The Husbandry of Devon and Cornwall

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Oliver Cromwell is known to have been in the Southwest for several months in 1645 and 1646. A decade later, Cromwell asserted that Devon's husbandry was the best of any English county. This paper explains the husbandry that Cromwell may have seen when he came to Devon. Attention is focused on what was different about Devonsshire husbandry that would perhaps have been strange to Cromwell's eyes. The abundance of small fields enclosed by high hedgebanks may well have struck him as unusual. He might have seen evidence of the practice of 'Devonshiring' or beat burning, the use of the ley as part of the rotation of crops, the absence of fallow, the cultivation of steep hillsides, the use of catchwork channels to create meadows on steep hillsides, and the application of calcareous sea-sand to sweeten the acid soils. A century and a half after Cromwell's day, William Marshall made a study of agriculture in the Southwest which convinced him that the region's husbandry was different from that practised elsewhere. Writing in 1796, Marshall described in detail the customs and ways of working the land that Cromwell almost certainly encountered. Drawing on Marshall's work, as well as works of earlier writers, the paper explores how and why the husbandry of Devon and Cornwall was so strikingly distinctive.

I have been in all the counties of England and think the husbandry of Devonshire to be the best

These were Oliver Cromwell's words spoken in company at Hampton court in 1658 and recorded by John Aubrey. What was there for Oliver Cromwell to admire?

Cromwell was in the Southwest with the New Model Army, under the command of Lord Fairfax, from the summer of 1645 until the spring of 1646, slowly mopping up after Naseby and Langport and the capture of Bristol. Both Plymouth and Lyme Regis were Parliamentary islands in a Royalist sea and awaited relief. Perhaps he had been in the region before – there are Cromwell papers relating to property
in Southwest archives – but, if not, his five months or so in the South-
west with the New Model Army took him to most parts of the penin-
sula and concluded with a triumphant march into Plymouth to raise
the four-year siege.

Cromwell was 45 years old when he came to Devon and he had
been immersed in the war and national politics only since the Long
Parliament met in 1639. Before that he was a landowner in a moder-
ate way around St Ives and Huntingdon, looking after his estates to
improve them when ‘improvement’ was very much in the air. With the
army, he subsequently visited most parts of England. His eyes would
have been opened to different ways with the land and contrasts with
the husbandry of the huge, unenclosed common arable fields and wide
riverside meadows of the flat lands of Cambridge and Huntingdon.

The New Model Army, in which Cromwell commanded the cavalry,
was surely full of the sons of landowners and farmers who knew the
‘land’, who would look about them and talk of what they saw. Other
folks’ practice was, and is, always of interest to farmers. A tedious
march would have been enlivened (and apprehension and fatigue light-
ened) by commenting on what they saw. In the midst of his general’s
duties, Cromwell would have shared their interest and comments, and
asked questions. His verdict on Devonshire farming, in the context
supplied by Aubrey, suggests an exchange of views. He is saying to his
London audience: I have been everywhere and seen everything, and
these are my considered views. His remark does not appear to have
been a snap judgement.

There were many Westcountry men amongst Cromwell’s political
supporters who would be familiar with Devonshire farming practice.
Amongst many others, Colonels Walter Yonge of Colyton and Walter
Erle of Axmouth, Edmund Prideaux of Ford Abbey, and John Bamp-
field of Poltimore were Parliamentary supporters from rural Devon.
None of them, according to the list at the back of Joshua Sprigge’s
account of the south western campaign of the New Model Army,2
were with the Army at this time, but there were two Fortescues, a
Gorges, and a Fownes amongst its landowning officers, who were
likely to be Westcountry men. These officers would have been able to
answer queries about the scene they all saw about them and this is
important because what Cromwell saw would have been, in part,
strange to him. Writing a century and a quarter later, Marshall says,
significantly, that the Westcountry ‘was under a course of management
that differs from that of the country at large and whose basis has a different origin. Marshall was struck by the fact that Dumnonian husbandry should not have ‘assimilated over the centuries with that of the whole island’ and ‘was as distinguishable from that of the body of the island as if the peninsula they form had been recently attached to it’.

Marshall’s detailed 1796 description matches pretty well with that of Samuel Colepresse, written in 1667, and gives no indication that Westcountry farming changed radically in the 130 years that separate them. Marshall had already surveyed the agriculture of other counties and his words suggest that the difference that he observed between south western farming, and that elsewhere, was fundamental and basic; it was not simply a matter of detail. John Aubrey, writing in 1696, said that the Devonshire men were the ‘earliest improvers’ and he dated these improvements – incorrectly, in fact – to the early seventeenth century, before the Civil War, and there for Cromwell to see.

This paper attempts to explain what Cromwell may have seen as he came into Devon from the east, through Chard or Wellington, and focuses on what was different about Devonshire husbandry that would have been strange to Cromwell’s eyes. The most obvious difference, most likely, would have been the small enclosed fields surrounded by high earth banks topped with a living hedge. Likewise, coming from East Anglia, Cromwell would certainly have been surprised that the heights and gradients of what was really hill country were no deterrent to cultivation and ploughing. Equally surprising was that the land was never fallowed – the conventional way to maintain fertility. Instead, the sward of the grassland was regularly ‘burnt’ and cultivated as arable, before again being sown to grass for several years, as in modern ley farming. He would have admired the industry of the husbandmen as they spread tons of calcareous sand and marl and lime on their arable; and diverted streams to irrigate their valley bottoms and sides to get early grazing for lambing ewes.

ENCLOSURE

English farmers from the Midlands would have been surprised to see that in the Southwest the land was largely divided into small fields enclosed by high hedgebanks, and equally surprised to find some large unenclosed common arable open fields with tenants working their strips – a familiar sight at home. There were ‘common fields’
(unenclosed arable fields) in Devon and Cornwall, as Cromwell would have noted when the New Model Army went into winter quarters at Ottery St Mary in November 1645. In that locality, furlongs and strips survived well into the eighteenth century. Elsewhere, there was open field land at Braunton (as there still is), and there were such fields at Kenton, Otterton, Stoke Fleming, and Stokenham, amongst many other places in both Devon and Cornwall (Fig. 1). But by Cromwell’s time, enclosure was in general commonplace, widespread and normal in Devon, and much to be envied by those still involved in the rules and restraints of the common practice of open-field husbandry. All writers about agricultural improvement agreed that enclosure had to be the way ahead. Thomas Tusser recommended it: on his own land, a man could be ‘bold of his own’, apply his own resources of skill and wealth to reap the benefits of the land for himself. Tusser said that ‘wealth’ was to be found ‘where enclosure is most’, where men could do what they thought best, subject to their leases.

In open field country, the rotation of crops, the use of the land, and harvesting dates were all regulated to suit the needs of all the villagers.

Figure 1. Landscove, Brixham. The picture gives a hint of how common arable may have looked when Cromwell visited Devon in 1645–46 (source: author’s collection, 1971).
together. The village livestock grazed together - sheep, cattle and horses - on the village common grazing, that is, the fallow fields, the meadow after hay harvest, and the stubble of the cropped fields after corn harvest. There was a village bull to serve all the cows, and rams for all the ewes. Selective breeding and disease control were impossible.

In enclosed fields, rams and bulls served only their owner's stock, and animals benefited from being regularly shifted from field to field to enjoy what the Exonian, John Hooker, called the 'new springing grass'. Disease was likewise more controllable. Animals could not so easily stray; land did not become 'sheepsick' from overgrazing. Much of Devon thus became divided into the three-, four-, five-acre fields of the present landscape.

HEDGES
For enclosure to be effective, the fields had to be hedged about. How was this done in Devon, by the creation of 'mighty great hedges' and banks, has always provoked comment, as it does today, and for sure did so in Cromwell's time. A 'hedge' in Devon was, in fact, an earth (or partly stone) bank, sufficiently packed with earth on the top and inside to grow hedgerow plants and trees. The bank might be solely of earth, faced with turf from the sward of the adjacent fields, as was done in the South Hams. It might be of stone alone, as on Dartmoor. Most commonly, it was a mixture of large stones picked up or ploughed up in the field, and earth from purposely dug ditches on each side of the bank, all formed into an upright bank up to six-feet high with a substantial topping of earth, into which hazel, thorn, withy and beech plants were set (Fig. 2). The plants were allowed to grow into young trees, and were then cut, not quite through, and laid - not quite horizontally - to provide an interwoven, live, growing hedge on the top of the bank: a fairly formidable obstacle to stock, provided the maintenance was good (Fig. 3).

The Devon hedge had other considerable virtues. At 5–6 feet high, such hedges offer good shelter for stock from wind and rain, thereby reducing the need for permanent buildings. Milking cows, calves, and fattening stock were housed in small numbers, but young stock and sheep made for the 'lew' (lee) of the bank in windy, cold, wet weather, and huddled under the hedge.

Likewise, hedges were a productive source of firewood from the regular cutting of the hedgerow timber. Hedge plants were allowed to
grow upright stems and trunks for upwards of ten years. By then, the stems could be cut up into good cordwood for logs, and brushwood for the copper. What looked – to the unknowing – like a hopelessly overgrown hedge, was that height and width for a purpose. Every farm would have its quota of ‘neglected’ hedges awaiting the saw and the axe. They were part of the plan; they were cut, laid, hedged and rebuilt when one of the grass fields that they bounded took its turn in rotation to be ploughed. Cutting turfs from the field to form a face for the newly made up hedgebank, and making fires from the brushwood, made a mess of the sward, but that did not matter if the field was then ploughed. The removal of the shade and the drips from the high hedgerow timber was beneficial to the corn crop that invariably followed. None of this was haphazard, but part of a well-understood (but not obviously self evident) plan that might need explanation to a stranger.

The need for firewood was huge and a farmer was not a ‘good husband’ if he did not provide it. Big farmhouses, with a fire in the hall
Husbandry of Devon and Cornwall

Figure 3. The plants topping 'Dumnonian' hedgebanks were allowed to grow into young trees and were then cut – not quite through – and laid to provide an interwoven, living barrier as a fairly formidable obstacle to stock (source: author's collection).

kitchen only, were cold. A big log fire needed a draught to make it burn up and draw. If there was not enough firewood, or peat, or 'vags' (dried turfs), houses were very cold. No farmyard in Devon was complete without its rick of faggots of brushwood and its enviable 'wigwams' of poles for cordwood (Fig. 4). Producing firewood was part of husbandry. It was probably easier to keep warm in hedged enclosed country than in hedge-less open field villages. Enclosure thus had beneficial side effects – farmers would not need or expect to pay for fuel to keep their homes warm. Labourers could sometimes 'take' an uncut hedge and lay it in their own time for the firewood – for a price.

There was in fact money to be made on the farm from supplying firewood and firewood faggots to towns, and the poorest land on the farm could be turned to good use growing furze (gorse). Furze was a recognised crop, seed for it was commonly for sale, and hill-top fields were ploughed and sown as 'furze brakes'. When the furze was 5–6 feet in
height, the whole brake was fired in a blaze to remove the prickles. What was left – the very hard, partly burned stems, so-called ‘blacksticks’\textsuperscript{12} – were made into ‘faggots’ or bundles, tied up with a willow bond, which were the very best fuel to put beneath a copper to heat water for washing, or to revive a fire. Every house had a copper or kettles on the hearth for hot water, and there was a great demand for ‘blacksticks’ in towns. The needs of Exeter were met in part by the furze brakes on Haldon Hill, cultivated and cut by the men of Dunchideock and Doddiscombsleigh, and Mamhead and Ashcombe. Haldon land is infertile, forestry plantations grow slowest there\textsuperscript{13} but the very poor land was put to good use; nothing was really wasted. Oliver Goldsmith, in his poem \textit{Auburn}, quite wrongly described a flowering furzy golden common as ‘unprofitably gay’. Furze is always gaily gold, always growing; ‘gorse is out of flower when kissing’s out of fashion’. Ancient main roads tended to follow the drier hill top land in the past and Cromwell’s troopers on their march may well have cursed as they had to push through the well-grown, prickly furze brakes.
**OUTFIELD**

Not all the land was enclosed and this may have had a purpose. Benjamin Donn’s 1765 map of Devon reveals wide areas of unenclosed land on almost all upland, sometimes shared by adjoining parishes or divided by boundstones to show parish boundaries. This unenclosed land is shown on Donn’s map by the use of pecked lines to delineate roads and tracks that were not hedged or fenced where they crossed waste or common. This common could be a furze brake, or it could be outfield.

Outfield was in origin common land, unenclosed, generally upland, manorial waste that was common to and freely used by manorial tenants to graze cattle and sheep, and dig turfs and cut sticks. When grazed in summer, stock could be moved off lower enclosed land where hay was to be cut, and the buzz and irritation of flies in warm weather were avoided. Outfield was not just for grazing. Manorial tenants in Hemyock in the Blackdown Hills had rights on Hemyock Common: the right to cut timber and brushwood for ‘firebote’, ‘hedgebote’, ‘housebote’, and ‘ploughbote’; and the right to cut turfs or vags for ‘turbary’. They could also seek permission from the manor court to plough a bit of the common in times of need to grow corn. Marshall remarked on this Dummonian peculiarity of practice. With no hedges, the growing of crops of corn on ‘intakes’ or ‘newtakes’ in the outfield needed the attention of a herdboy or two, or the construction of temporary fences of poles to keep grazing livestock out. Once cropped two or three times, the land could be sown with grass seeds or left to revert to common again. If it was cultivated in this way by a tenant or tenants over a number of years, it was probably easy to take a proper lease on it from the landlord (the ‘lord of the soil’), after hedging and enclosing it. Thus it stopped being ‘common’ and became ‘several’, held by one or more tenants. An individual farm could have its own private outfield, surplus to the immediate arable needs of the farmer, but available for cropping or grazing when prices were right. Enclosure of arable strips into enclosed fields was made easier by the existence of outfield. This deprived other commoners of the ability and right to use the enclosed land, but probably added to manorial income and so was acceptable. In his 1733 introduction to Carew’s *Survey of Cornwall*, Thomas Tonkin wrote, ‘If they intend to keep it up for enclosure, they throw in grass seeds and after four or five years it will be fit for tillage again, but if the land be ordinary ... they then
let it run amain ... and such will not answer for tillage for forty years or more'.

The first of these choices, posed by Tonkin, was of course 'ley farming', exactly.

Much of Devon is hilly but ploughing and cultivating steep land seems never to have been an obstacle to cultivation in the past. A charter of King Eadwig of AD 958 for land at Ashford and Boehill in Burlescombe parish in East Devon, states that 'there are many hills that man may plough' (manega hilla thae man erien maeg). In other words, 'there is hilly land here fit for the plough but not ploughed'. In most parishes, there is now, here and there, grassland so steep that it could not have been ploughed in the conventional way – back and forth, or up and down, with a pair of horses. Tonkin wrote of Cornwall, 'tillable fields are so steep that oxen cannot take a sure footing'. Really steep land was left quite uncultivated to grow gorse or trees, but there are steep grassy slopes that must at some stage have been ploughed or cultivated to rid the soil of bracken and other invasive weeds. Colepresse, writing in 1667, said that they ploughed 'downwards only'. 'This country is generally very steep and they must therefore wind about light, empty', with the plough not 'in work' while climbing the slope to make the next furrow. At some date in the eighteenth century, Westcountry plough-makers began to devise the 'one-way plough', based perhaps on the Kentish 'turnwrest' plough, with shares and mouldboards that could be tilted or moved to turn the furrow to the left or right at choice. Used across the slope, these ploughs would turn all furrows downhill, 'one way', starting at the bottom, creeping up the hillside, without 'winding about'. Hence the term: 'one-way plough'. Figure 5 shows quite a steep hillside being ploughed across the slope with a one-way plough. It also shows where the limit of cultivation was. Gravity meant that all the furrows had to fall down the slope, so the ploughman had to alter the share and mouldboard at the end of each furrow. This sort of plough is a Westcountry invention, the result of farmers wanting to plough such difficult hills. Cromwell is likely to have seen with surprise such hills ploughed up and down, 'winding about'; there were no one-way ploughs in 1645. 'Winding about' was slow hard work but a lot of extra arable land became available if all the hills were ploughed. The one-way plough made the ploughing of hillsides much easier, but really steep slopes still had to be ploughed downhill only until the advent of the crawler or caterpillar tractor in the last century.
Figure 5. *Ploughing a steepish hillside ley, 'sidling ground' across the slope, with a 'Dumnonian' one-way plough, turning the furrows one way only – down the hill. One horse is having to pull upwards as well as forwards to defy gravity and keep the plough in its work (source: author’s collection).*

**BEAT BURNING OR DEVONSHIRING**

The term beat burning was known to Samuel Colepresse in 1667 and must be the same process as that referred to by Anthony Fitzherbert in 1523 when he said that they 'must go beat their lands as they do in Devon and Cornwall'.¹⁹ Beat burning was used mainly for the first reclamation of land from the waste; land that was, in Colepresse’s words, ‘coarse and ancient’, or ‘ancient and mossy’, or ‘heathy, barren grounds; or, in Carew’s words in 1602, ‘coarse furzy heathy grounds’.²⁰

The process seems to be the same as that taken by any allotment holder today who is faced with land neglected for many years, growing strong grassy weeds, strol/couch grass, thistles, docks and bindweed. These weeds have to be rooted out or dug up and burnt, and the top layer of grass weeds ripped off and destroyed. In the seventeenth century, this work was done with a mattock or ‘beat axe’, by hand. It was said to be the hardest work on the farm.²¹ Alternatively, the work was
done using a plough with a wide shallow share, a ‘velling’ share, which sliced off a layer of weedy turf. This turf was then ‘twitched’ – turned over – left to dry and then broken into small pieces by harrowing it with a tined harrow, sometimes with the horse trotting, ‘beat trotting’, to hit the turfs harder and better loosen the soil from the roots. When dry, the ‘beat’ was rolled up into heaps by use of the beat rake, with widely spaced tines, and by chain harrow, and burnt until all the turfy weed roots were consumed. The countryside in June and July was enveloped in the blue haze of the smoke of burning beat.\textsuperscript{22} The ashes of the numerous fires were then spread. Farmers thought this process essential for newly ploughed rough land and continued to practise it even when forbidden to do so in their leases.\textsuperscript{23} Eventually, ordinary grass fields were treated in this way, not just rough pasture, once the ploughing of grassland was enforced in leases.

It is not clear why ‘Devonshiring’ was thought to be so necessary and good. To the modern farmer, one important idea is to preserve as much organic matter in the soil as possible. Burning destroyed a great deal of organic matter, and it is the colloidal material within organic matter that chemically fixes the inorganic plant foods that are needed for fertility. However, organic matter, if burnt anaerobically, is thought to make phosphates more available to the plant. Beat was burnt in the field in heaps and the fire would be set in the middle of the heap so that some burning may have been anaerobic. Such burning ‘could have converted some of the co-valent insoluble and valuable compounds containing phosphorous and potash ‘into more ionic forms which would have been readily available to the crop’.\textsuperscript{24} Burning also kills weed roots and weed seeds and thereby makes the next crop cleaner; and produces desirable ash to plough into the soil as well.

However it may be, Devonshire farmers believed in beat burning, and had been following the practice for centuries, from well before Fitzherbert’s reference to it in 1523. ‘Baticium’ was the medieval Latin word for the process, used as early as the thirteenth century.\textsuperscript{25} But it is likely to be older than that – as old as the time when men were faced with the problem of what to do, using inadequate ploughs, with overgrown heathy grassland that would grow crops if cultivated. They surely bent their backs and used a mattock. Somehow, the process gets tied up with Devon where there was a lot of such land, but it is more likely to be a Dumnonian, south western process (as Samuel Colepresse indicates), common to both Devon and Cornwall, and
perhaps on the Welsh border, and elsewhere in the highland zone as well. Northumbrians knew how to use a mattock for sure, and more ploughland was always a need.

In the sixteenth and seventeenth centuries, Devon was a rich 'industrial', forward-looking county where mining and cloth-making and overseas trade prospered, so what was done in Devon was perhaps taken as new and modern at a time when interest in improvement was waxing. Hooker, a patriotic native of Exeter, writing in 1600, thought so. So the Devonshire men were the 'earliest improvers' to Aubrey, and 'beat burning' was a Devonshire invention. Elsewhere, perhaps, it was just known as 'paring and burning' and evaded detailed description; but it was surely exactly the same ancient process. In 1645, by October, traces of the 'beat' fires might still have been just visible to Cromwell's eyes and surely provoked such questions.

LEY FARMING
In the seventeenth century, farmers – husbandmen – cultivated the soil in part for their subsistence: for their food and drink, firewood and shelter; and in part for the market. They were restricted as to what they grew on their enclosed land by their leases or by the 'custom of the country', and by their needs. Their needs were for arable land to grow enough grain for bread for themselves, for feed for their livestock, and for sale. They also needed grassland for their stock to graze to produce milk and butter and cheese and cream and meat.

Leases were devised principally to protect the interests of landlords and almost all land in Devon and Cornwall was leased. The overriding interest of the landlord was to keep the land that he owned sufficiently fertile and well looked-after to command a fair rent from future tenants. This was done by covenants in the leases or by enforcing the 'customs of the country'.

In classic open-field country, the accepted rules of good husbandry relating to rotations, fallows, and harvest times applied. In general, land was tilled for two successive crops – winter-sown corn and spring-sown corn – and then it was fallowed for a season, growing nothing, to recover its fertility naturally. Almost all land required this fallow break. It was ploughed in the fallow year and then cultivated to keep weeds down and maintain a good tilth. Cattle and sheep were turned onto the fallow to drop their manure; all animal, human and vegetable waste was added at some stage. With no fallow, fertility
would inexorably diminish. A few rare places, like Braunton Great Field, were never fallowed, and yields remained good due to the special nature and depth of the soil and subsoil, and perhaps climate; but it was one of the few exceptions that very much proved the rule.

With ley farming in Devon and Cornwall, there was no full fallow year. A rotation was covenanted in a lease that was intended to maintain fertility without the fallow. Land was ploughed and cropped for corn for three or four years (Figs 6 and 7), fertilised heavily with dung or lime or sand or marl before ploughing in the first year, and then sown to grass and clover in the third and fourth year; and then kept under grass until it was its turn to be tilled again. This grass was the ley of ley farming or ‘alternate husbandry’. It could be grazed or cut. It avoided the waste of the fallow year when there were no crops, and the fertility of the land was maintained by the sowing of nitrogen-fixing clovers and other leguminous plants with the grass seeds of the ley. When well-grazed and fertilised by the droppings of sheep and cattle, as well as dung from the farmyard, and any other available
source of fertility, such land was fit to be ploughed in and remain fertile for three or four arable crops in succession before seeding again.

Good grass and clover seeds had to be available to put the ley to best use. If seeds were not available, farmers used the sweepings of the hayloft – a second best, with too many weed seeds and too little clover. Samuel Colepresse knew of ‘three leaf’, which was probably wild white clover, a native plant, and ‘clover’, whose seed was on sale in Exeter and ‘other eastern markets’. This was sown in the last year of cropping at the same time as the oats commonly grown as the farewell crop of the arable at such times, and survived for up to ten years or so. The clover was probably broad red clover, *Trifolium pratense*. Colepresse knew of three grasses, but he provides no names; one was certainly Devon Eaver, the perennial rye-grass, *Lolium Perenne var.*., that was well-known later in Devon. Thomas Tonkin notes that ‘clover trefoil and eaver grass’ was ‘every where used with success’.\(^{27}\) Together, these species would have still been considered the basis of a
good seed mixture for a ley some two hundred years later in the twentieth century.

Landlords using the ley system protected their property from exhaustion by restricting in their leases the number of corn crops that could be taken off a field in succession. They applied these restrictions by ‘husbandry covenants’ in the tenants’ leases. It was commonplace to require that no more than three or four corn crops were to be taken in succession after ploughing grass, and ploughing must be preceded by applications of lime or dung or marl or calcareous sea-sand. Likewise, with the same end, landlords might insist that not more than a quarter or a third of all the arable (ploughable/tillable) land was to be in corn. The rest, though still called arable, was in grass. Fallow is never mentioned; there was no fallow break with this system. So in a farm of 100 acres, of which 75 acres were available to the plough, only 18 acres or so would be growing corn. By the terms of the lease, those acres could only grow corn for three or sometimes four years in succession, so the tenant would be moving his permitted acreage of corn from field to field, with some grass ley ploughed up every year to grow corn, and some under the plough being sown to grass ley every year. The length of the ley was sometimes stipulated to a number of years. Tonkin refers to seven/eight years ‘leyre’ before ploughing again.

Some landlords began to change their leases from ‘leases for three lives’ to ‘leases for years’ at the beginning of the eighteenth century in order to introduce covenants of the sort described above. Successive leases of Willersley Farm by the Bedford Estate were as follows:

1716 Lease for lives; no covenants
1736 Lease for years; only four corn crops to be taken; lime, dung, or sea-sand to be applied before ploughing
1749 three corn crops only to be taken; beat burning forbidden, with penal clause
1755 As 1749; plus: only one-fifth of the land to be tilled, no meadows to be ploughed; grass and clover (the ley) to be cut once only
1777 As 1749/1755; plus: one-fourth only to be in tillage.28

These leases – and there are a great many of them with the same sort of covenants with different landlords in Devon and Cornwall – in fact enforce ley farming by restricting the number of corn crops to be
taken and the proportion of land to be under cultivation. There were penalties, ultimately eviction, for breaking the covenants. Such a system had probably always been in unrecorded use. Harold Fox showed that beat burning and ley farming, which necessarily go hand-in-hand, were in use in Devon at the turn of the fifteenth century.29 Cromwell may well have seen evidence of it – from the ploughing of grass fields, or from what were obviously newly sown grass leys. It was not, as Aubrey suggests, an innovation, but ancient practice in the Southwest. However, while it was 'in accordance with the practice of good husbandry' in Devon, this was quite different from 'good husbandry' elsewhere, and so it was thought to be novel and innovatory by those interested in 'improvement' but unfamiliar with south western 'Dumnonian' practice.

In the nineteenth century, south western practice was considered old-fashioned and uninformed by those brought up in the 'Norfolk four-course, turnips and fallow school', and its distinguishing best aspect, the 'ley', seems to have been largely ignored or forgotten. Its later, great advocate – Sir George Stapledon – found some evidence of it, in particular, in the Cockle Park system of alternate husbandry.30 It was however hailed as something new and remarkable as late as the Second World War. Then, in the face of German submarine warfare and food shortages, it became government policy, backed by money grants to farmers, to plough up old pasture, crop it, and ultimately re-seed it with good grass seeds. Stapledon's name is associated with this 'plough up' policy. He was knighted and made a Fellow of the Royal Society for his work. Stapledon saw ley farming as a way in war time of producing much-needed grain and potatoes from what was often pretty poor, worn-out grassland of the kind prevalent everywhere in England during the farming depression that occurred between the two world wars. Farming then was too often 'dog and stick' farming, and good corn-growing land was overgrown 'fox coverts'. Stapledon published Ley Farming in 1941 and founded the Welsh Plant Breeding station at Aberystwyth where, among others, the famous strains of perennial rye grass were bred, S23 and S24, as well as white clover (S100), with which to re-seed. These were vital if ley farming was to succeed.

Stapledon investigated the origins of ley farming and found many widespread references to such practice but came to the conclusion that leys were used in the eighteenth century in 'a haphazard manner
and could not be said to have formed the cornerstone in any definite and predefined rotation. However, as shown earlier, the Bedford husbandry covenants enforced ley farming as early as 1736, and it was by then clearly part of a system in the Southwest. It seems that Stapledon never saw these leases. He might have been intrigued if he had, as he came from Devonshire farming stock.

Husbandry covenants, of course, existed everywhere. An examination of some from adjacent Dorset, and nearby Glamorgan showed that, at the same dates, fallow was very much the central feature of the lease in those two nearby counties. Moreover, as already noted, the medieval word ‘baricium’ – beat burning – indicates ploughing up of grassland and beating perhaps meant the first stage of cultivating the ley. If this is so, the practice of ley farming had medieval and perhaps even earlier origins.

FERTILITY
The ley was a way of preserving fertility, but farmers used anything to improve it. Waste materials, spent hops, wool shoddy, brewers grains, human and animal waste, night-soil from the towns, fish waste, rotten pilchards from the fishing villages (known as ‘caff’) – all were of value.

The Southwest had a particular asset – sea-sand, calcareous sand, comminuted shell. This material did a great deal to reduce the natural acidity of the region’s soils. Some sands on the north coast of Cornwall are strongly calcareous, up to 80 per cent CaCO₂. Such sand was freely available on all Cornish beaches requiring only the cost of transport as far as the haulage contractors and their teams of pack-horses could take it, or barges carrying it as far up river as was possible – for a price. Probably nowhere in Cornwall, and only inland Devon, was too far from the sea to benefit. Sand was brought 16 miles to Tavistock Abbey’s lands at Werrington. In Cornwall at least, sandy mud from the estuaries was likewise used, loaded at low tide. It was known as ‘liggan’. There were thought to be 35 different qualities of sand in Cornwall. In their covenants, leases commonly required the application of dung or lime or sand, before ploughing.

Limestone is thinly but well-distributed, in Devon and its use on the land seems to have begun in the sixteenth century. The monks of Tavistock who used sand extensively on their estates had land – at Denbury for instance – on limestone, but there is no evidence that they ever practised the burning of lime there. By 1630, however, lime
Figure 8. Smoky lime kilns were to be seen wherever there was limestone and lime was in common use as a fertiliser in Devon. This example is at Morwellham on the Devon bank of the river Tamar (source: Mark Brayshay).

burning was occurring. By the seventeenth century, smoky lime kilns were to be seen wherever there was limestone and lime was in common use, replacing sand (Fig. 8).

In East Devon, marl (that is, clay with a reputed lime content) was being dug. In 1667, Samuel Colepresse called East Devon the ‘marl country’, and long-abandoned marl pits can still be seen there. These pits were in full use by 1750. Marl was spread in huge amounts on leys. All this demanded the use of packhorse trains to supply the large quantities needed. The New Model Army would have been lucky whilst on the march not to have met some of these trains, seven horses strong, with their packs often occupying the full width of the lanes.

Farmers applied lime and sand and marl because they, and their forefathers, were excellent observers of the land and the soil. Long before they had any written word to consult, they had the wits to draw the correct conclusions from what they saw. They knew that Dumnonian soil is difficult and reverts naturally to acid infertility if
left alone. Devon and Cornwall farmers needed both to think hard, and work hard, to obtain any degree of prosperity from it.

**WATER MEADOWS**
Traditionally water meadows are first recorded in the Golden Valley of Herefordshire in the sixteenth century and, at the same time, were well used in Wiltshire to flood meadows in late winter and early spring to encourage an early growth of grass for lambing ewes. The system irrigated flat lands on both sides of a stream by diverting water into purpose-built channels which had hatches at intervals for the flooding of different parts of the meadow. In Devon they were used in this way in the valleys of the Exe, the Axe, the Otter, and the Culm.

Devon, however, has a rather different relief to Wiltshire and Herefordshire, and abounds with smaller streams running down narrower, steep-sided valleys. Ways were found to water these valleys by means of 'catch meadows' where furrows were dug at intervals of height across the slope of a hill, and water dammed and diverted often far up a valley to feed them, so that whole hillsides could be watered, furrow-by-furrow in succession (Fig. 9). This practice explains why small steep fields often bear the name meadow when their relief seems to make this impossible.35 These meadows were first shut off completely from grazing in October, and this would produce a lush green 'early bite' in March for newly lambed ewes. They could be shut up again in June or July to provide a late hay crop, or grazing in August and September. Colepresse was familiar with the use to which meadows could be put at different times for fat bullocks and store bullocks and horses. While Colepresse does not write of meadows as if they were a novelty in Devon, Cromwell may nevertheless have been surprised to see quite steep hillsides lush with foot-high grass of a green colour that only watered fields take on. The horizontal furrows for these meadows are still visible here and there.

**FARMING LANDSCAPES SEEN BY CROMWELL AND BY WILLIAM MARSHALL**
Much of what Cromwell was able to see in Devon and Cornwall in 1645 was not peculiar to Dumnonia, and not – as Aubrey suggested – new in the seventeenth century. However, what he saw would have been quite unfamiliar to a newcomer to the Southwest. The 'mighty
great’ hedgebanks were peculiar; as was perhaps the ploughing of hillsides. The almost entire enclosure of the landscape was matched in Kent and Essex, but peculiar elsewhere. ‘Devonshiring’, though so named, was surely practised wherever there was rough land to be tilled. ‘Ley farming’, with grass and crops alternating, with the total absence of fallow, was remarkable indeed perhaps 500 years before its almost universal adoption across England in the 1940s.

A century after Cromwell’s day, a man was born who became sure that ‘Devonshire’ husbandry was ‘different’. In 1796, he wrote a book about it (Fig. 10). He was the Yorkshireman, William Marshall (1745–1818).\textsuperscript{36} Marshall became a noted writer on agricultural matters; he was a contemporary and rival of Arthur Young. By the time Marshall began his account of Devon farming in 1791, he had been writing for 13 years on agricultural matters in Norfolk and Staffordshire among other places. He believed, unlike others, that a stay of at least a year in an area was necessary before putting pen to paper. Marshall took estate manager posts in different localities in order to

Figure 9. ‘Catch’ water meadows by the River Bray. The horizontal lines running across the fields are water furrows fed by stream that passes by the farm. Allowed to overflow in February, the grass — nourished and protected — grew early and lush (source: author’s collection).
finance himself. He obtained the job of steward to the Drake Estate at Buckland Abbey in 1791 and published his account of Damnonian (sic) husbandry five years later. Marshall had time to observe farming practices fully and coolly; at times, he was disparaging; his judgement was free from Dumnonian patriotism. His 'minutes' show that he travelled extensively in Devon and Cornwall, and into Somerset and Dorset. Marshall was convinced that the husbandry of Devon and Cornwall was quite different to that of the rest of the country. To repeat his striking comment: 'Dumnonian husbandry' was 'as distinguishable from the ordinary management of the body of the island as if the peninsula they form had recently been attached to it'. He preferred to describe the farming of areas like Devon and Cornwall, which shared common practices and use, rather than that of 'political' counties; so it was that he wrote about what he habitually called 'Danmonia' as one unit. Thus unit comprised Devon and Cornwall together with the extreme western parts of Dorset and Somerset.
Danmonia, as Marshall called it, and spelt it incorrectly, was Dumnonia, the ancient Romano-British word for the peninsula. He uses the word constantly to give the whole peninsula a common identity. He knew exactly where Dumnonia began geographically: ‘at the western termination of the chalk; and ended ‘at Lands End’.

He was able to recognise precisely where it began when, on the road west, he saw .... The first Dumnonian hedges near Chard: ‘extraordinary fence mounds’. Travelling eastwards, he notes in contrast that ordinary ‘thorn hedges’ began near Yarcombe, three or four miles west of the town.

Marshall was able to identify 27 Dumnonian peculiarities in husbandry. Six of these have been discussed already: ‘Devonshiring’ or beat burning; the use of the ley as part of the common Dumnonian rotation of crops; the absence of the fallow; the cultivation of hillsides; the use of catch meadows in the watering of hillsides; and the use of calcareous sea-sand to sweeten the acid soils.

Other peculiarities were less obvious. One was the shearing of sheep before, rather than after, dipping or washing, so that fleeces still contained the yolk of the wool, weighed heavier, but fetched a lower price. Another Dumnonian practice was the preparation of straw (‘reed’) for thatching. This involved the threshing of ripe heads of corn so that the grain was separated in a way that left the straw unbruised by the flail. The straw was then bundled neatly in ‘niches’ of ‘reed’ for the thatcher’s use. Thatching in Dumnonia is, and was, quite different to thatching elsewhere, and ‘reed’ had another advantage: it lasted much longer if used as bedding for cattle.

Animal husbandry was different. Pigs were fattened to an enormous weight in small sties, so that they had little space to move and lay ‘wet’, as it was thought they should, in their own dung, so as to produce the much-prized ‘fat bacon’ – inches of fat, and little lean – of the Dumnonian diet. Marshall said that cattle were not pole-axed but were bled at slaughter in Dumnonia, as pigs commonly were everywhere.

The scalding of milk over an open fire to produce ‘clotted cream’ was also unique. Such cream was commonly eaten on bread in preference to butter. Butter churns were unknown until the late-eighteenth century and are nowhere mentioned in such Devon probate inventories as survive, nor in the medieval dairy account of Tavistock Abbey, which record cheese in large quantities. Butter for sale commercially
was made by stirring scalded cream by hand in brass or 'cloam' crocks; scalding 'pasteurised' the cream and butter made from it kept better.

Marshall saw three differences in Dumnonian rural society, as well as in farming practice and diet. First, farms were small: family farms. Next, children of the rural poor were commonly apprenticed by the parish to farmers for up to 14 years to 'learn husbandry', living in the farmhouse and eating with the farmer's family. Lastly, there were no hiring fairs.

Elsewhere on fair days, labourers at the end of their current employment paraded themselves in public in the marketplace seeking their next job. Dumnonian habit, by contrast, was to rely on family labour on their small farms and, if the family grew up and left home, to seek unpaid, living in, parish apprentices as a substitute. This arrangement provided cheap biddable labour and coped better than the poorhouse with the many children at a time of rising population. There was thus no need for small, cash-poor farmers to hire labour in the market place. Apprenticing was not always a happy relationship, but the consequent society was much less that of 'master and man'; once again different.41

Differences of this nature in cultivating the soil, in animal husbandry, in diet, and in rural society are sufficient to suggest that Devon and Cornwall – Dumnonia – constituted a very clear pays in the French sense, un grand pays perhaps, enclosing smaller distinct geographical pays, the South Hams, Dartmoor, the Exe valley, that nevertheless shared a common culture.

Individually some of the differences that Marshall lists are quite trivial but together they suggest that he was right to use the word Dumnonian to define them. They are perhaps, ultimately, part of a relict agrarian culture of the pre-Saxon Dumnnonii and Dumnonia, the ancient Romano-British name for the south west peninsula. The differences are too many and varied to be the result of chance, and to suggest they are just 'old fashioned' merely poses another query. From where did the 'old fashion' derive if not from ancient indigenous Dumnonian practice?

Some of Marshall's peculiarities of practice in the Southwest were, however, by 1796 regarded as old fashioned and, when there was a choice, were shortly to disappear. An example is the carriage of almost all farm goods on the back of a horse on packsaddles, rather than in
a cart. Geology and topography were responsible for the very poor roads of Dumnonia, maintained only by parish labour costs that made the packhorse most practical. Likewise, Dumnonian farmers had no choice but 'barbarously' to winnow corn in the open on tops of hills until, in the eighteenth century, rather late, winnowing machinery became enough and commonplace.

For most of Marshall's practices, farmers could choose to do otherwise, to adopt other practices; there was no necessity to adopt the practice of ley farming and doing without the fallow, or of beat burning, and yet they were standard practice from an early date. They maintained fertility and created good pasture. Likewise, there was no necessity to create great Dumnonian hedgebanks, or to shear sheep unwashed; or in the use of prepared 'reed' for thatching. These ways were used because they had always been used; they were customary.

An examination of these methods and customs offers a glimpse of the agrarian practices of the people who preceded the Saxons in the Southwest. Philip Payton and Mark Stoyle have shown that the Cornish/Dumnonian language persisted until the nineteenth century.\(^\text{42}\) Stoyle argues that self-conscious Cornish/Dumnonian identity was behind the Cornish march to London in 1497, the Prayer Book Rebellion of 1549 in which men from Dumnonian Devon were also heavily involved, and the differing political loyalties of the Civil War. Husbandry - that most ancient, persistent and necessary skill, as old as language - did not require wars to preserve it, but it has very deep roots and some evidence of the past is still apparent today.

**NOTES**

4. *ibid.*, vol 1, xxxiii.
18. Colepresse, *op. cit*.
20. Carew, *op. cit*.
24. Brian Clist, *personal communication*.
27. *ibid*.
28. DRO, Bedford Estate, L1358, Devon Letters, 1751.
31. *ibid.*, 12.
32. DRO, Dorset, 1258M 82/7; DRO, Glamorgan, 1936M, L162.
33. Colepresse, *op. cit.*, see appendix.
35. For example, at Scarswell, Slapton.
38. *ibid*, vol. 2, 126.