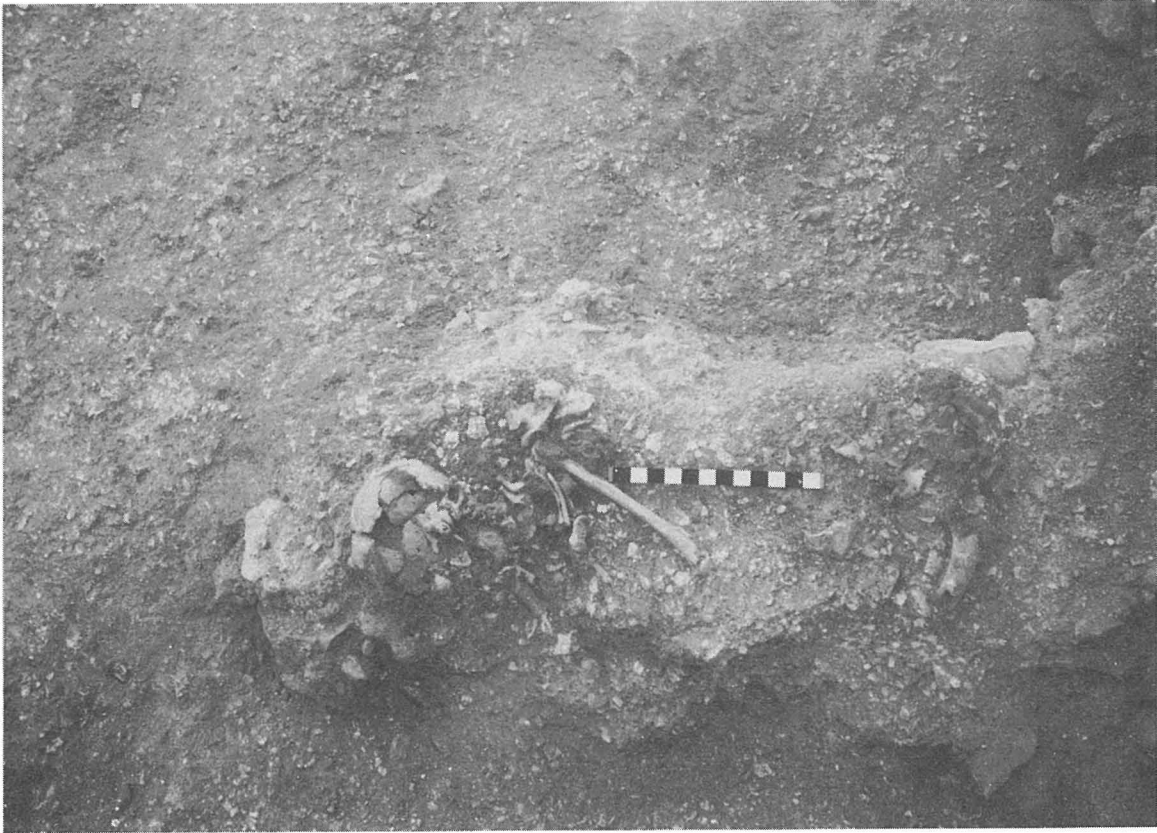


Fig. 9. Burial 2.

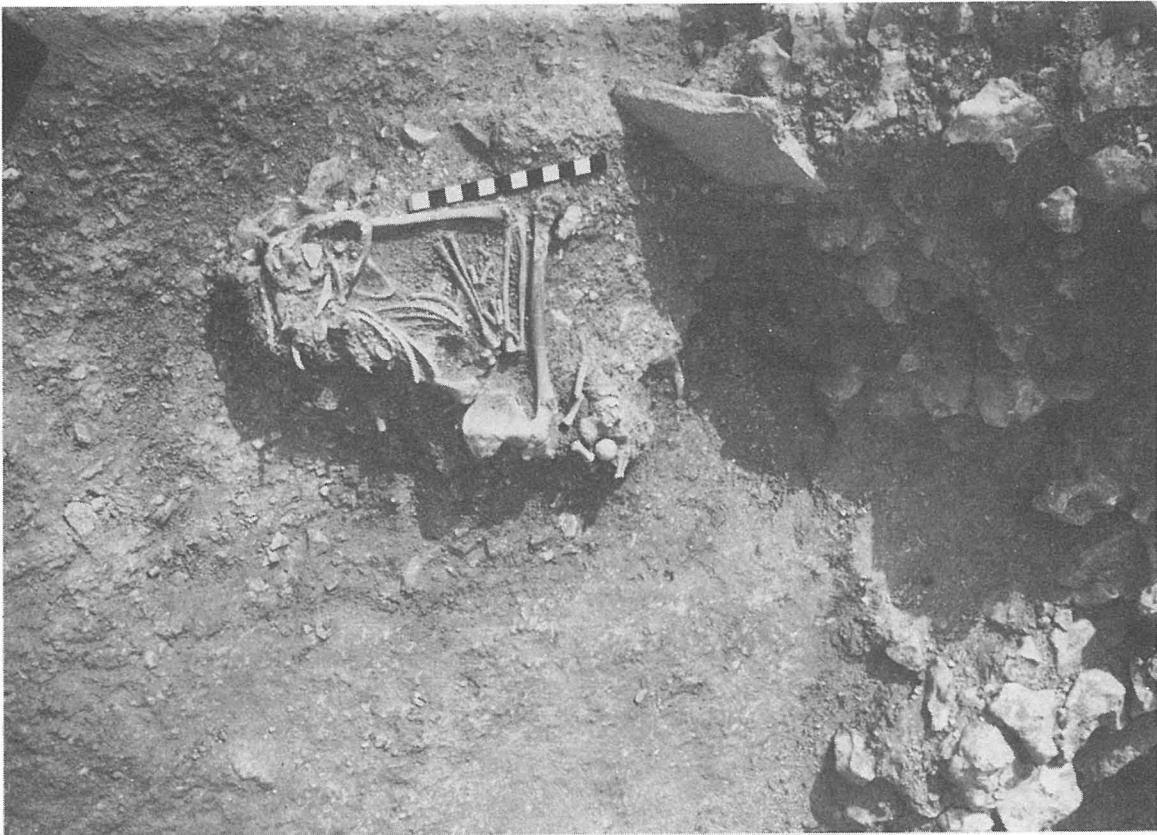


Fig. 10. Burial 3.

Long Bredy Dorset 1964

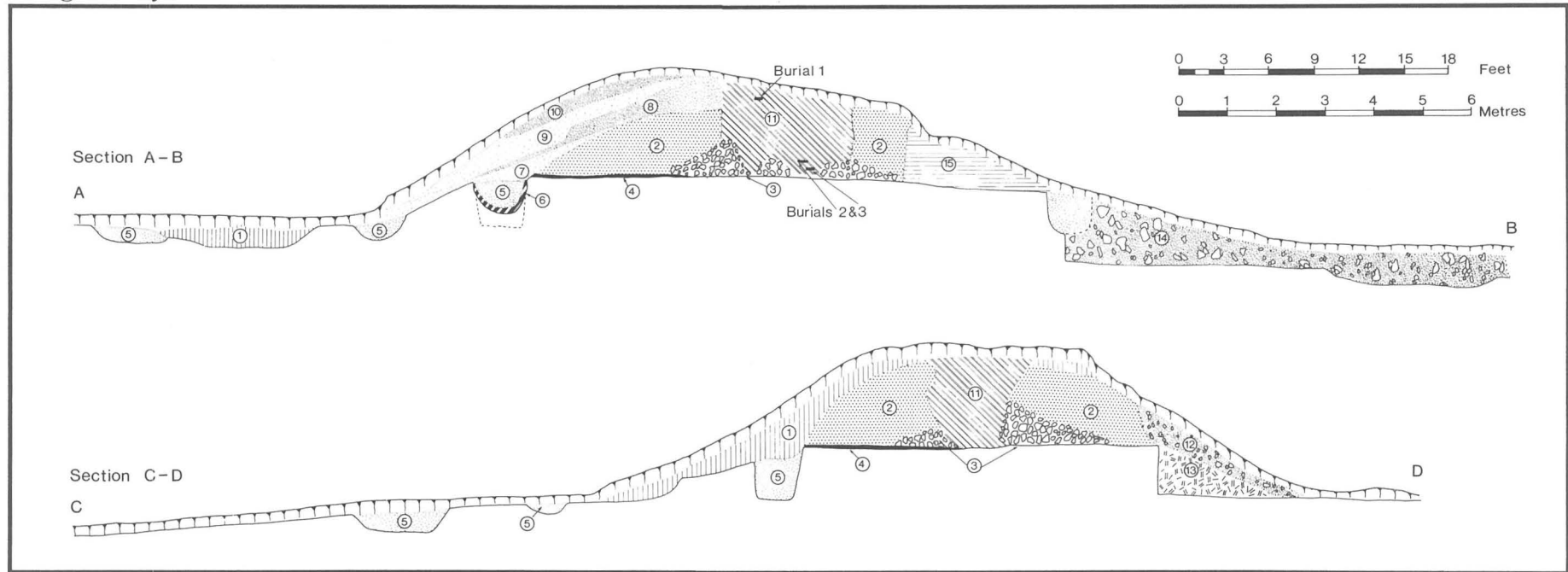


Fig. 11. Sections across the round barrow at Long Bredy.

- Key:**
- | | | | |
|--------------------|----------------------|---------------------------------------|----------------------|
| 1. Path | 2. Chalk mound | 3. Central Cairn | 4. Old surface |
| 5. Fill of ditches | 6. Silt | 7. Clean chalk | 8. Dirty chalk |
| 9. Clean chalk | 10. Dirty chalk | 11. Central pit | 12. Stones and earth |
| 13. Chalk rubble | 14. Stones and earth | 15. Rubble fill on site of toll house | |

the scarping was turned into a ditch. This had pointed rounded ends and a causeway 4 ft. 6 ins. between them. On the south of the entrance the ditch had a maximum width of 4 ft. 6 ins.; the portion to the north was 7 ft. 9 ins.

The next definite ditch occurred about 13 ft. out from the outer edge of the inner ditch. It averaged 3 ft. in width and 1 ft. in depth. As far as can be determined it was slightly over 70 ft. in external diameter.

Outside this, but not strictly concentric with it, was the outermost ditch, veering outwards on the western side. From a width of 7 ft. 6 ins. at the eastern end the ditch narrowed to 4 ft. at the western end. It was about 90 ft. in overall diameter. This ditch and the one adjacent to it had a fill of soft brownish earth and some small stones. It contained a quantity of unstratified pottery, mainly Bronze Age and Durotrigian in date. Cultivation may have destroyed the upper portion of the outer features.

Remarks

It may be assumed that this Long Bredy barrow was erected during the Early Bronze Age. However, due to the virtual absence of finds that could be associated with the use of the barrow and the subsequent damage that the barrow suffered, it is not possible to assign the structure to a definite cultural phase or phases. Neither does the morphological evidence help. Segmented ditches surrounding barrows and a cairn covering a central burial have been recorded at other sites (Ashbee, 1960, pp. 49-70). Sites with more than one enclosing ditch are also known. For instance, in Wiltshire at Amesbury G. 71 a circular ditched enclosure was succeeded by a low bell barrow with ditch of Beaker date. Further enlargements took place later (Christie, 1967). At Frampton, Dorset, two barrows produced evidence for multi-phase activity. In both cases the initial barrow was enlarged and as a result an inner ditch was buried (Forde-Johnston, 1958). These barrows provided evidence for activity from Beaker to Urn times. For Long Bredy no such positive evidence exists and it has not been established whether the original monument consisted of a mound surrounded by a ditch at its base and the other ditches representing successive stages of enlargement outwards, or whether the mound was built and all the ditches dug at the same time. The fact that the outer ditch is not concentric with the others is at least a hint that enlargement may have taken place.

The Pottery by Alison M. Cook, Inspectorate of Ancient Monuments

The excavations at Long Bredy, Dorset produced a total of 498 fragments of pottery, many having a surface area of less than 1.5 sq. cm. One Bronze Age sherd was found at the base of the inner ditch. The rest of the material, consisting very largely of Bronze Age and Durotrigian pottery, was in an unstratified context in the fill of the outer ditch about 8 cm below the ditch lip, on the north side of the barrow. A minimum number of 59 pots has been identified, but in no instance has it been possible to reconstruct a vessel in its entirety.

Pottery from the base of the inner ditch

A decorated Bronze Age body sherd probably from a vessel of 'bucket urn' type, with reddish brown surfaces and a crumbly, black core. The sherd is traversed by a moulded cordon, with obliquely impressed finger tip impressions on either side (Fig. 12, 1).

Pottery from the outer ditch

With the exception of a few odd sherds the pottery from the outer ditch can be divided into two main groups:

Group 1

Bronze Age sherds of relatively coarse fabric, generally with reddish brown exterior surfaces, black cores and either brown or black interiors. The fabric usually contains small quantities of grit. Decoration consists of moulded cordons and finger tip impressions. A total of six vessels belongs to this group.

The Bronze Age pottery of Dorset was extensively studied by B. Calkin in 1962 (Calkin, 1962). The Ultimate Late Bronze Age pottery has been discussed by B. Cunliffe in relation to his excavation at Eldon's Seat (Cunliffe and Phillipson, 1968).

Group 2

Black dark brown and dark grey sherds from wheel-made vessels of fine sandy fabric. Sometimes the core is sandwiched between reddish brown layers. The exterior surface of the pottery is moderately well finished, and many of the vessels are decorated with shallow incised linear

ornament. A minimum number of 49 vessels belongs to this group. The pottery belongs to the Durotrigian culture and parallel material has been discussed by J. Brailsford (Brailsford, 1958) and G. J. Wainwright (Wainwright, 1968).

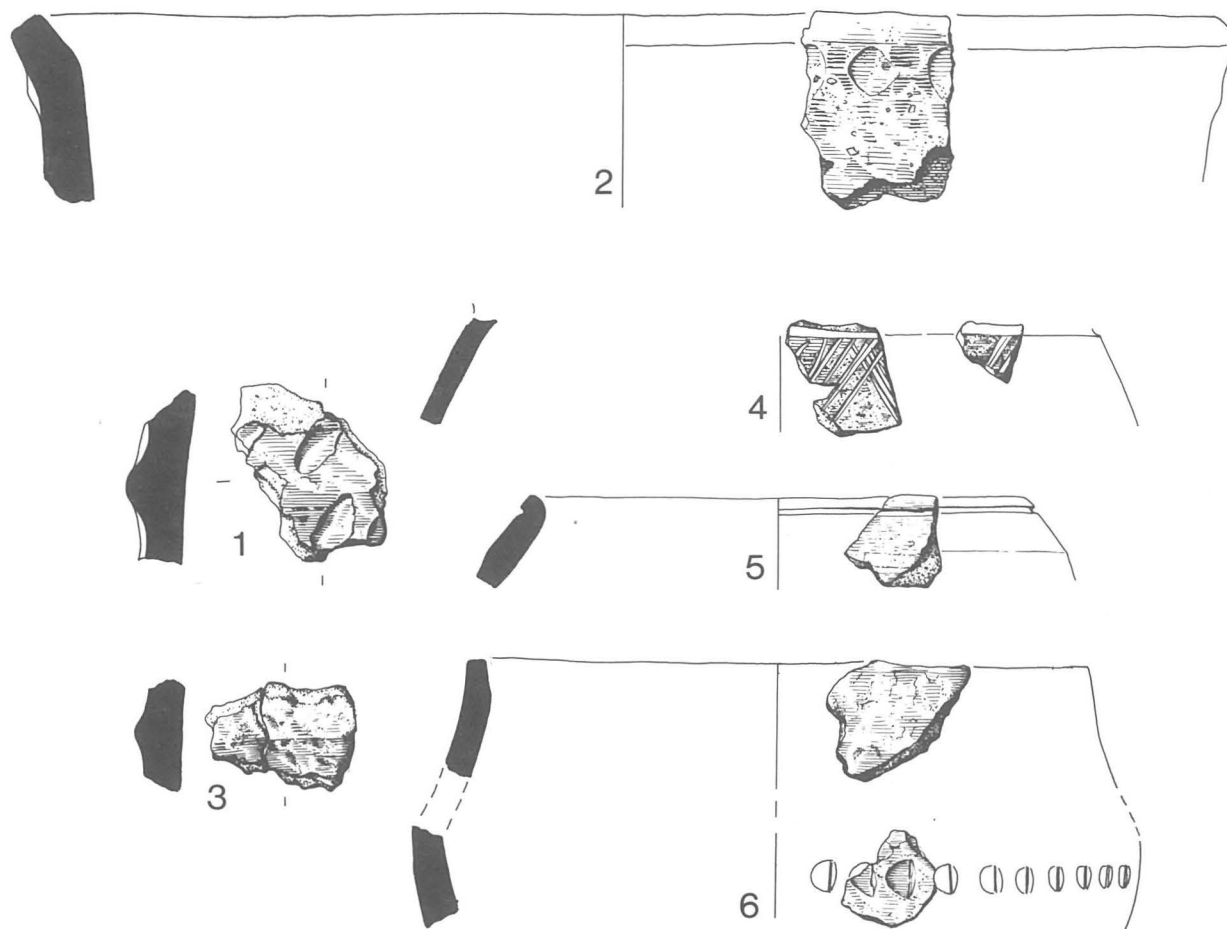


Fig. 12. Long Bredy: pottery from the inner ditch (2) and the outer ditch (1, 3-6). Scale $\frac{1}{2}$.

Catalogue of the pottery from the outer ditch

Unless otherwise stated, the material has been catalogued in individual vessel groups.

Group 1

- 1-3 One rim sherd and two body sherds probably from a vessel of 'bucket urn' type. The sherds are brownish black mottled with brown on their exterior surfaces and light brown on the interior. The rim is rounded and internally bevelled and immediately below it, on the exterior of the vessel, is a cordon formed by squeezing up the clay from the body of the pot. The cordon is decorated with a row of finger tip impressions (Fig. 12, 2).
- 4-11 Eight body sherds.
- 12-14 Three body sherds.
- 15 One body sherd. The sherd is reddish brown on the surface and has a soapy texture. It is traversed by an undecorated finely moulded cordon running horizontally around the vessel (Fig. 12, 3).
- 16-18 Three small body sherds.
- 19 One rim sherd. The rim is rounded and very slightly everted.

Group 2

- 1-5 Five body sherds. The vessel is decorated with chevrons arranged immediately below the rim or neck (Fig. 12, 4).
- 6-12 Seven body sherds decorated with shallow incised parallel lines forming a lattice pattern.
- 13-52 Forty body sherds, of which 19 are decorated with an incised lattice pattern, and one base sherd. The base is flat and forms a simple angle with the vessel wall.

- 53-56 Four body sherds decorated with parallel incised lines.
 57-58 Two extremely abraded body sherds decorated with an incised lattice pattern.
 59-61 Three body sherds with decorated incised lines.
 62-67 Six base sherds. The base is flat and forms a simple angle with the body of the vessel.
 68-71 Four base sherds. The base is flat and forms a simple angle with the body of the vessel.
 72-95 Twenty-four rim sherds, only two of which appear to be from the same vessel. The assemblage includes one bead-rim sherds (Fig. 12, 5).
 96-448 Forty decorated body sherds and 313 undecorated sherds. Sixty-seven per cent of the undecorated sherds have a surface area of less than 1.5 sq. cm.
 449-466 Eighteen base sherds, apparently all from different vessels. All the sherds are derived from pots with flat bases and in every instance there is a simple angle between the base and the body of the pot.

Pottery not belonging to Groups 1 and 2

- 1-3 One rim sherd, one body sherd and one base angle from a hand made vessel. The fabric is dark brown crumbly and tempered with reddish brown grog and a small quantity of coarse grits. The rim is rounded and inturned. The wall has an average thickness of about 0.7 cm and makes a simple angle with the flat base. The softness and general appearance of the sherds indicate that they might fall within the Neolithic series of wares.
 4 One rim sherd of coarse black fabric with fairly large quantities of coarse grit. The rim is rounded and closed. The rim diameter of the vessel would have been about 10 cm.
 5-12 Seven body sherds and one rim sherd from a shouldered jar. The sherds have orangey brown surfaces, and a black core. The fabric is fairly hard, and contains a small quantity of flint grits. The rim is flat, with a diameter of about 15 cm, and the shoulder is decorated with finger nail impressions. The vessel belongs to the Kimmeridge-Caburn pottery group defined by B. Cunliffe (Cunliffe, 1974, pp. 33 and 34), dated to the late 7th and 6th centuries BC (Fig. 12, 6).

Conclusions

The pottery from Long Bredy, Dorset is a mixed assemblage and only the sherd from the base of the inner ditch and the pottery in Group 1 from the outer ditch can be said to be contemporaneous with the period of use of the barrow. The Bronze Age pottery from the outer ditch may represent the remains of secondary cremation burials in the barrow mound. The pottery in Group 2 indicates the presence of a Durotrigian settlement in the vicinity. Presumably the material was deposited in the ditch as a result of ploughing.

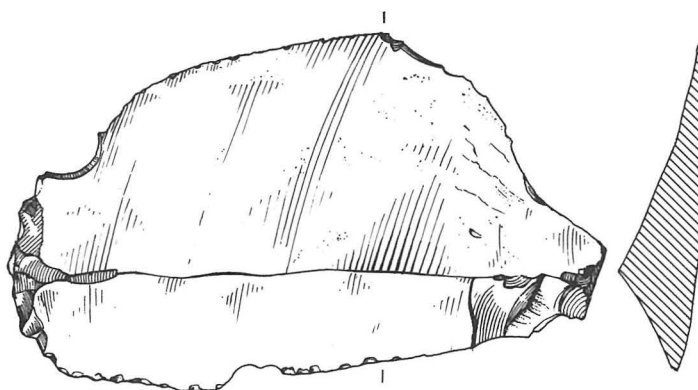


Fig. 13. Long Bredy: flint implement from the central cairn (full size).

Flint

A single flint implement (Fig. 13) was found in the central cairn of the barrow; a long end scraper with a white patination mottled with grey patches. It is 7.7 cm in length, measured along the bulbar axis, and has a maximum breadth of 4.5 cm. It is 0.9 cm thick at its medial point.

The size and general appearance of the flint show that it was struck as a secondary flake from a well prepared core. The bulbar surface is plain with a positive bulb of percussion. The dorsal surface shows two large flake scars and the distal end exhibits fine retouch worked at a low angle. Subsequent use of the scraper has caused step fracturing of the end. Both edges of the flake show slight utilisation. There is a later small chip at the juncture between the edge and the end. The general appearance of the implement shows that it was the product of a proficient flint industry, and it is probably of late Neolithic date.

Human Bone by Justine Bayley, Ancient Monuments Laboratory, London

Bones from three burials and a number of bone groups were examined. Their condition varied from good to very poor with varying degrees of surface erosion, distortion and fragmentation, even within one burial.

The age at death was calculated on the basis of tooth eruption (McCall and Ward, 1963, pp. 149 and 157) for the immature individuals and on dental wear (Brothwell, 1972) for the adults.

Burial 1

The bones were the remains of an adult male, aged about 20-30. Preservation was generally good although there was some surface erosion. The maximum stature was estimated to be 175 cm (*c.* 5 ft. 9 ins.) from the formulae of Trotter and Gleser (Trotter and Gleser, 1958, pp. 79-123). The skull measurements are given in Table 1.

The dental formula was:

OC															
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
OC								OC							

Key to dental formulae

/ = lost post mortem	NP = not present; congenitally absent
- = tooth only, no jaw	OC = occlusal caries
— = area missing	MC = medial caries
E = pulp cavity exposed	DC = distal caries
A = abscess	LC = labial caries

There were slight green calculus deposits on most of the teeth which also showed a medium degree of hypoplasia. The anterior mandibular teeth had been chipped in antiquity, possibly even before death.

There were slight traces of torus mandibularis on the right side. The lambdoid suture contained eight wormian bones, including two large ones at lambda.

The right-hand side of the fifth lumbar vertebra showed spondylolysis (non-fusion of the vertebral arch to the vertebral body), a congenital condition. There were also small pits in the articular surfaces of some of the vertebral bodies in the lumbar portion of the spine. These did not appear to be Schmorl's nodes (see below) although they may be of a similar degenerative type. There was slight osteo-arthritis on a few ribs, one thumb, the pelvis and some of the vertebrae.

The animal bone fragments were from hare, sheep and cattle.

Table 1: Skull Measurements for Burial 1 (in mm)

L	-	183		ZZ	-	40.6
B	-	149		RB	-	32.0
B̄	-	103		H ₁	-	33.3
S	-	129		M ₂ H	-	24.5
S ₁	-	114		CH	-	70.4
Bib	-	118.9		CyL	-	20.3
J	-	140.2				

For definitions of measurements see Brothwell (Brothwell, 1972).

Burial 2 (Fig. 9)

This burial was more muddled, with fragments of two juveniles of different ages mixed in with it. The individual whose bones comprised the bulk of the burial was a male aged 35-45. The bones were generally in a very poor condition, being eroded, distorted and fragmentary.

The skull was metopic and had at least six wormian bones in the lambdoid suture, including one at lambda. The teeth, which had slight calculus deposits and showed slight signs of periodontal disease, also displayed overbite.

The dental formula was:

E																
A																
MC																
NP	8	7	6	OC	5	4	3	2	1	1	2	3	4	5	6	—
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8	
MC	DC															OC
LC																

There were medium signs of osteo-arthritis throughout the skeleton but the cervical part of the spine was far more severely affected, with C3 and C4 actually fused by the bony deposits. There were Schmorl's nodes in the lumbar vertebrae. These pits are caused by a normal but genetically linked degeneration leading to herniation of the inter-vertebral disc material.

Burial 3 (Fig. 10.)

These bones were mainly those of a juvenile aged 10 ± 1 years. Three other individuals were also represented. They were the adult from Burial 2, a juvenile aged 5 ± 1 years and another adult, represented by just three teeth. Judging by their size this individual was possibly female. The juvenile bones found in Burial 2 were parts of the two juveniles represented in Burial 3.

The bones of the juvenile aged 10 ± 1 years were in a fairly good state of preservation with most parts of the body represented. No pathological changes were noted but three of the cervical vertebrae, C4, C5 and C6, had double foramina transversaria on the left side.

Bones from near Burial 1

There were three fragments of leg bones from a largish adult. They do not belong to Burial 1 but could be part of Burial 2. There was also one lumbar vertebra from an immature individual, possibly from Burial 3.

Bones from near Burial 3

These bones were mainly from a juvenile aged 5 ± 1 years, almost certainly the one represented in Burials 2 and 3. There were also a few fragments of a younger individual aged about 2 ± 1 years and a few fragments of an adult, possibly the one represented by the three teeth in Burial 3.

Bones from the Central Cairn

This was a very mixed collection of fragments. There were a number of adult bones, some of which belonged to Burial 2 and some of which did not. There were also immature bones belonging to one or both of the two juveniles and fragments from an infant aged 2 ± 1 years, probably the one represented in the bones from near Burial 3.

Cremated bone from the Central Cairn

These fragments were poorly calcined. They were mainly skull fragments with some small pieces from long bones. They were from an adult individual.

Summary

The bones examined were parts of at least six individuals. The table below shows which burials contained which individuals, e.g., Burial 2 was mainly a male aged 35-45 but also included fragments of two juveniles. Note that the column labelled 'Adult' may represent more than one individual.

Table 2: Summary

	Male 20-30	Male 35-45	'Adult'	Juvenile 10 ± 1	Juvenile 5 ± 1	Infant 2 ± 1
Burial 1	main					
Burial 2		main		frags	frags	
Burial 3		frags	frags	main	frags	
Bones near Burial 1		?frags		?frags		
Bones near Burial 3			frags		main	frags
Central Cairn		frags	frags	frags	frags	frags

Animal Bone by R. T. Jones, BSc, Ancient Monuments Laboratory, London

The animal bone consisted of 28 fragments of Red Deer (*Cervus elaphus*) antler and the proximal end of a metatarsam from the right limb of an Ox (*Bos sp*). None of the antler fragments show any signs of wear which could not have been attributed to natural causes. However, one tine does show chopping marks close to its distal end, perhaps indicating removal for use as a raw material. It is possible that these antler fragments came from two individuals.

Acknowledgements

I am most grateful to Mr. Reay Robertson-Mackay, Inspector of Ancient Monuments, for his continued help before, during and after the excavations and to Miss Alison Cook, for assisting in the production of the text. The line drawings were provided by the Illustrator's section of the Inspectorate of Ancient Monuments, London. For much valued assistance on the site thanks are due to Mr. William McComish, and also Miss Diana Barron and Mrs. Rooper. Mr. Roger Peers, Curator of Dorset County Museum provided invaluable local assistance. Thanks are also due to the Landowner, Mr. Frederick Baker.

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EXCAVATIONS BY THE LATE GEORGE RYBOT, FSA, ON EGGARDON HILLFORT 1963-66

CAROLINE WELLS

Excavations were carried out on Eggardon hillfort in the parish of Askerswell, Dorset (SY542947) by the late Mr. George Rybot during 1963-66. Some of the features visible as earthworks or depressions in the interior of the hillfort were examined. The excavations did not extend to the part of the hillfort which is in the parish of Powerstock. Due to his subsequent illness Mr. Rybot was unable to publish a report of these excavations.

Geology

Eggardon hillfort is situated on a western spur of the chalk uplands known as the Dorset Downs which occupy central and southern Dorset. On Eggardon Hill and the surrounding hills the Upper Chalk is covered in places by a deposit of pebbly clay and sand (The Geological Survey), also known as angular flint gravel (British Regional Geology). Eggardon Hill is bounded on two sides by steep escarpments formed by erosion and landslip, exposing the Upper Greensand beds beneath the chalk. The hill commands extensive views over the Askers Valley and much of West Dorset, an area where Cretaceous and Jurassic deposits have been largely eroded revealing Fullers Earth and Lias Beds (Bridport Sands). The ridge on which the hillfort lies extends east towards Dorchester and is the watershed between the Frome and Brit river systems (Fig. 15).

The Hillfort

The hillfort is multivallate; on the northern and southern sides of the hill where the slopes are steepest there are three ramparts and two ditches, disturbed at one point on the southern side by a landslide where the defences appear to have been partly rebuilt. The two entrances are to be found at the eastern and north-western ends where the defences cross the ridge on level ground. At the north-western end there are three widely-spaced ramparts and ditches and at the eastern end two ramparts and ditches, also widely-spaced and so enclosing an area of level ground. It is probably that Eggardon was initially a univallate hillfort with simple gap entrances through the ditch and rampart. The outer rampart and ditch were added at a later date and the entrances offset so as to lengthen the approaches between the outer and inner ramparts. The eastern outer entrance is flanked by inturned ramparts; these may be additional earthworks of a later date than the ramparts (R.C.H.M., 1952). The surface of the ramparts is uneven suggesting that they may be of unfinished dump construction.

The Region

Bronze Age activity in the area is demonstrated by two round barrows inside the hillfort, one of which was excavated, the other is now under plough. Several other barrows including one of the largest disc barrows in Dorset, which has also been interpreted as a henge monument (Grinsell, 1959) are situated nearby in the parishes of Askerswell, Powerstock and Litton Cheney.

Hillforts with Iron Age occupation contemporary with Eggardon include Abbotsbury Castle to the south-east, Maiden Castle and Poundbury to the east and Pilsdon Pen to the north-west. The nearest hillfort to Eggardon is Chilcombe Hill, two miles to the south, and there is an enclosure, of early Iron Age date at Shipton Gorge (Farrar, 1955).

Traces of "Celtic" fields survive on the downs around Eggardon Hill and provide evidence for pre-Saxon cultivation on the hills.

Having been turned to pasture, the downs were not ploughed again until this century. It appears that the southern half of the interior of the hillfort has never been ploughed, although the northern half, which is in the parish of Powerstock, has been ploughed and no earthworks or depressions are visible.

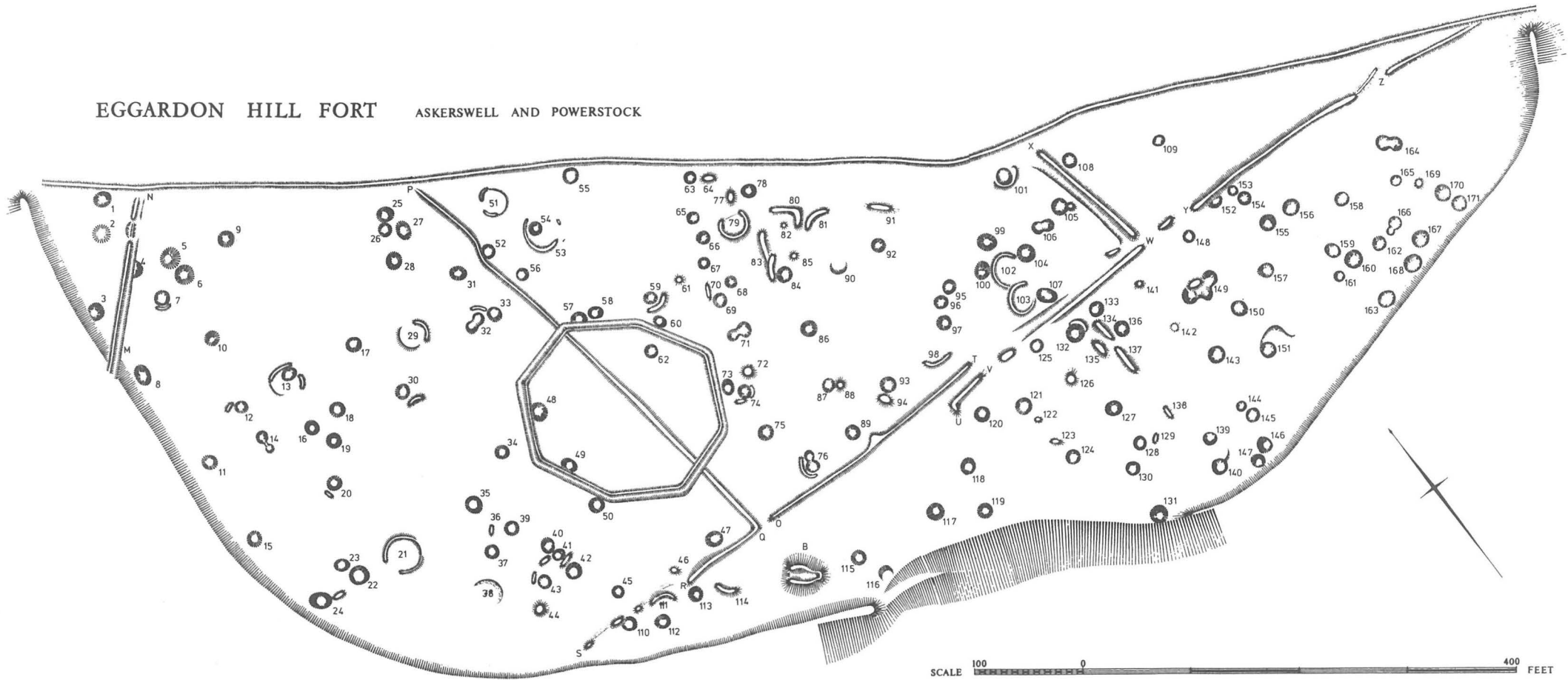


Fig. 14. Plan of the interior of the southern half of Eggardon hillfort: unpublished revision plan by RCHM (England), by permission of the Commissioners (Crown Copyright). Numbering superimposed.

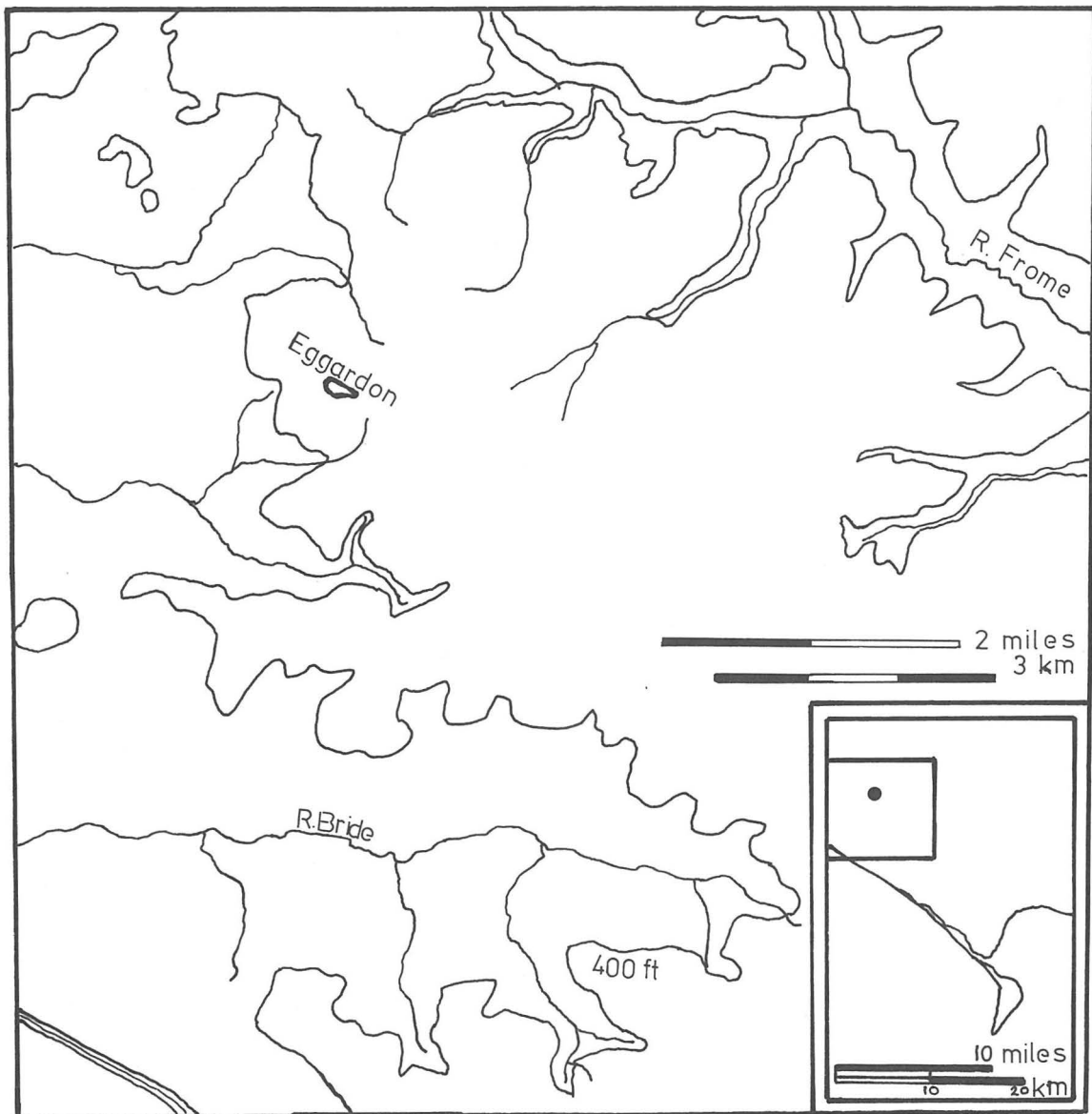


Fig. 15. Location Map.

EXCAVATIONS

In 1900 Dr. H. Colley March and the Rev. H. Solley excavated five pits within the hillfort (Colley March, 1901). The average depth of the pits was found to be 6 ft. 1 in. and the filling similar to that in the pits excavated by G. Rybot. There were few finds but these included sherds of pottery, flint implements and waste flint flakes.

Four seasons of excavations were carried out by G. Rybot in summers between 1963 and 1966. No large areas were stripped and no trenches were dug across any of the defences or entrances although the trench through Feature 8 extended 2 ft. into the adjacent rampart (Fig. 19).

THE BARROW

The bowl barrow is in the southern half of the hillfort. The grid reference SY54069462 matches that for Grinsell's barrow Askerswell 9, attributed probably by misprint to the Askerswell Down barrow group (Grinsell, 1959). In 1965 George Rybot sectioned the barrow in two directions, trench A 65 ft. 6 ins. long, running north-west/south-east and trench B 39 ft. 6 ins. long and at 90 degrees to trench A. The barrow was found to have been constructed as a small flint cairn with layers of soil capping. Traces of a layer interpreted as

“ancient soil” by the excavator, with no further detail, were identified, (Fig. 16, Layer 40). This was probably a stone-free layer. It was covered by Layers 38 and 39 described as reddish clay or soil which lay under much of the area of the barrow and extended to the south-east. The central layers of the barrow, 34, 35, 36, 37 and 22 are composed of dense large flints. These are covered by four layers of soil with some sand or small flints. In order of deposition these are layers 33, 32, 31 and 30. In trench A these are cut by layer 24 which was described as “flints in dirty grey soil”, widespread across the top of the mound, but on the north-east/south-west axis of trench B only filling the depression in the centre and covering the south-western slopes. In the centre of trench A layers 22 and 25 cut through the soil layers and the flint cairn. The base of these layers of disturbance penetrated the red natural clay. In the north-western extension of trench A dark clay with flints lie at the foot of the slope (28, 29) merging into a widespread clay-silt (27). These are covered by flints (26) and topsoil (21). Layer 27 fills a fissure in the subsoil found to run east-north-east/west-south-west, excavated and interpreted as natural.

Interpretation

The barrow had been previously excavated by unknown persons at an unknown date and much of the top surface shows signs of disturbance. The depression in the centre of the barrow is shown in plan (Fig. 14) extending north-west/south-east and trench A ran longitudinally along this axis while trench B intersected at right angles.

The undisturbed elements of the barrow are considered to be layers 40-26; of these layers 37-30 constitute the construction of the barrow. It is recorded that the barrow stood on red clay; layers 38 and 39 may consist of locally derived clay used as a basis for the mound and layer 40 might then be a buried turf line but it is probable that they are natural clays extending beyond the barrow (trench A, south-east end) and that layer 40 was incorrectly interpreted. Stone-free patches of clay apparently occur within the variations in natural subsoil on Eggardon Hill. Layers 27-29 are also considered to be natural clays and silting.

The densely flinty layers 34-37 and 22 composed a flint cairn part of which has been disturbed (layer 22). Central cairns have been recorded in many Bronze Age barrows in Dorset (Grinsell, 1959). The four layers of soil which lie over the flinty layers are considered to have completely covered the cairn before disturbance occurred. By projecting the angle of layer 31 in section B it is possible to conjecture that the height of the barrow would have been no more than 6 or 7 ft. Later activity on the barrow has resulted in a widespread but shallow disturbance along the axis of trench A; layers 31 and 32 have been cut and covered by the moderately flinty layer 24. In the centre a hole was dug reaching the clay beneath the cairn; the filling of this hole is represented by layers 22 and 25. It cannot be established whether the hole in the red natural clay 1 ft. by 3 ft. and 7 ins. deep was dug by the excavators of disturbance layers 22 and 25 or was a central pit under the cairn which was emptied and refilled with disturbed flint rubble. Layer 25 contained pottery and cremated bones.

Excavations confirmed that there is no ditch around this barrow. Barrows without ditches have been recorded in Dorset, Hampshire and elsewhere in Wessex (Grinsell, 1941; Piggott, 1943). The material for this barrow includes much flint probably picked up in the locality perhaps from Bronze Age fields and the soils may have been scraped up from around the barrow.

The finds from the barrow

Three kg of pottery sherds were recovered from the disturbed soil of layers 22 and 25. This pottery has been examined by Dr. Ann Ellison who identified six vessels. The sherds are very abraded and the vessels incomplete so reconstruction has not been possible. Fig. 17 shows tentative reconstruction of two vessels and partial reconstructions of the remainder illustrating rims, bases and decorated sherds. Quantities of body sherds of all these vessels which cannot be satisfactorily reconstructed have not been illustrated.

No. 1 (Fig. 17) Globular urn of Ellison's Dorset Downs vessel type 1 (Ellison, 1975) or Calkin's Type 11a globular urn (Calkin, 1964). *Form:* rim diameter 160 mm; 48 sherds (175 g) identified including many rim sherds, one horizontal imperforate lug, a base sherd and some very small fragments of at least two ridges between shallow finger grooves on the neck of the vessel. *Fabric:* dark grey, fine but laminated; contains sparse grog and small flint.

No. 2 Globular urn of Ellison's Dorset Downs vessel type 1 or Calkin's type IIa. *Form:* rim diameter 160 mm; 15 sherds (125 g) recovered including part of the rim and adjoining sherds, one of which shows a possible trace of a finger groove. *Fabric:* a fine pink/buff/black fabric with sparse flint and some fine grog.

No. 3 Collared urn: 44 sherds (425 g) recovered including one rim sherd and several on and above the collar; also one possible base and fragments from either collar or shoulder. The rim has an unexpanded internal bevel. There is no decoration. *Fabric:* black/red/cream, with pink core, filled with much grog.

No. 4 Small bucket urn of Ellison's Dorset Downs vessel type 7 (small vessels, plain or with plain imperforate lugs). *Form:* 43 sherds (325 g) recovered including a rim, base and fragment of plain, imperforate lug. Internally the rim is unevenly rolled over. *Fabric:* buff/pink/black with much grog and sparse fine flint. The exterior has a slightly sandy texture and the inclusions of grog are clearly visible.

No. 5 Medium bucket urn of Ellison's Dorset Downs vessel type 6 (bucket with one or two rows of finger-tip impressions, with or without plain imperforate lugs). *Form:* thirty sherds (575 g) including a fragment from below the rim showing an internal bevel and decorated sherds of one plain imperforate vertical lug and a row of finger-tip impressions. *Fabric:* pink/brown/black with medium density, medium-sized flint and some grog.

No. 6 Medium bucket urn of Ellison's Dorset Downs vessel type 3 (bucket with plain horizontal and/or vertical lugs near rim). *Form:* a large quantity of pottery (1 kg) of this coarsely-made, thick-walled vessel recovered but only the base and one plain imperforate horizontal lug give any indication of the vessel's appearance. Cremated bones adhere inside the base. *Fabric:* buff/pink/black in colour, slightly sandy in texture, friable, with much grog and sparse medium flint.

Parallels for the Pottery

Where possible the barrows are listed by parish and number according to Grinsell (1959). This is followed by identification of the urn; those in Dorchester museum are numbered following Ackland (1908) and with museum accession number in some cases. References to Abercromby (1912), Hutchins (1861), Warne (1866), Miles (1826) and Calkin (1964) are included where appropriate.

Nos. 1 and 2 Globular urns

Hilton 2a (Cheselbourne): Abercromby No. 403.

Milborne (Bagber barrow): Dorchester No. 42, Abercromby No. 396.

Upwey (Ridgeway): Dorchester No. 49 (1899.41).

Piddletrenthide 10c: Dorchester No. 96 (1884.8.57), Abercromby No. 402.

No. 3 Collared urn, undecorated

Calkin, 1964, Fig. 2, M 15 (profile only).

No. 4 Small bucket urn

Dewlish 1: Dorchester No. 74 (1884.15.1), Abercromby No. 456k.

Piddlehinton 4: Dorchester No. 88 (1884.9.65), Abercromby No. 441.

Sugden Quarry, Portland: Dorchester No. 126, Abercromby No. 437a.

No. 5 Medium bucket, vertical lug, finger printed row

Milborne 14 (Deverel barrow): Miles 1826 No. 15, Abercromby No. 409c.

No. 6 Medium bucket, plain horizontal lug

Bincombe 32a: Abercromby No. 420.

Hilton 2a (Cheselbourne): Hutchins, vol. IV 352.

Winterbourne Whitchurch 1: Warne, section ii, 24-5 tumulus No. 41.

Dorchester No. 77 (1884.14.2).

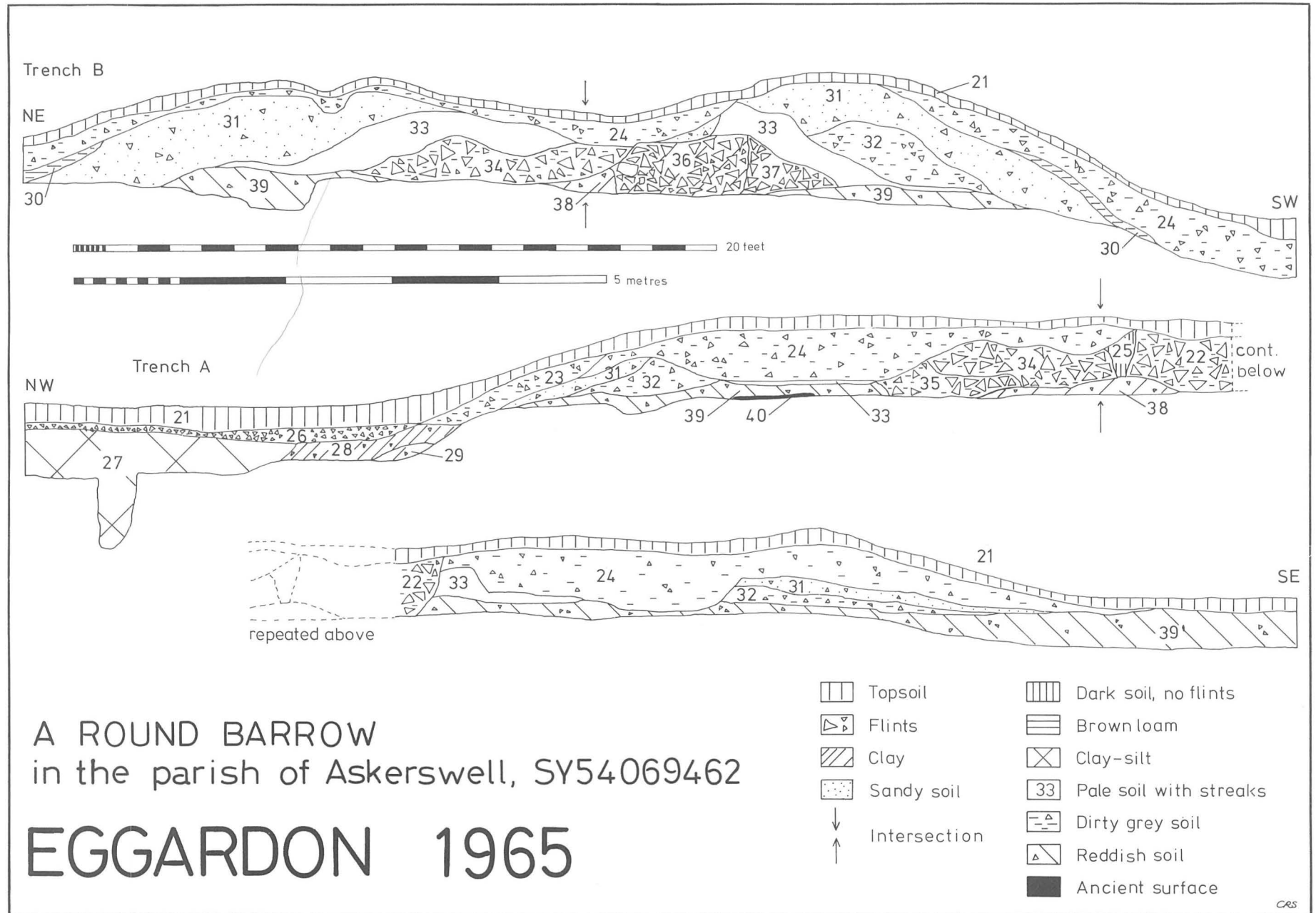
Near Weymouth: Dorchester No. 67.

Discussion

As a result of the earlier disturbance of the barrow the excavations did not reveal whether all the urns described originally contained cremated bones or were accessory vessels. One vessel had contained bones which were found adhering to the fabric. The fabric of the vessels, with grog and some flint tempering is in keeping with the fabrics of Middle Bronze Age pottery fabrics from Dorset. Many vessels from the Dorset Downs area have more than one type of filler, of those examined by Dr. Ellison, 65 per cent contain grog, 30 per cent contain sparse medium flint, 22 per cent contain medium-large flint (mostly bucket urns) while only 5 per cent contain shell and 3 per cent contain sand.

This is the first find of Calkin type IIa globular urns west of Dorchester except one at Portesham and is well away from the previously known concentration of type IIa globulars which lies in north central Dorset in the Plush/Piddletrenthide area.

In addition to the pottery, layer 25 yielded a small amount of cremated bone with adult and possible child bones represented. Rybot's excavation was selective, the finds were recovered from disturbed ground and were probably gathered together and dumped by the earlier barrow diggers from an excavation which was itself incomplete and so the proportion of interments within this barrow now recovered is not known.



A ROUND BARROW
in the parish of Askerswell, SY54 069462

EGGARDON 1965

Fig. 16. Two sections through the barrow.

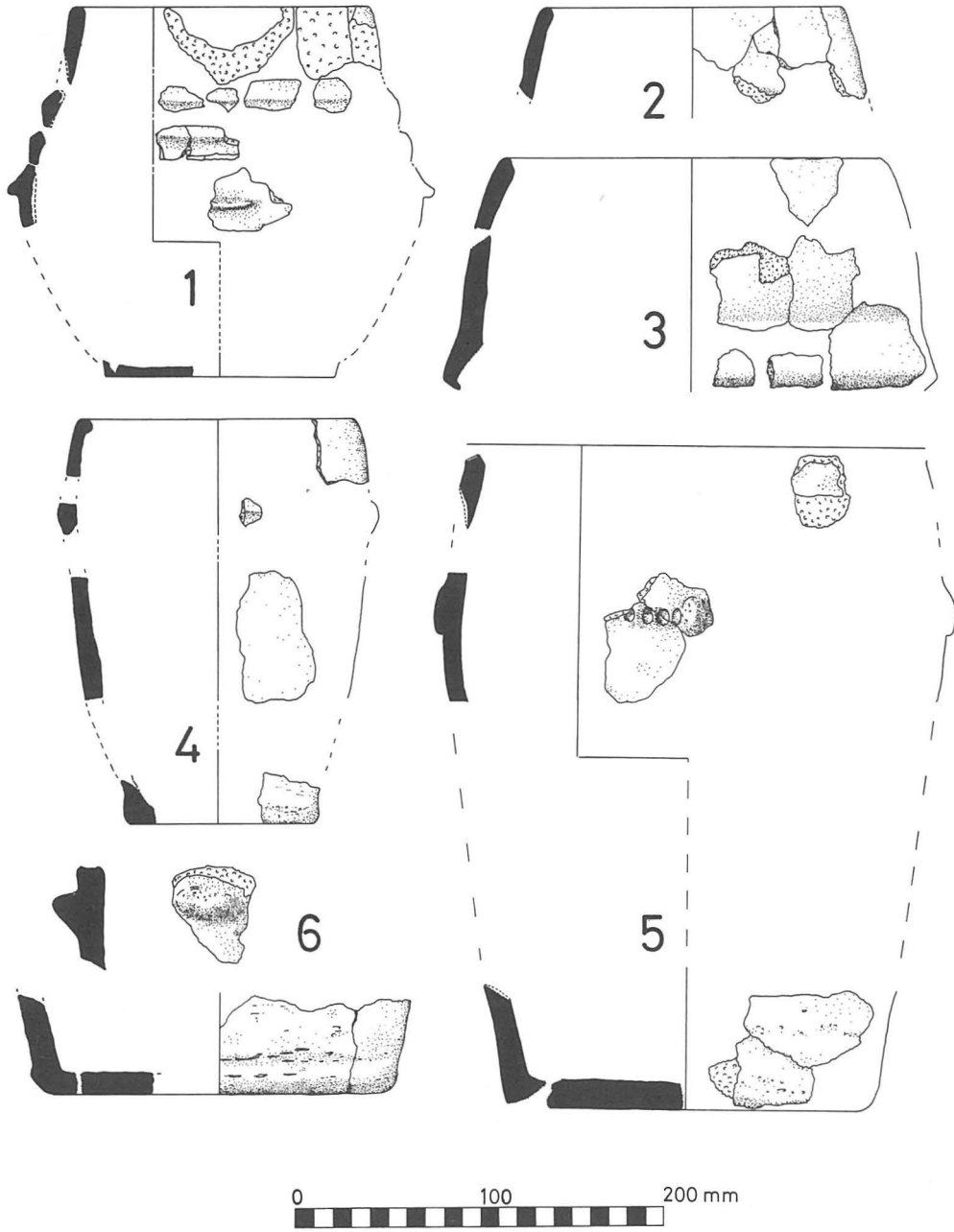


Fig. 17. The pottery from the barrow.

THE PITS

Feature 3

The trench dug through Feature 3 extended to the foot of the rampart to establish its relationship to the pit. The section (Fig. 18) shows layer 5, flint and loam at the base of the rampart covered by layer 4, flint in loam, which is cut by the pit. The pit was dug through 6 ft. of pebbly clay with sand and 3 ft. of chalk and was 6 ft. wide at the top and 2 ft. 6 ins. wide at the bottom. Patches of dark brown clay were found on the sides and on the bottom (layers 10 and 12).

Discussion

The sequence of layers 5, 4, 3 and 2 demonstrate that Feature 3 post-dates the rampart. It is possible that layer 12, a thin layer of chocolate-coloured clay found on the chalk surface of the interior of the pit is the remains of a clay lining for the pit, such as found at Danes Camp, Glos., (Bowen and Wood, 1968). Alternatively the clay may be forming naturally on the surface of the chalk inside the pit; chocolate-coloured clay occurs naturally on Eggardon Hill and in the opinion of the excavator the layers were natural clay *in situ*. Similar clay was found on the chalk surfaces within Features 57 (layers 5 and 6) and on the undisturbed chalk surface uncovered in the trench extending towards Feature 58 (Fig. 18).

When Feature 3 had fulfilled its original function it was filled with clay and flint which included broken pottery and other rubbish. In common with Features 57, 58 and 75 charcoal was found in the bottom of the pit which might be derived from material burnt inside the pits or from refuse disposal.

Numerous finds were recovered from Feature 3 including pottery (Fig. 21), a shale core (Fig. 20), two pebble sling-stones, a larger stone which may have been a rubber (Fig. 20), iron pyrites, ox teeth and bones.

Feature 8

This is approximately 10 ft. from the foot of the south-western rampart. A trench 14 ft. long was dug between the features in order to establish their relationship; the pit was only excavated to a depth of 2 ft. (Fig. 19). Clay, chalk and flint material at the base of the rampart (layers 5 and 6) are overlain by layer 7, packed flints, which is cut by the pit, Layer 7 is overlain by 4, less tightly packed flints and by layer 2, brown loam.

Discussion

Layer 7 overlying base of rampart material is cut by the pit and suggests that the pit post-dates the rampart as does Feature 3. Layers 4 and 2 which overlie layer 7 are interpreted as silting from the rampart.

The only find in this trench was a thin irregular ring of bronze 15 mm in diameter.

Feature 57

This was a pit found on excavation to be of approximately square plan with rounded corners, maximum width 7 ft. 6 ins., tapering to 4 ft. 6 ins. across the bottom. It was 6 ft. 6 ins. deep and was cut through clay and chalk. The small hole visible in the section drawing at the bottom of the pit (Fig. 18) is a natural fissure in the chalk not a man-made feature. When topsoil was removed from the trench through Features 57 and 58 a collection of pebble sling-stones was discovered between the two pits. The lowest filling of the pit was charcoal, followed by clay and flints with no other inclusions.

Feature 58

This was a circular pit 6 ft. deep cut through clay with flints; maximum width 7 ft., minimum width 5 ft. The bulk of the filling was clay with flints but charcoal pieces of slag were found in the bottom layer. Other finds from the pit included pottery, a pebble sling-stone, a flint flake with secondary working and daub with impressions of wattle.

Feature 59

Excavation showed this feature to be a deep pit but the trench was abandoned at a depth of 6 ft. because of the instability of the section. The maximum width of the pit was 8 ft. and it

EGGARDON

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pit sections

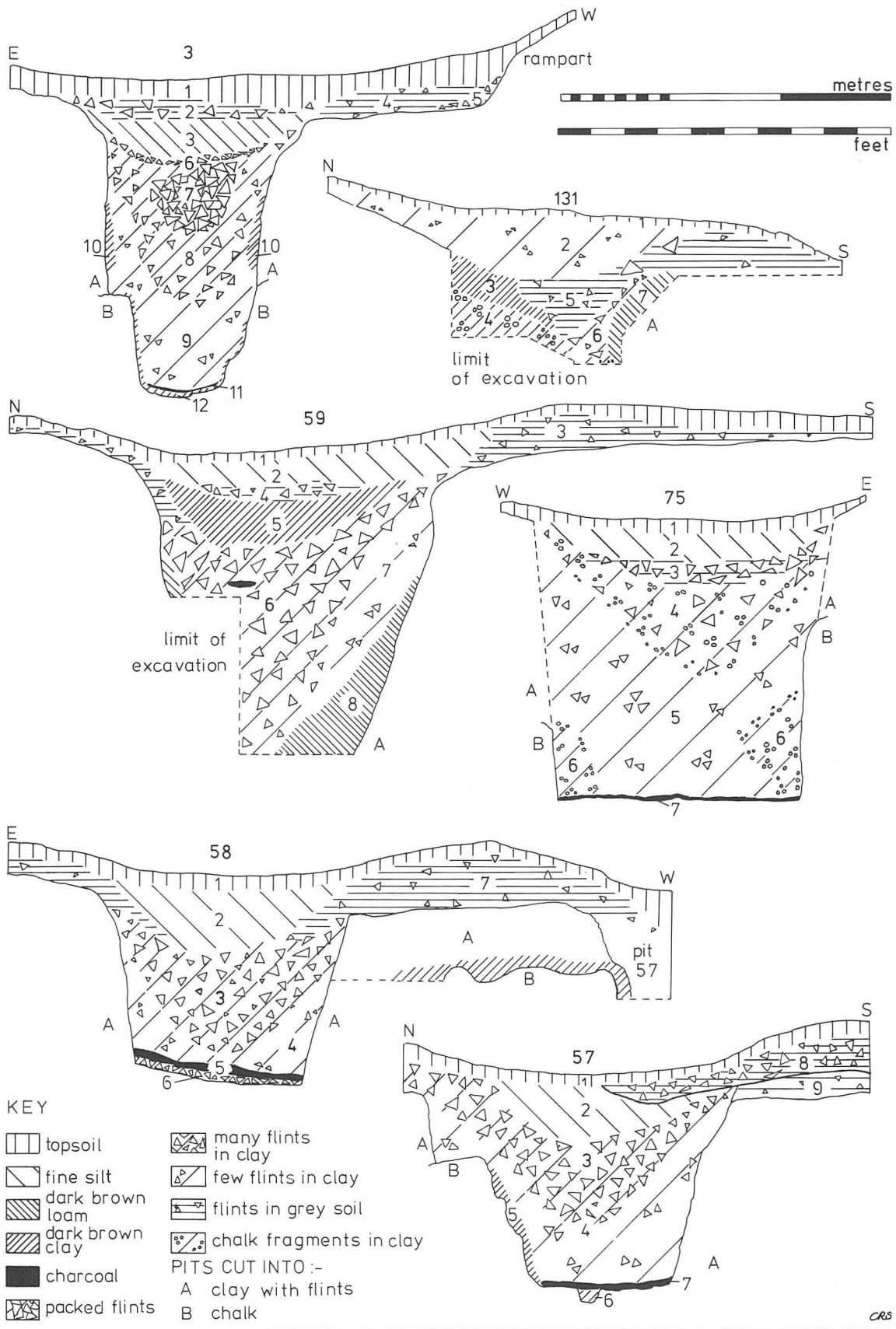


Fig. 18 Sections through the pits.

had been excavated into clay with flints. The section on Fig. 18 and the site plant (Fig. 14) show a slight bank on the southern side of this pit. The excavator considered that this bank was the remains of spoil from the original excavation of the pit, used to fill the pit when it was no longer required for its original function. Mounds around other pits were noticed by Dr. Colley March (1901) and the RCHM (1952).

The contents included pottery, a flint flake, charcoal and pieces of daub.

Feature 75

This pit was 8 ft. 6 ins. deep and 8 ft. 6 ins. wide at the top, 7 ft. at the bottom. It was excavated through clay and chalk, the chalk being between 3 and 6 ft. below the surface. The pit contained a layer of charcoal at the bottom, the bulk of the filling was clay with chalk fragments and flint. Included in the filling were a pig femur, iron pyrites nodules and pieces of daub with wattle and stake impressions.

Feature 131

The excavation of this pit appears to have been incomplete (Fig. 18). Neither the bottom nor the sides were defined. The pit is within 6 ft. of the landslip and would have been with 6 or 7 ft. of the rampart; a trench, 3 ft. by 16 ft., was dug in order to establish the relationship between landslip and pit. The pit was cut into clay with flints and filled with clay and loam with some chalk and flint (layers 2-7). On the southern side layer 2, silty clay with flints, was cut through flints in loam similar to layer 5, with large flints on the edge of the pit. At the southern end of the trench the level of this flinty loam layer drops at the edge of the landslip.

Discussion

Nothing remains of the rampart from which any dating evidence might be obtained. It is unlikely that the pit would have been dug so close to the landslide and thus Feature 3 may be assumed to pre-date the landslide. During excavation layers 5 and 6 were identified as being the filling of an intrusive feature or disturbance. In layer 6 sherds of Durotrigian black burnished ware (Fig. 21, No. 1) and of Samian (lost, not illustrated) were found, at depth of 2 ft. 6 ins. It is not established whether layers 5 and 6 result from a man-made feature or whether these layers fill a natural fissure or subsidence in the original pit filling caused by the landslide. These layers and layer 2 above date from the first century AD or later and if formed by natural disturbance, may suggest a possible date for the landslide.

Feature 116

A trench was dug over another depression adjacent to the landslip west of Pit 131. Topsoil was removed between the centre of the depression and the edge of the landslip. The southern half of the pit could be seen as a semi-circular feature cut into natural clay and not disturbed by the landslip and so no further excavation took place. Between 8 and 12 ft. from the southern edge of the pit a wide fissure in the pebbly clay was observed and excavated to a depth of 2 ft. 6 ins., it was V-shaped in a cross section and of natural origin.

The pits—discussion

The eight features described above were identified as depressions in the ground and on excavation were found to be pits. Features 8, 59 and 131 were incompletely excavated while Features 57, 58, 75 and 3 were sectioned and emptied completely. These four pits were found to be between 6 ft. and 9 ft. 6 ins. deep, varying in width at the bottom from 7 ft. to 2 ft. 6 ins.

At times during the process of excavation Rybot considered that these pits might have been originally excavated to extract pyrites from the chalk for smelting, a view supported by the discovery of charcoal slag in some of the pits. Pyrites was thought to be an unlikely choice of iron core as it contains a high proportion of sulphur but recent work suggests that the sulphur would not have prevented smelting by Iron Age smiths (L. Biek, *pers. comm.*). However the fact that pyrites is found incorporated in pit fillings alongside waste material suggests that it was not collected for use as ore. In addition it may be seen (Fig. 18) that the chalk lies several feet below the surface and is extremely uneven. It seems probable that if quarrying for pyrites ever took place it would have been pursued where the chalk was more accessible. Furthermore analysis has shown that the slag found is not the product of smelting but of smithing and there is no evidence of primary iron working in the hillfort. The charcoal

contained in the pits is probably domestic refuse or may be associated with the baked daub from the burning of a wattle and daub building.

Pits on Iron Age sites are generally interpreted as providing storage capacity. Although large, the four fully excavated pits and those excavated by Colley March (1901) are not outside the size range known elsewhere (Cunliffe, 1974).

Evidence for the dating of these pits depends on the finds. The shale core (Feature 3) is a waste product from the production of a bracelet on a lathe, having two holes visible on one side only, and a central hole perforating the core (Fig. 20). This is classified as Type C (Calkin, 1953) which has subsequently had a hole drilled through the centre, possibly for use as a spindle whorl. Calkin dated the production of shale bracelets on a lathe to the first century BC or the first century AD. The use of a lathe in the production of both wooden and shale artefacts may now be dated earlier and was in use by the third century BC at least; lathe-turned artefacts were found in the lowest layers of Meare Lake Village (Bulleid and Gray, 1948-1966) and a recent re-consideration of this site coupled with radiocarbon dating, has shown that these layers may be third or fourth century b.c. (Coles *et al.*, 1979). The pottery likewise can be dated to the third-first centuries BC, the bead rims and gritted fabrics being typical of Iron Age pottery from Dorset. The two later first century AD forms from Feature 131 may, as described above, have been incorporated into upper layers of the filling after land disturbance.

The excavations of the pits in two places impinged upon the defences, in Feature 8 where 2 ft. of rampart material was sectioned (Fig. 19) and Feature 3 where topsoil was lifted from a 3 ft. width of rampart (Fig. 18). Very little information about the construction of the rampart can be gained from the sections of photographic records of these trenches. It appears to be constructed of local material (clay, flint and chalk) and there is no evidence of stone walling, post-holes or horizontal timbers but the trenches were only 4 ft. wide and so post settlements may have been missed. The ramparts appear to be of dump construction.

THE EARTHWORKS

The Octagon

In the centre of the hillfort there is an octagonal enclosure formed by a low bank and outside ditch. This earthwork cuts Features 57, 48 and 49 and the bank running between the points marked P and O (Fig. 14). The Octagon was sectioned in 1963 by the trench through Feature 57 (Fig. 18) and the ditch may be seen to cut the filling of the pit. Both bank and ditch were composed of flinty soil (layer 8). It was recorded that this octagonal earthwork was built in the late eighteenth century to protect a coppice planted by Isaac Gulliver, owner of Eggardon Hill who was a smuggler alleged to have planned the feature as a sea-mark to guide his ships into the coast (Warne, 1872).

Feature M/N

At the western end of the hillfort a bank with ditch runs between the points marked M and N on Fig. 14. This small but well defined earthwork appears to be of recent origin, possibly contemporary with the Octagon. It cuts Feature 4 and the inner slop of the rampart, post-dating both features. North of the parish boundary the earthwork cannot be traced. It has not been excavated.

The Parish Boundary

This runs east-west across the centre of the hillfort between the two entrances. A fence now marks the line of a very slight bank, probably a former hedge line. The bank crosses the linear bank which is a continuation of the line S/Z (Fig. 14) and thus post-dates that feature. The parish boundary is likely to have been established by the twelfth century.

Linear Banks

Between points S and Z lie a series of banks with two other banks at approximately 90 degrees to S/Z to be found between points P/Q and X/W (Fig. 14). These banks are very low and only in a few places can adjacent ditches be observed as depressions of approximately 2 ins. depth.

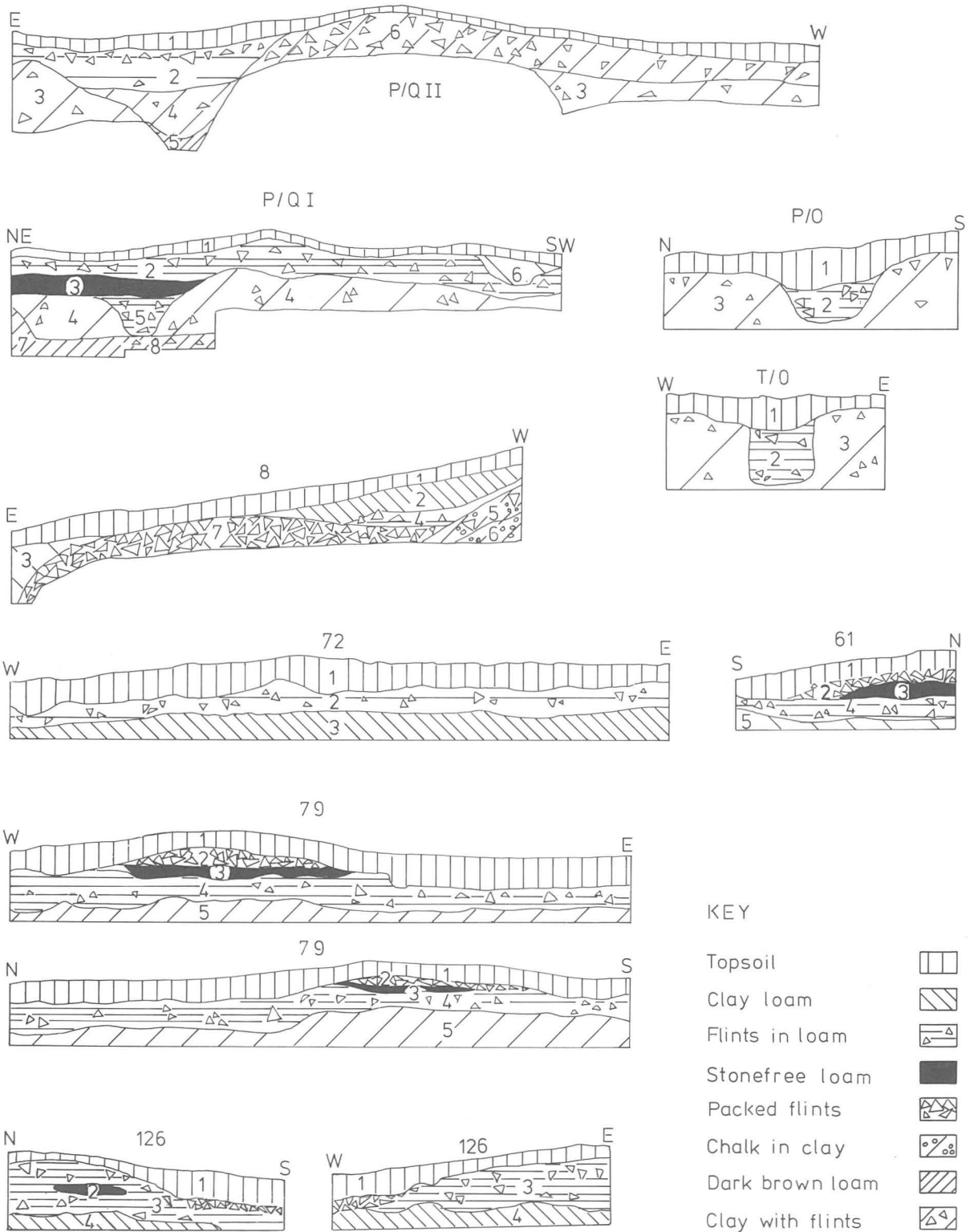
EGGARDON

1963-6

sections

13 feet

4 metres



CRS

Fig. 19. Sections through banks, ditches and mounds.

Bank P/Q

In 1963 a trench was placed at 45 degrees to bank P/Q inside the Octagon and adjacent to the Octagon bank in order to section bank P/Q and to establish if there was a ditch inside the Octagon bank. The excavation revealed a shallow ditch to the east of bank P/Q (Fig. 19, P/Q 1, layer 5) and this was sealed by a stone-free soil (layer 3), flinty soil (layer 2) and modern turf. A small disturbance was identified at the southern end of trench (layer 6).

In 1964 a second trench 23 ft. by 3 ft. was excavated to section the bank 23 ft. north of trench 1. As before bank P/Q was found to have a shallow ditch on the eastern side (Fig. 19, P/Q 2, layers 2, 4 and 5).

Discussion

In trench P/Q 1 the stony soil layer 2 covering the ditch is interpreted as spread from the construction of the Octagon bank which has sealed a worm-sorted soil. The position of the linear bank is marked by a slight rise in the level of the surface and a corresponding rise in the stony layer below turf and topsoil. No distinction is apparent between the composition of the bank and layer 2 elsewhere within the trench. In trench P/Q 2 the linear bank is more apparent and contained a higher proportion of flints than the rest of layer 6.

Finds

No finds were made in trench P/Q 2 but in the first trench pottery sherds were recovered from the area of the bank, some were of a hard fabric very finely tempered; of the three sherds one was a simple upright rim (Fig. 21, No. 16). The other fabric represented was vesicular, coarsely made with grog filler and of similar texture to the fabric of the larger urns recovered from the barrow. Too little remains to suggest what kind of vessel is represented.

PO/TO

In 1966 the linear bank system was investigated further at the point 0 (Fig. 14) between the western end of bank T/O and the corner at the southern end of bank P/Q. A square trench was opened and a ditch was found on the northern side of the bank T/O turning 90 degrees and running north, parallel to bank P/Q but 4 ft. to the east of it. Two sections of this ditch are shown on Fig. 19. No trace of a bank following this course and immediately adjacent to the ditch were found. Trench PO/TO did not uncover the entire area and it was not established whether at this point there existed a ditch immediately alongside bank P/Q as found in the other trenches, and the excavation produced no other information about the banks or the gap between them.

Finds

From the ditch PO/TO came sherds of hard pink/brown fabric with grog and sparse sand and flint filler. The simple upright rim of a straight sided vessel are illustrated on Fig. 21, No. 20 and the sherds are similar in appearance to those of the small bucket urn (Fig. 17, No. 4) although of a sandier texture.

Discussion

The linear features S/Z, P/Q and X/W appear from superficial evidence to be contemporary. The banks are not as fresh and distinct in appearance as the Octagon and earthwork M/N. They divide the interior of the hillfort into four sectors and it is probable that banks P/Q and X/W formerly continued north of the parish boundary. Excavation has shown that ditches exist which are not apparent from the surface and therefore the land divisions may be more complex than is apparent. It has been noted that the banks do not impinge upon any of the depressions within the hillfort which suggests that the banks do not post-date the pits (RCHM, 1952). Indeed bank P/Q appears to respect Feature 52 suggesting contemporaneity.

There is evidence in the form of an aerial photograph (VAP/LPE/UK 2431/4153/1943) which suggests that the line S/Z continues eastwards beyond the eastern entrance of the hillfort. No earthwork is apparent now and thus no relationship with the hillfort defences may be established but it is possible that the earthwork was constructed before the outer rampart. Line S/Z respects or is respected by the entrance in the inner rampart but the alignment is

crossed by the outer rampart (plan, RCHM, 1952). The possible existence of an extension of line S/Z can only be verified by further excavation.

The finds support the possibility that the linear banks were created at an early date: the affinities of fabric with Deverel Rimbury ware have been noted and the absence of black, densely gritted fabric associated with the middle-late Iron Age bead rims found in the other earthworks within the hillfort must be emphasised. The land divisions within the hillfort probably remained in use concurrently with the storage pits.

Feature 61

This is a small oval mound, 7 ins. high, excavated in 1964 by a trench 6 ft. square and found to consist of flints in soil covering a stone-free layer (Fig. 19, layers 2 and 3) overlying further flints in soil and natural clay (4 and 5). Layer 3 was interpreted as a buried soil and being at the same level as modern turf thought to indicate that the mound was of recent origin. No modern finds confirmed this theory, the only finds being Iron Age pottery. One sherd of Glastonbury ware from this mound fits with another from Feature 79, layer 5 (Fig. 21, No. 17) found 12-24 ins. deep. The two features are 20 ft. apart. The sherd may have been carried across the intervening gap accidentally but this would have happened before Feature 59 was filled to its present level. It seems more probable that the pit was filled by some material from Mound 61 and that this and other mounds are the remains of Iron Age spoil tips and refuse dumps.

Feature 72

In 1966 this very slight mound was excavated. Within a trench 18 ft. long the mound rises some 9 ins. from the west and 3 ins. from the eastern end of the trench (Fig. 19) and the material of which the mound is composed was not distinguishable from the surrounding loam and flint soil. No buried stone-free soil was uncovered. The excavator recorded the presence of black gritty pottery fragments in layer 2 which are not among the collected finds. The purpose and date of this mound are not clearly established but the excavator considered it to be an ancient spoil heap, probably associated with the digging of pits 73 and 74 nearby. Corroborative evidence of the contemporaneity of Features 61 and 59 supports his view.

Feature 126

This is another mound 12 ft. in diameter and 6 ins. high, partly excavated in 1966 by a trench 7 ft. 9 ins. square after the area had been surveyed by proton magnetometer. It was found to consist of flints in loam covering some yellow-clay-loam (Fig. 19, layer 2). The densest patch of flints lay beside the mound to be seen in the south-west corner of the trench. The magnetometer reaction which provoked the excavation was considered to be caused by the clay layer. Fragments of pottery of probable Iron Age date were recorded by Rybot but not kept.

Feature 79

The purpose of examining this circular bank was to discover whether this and similar features on Eggardon were the remains of Iron Age round houses. Topsoil was removed over two areas 9 ft. square covering half the feature and this revealed a concentration of flints in loam forming a low bank 6 ins. high and 6 ft. wide, in circular form with an overall diameter of 32 ft. and a gap or entrance to the north-east.

Once the mound was uncovered it was sectioned along the edges of the trenches (Fig. 19). The mound was composed of a greater density of flints in loam than the surrounding soil. The stony layer 2 covered a stone-free soil (3). Apart from the narrow trenches dug in order to section the feature no attempt was made to excavate further and the arrangement of trenches exposed less than half the central area within the feature. Consequently it is not known whether there were any postholes under the banks or in the central area.

Discussion

The structure of the feature was of loose flint in soil placed directly on a former turf-line or mound of soil. No regular ordering of the flints was observed nor features suggest the existence of a timber superstructure. The entrance gap (which was not excavated) is approximately one-fifth of the circumference which is large for a doorway. Seven other

features consisting of circular banks approximately 30 ft. (9.5 m) in diameter occur in the southern half of Eggardon. The entrances face in all directions contrary to the regular planning of entrance direction noted in some Iron Age sites (Smith, 1977). The only similarity between these features and Iron Age roundhouses excavated elsewhere is the size range of 20-30 ft. diameters (6.3-9.5 m) which is at the small end of the range known.

No ditch was found from which the material for the bank had been obtained so it is possible that it had been constructed of turf which has eroded leaving residual flints. Black gritted pottery was recovered from topsoil. The excavation did not disprove that the feature was a roundhouse but the dissimilarity of the structure and the wide entrance gap have been noted. It has been suggested that the circular features may have been constructed at a later date to provide shelter for stock. In the absence of similar features on the downland outside the hillfort the function of these features is likely to be related to the occupation of the hillfort and it is possible that despite the limitations of the excavated evidence the features are indeed the very slight remains of circular turf-walled structures, of Iron Age date, whose existence has been proposed elsewhere (Gelling, 1977).

PROTON MAGNETOMETER SURVEY AND AREA STRIPPING

In addition to excavation of earthworks a proton magnetometer survey was carried out in 1966 by Dr. M. Aitken of the Research Laboratory for Archaeology, Oxford. The areas were not planned accurately but were in the following approximate positions:

- α 15,000 sq. ft.; north of the Octagon between Features 54 and 65. Small excavations revealed iron slag and pyrites at one point, pieces of fencing wire elsewhere and sling-stones gathered in a small depression.
features or excavated further.
- β 150,000 sq. ft.; north of the Octagon between Features 54 and 65. Small excavations revealed iron slag and pyrites at one point, pieces of fencing wire elsewhere and sling-stones gathered in a small depression.
- γ 10,000 sq. ft.; between Features 9 and 26. A scatter of fragments of daub recovered.
- δ 5,625 sq. ft. near Features 21 and 38: a band of yellowish clay recorded at the northern edge of the square.
- ϵ 2,500 sq. ft. west of the barrow; to investigate the fissure seen in trench A (Fig. 16); pottery, bone, iron objects and limonitised pyrites recovered elsewhere in the area.
- ϕ 2,500 sq. ft. covering Feature 126 resulting in the excavation of this mound described above.
- χ 2,500 sq. ft. over Features 141 and 142; no reaction, no excavation.
- ρ 5,000 sq. ft. to cover Feature 151 and adjacent "eyebrow" feature. No reaction, no excavation.

The excavations in response to anomalies were very limited in scale; the features anticipated from the results of the magnetometer survey were not found and the responses were attributed either to metal objects including modern fencing wire, or in the absence of metal to clay patches. The natural subsoils on Eggardon are evidently varied in colour from yellow to orange and dark brown in texture and content of flint gravel, which may have caused difficulty in interpretation during excavation and a wide range of descriptions of the natural subsoils may be found in the site records. None of the clay patches found during this survey were interpreted as archaeological features and excavated further. The finds indicate that the Iron Age occupation debris is widespread and from the area ϵ pottery of first century AD date was recovered.

Auguring

One further method of investigating the earthworks was employed as all the depressions visible on the hillfort and interpreted as pits were drilled to a depth of approximately 2 ft. with an augur. Argillaceous silt and stony loam was generally found below topsoil. A small quantity of Samian ware was recovered from Feature 22.

THE FINDS

These have been mentioned under the descriptions of each figure; artefacts other than pottery are listed in Table 1.

MATERIAL	OBJECT	TABLE 1			CONTEXT		
		Fig. No. & Object No.	DIMENSIONS (mm)			Feature	Layer
<i>Flint:</i>	flake, worked on one edge	20.4	65	25	6	58	1
	flake	20.6	75	30	30	59	6
<i>Stone:</i>	pebble, slingstone?	—	20	15	15	58	5
	pebble, slingstone?	—	20	15	15	3	3
	pebble, slingstone?	—	15	15	10	3	3
	pebbles, slingstone hoard	—	—	—	—	57/58	1
<i>Shale:</i>	Worn stone, rectangular in cross section, a rubber?	20.1	70	45	55	3	7
	lathe-turned core Calkin type C1* with central perforation	20.5	(shrunken)			3	3
<i>Glass:</i>	Bottle-rim, blue-green glass, post-medieval	—	—	—	6	8	1
	Thin green opaque fragment, post-med.	—	—	—	—	75	2
<i>Burnt Clay:</i>	Daub, some with stake holes and wattle marks	—	—	—	—	131	—
						59	6
						75	—
<i>Bronze:</i>	Thin irregular ring (not a finger ring). Clothing ornament or chain link. Diameter 15 mm	20.3	—	—	—	8	3
	Ring, diameter 16 mm, D-shape profile as if to lie on a surface (?on clothing)†	20.2	—	—	—	Alpha	Topsoil
<i>Iron:</i>	Fragment of blade or file tip and base missing	—	42	10	—	Epsilon	Topsoil
	Nail fragments, rectangular in cross section	—	—	—	—	Epsilon	Topsoil
							Beta

*(Calkin, 1953).

†Two identical rings from Meare Lake Village, Objects E153 and E154, page 220 also plate XLIX; Bulleid and Gray, 1948-66.

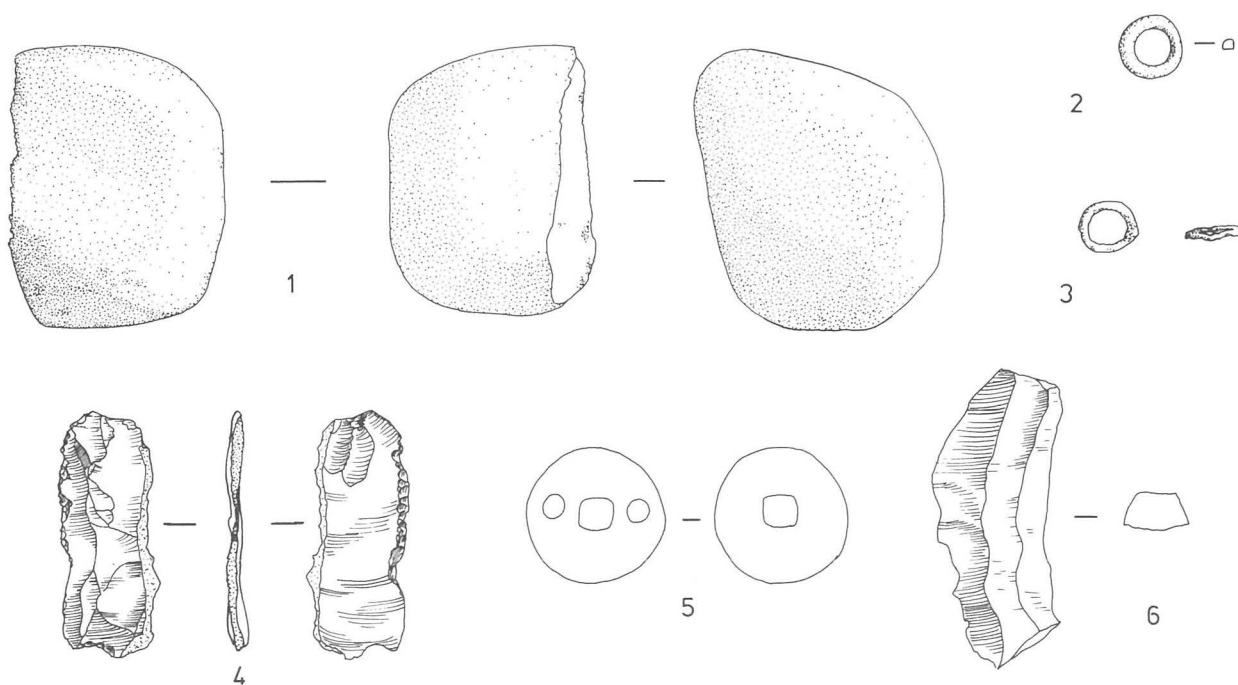


Fig. 20. Eggardon hillfort: bronze, stone, flint and shale finds. Scale: 1/2.

Animal remains

Ox teeth and bones and sheep teeth were recovered from pits 3 and 131 and the femur of a pig from pit 75.

Slag and pyrites

Slag was found in Feature 58, layer 5 and in topsoil in the area Beta. Nodules of pyrites were recovered from pits 131, 75 and 3 and from the area Beta and elsewhere (unrecorded). Samples examined by Mr. Leo Biek of the Department of the Environment Ancient Monuments Laboratory have been described as limonitised pyrite (largely oxidised and hydrated); mineralogically they are goethite pseudomorphs after pyrites nodules (by courtesy of the British Museum (Natural History) Department of Mineralogy). They occur naturally on Eggardon Hill.

Vitrified clay-with-flints

Small fragments of baked clay with burnt flints, sometimes exhibiting a tarry sheen were recovered from topsoil and examined by Mr. Biek who considers they may possibly be derived from clay-with-flints that has been fluxed by ash from a hot oxidising fire.

Discussion

The discovery of slag on Eggardon hillfort in the filling of one of the pits indicates that there was metal working during the Iron Age occupation of the hillfort. The slag has been identified as smithing slag, the by-product of the manufacture of wrought iron objects and despite the prevalence of limonitised pyrites, a possible source of ore, there was no evidence for primary iron working on site.

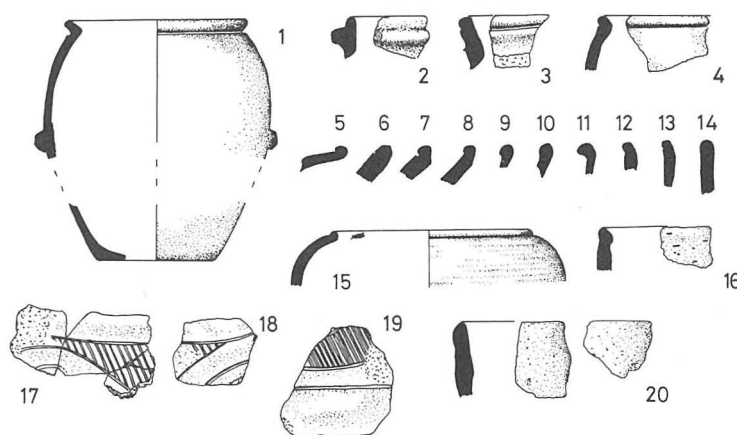


Fig. 21. Eggardon Hillfort: pottery. Scale: $\frac{1}{4}$.

The Pottery

With the exception of the Deverel Rimbury vessels fully described in the section on the Barrow, the pottery fabrics fall into three main categories with individual examples of other fabrics.

Fabric 1. Densely or moderately gritted with medium or small rounded sand grains. The majority of the middle-late Iron Age bead rims and associated sherds including the decorated pottery can be classified within this fabric group. The colour range is pink-red and grey-black with the majority of sherds black. Some vessels had fine smooth surfaces, others were abraded. Finds in this fabric were recovered from the following features and those illustrating numbered in brackets as on Fig. 21:

3: (Nos. 3, 4, 6, 7, 8, 13) also one sherd with a curvilinear impression and sherds of several other vessels.

58

Octagon Bank

59 (Nos. 19 and part of 17, Glastonbury ware)

61 (left-hand sherd of 17, and No. 18)

75

79

ε Nos. 9, 12 and 14 and unillustrated vessels.

α β γ unillustrated vessels.

Fabric 2 is brown or black, hard and well tempered with extremely fine particles and sparse small sand grains. Examples were found in Feature 3 (Nos. 5 and 10 illustrated and other vessels) and in Feature 79.

Fabric 3 is vesicular and eroded, most sherds are small and crumbling. Examples were recovered from Features 58, 61, α, β, γ and ε (Nos. 2 and 11).

The majority of vessels illustrated and listed above have bead rims either rolled (Nos. 8-12) or defined by a tooled groove (4, 6, 7, 13); a bead rim with tooled groove similar to No. 4 is associated with sherds 17 and 18. One exception is No. 2 which has a small flange. This and No. 3, a vessel with an everted neck, are first century AD. The other exception is No. 14 with a simple upright rim; all three variant vessels come from Area ϵ .

Of the remaining illustrated vessels not included in these fabric groups:

No. 1 is a small jar of first century AD style black burnished ware in a hard fabric with dense small and fine grits.

No. 15 is a pink/black high shouldered bowl of first century AD style with signs of tooling along the sides although no trace of a smooth burnished surface remain. Both 1 and 15 were found in Feature 131 accompanied by the base of a Samian bowl, recorded as being of Form 33 but now lost.

No. 16 is of hard fabric with fine grit and occasional medium sand grains. The rim is plain, it was found in Bank P/Q trench 1 and is accompanied by sherds in a vesicular soft fabric with grog filler with yellow exterior and black core.

No. 20 is of a hard fabric with reddish exterior and brown-black interior, slight vesicular with grog filler and sparse small sand grains and spare medium flint. It is similar in appearance to the small bucket urn (Fig. 17.4) but sandier in texture.

In addition to fabrics represented by illustrated vessels the following fabrics were noted: Samian, recovered from Features 131 and 22, the latter during auguring; shell-tempered black fabric from 131; a few abraded sherds of pink-grey very densely gritted fabric with rounded sand grains and small grog fragments from 79; a thin-walled vessel in pink fabric with dense small sand (Feature 22) and a grey-pink fine fabric with fine and small sand temper from 131, the latter two vessels probably of first century AD date.

Conclusions

As a result of George Rybot's excavations on Eggardon the following dating evidence has been obtained for the features examined. The barrow is shown to belong to the Middle Bronze Age with Deverel Rimbury pottery including the westernmost known Type IIa globular urns. The linear banks system is thought to predate the middle-late Iron Age occupation on account of the absence of the otherwise widespread pottery of that period. The pottery obtained from the linear banks could date from the Middle or Late Bronze Age or the Early Iron Age. Other evidence suggests one bank may have extended beyond the hillfort enclosure possibly pre-dating the outer rampart. The pits contain evidence of middle-late Iron Age occupation and in disturbance layers and upper silting there are finds of the early Roman period. The mounds contained middle-late Iron Age pottery providing a *terminus post quem* and it is suggested that they are features of that date possibly having been rubbish tips which provided spoil for the final filling of pits. The circular features, despite an apparent absence of the structural features associated with Iron Age buildings such as postholes or gullies, are of similar dimensions to known Iron Age buildings and may be the remains of turf-walled structures.

Acknowledgements

The excavations were made possibly by the kind permission of the landowner Admiral Sir Victor Crutchley and the farmer Mr. T. Pitcher. Some 66 volunteers worked on the site, 17 returning for two or more seasons; the excavator would have wished to acknowledge this entirely voluntary effort and those who helped with photography (Mr. E. Large), drawing, (Mr. J. Coombs) and equipment (the Austin family, Dorset Natural History and Archaeological Society and Dorset County Council). Financial costs were met by Mr. Rybot.

Work began on this report while I was studying at the Dorset Institute of Higher Education and I would like to thank Mr. W. G. Putnam, Mr. A. M. Hunt and Mr. J. Beavis for advice and identification of finds. No report would have been possible without the help of Lt.-Col. F. J. C. Rybot, Mrs. P. Fenley and Professor W. F. Grimes who enabled me to collect the scattered records and I am grateful for discussion with some of those who worked on the site, Mrs. D. Austin, Mr. S. Austin and Mr. R. Lucas and with Mr. H. C. Bowen who made available RCHM records. I am also indebted to Dr. A. B. Ellison for identifying the MBA pottery and supplying background material and to Mr. L. Biek for identification of the slag and pyrites.

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THE FLEET, DORSET—A SEASONAL STUDY OF THE WATERMASS AND ITS VEGETATION

JOHN E. WHITTAKER

Introduction

The lagoon called the Fleet, separated from the sea by the great shingle bank of Chesil Beach, is one of the best known coastal features in the British Isles. Whereas the literature concerning the origin and evolution of Chesil Beach and the associated area is considerable (see Bird, 1972; Carr and Blackley, 1974, for a review), published information on the Fleet waterbody itself is almost non-existent. When I began a doctoral dissertation on the taxonomy, ecology and distribution of Recent Ostracoda (Crustacea) in 1967, the Fleet was only one of several sheltered sites in Dorset chosen as a comparison to the more exposed localities along the Welsh coast that had been studied previously. It soon became clear, that a detailed hydrographic survey was needed of the Fleet to accompany the collecting programme since I was unable to find published data, apart from a Nature Conservancy Report (1968). Subsequently Bird (1972) published a short paper on the origin and physiography of the Fleet.

From August, 1967 until September, 1969 I visited the Fleet at roughly three-monthly intervals to collect seasonal populations of ostracods from samples of sediment, algae and *Zostera*, and to measure the salinity, pH, temperature and certain other chemical parameters of the water. At the same time I obtained as much information as possible from local people and from my own observations, of the tidal régime, the currents and the sedimentology. In 1967 Messrs. G. Wimpey & Co. Ltd. carried out a major hydrographic survey for the Central Electricity Generating Board (CEGB) in connection with a proposed Nuclear Power Station near Tidmoor, a project since abandoned. As this undertaking was both highly confidential and controversial, I was unable to obtain information from the CEGB to use in my own study and therefore decided to continue independently.

The Fleet is privately owned by the Fox Strangways Estates. Not only have they preserved the famous swans at Abbotsbury for centuries but also the Fleet itself from intruders, whether scientific or otherwise! To their management therefore must go a great deal of credit that the waterbody is still largely untouched and unpolluted. However developments associated with the expanding populations of Weymouth and Portland are in danger of contaminating the narrow marine inlet at Smallmouth (Figs. 22, 23). Untreated sewage from several caravan sites, and a build-up of nitrogen from farm fertilisers in the Fleet, are also worrying factors. Recently much of the Fleet has been made a Nature Reserve under the protection of the Fleet Sanctuary Trust (managed by the Estates), and the Fleet Study Group* has been set up, to initiate research projects into the hydrology of the watermass, its flora and fauna. Already an algal study (see Appendix) and a survey of the Mollusca (by D. Seaward), have been completed.

The present paper has been assembled largely from the results of my original survey (Whittaker, 1972), and from further work undertaken by the Fleet Study Group, including myself, since 1975, and is now complemented by the recent release of the important CEGB Hydrographic Survey data (this information, where included, is duly acknowledged).

Methods of Study

Water samples were collected from 45 stations (Fig. 23) either from a boat or by wading out from the shore. In very shallow water, samples were taken directly by hand into a bottle, but in deeper water a water-bottle, triggered and closed by a messenger slid down a cord, was used. This was particularly useful in obtaining oxygen samples with minimum oxygen loss. One glass medicine-bottle per station was used to store water for subsequent salinity, pH,

*The Fleet Study Group is based at the Dorset Institute of Higher Education, Weymouth, and consists of representatives of the Fox Strangways Estates, the Dorset Naturalists' Trust, the Nature Conservancy Council, the Dorset County Planning Department and a number of scientists. The Secretary is Mrs. J. M. Fitzpatrick, 24 Oakbury Drive North, Preston, Weymouth.

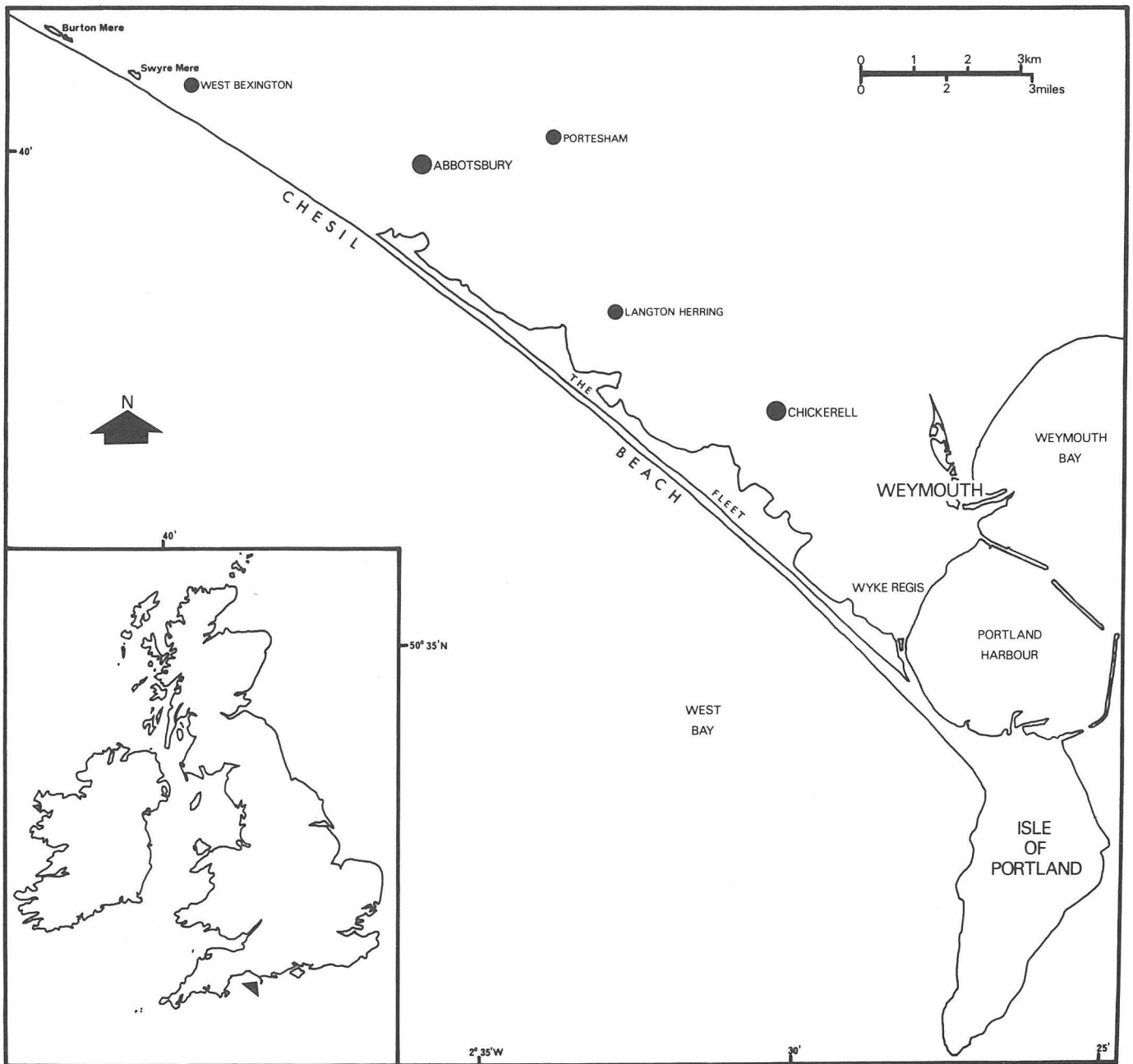


Fig. 22. The Fleet: site map.

and calcium and magnesium determinations; a separate brown plastic bottle was used for the oxygen sample, this being fixed with reagents in the field. At first, portable salinometers and pH-meters were used, but proved unreliable in the wide ranges of salinity in the Fleet, and it was found easier, and more accurate, to take all water samples back to the laboratory for analysis. Water temperatures were determined directly in the field and this was done with either a pocket centigrade-reading thermometer or a portable temperature probe.

As soon as possible after collection, the chlorinity of the seawater was determined by the silver nitrate method and converted to salinity with the aid of Knudsen's Hydrographical Tables (Knudsen, 1959). The pH was measured by a Pye Dynacap Laboratory pH-meter and the calcium and magnesium content by an atomic absorption spectrophotometer. Dissolved oxygen was determined by the Winkler titration.

For the tidal survey temporary tide-boards were erected at a number of stations and these

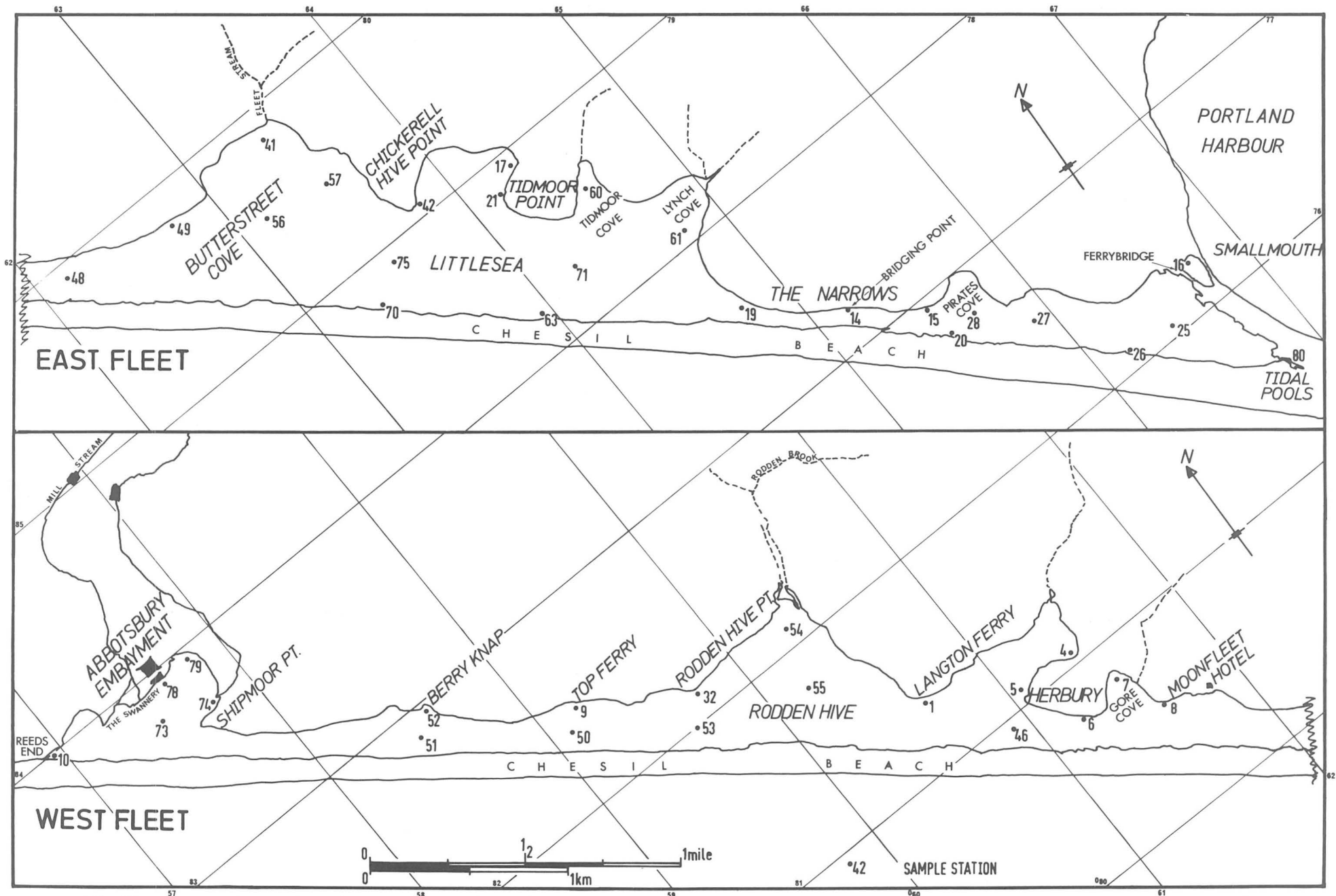


Fig. 23. East and West Fleet, showing location of sampling stations and place names mentioned in text. (1 km Ordnance Survey grid superimposed).

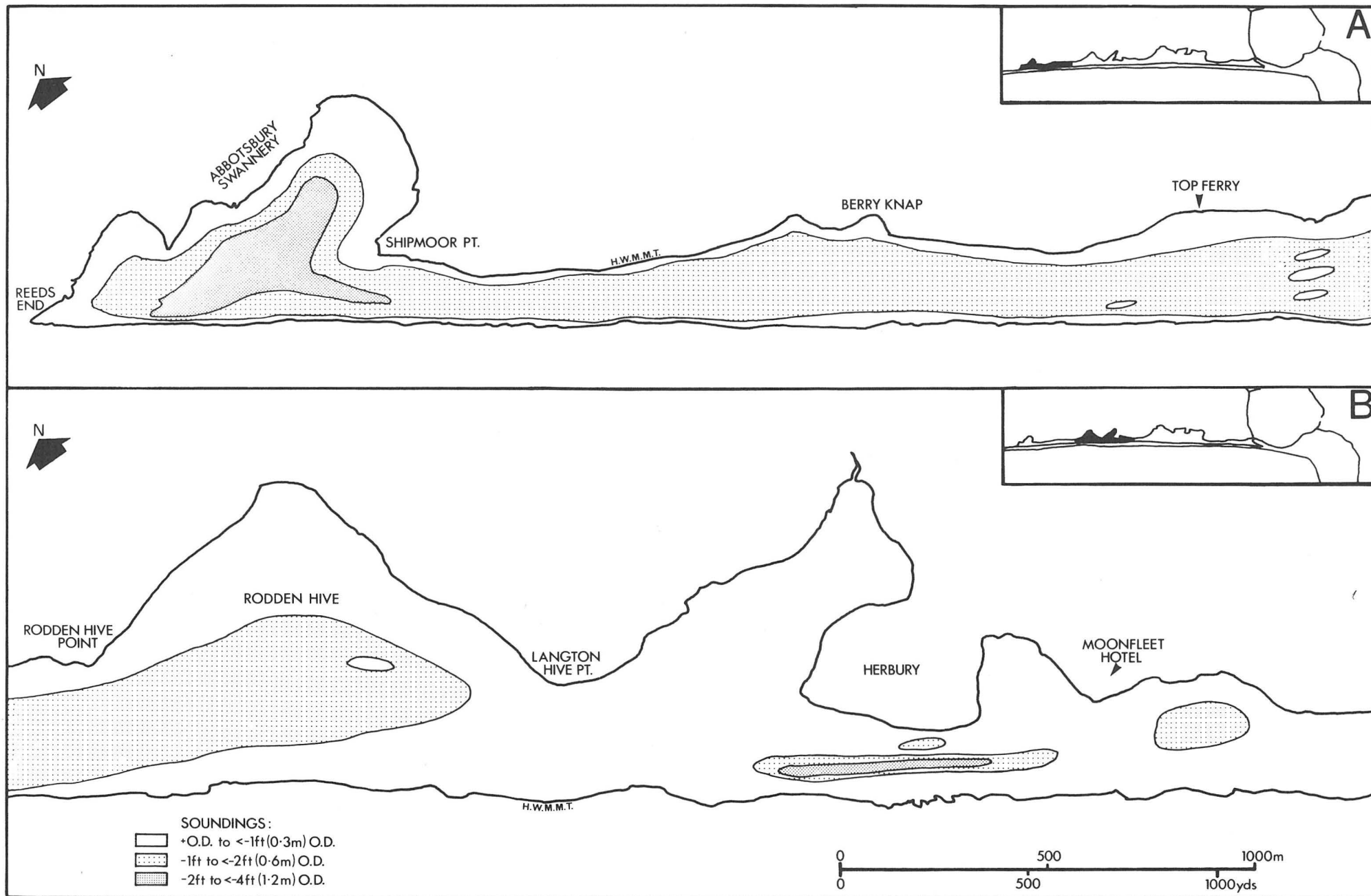


Fig. 24. Bathymetry of West Fleet. Adapted from CEGB 1:2,500 scale Master Sounding Plans, with permission. Surveyed Jan.-Feb., 1968 to O. D. Newlyn

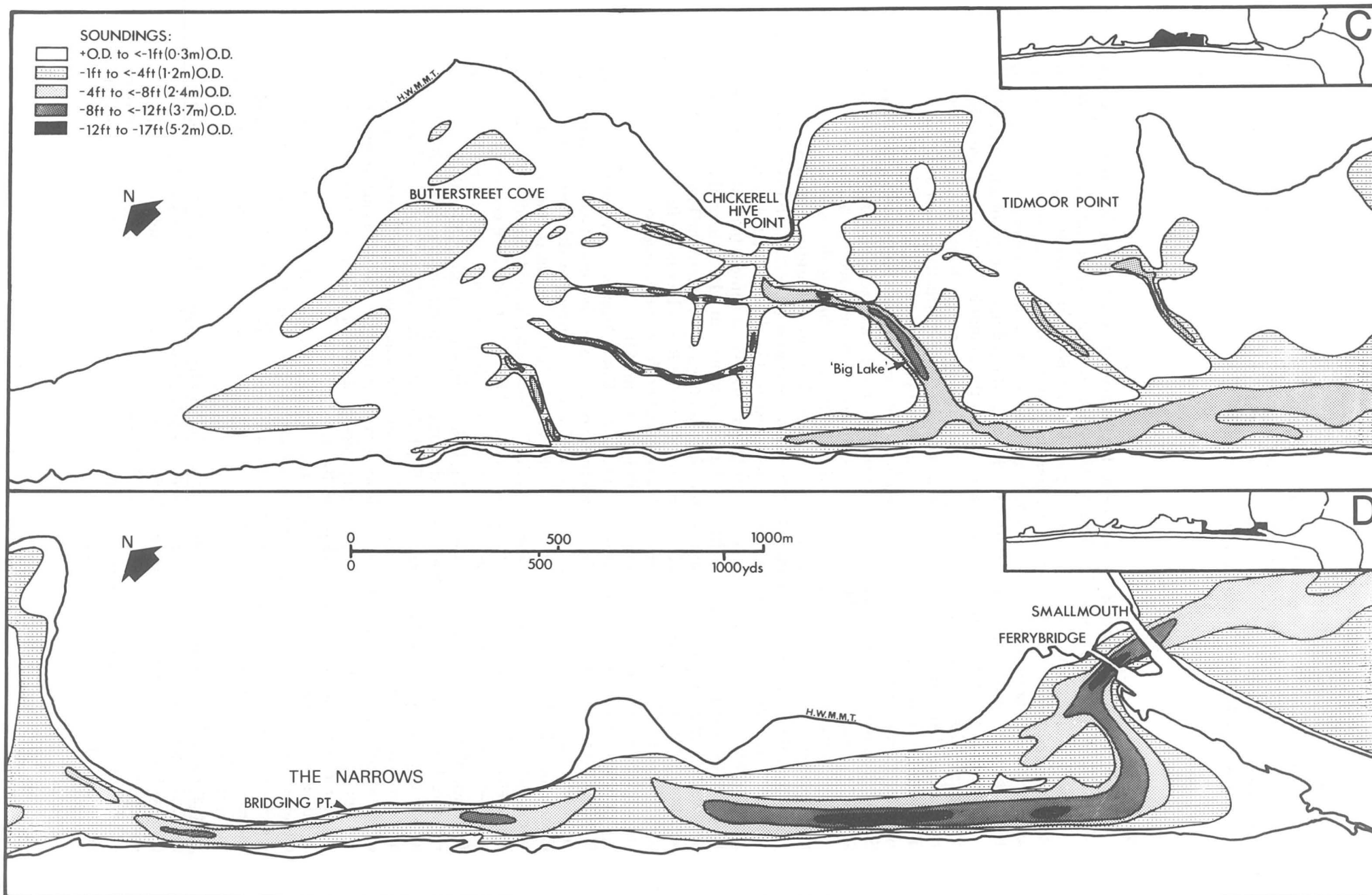


Fig. 25. Bathymetry of East Fleet. Adapted from CEGB 1:2,5000 scale Master Sounding Plans, with permission. Surveyed Sept., 1967-Feb., 1968 to O. D. Newlyn.

were observed at half-hourly intervals over 12/13-hour periods. Every hour a water sample was taken to measure the diurnal variation in salinity, pH, etc. The tide-boards were levelled into Ordnance Datum from convenient benchmarks and checked against CEGB data for reliability. Some current-metering was carried out in the summer of 1969 in the Narrows using a Kelvin Hughes direct-reading current-meter.

Bathymetry

The Fleet which is about 8 miles (13 km) long, varies in width between a mere 70 yards (66 m) in the Narrows, to over 1,000 yards (910 m) across Butterstreet Cove. Although often cited in the literature as a classic example of a shallow tidal-lagoon (*Fleet* or *Fleot* in Anglo-Saxon, means a shallow sheet of water), no detailed bathymetric map, as far as I am aware, has ever been published. There is a 6 inches to 1 mile scale Admiralty Chart, dated 1855, covering the area from the Bill of Portland to Abbotsbury (a copy of which has been kindly lent to the author by Dr. A. P. Carr), but as the soundings in the Fleet are either of average depths or more usually least depths, such features as the channels of East Fleet are not indicated and the map is of little value in assessing the bathymetry of over a century ago. The present author undertook rudimentary soundings as part of his survey in 1969. These were later drawn up in map form, but after access was granted in 1977 to the CEGB Master Soundings Charts, it is now possible to construct the much more accurate bathymetric maps shown in Figs. 24, 25, A-D. (For localities mentioned in the text, see Fig. 23.)

At the narrow marine inlet at Smallmouth (Ferrybridge), there is the maximum depth in the Fleet (−17 feet (5.2 m) OD) and the width is restricted by the bridge to 80 yards (73 m). Upstream, the main channel swings sharply to the southwest (Fig. 25D), turns back to the northwest and then runs adjacent to the Chesil Beach. The depth of the channel gradually shallows until, at Pirates Cove, it is −3 feet (1 m) OD over a shingle bar and outcropping resistant Corallian rocks; a broad shallow channel is formed in which the main flow swings landward. Upstream from this point are the Narrows (Fig. 25D) where the Fleet is restricted for about 1,000 yards (910 m), and at its narrowest at the Royal Engineers Bridging Point, is only 70 yards (66 m) wide. Scouring in this constriction from the strong tidal flow is mainly responsible for channel depths of up to −10 feet (3.1 m) OD.

Above the Narrows the Fleet opens out into Lynch Cove, Tidmoor Cove and Butterstreet Cove, known collectively as Littlesea, where there are extensive mudflats at datum level colonised by the sea-grass *Zostera* (Figs. 23, 25C). The maximum width here between the Chesil and the landward shore is over 1,000 yards (910 m). A deep channel now runs immediately adjacent to Chesil Beach, gradually decreasing in width and depth, until in Butterstreet Cove it is no longer clearly defined, the Fleet bed being here generally no more than −2 feet (0.6 m) OD, and often less. A series of deep sinuous channels also traverse Littlesea, the deepest being called locally 'Big Lake' (maximum depth −10 feet (3.1 m) OD) running from near Chickerell Hive Point diagonally to a point on the Chesil Beach side almost opposite Tidmoor Point (Fig. 25C). Big Lake takes the main part of the tidal flow in and out of Butterstreet Cove and the West Fleet, the other channels being formed by drainage of the mudflats. These subsidiary channels are relatively narrow and deep (maximum depth −8 feet (2.4 m) OD). They are also steep sided, slopes of 1 in 3 occurring in places, compared with the more gradual slopes of Big Lake.

All the channels are natural except for that which runs directly across the Fleet from Chickerell Hive Point. This is marked by posts and is man-made for the passage of boats at low water and over neap tides, and now appears to be silting up. On the *Zostera*-flats themselves water depths are between 2 and 4 feet (0.6-1.2 m) on spring tides, but on neaps the water barely covers them and at low water they dry out.

West Fleet, from above Butterstreet Cove to Abbotsbury (Figs. 24A, 24B), is very shallow, the bed being generally around datum level, slightly above OD, or no more than −1 foot (0.3 m) OD; except for a hole opposite Herbury (−3 feet (1 m) OD) which is believed to be recent in origin, and a larger area in the Abbotsbury Embayment where depths of over −2 feet (0.6 m) are achieved. Over the whole of West Fleet water depths, even at high water, are usually no more than 3 to 4 feet (1-1.2 m).

Tides and Currents

To ascertain the degree of marine penetration into the Fleet a knowledge of the range and effective limit of tidal flow, previously little known, was needed. Moreover, with the aid of such a survey, the diurnal variation in salinity, pH, water temperature, oxygen availability, and calcium and magnesium content of the water could be measured and prove of great value in understanding the overall environment.

A preliminary survey using stations 14 (RE Bridging Point), 42 (Chickerell Hive Point) and 9 (Top Ferry) was carried out on the 30th May, 1969 over a 12-hour period. The data obtained are shown in Fig. 30. As this was not a full spring tide, it was decided to sample the predicted highest tide of the year (29th August, 1969) and the corresponding neap tide seven days later (5th September). For this survey a station was added at Langton Hive Point (station 1) and on the 30th August a further station on the Chesil Bank side (station 70), opposite Chickerell Hive Point, to investigate whether there was a timelag in tides between the landward and Chesil shores. On the 30th August current metering was also carried out in the Narrows. The full results are given in Figs. 31-33, and the tidal ranges are shown in Table 1.

TABLE 1

<i>Station</i>	<i>Tidal range</i>	
	<i>Spring tide</i> (29th Aug., 1969)	<i>Neap tide</i> (5th Sept., 1969)
Portland Harbour (predicted from Admiralty tide tables)	6 ft. 3 in. (1.91 m)	2 ft. 1 in. (0.63 m)
RE Bridging Point	5 ft. 0 in. (1.52 m)	1 ft. 6 in. (0.46 m)
Chickerell Hive Point	3 ft. 8 in. (1.12 m)	1 ft. 2 in. (0.36 m)
Langton Hive Point	7 in. (0.18 m)	1 in. (0.03 m)
Top Ferry	6 in. (0.15 m)	1 in. (0.03 m)

These readings were taken in calm weather and are indicative of the maximum and minimum tidal ranges on the Fleet under optimum conditions. Commonly the tidal ranges and times of high and low water are greatly influenced by meteorological conditions, the effects of the wind being of particular importance (see Bird, 1972). The shallow West Fleet, in particular, is very susceptible to the ponding up of water especially in the coves and in the Abbotsbury Embayment. At the times of equinoxial gales, when the southeasterlies blow up the Fleet for long periods, the water level in West Fleet is 2 to 3 feet (up to 1 m) higher than normal, resulting in flooding on the landward shore; even slight winds blowing from this quarter produce ponding. In exceptional storms the seas have been known to break over and even through Chesil Beach, causing extensive introduction of marine water into the lagoon and subsequent heavy flooding of the land.

Locally, near the Abbotsbury end and opposite Chickerell percolation of sea-water through Chesil Beach has been observed by the author. This is not surprising on account of the time lag of the tides between the Fleet and West Bay (on the other side of Chesil Beach), the water in the sea thus being at times much higher than in the Fleet; a difference of 4 feet (1.2 m) at high water springs and 2 feet on neaps, was measured by the CEGB survey. In West Fleet, particularly during periods of neap tides, when this inequality of water levels is maintained the longest, percolating water can modify the salinity regime to some extent (see Fig. 29C), though its effects are by no means as important as Bird (1972) would suppose (for further discussion on this point see below under 'Salinity'). The cans (canns) or seepage hollows, which are a marked feature of the Fleet side of Chesil Beach are not connected with seepage caused by the time-lag of the tides. They are catastrophically formed and regulated under exceptional southwesterly storm conditions when the waves in West Bay are driven above a certain critical level in the Beach. At this time the porosity of the Chesil is enough to allow large amounts of water to pour through, but normally the cans are dry (see also Carr and Gleason, 1972). It is noteworthy that the CEGB hydrographic report refers to importance of seepage as follows . . . 'An estimate has been made of the volume of seepage which might occur through Chesil Beach under the maximum difference in water level and it has been found that this is insignificant compared with the tidal discharges . . . (Moreover) . . . under normal conditions seepage has an insignificant effect on water levels in the Fleet and even

under storm conditions it is unlikely to have anything more than a local effect'.

The time-lag of the tides *within* the Fleet is an interesting phenomenon. The rising tide in Portland Harbour pushes a column of water into the Fleet through the narrow constriction at Smallmouth and up to the Narrows where it meets the full force of the water running out. Although the water level begins to rise, to an observer on the bank at RE Bridging Point, for an hour after low water, the tide still appears to be on the ebb. Only after a further half hour can the surface water (through the movement of moored boats) be seen to have changed direction. The head of water flows up the channels of Littlesea and spreads out over the *Zostera*-flats. The volume of water needed to flood these extensive shallow areas undoubtedly severely weakens the head of water and by Herbury the tidal range, even on a spring tide, is almost negligible (Table 1).

High water at RE Bridging Point is usually some 30 to 45 minutes later than Portland; at Chickerell Hive Point it is over 1½ hours later, and at Langton Hive Point and Top Ferry, over 3 and 4 hours later respectively. By this time it is approaching low water in Portland Harbour and the water has begun to run out of the Fleet. The double low water (a feature produced by the Isle of Wight) is still marked at Portland and Smallmouth, but is reduced merely to a stand a little further up the Fleet (compare the tidal curves for Bridging Point and Smallmouth in Fig. 32). As with the inflow, the ebb is not seen in the surface currents until over half an hour after high water. The *Zostera*-flats of Littlesea begin to emerge about 3 to 4 hours after local high water, becoming finally 'dry' a further 1 to 2 hours later (Fig. 32). As for low water, times comparable with Portland cannot be given as they vary considerably more than high water.

No time-lag was measured (Fig. 32) between stations on the Chesil Beach and landward shores of the Fleet, even at its widest point, so it seems that the tidal current, which splits up at the top of the Narrows, flows in two directions (i.e., parallel to the Beach and towards Chickerell Hive Point, via 'Big Lake') with equal velocity.

TABLE 2

Table 2a. Maximum tidal velocities in knots (recorded during 12½-hour readings at spring and neap tides, November-December, 1967).

Station	Spring tides		Neap tides	
	Flood	Ebb	Flood	Ebb
Smallmouth	1.79	2.50	0.80	1.00
RE Bridging Point	3.75	3.16	1.80	1.80
'Big Lake' channel	1.00	0.80	0.40	0.50
Below Moonfleet	0.64	0.61	0.25	slack
Langton Hive Point	0.50	0.15	slack	slack

Table 2b. Maximum tidal discharges in cusecs (recorded during 12½-hour readings at spring and neap tides, November-December, 1967).

Station	Spring tides		Neap tides	
	Flood	Ebb	Flood	Ebb
Smallmouth	7,400	7,240	3,200	3,100
RE Bridging Point	7,200	4,500	3,100	2,300
'Big Lake' channel	2,470	1,400	—	—
Below Moonfleet	2,670	1,775	—	—
Langton Hive Point	1,233	340	—	—

(Information taken from CEGB Hydrographic Report, reproduced with permission).

A current meter was used on the 30th August and 5th September, 1969 to measure the current speed in the Narrows at the two extremes of the tide (Figs. 32 and 33). Only the ebbing spring tide was metered but a maximum of almost 3 knots was reached 2 hours after high water. CEGB figures (Table 2a) show that the maximum which can be expected on a flood at the Narrows is nearly 4 knots; this is probably the strongest current experienced

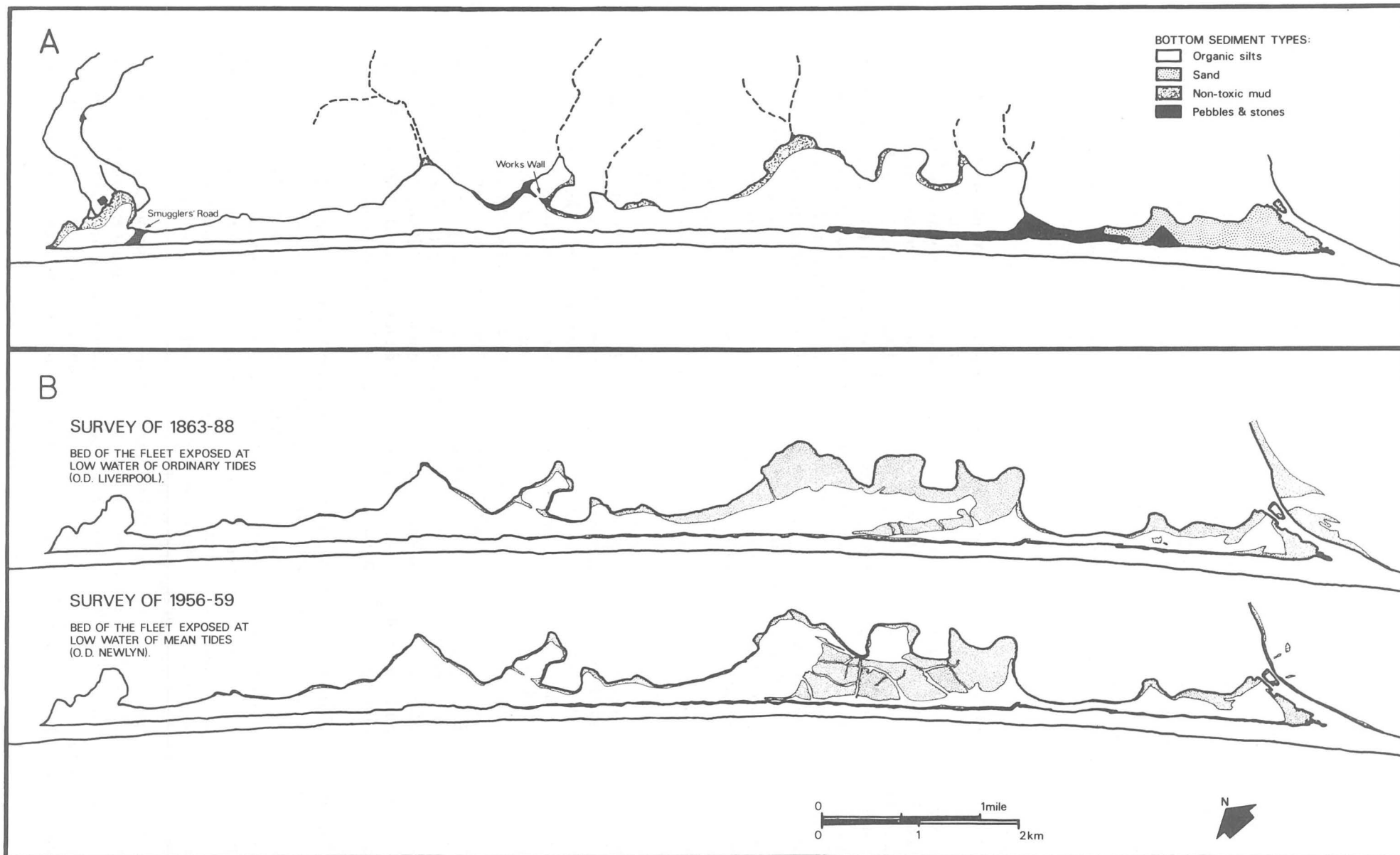


Fig. 26A. Bottom sediment types of the Fleet. Seasonal streams shown by broken lines, perennial streams by solid lines (as in Fig. 23). 26B. A comparison of the Fleet bed exposed at low water in the 1863-88 and 1956-59 surveys, showing apparent recent silting in Littlesea. Adapted from the first and most recent editions of the Ordnance Survey 6 in. = 1 mile maps, with permission.

anywhere in the Fleet. On the neap tide of the 5th September, 1969 my survey recorded a maximum of less than 1 knot 2 hours before high water; the current otherwise was negligible. Maximum tidal velocities and discharges at certain points of the Fleet, taken from the CEGB Hydrographic Report, are shown in Tables 2a, b.

Thus tidal influence diminishes in a northwesterly direction, with little tidal penetration and low current velocities beyond Butterstreet Cove, the narrow inlet at Smallmouth and the small English South Coast tidal range (*c.* 6 feet (1.8 m)) being such as to inhibit a greater tidal flow. It is significant that the lowest water levels in West Fleet are during periods of neap tides; only then is the overall outflow of water greater than that coming in. Figure 33 shows the water height, at stations 9 and 1, over 1 foot (0.3 m) lower on the 5th September than on the 29th August, 1969 (Fig. 31). Conversely, the highest overall water level will be reached during the next spring tidal cycle. The lack of tidal influence in West Fleet also means that the water there is rarely replaced. This has important repercussions on the flora and fauna.

Substrate

Several factors contribute to the paucity of well oxygenated sediment in the Fleet: the presence of *Zostera*, the decay of which gives thick reducing organic silts; the small number and size of streams entering the lagoon, and the lack of erosion of the landshore cliffs.

The bed of the Fleet above the Narrows is made up of what I have termed 'organic silt', on top of 'bed-rock' which is mainly Oxford or Kimmeridge Clay (Fig. 26A). The depth of this bed-rock varies (see Carr and Blackley, 1973; 1974), but at Langton Hive Point Dr. A. P. Carr (pers. comm.) reports that it is only 6 feet (1.8 m) below the floor at a point 30 yards (27 m) from the shore. Under Chesil Beach directly opposite, it is 44 feet (13.4 m) below OD. The fall is gradual between the two points, the extensive filling being largely of fine organic silts and peat. Elsewhere this infilling varies in thickness depending on the depth of the bed-rock, so that on the landward edge it may be only 1 to 2 feet (0.3-0.6 m) thick whilst under the Chesil and in the extensive embayment of Littlesea, East Fleet, it is reported by Carr (pers. comm.) to be up to 60-70 feet (18.3-21.3 m) (see Carr and Blackley, 1973). According to pollen evidence, most of the infilling appears to have formed very rapidly after the inception of the lagoon and was more or less completed by *c.* 5,000 BP (*Ibid.*). Nevertheless, some silting is continuing today. A comparison of the First Edition of the 6 inches to 1 mile Ordnance Survey map of the Fleet (surveyed 1863-88 and published between 1868 and 1889) (Fig. 26B; upper) with the latest edition (Fig. 26B; lower) shows a very different and more extensive arrangement of mud banks in East Fleet today at low water. This may be a phenomenon accentuated by a more restricted tidal flow since the building of Portland Harbour, but it certainly seems to suggest an ever decreasing body of water, at least at low tide. There is little evidence to suggest that the Fleet extended further to the northwest in historical times, though the discovery of *Zostera* pollen by Carr and Blackley (1973) at West Bexington possibly indicates that there was a waterbody with marine access in the vicinity at some time in the past. Today, Burton Mere (partly drained) and the seasonal Swyre Mere are the only other bodies of water behind Chesil Beach (Fig. 22); both are freshwater and are probably more related to local features of land drainage than to marine percolation through the Bank. Neither appear to be remnants of a much longer 'Proto-Fleet'.

The present distribution of *Zostera* in the Fleet is recent since it almost died out in the worldwide *Zostera*-disease of the 1930s. According to the Abbotsbury swanherds it now covers an area greater than at any time since its recolonisation and is practically ubiquitous from Littlesea to Abbotsbury. Because *Zostera* growth is seasonal, the substrate is mostly rotting vegetation and thixotropic silt during the winter and the greater part of the early spring. In late spring new green shoots appear and anchored by its extensive creeping root system and attendant mat of green algae, the *Zostera* has spread rapidly over areas which, twenty-five years ago, were bare mud all the year round.

Only at Abbotsbury are there perennial streams and these have built out a series of small mud deltas (Fig. 26A). Here also in the northern part of the Embayment extensive *Phragmites* reedbeds are found (Fig. 39) producing a stable oxygenated environment. Elsewhere, although small streams flow into the Fleet after heavy rainfall (indicated by a broken line in Figs. 23, 26A), little is added in the way of sediment. Furthermore, large masses of floating

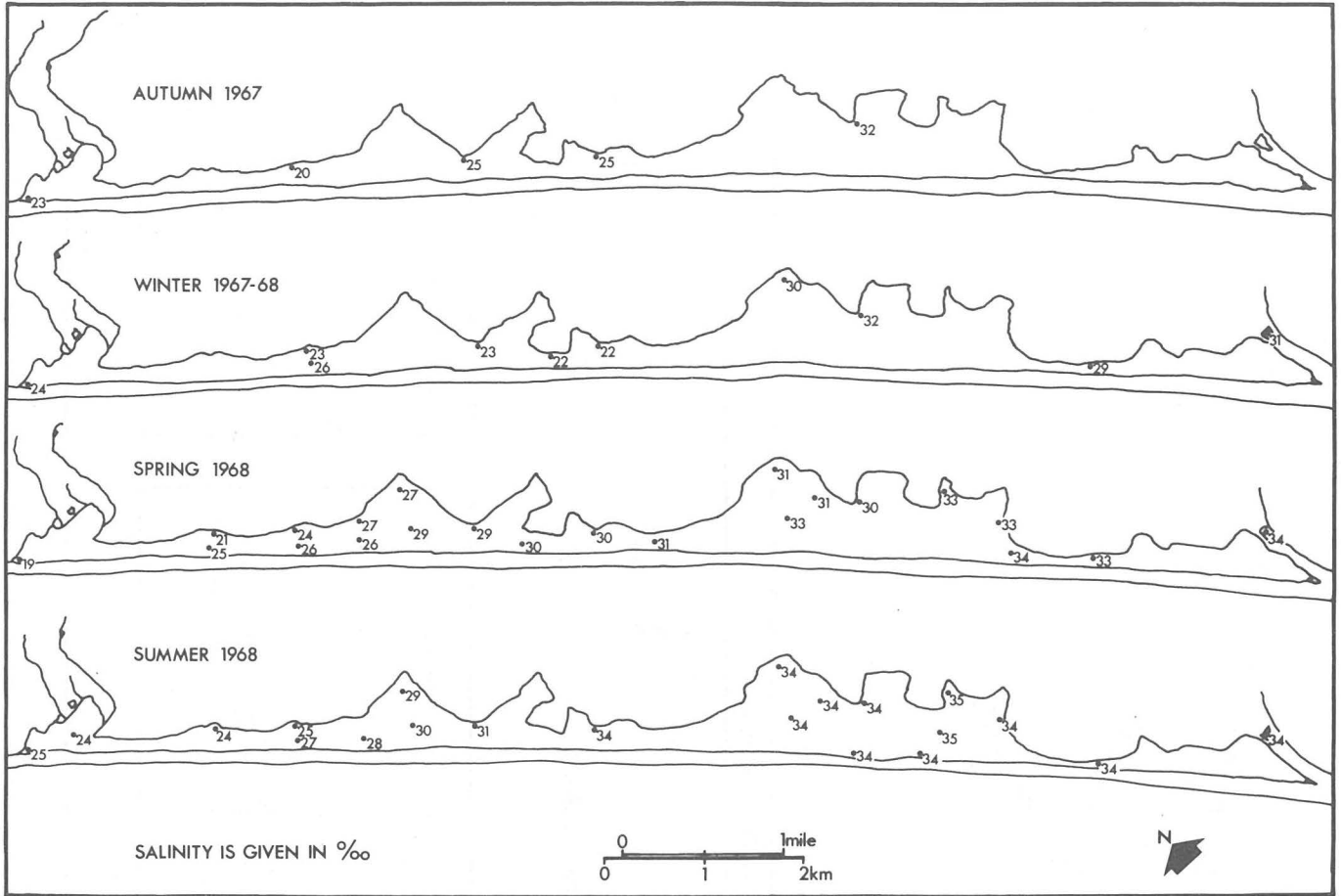


Fig. 27. Seasonal salinity maps of the Fleet, Autumn, 1967-Summer, 1968.

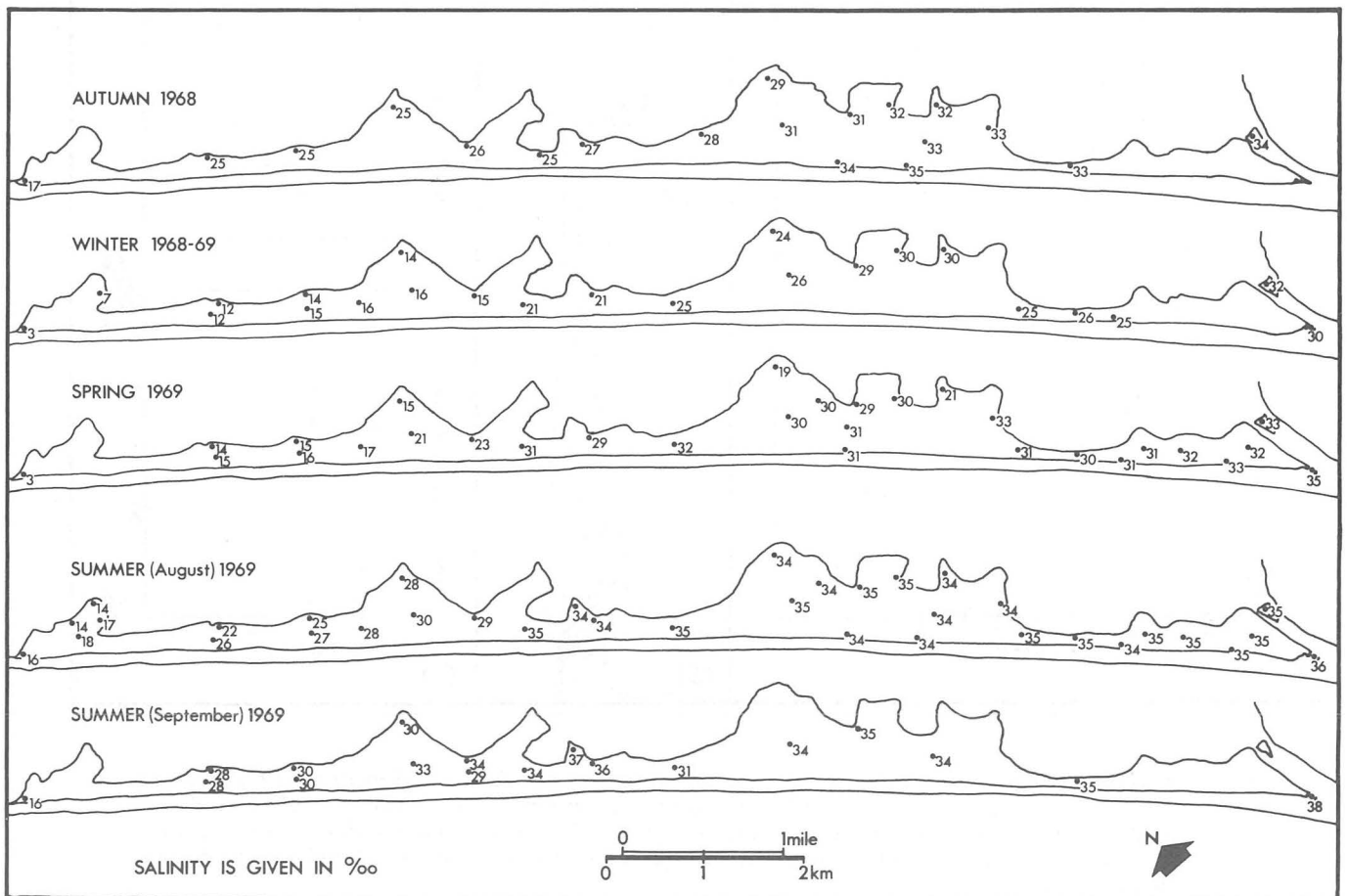


Fig. 28. Seasonal salinity maps of the Fleet, Autumn, 1968-Summer, 1969.

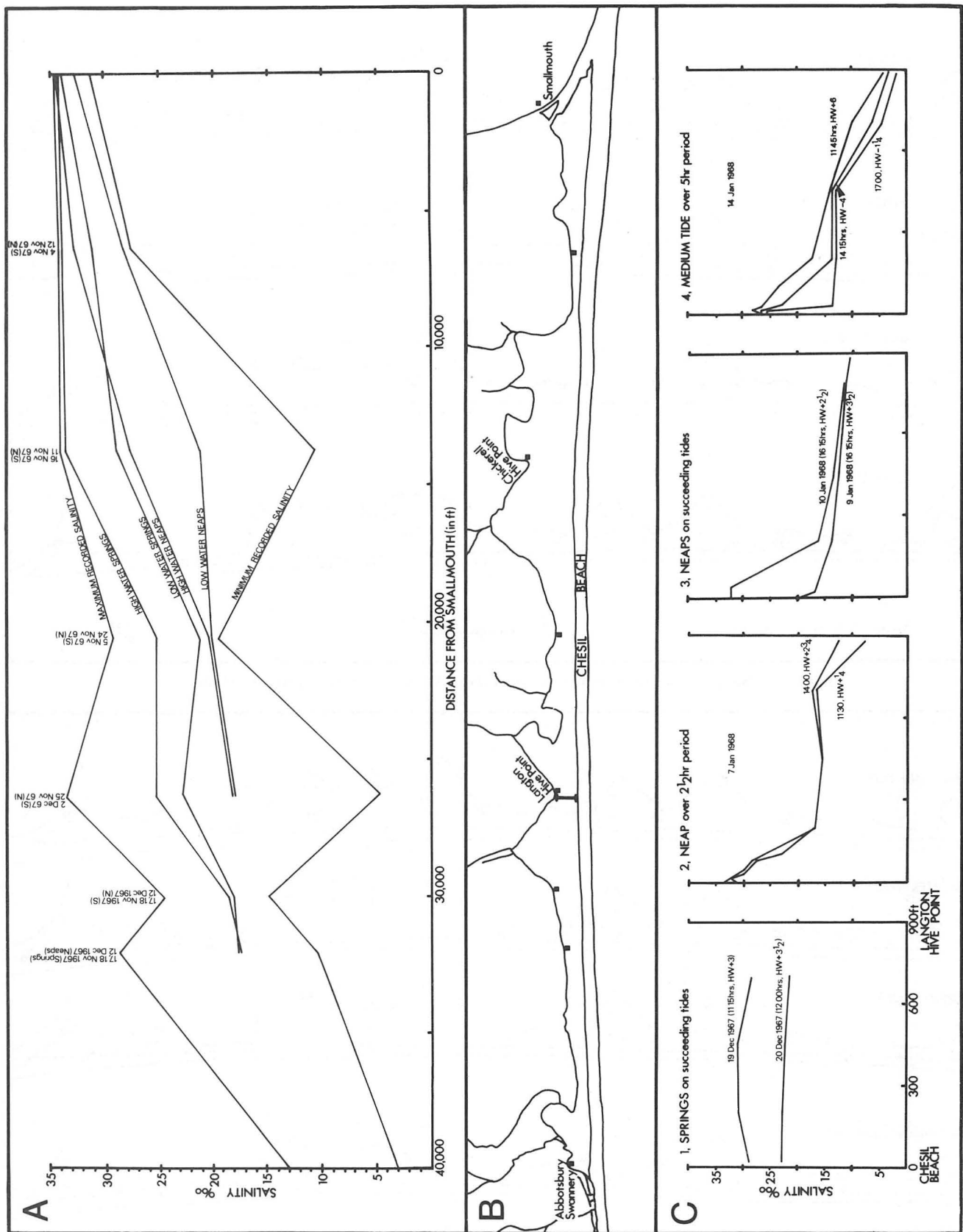


Fig. 29A. Salinity gradients in the Fleet on various tides. Dates of spring and neap tidal readings are given above stations, maximum and minimum recorded salinities are for period Nov.-Dec., 1967. B. Location of salinity stations used in A and salinity transects taken across the Fleet from Langton Hive point on various tides. All adapted from CEGB hydrographic survey, with permission.

and rotting vegetation become ponded up in the coves in summer and soon become stagnant. Around the Herbury Peninsula, parts of the Butterstreet Cove and Chickerell Hive Point shores, a small amount of sediment has been winnowed out of the low cliffs, but wave-erosion is minimal due to the restricted fetch. In the cove below Langton Hive Point (at Works Wall) and just to the southeast of Shipmoor Point ('Smugglers' Road') areas of stones in very shallow water occur (Fig. 26A), the ruins, so it is said, of early nineteenth century attempts to drain parts of the Fleet. The shore in the vicinity of Langton Hive Point is pebbly, the pebbles having been brought there by fishermen to assist in the beaching of boats.

From the head of the Narrows to Smallmouth the bottom sediment is of a somewhat different nature to the remainder of the Fleet. Between the RE Bridging Point and Smallmouth fine sand is the dominant substrate probably brought into the Fleet in suspension by the tide. In the Narrows the substrate is chiefly of pebbles which have been washed off Chesil Bank in storms, and partly added by human activity; the strong currents have also washed out the finer sediment. On the Chesil side of the Pirates Cove, there is a tongue of pebbles and outcropping rocks, the former marking the point, so it is said, where the Bank was breached in the great storm of 1824.

Salinity

The Fleet, unlike a normal estuary is long and narrow, has a relatively small discharge from rivers, a large volume of 'estuarine' water at low tide, and a tidal flow greatly retarded by the small nature of the marine inlet. Thus a salinity gradient is well developed from Smallmouth to Abbotsbury, though the degree of dilution and hence the steepness of this gradient varies from season to season (Figs. 27, 28, 29).

Although water samples were taken through eight seasons (Autumn, 1967 to Summer, 1969), only the period Autumn, 1968 to Summer, 1969 is described in detail. The 1967/68 records (Fig. 27) can be compared with those of 1968/9 (Fig. 28). Salinity measurements had been taken in November-December, 1967 for the Central Electricity Generating Board's survey, and these are reproduced (Fig. 29) with permission. This survey and that of my own being the only detailed studies of the Fleet's salinity régime undertaken to date. My maps (Figs. 27, 28) purport to show the seasonal variation in the bottom water, but it must be stressed that by their very nature such maps must be largely artificial as the values given for each 'season' are those for only a period of a few days and were of necessity taken at different states of the tide. Separate surveys undertaken in 1969, ascertained the salinity range which could be expected over both spring and neap tides in 'normal' weather conditions at various times of the year.

Autumn, 1968 (samples taken between 19th-20th November) showed a gradient from salinities of 34‰ at Smallmouth (normal marine salinities) to 17‰ at Abbotsbury (Fig. 28). Wind conditions were such as to pond up the water 2-3 feet (0.6-1 m) higher than usual in West Fleet; as a result the salinity values there remained stable. The penetration of marine salinities as far as Butterstreet Cove is significant as this marks the limit of effective tidal flow.

In Winter, 1968/69 (sampled 1st-5th March, 1969) freshwater run-off produced a rather more marked dilution of the water, particularly in the shallow West Fleet, where the salinities varied from 3-25‰. These figures are not as low as in typical estuaries, with larger inflow from rivers. Values were also much lower in East Fleet with only 26-32‰ being recorded. The apparent high readings (30‰) at the shore stations of Chickerell Hive Point and Tidmoor Point, compared with only 25‰ in the Narrows, is a tidal effect; samples being taken on different states of the tide on different days. At this time of the year, diurnal salinity fluctuations in East Fleet are at their most pronounced because of the run-back of lower salinity West Fleet water on the ebbing tide.

Dilution of the Fleet, particularly towards the landward shore can be rapid after heavy rain. This is clearly shown in the Spring survey (28th-30th May, 1969) (Fig. 28). The very low readings of 15, 19 and 21‰ taken in Rodden Hive, Butterstreet and Tidmoor Coves respectively, were recorded after a heavy downpour lasting several hours. The high spring tides at the time of the survey were responsible for the deep penetration of marine salinities as far as Herbury. Further to the northwest dilution was rapid, down to 3‰ at Abbotsbury. The much lower readings in winter and spring in West Fleet, especially in the Abbotsbury Embayment, compared to the previous year, is clearly seen in Figs. 27 and 28. This was due to higher precipitation, an extensive drainage scheme in the Abbotsbury marshes, and the

Fig. 31. The Fleet: variation in tidal range, salinity, pH and water temperature over a 12-hour period, spring tide, 29th August, 1969.

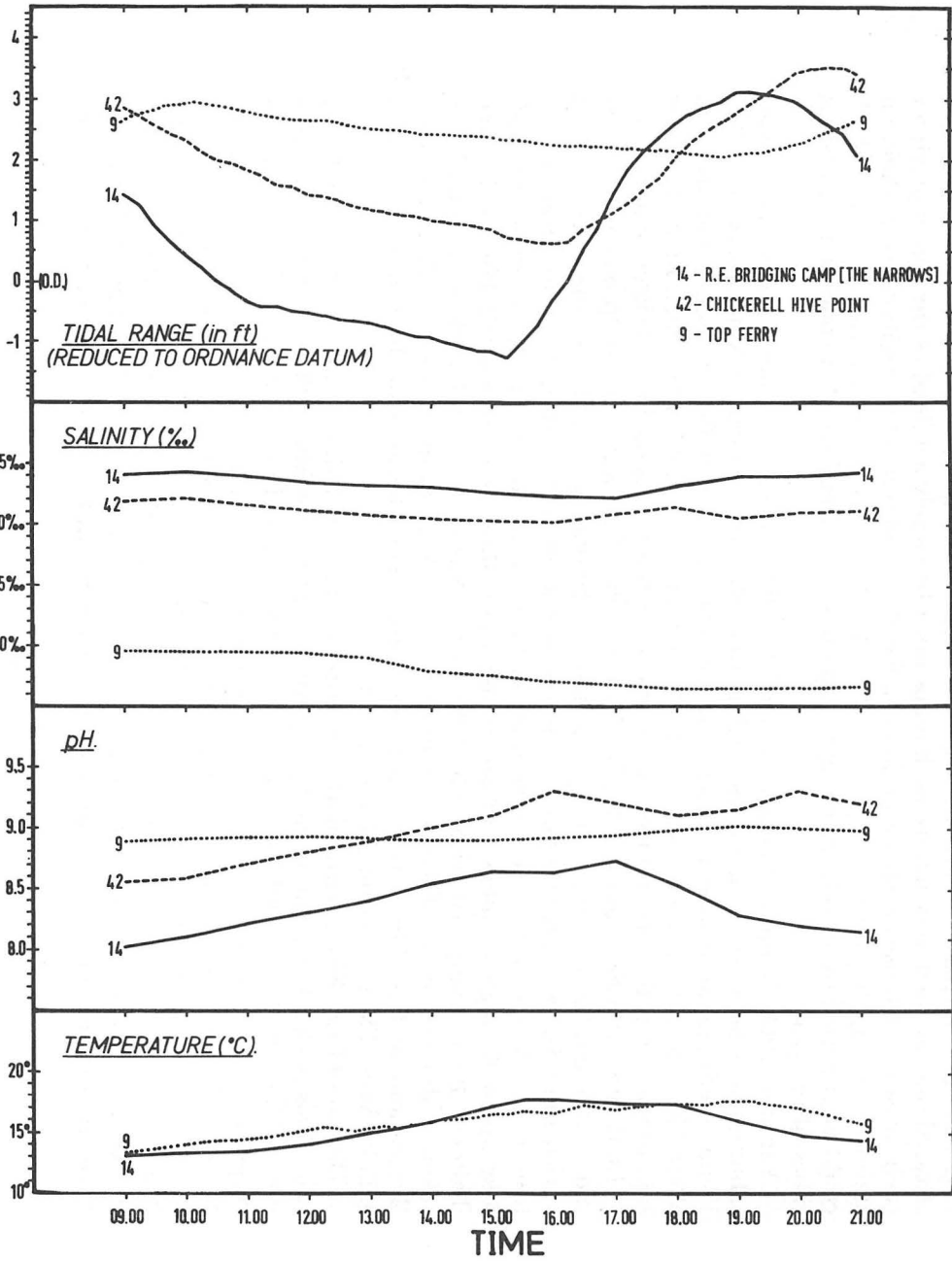
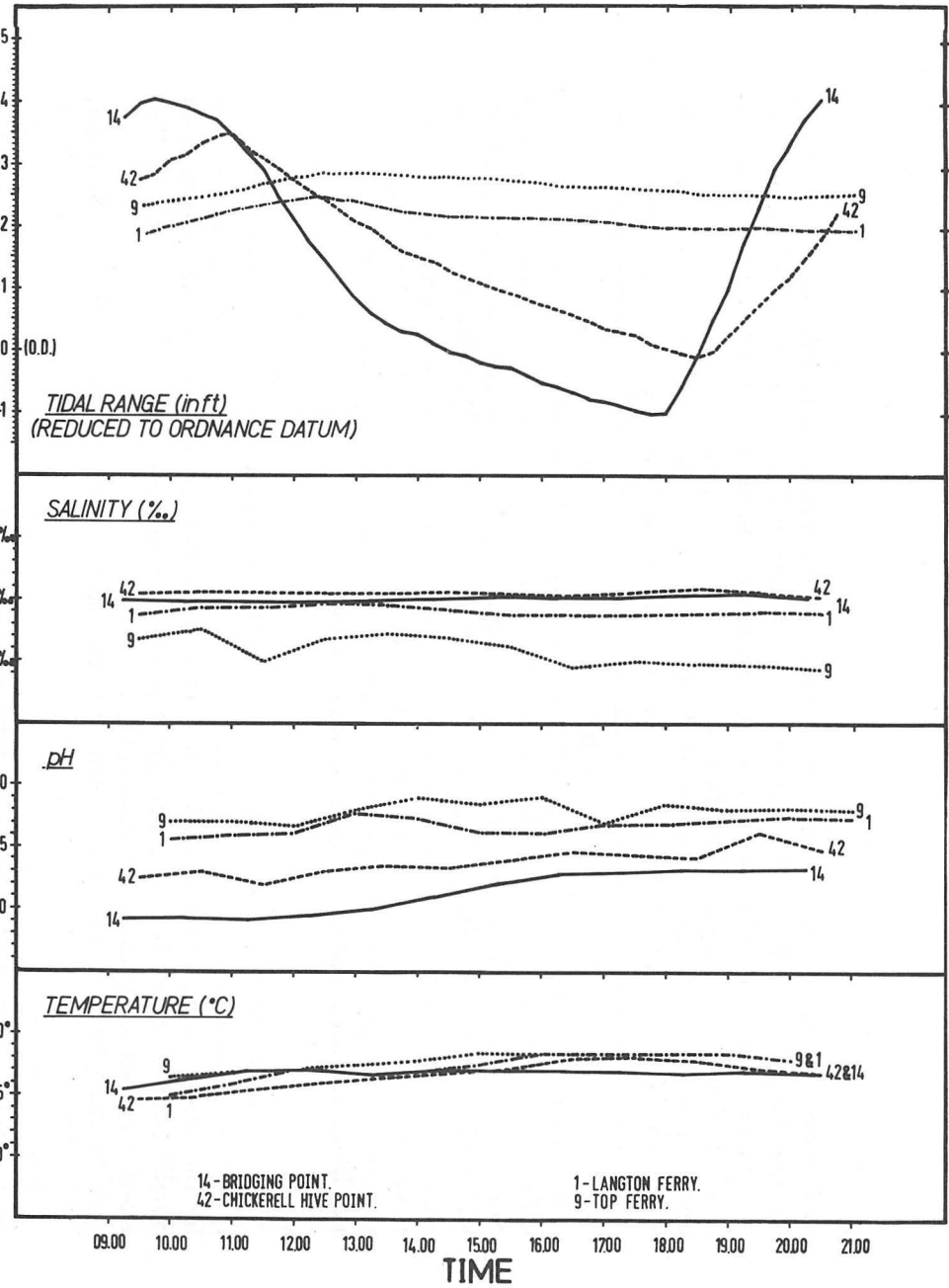


Fig. 30. The Fleet: variation in tidal range, salinity, pH and water temperature over a 12-hour period, spring tide, 30th May, 1969.



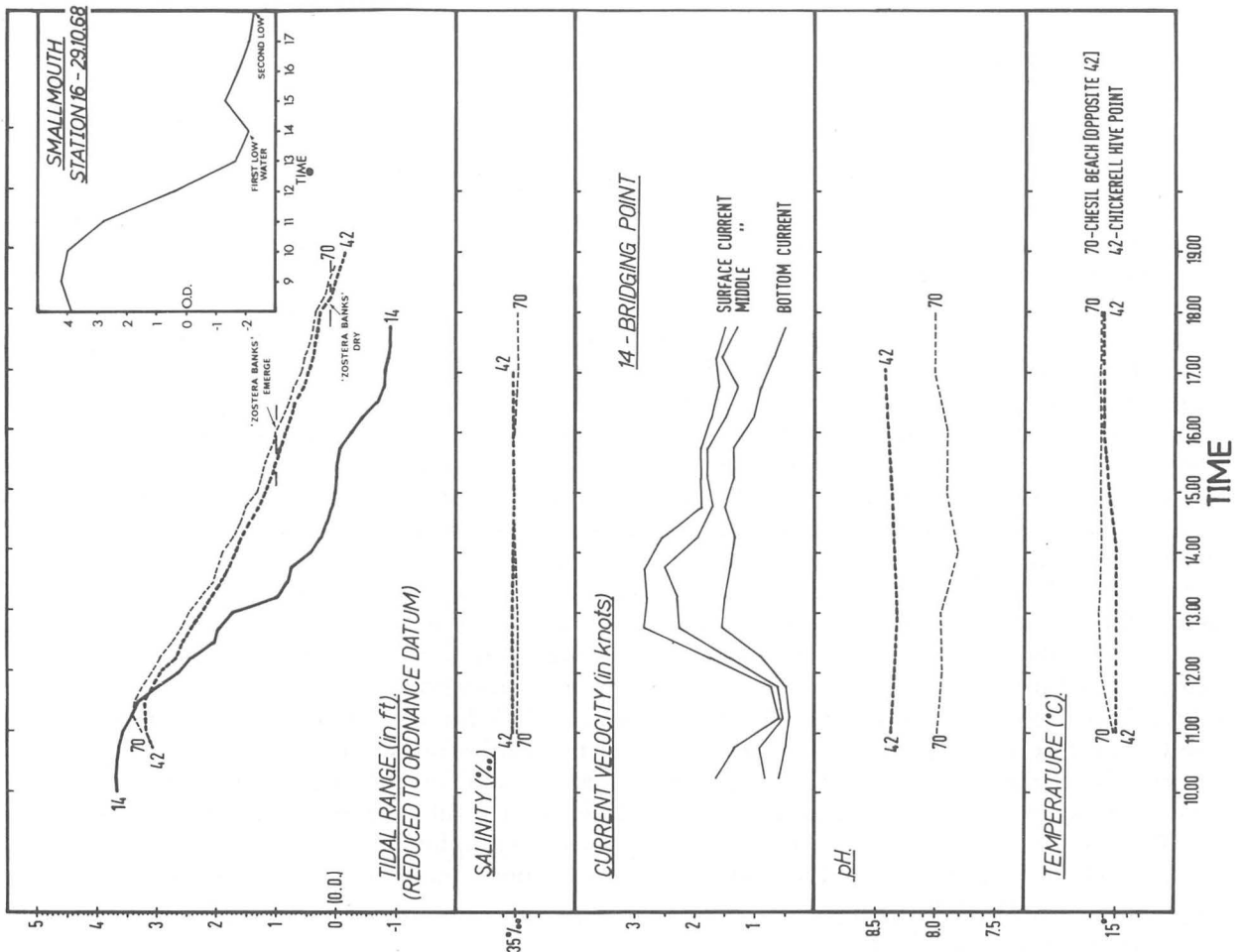


Fig. 32. The Fleet: variation in tidal range, salinity, pH and water temperature over an ebbing spring tide, together with current meter readings at RE Bridging Point. Eight-hour period, 30th August, 1969. (Inset described in text, p. 80).

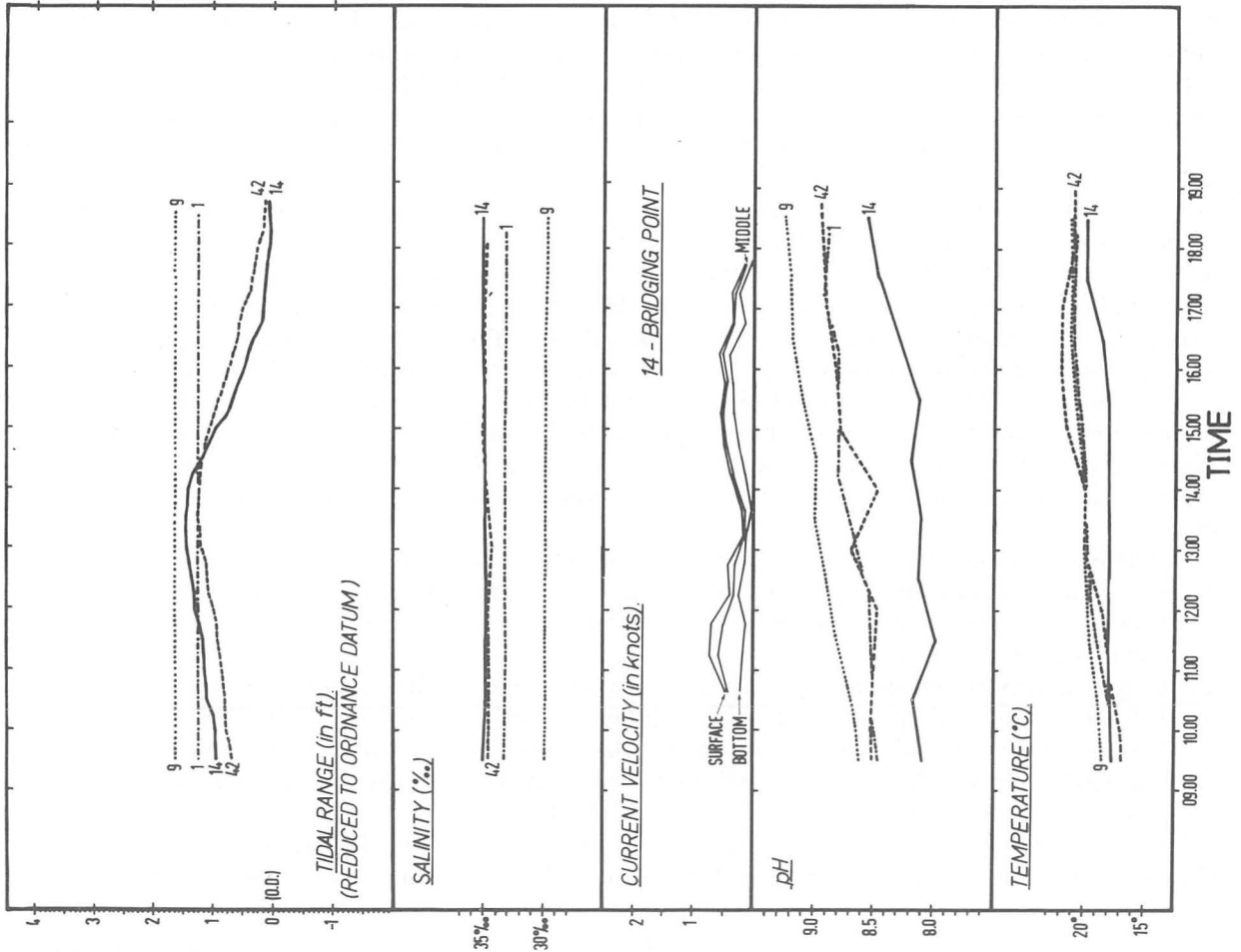


Fig. 33. The Fleet: variation in tidal range, salinity, pH and water temperature over a neap tide, together with current meter readings at RE Bridging Point. Ten-hour period, 5th September, 1969.

clearing out of the lower courses of the Mill Stream and streams in the Swannery area in 1968.

In Summer, 1969 (2nd-4th August) marine salinities were similar and extended as far as Langton (Fig. 28), though in West Fleet they had fallen by Abbotsbury to 14-16‰. 1969 was characterised by dry sunny weather from the end of May until late September, reaching drought proportions by September. At the beginning of this latter month a further survey was carried out to ascertain the effects of the drought on the salinity régime. Although such conditions may only occur infrequently, the results were of great interest as they show areas of the Fleet approaching hypersalinity (Fig. 28). Salinities ranged between 34 and 35‰ in East Fleet (still normal marine conditions), but evaporation in the tidal pools by the Weymouth-Portland road produced a reading of over 38‰. In West Fleet, the drought, coupled with a period of neap tides, was responsible for constant salinities except near Abbotsbury of over 30‰, rising to 37‰ at Moonfleet; the water being well nigh stagnant. Similar conditions, with even higher overall salinities in West Fleet, were reported in the 1976 drought (J. Fair, pers. comm.).

Salinity values, particularly in West Fleet tend to be higher for stations towards Chesil Beach than close to the landward shore. This is due partly to seepage of freshwater from the land and partly to percolation of marine water through Chesil Beach at certain states of the tides and weather conditions. A salinity transect from Langton Hive Point across to the Chesil Beach on several different tides in December, 1967-January, 1968 was measured by the CEGB Survey (Fig. 29C) and shows that on neap tides seawater percolation can add about 10‰ to the salinity in a belt 100-200 feet (30-60 m) from Chesil Beach at this point, while freshwater seepage from the land dilutes the salinity to a similar degree in a slightly wider belt from the shore. These conditions appertain to winter sampling at only one locality. Much more work still needs to be done on the effects of both modifying factors before their implications can be fully understood. Under spring tide conditions (Fig. 29C, 22) salinities are uniform across the Fleet.

Freshwater springs are said to occur in Pirates Cove, in the vicinity of Langton Hive Point and at a number of other places in West Fleet. A very low recording in September, 1969, of only 29‰, midway between Langton Hive Point and the Chesil Bank, seems to confirm one of these springs; the shore reading was over 34‰ at the same time (Fig. 28). However, the CEGB transect at this locality (Fig. 29C) fails to show this phenomenon.

The wide diurnal fluctuations in salinity observed by Murray (1966) in nearby Christchurch Harbour, prompted the present author to carry out a similar survey over a tidal cycle in the Fleet. The results (Figs. 30-33) show that the tidal cycle modifies the seasonal pattern. The effective inflow of the tide does not extend much beyond Butterstreet Cove even on the highest spring tides, the influx of marine water pushes the water already in the Fleet further up, so that there is an oscillatory effect. The salinities of the stations sampled in East Fleet vary about 2‰ under dry weather conditions over a tide; perhaps 10‰ in shore stations after a thunderstorm. In Fig. 30 (30th May, 1968) it can be seen that salinities fall at stations 14 (RE Bridging Point) and 42 (Chickerell Hive Point) as low water is approached and the more dilute water of West Fleet is allowed to run back. Diurnal fluctuations of 20-30‰ described by Murray (1969) from Christchurch Harbour and by other workers from estuarine environments, could never be experienced in the Fleet. In West Fleet, where the salinity gradient is steep, diurnal variations probably never exceed 5‰, but close to the Chesil and landward shores seepage and heavy rainfall may increase this figure to 10‰ or more.

In terms of salinity, the Fleet can now be divided into three parts:

- (1) A marine to near-marine part, extending from Smallmouth to Butterstreet Cove, only extending further to the northwest during high tides in summer months, and over periods of exceptionally fine weather.
- (2) A high-salinity brackish part, covering most of West Fleet, with values of between 12 and 30‰ in winter and spring, and a little higher generally in summer (24-30‰).
- (3) A low-salinity brackish part, found in the Abbotsbury Embayment, with values frequently below 10‰; rising to 20‰ or even higher in periods of low discharge of the streams (e.g. drought conditions of 1969 and 1976).

The chief factor influencing the salinity of the Fleet, as with water levels, is the tidal effect. This is in spite of the low tidal range and the restricted marine inlet. This is then modified in

West Fleet by marine percolation through Chesil Beach and freshwater run-off. Though only bottom water was collected as a rule in the present survey, a number of surface-water samples failed to indicate a vertical salinity gradient, thus underlining the minor role of these modifying factors. These general findings are in conflict with the 'estuarine lagoon system', governed by high percolation in both directions through the enclosing shingle barrier proposed as a model for the Fleet by Bird (1972). Certainly, he considered this factor to be of far greater importance than it appears to be in reality.

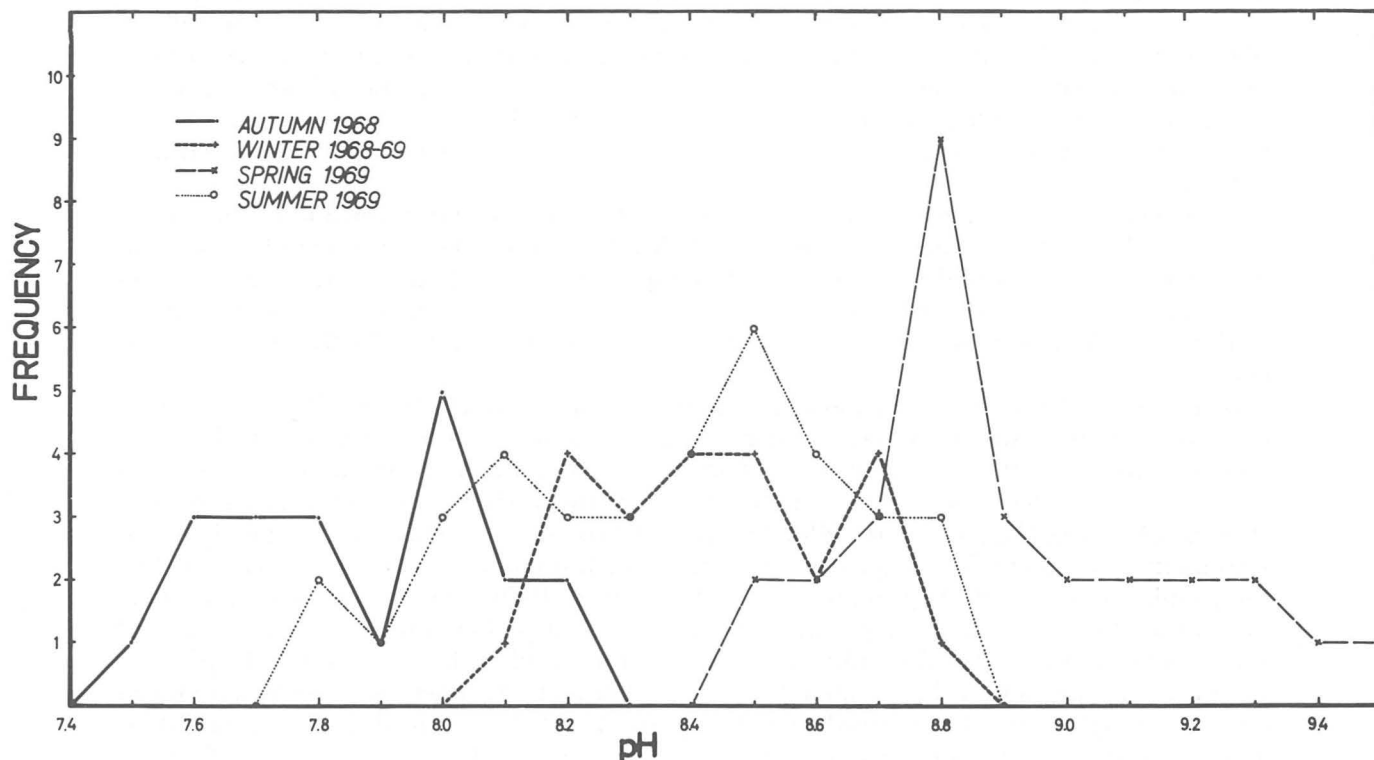


Fig. 34. Seasonal pH frequency graph of the Fleet water.

pH

The seasonal pH ranges (Table 3) present a picture of high alkalinity of the Fleet water especially in spring and summer months (average sea-water has a pH 7.8-8.2). In the present survey only the bottom water was measured, no readings were taken of the organic silt, presumed to be very acid, because of the difficulty of taking the pH of mud *in situ*. It is thought, however, that the thick carpet of *Zostera* and green algae covering the silt for much of the year would prevent too much contamination of the pH of the water during churning by storms.

TABLE 3

Season (Month)	No. of samples	Max.	pH	
			Min.	Mean
Autumn, 1967 (October)	8	7.9	7.4	7.7
Winter, 1967-68 (March)	9	8.1	7.5	7.8
Spring, 1968 (May)	19	9.0	8.0	8.5
Summer, 1968 (August)	19	8.8	7.3	8.4
Autumn, 1968 (November)	19	8.2	6.9	7.8
Winter, 1968-69 (March)	23	8.8	8.1	8.5
Spring, 1969 (May)	30	9.5	7.7	8.9
Summer, 1969 (August)	36	8.8	7.8	8.4

A seasonal cycle of pH values is apparent in the 1968-69 results (Fig. 24). The high pH of the Fleet water is considered to be produced by photosynthesis of the vegetation in the shallow water. The lowest overall figures are for the autumn survey (1968) when most of the *Zostera* was dead or decaying and photosynthesis was at a minimum, but rain at the time and some churning by the strong winds must have reduced the alkalinity. The winter figures are somewhat higher probably because the colder water can take up more oxygen and the pH and oxygen values tend to be linked. During spring and summer months when sunlight is most intense and plant growth at its maximum, pH values are very high, a maximum of 9.5 being recorded on the *Zostera* flats. By late summer the flush of green algae had gone and the pH was reduced. As a rule the highest values occur on the *Zostera* flats of East and West Fleet in spring and summer, the lowest around Abbotsbury in summer and autumn when the water stagnates. Significantly too, *Zostera* is rarer in the Abbotsbury Embayment, where fouling of the water by the large bird population there may also contribute to the lowering of pH values.

In September, 1969 much of the water of West Fleet became dark brown in colour with a lower pH than normal. There was considerable fish mortality. The cause is not fully known, though it may have been due to a bloom of phytoplankton possibly triggered off by pollution from farm fertilisers, as the water here, some 7 miles (11 km) from the sea, is but rarely flushed out. A similar occurrence took place in the severe drought of 1976 (J. Fair, pers. comm.).

Bruce (1925) found small diurnal ranges in the pH of sea water off the Isle of Man which he considered were due to photosynthesis of algae, this being more discernible inshore. In rockpools and in shallow water on salt marshes, records of much higher variations, as much as 1 or 1½ units have been reported. In the Fleet, the variation of over 1 unit shown at stations 14 and 42 (Fig. 31) on the 29th August, 1969 could, it is argued, be due merely to the introduction of water with a higher or lower pH value from other parts of the watermass, but the graph for station 9 (Top Ferry) on 5th September, 1969 (Fig. 33), clearly shows that diurnal photosynthesis is an important factor. This was a period of neap tides and the tidal range, water movement and salinity variation was almost nil at this locality, yet the pH rose from the early morning value of 8.6 to 9.3 by late afternoon. Although no records were taken during the night it can be assumed that the pH would fall to a neutral figure (around 8.0). These diurnal ranges of over 1 unit, it is suggested, are probably the first record of such a marked effect of photosynthesis in a water body as large as the Fleet. It is clear that the Fleet in spring and summer behaves like a gigantic rockpool.

Dissolved Oxygen Content

Values in excess of 200‰ saturation recorded from the Fleet in spring and summer (see Table 4, below) were at first considered to be an error. Broekhuysen (1935) produced similar

TABLE 4

<i>Season (Month)</i>	<i>No. of stations</i>	<i>Dissolved oxygen (% saturation)</i>		
		<i>Max.</i>	<i>Min.</i>	<i>Mean</i>
Spring, 1968 (May)	17	238%	74%	143%
Summer, 1968 (August)	16	270%	109%	179%
Autumn, 1968 (November)	15	182%	106%	146%
Winter, 1968/69 (March)	16	174%	112%	142%
Spring, 1969 (May)	23	258%	118%	168%
Summer, 1969 (August)	19	177%	123%	147%

results for the oxygen content of water on *Zostera*-flats in the Netherlands and therefore the figures (Table 4) may be typical of such an environment. Broekhuysen measured a range from a saturation value of 0‰ (with a strong smell of hydrogen sulphide) at night, to a 260‰ maximum during the day. It does nevertheless appear clear that the shallow Fleet provides conditions for maximum photosynthesis of plants. Very few records were taken of

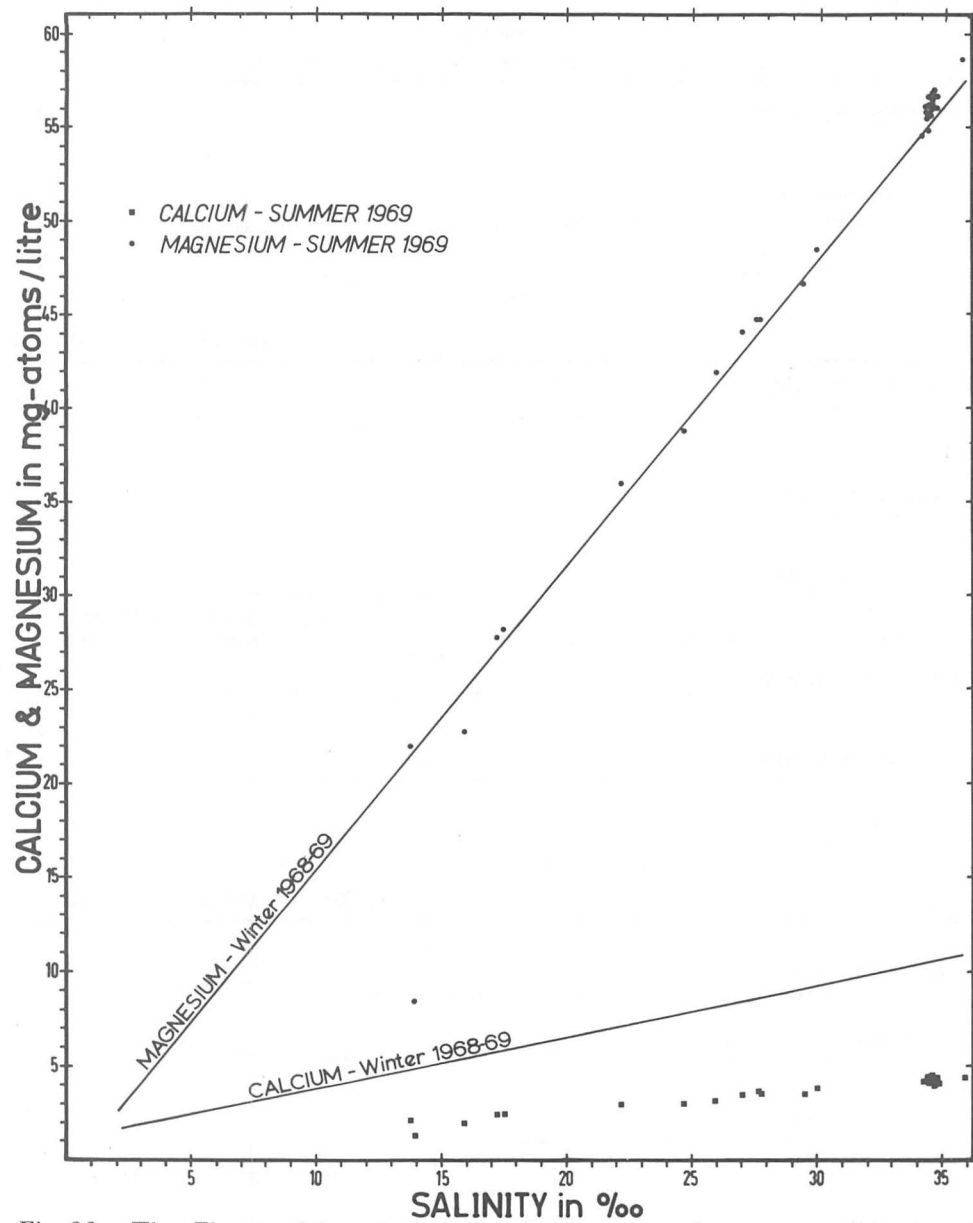


Fig. 36. The Fleet: calcium and magnesium content (in mg-atoms/l) plotted against salinity, Summer, 1969. The mean lines for Winter, 1969 are drawn for comparison.

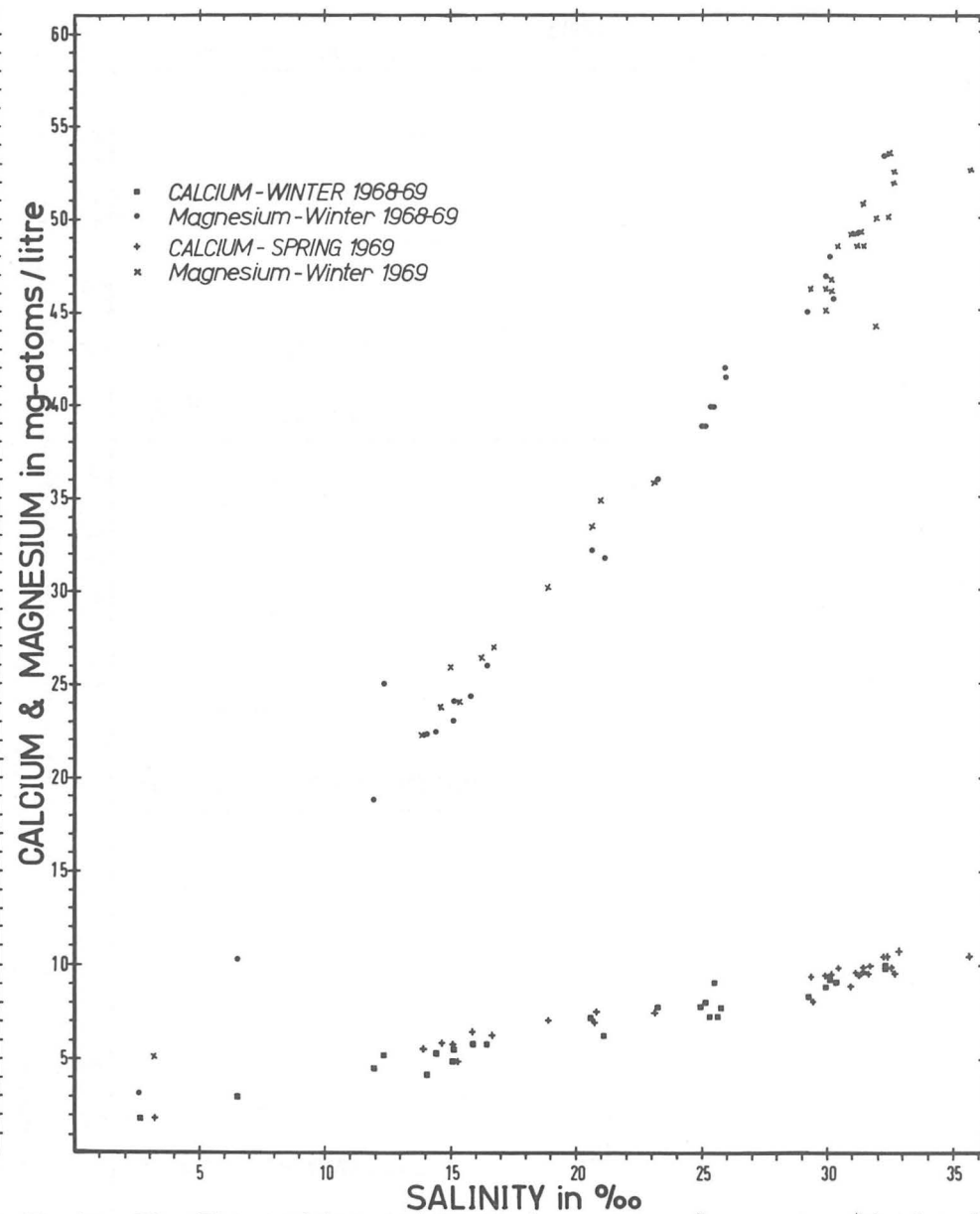


Fig. 35. The Fleet: calcium and magnesium content (in mg-atoms/l) plotted against salinity, Winter and Spring, 1969.

Fig. 38. Variation in calcium and magnesium content of the Fleet water plotted against salinity over an 11-hour period, spring tide, 29th August, 1969.

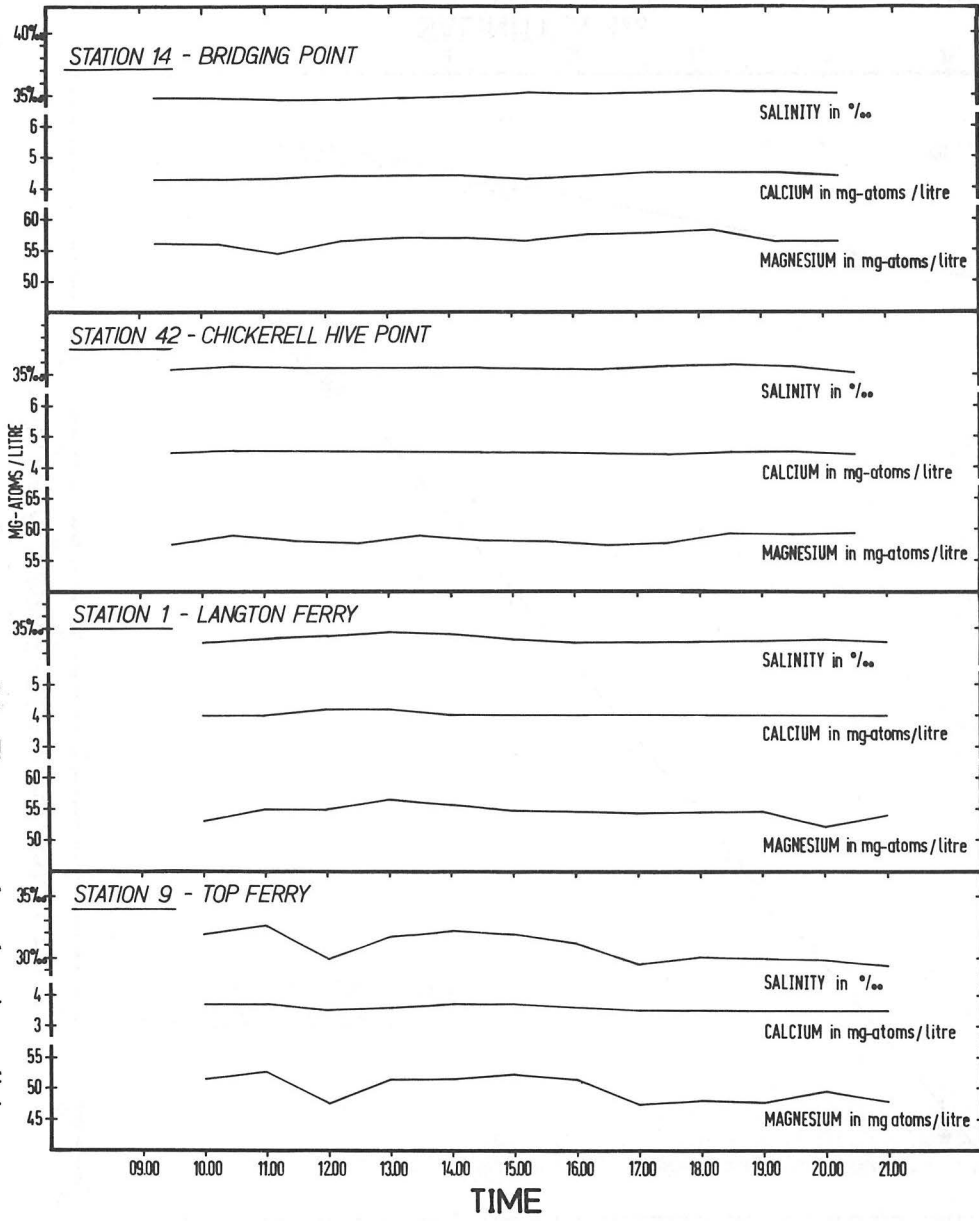
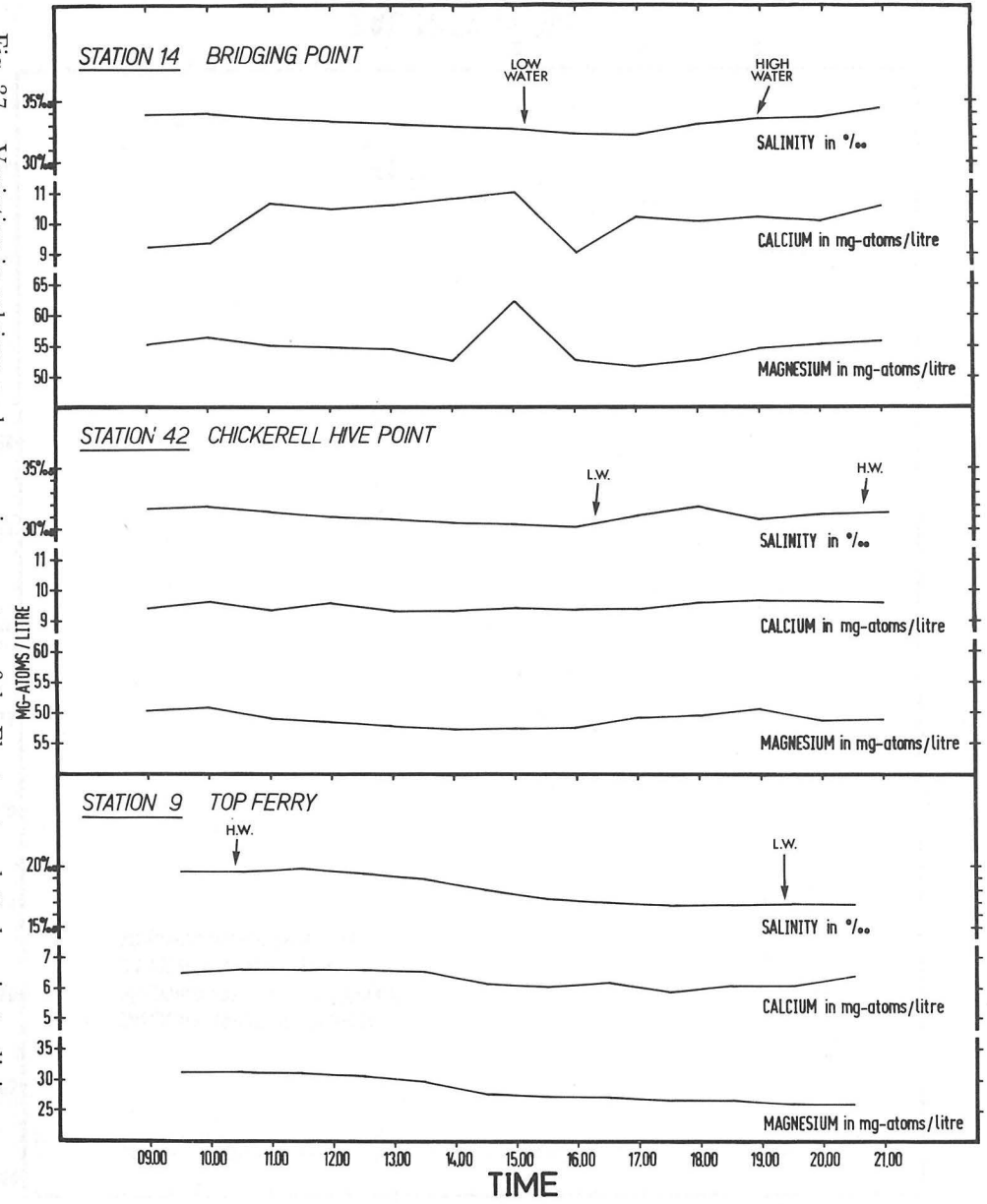


Fig. 37. Variation in calcium and magnesium content of the Fleet water plotted against salinity over a 12-hour period, spring tide, 30th May, 1969.



water with values below supersaturation. Even the winter samples showed constant readings over 150‰ when there was no *Zostera* in the Fleet. It is thought this is due to a temperature effect, the colder water being able to take up more oxygen. The Fleet environment certainly does not lack a good oxygen supply.

Calcium and Magnesium Values

Prompted by Murray's discovery (1966) of a strong calcium deficiency in the bottom water of Christchurch Harbour in the summer months, the present author undertook a determination of the calcium and magnesium values of all the water samples in the Fleet, beginning with the Winter, 1968/69 survey.

Dobson and Haynes (1969) reported no such calcium deficiency in the summer readings for the Dovey Estuary, Mid-Wales and they showed a linear relationship between the calcium and magnesium values and the salinity for both winter and summer surveys. Fig. 35 shows the winter and spring values of the Fleet water and they show a similar linear relationship. However, the summer calcium values (Fig. 36) show a marked deficiency as against the mean line for winter. The relationship is somewhat different to Murray's findings. Instead of a virtual total and rapid removal of calcium, as occurred in Christchurch Harbour when the marine water spread out over the mudflats, water entering the Fleet seems to be deficient in calcium in the first place. As the water moves up the Fleet the lowering of values merely reflects the fall in salinities (Fig. 36).

The relationship between the calcium and magnesium content and the salinity over two spring tidal cycles from the tidal surveys of 30th May and 29th August, 1969 (Figs. 37 and 38) show an almost perfect relationship for both elements. No calcium is lost through precipitation or organic activity in the Fleet because of the unsuitable nature of the *Zostera*-covered mudflats, but the amount of calcium in the water does seem to have been influenced by the high summer temperatures, probably originally in the shallow waters of Weymouth Bay and Portland Harbour. It is difficult to ascertain the critical temperature but as no less of calcium was apparent in the spring readings, it would appear to be between 18 and 19°C. The summer magnesium values in the Fleet were very slightly higher than the winter and spring means (compare Figs. 35 and 36).

Temperature and Climate

Temperature conditions in the Fleet lagoon produce a régime much warmer in summer and much cooler in winter than the surrounding sea (Table 5). The highest water temperature recorded (26°C/80°F) is as warm as on the Bahama Banks, whilst in winter it is little above freezing point. The Fleet will freeze over in severe winters with dire effects on the vegetation and fauna, this last happened in 1963.

TABLE 5

<i>Season (Month)</i>	<i>No. of stations</i>	<i>Temperature in °C</i>		
		<i>Max.</i>	<i>Min.</i>	<i>Mean</i>
Autumn, 1967 (October)	6	13.9	10.5	12.7
Winter, 1967/68 (March)	13	5.7	1.1	4.0
Spring, 1968 (May)	27	25.5	17.5	20.7
Summer, 1968 (August)	25	19.7	16.7	18.4
Autumn, 1968 (November)	21	10.0	5.5	7.5
Winter, 1968/69 (March)	29	6.1	1.7	4.2
Spring, 1969 (May)	36	23.9	12.9	16.1
Summer, 1969 (August)	39	26.0	17.5	20.0

The climate on the south coast of England usually gives long warm summers with low precipitation. The Spring of 1969, however, was very late and even at the end of May when the water samples were taken, the average water temperature was 4°C below on the previous year. Winds greatly influence the tidal cycles in the Fleet, and periods of southeasterlies are characteristic of early spring and autumn. Chesil Beach is also one of the most exposed sites

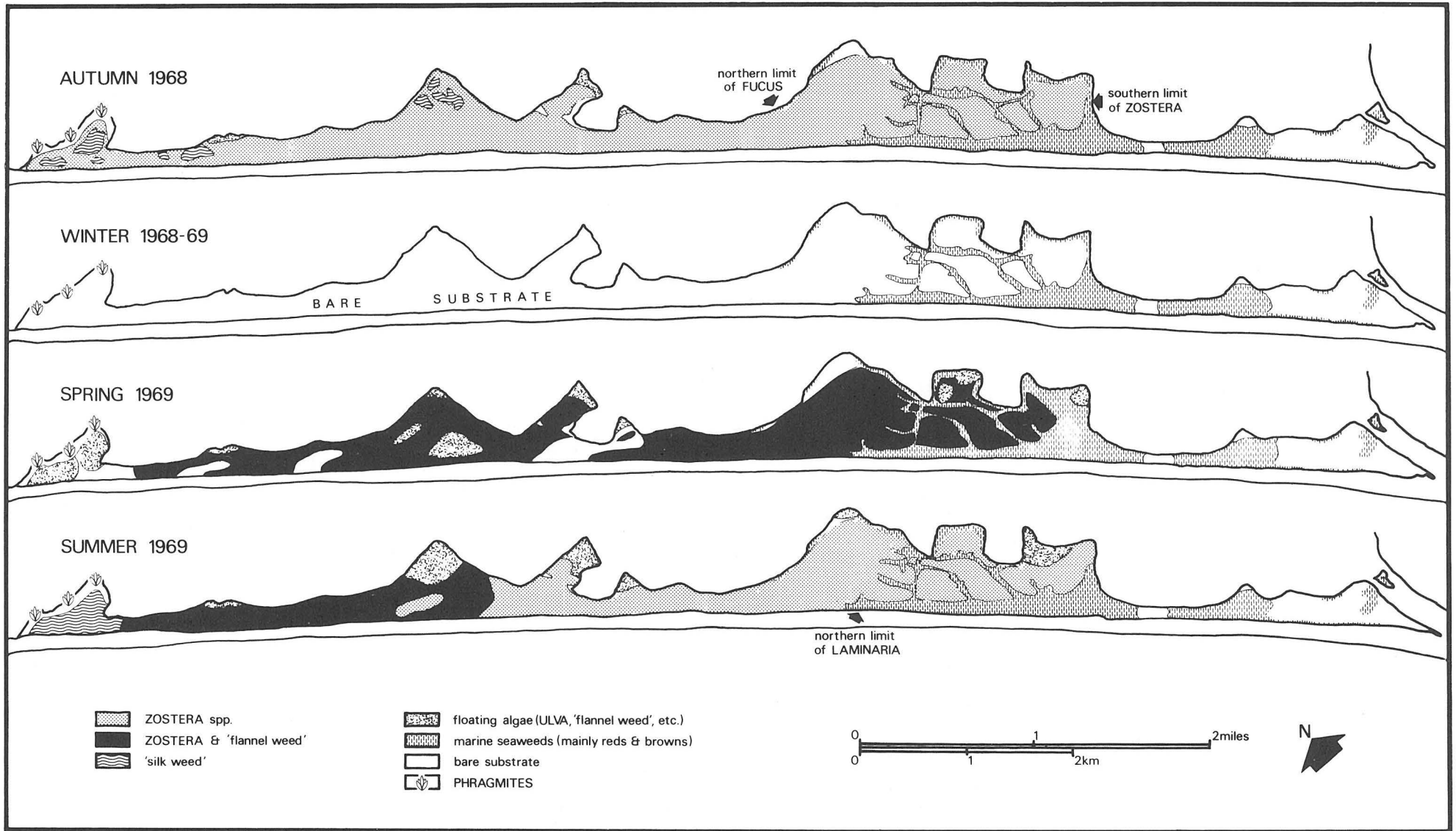


Fig. 39. Seasonal vegetation maps of the Fleet, Autumn, 1968-Summer, 1969 (high simplified).



Fig. 40. Butterstreet Cove looking northwest towards West Fleet. The termination of the deepwater channels marks the effective limit of tidal flow. Chickerell Hive Point is bottom right.



Fig. 41. Abbotsbury Embayment and West Fleet looking southeast. Note the floating green algae (*Ulva*, 'flannel weed' and 'silk weed').

Photographs by Aerofilms Ltd.; reproduced by permission.

along the English Channel coast for southwesterlies. Carr and Blackley (1974) show that the prevailing onshore wind direction for strengths of over 17 knots is in this quadrant. Generally speaking the Chesil does offer some degree of protection to the shallow waterbody and throughout the greater part of the summer months calm weather conditions are the rule.

In such an environment diurnal variation is very pronounced and water temperature fluctuations of over 5°C/10°F, from early morning to late afternoon in sunny weather, are common. The temperature variations measured in my tidal surveys of 1969 are given in Figs. 30-33).

Vegetation

Marine algae and *Zostera* occur in luxuriant abundance in the Fleet for much of the year; only in winter and early spring are there large tracts of bare mud ('organic silt'). Green algae are particularly common in the lower salinities of West Fleet where many species form dense mats of vegetation on the beds of *Zostera* and often cover large tracts of the water surface in spring. The brown Fucales are found all year round in clumps around the shores of East Fleet, while *Laminaria* is restricted to the deepest part of the Narrows and deep channels of Littlesea. Epiphytic growth on all seaweeds and *Zostera* is very well developed. The distribution and seasonal variation of the algae and *Zostera* between Autumn, 1968 to Summer, 1969, is now discussed and illustrated (Fig. 39) and a check-list of algae found to date in the Fleet is presented.

Chlorophyceae

Ulva lactuca—grows mainly in the lower salinities and is abundant from March to April together with 'flannel weed' (see below), it is the first of the green weeds to colonise the bare mud of East and West Fleet before the germination of the *Zostera*. After releasing its spores it dies back and is pulled up by the swans and other wildfowl that feed on the young *Zostera* shoots. It then floats to the surface completely covering large areas of water until broken up by gales and driven ashore where it accumulates to great thicknesses. It is usually gone entirely from the Fleet by late June except for certain shallow inlets where drifted masses remain, shredded and rooting for most of the year (Fig. 39). In East Fleet small amounts of *Ulva* can be found throughout the year along the shoreline where the water is locally diluted by run-off.

'Flannel weed'—so called locally because it forms with the *Ulva* a dense filamentous mat around the rootmass of *Zostera*. It is found from Berry Knap in the northwest to Lynch Cove in the southeast (Fig. 39). The main growth is finished by June and it is blown ashore by gales, but in particularly mild and calm years (e.g. 1969, 1976) it can stay in dense masses all summer causing the growth of *Zostera* to be late and stunted. It has been identified as species of *Cladophora* and *Enteromorpha*, and some red algae. Flannel weed dies back in late autumn.

Enteromorpha intestinalis—grows in abundance on stones and pebbles in several areas of the Fleet: in the littoral from Chickerell Hive Point southeastwards to Portland Harbour; around Herbury, and in the low salinities of the Abbotsbury Embayment (e.g. on stones in the very shallow water offshore Shipmoor Point).

Chaetomorpha linum ('silk weed' or 'hair weed')—it grows mainly in the low salinities of the Abbotsbury Embayment and to a lesser extent in some of the inlets of West and East Fleet down as far as Lynch Cove (Fig. 39). It is noticeable in late spring and summer.

'Low weeds'—pebbles, stones, stable sediment (e.g. tidal pools near Smallmouth), and holdfasts of certain algae such as *Laminaria* are often covered by a dense growth of very fine carpet-like weed. Several genera and many species have been identified (Appendix).

Phaeophyceae

Fucaceae (Fucales) (wracks)—are represented in the Fleet mainly by *Fucus serratus* and *F. vesiculosus*; *F. spiralis* is rare, while *Ascophyllum nodosum* occurs near the tidal inlet at Smallmouth. Their distribution is that of the marine littoral environment in miniature, clumps of weed being found between 5 and 10 feet (1.5-3 m) out from the shore both on the landward side and off Chesil Bank, where at low water they are exposed to the air. They also grow in deeper water in the Narrows and the Littlesea channels (Fig. 39). The distribution of *Fucus* spp. appears to depend on the salinity of the water, *F. vesiculosus*, the last to die out, has never been found on the landward shore further north than station 49 in Butterstreet Cove (Fig. 39). The penetration on the Chesil shore is similar. Other factors affecting the distribution of *Fucus*, appear to be the limit of the tides and the gastropod *Littorina*. Butterstreet Cove marks the effective limit of the tidal flow, which would be significant for the transportation of the fertile furoid egg, whilst it is also noteworthy that the browsing periwinkle (*Littorina*) occurs in vast numbers on the shores above this Cove. It is suggested (after Boney, 1966) that this latter factor could severely affect the success of colonisation of the *Fucus* alga further up the Fleet. From an ecological point of view, the Fucales secrete toxics which make the surface area uninhabited except for molluscs and spirorbid worms, nevertheless the broad fronds attract large numbers of filamentous epiphytes which provide a more hospitable environment.

Laminaria saccharina—the only species of *Laminaria* ('kelp') found in the Fleet appears to be depth-controlled and occurs in the deepwater of the Narrows and the Littlesea channels. It has not been found further to the north (Fig. 39). The holdfasts often attract other seaweeds and epiphytes, but the rest of the plant is generally devoid of both flora and fauna.

Rhodophyceae

Red weeds are found mainly in the deeper and more marine part of East Fleet, between Portland Harbour and station 70 (at the end of the deep channel on the Chesil shore, opposite Chickerell Hive Point; Fig. 23). The filamentous red algae *Ceramium* occurs in large floating masses in spring and is often driven by wind into West Fleet.

Zostera

This marine angiosperm, locally known as 'eelgrass', is represented in the Fleet by two species, the more common *Zostera angustifolia* (Hornem.) Reichb. (*Z. hornemanniana* auct.) and *Z. noltii* Hornem. (*Z. nana* auct.). The true *Z. marina* L. is not found in the Fleet, but it does occur in Weymouth Bay. (For taxonomy of *Zostera* spp., see Danby, 1958).

Zostera angustifolia (Hornem.)—forms extensive 'meadows' over the bed of the Fleet from Lynch Cove in the southeast to Abbotsbury in the northeast (Fig. 39). It is not found south of Lynch Cove nor in the channels of Littlesea, and is replaced to a great extent in the westernmost part of the Fleet by *Z. noltii*. The years 1968-69 saw the largest extent of this plant for many a decade and in some areas the leaves were over 3 feet (1 m) long and in late summer were covered with luxuriant epiphytes. Except for some coves which were clogged with drifted 'flannel weed', 'silk weed' and *Ulva*, the *Zostera* community constitutes the main environment for a whole range of phytal and benthic invertebrates over almost the whole of West Fleet and much of East Fleet. During late autumn and in winter the foliage dies back and is driven ashore by the wind to accumulate in some of the coves. The yearly decay of eelgrass has also produced the great thicknesses of organic silt which floor much of the Fleet above bedrock.

Zostera noltii Hornem.—much rarer than the previous species, is found in the lowest salinities of West Fleet. The plant is not unlike *Ruppia* ('widgeon grass') which also occurs in West Fleet. For the sake of clarity, *Ruppia* is indicated within the *Zostera* community shown in Fig. 39.

Acknowledgements

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APPENDIX. LIST OF ALGAE FOUND IN THE FLEET

By Dr. E. M. Burrows, formerly of the University of Liverpool, and Dr. W. F. Farnham, Portsmouth Polytechnic.

As a result of detailed collections made during 1975-77 by members of the Fleet Study Group (Dr. E. M. Burrows, Dr. W. F. Farnham, Mrs. J. M. Fitzpatrick and Dr. J. E. Whittaker), a list of about 150 species has now been compiled. Of these, 36 species are green algae (Chlorophyceae), 33, brown algae (Phaeophyceae), including two forms of *Cladostephus spongiosus*, and 63 species are red algae (Rhodophyceae), including two varieties of *Grateloupia filicina*. There is one rare charophyte, at least eight species of blue-green algae, probably an important group in the Fleet, but very difficult to identify, and several species of *Vaucheria* (Xanthophyceae), at present left in open nomenclature. The authorities for the algal names can be found in Parke and Dixon (1976).

Chlorophyceae

<i>Blidingia marginata</i>	<i>Cladophora rupestris</i>	<i>Phaeophila viridis</i>
<i>Blidingia minima</i>	<i>Codium fragile</i> subsp. <i>tomentosoides</i>	<i>Prasiola stipitata</i>
<i>Bolbocoleon piliferum</i>	<i>Endoderma perforans</i>	<i>Pseudendoclonium submarinum</i>
<i>Chaetomorpha linum</i>	<i>Enteromorpha compressa</i>	<i>Rhizoclonium riparium</i>
<i>Cladophora aegagropila</i>	<i>Enteromorpha flexuosa</i>	<i>Ulothrix consociata</i>
<i>Cladophora battersia</i>	<i>Enteromorpha intestinalis</i>	<i>Ulothrix flacca</i>
<i>Cladophora glomerata</i>	<i>Enteromorpha prolifera</i>	<i>Ulothrix pseudoflacca</i>
<i>Cladophora hutchinsiae</i>	<i>Enteromorpha torta</i>	<i>Ulothrix subflaccida</i>
<i>Cladophora laetevirens</i>	<i>Eugomontia sacculata</i>	<i>Ulva lactuca</i>
<i>Cladophora pellucida</i>	<i>Monostroma oxyspermum</i>	<i>Ulva rigida</i>
<i>Cladophora prolifera</i>	<i>Percursaria percursa</i>	<i>Ulvella lens</i>
<i>Cladophora retroflexa</i>	<i>Phaeophila dendroides</i>	<i>Urospora penicilliformis</i>

Phaeophyceae

Acrothrix gracilis
Ascophyllum nodosum
Asperococcus fistulosus
Asperococcus turneri
Chorda filum
Cladosiphon contortus
Cladosiphon zosterae
Cladostephus spongiosus f.
spongiosus
Cladostephus spongiosus f.
verticillatus
Colpomenia peregrina

Cylindrocarpus microscopicus
Cystoseira foeniculacea
Cystoseira nodicaulis
Dictyota dichotoma
Ectocarpus fasciculatus
Ectocarpus siliculosus
Elachista fucicola
Fucus serratus
Fucus spiralis
Fucus vesiculosus
Giffordia granulosa
Giraudia sphacelarioides

Hecatonema maculans
Laminaria saccharina
Litosiphon pusillus
Myriactula rivulariae
Myrionema strangulans
Padina pavonia
Phaeostroma pustulosum
Pilayella littoralis
Punctaria latifolia
Scytosiphon lomentaria
Spongonema tomentosum
Striaria attenuata

Rhodophyceae

Ahnfeltia plicata
Antithamnion plumula
Audouinella purpurea
Audouinella secundata
Audouinella thuretii
Calliblepharis ciliata
Catanella caespitosa
Ceramium ciliatum
Ceramium diaphanum
Ceramium echionotum
Ceramium pedicellatum
Ceramium rubrum
Chondria dasyphylla
Chondria tenuissima
Chondrus crispus
Chylocaldia verticillata
Corallina officinalis
Cordylecladia erecta
Cystoclonium purpureum
Dermatolithon cystoseirae
Dumontia incrassata

Erythrotrichia carnea
Fosliella farinosa
Fosliella lejolisii
Furcellaria lumbricalis
Gelidium pusillum
Gigartina acicularis
Gloiosiphonia capillaris
Gracilaria bursa-pastoris
Gracilaria foliifera
Gracilaria verrucosa
Grateloupia filicina var. *filicina*
Grateloupia filicina var. *luxurians*
Griffithsia corallinoides
Griffithsia flosculosa
Gymnogongrus griffithsiae
Halopitys incurvus
Hildenbrandia rubra
Holmsella pachyderma
Laurencia obtusa
Laurencia pinnatifida
Lithophyllum incrustans

Membranoptera alata
Palmaria palmata
Peysonnelia dubyi
Phyllophora crispa
Phyllophora pseudoceranoidea
Phyllophora sicula
Phymatolithon lenormandii
Plocamium cartilagineum
Polyides rotundus
Polysiphonia elongata
Polysiphonia lanosa
Polysiphonia nigrescens
Polysiphonia urceolata
Porphyra linearis
Porphyra umbilicalis
Rhodophyllis divaricata
Rhodophysema elegans
Schmitziella endophloea
Schottera nicaensis
Solieria chordalis
Sphondylothamnion multifidum
Spyridia filamentosa

Charophyceae

Lamprothamnium papulosum

Xanthophyceae

Vaucheria spp.

Cyanophyceae

Agmenellum sp.
Anabaena sp.
Calothrix crustacea

Entophysalis conferta
Microcoleus lyngbyaceus
Microcystis sp.

Nodularia spumigena
Schizothrix arenaria

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THE MARINE MOLLUSCS OF THE FLEET, DORSET

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Summary

The marine molluscs recorded in the Fleet, Dorset are listed and some aspects of their distribution and ecology are discussed. Near the mouth of the Fleet, the mollusc population is marine in character, while at its upper end, the Fleet has a brackish water community of low diversity and high density which utilises the large annual production of vegetation, both directly and in detrital form, and the rich plankton.

Several of the Fleet molluscs are rare or local, and the population has been documented from the middle of the nineteenth century.

Introduction and Acknowledgements

The following notes are largely the results of 47 visits which I have paid to the Fleet since 1970, covering every month except July, supplemented by references from the literature.

I am grateful to G. H. Brown, Patricia L. Cook, P. F. S. Cornelius, M. Edmunds, Dr. V. Fretter, Dr. T. E. Thompson and Mrs. S. M. Turk for help in determining or checking difficult species, to Dr. W. Farnham for providing material obtained by scuba diving, to Dr. J. E. Whittaker for much information and to J. Fair and the Strangways Estate for help and access to the Fleet. Paul Seaward was of great assistance in the field. All observations are my own except where otherwise stated. References are listed at the end.

Description of the Fleet

The Fleet is a lagoon extending 13 km north west along the Dorset coast from Weymouth, occupying the space between Chesil Beach and the mainland. The width varies from 1/10 km at the Narrows to 1 km at Butterstreet Cove. (Place names are shown on the map, Fig. 42).

Tidal flow is restricted by the narrow outlet at Smallmouth and the maximum range varies from about 2 m there to about 0.15 m near the Swannery. In general, the lower Fleet is of marine or near marine salinity up to Butterstreet Cove which marks the limit of effective tidal flow, the middle section is high salinity brackish while the uppermost is low salinity brackish; this simplified classification may be upset by several factors resulting in higher or lower salinities in the upper Fleet.

Physico-chemical conditions are discussed at length in Whittaker (1972 and 1980).

The depth of water at low tide is generally about 1 m or less except in a few depressions and channels and in the Narrows where the greatest depth of about 5 m occurs.

The bed of the lower Fleet is of sand or muddy sand, with intertidal flats, but in the vicinity of the Narrows it is rocky or pebbly, with rock ledges which create rapids at low tide. From the Narrows to Butterstreet Cove, extensive mud flats are exposed at low tide, intersected by deep channels, while the upper part of the Fleet is largely floored with soft mud most of which is never exposed.

Freshwater inflow is relatively small and silting is largely derived from rotting vegetation.

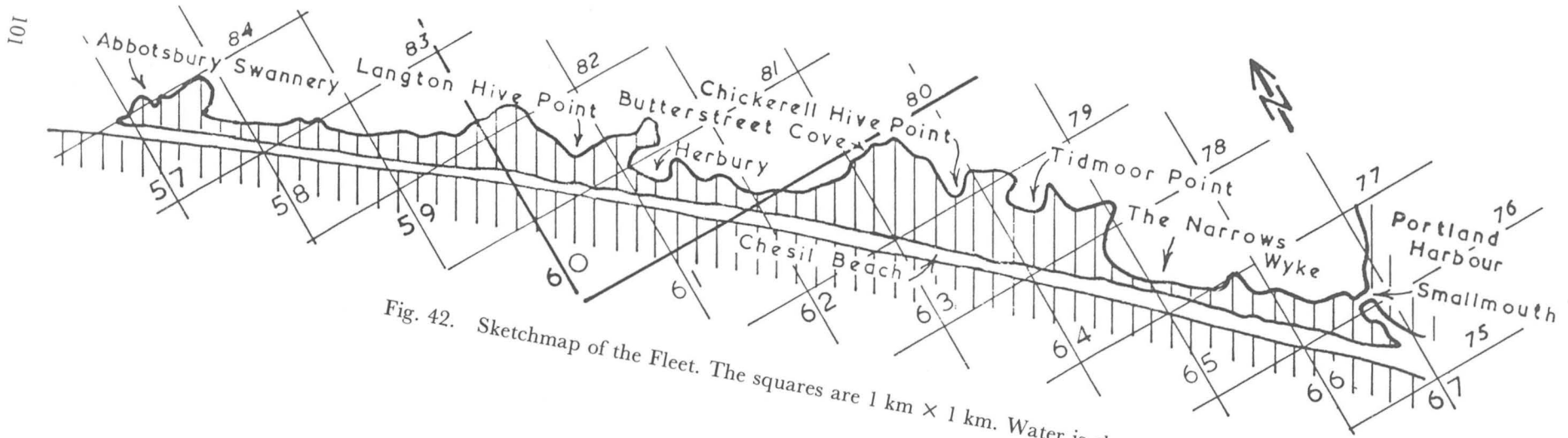
The vegetation of the lower section is marine in character (red and brown algae) to just above the Narrows, but the remainder of the Fleet is dominated by meadows of *Zostera* species, *Ruppia spiralis*, and luxuriant annual growths of green algae.

In the upper Fleet there are large annual growths of a few species of phytoplankton (Dr. D. J. Hibberd reported in Fitzpatrick, 1976).

I am indebted to Dr. J. E. Whittaker for much of the above data.

Distribution of Species

The map (Fig. 42) shows the national grid lines spaced 1 km apart, together with their eastings and northings. In the systematic list, the distribution of a species is described by specifying the 1 km wide north-south strip within which I have found it living. Thus the easternmost strip between easting 66 and 67 is referred to as (66), while at the other end of the Fleet, the Swannery is situated in (57). The limit of the Fleet is taken as the Ferrybridge at Smallmouth.



I have sampled in every strip of the Fleet, by boat and on both shores.

SYSTEMATIC LIST

As the following records show, the molluscs of the Fleet have been studied for 125 years.

An asterisk (*) denotes that the species also occurs in Portland Harbour.

Nomenclature generally follows Fretter and Graham (1962) for prosobranchs and Pyramidellidae, Thompson and Brown (1976) for the rest of the opisthobranchs, and Winckworth (1932 and 1951)

Loricata

**Lepidochiton cinereus* (L. 1767), **Callochiton achatinus* (Brown, 1827)

Both occur sparingly on shingle east of the Narrows (65).

Gastropoda: Prosobranchia

Emarginula conica Lamarck, 1801

A few were found on silty pebbles dredged from the lower Fleet (65) and (66), on 2nd December 1972 and 18th June 1977 (Fretter and Graham, 1976).

**Patella vulgata* L., 1758

Occurs frequently littorally on stones up to the Narrows (65) and (66), but only rarely above, (64).

**Acmaea virginea* (Müller, 1776), **Gibbula cineraria* (L., 1758), **G. umbilicalis* (da Costa, 1778)

These species occur frequently on stones in the lower Fleet (65) and (66).

Gibbula magus (da Costa, 1778),

One in the Narrows (65) on 4th November 1978.

**Littorina littorea* (L., 1758)

Frequent on shores up to the Narrows (65) and (66), but above the Narrows is found only at Chickerell Hive Point (63).

**L. saxatilis* (Olivi, 1792)

The most widespread and probably most abundant mollusc in the Fleet, recorded from every strip (57) (58) (59) (60) (61) (62) (63) (64) (65) and (66) and abundant on most shores. Sykes (1892) and Crowley (1969) recognise var. *tenebrosa* from the upper Fleet. Part of the population lives on *Zostera* and algae apparently permanently submerged, contrary to the normal upper shore habitat (Fretter and Graham, 1962); about 30 per square metre were present over a large part of the upper Fleet in August 1978. Shells of these animals are often colonised by a bryozoan, identified by P. L. Cook (pers comm.) as '*Alcyonidium* perhaps of the "*mytili-polyoum*" complex', sometimes to such an extent that the mollusc finds difficulty in righting itself when placed upside-down on a flat surface, and occasionally the aperture is obstructed.

A small white burrowing anemone from the Fleet, probably *Nematostella vectensis* (Stephenson, 1935), disgorged the empty shell of a small (2 mm) specimen of *L. saxatilis* which it had apparently consumed, on 7th June 1977. A more common predator is the flatworm *Leptoplana*.

**L. littoralis* (L., 1758)

Sykes (1892) records it up the Fleet as far as Chickerell and this coincides reasonably well with its present upper limit of the west side of Tidmoor Point, usually being restricted to *Fucus* species. (64) (65) and (66).

Hydrobia ventrosa (Montagu, 1803), *H. ulvae* (Pennant, 1777)

The first of this pair of species occupies the upper part of the Fleet (57) (58) (59) (60) (61) and (63), and the second, the lower part (63) (65) and (66), with a zone of overlap in Butterstreet Cove. Mansel-Pleydell (1898) describes *H. ventrosa* as 'adhering to the silk weed' at the Abbotsbury swannery, and it is common to abundant both littorally and permanently submerged, whereas *H. ulvae* is more or less restricted to the shore and is less numerous.

Truncatella subcylindrica (L. 1767)

This local species is restricted to a narrow strip of shore at HWM. I have found it at four sites along the Chesil shore of the Fleet (60) (61) (64) and (65), living a few centimetres deep among pebbles and *Zostera* debris at HWM under *Suaeda fruticosa* and *Halimione*. Forbes and Hanley (1853) record it as 'obtained near Portland, and at Wyke, near Weymouth, cast up dead at high water mark'.

**Cingula semicostata* (Montagu, 1803), **C. cingillus* (Montagu, 1803), *Alvania crassa* (Kanmacher, 1798)

The first two are found frequently, the third occasionally, on silty shingle up to the Narrows (65) and (66).

**Rissoa parva* (da Costa, 1778)

Frequent on algae and silty shingle up to the Narrows (65) and (66)

**Rissoa guerinii* Récluz, 1843

Occasional on algae in the Narrows (65).

**Rissoa membranacea* (J. Adams, 1800)

Mansel-Pleydell (1898) says of this very variable species 'several interesting varieties found near the mouth of the Fleet . . . and as high up as the Swannery'. The form which is common to abundant in the upper Fleet (57) (58) (59) (60) (61) (62) and (63) is *membranacea* J. Adams, but with variable body colour (Fretter and Graham 1978b); there were about 500 per square metre over a large area of the upper Fleet in August 1978. Occasional specimens occur in the lower Fleet (66), usually on weed which has presumably floated down from the upper end.

The very distinct form *labiosa* Montagu occurs on *Zostera marina* in Portland Harbour.

A bryozoan, *Alcyonidium*, colonises and affects the shell of this species in the same way as described above for *Littorina saxatilis*. A flatworm identified by Dr. V. Fretter (pers. comm) as '*Leptoplana* sp; a voracious carnivore, probably *L. tremellaris* (O.F. Muller),' is a common predator.

Paludinella littorina (Chiaje, 1828)

According to Forbes and Hanley (1853) 'Mr. W. Thompson, of Weymouth, has obtained this very local species from the estuary, near Portland, where he found it in company with *Conovuli* (= *Leucophytia bidentata*) and *Truncatella*, near high water mark, under such stones only as were kept moist by a deepish layer of dead *Zostera* weed.' Subsequently, about 100 live specimens were recorded in 1888 by Sykes (1890). The only modern record is of one fresh but empty shell, sieved from *Zostera* debris at HWM at the south end of the Fleet (66) by Dr. H. J. M. Bowen in August 1974 (pers. comm.). A specimen from the Fleet is figured in Fretter and Graham (1978a).

**Rissoella diaphana* (Alder, 1848), **Bittium reticulatum* (da Costa, 1778), **Cerithiopsis tubercularis* (Montagu, 1803), **Calyptrea chinensis* (L., 1758), **Crepidula fornicata* (L., 1758)

These species occur in and east of Narrows, (65) and (66).

**Lamellaria perspicua* (L., 1758)

Under boulders and on weed with tunicates, in and east of the Narrows, (65) and (66).

**Ocenebra erinacea* (L., 1758)

One large specimen in the Narrows (65) on 4th November, 1978.

**Nassarius incrassatus* (Ström, 1768)

On silty surfaces in and east of the Narrows, (65) and (66).

**N. reticulatus* (L., 1758)

Occasional in sand in the lower Fleet (66).

**Mangelia brachystoma* (Philippi 1844)

One at LWST on the sandflats near Wyke (66) on 4th November, 1978.

Gastropoda: Opisthobranchia

**Retusa obtusa* (Montagu, 1803)

Locally frequent in mud (58) (60) (61) (62) and muddy sand (63).

Haminoea navicula (da Costa, 1778)

A few juveniles, up to 3 mm. long, were present at LWST on sand flats near Wyke (66) on 20th August, 1978. Empty adult shells are occasionally found.

Akera bullata Müller, 1776

'About four miles from Portland Bridge, the mud, at high water mark is fringed with thousands of them' (Forbes and Hanley, 1853), and the species is still locally common (up to 120 per square metre) in the Fleet (57) (59) (60) (61) (62) and (63). In June, the strings of spawn are dispersed widely on floating masses of blanket weed. The variety in the Fleet lacks the purple gland and posterior pallial tentacle (Thompson, 1976) and I have never seen it swimming; however one juvenile (3 mm) found in the Narrows (65) on 18th June 1977 did possess the posterior pallial tentacle.

Runcina coronata (Quatrefages, 1844)

Frequent and widespread on green algae (60) (61) (62) (63) (64) (65) and (66), a very different situation to its normal upper shore coralline rock pools (Thompson, 1976).

Odostomia plicata (Montagu, 1803)

Dredged just east of the Narrows (65) on 31st August, 1975.

**O. unidentata* (Montagu, 1803)

Dredged in the Narrows (65) on 18th June 1977.

Turbonilla elegantissima (Montagu, 1803)

Occasional on silty stones in the lower Fleet, (65) and (66).

Berthella plumula (Montagu, 1803)

Several under boulders in the Narrows (65) on 22nd April 1978.

Alderia modesta (Lovén, 1844)

Eleven were found amongst filamentous algae including *Vaucheria* sieved from a sandflat at LWST near Wyke (66) on 20th August 1978. The normal habitat is *Vaucheria* from high levels on saltmarshes (Thompson, 1976).

**Elysia viridis* (Montagu, 1804)

Frequent on *Codium* in the lower Fleet, (65) and (66).

Limapontia senestra (Quatrefages, 1844)

Occurred in small numbers in March, April, August and December at several localities in the middle and upper section of the Fleet (59) (60) (61) and (63), on green algae and *Zostera*; this is in contrast to its normal habitat of 'fully saline coralline rock pools on the middle and lower shore' (Thompson, 1976).

Acanthodoris pilosa (Abildgaard, 1789)

A few individuals were found spawning on *Fucus serratus* on isolated concrete blocks in the lower Fleet (66) on 28th December, 1974; they were still present 3 months later. First record for Dorset.

**Palio dubia* M. Sars, 1829

One from *Fucus serratus* with epifauna, in the Narrows (65), on 22nd April, 1978. (*P. nothus* form).

**Aeolidia papillosa* (L., 1761)

'Once appeared in hundreds at the mouth of the Fleet' (Mansel-Pleydell, 1898). On the only occasion I have seen this species in the Fleet, on 22nd April 1978, over 50 large individuals were spawning just below LWST in the Narrows (65).

**Aeolidiella alderi* (Cocks, 1852)

One under a stone with anemones at LWST near Smallmouth (66) on 28th February 1979.

Eubranchius farrani (Alder and Hancock, 1844)

Occasional on hydroids in the lower Fleet (65) and (66). At least two forms of this very variable species occur: white with yellow or orange patches, and grey-brown with orange-centred dark brown patches. First record for Dorset.

Eubranchius sp

A puzzling group of nudibranchs of this genus is widespread on hydroids in the Fleet, being found on *Obelia dichotoma* on *Zostera* in the upper Fleet (59) (60) (61) and on *Obelia* and other hydroids in the lower Fleet (65) and (66). The colouring is generally pale grey or brown, blotched with darker grey or brown particularly on the cerata. Although not yet satisfactorily identified, it is probably a form of *E. pallidus* (Alder and Hancock, 1847). (See Addendum).

E. cingulatus (Alder and Hancock, 1847)

Several from hydroids in the Narrows (65) in August and November 1978.

Tenellia pallida (Alder and Hancock, 1842)

Frequent on hydroids, *Obelia dichotoma*, on *Zostera* and *Ruppia spiralis* in the upper Fleet (59) (60) (61). First record for Dorset.

Trinchesia foliata (Forbes and Goodsir 1839)

One on hydroids in the Narrows (65) on 22nd April, 1978. First record for Dorset.

Gastropoda: Pulmonata

Leucophytia bidentata (Montagu, 1808), *Phytia myosotis* (Draparnaud, 1801)

Both these species are found sparingly at HWM on the Chesil shore of the Fleet, among *Zostera* debris and pebbles and under *Suaeda fruticosa*. (57) (60) (61) (64) and (60) (61) (66), respectively.

Lamellibranchia*

Nucula turgida Leckenby and Marshall, 1875

One in sand below LWST near Wyke (66) on 20th August, 1978.

**Mytilus edulis* L., 1758

Only on a few small artificial substrates near the mouth of the Fleet (66).

**Musculus marmoratus* (Forbes, 1838)

One in the Narrows (65) on 4th November, 1978.

Ostrea edulis L., 1758

'Fleet, Weymouth, abundant; planted in an oyster bed'. (Mansel-Pleydell, 1898). It now appears to be extinct within the Fleet.

**Loripes lucinalis* (Lamarck, 1818)

'Fleet, Weymouth. Very fine, commonly obtained by digging at the mouth of the Fleet.' (Mansel-Pleydell, 1898). Still frequent in sand on the lower shore near Wyke (66).

**Cardium exiguum* Gmelin, 1791

'Fleet, Swannery, abundant on silk weed' (Mansel-Pleydell, 1898). Now only occasional on sand or clambering among stones in the lower Fleet (64) (65) (66). I suspect that the earlier record is an error. This cockle has often been confused with *C. glaucum* (see following) (Peterson and Russell, 1972).

**C. edule* L., 1758, *C. glaucum* Poiret, 1789, (= *C. edule lamarcki* Reeve, 1845)

C. edule, the edible cockle, is frequent to common on sands in the lower Fleet, (65) and (66), but is replaced by *C. glaucum* in the middle and upper sections of the Fleet, (57) (58) (59) (60) (62) and (63) where it is common to abundant in mud and clambering on weed. Russell (1972) included the Fleet populations in his study on these two closely related species.

There are no old records for *C. glaucum*, presumably because it was lumped with *C. edule* agg. or was confused with *C. exiguum*. However *C. glaucum* must be of considerable antiquity in the area. On 8th March, 1975 after storms, I found washed up from the open sea onto Chesil Beach at West Bexington (SY 530 864) slabs of dark grey consolidated mud crowded with sub-fossil shells representing a brackish water fauna similar to that now present in the Fleet. *C. glaucum* was very conspicuous together with *Littorina saxatilis*, *Hydrobia ventrosa* and one *Retusa obtusa*. This deposit is perhaps the remains of an earlier 'Fleet' to the west and some distance seawards, implying recession of Chesil Beach.

Venus verrucosa L., 1758

Mansel-Pleydell (1898) recorded it 'from the north side of the Fleet estuary'; now occurs sparingly among stones in the Narrows (65).

V. casina L., (1758)

Recorded by Gosse (1854) in sand in the Fleet near Wyke; no subsequent records.

Mercenaria mercenaria (L., 1758)

Many fresh but empty shells at Langton Hive Point on 17th September 1970 were apparently the remnants of an attempt to start a fishery of this American quahog. (See Addendum).

**Venerupis aurea* (Gmelin, 1791)

Recorded by Gosse (1854) in sand in the Fleet near Wyke; now found sparingly among stones in the Narrows (65).

**V. decussata* (L., 1758)

Mr. J. Churchouse showed me live specimens from sandy flats in the Fleet south of Wyke (65), collected on 18th June, 1977.

**Irus irus* (L., 1758)

One found among stones dredged just east of the Narrows (65) on 31st August, 1975.

Tellina squalida Montagu, 1803

'Lives in sand, at the mouth of the Fleet estuary' (Mansel-Pleydell, 1898). I have not found it within the Fleet, but fresh, empty valves occur frequently on the sands in Portland Harbour.

Macoma balthica (L., 1758)

Empty shells occur commonly in muddy sand just east of the Narrows (65) but I have found none alive.

Scrobicularia plana (da Costa, 1778)

'The Fleet, generally dead' (Mansel-Pleydell, 1898). I have not found the animal or its shell within the Fleet. (See Addendum).

Abra tenuis (Montagu, 1803)

'Notwithstanding that it is locally abundant, this cannot be considered a very common species, being found in but a few localities. Perhaps a few miles beyond Portland bridge in Dorsetshire, where the high water mark is indicated upon the muddy surface by the copiously scattered shells of this and other Molluscs, may be regarded as its most prolific site.' (Forbes & Hanley, 1853). The species is still common to abundant in mud in parts of the Fleet (59) (60) (61) (62) (63) and (66).

Solen marginatus (Montagu, 1803)

Mr. J. Churchouse showed me specimens collected at LWST from sandy flats in the Fleet, south of Wyke, (65) on 18th June 1977.

Sphenia binghami (Turton, 1822)

One among stones in the Narrows (65) on 22nd April 1978.

Corbula gibba (Olivi, 1792)

'mouth of the Fleet, abundant' (Mansel-Pleydell, 1898). I have never found the animal or its shell in the Fleet.

Cephalopoda

Sepia officinalis (L., 1758)

The cuttlebone is frequently washed up on the Fleet shore but there are no records of the live animal.

DISCUSSION

The following tables analyse the distribution of live molluscs in the Fleet, Table 1 showing how the species diversity decreases in the upper Fleet, and Table 2 shows those molluscs with the widest distribution within the Fleet.

Table 1

Location	Fleet—1 km strip										Fleet (total)	Portland Harbour
	57	58	59	60	61	62	63	64	65	66		
Number of species recorded alive	6	5	9	14	12	7	11	7	48	39	65	85

The rock and shingle sub-strate in the Narrows (65) provides a more stable and varied environment than the sandy lowest reach (66) and this is reflected in the number of species present. The upper Fleet is presumably a 'difficult' habitat with widely varying physical and chemical conditions, so that only a handful of species are present; however, the number of individuals is immense and in places their empty shells form a littoral fringe. The population density of these few species is much higher than that found generally in the lower Fleet or in Portland Harbour where many more species occur. Little quantitative data is available as I have not yet devised a practicable means of standardised sampling in soft mud covered with floating masses of algae.

Table 2

Species occurs in the following number of 1 km strips	Species
All 10	<i>Littorina saxatilis</i>
8	<i>Rissoa membranacea membranacea</i>
7	<i>Akera bullata</i> <i>Runcina coronata</i>
6	<i>Hydrobia ventrosa</i> <i>Cardium glaucum</i> <i>Abra tenuis</i>

- The species which are widespread in the Fleet (table 2) fall into two groups:
- (a) specialised brackish or sheltered water species (or subspecies) i.e. *Rissoa*, *Hydrobia*, *Cardium*, *Akera*, *Abra*.
 - (b) species occurring in a wide range of habitats and conditions i.e. *Littorina saxatilis* (as an aggregate species), *Runcina*.

Table 2 includes all those species which occur in high densities, comprising all of group (a), and *Littorina saxatilis* from group (b). They use various feeding methods to exploit the available resources; the gastropods graze the vegetation (*Zostera*, *Ruppia* and algae, and the ensuing detritus) and associated micro-organisms, while of the bivalves, *Abra* uses long mobile siphons to take in detritus and bottom living micro-organisms, and *Cardium* with short siphons, filters plankton from the water.

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ADDENDUM

Further work on the Fleet subsequent to the submission of the above paper has necessitated the following additions and amendments.

Tricolia pullus (L. 1758), *Omalogyra atomus* (Philippi, 1841)

Small numbers of both species in the narrows (65) on 17th February 1980.

Truncatella subcylindrica

This has now been found on the mainland shore in the Narrows (65) living under stones.

Eubranchus sp.

The species of this genus regarded as unidentified is now considered to be *E. farrani*; it

approximates to form D of Edmunds & Kress (1969), while the colour varieties listed under *E. farrani* above are near to forms A and B respectively of Edmunds & Kress.

E. vittatus (Alder & Hancock, 1842)

A single specimen was found and photographed in the lower Fleet (66) on 28 February 1979 satisfying the description given by Edmunds & Kress (1969) (Seaward, 1979b) First record for Dorset. This species may be a colour variety of *E. cingulatus*.

Phytia myosotis

Also occurs on the mainland shore at the Narrows (65) under stones.

Mercenaria mercenaria

A few large specimens alive in July 1979. (60)

Scrobicularia plana

Dead shells can still be found at Wyke Cove, but I have seen no live animals. This area is heavily disturbed by bait digging. (65).

The total number of species now recorded living in the Fleet is 67.

ADDITIONAL REFERENCES

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THE DRAGONFLIES OF ARNE NATURE RESERVE AND THEIR CONSERVATION

BRYAN P. PICKESS

Summary

22 species of Odonata have been recorded on the Arne Nature Reserve between 1966-1976, of which 18 species are thought to have bred. The need for a continued conservation programme is stressed to maintain what must be one of the more important Odonata communities in Britain.

Introduction

The dragonfly populations of Britain have declined considerably over the past few decades (Moore, 1976; Hammond, 1977). The reasons for the demise of these beautiful insects is related in most cases to the deterioration or loss of their aquatic environment. The southern lowland heaths, the most important Odonata habitat in Britain, have suffered extensive loss, due to drainage of wet heath and bog, from urban development, afforestation and marginal farming.

Dorset is fortunate that it still has some areas of lowland heath remaining but even so these are being steadily eroded (Moore, 1962; Rippey, 1973; Bibby, 1977). Possibly the most important areas of heath are to be found in Purbeck and they hold nationally important Odonata populations. It is a matter of some conjecture as to just how long even this heathland, can remain in a viable state, and it is important that all is done to conserve the existing populations before it is too late.

The Arne Peninsula, which lies to the S. E. of Wareham is a rich area for dragonflies. It contains substantial areas of wet and dry heath, the best examples are included in the nature reserve of the Royal Society for the Protection of Birds. This paper gives the considered status of the dragonflies of the Arne Nature Reserve between 1966-1976 and outlines some steps that have been taken to maintain and one hopes improve the wetland habitat for a wide variety of plants and animals, and not least dragonflies.

Species recorded between 1966-1976

Up to the summer of 1976, 22 species of Odonata had been observed on the reserve, 8 species of damselfly (Zygoptera) and 14 species of dragonfly (Anisoptera). It is thought that 18 species are breeding, the remainder just occasional visitors or vagrants. Moore (1964) lists 15 species (6 Zygoptera and 9 Anisoptera) breeding on the northern part of the Peninsula; which is outside the present Arne Nature Reserve.

In Table 1, all species are listed and their probable status based on frequency of encounter. Three breeding species are worthy of special note because they are at the limits of their European range in southern England. *Ischnura pumilio* is exceedingly local having been recorded in only 13 10 km squares (0.004%) in the British Isles (Hammond 1977). In Purbeck it is known from several sites but on the reserve it is a recent colonist, and undoubtedly our most important and interesting species. *Ceriagrion tenellum* like *I. pumilio*, is a Mediterranean species, although a little more widespread, it nevertheless has only been recorded from 53 10 km squares (0.015%) since 1960 (Hammond, *op. cit.*). At Arne *C. tenellum* is not uncommon but numbers vary from year to year. Another very local British species is *Cordulia aenea*, Not uncommon on the reserve but unlike the previous two species is just on the western limits of its range. Records from 1960 onwards have only come from 36 10 km squares (0.01%) (Hammond, *op. cit.*)

Conservation

In the past the Peninsula's dragonfly populations must have relied upon a scattering of farm ponds and ditches, old peat cuttings, a few small clay workings and pools in the saltings.

TABLE 1

STATUS OF THE DRAGONFLIES OF ARNE NATURE RESERVE

BREEDING SPECIES	STATUS
<i>Pyrhosoma nymphula</i> (Sulzer)	The commonest damselfly of the reserve.
<i>Ischnura elegans</i> (van der Linden)	Common and especially in the Saltern Marsh Area.
<i>Ischnura pumilio</i> (Charpentier)	A small colony established since 1971; a nationally rare species.
<i>Enallagma cyathigerum</i> (Charpentier)	Common
<i>Coenagrion puella</i> (L.)	Common
<i>Ceriagrion tenellum</i> (de Villers)	Common in some years—a nationally very local species
<i>Lestes sponsa</i> (Hansemann)	Not common but being a late species possibly overlooked.
<i>Aeshna cyanea</i> (Müller)	The commonest <i>Aeshna</i> at Arne and frequently encountered along the trackways in summer.
<i>Aeshna juncea</i> (L.)	Definitely scarce and only known to breed at two sites.
<i>Aeshna mixta</i> Latreille.	More common than <i>Ae. juncea</i> and increasing.
<i>Anax imperator</i> Leach	Not common but breeds in a number of ponds.
<i>Cordulia aenea</i> (L.)	Not uncommon; a nationally very local species.
<i>Orthetrum cancellatum</i> (L.)	More frequently recorded in the last three years and Salterns Marsh a favoured area.
<i>Orthetrum coerulescens</i> (Fabricius)	Recorded in small numbers each year. No actual evidence of breeding but thought to do so.
<i>Libellula depressa</i> L.	Frequent
<i>Libellula quadrimaculata</i> (L.)	Not as numerous as <i>L. depressa</i> which is a little difficult to understand.
<i>Sympetrum scoticum</i> (Leach in Donovan)	Not uncommon
<i>Sympetrum striolatum</i> (Charpentier)	Certainly the commonest anisopteran at Arne and frequently persisting until late October/early November most years.
IRREGULAR VISITORS AND VAGRANTS	
<i>Agrion</i> sp.	One seen on North Shore on 29/7/72. Doubtless a wanderer from the River Frome and almost certainly <i>A. splendens</i> .
<i>Cordulegaster boltonii</i> (Donovan)	One or two seen most years.
<i>Brachytron pratense</i> (Müller)	Rare visitor, noted less than 10 times.
<i>Sympetrum sanguineum</i> (Müller)	Only one record—16/8/1971.

In part this situation still exists today but it was improved during the Second World War when a number of enemy bombs intended for Poole/Holton Heath landed on the Peninsula. Where bombs fell in wet heath or bog, ponds were created. The value of these flooded bomb holes has already been shown by Moore (1964).

Since the nature reserve was established in 1965, the number of dragonfly breeding sites have been increased from four to thirteen. These ponds serve a multi-purpose role, for not only do they provide habitat for aquatic plants and animals but also watering and feeding places for birds and mammals, and water, if needed, in the event of heath fires.

The ponds created have varied in shape and size but from experience a circumference of not less than 20 m is desirable. Smaller ponds are of little value as the limited perimeter does not allow the larger dragonflies to develop territories, which is most important aspect of their breeding behaviour. The depth of the ponds has also found to be important, as during dry summers the water table can drop dramatically, as in 1976, and may even cause drying-up. The minimum depth at the centre should not be less than 1.5 m. As emergent vegetation is desirable, especially for the larvae when they climb out of the water for their transformation into adult life, the sides of the ponds have been graded. By grading the pond it allows for a shallow rim of water at all times and also encourages the establishment of aquatic plants.

So far all the ponds created at Arne have been dug by hand. The spoil has been placed around the edge of the pond and the original surface vegetation cut as turves and laid on top of the spoil. On fairly firm ground the use of a mechanical digger might be an easier method of construction but obviously impracticable in boggy conditions. The controlled use of explosives has not been tried at Arne but could produce very suitable ponds (Mathiak, 1965).

The ponds so far excavated have not been rapidly colonised by plants. Usually the bulbous rush (*Juncus bulbous*) appears first followed by *Sphagnum subsecundum*, soft rush (*J. effusus*), jointed rush (*J. articulatus*) and many-stalked spike rush (*Eleocharis multicaulis*). Little other plant colonisation has been noted even though some of the ponds are eight years old. Dragonflies quickly find these new ponds and colonisation seems to take place from the first summer of the ponds existence.

Once a pond is well established it is necessary to ensure that it does not get shaded by trees. It is important that ponds remain fairly open to sunlight as these insects require well oxygenated water.

One hopes that by thoughtful planning by providing more suitable breeding sites that the future dragonfly populations of the reserve can be maintained and increased. Already the establishment of *I. pumilio* is most encouraging. There are several other species, if the right type of water regime can be established, which could possibly breed at Arne such as *Brachytron pratense*, *Sympetrum sangiuneum*, *Coenagrion pulchellum* or even *Erythromma najas*.

Acknowledgements

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Compiled by LAURENCE KEEN

ARNE. Work on the Romano-British potteries at *Redcliff* continued on a larger scale in 1977 and 1978 under the direction of R. A. H. Farrar, on behalf of the Society and with help from the Dorset Institute of Higher Education. The main discovery was a contemporary gully probably bounding the west side of the site and containing a number of substantially complete 'waster' vessels in fragmented condition. A water-main laid early in 1978, fortunately across the excavated part of the site, suggests that the eastern edge of the potters' working area is near at hand, making perhaps an overall width of some 20 m for what appears to have been a one-metre deep excavation into the underlying clay; the north and south limits are unknown. At a high level across the burnt deposits filling this artificial hollow, a narrow wall of unmortared sandstone rubble, too weak to be load-bearing, runs east-west in the north-east quarter of the current excavation.

Cooking-pots and storage-jars with necked rims, platters, and bowls and dishes with flat 'pie-dish' rim, form the vast bulk of the products, and it is now clear that the 'pie-dish' rim is not confined to upper levels as first supposed.

BRADFORD PEVERELL (SY 3661109278). Further excavation by L. J. Keen and J. B. Hawthorne at *Frome View* uncovered two more inhumation burials, bringing the total to ten. One burial was accompanied by an unidentified iron object, the other by a spearhead, small knife and a bronze and iron buckle. The dating of these objects confirmed the late seventh- to early eighth-century date suggested by the grave-goods of the other graves. Excavation continues during 1979.

CHICKERELL (SY 647799). F. A. Winnall reports the discovery of Roman pottery and human bone in *Putton Brickyards* quarry. Four or five inhumation burials observed in 1973, and another burial in 1976 are perhaps part of the group of burials recorded in RCHM (E), *Dorset*, II, part 3 (1970), 595a.

CHRISTCHURCH (SZ 15759305). For further details of excavations at *Bargates* by K. Jarvis, (*PDNHAS*, 99 (1977)), in which Late Neolithic, Iron Age, Bronze Age and Saxon material was discovered, see *PPS*, 45 (1979) 329, 335.

CORFE CASTLE (SY 954815). Excavation by J. Collins and N. Field at *Bucknowle Farm* began in 1976 in advance of possible plough-damage and continued in 1977 and 1978. The main discovery is a tripartite villa-wing comprising corridor, domestic rooms and service rooms, in all 20 m long and 14-15 m wide. It formed an extension to another earlier building lying on the third side of the yard first revealed in 1976. In the service range two more stone doorways were found, similar in construction to the one planned and lifted* in 1977, while a robbed doorway was also noted leading from the corridor into the yard. Other details include a corn-drying kiln inside the domestic range and painted wall-plaster from the earlier foundations. There is evidence for the manufacture of shale objects of various kinds during the life of the villa-wing, dating from c. 270 to 350 at least. Further evidence of Iron Age occupation, terminating c. AD50 was found.

————— (SZ 002860). P. Woodward reports that excavations were carried out for the Dorset Archaeological Committee on the Ower Peninsula near *Cleavel Point* from June to September, 1978, in advance of pipe-line construction for the Purbeck Oilfield centre on Wych Farm.

The area examined, 450 m² was part of a very extensive Romano-British site of at least 27,000 m², as further geophysical and fieldwalking survey has shown. The site spreads from about 100 m to the south-east of Ower Quay and to the east of the Ower Quay Road, over the whole peninsula as far as the low-lying land to the west of Cleavel Point. The site stretches to the northern and southern shorelines where it has clearly been eroded since Romano-British times. The site also spreads around Newton Bay to the south, but the exact extent has not as yet been determined by survey.

This site is one of several along the south side of Poole Harbour which have been identified as being production centres for BBI pottery. Interpretation of the geophysical survey suggests that the main industrial kiln area (an area of extremely high magnetic enhancement) was perhaps specifically delineated by a ditched enclosure on the northern edge of the peninsula which is now substantially eroded. In addition, earlier excavation in this area uncovered what has been interpreted as a kiln cap and fieldwalking shows the highest concentration of briquetage and oxidised waster material in this area. To the south and west, this industrial area is surrounded by a palimpsest of rectilinear ditched-enclosures with interconnecting trackways and associated pit and kiln/oven features. Some kiln/oven features and certain specific areas of higher magnetic enhancement (which may be indicative

(* now on display at the Public Library, Wareham.)

of building) are not always coincident with the ditched-enclosures, which suggests at least two periods of activity on the sites. This was confirmed by excavation.

The 1978 excavations concentrated on part of one of these rectilinear ditched-enclosures which was defined as a settlement focus on the basis of the pottery distribution derived from gridded trial pits. Additional areas surrounding this focus were examined as dictated by the area which was to be disturbed.

The first phase of this settlement focus was represented by a rectilinear ditched-enclosure. From the ditch sediments it was clear that the ditch had a short life and went out of use during the 1st century AD when it was deliberately infilled with successive clay, shell and burnt soil deposits. There was evidence of some small post-structures both inside and outside the enclosure. This enclosure was replaced by a curving ditch which cut across and totally ignored the alignment of the first enclosure. This latter ditch would appear to be out of use by the middle of the 2nd century AD. The reason for the deliberate infilling of the first ditch is not at all clear, nor can a precise function be given to the enclosure; however, it is certain that the settlement was engaged in utilising the resources of Poole Harbour and was involved with extensive trading (pottery from the early military potteries of Corfe Mullen, *terra nigra* and other continental imports were present in the upper ditch levels).

The final phase of the site consists of a series of rectilinear buildings, pathways and yards which were in use between the end of the 2nd through to the 4th century. These buildings were of either post-pad or sill-wall construction in local heathstone and, together with the yards and pathways were arranged on a north-south and possibly gridded. The surviving floor levels were of trampled clay and some of the roofs at least were covered with Purbeck limestone and shale tiles. These buildings were not all of one date and it was clear that the complex had gone through a complicated process of addition, alteration, re-use and replacement. Although it was possible to identify some of the functional parts of this settlement and its physical characteristics, it was not possible to identify the pattern of the settlement at any one moment in time because of the nature of the soils and the stratification, and the nature of the site's survival.

The site was clearly using the resources of the Harbour and minerals from Purbeck for domestic and building purposes (gritstone querns, limestone and shale roofing-tiles, trampled clay for floors and daub walls) and also for the production of salt, lathe-turned shale bracelets, and pottery. That the site was engaged in pottery production was clearly indicated by two features. One was a clay box in an open yard and the other was a building with a drier (no grain present) inside its entrance, suggesting that the building was used as a pottery store prior to firing. The functions of the other buildings in this complex were not determined but because of the absence of a wide range of habitation debris they are probably best considered as clay stores and working sheds rather than as living accommodation.

One of these buildings incorporated a re-used marker stone. The upper two thirds of this heathstone block was well tooled to form a cylindrical post of 0.19 m diameter at the top and 0.30 m at the bottom. The lower third was untooled and would have formed a heavy base for insertion in the ground. The height of the tooled post was 0.53 m. This marker stone has an 'incidental' similarity to centuriation stones. The building was probably in use by the end of the 2nd century, and the incorporation of the marker stone suggests a sudden change of use of this area at this period.

Two other important features were uncovered: two kilns/ovens similar to that excavated 65 metres to the west. This latter kiln was located in the magnetometer survey, and was one of several surrounding this settlement focus. The kiln bowl (1.3 m diameter) was constructed of small heathstone and occasional limestone slabs with two large heathstone blocks at the flue entrance. The horizontal flue situated to the west, was cranked and constructed of larger upright heathstone slabs. The oven/kiln was clearly of updraught type (with no floor surviving) and was stoked on the lip of a boundary ditch. Pottery crammed into the neck of the flue together with unfired ball clay suggested a date of late 2nd century. The upper silts of the ditch sealed the kiln flue in the late 3rd century. However, the kiln's size and flimsy construction suggests that it was not necessarily used for firing pottery.

In addition to excavations previously described, trenches were cut east-west across the settlement and along the line of pipe-line construction. It was clear from these that the settlement focus spread very little further to the east and hardly as far as the kiln to the west. An area in the trench to the east of the kiln showed evidence for post-buildings and yard areas of 2nd–4th century date, but these were not examined on a sufficient scale to establish their function or shape. It is clear that this settlement fell into disuse in the 4th century due to the collapse of the Roman markets for pottery products. At this date the settlement was apparently abandoned totally. The excavation also shows systematic strip cultivation during the medieval period which reduced the upper levels of the site to long lines of survival between the furrows. The medieval settlement is located to the north-east at Ower Quay.

DEWLISH. W. G. Putnam reports that the tenth season of excavation of the Roman Villa for the Dorset Institute of Higher Education took place during July and August, 1978.

Excavation was concentrated on the area between the main villa building and the aisled-barn found in 1976, which had been destroyed to make way for a small residential building. In line with the residential building, and of similar dimensions front to back, lay a small building 7 m square with a large porch on the north-east side.

Unhappily, in common with other buildings on the south-west side of the courtyard, it has been ploughed to well below floor level. The topsoil downhill from the building contained a large number of *tesserae* and a complete limestone half-column. It is difficult to see any explanation for such a building

other than that of a small temple, with the residential building found in 1977 serving as a priest's house or accommodation for visitors. All this replaced the farming complex at the final stage in the villa's history, late in the 4th century.

Extensive efforts were made to find 1st and 2nd century buildings suggested by the presence of samian and early black-burnished wares in filled-in field ditches, but without success. These probably lie outside the area under investigation.

It now seems likely that the 1979 season, which will be devoted to clarifying some outstanding problems, will be the last. In the light of this, publication of final plans and a summary of the excavations will be delayed until the next issue of the *Proceedings*.

DORCHESTER. Excavations by D. Batchelor were continued at *Wollaston House* until July, 1978. No further major structures were found. On completion of the excavation the site was then backfilled, sand being spread first to protect the more delicate structures, before the spoil was pushed back to reinstate the former ground-level. Subsequent to this a complete geophysical survey of the area was undertaken to try to locate the extent of the unexcavated buildings. The survey showed that the area of the building is very much more extensive than was revealed by excavation, it spreads both to the east and west of the main trench. From this survey and the excavated remains it is now possible to interpret more fully the plan of the bath-house. It appears that the bath-house has developed from two separate centres, the earlier one to the west of the main trench and the later one to the north-east. Of the western suite of rooms only a small part of the *frigidarium* was exposed in the main trench, to the west a trial trench crossed a large heated room (*caldarium* or *tepidarium*). This heated room had the same north-south dimension as the *frigidarium* (9.5 m) and had an apsidal plunge bath in the south wall and a rectangular recess of uncertain use opposite it in the north wall. To the east of the *frigidarium* was a suite of rooms consisting of a plunge bath, *laconicum* and two small heated rooms, this part of the bath-house represents the earliest phase of the building yet found.

A later phase of building is represented by a suite of rooms to the north-east of the main trench, only a very small part of this was exposed. It consisted of a second *frigidarium* and several heated rooms to the west and south. The remaining part of this phase lies unexcavated to the north-east of the main trench. The bath-house had undergone several periods of alteration within this framework, the major one being the addition of a separate building to the south of the *laconicum*, after this had gone out of use as a heated room. This separate building had a stoke-hole to the east feeding a channelled hypocaust. The bath-house probably had a large *palaestra* to the north of the buildings, this open area was bounded by a double wall 40 m to the north of the buildings.

The road described by R. A. H. Farrar (*PDNHAS*, LXX (1948), 61-2) was exposed for a length of 15 m in the south-east of the site. It did not have any relationship with the bath-house buildings, the surface was only slightly worn, indicative of the lack of much traffic using the road. The road alignment (ENE-WSW) was bounded by a ditch to the north, this ditch drained to the north-east and was 3 m deep where sectioned and had a tile conduit in the bottom. The ditch was one of the earliest features on the site, probably going out of use in the early 2nd century, as the upper filling was made up from the material removed in the digging of the construction trenches of one of the early building phases of the bath-house. For a brief account of the excavations see Anon, *Roman Town Baths; Open Days 23 and 24 June 1978*, Dorset Natural History and Archaeological Society.

HALSTOCK (ST 533076). R. Lucas and E. Flatters report that a total of 450 m² was excavated during the 1978 season of investigation of the *Roman villa*. The main area of some 385 m² was in the field south of Common Lane in an area where, in 1976, trial excavation had located wall-foundations.

This area exposed the eastern end of the corridor or verandah (43) and some 27 m of its length, together with four other rooms; one (42) situated to the north of the corridor while the other three (40, 41 and 44) formed an eastern wing. No floor-levels remained and no walling above floor-level. The natural fall on the ground to the east and the need for the builders to terrace the corridor over its 80.3 m length had left these vulnerable to erosion. The original ground-level is probably indicated by an area of small stone fragments about 2.5 m wide, which may represent a path, running parallel to and on the south side of the corridor.

Room 44 may have been a continuation of corridor (43) in a southerly direction in an earlier phase as the wall which separated them was a later insertion. No southern end wall was found to this room and both the east and west walls survived only as the last layer of foundation stone at their southern ends. There was no evidence in the accumulation of soil above these of robbing which suggests an early removal of the stone. Although the length of this room was only traced for 10 m the possibility remains that it extended further south and that it had been totally demolished during the occupation period. However, no trace of any structure was found although at a point some 46 m to the south a shallow ditch was exposed on an east/west alignment cut into the natural clay. About 6 m of this ditch was excavated. A considerable number of R-B pottery sherds was recovered, including eight of samian. One sherd, part of a side and base of a form 31 bowl, with a potter's stamp IVVENIS FE, is dated to AD 130-170.

The purpose of rooms 40 and 41, which measure 3.2 m by 8 m and 3.2 m by 5.9 m respectively and are to the east of rooms 44 and 43, could not be determined since no floors survived.

Room 42 on the north side of the corridor (43) near its eastern end had internal dimensions of 3.5 m by 6.2 m. Although no north wall was found, sufficient evidence of robbing and mortar was present to

indicate its position. Underlying the east wall of this room and to its west side running in the same direction is the foundation of an earlier wider wall.

The stone packings of 16 post-holes were exposed and postdate the stone structure phase of the corridor (43). Thirteen of these post-holes formed two parallel lines, one of six running along the corridor (43) and the other of seven an average of 2.5 m to the north. The post-holes extend over a distance of approximately 19.5 m. No dating evidence was recovered from these post-holes.

Excavation was also carried out in the field to the north of Common Lane. 32 m² were exposed immediately north of the lane in an alignment with room 42. This revealed natural clay at a depth of 25 cms and no archaeological features.

A further area was exposed in this field at a position east of the barn. This exposed walls on the same alignment as the corridor (43), and a covered drain running in an approximately north-south direction across the area. No conclusion was made about this area and it will be re-excavated and extended in the 1979 season.

Investigation will also be carried out in an area east of the southern end of the villa's west wing where a trial trench revealed a probable wall.

For a plan of the villa after the 1978 excavations see *Britannia*, X (1979), Figure 16, p. 328.

HURN. The excavation of one of the earthwork rings (Structure 3, one of a group of three rings on high ground next to the motorcycle scrambling track, SZ 1318497398) on *Sopley Common*, noted by Paul Aitken in 1976, was carried out on 26th November, 1978 by P. J. Woodward with the help of students from the Dorset Institute of Higher Education (Weymouth) and members of the South Wessex Archaeological Association. This ring was one of two rings selected for excavation from a total of approximately seventy in the area of SZ 131973 (the other ring selected for excavation was on low waterlogged ground, Structure 21). The object of excavation was to determine the nature of their construction, and to find a function and date for them.

Ring Structure 3 was slightly elliptical about the N-S axis, having diameters to the outside of the ditch of 4.5 m (N-S) and 4.0 m (E-W). The earthwork ditch was from 8 to 12 cms deep and from 0.9 m to 1.2 m wide. An external bank spread from the lip of the ditch for 2.0 to 3.5 m with a maximum height of about 10 cms above ground level. The internal area of the ring showed no evidence for a mound, there being no difference in ground level between ground level inside and outside the external ring bank.

The N-E and S-W quadrants of the ring were excavated in two 4 m square trenches, so that an area outside the ring was also included. Excavation showed that the ditch was extremely irregularly cut, but most frequently occurred with a steeply cut trenched base to a depth of 0.3 to 0.4 m below ground surface. The upper sides of the ditch were generally more steep on the outside of the ring, 45°-60° to the horizontal, whereas on the inside they were 25°-45° and both the internal and external sides were fairly straight or slightly convex. There were no recuts and the soil in the ditch represented a single natural silting. Humic banding in the ditch silts suggests that the movement of soil into the ditch was primarily from outside the ring. The external bank was composed of a layer of rounded heathstone flint pebbles at its base but was otherwise composed of a sandy soil practically indistinguishable from the underlying B horizon soil. The only feature noted in the interior of the ring was a deeply cutting 'root' hole which merged with the ditch in the S-W quadrant. The internal soil profile matched that outside the ring both in form and levels suggesting that there was little disturbance of this area when the ditch was cut.

A detailed note on the soils is being prepared by John Beavis and no full interpretation of the site can be made until this is complete. However, some initial observations can be made at this point. The irregular cutting of the ditch, and the well spread bank of the structures suggests that the rings were not particularly constructed as 'visual' entities such as barrows. The irregular distribution and unchanging appearance between those on low and high ground also gives this impression. The complete lack of finds (indeed no finds are recorded in association with any of the rings) suggests that they were not habitation structures. The square cut trenched bottom suggests a drainage function, but the lack of silting or recutting militates against this as well as the fact that the 'iron-pan' ('B' soil horizon) was not cut. No features were noted in the interior, and the ground indeed gave the appearance of being substantially undisturbed apart from ancient root runs. This latter point would in turn suggest post-clearance construction and indeed the general impression of the site was that it was of recent origin.

The only possibility as to the nature of these structures is that they occur as a result of some forestry or horticultural practice. Also it has been noted in Rempstone Forest (also on sandy heathland soils) that natural regeneration of forest is encouraged in certain areas by clearance of bracken and heather around chosen strongly growing self-sown trees. If this were done repeatedly over a number of years and with subsequent root pruning and cutting (to encourage downward root growth), it would seem likely that an earthwork such as the Sopley Common Ring would result. However it must be stated that this is unlikely to be absolutely confirmed by excavation, and it would seem that the most fruitful line of enquiry would be that of documentary research, to establish the land-use of the area in the immediate past, since this is the most likely period when this type of forestry practice might have been undertaken. (Although for comparative purposes the excavation of a ring on low waterlogged ground would probably be useful so that a more complete description of this type of ring-work can be made). Another useful line of research would be to examine in more detail current techniques of forest regeneration (as those at Rempstone), possibly even by excavation and experiment. It will be only

through the pursuit of these two lines of research that the date and function of these enigmatic earthworks are ever likely to be known.

IWERNE COURTNEY (ST 849122). Large scale examination by R. J. Mercer of the Neolithic settlement on *Hambledon Hill* included the excavation in 1978 of part of the enclosure on Stepleton Spur. It became apparent that this new enclosure exhibited an interrupted ditch with a continuous bank on its inner side. Excavation revealed that the causewayed ditch was at almost all points far more massive in proportion than the ditch of the main causewayed enclosure on the crown of Hambledon Hill. Other evidence suggests that the bank or rampart that existed behind the ditch was more massive than that enclosing the main enclosure. The filling of the ditch does not have the complex series of recuttings seen in the main causewayed enclosure. Large quantities of charcoal in the ditch filling may be associated with the burning of a timber superstructure which stood on top of the bank. The burning appears to have taken place when the ditch had partially silted up. In the southern ditch butt by the eastern gateway this burning is associated with the intact skeleton of a young man about 19, with a leaf shaped arrowhead contained within his thoracic cavity. The condition of the skeleton probably indicates that it was covered with chalk rubble very soon after it came to be lying spreadeagled in the base of the partially silted ditch. Four human skulls were found in the eastern sector of ditch, two of them were complete with their mandibles and atlas and axis vertebrae, a phenomenon unknown in the ditch of the larger enclosure where skulls had been placed at intervals around the circuit of the ditch. The differing function of the two enclosures was demonstrated further by an apparently post-natal infant found crammed into a natural crevice in the Stepleton ditch, no traces of such young individuals having been found in the main enclosure. The intact individual, in all likelihood lying where he fell, having been killed by an arrow, is a further aspect of differential function between the two enclosures.

In the eastern sector of the bank on the inner side of the causewayed ditch an insertion of a cemetery of fourteen inhumation burials had taken place, probably during the 7th to 8th centuries AD. The burials, which were much damaged by recent ploughing, were set into the bank, then apparently upstanding. The bodies were aligned east-west. In two instances males were accompanied by single and small iron knives. A female, accompanying a male in a double grave had a single iron pin on her left shoulder.

For further details of work in 1978 see R. J. Mercer, *Hambledon Hill 1979, Interim Statement* (1980) duplicated, and *PPS*, 45 (1979), 334-5.

LYTCHETT MATRAVERS (SY 956964). K. Jarvis reported a barbed and tanged flint arrowhead and three late Neolithic/early Bronze Age flints. Poole Museum Accession No. 1978: 036.

HAMPRESTON (SZ 06489783). A 2nd or 3rd brass of Maximus II, c. 305-313, mint of Alexandria, found at *105 Ringwood Road, Longham*, is reported by K. Jarvis. Poole Museum Identification No. 422.

POOLE. Several chance finds are reported by K. Jarvis. At *165 Blandford Road, Hamworthy* (approximately SY 9992890400) a penannular bronze brooch, possibly Roman. Poole Museum Identification No. 356.

————— (SY 98529180), a Greek bronze coin, at *80 Turlin Road* is probably of Ptolemy IV, 220-204BC. It is unclear whether such finds are archaeologically significant or recent losses (see, J. G. Milne, *Finds of Greek Coins in the British Isles* (1948)). Poole Museum Identification No. 461.

————— (SZ 0030590327), Mr. R. Timms found about 100 early Roman pottery sherds in the garden of *40 Blandford Road, Hamworthy*, and also noted gravel thought to be the Roman road from Hamworthy to Badbury. The position is close to the course predicted by H. P. Smith. Poole Museum Accession N. 1978: 113.

PORTLAND (SY 69697111). The ruined church of *St Andrew*, parts of which are dated by architectural evidence to the 12th century, is the subject of a Dorset County Council conservation scheme. Archaeological investigations in connection with this scheme are directed by A. M. Hunt. Clearance of rubble was observed by P. W. Cox for the Department of the Environment during November, 1978. Some 60 architectural fragments were recovered, and portable items removed for cleaning and drawing. A number of minor details were added to the plan of the church, previously surveyed by students of the Department of History and Archaeology at the Dorset Institute of Higher Education. Students also planned and recovered the surviving grave memorials in the churchyard. Work is expected to continue in 1979.

SHAFTESBURY (ST 86152298). Trial excavations inside *Holy Trinity Church* were directed by A. M. Hunt, with the assistance of W. Moore and the Shaftesbury and District Archaeology Group, to determine whether any remains of the medieval and post-medieval churches survived below the present structure, and to indicate whether forthcoming reconstruction might jeopardise such remains.

This parish church, built by Sir George Gilbert Scott in 1841-2, was recently declared redundant. Alternative uses, possibly entailing some reconstruction and underfloor disturbance, were explored.

Beneath the south aisle of the present church, and some 1.25 m below the latest floor-level, the greensand wall-foundations and flagstone floor of the previous structure were well preserved. An

illustration (c. 1840) of this previous church indicates that it rivalled the 1841-2 structure in size; the position of the excavated south wall suggests that its alignment was very slightly to the north of the Scott church. It was thought unlikely that building operations involved in a change of use would disturb archaeological evidence so deeply buried, but the site remains under review.

STALBRIDGE (ST 73351820). A. M. Hunt reports that at *St Mary's Parish Church*, during reflooring operations in the vestry to the south of the chancel, stone foundations of an earlier structure, on the same alignment, were exposed. St. Mary's Church was substantially rebuilt in the late nineteenth century; in its previous form it was substantially complete in the 14th century. The foundations revealed beneath the vestry could hardly form part of the 14th-century church, since the plan, foundations and parts of the fabric of this church survived the 19th-century rebuilding. It is likely, therefore, that the excavated foundations belong to a pre-14th-century church, of which no other evidence is available at present.

TARRANT HINTON. A. G. Giles reports that the 1978 season at *Barton Field* commenced on 24th March and continued through the summer until the 24th September. The excavation was concentrated on a small area at the southern-most corner of the complex, on Site 1 (Figure 43) in an attempt to discover the south-eastern extent of the 'enclosure' that was found in 1977. However, at this point a low ridge runs across the field from north-east to south-west and it was found that modern ploughing had removed much of the top soil from this area together with the foundations of the enclosure walls.

To the south-east of, and on the same alignment as the enclosure another small building (Building V) was found. It measured 29 feet by 18 feet and the only evidence for the existence of the walls were very slight traces of mortar on the chalk bedrock. The chalk to the south of this building is covered only by a thin layer of soil and is heavily scored by the plough.

To the east of Building V and underlying its eastern corner, the remains of a small bath house were found. This bath house, (Building VI) measured 21 feet wide by at least 48 feet long (the north-eastern end was not excavated in 1978). It had at some time been completely destroyed and every re-usable piece of material, with the exception of one stone roof tile and approximately 3 feet of flint walling two courses high, had been removed. It was possible, however, to determine the layout of the building from the clear impressions of the foundations in the chalk.

Rooms I and II were cut into the chalk to a depth of 2 feet in order to allow for the construction of an hypocaust. Room I contained a semi-circular bath at its western corner and at its northern corner a 2 feet square bath of *opus signinum* was raised on a chalk plinth to the same level as the floor of Room II. This small bath had a quarter round moulding at the base of its inner sides.

The positions of the *pilae* in Room II showed only as depressions in the mortar at the base of the hypocaust.

The feature in the centre of Room II was a rectangular depression cut into the chalk to the same depth as Room I. It was walled with flint and mortar. Only slight traces of these walls remained. This room (Room III) had a small extension, 6 feet long by 4 feet 6 inches wide, projecting from its north-west wall, the purpose of which has not been determined. No traces of flooring were found within the building but several large stone *tesserae* were found amongst the material used to backfill the hypocaust.

No water supply to the building could be found, nor any trace of a drainage system. The stokehole for the hypocaust was most likely at the north-eastern end of the building which has not yet been excavated.

A further short length of the Iron Age ditch was excavated. This ditch, crossing the site from east to west, passed beneath the bath house where only poor attempts had been made to strengthen the foundation of the walls which crossed it.

WEYMOUTH (SY 76947874). P. W. Cox reports that archaeological observation on the construction of an extension to the Ship Inn public house, westward along *Custom House Quay*, Melcombe Regis, was carried out during September, 1978 for the Dorset Archaeological Committee.

A deposit of beach pebbles was observed at the base of a north-south builders' trench. The deposit shelved to the south, from a depth of 0.25 m to 0.5 m below the present street level of the quay, and was overlain to the south by a clay deposit.

The pebble deposit may represent a former beach line approximately 25 m to the north of the present waterfront. Its position appears to align with Lower Saint Edmunds Street and the continuation of this along property boundaries behind the south side of St. Edmunds Street. To the east, this line would continue along Helen Lane. A similar deposit of beach pebbles was observed at a depth of approximately 0.5 m, during building construction to the north west in St. Thomas Street (see below).

The construction of the Ship Inn in the 17th century would seem to have been forward (*i.e.* south) of this beach line and partly on the clay infilling above and to the south of the beach pebble deposit. This infilling would therefore have been deposited prior to this time, and presumably represents reclaimed land.

Foundations immediately to the west of the Ship Inn and fronting onto the quayside were also evident. The footings were of roughly hewn limestone in yellow mortar and may have been for a harbourside house of similar date to the Ship Inn. This building would have been demolished prior to

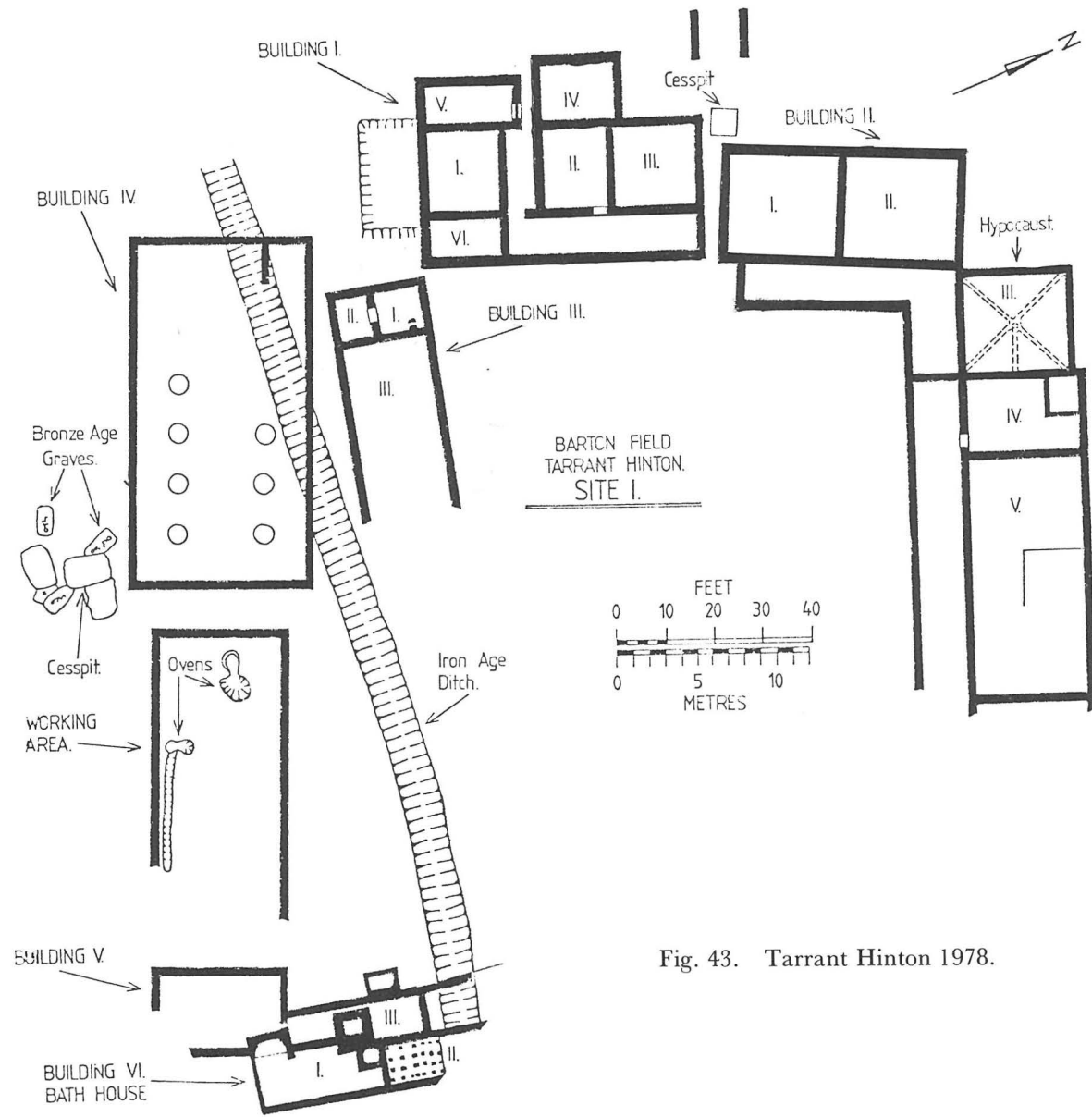


Fig. 43. Tarrant Hinton 1978.

the construction of a five storey warehouse on the site *c.* 1806

No dating evidence from finds is available. Site records will be deposited in the DCM.

—————. Archaeological observation was carried out by P. W. Cox for the Dorset Archaeological Committee during September, 1978, prior to building construction at *Nos. 41-43 St. Thomas Street*. No evidence of medieval occupation was observed. A horizontal deposit of beach pebbles was seen at the base of builders' trenches at a depth of approximately 0.5 m below the present street level.

WIMBORNE. Observations and excavations were carried out by Peter J. Woodward for the Dorset Archaeological Committee with Norman Field and the Wimborne Archaeological Group on the site of three 19th-century terrace houses in the *Corn Market* north-west of the minster church. These were begun in November, 1978 and continued as site works permitted into 1979. The findings will be summarised and discussed with other sites examined in the town in *PDNHAS*, CI (1979).

COLLITON PARK, DORCHESTER

The area within the north and west corner of the Roman walls of Dorchester, now known as Colliton Park, has been assumed not to have contained any medieval buildings. The excavations at Colliton Park (1937-9) appeared to confirm this. However, recent work on the seventeenth century rental lists of the borough suggests that at least one late medieval building did exist on the site. 'A Breife Rentall of all sure Leases as are graunted out of the Towns Landes' (c. 1623 with additions to 1658) contains the following as lease 4:

'A Lease graunted by the Burgesses . . . of Dorchester bearing date xxvij Octobris xxvij Regin[a]e Elizabeth[a]e [1586] unto John Cox of Bockhampton . . . Sheppard of all that howse and garden now in the tenure of one Walter Boyland situate . . . in Dorchester . . . *aforesaid on the north west corner of the West Walles* and also soe much voyd grownd to enlarge the said garden and to contayne in length fowerteene foote next on the east part of the said garden and to contayne soe farre in breadthe that it may not annoy the way there. . .' (Dorset Record Office B2/26/1, transcript by P. W. Lock and author's italics).

The other leases of lands, houses and standings in this rental are, wherever possible, fixed in their positions by reference to streets. This makes it unlikely that this house is near Glyde Path Road or High West Street, the two streets bounding this quarter. It is most unlikely that the house is outside the walls, since it would then have been outside the borough.

Therefore it seems that this house is in Colliton Park, probably towards the north west corner. No building is shown in this area on Speede's map (1610) of the town, but it seems unlikely that all detail is recorded on this map.

The cobbled path found in the Colliton Park excavations, to the east of building 1, has been interpreted as a late Roman feature. However it is slightly off the alignment of the Roman buildings and its appearance on photographs (RCHM, 1970, pl. 219) suggests a later date. A section drawn across the path (DCM, X23/133) shows the path above the Roman layers, at the bottom of a disturbed later layer (CP notebook 2, p. 24).

It seems possible that this path is late medieval, and associated with the house cited in the lease. It may indeed be the 'way' which the extended garden is not to 'annoy'.

Interim reports on the 1937-9 Colliton Park excavations:

Proceedings LIX, 1937, pp. 1-14. C. D. Drew and K. C. C. Selby.

Proceedings LX, 1938, pp. 51-65. C. D. Drew and K. C. C. Selby.

Dorset, Vol. 2, South East, 1970, pp. 553-560. RCHM.

Finds, drawings and site note books from Colliton Park are in the Dorset County Museum.

JO DRAPER

A COARSEWARE BELLARMINE FROM DORSET

The Dorset County Museum's collection contains a coarseware Bellarmine jug (1948:13), the provenance of which is unfortunately not recorded. This type of jug is rare in coarseware, although common in German and English stoneware. Stoneware Bellarmines were imported from Frechen from the early seventeenth century, and were made in England from the late seventeenth century. Four other coarseware examples are known: two from Hampshire.¹

Description (Fig. 44)

Soft brick red fabric covered with a thick yellow lead glaze: finely moulded mask: chips on rim covered by glaze and large firing crack down side: handle circular in section. Probably mid-to late seventeenth century.

The drawing is by Daphne Roscoe.

JO DRAPER

¹ Jeremy Haslam, 'A seventeenth century pottery site at Cove, E. Hampshire', *Post Medieval Archaeology*, Vol. 9, (1975), pp. 164-187, fig. 10, no. 118.

A MID NINETEENTH CENTURY GROUP OF COARSEWARES FROM DORCHESTER

These local earthenwares (Fig. 45, Nos. 3-9) are the only coarsewares from a huge group recovered in the 1971 excavations in Trinity Street, Dorchester. c. 90 per cent of the group is not illustrated, and consists of blue printed earthenwares and yellow glazed fine earthenwares, some with 'mocha' decoration. Two fine, non-local cups are illustrated with the coarsewares as comparative dating material. The group probably dates from the 1850s and it is hoped that it will be of assistance in

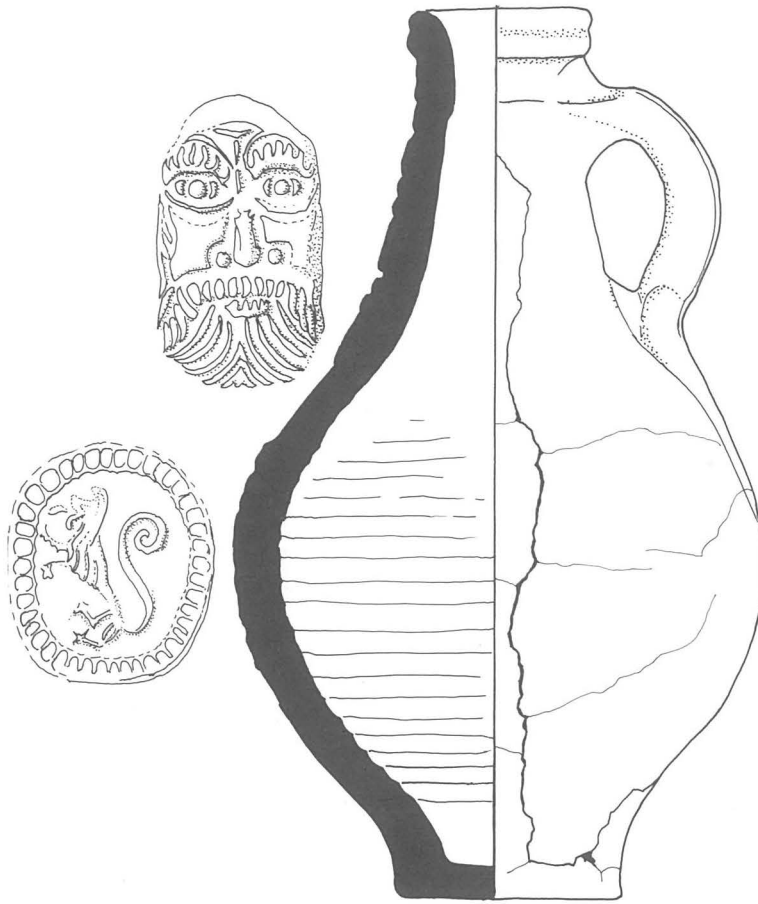


Fig. 44. Coarseware bellarmine from Dorset. Scale $\frac{1}{2}$.

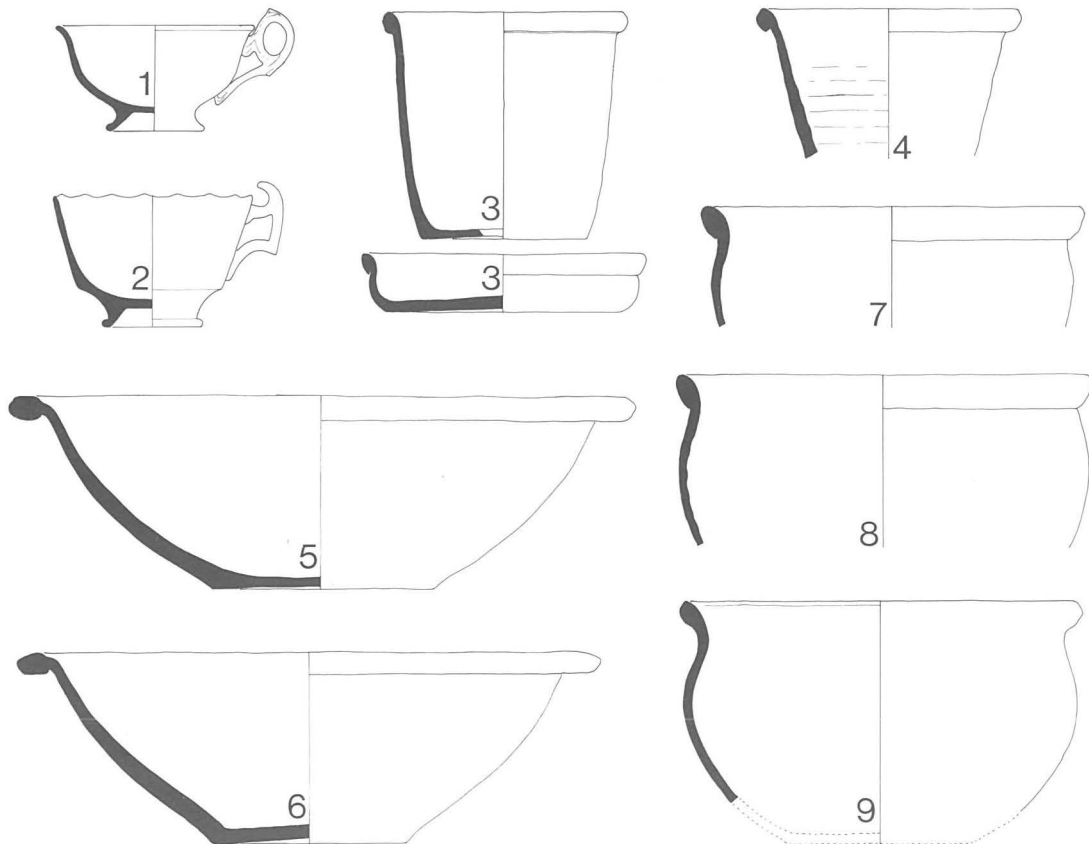


Fig. 45. Local coarsewares from Trinity St., Dorchester. Scale $\frac{1}{4}$.

distinguishing nineteenth century coarsewares from those made in the seventeenth and eighteenth centuries. The source of these coarsewares is probably Verwood.

The drawings are by Daphne Roscoe.

- 2: Cup: hard fine chalky white fabric: moulded handle: glazed slightly greyey off white with painted underglaze blue random squiggles: probably Staffordshire 1840s.
- 2: Cup: porcelain: London shape: slightly off white glaze: printed under the glaze in pale blue with a complex, deep border and a small scene in the base, both internally: externally with a version of the Willow Pattern and a leaf on the handle: possibly Grainger's Worcester 1840s.
- 3: Flower pot and saucer: pale greyish buff sandy fabric with a red core: pot dark grey externally and buff internally: saucer buff internally and orange externally.
- 4: ?Flower pot: as no. 3 saucer.
- 5 and 6: Bowls—probably kitchen mixing bowls: fabric as no. 3: glazed internally mustard yellow with brown flecks: externally unglazed and greyish buff.
- 7, 8 and 9: Chamber pots: as nos. 4 and 5: there is no evidence for the shape of the handles.

JO DRAPER

THE NON-CONFORMISTS MEETING HOUSE, 34 COLLITON STREET, DORCHESTER

Early in 1976 the small Meeting House on the north side of Colliton Street, (formerly Pease Lane) Dorchester, was demolished to make way for redevelopment of the area as flats.¹

The Meeting House was built in 1718 or 1719 since it was licensed on the 7th April, 1719. 'There was before that time a Meeting House in what was . . . termed the Friary, whence the congregation removed to Pease Lane'.² Before 1772 the beliefs of the congregation were described as moderate Calvinism, and by 1835 they were decidedly Unitarian.³ Many who did not agree with this seceded and formed a separate congregation whose chapel in Durngate Street opened in 1776. In 1822 some members left the Durngate Street chapel and met in a room in the Greyhound yard. These seceders returned to Durngate Street in 1826 and this congregation built the large chapel in South Street in 1857.

A description of the Meeting House was published in 1835;⁴ it originally had a 'double roof, tiled and supported by two large and heavy looking brick pillars'. In 1808 'notwithstanding several previous repairs' the timbers were so much decayed that a new roof was required. The new roof was 'single, covered with lead, and nearly flat, having a sky-light dome in the centre, which has a pleasing effect'. The 'massy' brick pillars were removed, and 'sashes were substituted for casements, besides other alterations and improvements, made at considerable expense, so as to render this place of worship . . . both neat and convenient'. There was a 'vestry, a vestry library (containing nearly 400 volumes), a small gallery and an organ'. The 'small burial ground' attached to the Meeting House was seldom used by 1835, and it is recorded that three of the ministers were 'interred in the aisle opposite the pulpit' in the same grave.

It is possible to reconstruct some detail about the use of the Chapel from a surviving *Book of Accounts for the Dissenting Church in Dorchester*⁵ which runs from 1756 to 1829, with only a few entries for the last twenty years. Besides listing innumerable small repairs and payments to cleaning ladies, the debit side shows that in 1778 '4 fir trees and 2 lignumvite trees' were planted outside the Meeting House at a cost of '3s. to set them and 2d. to prune them'. These trees may possibly have survived until at least 1888, since four fir trees and two deciduous trees are shown in the forecourt of the Meeting House on Ordnance Survey's 1:500 survey of that date.

The congregation, as revealed by contributions to repairs, letters, etc., seems to have been small—12 to 14 apparent heads of Dorchester households throughout the latter part of the eighteenth and early nineteenth centuries. The baptism registers survive from 1750,⁶ but the more vital burial registers are so far untraced. Burials certainly took place in and around the Meeting House, as they are mentioned by Murch and a plan of some of them survives. Details of the ministers are recorded by Murch and by Densham and Ogle. The interior and accessible parts of the exterior of the Meeting House were recorded by Daphne Moffatt, just prior to their destruction early in 1976. The brick built building stood on a brick plinth and measured internally 12.20 m (40 ft.) east-west and 14.90 m (49 ft.) north-south and was 6.10 m (20 ft.) high internally. The front (south) wall was of Flemish bond brickwork with four courses to the foot, with some glazed headers. The flat lead roof and the ceiling were almost certainly those built in 1808. The ceiling had four small moulded roundels of concentric circles, and a plain, central, circular skylight 3.65 m (12 ft.) diameter. Either side of the skylight was a plain cast iron pillar, inserted after the 1808 alterations. The plaster cornice moulding between wall and ceiling continued across the chimney of a small fireplace in the south-east corner, suggesting that

¹ The building is monument 5, page 112, in the Royal Commission on Historical Monuments' *Dorset*, Volume 2, South-East (1970) part 1; it is also discussed by David Lloyd on page 201 of his 'Dorchester Buildings' in the *Proceedings*, Volume 89 (1967). The National Grid Reference is SY69189083.

² *History of the Presbyterian and General Baptist Churches in the West of England* by Jerom Murch (1935), p. 272.

³ *Op. cit.*

⁴ *Op. cit.*, pp. 272-3.

⁵ DRO. d43/R8.

⁶ 'Dorset Non-Parochial Registers', *Somerset and Dorset Notes and Queries*, Vol. 5 (1897), pp. 332-3.

this may date from at least 1808. Payments for coal for the Meeting House are recorded from 1756. Small areas of a fairly plain wooden panelling dado survived with tongue and groove boarding set vertically below. There were two large high windows towards the centre in the north wall with a doorway at either end, and two windows either side of what was probably a door with a window over in the southern wall. The east and west sides had two, probably original, blind embrasures each internally, which were of similar proportions to the windows in the north wall, but which unlike them had no splay to their reveals. There were possible indications of two more embrasures or windows on each side, which had been blocked and plastered over.⁷

The Royal Commission describes the building: 'the S. front has a moulded wood cornice, three symmetrically placed windows with segmental heads and a brick string arched over the central window⁸ . . . In both the E. and W. walls are five⁹ blocked windows . . .' The east and west walls externally had a continuous three-brick string course, joined to a central brick pilaster which was 0.57 m (1 ft. 10½ ins.) wide and had a 5 cm (2 ins.) projection. Below the string were four symmetrically placed segmentally arched windows, the brick blocking of which had been rendered. The blocking of the central pair of windows on the east side was set back further than the blocking of the south window on the same side. This southern window reflected an internal embrasure. Thus there were probably originally four windows in the east and west walls, and these were perhaps blocked at two different periods, since there are two different styles of blocking, both internally and externally. The possibility remains that these were originally blind architectural features and not windows, but this seems unlikely.¹⁰

Hutchins records that 'on digging the foundations' for the Meeting House 'a large cavity was discovered, made through the chalk, leading from the castle to the town, and a lesser one each side of the former, all very deep; perhaps a subterraneous communication with the town from the castle'.¹¹ These are almost certainly the castle ditches, since the Castle is known to lie immediately to the north.¹² The direction is odd, since the ditches should run roughly east-west and they are described here as running north-south: perhaps there was an entrance here.

The congregation at Colliton Street must have declined during the nineteenth century, since by 1894 the Meeting House is described as having been disused as a place of worship for some 30 years past, being then occupied as a Liberal Club.¹³ The building, then known as 'Holles Hall' was sold by the authority of Charity Commissioners in 1898 and a plan of this period survives. This shows the interior basically split into a billiard and a reading room, with a small card room, office and bar at the southern end, and lavatories in the yard at the back. A tombstone is marked in the north east corner of the building and another outside to the south west of the entrance.¹⁴ When the Charity Commissioners sold the land they made the purchasers agree that at no time would the graves be disturbed, whether they were inside or outside the chapel, and that there were to be no buildings erected over the graves. By the 1930s the building was in use as a garage or store and in 1977 the whole area was redeveloped, with buildings over the graves.

APPENDIX

A Quaker Meeting House in Colliton Street

Some confusion has arisen because there are deeds for 'a burgage . . . in a certain street or lane called Pease Lane . . . on the north side . . . which messuage . . . or some part thereof had been then formerly used for and as a Quaker Meeting House'.¹⁵ Superficially this could be taken for the Meeting House discussed above, particularly when we discover that 'the tenements since converted to a Meeting House were first purchased February 14th, 1712' and that the property was transferred to other people in 1723, with directions to convert it to a 'Meeting House and the Garden to a burial ground, the residue of the premises not so used to be let and the rents after keeping the premises in repair should be applied to the poor of the people called Quaker'.¹⁶ However, although the dates are close to those of the Presbyterian Meeting House they are not identical and there is plenty of evidence that that Meeting House was not Quaker, but first Presbyterian and then Unitarian.

The tenements used as a Quaker Meeting House were sold to Mrs. Eliz. Read in 1842, and the conveyance recites the occupiers and in some cases the owners of the lands surrounding. Thus there were to the east the lands heretofore of Mathew Banger, later Robert Lambert, since Richard Wallis and now Elizabeth Read. If this is compared to the borough maps of 1810¹⁷ and 1848¹⁸ and to the lists of the owners and occupiers of land which relate to these maps, we find that in 1810 Richard Wallis owned a long thin garden at the western end of the north side Pease Lane,¹⁹ and in 1848 we find the

⁷ Measured drawings and photographs in DCM.

⁸ This brick string course was interrupted by the two side windows.

⁹ This should be corrected to *four* windows.

¹⁰ The description of the east and west walls externally has kindly been supplied by Christopher Stell.

¹¹ *The History and Antiquities of the County of Dorset* by John Hutchins (1772), p. 381.

¹² *Dorchester Excavations*, Vol. 1 by Jo Draper and Christopher Chaplin: forthcoming.

¹³ *The Congregational Churches of Dorset* by W. Densham and J. Ogle (1899), p. 127.

¹⁴ Copy in DCM.

¹⁵ DRO/N10/R6.

¹⁶ *Op. cit.*

¹⁷ DRO/OE1.

¹⁸ DRO/D40E/7.

¹⁹ DRO/B2/26/12 No. 64.

same garden owned by Mrs. Read.²⁰

To the west of the Quaker tenement there were lands which Robert Williams let to Mr. Bridge, and this is exactly reflected on the 1848 map and list.²¹ The conveyance shows on the north of the Quakers John Wood as tenant to the Earl of Shaftesbury. Shaftesbury did own the lands to the north of the Quaker tenements both in 1810 and 1848, but by 1848 John Wood is tenant of Plot No. 71,²² which is the house bounded by those listed above and must therefore have been that used by the Quakers. This identification is reinforced by the pencil endorsement against the same house on the 1810 list (No. 65): 'Quaker's Meeting'.

Thus the Quakers used for a Meeting House the house which is shown on both the 1810 and 1848 maps as the fourth from the western end of Pease Lane, on the north side. This fairly small house was detached, with only a small garden and it seems likely that it was not substantially altered for use as a meeting house, since when it was sold in 1842 it was simply described as a house which had been partly used for a Meeting House.

The building may have survived at least until the late nineteenth century, since a small building in the same position is shown on the Ordnance Survey's 1:500 plan of 1888, but there is no building on the site now. The garden and burial ground have been incorporated into the Colliton Youth Centre's yard and a disturbed human burial was found in this area during 1976.²³ This was almost certainly a Quaker burial. A copy of Dorset Quaker burial registers from 1659-1836,²⁴ shows that there were only 12 burials over the period 1716-1739, so that although the sale of 1842 stated that Quakers should have 'free liberty way and passage to and from' the burial ground 'for burying a corpse or otherwise' it seems that the burial ground was not used after 1739. Rights were also reserved for the 'said Society of people called Quakers there to assemble and meet for the public worship and service of God as formerly with all others who should think fit to join . . . previous to every such meeting or assembling giving one hour's notice'.²⁵ However by 1829-30 there is mention in the Quaker records of the 'late Meeting House in Dorchester',²⁶ and it seems likely that the sale of 1842 reflects a decline in numbers of the Quakers in Dorchester.

JO DRAPER

²⁰ *Op. cit.*, No. 70.

²¹ D40E/7/No. 72.

²² D40E/7.

²³ *Proceedings*, Vol. 98, p. 56.

²⁴ DRO/N10/Q3.

²⁵ DRO/N10/R6.

²⁶ DRO/N10/S4.

EXCAVATIONS IN EAST STREET, WAREHAM

During 1977 and 1978 two sites in East Street, Wareham, were excavated by the Poole Museums Service and the Department of Archaeology, University of Southampton (Fig. 46). Each involved a week-end's trial work. We are very grateful to the developers of the sites for permission to excavate and for other help: Mr. R. A. Chalker and Mr. M. A. Gale.

Site 1, 26 East Street

This site is on the south side of East Street, on the east corner of its junction with Church Street. Two 19th-century houses were demolished, and excavation took place in January, 1977 before re-building. A 3 m by 2 m L-shaped trench was laid out, both arms ending at a street frontage, but concrete foundations made it impossible to maintain the complete trench.

Thirty centimetres below the Victorian foundations was a fine black humus (layer 1002), 40 cm deep, with quantities of 12th/14th-century pottery, and no later material. Two slots and four stake-holes lay below 1002, cut into a 32 cm deep, re-deposited yellow sandy layer, 1005, dumped over a black soil layer, 1006, which varied between 2 and 8 cm in depth. Below 1006 was undisturbed natural sand. All these layers contained exclusively medieval pottery.

The only feature of significance was a north-south gully, 1012, below 1002 and 1005. It sloped quite markedly southwards, and was about 1.30 m wide at the top, its east side being 5.30 m from the edge of Church Street.

A second trench, a 5 m by 2 m rectangle, was excavated at the south end of the tenement. Here natural sand was found only about 50 cm below the top surface.

Site 2, 11 East Street

This site is on the north side of East Street, east of its junction with Moretons Lane. Excavation took place in July, 1978 after a 1920s house had been demolished. The house had stood slightly back from the road, and the ground rises quite sharply from street level.

A 4 m by 2 m trench was laid out 5.60 m from the pavement. Below the 1920s foundation layer were the walls of a house perhaps destroyed in one of Wareham's 18th-century fires—Hutchins' late 18th-century map does not show buildings on the site. There was a disturbed dark layer (1004) below and around this foundation. Below 1004 was a wall footing or rough paving (1007), comprising rubble stone and oyster shells (the stone including part of a biotite granite (?South-West Britain) quern). 1007 did not spread as far as the south end of the trench; here natural sand underlay 1004, as it did 1007. Cut into the sand was a shallow east-west slot, 1008, 1.20 m wide, 1 m from the south end of the

trench, with two post-holes in it. In 1008 were a few medieval sherds, two of which were glazed. At the north end of the trench was a deeper east-west, irregular-sided but deep feature, 1009, not fully excavated. The part of 1009 within the trench contained no pottery or other objects, and was filled with clean, silty sand.

A second trench, also 4 m by 2 m, was excavated 8 m from the north end of the property. Between 80 cm and 1 m of dark humic soil was found to overlie the natural sand. There were no archaeological features. Pottery included two small Roman sherds from the lower levels (2004), with about 25 medieval glazed and unglazed wares.

The pottery

Two sherds of Roman pottery were recovered (from No. 11, Site 2: 2004). No other sherds were found that definitely pre-date the 12th century; there is no Fabric A pottery, as identified at the St. Martin's House site, in North Street, and there are only two small sherds of Fabric B (also from 2004¹). The very great majority of the pottery on both the East Street sites is in Fabrics C, D and E, with various grain sizes of sand. Very few contain the larger grains considered to be characteristic of the earliest types. A few sherds are 'scratch-marked'. There are also some sherds of jugs imported from France, and glazed sherds in a light buff sandy fabric thought to be local imitations of such imports.

Vessel forms include tripod pitchers, cooking-pots and bowls, and glazed jugs. There are of course no complete vessels. Rim forms and surface decoration are generally comparable to those from St. Martin's House, with 12th/14th-century dates. Only a large, glazed lamp is a form not previously represented (Fig. 47, 1: 1001): although from the top layer, the light sandy fabric suggests that this is 13th/14th-century, like recent finds from Southampton.² The lower basin (to catch drips) is mostly intact, but the stem is broken off below the upper basin (in which a pool of wax floated). The stem is pierced, presumably to reduce the risk of heat shattering the body.

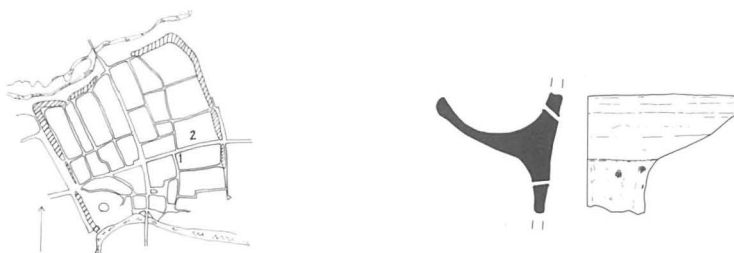


Fig. 46. Sketch map of Wareham showing location of the two sites in East Street.

Fig. 47. Pottery lamp from Site 1, layer 1001. Scale: 1:4.

Botanical remains by Frank Green

Five samples were taken from medieval levels on Site 1, by the method of sampling and recovery outlined by Green.³ All the seed remains were carbonised, except some semi-mineralised Elderberry (*Sambucus nigra*) that were almost certainly intrusive.

Economic plants included bread wheat, barley, oat, rye, large seeded vetch and peas (*Pisum sativum*). Layer 1006 contained a flax capsule. Apple pips and fragments of bilberry (*Vaccinium* sp.) were also found.

The wild plants recovered fall into two groups: most (*Agrostemma githago*, *Chenopodium album*, etc.) are those with arable habitats or of arable association, others (*Carex* sp., *Ericaceae* sp., *Caluna* sp.) are associated with heathland.

It is interesting that legumes and flax were both found on this site, these species having been recovered from few sites of this period in Wessex. The presence of flax preserved by carbonisation is particularly rare, and this, combined with a carbonised fragment of couch grass (Rhizome), may suggest deliberate burning of crop residues on the site. The samples from this site provided an important insight into the types of botanical material that can be recovered from small observation and rescue excavations if a specialist is at hand working on the excavation.

Conclusions

It is the negative rather than the positive evidence that is important on the two East Street sites. Although both were some distance from the North Street/South Street axis road, they can be used as a measure of the extent of Wareham's development at different periods.

¹ See D. A. Hinton and R. Hodges, 'Excavations in Wareham, 1974-5', *Proceedings* 99, 60, for discussion of the fabrics, etc.

² D. A. Hinton, 'Excavations at 58 French Street', *Proceedings of the Hampshire Field Club and Archaeological Society*, Fig. 1, No. 2.

³ F. Green, in *Archaeo-Physika Supplement to Bonner Jahrbücher* (1979, in press).

Firstly, there were no Roman features, and only two Roman sherds (2:2004). This further emphasises the likelihood that there was no Roman 'town'.⁴ Trench 2 on Site 2 provided the first archaeological opportunity to test the nature of the 'black layers' of Wareham which have led some antiquaries to argue for deep Roman deposits, but only medieval and later sherds were found. The 'black layer' is not Roman, or immediately post-Roman, but garden soil which may have been deliberately introduced in the post-medieval period; the recent excavations at the Hardye's School site suggest that the same thing happened in Dorchester. The shallow depth of soil in Trench 2 on Site 1 is further proof that there are no substantial archaeological deposits in this part of Wareham.

Had there been a large post-Roman settlement in Wareham before it became a 'burh', one likely area for it would be to the north of the minster church of St. Mary, outside the church precinct, and above the flood plain. No evidence of such a settlement was found, however, where Site 1 might have located it. It seems increasingly likely therefore that any mid-Saxon secular occupation was of little consequence.⁵

The excavations threw no light on the date when East Street appeared in the town plan of Wareham, but neither site produced any evidence of occupation earlier than the 12th century. It is possible that Site 1 was brought into use first, for there were more tripod pitcher sherds from it than from Site 2, which would be expected if habitation spread gradually eastward from the main axis road. An element of doubt is introduced here by the two Fabric B sherds and by the incompletely excavated feature 1009 on Site 2; this produced no finds, and in this was reminiscent of the earliest features on the St. Martin's House site in North Street, from which very little material was recovered. 1009 may however have been a drainage channel, silted up or back-filled before occupation on the site began. The only other feature which may be topographically significant is the north-south gully on Site 1, feature 1012. Dug as the site came into use, its most likely interpretation is as a tenement boundary. If so, it did not apparently conform to the 18th-century boundary, a corrective to any attempt to attribute every line on the modern map of Wareham to a lay-out planned *c.* 900.⁶

Both East Street sites seem to have been quite densely used in the 13th century. Later medieval pottery was hardly recognised, and there may have been some 14th/15th-century abandonment, as the town went through a recession. The 'black layer' in Trench 2 on Site 2 suggests profitable gardening activities, as Hutchins recorded in the 18th century.

The excavations indicate that, as Wareham developed as a town in the late Saxon and early medieval periods, so previously unoccupied areas were successively brought into use for tenements. At St. Martin's House, occupation dated from the 10th century, some two centuries earlier than in East Street. Clearly North Street/South Street and West Street, the through routes, were the first to attract settlement. East Street was less desirable commercially: its 12th-century emergence may have resulted partly from continued population growth, partly from a shortage of habitation sites caused by the intrusion of the Norman castle into the south-west quarter of the town. The excavations have helped to confirm the model of Wareham's development and decay already postulated,⁷ and justify the use of small-scale investigations on carefully chosen urban sites.

D. A. HINTON AND I. P. HORSEY

⁴ See Hinton and Hodges, *op. cit.* note 1, 81.

⁵ *Ibid.*

⁶ Taken to extremes by M. Aston and J. Bond, *The Landscape of Towns* (1976), 67-8.

⁷ D. A. Hinton, *Alfred's Kingdom* (1977), *passim*.

NATURAL HISTORY REPORTS 1978

DORSET RAINFALL, 1978

D. J. PAXMAN

STATISTICS

Dorset's general rainfall in 1978 was 34.89 inches, which is 5 per cent less than the recent average of 36.84 inches.

Monthly summary:

	Rainfall in inches	Average for 1945-69
January	4.5	3.5
February	4.8	2.7
March	3.4	2.6
April	2.2	2.2
May	1.7	2.6
June	1.5	2.1
July	4.7	2.3
August	1.7	3.1
September	.8	3.6
October	.3	3.7
November	1.3	4.2
December	7.8	4.1

The wettest station was Minterne with 44.5 inches of rain. The driest was Weymouth (Cranford Avenue) with 29.31 inches.

GENERAL REPORT

A notable feature of the year was the dry autumn and the exceptionally low rainfall of October. In England generally it was the driest October since 1781 and the second driest on record. Rainfall was particularly low in the west country with Taunton recording only .02 inch. In Dorset the Pumping Station at Corfe Mullen was the driest station with .08 inch while the county as a whole registered .31 inch. This made October, 1978 the equal of the previous driest October, that of 1969. The total rainfall in September, October and November was only 2.49 inches, one-fifth of the usual amount.

Snow fell on seven days in mid-February. The falls were light except during the blizzard conditions of 18th. In quieter weather the snow would have been a foot deep but strong winds caused drifting so that many parts of Dorset had drifts from 5 to 10 feet deep. All roads into Beaminster were blocked for several days and the conditions were the worst since 1947. Dorchester was also at a standstill until 22nd. The main snow cover melted in the last days of the month with flooding of the main river valleys. Some snow drifts survived until about March 10th.

During the same period the combination of gales and high tides led to the partial destruction of the sea defences on the west side of the entrance to Bridport Harbour. Many large blocks of stone were then brought by road from Portland to effect temporary repairs.

Snow returned during the last two days of the year. The general cover was about 4 inches but again the wind caused drifting to about 3 feet.

HEAVY FALLS OF RAIN

January 27th

A depression moved across Ireland and became quasi-stationary over the British Isles, its centre deepening to 968 millibars. The associated warm front crossed southern England during the morning but the formation of a wave depression over the south west delayed the passage of the cold front until the early hours of 28th. Over the high ground of central Dorset there was more than an inch of rain (1.70 inches at Okeford Fitzpaine and 1.67 at Forde Abbey).

May 1st

South west England lay in a col between one depression centred south of Ireland and another over north Germany. Most of Dorset had over an inch of rain (1.40 inches at Okeford Fitzpaine, 1.38 at Dorchester Waterworks).

Rainfall in Dorset 1978

STATION	OBSERVER	Greatest Fall Days Days in 24 hours with with .01 in. 1 in.		DEPTH OF RAINFALL IN INCHES												Total for Year		
		Depth	Date	more or	more or	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		Nov.	Dec.
Abbotsbury (Rodden Row)	Miss A. M. Hutchins	1.89	31/7	182	1	4.11	5.44	2.91	2.38	1.38	1.29	5.40	.96	.87	.42	1.00	5.42	31.58
Beaminster (East Street)	W. A. Stiby	1.62	31/7	183	4	5.01	5.33	3.80	2.32	1.71	1.83	5.49	1.91	.61	.62	1.81	8.00	38.44
Blandford (Bryanston)	Miss A. M. Jaques	1.43	27/1	175	3	5.26	4.97	3.87	2.04	1.59	1.06	2.37	1.47	1.13	.33	1.56	8.33	33.98
Bournemouth (Alderney Reservoir)	B'mouth & Dist. Water Co.	1.50	31/7	161	1	4.02	3.76	2.82	2.06	1.90	1.20	3.56	2.13	.69	.10	.73	7.46	30.43
Branksome (Bourne Valley)	W. R. Coles	1.23	31/7	160	1	4.30	4.18	2.91	2.12	1.66	1.17	3.25	2.01	.83	.11	.78	7.88	31.20
Bridport (North Chideock)	H. J. F. Smith	—	—	—	—	4.05	4.86	3.35	1.94	1.38	2.02	3.96	1.51	.77	.55	1.17	5.88	31.44
Buckland Newton (Brockhampton Gate)	Major A. M. Hall	2.60	31/7	—	—	3.33	4.12	2.94	2.45	2.03	1.90	7.30	4.32	.74	.39	1.63	8.73	39.88
Cattistock (Manor Farm)	R. J. Bere	1.62	31/7	165	5	4.99	5.06	4.74	1.89	1.63	2.14	6.90	1.75	2.08	.32	2.15	9.75	43.40
Charminster (Forston Pumping Station)	E. R. Fox	1.59	31/7	178	5	5.27	5.42	4.34	2.33	1.44	1.17	5.36	1.78	1.10	.27	1.58	9.14	39.20
Corfe Castle (Waterworks)	Wessex Water	2.02	31/7	171	3	4.54	4.92	2.90	2.63	1.64	1.64	5.26	1.75	.88	.24	1.09	8.21	35.68
Dorchester (Monmouth Road)	J. R. Oliver	1.64	31/7	187	3	5.01	5.47	3.77	2.77	1.58	1.26	5.07	1.24	1.00	.23	1.17	7.88	36.45
Dorchester (Queen's Avenue)	Miss A. M. Yeatman	1.75	31/7	—	—	4.64	4.70	4.23	3.14	1.86	1.50	5.33	1.33	1.08	.36	1.38	7.15	36.70
Dorchester (Waterworks)	Wessex Water	1.58	31/7	157	4	4.54	5.08	3.65	2.76	1.81	1.17	5.38	1.28	.94	.45	1.27	7.47	35.80
Evershot (Melbury House)	W. Wright	1.81	31/7	190	6	5.38	5.74	4.93	2.28	2.10	2.22	5.70	1.68	.68	.56	2.62	7.71	41.59
Forde Abbey	G. D. Roper	1.67	27/1	154	3	4.96	5.91	3.60	2.19	1.73	1.80	3.88	1.22	.65	.55	1.69	8.07	36.25
Maiden Newton (Toller Porcorum)	C. Staple	1.52	31/7	—	—	5.75	5.03	3.62	2.45	1.70	2.06	6.32	1.98	.86	.43	1.81	—	—
Mapperton	V. Montagu	1.47	31/7	157	5	3.57	5.57	4.01	2.61	1.81	2.39	6.44	2.49	.79	.51	1.67	7.11	38.97
Marnhull (Great Down Lane)	Mrs. E. M. Payne	1.35	31/7	199	1	3.61	3.40	3.14	2.02	1.43	2.06	4.51	1.75	.90	.99	1.73	5.90	31.44
Minterne	The Lord Digby	2.08	31/7	174	7	5.74	5.60	5.08	2.81	1.66	1.92	6.42	1.55	1.01	.44	2.43	9.93	44.59
Netherbury (The Garden House)	J. K. Newsom Davis	1.28	31/7	191	2	4.63	4.59	3.65	2.11	1.59	2.13	4.73	1.90	.64	.40	1.50	7.30	35.16
Okeford Fitzpaine (Pumping Station)	Wessex Water	1.76	31/7	160	3	5.26	4.64	3.65	1.69	2.01	1.79	4.26	1.73	.75	.22	1.73	6.85	34.58
Owermoigne (The Mill House)	J. Whatmoor	1.65	31/7	177	4	3.82	4.80	2.74	1.99	1.38	1.49	4.85	1.20	.75	.24	1.26	8.40	32.92
Parkstone (Lilliput)	R. J. O. Crew	1.36	31/7	176	2	4.38	5.86	2.33	2.19	1.45	1.14	3.14	1.64	.86	.15	.77	7.79	31.70
Poole (Pitwine's Gasworks)	W. R. Coles	—	—	—	—	4.24	3.83	2.75	2.15	1.34	1.14	3.38	1.31	.76	.20	.83	7.70	29.63
Shillingstone (Green Hills)	E. Nimmo	1.86	31/7	—	4	5.19	4.52	3.89	1.72	1.69	1.73	4.20	1.59	.80	.43	1.70	8.63	36.08
Swanage	K. Moore	1.38	31/7	164	2	3.84	4.31	3.14	2.43	1.30	1.52	3.86	2.17	.67	.23	1.22	6.75	31.44
Wareham (East Stoke, River Laboratory)	J. Morgan	1.91	31/7	177	3	4.94	3.96	2.73	2.30	1.44	1.39	4.67	1.89	.78	.10	.95	8.27	33.43
Wareham (Furzebrook Research Station)	D. C. P. Malt	1.73	31/7	147	—	4.09	—	2.98	2.31	1.75	1.49	5.13	2.58	1.05	.15	1.15	8.85	—
Wareham (Trigon)	Mrs. J. D. Sturdy	2.25	31/7	133	6	5.23	5.09	3.02	1.86	1.69	1.70	5.32	1.86	.80	.19	.88	8.01	35.65
Weymouth (Cranford Avenue)	H. F. Middleton	1.37	31/7	152	2	3.70	4.97	2.31	2.35	1.36	.92	3.95	1.06	1.07	.12	.87	6.63	29.31
Wimborne (Clevedon Lodge)	Dr. E. H. Markby	1.83	31/7	—	—	4.14	3.50	3.24	2.33	1.95	1.28	3.97	1.22	.57	.26	1.16	8.91	32.54
Wimborne (Corfe Mullen, Central Avenue)	A. H. Dunn	1.84	31/7	175	3	4.52	4.83	3.32	1.74	1.98	1.40	4.48	1.44	.73	.12	1.14	9.05	34.75
Wimborne (Corfe Mullen, Pumping Station)	Wessex Water	1.71	31/7	166	2	4.41	3.87	3.02	2.29	1.96	1.04	3.95	1.32	.52	.08	.91	8.47	31.83
Wimborne (Stanbridge Mill Pumping Station)	B'mouth & Dist. Water Co.	—	—	—	—	3.90	4.50	2.53	1.58	2.39	1.26	4.48	1.41	.70	.28	1.13	6.51	30.68
Wimborne (Walsford Bridge Pumping Station)	B'mouth & Dist. Water Co.	2.21	31/7	173	3	4.20	4.50	3.08	2.06	2.05	1.20	4.14	1.19	.69	.11	1.04	8.59	32.84
Winfrith (Atomic Energy Establishment)	D. C. Fraser	1.91	30/7	168	4	4.81	5.44	2.89	2.29	1.45	1.46	5.64	1.97	.76	.10	.91	8.87	36.59
AVERAGE FOR THE COUNTY				170	3	4.52	4.79	3.39	2.23	1.69	1.54	4.72	1.68	.84	.31	1.34	7.85	34.89

July 30th and 31st

On 30th a depression moved northwards across France towards the Low Countries causing outbreaks of thundery rain over the southern half of England and Wales. During 31st the main depression centre (1008 millibars) moved down the English Channel.

On the first of these days a small area of Dorset from Purbeck to Owermoigne had over an inch of rain, the heaviest fall being 1.91 inches at Winfrith. Most of the rest of the county had about half an inch of rain. However, next day all Dorset had over an inch of rain accompanied by thunderstorms as the depression centre passed by on its way down Channel. In three areas the rainfall was more than 2 inches. The highest fall was of 2.60 inches at Buckland Newton. Once again Purbeck had heavy rain (Trigon 2.25 inches, Corfe 2.02 inches). The other area of high rainfall lay just north of Wimborne.

Four stations had a combined rainfall in excess of 3 inches during these two days:

Winfrith	3.50 inches
Wareham (Trigon)	3.30 inches
Corfe Castle	3.17 inches
Buckland Newton	3.03 inches

December 23rd

At 0600 a deepening depression of 972 millibars was centred 500 miles south west of Land's End. During the following 24 hours it moved steadily north east so that the centre was over south west Ireland by 0600 on 24th. The associated fronts crossed Dorset during the early evening of 23rd but a trough from the depression then extended into the English Channel, prolonging the rainfall behind the fronts. More than an inch of rain fell over all the higher ground of central Dorset. The heaviest falls were 1.70 inches at Minterne and 1.59 at Cattistock and at Forde Abbey.

December 29th

A narrow storm moved from Lyme Bay by way of Eggardon Hill to the area of Maiden Newton. It did not generate an inch of rain but the .76 inch that fell at Cattistock is remarkable because it fell in the space of an hour.

LATE REPORTS FOR 1977

The following reports from Parkstone Grammar School and Weymouth (Westham) were received too late for inclusion in last year's report.

	Parkstone	Weymouth
	ins.	ins.
January	2.97	3.17
February	5.00	5.02
March	3.33	3.71
April	.84	.95
May	1.87	2.02
June	4.27	2.35
July	1.15	3.53
August	5.84	4.62
September	1.12	1.22
October	3.07	1.54
November	1.27	2.89
December	4.60	4.72
Year's total	35.33	35.74

RAINFALL STATIONS

The gauge at 5 Alfred Road, Dorchester, has been moved a quarter of a mile to 150 Monmouth Road. The station is now listed as Dorchester (Monmouth Road). It is at NGR SY 697900. Height 215 feet above MSL.

The station at Maiden Newton (Toller Porcorum) has closed.

GEOLOGY

JOHN C. W. COPE

SUBMERGED FOREST AT CHARMOUTH

Miss B. Lang reports that the submerged forest at Charmouth was exposed to the west side of the Char Valley Fault on both sides of the western groyne during the period 14th-20th December. Immediately to the west of the tree trunks the Hartmanni Ledges were exposed, tilted up on end and clearly affected by faulting. (The Hartmanni Limestone forming these ledges is Bed 74f of Lang 1923, belonging to the *birchi* Subzone of the *turneri* Zone.)

BRYOZOA FROM THE PORTLAND BEDS

During the summer of 1978 I conducted Dr. P. D. Taylor (University College, Swansea), a specialist in Jurassic Bryozoa, around some of the main exposures of the Portland Beds of South Dorset in a search for bryozoans. Following this visit Dr. Taylor presented the report below:

From the infrequency with which they are mentioned, it would appear that fossil bryozoans are rarely found in the Portland Beds of Dorset. However, recent investigations have revealed a bryozoan fauna which, although low in species diversity, is extremely abundant. This fauna has probably been overlooked principally because its commonest components are small encrusting species frequently masked by micritic sediment adhering to the colony surface. The most remarkable oversight concerns an important species, *Pyriporopsis portlandensis*, the oldest known cheilostome bryozoan and the only Jurassic cheilostome in the world (Pohowsky, 1973).

With the exception of *P. portlandensis*, characterised by encrusting colonies consisting of uniserial rows or multiserial masses of ovoid zooecia, the Portlandian bryozoans all belong to the Order Cyclostomata. By far the most common species is *Hyporosopora portlandica* (Gregory, 1896). This species consists of generally small disc-shaped colonies with conspicuous concentric ridges crossing the colony surface perpendicular to the long axes of zooecia.

Another common Portlandian bryozoan is an undescribed species of *Microecia* which has adnate branching colonies with very elongate zooecia arranged in multiserial rows. Branch width tends to increase away from the colony origin and fan-shaped subcolonies often occur as outgrowths from the growing edges of the colony.

Another species of *Hyporosopora*, resembling *H. portlandica* but without concentric ridges, occurs rarely in the Dorset Portlandian. This may be equivalent to *Berenicea damnatorum*, Lang, 1925.

Erect bryozoans are uncommon in the Portlandian. However, Lang (1925) created a new genus when describing *Elaphophora cervina*, a species with erect branches marked on their exterior by ridges perpendicular to the long axes of the zooecia. *E. cervina* may prove to be an erect growth-form of *Hyporosopora portlandica* with which it shares a ridged colony surface, although the two forms have yet to be found connected.

Distribution

The known distribution of Portlandian bryozoans in Dorset is listed below. Records of *H. portlandica* and *H. sp.* from the Exogyra Bed represent the first recorded occurrences of bryozoans in the Portland Sands. Stratigraphical nomenclature follows Wimbledon & Cope (1978).

Pyriporopsis portlandensis:

Basal Shell Bed (*kerberus* Zone), west coast of Isle of Portland (*vide* Pohowsky, 1973)

Cherty Beds (*kerberus* Zone), Wallsend Cove.

Portland Roach, Portland Freestone Member (*anguiformis* Zone), quarry west of Easton, Isle of Portland (*vide* Pohowsky, 1973).

Hyporosopora portlandica:

Exogyra Bed (*albani* Zone), Sutton Poyntz

Basal Shell Bed (*kerberus* Zone), Chalbury, Wallsend Cove, Freshwater Bay, West Weare Cliffs.

?Bed J-J₁, (*kerberus* Zone), St. Aldhelm's Head (fallen block).

Cherty Beds (*kerberus* Zone), Wallsend Cove.

'Portlandian Oyster Bed', Tilly Whim Caves, Durlston Head, (*vide* Woodward, 1910)

Hyporosopora sp:

Exogyra Bed (*albani* Zone) Plaisters Lane, Sutton Poyntz.

Microecia sp. nov:

Basal Shell Bed (*kerberus* Zone), Wallsend Cove, Freshwater Bay.

Elaphophora cervina

Basal Shell Bed (*kerberus* Zone), Portland (*vide* Lang, 1925)

Whit Bed (*anguiformis* Zone) Portland (*vide* Lang, 1925)

Portland Freestone Member (*anguiformis* Zone), St. Aldhelm's Head.

Further diligent collecting should greatly expand this list of occurrences.

Palaeoecology

The Portlandian bryozoans encrust hard substrates provided by shells of the bivalves *Camptonectes*

lamellosus, *Isognomon bouchardi*, and *Nanogyra nana* as well as titanitid ammonites. Encrustation of internal surfaces, notably the interior of *Titanites* body chambers, is common and clearly indicates bryozoan growth on dead molluscs lying on the sea-bed. These characteristically concave internal surfaces often constituted a habitat less prone to the effects of sedimentation, predators, and competition from algal growth. However, water circulation may be reduced and this may account for the generally small zooid size in the Portlandian bryozoans because small zooids can function at a greater efficiency. Adjacent colonies of *Hyporosopora portlandica* were usually unable to overgrow one another but *H. portlandica* readily overgrew colonies of *Microecia* sp. nov. Both bryozoans tend to be smothered by small encrusting individuals of *Nanogyra nana*. *Pyriporopsis portlandensis* often encrusted the interior surfaces of trigonid bivalves and it is characteristically found on steinkerns of these bivalves.

The low species diversity of Portlandian bryozoans perhaps reflects isolation of the Portland basin of deposition allowing only restricted immigration of these sessile organisms with short-lived larvae.

It is intended to follow this preliminary report with a complete revision of British Portlandian Bryozoa to be published elsewhere.

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BOTANY

J. M. FITZPATRICK

It is very gratifying to find that many and interesting plant records continue to come into the Environmental Record Centre at the County Museum. A selection of rare or under-recorded species has been made on the basis of the plant having been found at new localities not entered on the cards at the Centre. Exact localities have been omitted for obvious reasons. Many thanks are due to all those contributors who have sent in records, in particular to Dr. H. Bowen, Dr. J. K. Hasler, Mrs. Diaper, R. Burt, Miss A. Horsfell, Dr. T. Norman, Miss E. Pearce, J. Waters, J. M. Chandler, Mrs J. Bowyer, Miss F. N. Stanley, the Hattons, E. Nimmo, J. Dukes, F. R. Green, S. Davey, A. H. Dunn, and R. H. D. Deakin.

<i>Helleborus viridis</i> L.	Marshwood	E.P.
<i>Aconitum napellus</i> L.	Litton Cheney	E.P.
<i>Thalictrum flavum</i> L.	Winfrith	J.M.C.
	R. Frome—Several sites	River Survey
<i>Viola lactea</i> Sm.	Winfrith	L.D.
<i>Spergularia rupicola</i> Lebel ex Le Jolis	Dancing Ledge	R.B.
<i>Lotus hispidus</i> Desf ex DC	Rempstone	H.B.
<i>Lathyrus aphaca</i> L.	Portland	H.B.
	West Bexington	E.P.
<i>Lathyrus tuberosus</i> L.	Moreton	H.B.
<i>Potentilla palustris</i> (L.) Scop.	Slepe	J.B.
<i>Geum rivale</i> L.	Tadnoll	F.N.S.
<i>Sanguisorba officinalis</i> L.	Keysworth	A.H.
	Winfrith	H.B.
	Watercombe	E.P.
<i>Hippuris vulgaris</i> L.	Bere Regis	H.B.
<i>Thesium humifusum</i> DC	Portland	H.B.
<i>Carum verticillatum</i> (L.) Koch.	Ridge	R. & S.H.
<i>Limonium recurvum</i> C.E. Salmon	Portland	H.B.
<i>Cicendia filiformis</i> (L.) Delarb.	Arne	J.B.
	Wytych	H.B.
<i>Centaurium capitatum</i> (Willd) Borbas	Shillingston	E.N.

<i>Gentianella anglica</i> (Pugs.) E. F. Warb	Ballard Down	R.B.
<i>Pulmonaria longifolia</i> (Bast.) Bor.	Affpuddle	L.D.
<i>Verbascum lychmitis</i> L.	Badbury Rings	J.D.
<i>Lathraea squamaria</i> L.	Whitchurch Canonicorum	J.W.
<i>Orobancha maritima</i> Pugs.	Smallmouth	L.D.
<i>Baldellia ranunculoides</i> (L.) Parl.	Wareham	R.B.
	Winfrith	H.B.
	Wareham	H.B.
<i>Asparagus officinalis</i> L.	Kimmeridge	R.B.
<i>Tulipa sylvestris</i> L.	Kingstag	F.R.G.
<i>Gagea lutea</i> (L.) Ker-Gawl.	Damerham	S.D.
<i>Colchicum autumnale</i> L.	Uploders	E.P.
<i>Paris quadrifolia</i> L.	Morden	A.H.
<i>Leucojum verum</i> L.	Cranborne	A.H.D.
<i>Cephalanthera damasonium</i> (Mill.) Druce	Turners Puddle	J.K.H.
<i>Epipactis leptochila</i> (Godfrey) Godfrey	Fontmell Magna	T.N.
<i>Coeloglossum viride</i> (L.) Hartm.	R. Piddle	H.B.
<i>Scirpus fluitans</i> L.	Moreton	H.B.
<i>Cyperus longus</i> L.	Winfrith	H.B.
<i>Schoenus nigricans</i> L.	Keysworth	A.H.
	Winfrith	H.B.
<i>Carex serotina</i> Marat.	Alderholt	R.H.D.
<i>Briza minor</i> L.	Rempstone	H.B.

DORSET FIELD MEETING OF THE BOTANICAL SOCIETY OF THE BRITISH ISLES, 19-20 AUGUST, 1978

On a weekend of glorious weather, Dorset was fortunate in having a BSBI meeting led by Dr H. Bowen. It was attended by 30 members. The extensive itinerary included a visit to Winfrith Heath, Black Down, the iron ore ridge and the castle ruins at Abbotsbury and Portland where the party split into groups to record tetrads. Sunday morning was spent walking from Rempstone to Ower and Cleavel Point. Before retiring for tea at Wareham, they visited Brenscombe Hill and Wytch Heath. Plant lists were compiled at all sites visited and records were sent to the Environmental Record Centre by Dr Bowen. Many interesting and rare species were recorded. Among these was a weed, new to Dorset, *Solanum sarrachoides* Sendtn., found on newly ploughed land. Later Dr. and Mrs. Bowen kindly entertained the members to a splendid barbecue at Ringstead where *Cantharellus* featured on the menu. Among the interesting plant species recorded at the meeting were:

Chamaemelum nobile (L.) All.
Hammarbya paludosa (L.) Kuntze.
Pinguicula lusitanica L.
Cyclamen hederifolium Ait.
Trifolium subterraneum L.
Trifolium squamosum L.
Hypericum hircinum L.
Matthiola incana (L.)
Polygonum mite Huds.
Hyporhoeris glabra L.
Lotus hispidus Desf ex DC
Oenanthe lachenalii C.C. G mel.
Carex divisa Huds.

MARINE INVERTEBRATES

J. B. HAWTHORNE

The Purbeck Marine Wildlife Reserve was launched by the sponsoring organisation, Dorset Naturalists' Trust (DNT), in September, 1978. Representatives of user organisations, The Army and the Smedmore Estate combined efforts to produce a Reserve Guide which has been published by DNT and which is the technical document which has created the Reserve. The Law relating to the shore and near-shore is so complex and the bodies with responsibility so numerous and diverse, that the setting up of statutory marine nature reserves has appeared almost impossible, and the principle has been so controversial that the basic research necessary to identify the best sites has been started in only recent years. A second major report for the government on national marine conservation is due to be published at about the time of writing of these comments.

The Purbeck Reserve is voluntary and depends on the co-operation of users. Most visitors to the area of the Reserve come to enjoy its natural beauty or to study wildlife geology. A major function of the Reserve is to encourage the maintenance of the very aspects which people wish to enjoy and study, and the prime task is one of education. The Reserve Advisory Group hopes to learn what the public expect of the area and what effects visitors have on the Reserve's resources, and in return, by means of an information centre and appropriate publications and wardening, to assist educational groups study safely and the general public to enjoy the area without conflict between interests and without diminishing the values of the area.

The Purbeck Marine Wildlife Reserve is bounded at sea by a line drawn between Clavell's Hard (SY920778) in the east, and Bacon Hole (SY839796) in the west, a distance of 7 km, and its landward boundary is the top edge of the cliffs between these two locations. It consists of the wildlife and wildlife habitats within these boundaries and thus includes cliff vegetation and nesting birds as well as the marine organisms.

The shores of Kimmeridge and the Army Ranges were recognised as being of very high natural history value by the DNT working group that reported in 1974. That the underwater life is of the anticipated high interest has been confirmed by the Dorset Underwater Surveys (DUS), which came to an end in their present form at the end of 1978 with an investigation of sites in West Bay. There are probably plenty of other sites of high quality around the British Isles, but few can offer the particular scientific interest of having large numbers of species near the known limits of their ranges, or the opportunity for reserve status represented by this part of Purbeck.

The limitations on access which derive from the existence of the Lulworth Army Ranges and the Sea Danger Areas, combined with the single road access at Kimmeridge, have provided opportunity for a reserve, and opportunity may prove to be the most important criterion in the selection of marine reserve sites in Britain. The major request to be made of users of the Reserve is that they should not increase their demands on it. A suggestion that people cease what they are accustomed to do, whether a reserve is to be voluntary or statutory, is unlikely to be successful without more wardening than is likely to be available.

Most specimens in the DUS reference collection have been deposited in the County Museum, as has the photographic record. Completed record cards have been lodged with the Dorset Environmental Records Centre at the Museum.

Of undoubted significance to Dorset marine invertebrates is the establishment during 1978 of Japanese Seaweed, *Sargassum muticum*, at Chapman's Pool in spite of attempts to control it. Its arrival in Dorset has seemed inevitable, and it will now almost certainly appear along the whole Dorset coast. Whilst it provides habitat for numerous animal species, it may well replace other habitats and its effects merit close study.

Dr. David Prandle of the Institute of Oceanographic Sciences, Bidston Observatory, Birkenhead, has published an estimate of the mean value of residual flow through the Dover Strait for the period 1949 to 1972, based on a computed model (Prandle, D., 1978. Monthly-mean residual flows through the Dover Strait, 1949-1972. *J. mar. biol. Ass. U.K.* 58, 965-973.). His results show a single month when the normal direction of flow was reversed and North Sea water flowed into the Channel. This calculation is for the month of January, 1963 and coincides with the suggestion made in a short paper in these Proceedings (Hawthorne, J. B., 1964. Death of marine organisms in Dorset during February, 1963. *Proc. Dorset nat. Hist. & Arch. Soc.*, 85, 87-90 and supported in these notes for 1964 (vol. 86). Readers may recall the severe conditions and the death of fish and other organisms of that winter.

LAND ARTHROPODS OTHER THAN LEPIDOPTERA

A. J. BROWN

Unfortunately this report is rather short as very few people submitted records for 1978.

Odonata

Aeshna cyanea (Southern Aeshna), Bournemouth Town Centre, 26 viii 78 (M. Jaeger).

The following species were recorded by Mrs. A. Hughes from Prior's Down Nature Reserve on 11 vi 78:

Anax imperator (Emperor Dragonfly); *Libellula quadrimaculata* (Four-Spotted Libellula); *L. depressa* (Broad-bodied Libellula); *Orthetrum cancellatum* (Black-tailed Skimmer); *Pyrrosoma nymphula* (Large Red Damselfly); *Enallagma cyathigerum* (Common Blue Damselfly); *Ischnura elegans* (Common Ischnura). The same person recorded *Agrion splendens* and *A. virgo* at Fiddleford Mill on the same date.

Coleoptera

Arhopalus rusticus, Holt viii 78. This specimen, the first Dorset record, was found by R. H. S. Hatton in logs delivered from Three Legged Cross.

Hymenoptera

Vespa crabro (Hornet), Radipole Nature Reserve 23 viii 78 (W. H. Dady).

LEPIDOPTERA

ALAN T. BROMBY

Thanks are due to all who have contributed records, only a few of which can be printed in this report.

There was a notable influx of some of the rarer migratory species in late Autumn, including: *Heliothis peltigera*, *Leucania unipuncta*, *L. vitellina*, *L. albipuncta* and *Rhodomestra sacraria*.

Also noteworthy are records of *Catocala promissa* and *Cosymbia puppilaria*.

The following sent in reports and those printed are followed by the initials of the contributor: A. A. Allen; D. N. Arnold, K. Clements, J. Rees Cox, A. H. Dunn, Dr. J. H. Hasler; D. T. Ireland; B. P. Pickess; Dr. N. R. Webb.

Anthocharis cardamines L. Orange-tip White. Studland Heath, 28.5. (J.R.C.) Radipole. 10 between 4.5 and 20.6. (D.N.A.) Corfe Mullen, 10 between 10.5. and 9.6. (A.H.D.)

Limenitis camilla L. White Admiral. Studland Heath, maximum of 9. (J.R.C.)

Vanessa cardui L. Painted Lady. Scarce this year, Studland Heath 21.8. and 3.9. (J.R.C.) Radipole, 6.6. (D.T.I.) Broadstone 18.8. (A.H.D.)

Polygonia c-album L. Comma. Studland Heath, 1 in August (J.R.C.) Radipole, 13 between 11.7. and 25.7. and 25.9. and 27.11. (D.N.A.) Thorncombe Wood 24.7. (J.K.H.) Morden, 24.4. (A.H.D.) Corfe Mullen 4.6. and 20.8. (A.H.D.)

Argynnis paphia L. Silver-washed Fritillary. Studland Heath, scarce this year, with maximum of 3 (J.R.C.) Woods near Dorchester 21 on 18.7. (J.K.H.) Stubbampton large numbers on 27.7. (A.H.D.)

Argynnis cydippe L. High Brown Fritillary. Radipole, 21.7. (D.T.I.)

Clossiana euphrosyne L. Large Pearl-bordered Fritillary. Blandford area, 5 on 25.5. (A.H.D.)

Clossiana selene Schiff. Small Pearl-bordered Fritillary. Radipole, 17.6. (D.N.A.)

Strymonidia w-album Knock. White-letter Hairstreak. Radipole, 58 between 14.7. and 17.8. (D.N.A.)

Callophrys rubi L. Green Hairstreak. Studland Heath, Maximum of 5 (J.R.C.)

Celastrina argiolus L. Holly Blue. Studland Heath, maximum of 3 (J.R.C.) Radipole, 21 between 4.5. and 19.7. (D.N.A.) 29.7. (D.T.I.) Corfe Mullen, 3 between 11.5. and 30.5. singles on 11.8. and 23.8. (A.H.D.)

Cupido minimus Fuessl. Small Blue. Radipole, 30.5. (D.N.A.)

Hyloicus pinastri L. Pine Hawk. Furzebrook, 25 between 31.5. and 11.8. (N.R.W.) Arne, 29 between 28.6. and 26.7. (B.P.P.)

Macroglossum stellatarum L. Humming-bird Hawk. Furzebrook, 27.7. and several singles between 21.10. and 30.10. (N.R.W.)

Hemaris fuciformis L. Broad-bordered Bee Hawk. Arne, recorded in May and June, (B.P.P.) Studland heath, 3.6. and 16.6. (J.R.C.)

Stauropus fagi L. Lobster Prominent. Furzebrook, 12 between 31.5. and 13.7. (N.R.W.) Arne, 2.7. 12.7. and 15.7. (B.P.P.)

Clostera curtula L. Large Chocolate-tip. Furzebrook, 31.5. (N.R.W.)

Clostera anachoreta Schiff. Scarce Chocolate-tip. Furzebrook, 29.7. and 5.8. (N.R.W.)

Trichiura crataegi L. Pale Eggar. Furzebrook, 3 on 11.9. and 12.9. (N.R.W.) Radipole, 13.9. and 14.9. (D.N.A.)

Lasiocampa trifolii Schiff. Grass Eggar. Furzebrook, 1.9. (N.R.W.)

Gastropacha quercifolia L. Common Lappet. Furzebrook, 31.7. and 5.8. (N.R.W.) Arne, 27.7. (B.P.P.) Radipole, 7.7. (D.T.I.)

Saturnia pavonia L. Empress. Furzebrook, 15.5. and 29.5. (N.R.W.) Studland Heath, several larvae in dune heath (J.R.C.) Broadstone, a female in May (K.C.) Corfe Mullen, a female 21.5. (A.H.D.)

Nola albula Schiff. Kent Black Arches. Furzebrook, singles on 1.8. 13.8. and 4.9. (N.R.W.) Radipole, 4.8. (D.N.A.)

Celama confusalis H-S. Least Black Arches. Furzebrook, singles on 30.5. 2.6. and 3.6. (N.R.W.)
Celama trituberculana Bosc. Scarce Black Arches. Radipole, 28.8.78. (D.T.I.)
Lithosia quadra L. Large Footman. Arne, a male on 31.7. (B.P.P.)
Coscinia cribraria L. Black-speckled Flunkey. Furzebrook, 30.7. (N.R.W.)
Diacrisia sannio L. Clouded Ermine. Furzebrook, 4 between 30.7. and 8.8. (N.R.W.)
Aegeria formicaeformis Esp. Red-tipped Clearwing. Studland Heath, 1. no date. (J.R.C.)
Zeuzera pyrina L. Wood Leopard. Furzebrook, 5 between 14.7 and 15.8. (N.R.W.) Arne, 18.7. and 11.8. (B.P.P.)
Agrotis trux Hubn. Crescent Dart. Radipole, 14.8. (D.T.I.)
Graphiphora augur F. Double Dart. Furzebrook, 27.6. (N.R.W.)
Anaplectoides prasina Schiff. Green Arches. Furzebrook, 3 between 8.7. and 14.7. (N.R.W.)
Heliothis peltigera Schiff. Dark Bordered Straw. Furzebrook, 15.10. (N.R.W.) Radipole, 1.6. (D.T.I.)
Leucania obsoleta Hubn. Obscure Wainscot. Arne, 10.7. and 12.7. (B.P.P.)
Leucania unipuncta Haw. White-speck Wainscot. Furzebrook, 24 between 31.10 and 21.11. (N.R.W.) Arne, 29.10. and 7.11. 2 on 10.11. and 6 on 11.11. (B.P.P.) Radipole, 43 between 30.10. and 17.11. (D.N.A.) 9.11. (D.T.I.)
Leucania vitellina Hubn. Delicate Wainscot. Furzebrook, 13.10. and 20.10. (N.R.W.) Arne, 6 between 10.11. and 17.7. (B.P.P.)
Leucania albipuncta Schiff. White-point Wainscot. Arne, 13.9. (B.P.P.)
Stilbia anomala Haw. Anomalous Wainscot. Furzebrook, 9 between 29.8. and 24.9. (N.R.W.)
Eremobia ochroleuca Schiff. Dusky Sallow Rustic. Radipole, 29.7. (D.T.I.)
Celaena leucostigma Hubn. Brown Crescent. Arne, 1.8. and 3.8. (B.P.P.) Radipole, 4 between 12.8. and 24.8. (D.N.A.)
Apatele alni L. Alder Dagger. Furzebrook, 8.6. and 2 on 16.8. (N.R.W.)
Craniophora ligustri Schiff. Furzebrook, 29.7. (N.R.W.)
Cucullia verbasci L. Mullein Shark. Radipole, 4 between 4.5. and 30.5. (D.N.A.) Dorchester, 4 larvae (J.K.H.)
Lithophane semibrunnea Haw. Tawny Pinion. Furzebrook, 2.4. and 4.10. (N.R.W.)
Lithophane socia Hufn. Pale Pinion. Furzebrook, 5 between 29.3. and 18.4. (N.R.W.) Radipole, 3 between 30.5. and 26.6. (D.N.A.)
Lithophane ornitopus Hufn. Grey Shoulder-knot. Furzebrook, 26.3. (N.R.W.)
Brachionycha sphinx Hufn. Common Sprawler. Furzebrook, singles on 8.11. 11.11. 15.11. and 24.11. (N.R.W.)
Dasycampa rubiginea Schiff. Dotted Chestnut. Furzebrook, 26.3. then 5 between 5.11. and 25.11. (N.R.W.)
Tiliacea citrigo L. Orange Sallow. Furzebrook, singles on 16.9. 23.9. 2.10. and 20.10. (N.R.W.)
Tiliacea aurago Schiff. Barred Sallow. Radipole, 6.10. (D.N.A.)
Cirrhia gilvago Schiff. Dusky-lemon Sallow. Radipole, 18.10.78. (D.T.I.)
Eustrotia uncula Clerck. Silver Hook. Furzebrook, 27.6. and 7.7. (N.R.W.)
Catocala promissa Schiff. Light Crimson Underwing. Arne, 5.8. (B.P.P.)
Colocasia coryli L. Nut-tree Tuffet. Furzebrook, 14.7. (N.R.W.)
Episema caeruleocephala L. Figure of Eight. Radipole, 6 between 11.10. and 25.10. (D.N.A.) 19.10. (D.T.I.)
Plusia gamma L. Common Silver Y. Furzebrook, 561. between 29.7. and 16.12. (N.R.W.)
Cosymbia pupillaria Hubn. Blair's Mocha. Radipole, 12.10. (D.T.I.)
Sterrhia degeneraria Hubn. Portland Ribbon Wave. Radipole, 14.7. (D.T.I.)
Rhodometra sacraria L. Vestal. Arne, 11.10. 12.10. 21.10. 25.10. and 26.10. (B.P.P.) Radipole, 27.10. (D.N.A.) 17.10. (D.T.I.)
Nycterosea obstipata F. Narrow-barred Carpet. Furzebrook, 13.10. and 21.10. (N.R.W.) Arne, a female 9.11. and male 11.11. (B.P.P.)
Perizoma flavofasciata Thunb. Sandy Carpet. Furzebrook, 2.8. and 5.8. (N.R.W.) Radipole, 2.6. (D.T.I.)
Acasis viretata Hubn. Brindle-barred Yellow. Furzebrook, 19.6. (N.R.W.) Radipole, 19.8. (D.N.A.) 10.6. (D.T.I.)
Odezia atrata L. Chimney-sweeper. Radipole, 3 between 11.7. and 14.7. (D.N.A.)
Palpita unionalis Hubn. Scarce Olive-tree Pearl. Arne, 12.10. and 28.10. (B.P.P.)
Udea fulvalis Hubn. Fulvous-dot Pearl. Radipole, 14.8. (D.T.I.)

FISH

M. LADLE

In the year 1978-79 the seasonal patterns of fish movements, as indicated by recorded occurrences, showed few changes from other years. Catches of salmon from local rivers were again low but it is difficult, if not impossible, to determine the relative effects of numbers entering the river and fishing conditions on catches. Similar problems arise in drawing conclusions from the 'scattered' records of other fish species and it is only over long period of time that trends might become apparent.

MARINE FISH

Rajidae

Raja clavata (L.) Thornback Ray. August, 1978. A fish of 14lb from Poole.

Raja undulata Lacépède. Undulate ray. August, 1978. A very large fish of 18lb from Swanage.

Raja microocellata Montagu Small-eyed ray. As usual a number of these fish were reported, particularly from the Swanage area but none was of special interest.

Congridae

Conger conger (L.) Conger eel. August, 1978. 45¹/₂lb and 34lb Poole, July, 1978. 49lb Poole.

Gadidae

Gadus morrhua (L.) Cod. January, 1979. 29lb 13oz Hengistbury Head. February, 1978. 24¹/₂lb Poole, a number of smaller cod were reported in December and January, 1979.

Trisopterus luscus (L.)

Trisopterus minutus (L.)

} As usual numerous reports were
} received of both species.

Blenniidae

Blennius gattorugine L. A specimen was reported from 10 metres in Swanage Bay.

Labridae

Labrus berggylta Ascanius Ballan Wrasse. Abundant on rocky ground.

Crenilabrus melops (L.) Corkwing Wrasse. Abundant on rocky ground.

Ctenolabrus rupestris (L.) Goidsinny Wrasse. A specimen from 10 metres depth, July, 1978. Swanage Bay.

Mugilidae

Crenimugil labrosus (Risso) Thick-lipped grey mullet. May-October, 1978. Numerous inshore and in estuaries along the coast.

Bothidae

Scophthalmus maximus (L.) Turbot. August, 1978. 14lb and 12lb Poole.

Pleuronectidae

Pleuronectes platessa L. Plaice. October, 1978. 6lb 10oz Poole Harbour, an exceptionally large specimen. Smaller fish were numerous in Summer off Poole and Swanage.

Platichthys flesus (L.) Flounder. Many large (> 21lb) flounder were reported from Poole in the winter.

Soleidae

Solea solea (L.) Sole. December, 1978. Fish of up to 2lb reported from the sandy beaches in the east of the area.

FRESHWATER FISH

In recent years quite a large number of still-water fisheries have been established within the area, many of them freshly dug or constructed. The resultant stocking has increased the number of sites suitable for fish characteristic of these situations. Carp, Tench and even Bronze Bream are becoming common in an area within which they were, traditionally, in poor supply. Brown and Rainbow Trout are also commonly introduced to still waters (and rivers) and, as a result, reports of all these fish from local waters can be expected to increase. In 1978 and 1979 Carp were taken from the River Frome at Wareham and Crucian Carp from the Tadnoll Brook, a tributary of the Frome. Rainbow Trout are frequently recorded from the Frome and Piddle catchments.

Petromyzonidae

Lampetra fluviatilis (L.) Lampern. Reported from the River Frome at East Holme in the summer of 1978.

Petromyzon marinus L. Sea Lamprey. In early summer Sea Lampreys spawned in the River Frome at East Stoke.

No other records of interest but any localities for the following species will be gratefully received. Common carp, Crucian carp, Tench, Bronze bream, Silver bream, Rudd.

AMPHIBIANS

ROBERT V. SKINNER

Palmate Newt. *Triturus helveticus*—Razoumowsky

About six observed in a small shallow pool at Warren Hill, Hengisbury Head on 21st May. (D. A. Dolton)

Common Toad. *Bufo Bufo*—L.

Two good breeding colonies in garden ponds in Central Avenue, Corfe Mullen, and another colony in a garden pond in Parkstone. (A. H. Dunn)

REPTILES

ROBERT V. SKINNER

Viviparous lizard. *Lacerta vivipara*—Jaquin

One male seen on a grassy roadside bank on 20th August near Slepe in the Arne area. (D. A. Dolton). First seen on Studland Heath on 2nd March. At least 20 individuals recorded on the Reserve, not as many as last year, but more than in 1976. The last record was on 9th September (J. R. Cox).

Sand Lizard. *Lacerta agilis*—L.

One male seen in the grounds of St. Ann's Hospital, Flag Head Undercliff, Canford Cliffs on 14th July (K. M. Godfrey). A female seen at Holton Point, Poole Harbour on 12th May and another on 16th May. (D. J. Godfrey). One young specimen seen on heathland between Stapelhill and Ferndown on 28th May. A female was also observed in this same area on 30th May. Another female was seen on 4th August and four more individuals, three were young, observed on 20th August, all near the road to Slepe in the Arne area. A male and female seen on heathland at Holt on 19th August. (D. A. Dolton).

First sighting on Studland Heath was on 5th March. (I. Q. Grant) 34 individuals were seen on the reserve during the year and the last recording was on 29th October. (J. R. Cox).

Slow Worm. *Anguis fragilis*—L.

One recorded in a garden in Treves Road, Dorchester on 16th May. (J. K. Hasler). Two seen at The Towers, Corfe Mullen on 22nd May, another on 28th May, another on 18th August and one more on 2nd September. One half grown specimen seen on heathland at Patching Point, Poole Harbour on 14th August. Four other individuals were seen in the Corfe Mullen area between 22nd May and 22nd October. (A. H. Dunn). Two observed at St. Thomas Hill, Milton Abbey on 1st October. (P. Simons—Milton Abbey School). One juvenile seen on Studland Heath on 1st January, then none until 4th March. 13 sightings during the year on the reserve, this was more than the previous two years. Last record was on 10th September. (I. Q. Grant).

Grass Snake. *Natrix natrix helvetica*—Lacépède

One seen in Shore Woods, Holton, Poole Harbour on 10th May (D. J. Godfrey). One adult found cut in half by a mowing machine in a field at Corfe Mullen on 17th July. Another adult was found to be caught in an eel trap at Corfe Mullen Mill on 16th September. (A. H. Dunn). First seen on Studland Heath on the 4th March. 23 individuals recorded during the year, but some areas were not really searched. The last date was 11th October, but a long dead specimen with the head severed was found on 21st October. (J. R. Cox).

Smooth Snake. *Coronella austriaca*—Laurenti

Two seen on heathland in Wareham Forest on 7th August and another on 16th August. The location of the following observations is not revealed for the purpose of protection. Four seen on heathland on 2nd September and four seen in the same area on 3rd September. On 6th September six were seen one

of which was a juvenile. Two large adults, one very grey in colour and both probably female were seen, one on 20th and one on 25th September. (A. H. Dunn). First sighting on Studland Heath was on 16th April. (L. T. Howells and C. H. Flynn).

One was found in an area of dune heath where the species had not been recorded before, on 22nd April. (I. Q. Grant). At least eight individuals were seen on the South Haven Peninsula during the year. (J. R. Cox).

Adder. *Vipera berus*—L.

First seen on Holton Shore, Poole Harbour on 10th March (D. J. Godfrey). One large grey adult seen on the Common, Corfe Mullen on 3rd May. Eight specimens killed on a bank in the garden at Stoney Down, near Corfe Mullen in the early summer. (A. H. Dunn) On Studland Heath one individual kept appearing from 2nd January to 17th January, then on 25th January it was lying dead in its normal basking spot. On 4th March eight were seen on Studland Heath. Over the year 60 individuals were recorded on the reserve, the same as last year, but some areas were not searched. Three were found killed in one area, in late August and early September, almost certainly by humans. Last record was a young specimen seen on 8th October. (J. R. Cox).

BRIEF SUMMARY OF THE DORSET BIRD REPORT FOR 1978

J. V. BOYS (Editor)

For the second successive year the Bird Report has been published separately as a sixty-four page booklet, obtainable from July, 1979 at the Dorset County Museum. It contains a brief introduction, a list of contributors, the systematic bird list in the new order (Voous, 1978) now in general use, a map showing grid squares, an up-dating of Rare Birds Committee verdicts, census tables for wildfowl and for estuarine species, a paper on Mute Swans, the Ringing and Recovery report, and information about the Dorset Bird Club—these last three items contributed by Col. E. D. V. Prendergast.

Two new special study and census areas have been added, by Dr. Green near Corfe Mullen and by Mr. Allsop west of Sopley. In general coverage is quite good though there are parts of the County not well studied, and of course the majority of records come from the mainly coastal observatories and reserves.

1978 was not a vintage year for weather or for birds, and breeding numbers were well down for Common and Little Terns, Razorbills and Puffins, Ravens (none), Grasshopper, Dartford and Garden Warblers, but increases were noted for Teal, Bearded Tits and Cetti's Warbler. Two new species were added to the County List, a Ring-necked Duck from America at Radipole Lake in April, and an Alpine Accentor at Portland Bill also in April. Other rarities include Red-footed Falcon, Great Reed and Savi's Warblers, Isabelline Shrike and Black-headed Bunting, while Rare Birds Committee verdicts are (at the time of writing, July, 1979) awaited for Black-winged Stilt, Sharp-tailed Sandpiper (another possible County first), Long-billed Dowitcher, Ring-billed Gull, plus a number of rather less rare visitors.

The Mute Swan survey in April and May was part of a BTO national enquiry and, with help of an aeroplane, covered virtually the whole County. In Dorset, unlike many other counties more affected by various forms of pollution, numbers have not changed markedly since the last census in 1961, and we have 174 breeding pairs plus 695 non-breeding individuals. The Abbotsbury Swannery, in existence since before 1393, is still the predominant site.

Other surveys have not progressed as well as hoped and we still require information about Turtle Doves, Tree Sparrows and Corn Buntings, especially in the breeding season, but we hope to report next year on the outcome of the 1978 enquiries into wintering Blackcaps and breeding House Martins.

Ringing totals show a reduction on last year largely because of much reduced programmes at two sites, but the report includes an attempt to give totals of each species ringed in Dorset over past years. There have been some valuable recoveries, the least expected being a Bullfinch which wandered very untypically to the Loire valley in France, and a twelve-year-old Oystercatcher in Poole Harbour deserves mention.

E. M. KEATS

I am pleased to use for the report some of the mammal observations which have been sent in, both to me and direct to the Dorset Environmental Records Centre at the Dorset County Museum. All reports are filed at the Records Centre and more would be welcome. *The Provisional Atlas of the Mammals of the British Isles*, edited for the Mammal Society by Henry R. Arnold and published by the Natural Environment Research Council, Monks Wood, in 1978 shows some blank areas in Dorset, for certain mammal species, which I suspect means lack of records rather than species.

The check list numbers and scientific names are as listed in *The Identification of British Mammals*, by G. B. Corbett, British Museum (Natural History) 1969. In addition to the observations printed here the following species were also reported in 1978: 2. Mole, *Talpa europaea*. 3. Common Shrew, *Sorex araneus*. 4. Pygmy Shrew, *Sorex minutus*. 5. Water-shrew, *Neomys fodiens*. 12. Natterer's Bat, *Myotis nattereri*. 14. Daubenton's Bat, *Myotis daubentoni*. 21. Common Long-eared Bat, *Plecotus auritus*. 22. Grey Long-eared Bat, *Plecotus austriacus*. 24. Fox, *Vulpes vulpes*. 30. Mink, *Mustela vison*. 44. Fallow Deer, *Dama dama*. 45. Roe-deer, *Capreolus capreolus*. 53. Rabbit, *Oryctolagus cuniculus*. 57. Grey Squirrel, *Sciurus carolinensis*. 59. Dormouse, *Muscardinus avellanarius*. 62. Long-tailed Field Mouse, *Apodemus sylvaticus*. 63. Yellow-necked Mouse, *Apodemus flavicollis*. 67. Bank Vole, *Clethrionomys glareolus*. 68. Water Vole, *Arvicola terrestris*. 69. Short-tailed Field Vole, *Microtus agrestis*.

1. **Hedgehog**, *Erinaceus europaeus*. Hedgehogs were active in Dorchester as usual and in one garden a pair were seen mating after a long period of circling and grunting on 17th June. In the same garden three young ones were seen on 14th August with one adult and there were many further sightings both in the daytime as well as after dark of this family. The young ones squeaked a great deal and seemed to keep together in this way. Live records have also been reported from Brownsea, Wareham and road victims at Sixpenny Handley, Spetisbury, Broadstone and Athelhamp-ton/Tolpuddle.
2. **Greater Horseshoe Bat**, *Rhinolophus ferrumequinum*. The Dorset population is thought to have declined to about 130 bats and some of these will hibernate in S. Wiltshire and possibly E. Hampshire.
10. **Mouse-eared Bat**, *Myotis myotis*. This species seems to be almost extinct in Dorset, just one male found in the winter 1978/1979.
11. **Whiskered Bat**, *Myotis mystacinus*. This species still hibernates in S.E. Dorset in small numbers although possibly a few more were recorded this year than in recent years.
19. **Pipistrelle**, *Pipistrellus pipistrellus*. One roost near Dorchester had many fewer in 1978 than in 1977, but at another roost in the centre of the county nearly 200 bats were counted out. This species has also been recorded in bat boxes in the S.E. of the county.
27. **Stoat**, *Mustela erminea*. This species has been reported from Milton Abbas, Delcombe Valley, Bere Regis, Holwell, Milborne St. Andrew, Hilton, Hammoon, Wimborne, Sherford Bridge, Corfe Mullen and Cogden near West Bexington.
28. **Weasel**, *Mustela nivalis*. This species has been reported from Blandford, Shaftesbury, Milborne St. Andrew, Milton Abbas, Delcombe, Bulbarrow, Hilton, Hammoon, Chapman's Pool, Corfe Mullen, Lodmoor, Dorchester and Revels Hill, Buckland Newton where a pack of seven was seen crossing the road in July.
31. **Badger**, *Meles meles*. The Provisional Atlas shows no records of Badgers from 10 km square ST 9000 which includes most of the Tarrants, Witchampton, Spetisbury and much of Pamphill, surely this is an example of no reports rather than no badgers. Reports have been received from Lyscombe, Lyme Regis, Weymouth, Bincombe, Yellowham Hill, Puddletown, Cogden, Hammoon, Bagber, Corfe Mullen, Morden, Piddlethrethide, Milton Abbas and Delcombe.
32. **Otter**, *Lutra lutra*. Work on providing otter havens has been carried out on several Dorset rivers by Angela Potter and Angela King sponsored by the Fauna Preservation Society and the Vincent Weir Wildlife Trust. Artificial holts have been built and areas of river bank planted with scrub and trees and fenced off, to provide cover for the otters, by arrangement with the owners of the land.
43. **Sika Deer**, *Cervus nippon*. Several reports have been received of this species on the usual heathland areas and one calf was found on Brownsea Island but one report of a mature stag is interesting because it was seen in September on farmland in the Hilton area where it has not previously been recorded.
56. **Red Squirrel**, *Sciurus vulgaris*. Mrs. Parkyn comments in her excellent report of the sightings on Brownsea for this species that this year (1978) was an all-time record, 233 sightings. After the low figure for 1977 of 56 sightings, in October, 1978 alone 93 squirrels were seen. Although the figures recorded can not tell the actual numbers of Red Squirrels on Brownsea, over the sixteen years of recording perhaps they give some indications of the highs and lows in the population and the careful recording of the areas on the Island where they are seen provides a guide to their distribution. Two large groups, one of five and one of seven were seen in October and eleven groups of three were also seen during the year. One Red Squirrel was found drowned in a water butt on 9th

November on Green Island and the corpse was taken to the Dorset County Museum. One other report in mainland Dorset was unfortunately uncertain.

66. **Brown Rat**, *Rattus norvegicus*. A large brown rat was seen in the cold snowy spell in February in a Dorchester garden in the early morning. It bit through the string holding a piece of suet on a bird table and carried the suet away.

Records of Dorset Mammals for 1978 have been received from the following: J. W. Bonn, R. Burt, Dorset Naturalists' Trust, A. H. Dunn, C. Ellis, R. Ford, Mrs. J. FitzPatrick, K. M. Godfrey, Mrs. E. Greenland, Dr. D. Griffith, J. Hand, R. Holloway, Mrs. A. Hughes, F. J. Humber, Milton Abbey School Natural History Society, Mrs. K. B. Parkyn, Miss. E. Pearse, A. and S. Perry, M. F. Robertson, P. Scofield, W. C. Shreeves, S. Slade, R. W. Smith, Mrs. G. Soane, Dr. R. E. Stebbings, Miss. T. Sussman, J. Tennant, Miss. H. Thomas, Mrs. J. Walton, P. F. Williams, A. Wise.

Early Wars of Wessex by Albany Major (Blandford Press, 1978).

Albany F. Major's *Early Wars of Wessex* first appeared in 1913; its full title continued '... being *Studies from England's School of Arms in the West*'. This sub-title, together with three appendices, many of the original footnotes and much of the detail from the index, have been excised by the editor of this reprint. Even the author's second initial has disappeared. Surviving footnotes have become marginal notes, lacking numbered references in the text. The original line drawings (some by Heywood Sumner; others by the author) have been augmented, sometimes incongruously: thus for example on p. 10, beside a section of text dealing with Saxon raids on the coast of late-Roman Britain, appears a tenth-century archer. No doubt these changes were made in order to render the book more attractive to a general readership; and the publisher's note, describing it as 'highly readable' and 'exciting', reinforces this impression. This is obviously a matter of opinion, but *Early Wars* seems neither highly readable nor exciting (although that may be as much a comment on this reviewer's taste in entertainment as on Major's writing). In any case, it is unlikely that the author had such superficial ends in view.

Respect for this edition is sadly undermined by the accumulated effect of the modifications referred to earlier. Initial impressions apart, what of the content? In *Book I* the origins of the kingdom of Wessex are interpreted in terms of military campaigns conducted by Saxon invaders, using as evidence the *Anglo-Saxon Chronicle* (read literally), place-names, local legends, and the distribution of linear earthworks, particularly iron-age hillforts. The latter are assigned important parts in the campaigns so speculatively reconstructed. *Book II* examines the military impact of the Danes on Wessex, and in *Book III* the 'campaigns of 876-8' are considered. Much of this latter Book revolves around the siting of *Ethandun*, and other named sites of battles and incidents, *Ethandun* being placed in Somerset, rather than in its more familiar Wiltshire location.

Academically, the book has been rendered obsolete by historical and archaeological research during the last half-century. Certainly our interpretation of the *Anglo-Saxon Chronicle* would be more critical. As Sir Frank Stenton has since written of the *Chronicle*, '... these annals should not be regarded as a piece of consecutive history ... many events of far-reaching significance passed entirely out of memory because they were not accompanied by any incident of which a poet could take advantage'.

For the fifth-sixth centuries, the picture of coherent military campaigns itself seems a non-starter. The later subject matter is stronger, mainly because historical sources supply more details. Archaeologically, Major's ideas seem quite archaic from a 1978 standpoint; but in this area the book has patently been overtaken (as, indeed, we would expect after more than half a century). The publisher's introduction, admitting that this may have happened, considers that it should be 'read with a modern archaeology'. What does he have in mind?

Major's original is still a not-unattractive work, albeit a fossil in academic terms. To revive it in this manner, however, is merely to emphasise its antiquity. In this new edition, nothing of value is added; most of its scholarly attributes and its charm are swept away in favour of a catchpenny presentation. It is difficult to see why *Early Wars* merited reprinting, since scholars will give it scant attention, and a reader with little or no knowledge of the period could be greatly misled by it. With so much up-to-date and stimulating popular archaeology and history now appearing in print, it is hard to see how this rather anachronistic volume can successfully compete in the market.

A.M.H.

The Houses of Yetminster by R. Machin (Dept. of Extra-Mural Studies, University of Bristol, £2.95).

The last few years have seen a growing interest in vernacular architecture—the smaller houses, cottages, and early industrial buildings which make up the larger part of our towns and villages, and a growing appreciation of their importance. A number of books on this subject have appeared, some of which are concerned largely with the external characteristics of these buildings—choice of materials, and details such as doors, windows and chimneys. Indeed, this interest seems to have led to a new 'vernacular revival' in house design, inviting comparison with that earlier revival inspired by the Arts and Crafts movement, and the first Garden Cities.

It is a change to find a book which goes beyond the superficial characteristics of the traditional smaller house and, by concentrating on a relatively small area, the medieval Parish of Yetminster, examines in some detail the social and economic conditions which led to the building and subsequent alterations to these houses.

Most of the houses described in Mr. Machin's book date from the seventeenth and early eighteenth centuries, the period when the influence of the Renaissance at last began to affect the rural areas of the West Country. The principal result of this was the change from the asymmetrical medieval house plan, evolved for functional reasons, and reflected in the elevation, to the classical plan, designed to fit behind a symmetrical facade. By the early eighteenth century this change was complete, but

architectural details were still traditional—Gothic in inspiration. Houses in Yetminster, and indeed over much of Dorset, were still being built, for comparatively well-to-do owners, with steeply pitched gabled roofs, and mullioned windows, at a time when London was being rebuilt after the Fire in the fully developed classic style now regarded as typically 'Georgian'.

In his introduction Mr. Machin refers to the inadequacies of the West Dorset volume of the Survey of the Royal Commission on Historical Monuments in recording the smaller houses. Although this has to some extent been improved in the later volumes there are still many omissions. All too often the houses appear to be assessed by external inspections only. As Mr. Machin's book makes clear, the historical significance of a house is often revealed only by a careful internal inspection. This, of course, is only possible with the co-operation of the owner, and many owners are understandably suspicious of inspections of their property by 'official' bodies, particularly if this is likely to result in the house being 'listed', with consequent restrictions on future alterations!

The second part of Mr. Machin's book consists of the results of detailed historical research into the social and economic background of the Parish, and the effect this had on building, and much of the value of the book lies in this combination of architectural and historical evidence. The development of the plan forms is well illustrated. One would like to have seen more photographs, particularly of surviving internal details, although this would probably have increased production costs. As it is, the book is very good value, and it is to be hoped that it will inspire similar studies of other parishes. Many of the past (and continuing!) losses of these older houses have been due to ignorance of their significance. All too often they have been destroyed as so much 'Sub-standard housing', or have suffered from over-drastring modernisation, particularly internally. Mr. Machin's book does much to prove the fallacy of the 'facade preservation' attitude, especially when considering buildings of this type. Although of primary interest to residents of Yetminster, this book should encourage all owners of old houses to look at them in a new light.

P.M.C.

THE DORSET RECORD SOCIETY

This society, founded in 1962 as a subsidiary to the DNHAS, has been in abeyance for several years. It now proposes to produce several new publications. *Full members* of the DNHAS will be entitled to purchase any of these publications at a substantially reduced rate, while stocks last.

The Dorset Lay Subsidy Roll of 1327

Edited by Alexander R. Rumble. Members £2.00, Non-members £4.00. The cost of each publication includes postage, but may be revised later, if postage is substantially increased.

Two publications for 1980:

The Mapperton Rectory Building Accounts, 1699-1703

These accounts are unique among local records and can have few parallels elsewhere in the country. They record in detail every expense in constructing a large farmhouse or small pseudo-manor house from the opening of the quarry to painting the woodwork. There is, in addition a brief statement of the annual income assigned to the work which explains why building was spread over several years. All this took place at the end of the greatest pre-industrial building boom in England and therefore provides information on costs and the building process at a crucially important period. Moreover, the house survives for archaeological examination. The volume will consist of a transcript of the accounts, appended comparative material and glossary with an introductory analysis of the documents and a discussion of the surviving fabric illustrated by plans and photographs.

The editor will be R. Machin, MA, Bristol University Resident Tutor in West Dorset. His research tries to integrate the archaeological and historical study of minor domestic architecture as exemplified by his *Houses of Yetminster* (1978) and 'The Great Rebuilding: a re-assessment' in *Past and Present* no. 77 (1977).

Francis Ashley's Journal

An edition of the fascinating journal kept by Francis Ashley who was Recorder of Dorchester and a Justice of the Peace for Dorset during the years 1610 to 1635. His journal is now in the British Library and records in detail the legal cases that were brought before him from all over Dorset and the evidence given by the witnesses. This throws new light on many aspects of life in the county during the early seventeenth century and especially about that section of society which does not normally receive much attention in written records. Cases tried by Francis Ashley and for which he records the evidence given by witnesses, include all sorts of offences by pickpockets, poachers, petty thieves, horse and cattle stealers and rioters, it also extends to cases involving murder, blasphemy, assault and other serious crimes.

The journal gives much incidental information about housing, social customs, markets, fairs and church life. It is especially valuable in providing information about the important fair held each year on the top of Woodbury Hill, near Bere Regis. Each year a fresh crop of rogues and cut-purses who had been caught during the fair appeared before Francis Ashley and the evidence gives much detail about the fair, the stalls and booths, the business conducted and the fact that people came regularly to the fair from places as far away as Coventry and London to sell various commodities. The journal is being edited by Dr. J. H. Bettey of the University of Bristol.

A full list of the pamphlets published by the Society may be had on application to the Hon. Secretary, c/o Dorset County Museum, Dorchester.

