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# OASTS IN KENT AND EAST SUSSEX

## PART I

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The oasts of Kent and East Sussex have long been characteristic of the local rural landscape, perhaps even more characteristic, because more numerous and widespread, than the medieval castles in which the area is also particularly rich. Artists have captured them; writers in prose and poetry have extolled them. In these lines penned by the Kentish poet Donald Maxwell in 1927 castles and oast kilns are associated, and the poem has become something of a period piece of the nineteen-twenties.<sup>1</sup>

O people they come from far and wide  
With a Morris car and a shilling guide,  
And a man may reckon his time well spent  
Counting the castle walls of Kent.  
Dover, Rochester, so he reads,  
Tonbridge, Allington, Upnor, Leeds,  
These are the scenes of doughty deeds.

And when he is looking round for these  
He notices, hidden among the trees  
Curious towers with conical tops,  
They're hundreds strong in the land of hops;  
'What are they?' Surely a child can tell,  
These are the castles of Kent as well.

The study of oasts and their development through the centuries provides an excursion into the realm of industrial archaeology which rather surprisingly has not hitherto engaged the attention of the Society. The round kilns which are a familiar sight today, the 'curious

<sup>1</sup> From *The Enchanted Road*.

towers with conical tops', date only from the nineteenth century, the golden age of hop-growing, which I propose to deal with in Part II. The present article is confined to earlier evolutionary developments.

## DEFINITION

It will be noticed that I have chosen to use the word 'oast' in the title of this article, in preference to 'oasthouse'. The latter expression first appeared in the eighteenth century when, we are told, it was pronounced 'wostus' in the local dialect.<sup>2</sup> The shorter term however is the one more often used by the hop-grower himself, 'oasthouse' being more the language of the lay outsider and the estate agent.<sup>3</sup>

According to the Oxford Dictionary, the word 'oast' is derived from the Old Latin *æstus*, meaning 'heat'. As understood today, an oast is much more than a heat chamber, its purpose being to de-hydrate, not merely to bake. For the drying of any vegetable matter, it is essential that the application of heat is combined with air movement, to carry away the vaporized moisture. This fundamental requirement applies to hop-drying no less than to the drying of other crops, such as tobacco, tea and herbs of all kinds. Without a draught of air through the material being dried, the vapour would be re-condensed, with results disastrous to the quality of the product.

It seems that the term 'oast' was originally applied to kilns used for drying malt, and that when hops were first grown in England they were sometimes dried on already-existing malt kilns. Reynolde Scot, member of a prominent Kent family, who in 1574 produced the first English book exclusively devoted to hop culture,<sup>4</sup> after giving detailed instructions for building 'such an Oste as they dry their Hops upon', mentions the fact that 'some use to dry their Hops upon a common Oste, but that way there can be no great speed in your work, nor small expence of your wood, besides danger of fire and ill success of your doings'. By this he implies that a 'common Oste', that is to say one used in turn for both malt and hops, would be less satisfactory than one designed specifically for the latter. In recent times the term oast has come to mean exclusively a building for the drying and packing of hops.<sup>5</sup>

It consists essentially of one or more kilns, where the actual drying takes place, and adjoining accommodation providing room for

<sup>2</sup> W. Marshall, *Rural Economy of the Southern Counties*, (1798), 260.

<sup>3</sup> In the West Midland hop districts, the dialectic word 'kell' is the customary synonym.

<sup>4</sup> *A Perfect Platform of a Hop Garden*. The author was a nephew of Sir Reynold Scott of Scott's Hall (see *Arch. Cant.*, lxxiv (1960), 46).

<sup>5</sup> A Cronk, *English Hops Glossary* (1959), 22.

cooling, packing and storing the product. The entire building is called an 'oast'.

#### THE INTRODUCTION OF HOP-GROWING

The history of oasts of Kent and Sussex can begin no earlier than the date of the introduction of commercial hop-growing into England, which seems to have taken place in the first half of the sixteenth century. Long before that, in fact since the twelfth century, the value of *Humulus lupulus* for flavouring and preservation of beer had been recognized in central Europe. Cultivation of the crop gradually spread to the Low Countries and elsewhere. The Flemish weavers who came to Kent in the reign of Edward III soon introduced the practice of using hops in beer, importing for the purpose hops grown and dried abroad. To the Englishman however, right up to the end of the fifteenth century, beer (that is to say hopped ale) was still considered the drink of foreigners. As William Caxton put it, 'Ale of England; Byre of Alemayne'. However, as the taste for beer eventually became established here the Government of the day, as had been the case with weaving, brickmaking and other useful arts, encouraged experts to come over from Flanders to teach the English, and initially the Kentish, the technique of hop-growing. Legislation passed in 1549 seems to provide clear evidence that it was at that time a new industry on this side of the Channel, its introduction having probably started in the preceding decade.

It was however an industry which was quickly taken up. William Harrison's *Description of England*, 1577, leaves us in no doubt that although hop-growing was still regarded as a recent introduction here, it was rapidly spreading. 'Of late years', he says, 'we have found and taken up a great trade in planting hops, whereof our moorie and hitherto unprofitable grounds doo yield such plentie and increase, that there are few farmers in the countrie which have not gardens and hops growing of their owne, and these far better than doo come from Flanders unto us'.

The statement that in 1577 there were few farmers in the country not growing their own hops has to be accepted with reserve, although planting was certainly widespread. A deed of transfer of land in the Vale of Conway, Caernarvonshire, in 1592, refers to hop-yards, showing that their cultivation had already spread to Wales. Harrison however was probably referring particularly to the south-eastern counties, where small-scale planting took place on most holdings.

## MAKESHIFT DRYING

To begin with, there were of course on most farms no oasts of any kind. 'Some use to dry their hops in a Garret', Reynolde Scot recorded in 1574, 'or upon the floor of a Loft or Chamber, in reproof whereof I must say that few men have room enough in their houses to contain a great quantity or multitude of hops, so that the dust that will arise shall empair them, the chinks, crevices and open joints of your lofts, being not close byrthed, will devour the seeds of them'. There is a risk, he says, that the hops 'will be utterly spoiled in colour, in scent and verdure'. Nevertheless, in case of necessity he concedes, 'if you have no Oste, dry them in a loft as open to the air as may be'.<sup>6</sup>

For such a purpose, Scot advises, 'sweep, wash and rub the boards, and let your broom reach to the walls, and even to the roof of your loft, for I can teach you no way to divide the dust from your hops, but so to prevent the inconvenience thereof. Stop the holes and chinks of your floor, lay [the hops] not half a foot thick, and turn them once a day at least, by the space of two or three weeks. This being done, sweep them up into a corner of your loft, and there let them lye as long more, for yet there remaineth peril in packing them'.

With even greater disapproval, Scot records that 'some lay their hops in the sun to dry, and this taketh away the state of the hops, contrary to the purpose of drying, which is very prejudicial to the brewer'.<sup>7</sup>

Scot's message to the novice hop-planters of England was that to achieve anything like satisfactory results they should provide themselves with a purpose-built hop-oast, 'such an Oste', he said, 'as they dry their hops upon at Poppering'. There is no doubt whatever that Reynolde Scot was thoroughly knowledgeable of his subject. He grew hops on his own farm at Smeeth in Kent, and was evidently familiar with hop-growing practices in Flanders, where the little town of Poperinge remains to this day a traditional centre of the industry.

## THE 'SCOT' PATTERN

His book gives detailed illustrated directions for the construction of what he calls 'a little house', timber-framed, 18 to 19 ft.-long and 8 ft.-wide, divided into three rooms. The middle room was the kiln, 8 ft.-square, with a honeycomb brickwork furnace on the ground floor. The drying floor above was constructed of wooden laths 'sawen very even

<sup>6</sup> As to drying hops on a 'soller', see also Thomas Tusser, *Five Hundred Points of Good Husbandry* (c. 1557), 193.

<sup>7</sup> *op. cit.*

one inch square and laid one quarter of an inch asunder', placed 5 ft. above the ground.

The fire was stoked through a hole in the wall of one of the end rooms, and in the same wall a door gave access to the lower part of the kiln, or as we call it, the plenum chamber. Openings were also provided between the upper part of the kiln and each of the end rooms. The basic layout was analogous to that of the most modern oast being built today, that is to say a room for receiving the green hops on one side of the kiln, and a cooling room to receive the dried hops on the other side. Dimensions and details have evolved during four hundred years, but not the fundamental layout.

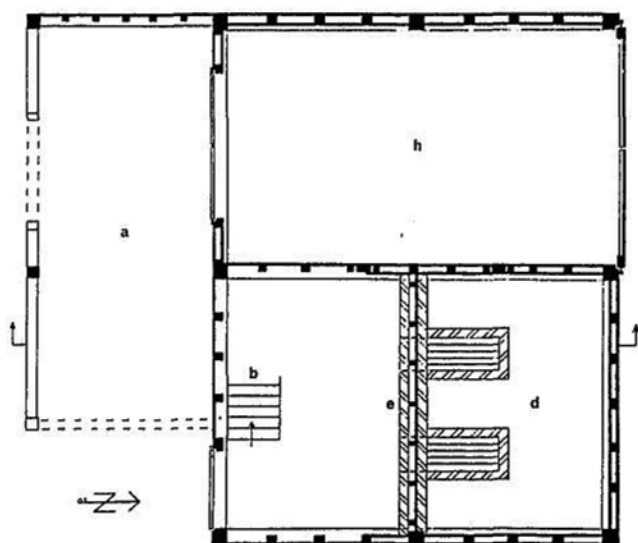
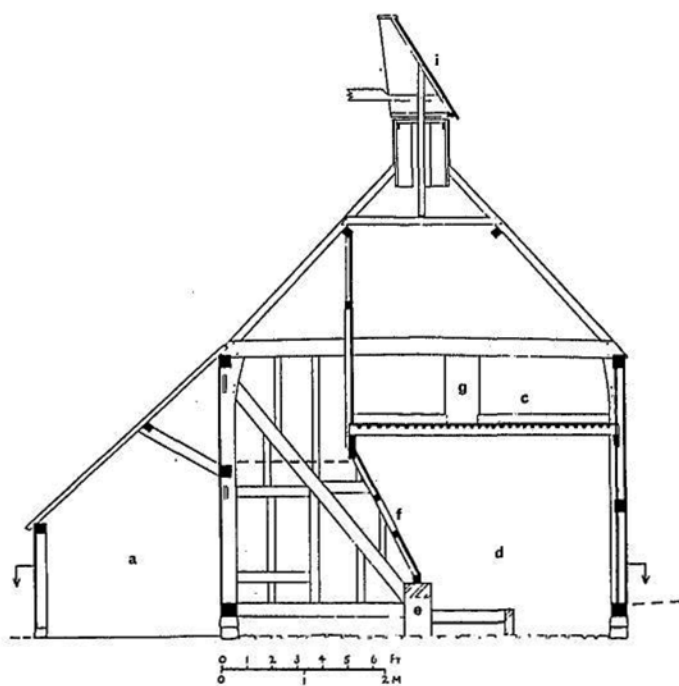
It will be noted that Scot gives no directions as to that part of the kiln above the hop-bed. He describes the drying floor and the furnace below, but says nothing about the roof structure, which probably did not differ from that of other buildings of the period.

As to siting, Scot advised, 'place it near to your Garden, for the better expedition of your work, and somewhat distant from your house to avoid the danger of fire'. Oast fires are fairly common even today; in those days the risk was enormous. Consequently, surviving traces of those Elizabethan hop-oasts must be very rare, if indeed they exist at all. The oldest extant derivative of Scot's design is probably that at Little Golford, Cranbrook (Figs. 1 and 2). Although evidently purpose-built c. 1750 of re-used materials, and although it featured twin furnaces under a drying floor slightly larger than Scot's, this little oast possessed a number of characteristics which acknowledge its heritage from an earlier date, including a ground-floor cooling room, close-boarded internally to a height of about 4 ft. to contain the dried hops.

The fuel used in Scot's day for hop-drying was wood, and must have had the disadvantage that all the smoke had to pass through the bed of hops being dried above, before escaping through openings in the walls and gaps between the roof-tiles. It was not long before charcoal was introduced, and being virtually smokeless this remained an important hop-drying fuel for centuries. Right up until the Second World War there were itinerant charcoal burners going from farm to farm in the hop-growing districts practising their mysterious art, converting great quantities of cordwood into fuel for the oasts.

#### THE STUART PERIOD

Throughout the seventeenth century many farms had their two or three acres of hops. It is difficult to say how many oasts of the Scot type were in use, but the importance of proper drying came to be widely



recognized. Some hops were still dried on malt kilns, but hop-growers then as now being among the most individualistic of men, there is no doubt that drying arrangements were many and varied. It was quite common for a drying floor to be erected at one end of a barn, with one or two fireplaces installed beneath it. Many an ancient barn still bears the traces of such adaptation, in the form of mortices at first-floor level, and evidence of otherwise unexplained former windows and doors. Such improvisations were subsequently superseded by purpose-built oasts, as the inventive genius of the hop-planters constantly sought to devise some technical improvement. John Worlidge, in his *Systema Agricultura*, published in 1669, actually describes a modified type of kiln in which the products of combustion did not have to pass through the hops, but were conveyed away by a flue – an idea very much in advance of its time.<sup>8</sup>

The majority of oasts were still of the Scot type, though tending to be somewhat larger. For instance, when one Augustin Taylor took a lease of a farm at Hadlow in 1714, one of the covenants was that he should build at his own expense a barn and an oast, 'the said oasthouse to containe in lenght from end to end forty feet and in width seventeen feet . . .'<sup>9</sup> Thus it will be seen that in the 150 years since Scot's description, the customary dimensions had increased considerably.

#### THE EIGHTEENTH CENTURY

With increased production, there was greater pressure to increase the drying capacity of the kilns, but it was not until the eighteenth century that it was appreciated that the only means towards even drying of a deeper bed of hops was to increase the speed of flow of heated air. When this important consideration became known, it led to a flurry of

<sup>8</sup> A. H. Burgess, *Hops – Botany, cultivation and utilization* (1964), states that this patent was granted in 1635 (p. 207).

<sup>9</sup> Elizabeth Melling, *Kentish Sources III, Aspects of Agriculture and Industry*, (1961).

Fig. 1. Oast at Little Golford, Cranbrook, as arranged for Hop-drying.

#### KEY

- a Lean-to Stowage
- b Loft-ladder to Drying-floor
- c Drying-floor, 10 ft. 6 in. square
- d Plenum chamber with twin Furnaces
- e low Wall with two arched Openings for Stoking
- f hinged Trap-door
- g sliding Trap-door for off-loading dried Hops
- h Ground-floor Cooling-room, boarded and lined
- i Cowl.



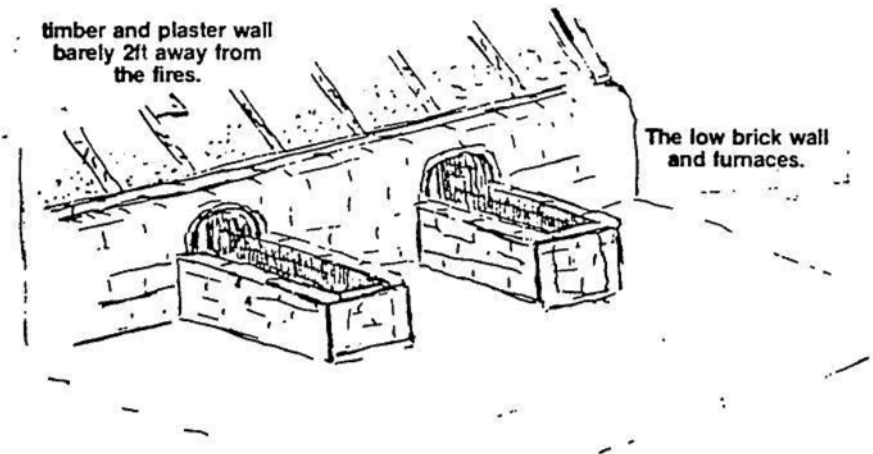


Fig. 2. Oast at Little Golford, Cranbrook; Impression of Plenum Chamber before Removal of Furnaces (*ante* 1961).

development in oast construction and adaptation, in which far greater attention was paid to that part of the kiln above the drying floor. Sloping inwards from about two feet above the square or rectangular drying floor was contrived a pyramidal ceiling of lath-and-plaster, carried right up to the apex of the pitched roof of the building, and gathering to a single opening at or just above the ridge-line. This, it was found, acted as a kind of flue, which accelerated the upward draught of warm air like a chimney. Where the sides of this pyramidal ceiling corresponded to the pitch of the roof, the lath-and-plaster was fixed to the undersides of the rafters; where it did not, similar timbers were framed up inside the roof-space to carry it.

An exceptional example of a large kiln in a barn is at Catt's Place, Paddock Wood. Here were no fewer than eight fireplaces, served from a tunnel running the whole length of the plenum chamber. Two exhaust openings were constructed in the roof-ridge, instead of the usual single one.

The next logical step in oast development was to provide, over the opening, the familiar wooden pivoted cowl, which has long been a typical feature of the landscape of hop-growing districts. The purpose of this is not only to prevent the entry of rain. Turning as it does away from the breeze, it is so shaped to provide wind-induced extraction of air from the kiln. Thus an aerodynamic principle combines with convection to achieve the primary essential of the hop-dryer's art, movement of warm air through the hop-bed. This revolving cowl has

become the best known and most picturesque insignia of hop-growing areas. The design was probably originally borrowed from contemporary maltings. The late Dr. Burgess<sup>10</sup> stated that it was first used in the late-eighteenth or early-nineteenth century. However, John Thorpe's *Customale Roffense*, which appeared in 1782, gives an illustration of this type of cowl mounted on the ridge of the former chapel of St. Katherine, Shorne, one of a number of erstwhile ecclesiastical or monastic buildings to be adapted for hop-drying (other examples being St. Peter's, Aeslingham, near Frindsbury, the former parish church of St. Botolph, Ruxley, and a church at West Barming,<sup>11</sup> all of which had been desecrated at the Reformation).

Poets have likened these oast cowls to nuns' head-dresses, ships' sails against the scudding clouds, or the questing heads of great white birds. More prosaically the traditional cowl may be described as an inclined cone, open on one side for slightly less than half its circumference, constructed of timber and feather-edged boarding, mounted on a vertical spindle in such a way that it can be caused to rotate in the direction of the wind by a horizontal vane protruding from the centre of the opening. Today they are commonly 8-9 ft. tall, but the early ones were on a somewhat smaller scale.

There is a deeply entrenched tradition that oast cowls should be painted white. Some years ago a certain grower decided to have his repainted sky blue, but finding himself faced with much shocked disapproval from his neighbours, he felt obliged to revert them to white almost immediately. Derision, too, was poured on the South African diamond millionaire who bought a farm near Ashford and committed the *faux pas* of having the oast cowls painted to match his racing colours! Apart from these rare aberrations, white has remained the universal custom.

Cowls were usually made by that now-vanished craftsman, the wheelwright. In form, they exhibit a marked similarity throughout the region. Some, however, such as those made on the Whiligh Estate in Sussex, are distinguished by having two parallel boards, like blinkers, on either side of the opening. The pattern is known locally as the 'Courthope cowl'. It is in the variations in outline of the wind-vane that the maker, or his client, could really add a touch of individuality and artistic licence. Fingers, hands, points and finials of great variety; arms straight or wavy or crocketed, sometimes supporting saucy cut-outs of the rampant horse of Kent, or some other emblem - they can all be found on the oast cowls of Kent and Sussex.

The freedom of the cowl to rotate, so that it always presents its

<sup>10</sup> *op. cit.*, 8.

<sup>11</sup> *vide* Wm. Coles Finch, *In Kentish Pilgrim Land*, (1925).

boarded or closed side to the weather, is not only essential to the purpose for which it was designed, it is also vital for its own preservation. So conspicuously exposed to the force of high winds, if a cowl fails to turn its back on a gale, much destruction can ensue. Consequently, as many have learned to their cost, bearings have to be kept greased to avoid sticking in one direction.

The revolving cowl was not the only innovation in the eighteenth century, a time of continuing expansion of English hop-growing, particularly in Kent. Inventories dating from the beginning of the century indicate that hop-growing was usually, as yet, only a relatively inconsiderable part of the general economy of the farm.<sup>12</sup> By the end of the century it was, on many, a major enterprise, and oasts were reckoned to be most important items of fixed equipment. When William Cronk in 1795 leased a farm at Seal, which he subsequently bought, it was said to include 'the oasthouses, barns and stables', in that order (KAO U840 EB212).

It was around Canterbury that Daniel Defoe noted 'the most surprising encrease of hop grounds'. He was informed that there were 6000 acres of hop-gardens 'within a very few miles of the city'.<sup>13</sup> Naturally there was much endeavour to improve the efficiency of the oasts, to cope with the increased quantity of the crop.

It will be recalled that in Reynolde Scot's day the hops were dried on a floor of wooden laths which had gaps of  $\frac{1}{4}$  in. between them. Although such spacing would prevent whole hop-cones from falling through, there must have been some loss of broken petals and lupulin dust. By 1798, according to Marshall,<sup>14</sup> the use of a hair cloth had become general. This consists of an open-weave mat of horse-hair, laid like a carpet over the drying floor, covering the laths. This made it practicable to increase the gaps between the laths to about one inch, thus offering less resistance to the circulation of air. In 1748, the tenant of Tatlingbury Farm, Capel, paid to one Stephen Potter the sum of £2 11s. for 34 yards of oast hair at 1s. 6d. per yard.<sup>15</sup> Because most other fibres are quickly destroyed by sulphur fumes and heat, horse-hair cloth is still used today, but replacement costs are many times greater.

The kilns themselves were being built somewhat larger in area. Marshall describes as a full-sized kiln, one of 14-15 ft. square. Now for the first time, the kiln was being built as a separate element of the building, under its own pyramidal roof. The adjoining body of the oast, in which the dried hops were stored and packed, became known

<sup>12</sup> Elizabeth Melling, *op. cit.*

<sup>13</sup> *A Tour of Great Britain*, (1724).

<sup>14</sup> *op. cit.*, 262.

<sup>15</sup> Dennis Baker, *An Eighteenth-Century Wealden Hop Farm*, in *Cantium*, 3 (1971).

as the 'stowage'. Although the great majority of oasts still had a single kiln, placed at one end of the stowage, by the close of the century the larger growers were installing multiple oasts in which a number of kilns were attached along the side of a single large stowage. Marshall describes one situated near Maidstone, belonging to a Mr. Russell,<sup>16</sup> 'perhaps the largest and completest of its kind', and there is another still surviving and dated 1790, at Swarling Farm, Petham.

For the most part, the furnaces remained much the same as they had been in Scot's day two hundred years before, though proportionately larger, or duplicated in the larger kilns. In an effort to obtain an even distribution of heat from a single furnace under a large square drying floor, some new kilns were constructed on what was known as the 'hopper' pattern, that is the plenum chamber was formed like an inverted pyramid.<sup>17</sup>

Charcoal was still the customary fuel, one writer averring that it required 100 sacks of charcoal to dry a ton of (?green) hops. The importance of levelling the bed of hops on the hair cloth raised well above a charcoal furnace, and the arcane skills of the ubiquitous soot-begrimed charcoal burner were both well-known to that perceptive Kentish poet Christopher Smart (1722-71). His georgic *The Hop Garden*,<sup>18</sup> after descanting on the subject of eighteenth-century hop-picking, goes on to say,

. . . next succeeds

The important care of curing: - quit the field,  
And at the kiln th' instructive muse attend.  
On your hair-cloth, eight inches deep, no more,  
Let the green hops lie lightly; next expand  
The smoothest surface with a toothy rake.  
Thus far is just above; but more it boots  
That charcoal flame burn equally below;  
The charcoal flames, which from thy corded wood,  
Or antiquated poles, with wond'rous skill,  
The sable priests of Vulcan shall prepare.

Some growers however were introducing enclosed 'cockle' stoves of cast-iron, with flues of brick or iron piping passing through the plenum chamber and leading to an external chimney, so that the products of combustion did not come into contact with the hops. This system meant that ordinary 'sea coal', the new cheap, but smoke-producing fuel, could be used without detriment to the hops.

<sup>16</sup> A direct ancestor of the present writer, he was a leading mid-Kent grower.

<sup>17</sup> E. J. Lance, *The Hop Farmer*, (1838), 142 (illustration).

<sup>18</sup> Printed in *Poems on Several Occasions*, (1752), and quoted in extract by George Clinch, *English Hops*, (1919), 82.

As the eighteenth century drew to its close, the hop industry was on the threshold of further technical developments which would have their effects in and on the oasts of Kent and Sussex. Now already of historical interest, those developments will fall to be dealt with in the second part of this study.

#### ACKNOWLEDGEMENTS

Thanks are due to Mr. K. W. E. Gravett, for assistance in dating the Little Golford oast, and to Mr. P. Lambert, for very kindly executing the measured drawing of the same (Fig. 1). In important respects this and also Fig. 2 are based on sketches made in 1961 by Mr. P. H. Gratton. Due to subsequent structural adaptations, Mr. Gratton's sketches and notes are now unique records which he has generously made available for the purpose of this article.