

The Development of Water Meadows in Dorset during the Seventeenth Century

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THE rapid development of water meadows along the chalkland valleys of Dorset is the most remarkable feature of the agricultural history of the county during the seventeenth century. The introduction and use of water meadows in the neighbouring county of Wiltshire during the same period has been described in detail by Dr Eric Kerridge,¹ and in the chalkland areas of both counties, as well as in Hampshire, the water meadows, by producing abundant grass feed for the sheep flocks during the hungry months of March and April, when the hay was spent and before the natural growth of grass occurred, made it possible to keep the very large numbers of sheep which so impressed contemporary observers.² The main purpose of the sheep flocks was for folding on the arable land, and the water meadows, by making it possible to keep larger flocks, were the essential basis of all the arable farming advances on the chalklands, since only by the intensive use of the sheepfold could the fertility of these thin soils be maintained.

The fast-flowing chalkland streams of Dorset were well suited for the creation of water meadows; the water came directly from the vast underground reservoirs of the chalk downs and, besides containing valuable sediment

which was deposited among the roots of the meadow grass, the water came from the hill-sides at a constant temperature, winter and summer alike, of about 54°–58°F. This water was ideal for keeping the frost from the meadows and for encouraging an early growth of grass, and the excellent drainage of the chalkland, together with the carefully arranged levels and channels, ensured that the water was kept moving over the surface of the meadow; it was important that the water should not be allowed to stagnate since this would kill the grass instead of encouraging it.³ It was a costly and laborious business to construct a water meadow, and it is curious that no documentary references have so far been found to any preliminary attempts at making water meadows in Dorset; nor is it clear how the necessary expertise was first obtained, or how the idea originated or was made known in the county. There is no indication that Dorset farmers were influenced by contemporary developments in Wiltshire, or that they were aware of the experiments of Rowland Vaughan in the Golden Valley of Herefordshire; indeed, as will be shown, the watering of meadows in Dorset seems to have begun before the publication of Vaughan's book in 1610.⁴

¹ E. Kerridge, 'The Floating of the Wiltshire Watermeadows', *Wilts. Arch. & Nat. Hist. Mag.*, 55, 1953, pp. 105–18; *idem.*, 'The Sheepfold in Wiltshire and the Floating of the Watermeadows', *Econ. Hist. Rev.*, 2nd ser., vi, 1954, pp. 282–9. The date when controlled watering of meadows began in Wiltshire is uncertain; John Aubrey stated that it was being introduced at Wylve and Chalke by 1635, but it is likely that experiments were being made for several years before this.

² Thomas Gerard, *Survey of Dorset*, c. 1630, first published in 1732 and attributed to J. Coker, p. 3; Robert Seymer, *Report to the Georgical Committee of the Royal Society*, 1665. Royal Society MSS., Classified Papers 1660–1740, 10/3/10; D. Defoe, *A Tour through England and Wales*, Everyman's edn, 1927, 1, pp. 187–8, 210–11, 218, 284–5.

I
The first reference which has been found to anything like a fully developed system of watering in Dorset is at Affpudde on the river Piddle during the early years of the seventeenth century. The lord of the manor was Sir Edward

³ B. J. Whitehead, *The Management and Land-Use of Water Meadows in the Frome Valley*, Proceedings Dorset Nat. Hist. & Arch. Soc., 89, 1967–8, pp. 257–81. This gives a valuable description of the techniques and of the later use and eventual decline of the water meadows.

⁴ Rowland Vaughan, *Most Approved and Long Experienced Water-Workes*, 1610.

Lawrence, an active, energetic man, who was keenly interested in agricultural improvement, and encouraged the introduction of water meadows at Affpuddle and also on his neighbouring manors of Briantspiddle and Pallington. In the court book of Affpuddle there is a reference in 1605 to "fossas versus le Moore et Prat," and to the fact that "les hatches et Weare sunt in decay." At the manorial court in 1607 it was ordered that "Whereas the water course is used to be turned into the meads by the tenants thereof and kepte theare longer than it hath been accustomed, yt is therefore ordered that the tenants of the meads shall use the same in noe other sorte than in ancient tyme it hath been used."⁵ It is clear that some system of watering the meadows was already established there, and further evidence occurs in the court proceedings during 1608 when it was reported that "Tenentes per Indentur de Burkmeade contraversu cursu aqua ibidem extra antiquum cursu . . .", and more explicitly in 1610 that "Tenentes prat. orientali ordinant qd pratum irrigetur anglice shall be watered et qd Johes Hearne, Johes Roberts et Henricus Melwith provident aliquam peritum anglice a workman ad irrigedum pratum predictum et qd nullus tenetum obstruat fossas vel opus. . ." It was also ordered that the tenants should pay for the work in proportion to their holding of meadow land there.⁶

The reference to "Tenentes per Indentur" in 1608 is particularly interesting as illustrating the sort of tenants who were most actively concerned with the development of the new idea. The rapid spread of water meadows in the county owed much to a few freehold and leasehold tenants who, with the encouragement of their landlords, pressed forward and carried the copyholders with them; for the water meadows were essentially a communal undertaking, car-

ried out through the manorial courts. Evidently the meadows were successful at Affpuddle, for later entries in the court book show that they gradually spread along the valley, though not until some years later, and not without opposition from some tenants. In 1629 a more general scheme for watering all the meadows at Affpuddle was introduced in the manorial court, and the court book records that

At this Court upon petition of the homage it is ordered in these English words following, namely—Forasmuch as the homage desire that they may have one chosen to water the Common meadowes of this Manor namely the Northmeade, the Westmeade and the Eastmeade, it is thereupon ordered that John Rudle and Robert Scutt the middle one, shall make choice of some fitt and able man for that worke whoe by consent of the Lord and Homage is authorised to cutt and make Trenches in the same meadowes for the better conveyinge and carriage of the water for the watering of every tenant's meadowe. And the said John Rudle and Robert Scutt . . . to make a rate on every tenant having meadow there according to his or their quantitie of ground for the raising of the said Workman's wages, . . . And none to interrupt the said workman in his worke about the carriage of the said water . . .

There is no indication of where the workman came from or of the total cost of the work. Evidently not all the tenants supported the new arrangements for during the next year the court book records fines imposed on several tenants for hindering the work, including one who came armed with a pike and forbade the digging of any channels across his land. But none the less the work went ahead quickly, and by 1631 a full-time "waterman" was employed by the tenants to look after the Affpuddle meadows; he was to manage the watering, maintain all the hatches and weirs, and was to be paid proportionately by each tenant as well as having a plot of meadow land for his own use. Individual tenants were forbidden from interfering in the management of the meadows, and

⁵ Dorset R.O.: D29/M1 Court Book of Affpuddle 1589-1612; J. Brocklebank, *Affpuddle in the County of Dorset*, Bournemouth, 1968, pp. 22, 54-6. Sir Edward Lawrence was especially commended by the Privy Council in 1624 for the "watechful diligence and faithful care" with which he carried out his duties as a justice of the peace: Acts of the Privy Council, 13 April 1624.

⁶ Dorset R.O.: D29/M1.

the control of the water was to be left entirely to the waterman.⁷

The manorial records of Puddletown, three miles up the valley of the Piddle from Affpuddle, also contain numerous references to watering and improving the meadows from the early seventeenth century. The large manor of Puddletown occupied the area between the rivers Piddle and Frome, and from the number of complaints in the manorial court about damage caused to the roads by the watering of meadows, it appears that some of the tenants with meadow land at Broadmoor had begun watering at least as early as 1620. The valley at Broadmoor widens to form a flat plain, admirably suited for the construction of water meadows, and the area remains today an excellent example of the practice, with its channels intact and many of the weirs and hatches still in place, though it is no longer used as a water meadow. At Puddletown manorial court in October 1629 an agreement was made by the tenants to continue with the work, which had already been started, on turning the whole of Broadmoor into a water meadow. "The honorable Henrie Hastings esquire Lord of the same manor being present with the Tenants of the same and a greate debate beinge theare had and questions moved by some of the tenants about watering and Improveinge their groundes and theare heard att large . . .", it was agreed that Mr Richard Russell and others should be allowed to continue with the work already started "for the watering and Improveinge of their groundes in Broadmoor," and that they should be permitted to make a main trench or watercourse, and to construct the necessary bays, dams and sluices. It is significant that the lord of the manor, Henry Hastings, was himself present in court when this important decision was taken, although he did not live at Puddletown and the court was usually conducted by his steward.⁸

⁷ Dorset R.O.: D29/M4. The Court Book of Affpuddle for the years 1624-54 cannot now be found, but an apparently complete translation of the original was made during the nineteenth century. It is this which is quoted here.

⁸ Dorset R.O.: D39/H2, Court Book of the Hundred and Manor of Puddletown, 1624-38, fols. 5-7, 8-9v, 17-

It is also interesting that the lead was obviously taken by one of the leaseholders, Richard Russell, and that great pains were taken in the agreement to satisfy various conflicting interests involved in making the watercourses and changing the ancient practice in the meadow.

In this new and untried project success was not assured, and the agreement contained a provision that ". . . yf yt shall appeare after the maine watercourse shalbe made throughe the saide grounde thatt Improvement cannott be made upon some good parte of Mr Woolfries grounds out of the same watercourse, the order is by the agreement of the said tenants and parties Thatt then the said Mr Russell shall fill in the said watercourse againe at his owne costes all alonge in Mr Woolfries grounde. . ." Richard Russell was evidently prepared to accept the risk of failure of at least a part of the scheme. There is insufficient evidence in the court book to determine the amount of land held either by Russell or by Woolfries; nor is there any indication of the costs of the work or of how these were to be borne; but the work must have proved successful, for by 1635 the whole of Broadmoor was being watered, and similar improvements were being made in the other meadows in Puddletown.⁹ For example, in 1632 the meadows on the Frome between Tincton and Woodsford, some three miles south of Puddletown, were being watered, and there are references in the hundred court book to damage to roads and footpaths "in pratis . . . per aquas super illas noviter jactatas," and to "aquas jactat. at tractat. super terr. ibm. anglice to water their grounds. . ."¹⁰ During the same period the idea of water meadows also spread along the valley of the Piddle to Tolpuddle and Turners Puddle, as well as along the Frome, where water meadows were constructed at West Stafford, Moreton, Winfrith Newburgh, Bovington, and Bindon, and possibly also at Fordington near Dorchester. In his Survey of Dorset of c. 1630 Thomas Gerard wrote of the

22v, 60-61v, 189; J. Hutchins, *History of Dorset*, 1861-70 edn., III, p. 115. For a brief account of Henry Hastings see J. H. Bettey, *Dorset*, 1974, pp. 130-2.

⁹ Dorset R.O.: D39/H2, fols. 111, 120-120v.

¹⁰ *Ibid.*, fol. 205v.

river Frome passing "amongst most pleasant Meadows (manie of which of late Yeares have been by Industrie soe made of barren Bogges). . ."¹¹

II

This very rapid spread of water meadows along the valleys of the Frome and the Piddle meant that by the middle of the seventeenth century many meadows along both these rivers were covered by the elaborate system of hatches, channels, and drains, and that "watering" was already an established part of the agricultural technique of this part of Dorset.¹² When in 1659 a scheme for making a water meadow was proposed by some of the tenants at Charlton Marshall on the river Stour, it was from Tolpuddle that "two able and sufficient carpenters" were obtained for making the hatches, while Henry Phelps of Turners Puddle, "a known Antient Able and well Experienced waterman," was sent for to supervise the whole project, "soe ordering the water whereby that the said groundes might be well watered . . . as farr as the strength of the River would cover."¹³

There is very little documentary evidence for the spread of water meadows in most of the other chalkland valleys of Dorset during the seventeenth century, but the valleys of the Iwerne, Tarrant, Gussage, and other chalk streams are all suited to the creation of water meadows, and all were being watered by the early eighteenth century.¹⁴ The most convincing evidence comes from the report made by Robert Seymer of Hanford to the Georgical Committee of the Royal Society in 1665 on the husbandry of the north-east part of Dorset. This is just the area for which other documentary evidence is lacking, and it is significant that

Seymer wrote of watering the meadows in this part of the county as a matter of course and as an established practice. He reported on the usefulness of the water meadows, but gives no indication that there is anything novel in the idea, ". . . the greatest improvement they have for their ground is by winter watering it, if it lye convenient for a River or lesser streame to run over it."¹⁵ There are also isolated references to the watering of meadows at Tarrant Rushton, where in March 1646 the miller complained that his watercourse was obstructed, "obstruc-tat et divertit causam innundationi pratori"; and at Cranborne, where in 1636 a leaseholder was granted additional rights over 20 acres of land "to water and improve the grounds of the farm leased to him."¹⁶ A survey of Dewlish made in 1742 records that water meadows had already been in use for many years there on the little Dewlish brook.¹⁷ Both George Boswell and John Claridge, writing during the later eighteenth century, described the Dorset water meadows as having been very long established, and William Stevenson in 1812 stated that he was unable to give a precise figure for the cost of constructing water meadows because "the most part of the meadows are of very ancient construction."¹⁸ Certainly by the end of the eighteenth century the water meadows had spread all over the chalkland area of the county, and attempts had been made to introduce the system into the claylands. Stevenson in 1812 estimated that "about 6,000 acres of meadow land in the chalky and sandy districts are regularly irrigated"; and Claridge in 1793 stated that "the proportion of water meadows is no where so great or anywhere better managed;

¹⁵ Royal Society MSS., Classified Papers, 1660-1740, 10/3/10.

¹⁶ Salisbury MSS, Hatfield House, Court Rolls 9/3, Court Book of Tarrant Rushton, 26 March 1646; Dorset R.O.: D396/1.

¹⁷ Dorset R.O.: D263/L1.

¹⁸ J. Claridge, *General View of the Agriculture of Dorset*, 1793, pp. 34-7; W. Stevenson, *General View of the Agriculture of Dorset*, 1812, p. 370; G. Boswell, *Treatise on Watering Meadows*, 1779. Boswell lived in the Piddle valley at Puddletown. In an unpublished letter of 25 March 1787 he gave his opinion that the Dorset water meadows had been in existence "perhaps more than two hundred years": Dorset R.O.: Photocopy 415.

¹¹ Dorset R.O.: D10/E79, D10/E121, D10/M74, D10/E130, D10/M76, D29/E65, Mus. KG 1233. P.R.O.: LR2/207; E134/6 Jas I M18; E134/9 Jas I H15; Smedmore MSS. T24/1; Gerard, *op. cit.*, pp. 64, 75.

¹² Dorset R.O.: D10/E103, D29/E65, D10/M97, D10/E130, D29/T9, D29/M4a.

¹³ P.R.O.: C5/58/15.

¹⁴ Dorset R.O.: D263/L1, D29/E65. Fuller information on the extent of water meadows in these areas must await the availability for study of the papers of the Bankes family of Kingston Lacy, and those of the Earl of Shaftesbury at Wimborne St Giles.

the early vegetation produced by flooding is of such consequence to the Dorsetshire farmer that without it their present system of managing sheep would be almost annihilated."¹⁹

The management of the Dorset water meadows was very similar to that followed in Wiltshire and Hampshire. The sheep flocks followed a regular calendar of grazing and folding throughout the year, carefully arranged in order to obtain the maximum use from the water meadows. The meadows were watered for varying periods from early October until Christmas or later, depending upon the weather, and on agreements with other manors in the same valley and with millers about the use of the water. For example, at Winfrith Newburgh the meadow on the banks of the Frome was flooded or "floated" from All Saints' Day until St Thomas's Day, and had the benefit of any silt or sediment brought down by floods during that period. Thereafter, by agreement, the hatches were drawn and the water was allowed to flow on to water the meadows at Moreton and Bovington, further down the valley. On some manors there were also complicated agreements with millers over the use of the water, as for example at Waddock in Affpuddle manor, where the meadow could be watered "from each and every Saturday night unto each and every Munday morning, and at all and every other Tyme and Tymes doing no prejudice unto the Mill there."²⁰ Robert Seymour in his report to the Royal Society described the practice of his area as "... the chiefest time they account for watering is to begin about All-hallows, and to continue till Candlemas and no longer, especially if the ground be naturally moyst; for they find by experience that if the water run any considerable time longer than this on their ground it breeds abundance of Rushes, but all the winter it destroys them."²¹

¹⁹ Claridge, *op. cit.*, p. 34; Stevenson, *op. cit.*, pp. 304-5. There are examples of clayland water meadows at Bradford Abbas, Chetnole, Holnest, Folke, and several other places in north Dorset. There are also examples of "catch-work" or hillside water meadows on the chalkland at Martinstown and Wynford Eagle.

²⁰ Dorset R.O.: D10/E130, D29/E65, D29/T9.

²¹ Royal Society MSS. 10/3/10.

During the autumn and winter the wether flocks were pastured on the downland by day, and folded in common on the wheat or the land destined for spring corn by night. Their feed was supplemented when necessary with hay, straw, or vetches, and in severe weather they were allowed to seek shelter in copses or woodland. The ewe flock was accommodated on lower-lying pasture ground, and was generally not folded during this period, which was the lambing season. Lambing was a drawn-out affair for the Dorset sheep with their remarkable propensity for early lambing, since the older ewes which were generally the first to take the ram began to lamb in late September and October, while some of the younger ewes did not lamb until Christmas or even later.²² By Lady Day, or even earlier in mild winters, the meadows would have sufficient grass, and after a few days in which to dry out, they would be fit for the sheep to feed on for short periods each day. This was the period when the water meadows really proved their worth, at least a month before the natural growth of grass started. It was unwise to allow the sheep to feed in the water meadows after the beginning of May since they were then liable to contract liver rot from the damp pasture. The water meadows were therefore shut up for hay after a brief watering. During the later summer months they were used for cattle and dairy cows until Michaelmas, when they were again made ready for the winter flooding.²³

It was above all for their value in enabling more sheep to be kept, thus swelling the size of

²² P.R.O.: E134/14-15 Eliz. H2, E134/10 Anne T9; B.M.: Add. MSS. 41,750. In a letter of 25 July 1793 George Boswell wrote "We have many lambs fall by 12 October and a great many by the beginning of November, and the principal stock of old Ewes have finished by about Old Xmas." See also a similar letter of 9 September 1787. Dorset R.O.: Photocopy 415.

²³ In most of its essentials the method of flock management in Dorset resembled closely that followed in Wiltshire, which has been described by Kerridge, in the works cited above, n. 1. Dorset R.O.: D10/M203, D10/E130, D29/E65, D39/H2; Salisbury MSS., Hatfield House, Cranborne General 1650-59, Court Rolls of Gussage St Michael, 20 March 1658; Winchester College MSS., Court Books of Sydling St Nicholas, Piddletrenthide and Minterne Magna; E. Lisle, *Observations in Husbandry*, 1757, II, pp. 157, 178-91.

the flock available to be folded on the arable land, that the water meadows were chiefly valued. There is ample evidence of the supreme importance which Dorset farmers attached to the sheepfold during the seventeenth century, and of the vital part played by the great sheep flocks in the husbandry of the chalklands. In a survey of the manor of Sydling St Nicholas in 1776 the surveyor noted that "the Sheep are kept mainly to produce Manure for the Arable Lands, which is the greatest profit gained by them . . ."; and the many disputes over the sheepfold, and over the respective rights of individual tenants to the benefits of the common fold, bear witness to the fact that his statement was equally true for the seventeenth century.²⁴ For example, the tenants at Sydling St Nicholas in 1630, protesting against the demesne farmer's proposal to keep his sheep separate from the copyholder's flock and to use them exclusively for folding on his own ground, stated their custom of folding ". . . to begin about Michaelmas upon their sowed wheatlands and to begin at Thannunciacon upon their sowed Barlie lands, and this foldage to continue from Tennant to Tennant till their corne bee greene. Likewise the tennants have the folding of the flocke at summer upon their lands then fallowed for wheat for the year following. . . All which helpe to ye Tennants . . . did tend to the mayntenance of Tillage, and did arise in profit not only to the Commonwealth in corne but to the lords of the manor by advancing their fynnes. . ."²⁵ One of the rights tenaciously insisted upon by the rector of Cheselborne in 1634 was that his 12 acres of arable land in the common fields were to be folded by the common sheep flock of the manorial tenants, ". . . to soile the said twelve acres with their flock of sheep yerely once as they doe their owne." Those who had no sheep or who were not en-

²⁴ Winchester College MSS. 21429a, Survey of the manor of Sydling St Nicholas, 1776. For similar disputes over the sheepfold, see e.g. Digby MSS., Sherborne Castle, Presentments of the homage at North Wootton 23 April 1657; B.M.: Add. MS. 41,750, fol. 42; Dorset R.O.: P5/MA5, Court Book of Wyke Regis, 14 October 1605.

²⁵ Winchester College MSS. 18287, Court Book of Sydling St Nicholas, 14 April 1630.

titled to the benefits of the common fold resorted to hiring a flock of sheep to dung their arable land.²⁶ Robert Seymer in 1665 reported that ". . . the chiefest helpe that the hill Country hath for their Corne ground is their great Flocks of sheep which they constantly fold upon their Land."²⁷

III

Little evidence survives from the seventeenth century on the costs of making a water meadow. Obviously, much depended upon the lie of the land, the extent of the scheme, and the amount of work involved in levelling and in digging the channels, though it is clear that at Puddletown, and no doubt elsewhere, much of this work was done by the tenants themselves. None the less, the expense of making and installing the hatches and sluices must have been high. At Charlton Marshall in 1659 the carpenters were paid £63 for making the hatches, and for this they provided the timber. The waterman received £37 for supervising the whole scheme, and sundry labourers were employed in digging trenches at a total cost of £21 9s. 2d., but there is no indication of the acreage of meadow involved. The money was raised by a levy on all the owners of rights in the meadow. In Wiltshire extremely elaborate schemes for constructing water meadows along the Avon between Alderbury and Downton in the later part of the seventeenth century varied in cost between £4 and £10 per acre, though this scheme involved very long main channels and a multitude of agreements with millers, farmers, and others, as well as the construction of several bridges. Even so, the steward felt it necessary to explain "the reasons why the Expense of the . . . worke cam to near duple the expense as was at first proposed."²⁸ George Boswell of Puddletown in his very practical *Treatise on Watering Meadows*, the first edition

²⁶ Salisbury Diocesan R.O.: Archdeaconry of Dorset MSS., Glebe Terrier of Cheselborne 1634; P.R.O.: C3/18/92, E134/31 Chas. II E6; Dorset R.O.: D16/M115; Lisle, *op. cit.*, pp. 45-6, 368.

²⁷ Royal Society MSS. 10/3/10.

²⁸ Wilts. R.O.: 490/891-904; P.R.O.: C5/58/15; Dorset R.O.: D10/M71, D10/M72.

of which appeared in 1779 ("not the effusion of a garreteer's brain, nor a Bookseller's job, but the result of several years experience"), as well as in his long correspondence with George Culley of Northumberland, estimated the average cost of a water meadow at £6 per acre; John Claridge in 1793 suggested £6-£7 per acre. William Stevenson in 1812 put the cost at £7-£8 per acre, but went on to suggest that the meadows would bring an annual profit of more than the cost of their construction. All agreed that, once laid out, the subsequent annual costs of maintenance were very low, no more at most than 10s. per acre.²⁹

The remains of many hundreds of acres of former water meadows which survive all along the valleys of the chalkland area of Dorset leave no doubt of their former profitability. By the eighteenth century the water meadows had become an indispensable feature of the agricultural life of much of the county, without which it would have been impossible to maintain the scale either of arable or of livestock farming.³⁰

²⁹ Boswell, *op. cit.*, p. 118; Dorset R.O.: Photocopy 415; Claridge, *op. cit.*, p. 35; Stevenson, *op. cit.*, pp. 358-72.

³⁰ Although the now disused water meadows are the

However, this subject and the later development in the construction, layout, and management of the meadows demand a detailed, separate treatment, and is outside the purpose of this article. The importance of the meadows continued until the early twentieth century, when the dramatic decline in the number of sheep kept in the county meant that watering became of much less consequence. Some of the meadows continued to be used for dairy cattle, but they were less suitable for this purpose in the spring and early summer when the cows damaged the soft ground and the water channels. Finally, the combined effect of the availability of cheap artificial fertilizers and feedstuffs, improved strains of grasses and fodder crops, the difficulty of obtaining the skilled labour necessary for the maintenance and management of the meadows, and the problems of using tractors and machinery in the soft meadow soil have led to the total abandonment of all but a few of the Dorset water meadows.

commonest and most characteristic relict feature of previous agricultural practice in the chalkland valleys of Dorset, they are completely ignored by all the R.C.H.M. surveys of the county which list other field systems with great detail and precision.