

A Cruck House at Lower Radley, Berks.

By DAVID A. HINTON

INTRODUCTION

RADLEY is a Thames-side parish, between Oxford and Abingdon, on the Berkshire bank. Between the modern railway line and the river, is a small hamlet known as Lower Radley, standing some 175 ft. above sea-level, and about quarter of a mile from the river. It is composed of houses dating from the 14th to the 19th centuries, built on both sides of a lane which runs round a rectangular field 350 yards long, and 250 yards wide. When one of these houses (Grid Reference SU532990) was condemned, the owner, Mrs. F. B. Levetus, who lives in Lower Radley, very kindly allowed a complete archaeological examination to take place.¹

The house was a cruck-built, thatched dwelling, approximately 46 ft. 6 ins. × 16 ft. 6 ins. (see Ground Plan, FIG. 5). Only the west cruck (Cruck I) was visible from the exterior, for the eastern gable had a lean-to shed attached to it. Otherwise, there was nothing to suggest a pre-Tudor date, for the timber framing was covered by lath and plaster, and much of the front had been rebuilt in brick. Inside, however, four more crucks were found, the building being divided into four rooms upstairs and down. The partitions came at the crucks, except at one point downstairs, where the dividing wall between the second and third bays was about 3 ft. to the west of the central cruck (Cruck III).

It was decided that so far as safety permitted (and at times rather further), we should gradually remove all the additions to the original building, so that the skeleton of a Medieval house would remain. This was not, of course, altogether practicable, as many of the later parts appeared to be structural; but during our 'constructive demolition', it became apparent that the Medieval woodwork that remained had rotted considerably less than some of the thinner timbers of later centuries; so that much more could be removed than at first seemed possible, and the operation's only casualties occurred at

¹ I also owe my thanks to Dr. W. A. Pantin, for his advice throughout the project, and for reading through and commenting upon the draft of this article; to Messrs. Roger and Colin Fearon, who drew Crucks II and IV; to many members of the Oxford University Archaeological Society, especially Messrs. Banks, Paterson, McNeill, Coad and Miss E. Leedham-Green; and particularly to Mr. David Sturdy, who discovered the house, initiated the work and taught me how to direct it, and who was always available for advice and encouragement.

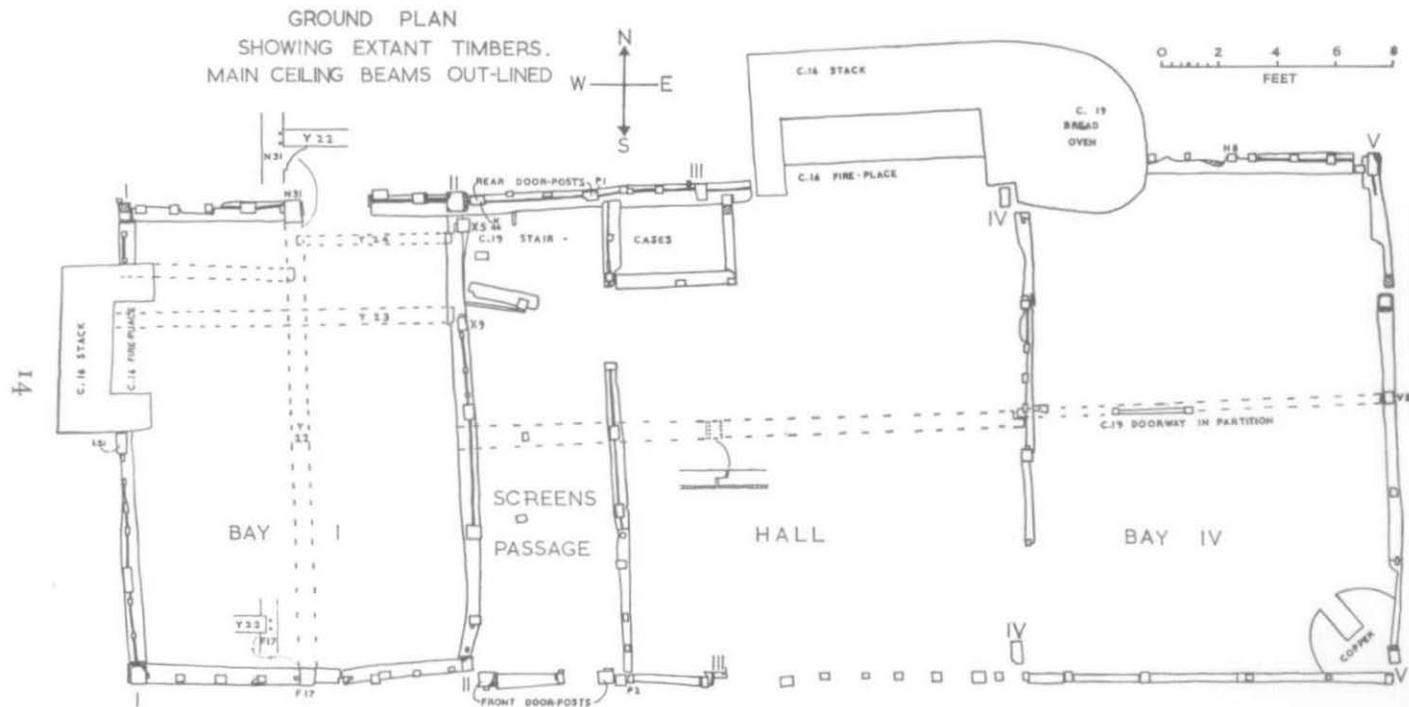


FIG. 5
(The beam spanning Bay IV is Y 5)

A CRUCK HOUSE AT LOWER RADLEY, BERKS.

the very beginning, when a party removing thatch disturbed a wasps' nest. The removal of the thatch from the two end bays displayed the dangerous state of most of the rafters, and these had to be jettisoned whatever their antiquity. All the rafters, which were between 6 ins. \times 3 ins. and 3 ins. \times 2 ins., and 12 ins.—18 ins. apart, were fixed to ridge-piece, purlin and wall-plate by wooden pegs. The wall-plate itself had rotted in most places, but the ridge-piece and purlins were in general fairly strong, though parts of the latter were inclined to break off. They were attached to each cruck blade, generally by a single stout peg. The 19th-century dormer windows were removed from the south front, so that the original roof-line could be seen. The chimneys were not knocked down until a later stage of the work, because it was felt that they might be the only solid part of the building.

It was obvious from the arch-brace (K6, K10 etc.) on the central cruck (Cruck III, FIG. 10) that the house had originally had an open hall. This had been ceiled over in the 16th century; at the same time two fire-places were put in, and stone chimneys built. Other cruck houses, such as those in Monmouthshire,² were ceiled at much the same time, in the height of the Elizabethan and Early Stuart building activity. Further very considerable alterations had occurred in the 19th century. The house had then been divided into two cottages, one having Bay I and the Screens Passage downstairs, and Bay I and most of the area between Crucks II and III upstairs. Two front doors had been put in next to each other between Crucks II and III, and another in Bay IV. Both chimneys had been given brick extensions. Various windows, two staircases opposite the front doors, a bread oven and a copper stand, had also been added. Electricity had been put in at some time, but otherwise living conditions were not disturbed by such frivolities as running water. Much daub and wattle remained to provide nests for mice, and lath and plaster did little to alleviate draughts. The layers of wall-paper and linoleum that clung in shreds to partitions and floors testified to the dampness that was such a feature of this quaint example of Olde England.

We were able to remove almost all traces of the 19th century, and most of those of the 16th, including the hall ceiling and the chimneys, so that we were left with five pairs of cruck blades, their collar- and tie-beams (we removed the studs while it was still possible to reach them), the ridge-piece over the hall, most of the purlins, a fair quantity of wall-plate, the joists of Bay I, a few of the uprights below the wall-plates, and what was left of the sill-beams. At this point, there was so little left supporting the building that it collapsed like a card-house, each timber in turn bringing down its neighbour. This dramatic

² See Fox and Raglan, *The Monmouthshire House, Part I*, Cardiff, 1951.

DAVID A. HINTON

conclusion was really rather fortunate, since to have demolished any more timbers by hand would have been courting disaster.

The original house had been built, as was shown by pottery found in excavation,³ during the late 14th century, and is thus one of the first cruck houses to which a reliable date can be assigned, a date rather earlier than those frequently given for such buildings in other regions,⁴ but which corresponds fairly closely with results found by radio-carbon dating methods used on crucks at Harwell, Berks.⁵ It was an early example of a timber-framed house, built on low walls of stone and loose mortar, about 1 ft. 6 ins. high, which were sufficient to protect the woodwork from damp. On these walls were laid the sill-beams, roughly 8 ins. × 6 ins., tenoned into each other and secured by two pegs, the mortices being in the longer timbers. The crucks themselves and other upright posts, were placed on the sill-beams, the larger ones being tenoned into them, some of the smaller (and usually later) ones merely being pushed into a 1 in. deep groove which ran the length of the sill-beam. The cruck blades supported tie-beam, collar-beam and saddle. Wall-plates along the front and back of the house were tenoned into the uprights, and were pegged onto spur-ties on the crucks, except on Crucks IV and V, the two easternmost (FIGS. 11 and 12), where the tie-beams were halved into the blades,

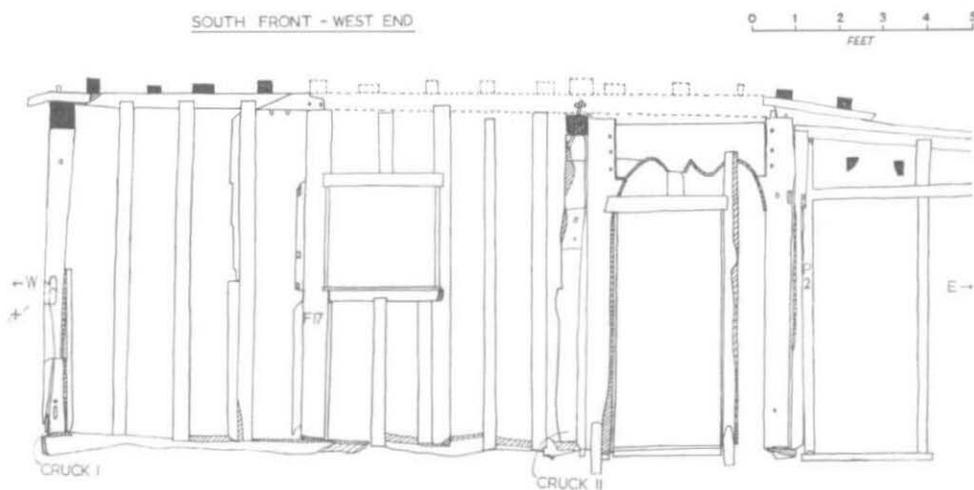


FIG. 6

³ Directed by Miss Helen Sutermeister ; it is hoped that a report will soon be published.

⁴ But cf. R. K. Field, 'Worcestershire Peasant Buildings in the Middle Ages', *Medieval Archaeology*, IX (1965), 113-4, where the earliest Court-Roll evidence for cruck building is dated 1312.

⁵ J. M. Fletcher, 'Radiocarbon Dating of Cruck Cottages and Barns', *Trans. of the Newbury and Dist. Field Club*, XI (1963), 94-101.

A CRUCK HOUSE AT LOWER RADLEY, BERKS.

and extended to carry the wall-plates. The wall-plates also had the bottoms of the rafters pegged onto them. The walls themselves were originally daub and wattle between the timbers, mixed of clay and cow-hair, as was found in one of the interior partitions; 16th-century daub and wattle, which remained in a few spaces in the north front and east gable, used straw rather than hair.

It was not possible to be certain of the dates of all the timbers in the house, and many were evidently re-used. Many of the upright posts in the north and south fronts of the building (FIGS. 6 and 7) were obviously quite

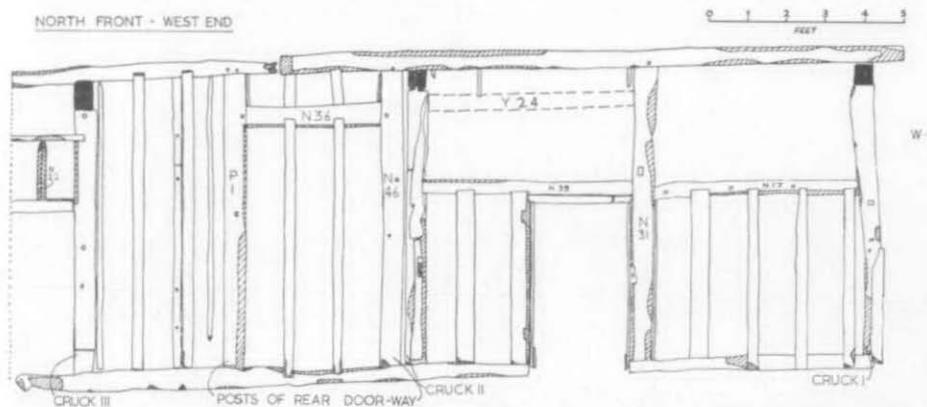


FIG. 7

recent, and had been nailed to the wall-plates by triangular joints, which showed on the outside face of the wall-plate, while a few older posts were morticed and pegged in. Mortices in the wall-plate soffits showed where there had been other posts previously. It was assumed that the newer posts were of the 19th-century period of reconstruction, for they occurred where there had been less need of complete re-building. The south front, from the 19th-century doorways to Cruck V, had been re-built mainly in brick, with intermittent timbers; most of the partition of Cruck V was similar. Presumably this front had needed more complete restoration, and it was found easier to carry out a thorough repair than to make merely a few alterations as elsewhere.

CRUCK I (FIG. 8, PLATE IIB)

The inside edges of the feet of Cruck I were 16 ft. apart, and were tenoned into the longitudinal sill-beams; the tenon at the base of the southern blade showed clearly from the exterior. This cruck had split at some period,

DAVID A. HINTON

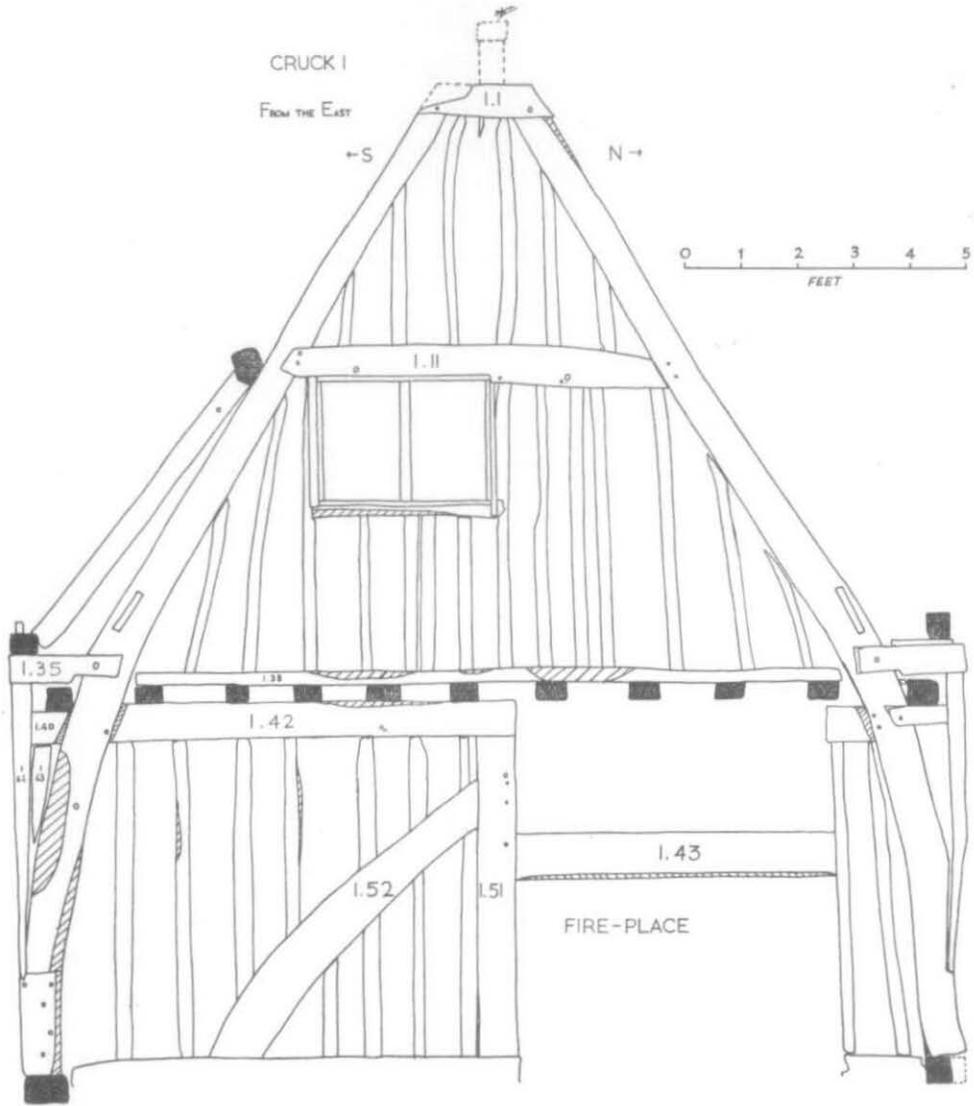


FIG. 8

1 ft. 10 ins. above the sill, and a repair effected. A small upright flanking stud (I 62) was jointed into the cruck, which supported a small spur-tie (I 35), upon which the wall-plate rested, being pegged onto it. There was a blocking-

A CRUCK HOUSE AT LOWER RADLEY, BERKS.

piece (I 63) between the cruck, the flanking stud, and a lower spur-tie (I 40) which abutted the stud, and upon which a joist rested. Above the higher spur-tie (I 35), which supported the wall-plate, was a wind-brace slot in the cruck; there being a corresponding one on the northern blade. The south purlin had a trench on its exterior face to fit the wind-brace, which, like all the wind-braces throughout the house, had been cut away. At its end, the purlin was pegged to the cruck, and was supported by a cleat and a principal rafter, which in its turn rested on the wall-plate. The north purlin unfortunately collapsed before it could be inspected. The cruck blades were joined at their tops by a saddle-beam (I 1), upon which stood the short king-post that supported the ridge-piece and rafters. Discretion prevented these from being measured too nicely. The north blade was similar to the south, though a small plank had had to be placed between wall-plate and spur-tie; and the foot had not split.

This truss formed the west gable of the house; the outside had been given a pebble-dash coating, and only the crucks themselves were left visible. The wall was composed of lath and plaster nailed onto upright studs, which were pushed into mortices in the soffits of the horizontal beams above, and sprung into grooves in the beams below; those which met the cruck blades were not attached to them. 5 ft. 9 ins. above the sill-beam was the tie-beam (I 42), which was morticed into the cruck blades. On this rested the joists, running East-West, there being an extra one resting on each of the lower spur-ties on the outside of both cruck blades. There was another, smaller beam (I 38) resting on the joists, unattached to the cruck blades, into which the next uprights were sprung; 5 ft. above this was the collar-beam (I 11), lapped and tenoned into the south, and tenoned into the north, blade; this had been slightly cut into when a 19th-century window was inserted, but had mortice slots where there had once been studs. It had no mortice slots to correspond with peg-holes in it, however. It supported the top row of studs. A fireplace had been added at the end of the 16th century; the chimney was built of stone and mortar, and had been extended in brick in the 19th century. The hearth projected into the room, and had a chamfered beam (I 43) across it. It had been modified in the 19th century.

A large upright post (I 51) abutted the fireplace; it had a strong, slightly elbowed brace (I 52) tenoned into it, and had had another on its other side, as an empty mortice showed. Centre posts with elbowed braces are not usual in the gable trusses of cruck houses, but F. W. B. Charles (*Medieval Cruck-Building and its Derivatives*, 20, and FIG. 4b) has shown that they may occur in the interior, between the first room and the hall; in these, the centre post is extended up to the collar beam, and has a functional purpose in the

DAVID A. HINTON

rearing sequence of the cruck blades. Unfortunately, the work at Radley had been completed before the publication of Mr. Charles' book, and many of the interesting points which he makes about the construction of a cruck house could not be studied. The Radley house differs in many respects from his models, not least in the use of mortice and tenon joints for the tie- and collar-beams in Crucks I-III, instead of halved dovetails. I think that the crucks were raised in the order in which they are numbered in this report, although the position of the Cruck IV tie-beam on the east face of the truss argues against this.

BAY I (11 ft. 6 ins. \times 15 ft. 9 ins. internally)

Bay I, the area between Crucks I and II, was the service-room of the house, with first-floor storage space above. The upright posts of the south front rested on a wooden sill-beam, which was distinctly bent. 5 ft. 4½ ins. from the foot of Cruck I was a large upright post (F 17), which had a counterpart on the north front (N 31). These supported, by a bracket on N 31 and a halving joint on F 17, a horizontal timber (Y 22) designed to help support the joists; but it had sagged so much that it was no longer in contact with them. The north sill-beam had rotted rather worse than the south, and east of N 31 had been cut away, a small lean-to having been erected there on the outside in the 19th century. The uprights of the north front did not reach the wall-plate, but ended about half-way up at two horizontal timbers, each morticed into N 31, and the cruck blades. The area above the western of these horizontals (N 17) was filled with daub and wattle, but was empty above the eastern (N 35), as it had there been used as a window. But a slot the whole length of the upper side of N 35, and auger-holes in the wall-plate, showed that this area had also once contained daub and wattle. N 17 and N 35 were almost certainly late 16th century, as was the wall-plate itself here. On the south front, the wall-plate had rotted even more, but was perhaps the original one. It had had to be repaired at some stage, there being a scarfed joint secured by two pegs to the west of F 17, which was tenoned and pegged into it. Beyond this point, it disintegrated before measurement was possible, but had obviously passed over the cruck spur-tie, and then over the front door-posts. All the uprights in Bay I, except F 17 and N 21, were fitted to the wall-plates by triangular joints and nails. A 19th-century window had been attached to F 17. The whole bay had been given a concrete floor, which effectively prevented excavation.

It seems likely that the north-east corner of Bay I was the site of the original staircase. Two grooves on the top of the transverse beam Y 22, on

A CRUCK HOUSE AT LOWER RADLEY, BERKS.

the east side, suggested that a ladder might have rested there. The grooves were 1 ft. 1½ ins. and 3 ft. from the wall-plate, and between 4½ ins. and 6 ins. wide, cutting about 4 ins. back into the surface of the beam. All the joists went the full length of the room, except for the one at this point, which cut off about 1 in. from the east side of Y 22, a later insertion carrying on into the partition under Cruck II. 5 mortices in the soffit of the eighth joist (Y 23), next to this insertion, suggest the former presence of a partition, separating the ladder from the rest of the room. An extra joist (Y 24) between Y 22 and Cruck II, where it fitted directly into the corner formed by the tie-beam and the cruck blade, may also have been part of the staircase construction, or may have been added when the staircase was floored over. On the top side of Y 23 were four more mortices, and two auger-holes, suggesting an upstairs partition. In Y 22 there was an auger-hole between the first groove and Y 24, which may have been for an upright, to be gripped by those going up and down the ladder. Two of the posts of the partition under Cruck II, X 9 and X 5, were rebated as though for a door.

CRUCK II (FIG. 9)

The blades of Cruck II were rather more elbowed than those of Cruck I, and the foot of the southern blade may have warped, pulling the sill-beam on which it rested inwards, and causing the bend in it which was very noticeable in Bay I. The inside edges of the blades were 15 ft. 8 ins. apart. During re-building, the entrance to the 19th-century staircase had been put in, and earlier the end of the 16th-century hall-beam had been inserted immediately below the tie-beam (X 7), being cut off flush with it. Yet there was no post under it here to help bear its weight, a rash omission. Unlike Cruck I, Cruck II had not originally had flanking studs, the short one on the north side (X 3) apparently being 16th century, its tenon going in the opposite direction from those on other crucks. There had probably been a similar one on the southern blade, but it must have fallen out. The wall-plate rested upon a short spur-tie, well above the level of the tie-beam, which was tenoned into the blades at both ends. Under the northern spur-tie (X 15), was the end of the joist Y 24. The purlins on both blades of Cruck II were trenched and pegged into them, the trench being an inch deep. Principal rafters again gave the main support, as in Cruck I, though on the northern blade this had rotted away at the top, so that removal of the rafters was a particularly hazardous operation. The tops of the cruck blades were joined by a saddle-beam (X 14), rather longer than that on Cruck I, but the king-post (X 12) was not so high. What may have been a carpenter's mark,

DAVID A. HINTON

CRUCK II

FROM THE WEST

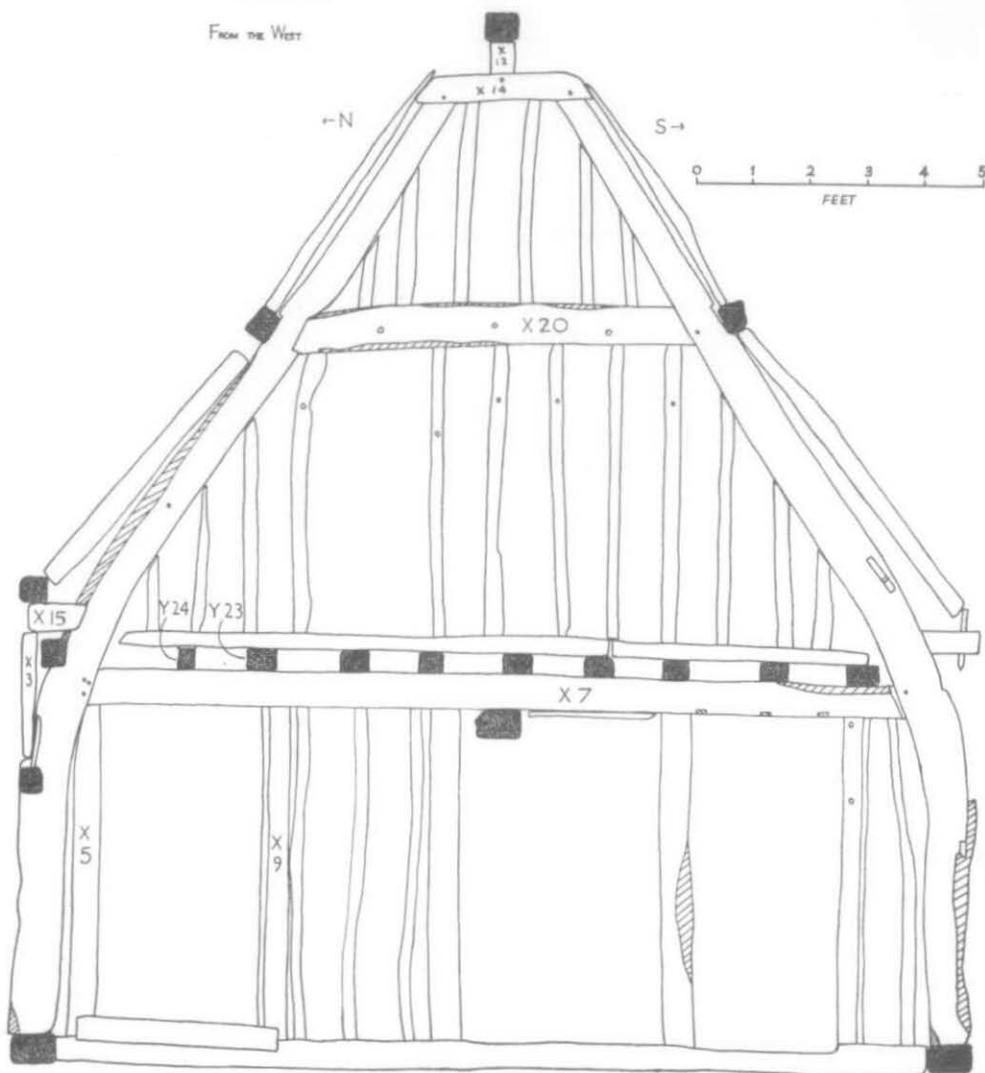


FIG. 9

appeared on the saddle-beam east side. The south blade west side, which the north blade lacked, though only because the wood had



over the north blade, on the had a wind-brace slot on the

A CRUCK HOUSE AT LOWER RADLEY, BERKS.

rotted so badly. Both blades had slots on their east sides, the tenon of the brace remaining in the north blade's slot.

On the east side of Cruck II was the Screens Passage, and there were probably two doorways in the partition under the truss. One of these presumably was at the bottom of the ladder, the other at the opposite end giving access to Bay I; the sill-beam was absent here. The five wider uprights on it may have been original. The arrangement of tie-beam, joists, small upper beam, studs, collar-beam and another row of studs, was similar to that of Cruck I, though the collar-beam (X 20) was cleft and slightly cambered. Auger-holes in it did not have corresponding mortices below, as was also the case with the collar-beam of Cruck I. In one of these auger-holes a leather purse was found; it contained $\frac{1}{4}$ in. wide strips of paper with indecipherable writing on, and remains an enigma. The partitions were filled with daub and wattle, in three layers, with whitewash. The spaces between the joists had been filled in with sawn-up branches, stuffed round with plaster.

THE SCREENS PASSAGE (4 ft. $7\frac{1}{2}$ ins. \times 16 ft. 3 ins. internally)

During the process of demolition, one of the most important features of the house was revealed, for a very fine doorway with double ogee-arched and chamfered head-board came to light (PL. II A, FIG. 6). This had been completely covered with lath and plaster in the 19th century, when a smaller door-frame had been built into it. This is the first time that a doorway of any significance has been reported in a cruck-built house;⁶ stylistically, however, it could belong to the late 14th century structure, or to the late 16th century re-building. The touch of distinction which it gave to the house can be compared to the slightly luxurious feature of the chamfered brace under the collar-beam in Cruck II, but this is a feature found in many cruck houses. The fire-place beams and the central beam in the Hall, of the late 16th-century period, were also chamfered—a comparable small decorative addition. The door-posts have tenons, to fit into the wall-plate, as do the other first period uprights, such as F 17 in the same front, but this would have been the normal joint in the late 16th century also. No associated pottery was found in the holes in which the posts had stood—for the sill-beam had rotted away—nor were the posts in line with the sill-beam of Bay I. A sill could have run almost without deviation from the foot of Cruck I to F 17, and then to the two door-posts and Cruck III; but its actual line altered between F 17 and Cruck II. Had this cruck shifted by warping, it could have pulled the sill-beam with it. Had it always been its present shape, there would have been nothing to prevent

⁶ Since the publication of F. W. B. Charles' *Medieval Cruck Building and its Derivatives* 1967, this is no longer true: cf. especially his Plate xxvii, C.

DAVID A. HINTON

the builders from keeping it in line with Crucks I and III by lengthening the saddle-, collar- and tie-beams ; or alternatively they could have brought F 17 inwards slightly. A line between Cruck II and V would pass directly under Cruck IV, but would not include Cruck III ; and it seems quite likely that Cruck IV had also shifted position.⁷ The wall-plate had achieved a straight line because posts were not quite upright, but its readiness to disintegrate suggests that there was considerable strain upon it. As stylistically the doorway is less likely to be as late as 1600 than to belong to the late 14th century, it seems probable that it is in fact part of the original structure. (The doorway is now in store at the Oxford City and County Museum.)

This door led into the Screens Passage, having access to Bay I on the left, and, further along, to the ladder. Immediately opposite to the main door was a back doorway (P 1, N 36 and N 46), blocked up by later posts but still standing on the sill-beam and tenoned into the wall-plate. The head-board was rectangular and chamfered, as was part of the east post (P 1), although the west post (N 46) was plain. P 1 was rebated at the back ; a hole in the back of N 46 could have been for a hinge. This doorway may well have been a 16th-century insertion, however, and not part of the original structure. The north end of the Screens Passage had been very much altered by a 19th-century staircase and cupboards. The partition between the Hall and the Passage had also been very much altered, but there was probably a 2 ft. 6 ins. doorway where the sill-beam was missing, 2 ft. 9 ins. away from the north front sill-beam ; the posts here supported a 9 in. wide horizontal, 1 ft. below the ceiling, which may have been a headboard. Further along, the sill-beam had been replaced, and a second door into the Hall, just to the right of the front door, is probable. Originally there may only have been a flimsy partition here, the more permanent timbers being part of the 16th-century reconstruction.

CRUCK III (FIG. 10, PLATE IIIA)

The previous existence of an open Hall was proved by the arch-brace (K 6, K 10, etc.) under the collar-beam (K 5) of Cruck III, which did not originally have a tie-beam, though one had been halved into the cruck in the 16th-century reconstruction, to support the new floor. This cruck had been much cut about, being very thin on the south blade. The inside edges of its feet were 16 ft. 6 ins. apart. On the north, however, it still rested on its sill-beam, but had been altered further up to make room for the second 19th-century staircase. The arch-brace had also been cut on this side when the floor was inserted, so that a doorway could be made. The panels had been

⁷ See below, p. 32

A CRUCK HOUSE AT LOWER RADLEY, BERKS.

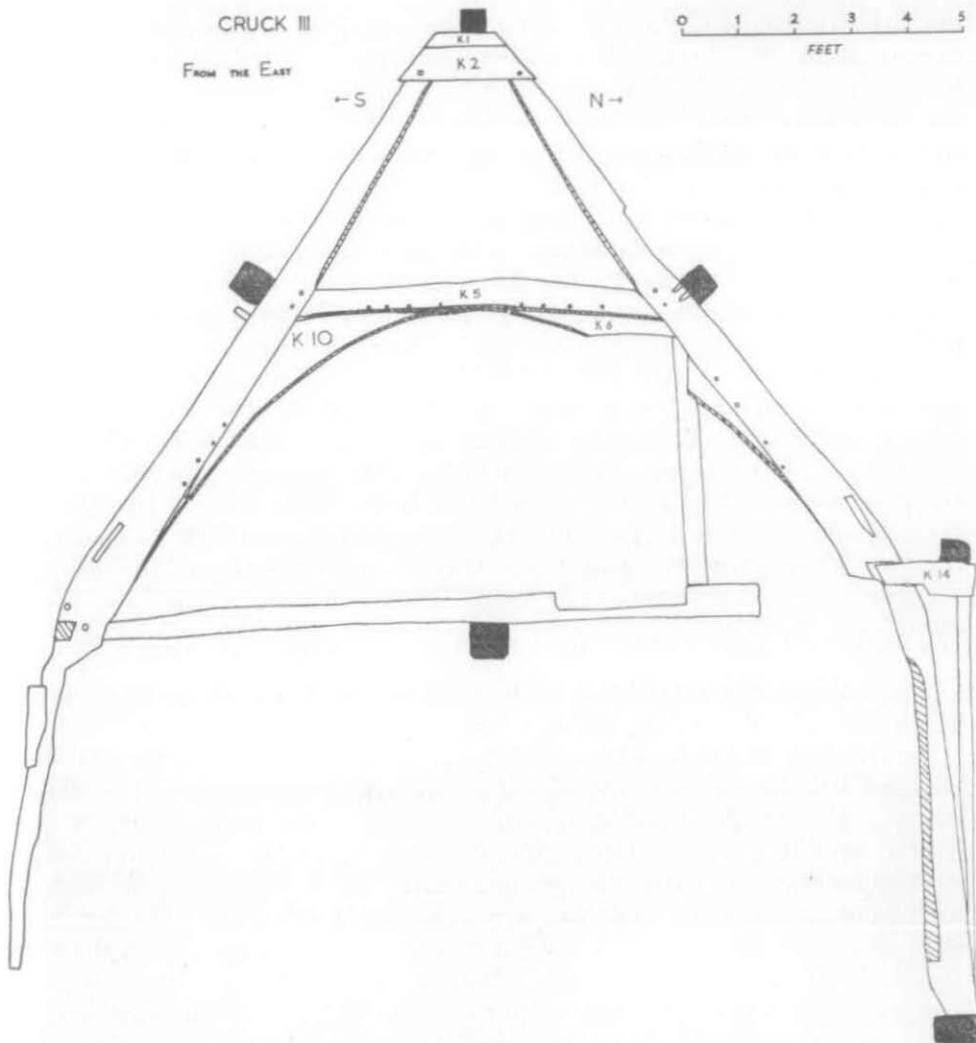


FIG. 10

filled with daub and wattle, but without studs, which were in all the other partitions. On the north side, the wall-plate was supported on a spur-tie (K 14), but both wall-plate and spur-tie had disappeared on the south. There were wind-brace slots on both sides of both blades, there being trenches in the purlins corresponding to them. On the north purlin, between Crucks II

DAVID A. HINTON

and III, the sawn-off end of the wind-brace remained. This purlin had been extended immediately east of the cruck blade, a plain scarfed joint being secured by four pegs, two of which were flush with the blade itself. Neither purlin was fitted into a trench in the blade, but both had a cleat under them, upon which the south purlin no longer rested. Both purlins were pegged into the tops of the blades. If they had ever had principal rafters, these had been removed during the 19th century when the staircases were put in in the north, and a dormer window in the south. The arch-brace had five sections, including a small piece at the top joining the two main sections; these were morticed and pegged into the blades, the other three sections being cut out of the blades and the collar-beam. Slightly chamfered on both sides, this brace was an impressive feature of the house; Mr. Charles has shown that these braces also had an important structural role. The blades above the collar-beam were chamfered on both sides, as was the collar-beam itself. They were joined by a saddle-beam, which was higher than those on Crucks I and II, being in two pieces (K₁, K₂) pegged together. There was no king-post for the ridge-piece to rest on; this had been extended about 18 ins. to the east of the truss, being joined by three pegs. It was pegged into the saddle-beam.

THE HALL (14 ft. 0 ins. × 16 ft. 3 ins. internally, not including the Screens Passage)

The whole of the Hall had been very extensively altered, most obviously by the insertion of a ceiling, and of a chimney in the north front. The original central hearth, discovered by excavation, was between Crucks III and IV; the upper timbers of the east side of Cruck II, of both sides of III, and of the west side of IV, were blackened by smoke. The south front was also entirely rebuilt, a second 19th-century doorway leading directly into the Hall. A long window was put in at the same time. All the timbers were modern, there was no sill-beam, and the partitions were brick-filled. On the north front, the sill-beam continued until it met the chimney, but, apart from the cruck, the timbers on it were not original. The wall-plate, which was not continuous the whole length of the front, ran on into the chimney, which was built over it; its soffit contained mortices which showed where there had been uprights. The chimney was built of stone with a loose sandy mortar, with daub on the inside; two wooden cross-poles had been built into it, about 6 ft. from the ground, for hanging hams. Like the gable chimney, it had a 6 ft. brick extension. The hearth did not project into the room, and was wider than that in the gable; it too had been modified, and a brick bread-oven had been built in the 19th century. The beam over the ingle was chamfered and slightly cambered. It was 9½ ins. high, and had split in the

A CRUCK HOUSE AT LOWER RADLEY, BERKS.

soffit. Its west end projected beyond the fireplace into the wall, and abutted the cruck. Its height here had been cut down from $9\frac{1}{2}$ ins. to $3\frac{1}{2}$ ins., and the extension provided the base of a small two-light window, presumably 16th century, whose central square wooden mullion (N 22), set diagonally, remained, though much rotted. The edge of the cruck had been bevelled to match it, and there was a thin timber above it. The window had been blocked with bricks, presumably when the second 19th-century staircase had been put in front of it; this, like the first, had cupboards in front of it.

The Hall and Screens Passage had been ceiled over in the late 16th century, the bulk of the weight of the new floor being carried by a central East-West beam, 7 ins. wide and between 6 ins. and 8 ins. high. This timber was not supported at its west end, except for a small 19th-century post in the middle of the Screens Passage. It passed over a more substantial post in the partition between the Passage and the Hall, which presumably took most of its weight. 3 ft. further it was divided, being joined by a horizontal halving joint to a matching beam which was $\frac{1}{2}$ in. less wide. It sloped downwards for most of its length, but levelled out for its last 6 ft. At its east end, it had only marginally more support than at the other, for it rested on a very thin horizontal beam in the partition, there being no upright directly under it. It was halved vertically into the central beam of Bay IV, and this joint showed that it had slipped inwards about 2 ins. It was chamfered on both sides throughout its length, the chamfer on the north side being end-stopped at its east end. On the south the chamfer went into the partition. The joists, of which there were 13 pairs running North-South, were joined to the beam by slots, being nailed into it from above. On the south front, the joists rested on top of a small horizontal timber, which in its turn rested on another, older one, which was halved into Cruck IV. West of Cruck III, they were built into the brick-work. On the north, they rested on a beam above the fire-place; between this and Cruck II, they were held up by timbers of the staircase.

CRUCK IV (FIG. 11)

The most difficult problem of Cruck IV was that neither of its blades rested upon sill-beams, either longitudinal or transverse. Its inside edges at ground level were only 15 ft. 3 ins. apart, which was considerably less than those of the other crucks. It was also lower. There were significant differences between the construction of the area round the tie-beam (H 30) of Cruck IV and the others; it was halved, not tenoned, into the cruck blades, and projected beyond to carry the wall-plate—as is normal in most cruck houses. The joists of Bay IV, like those in the Hall, ran North-South, not East-West

DAVID A. HINTON

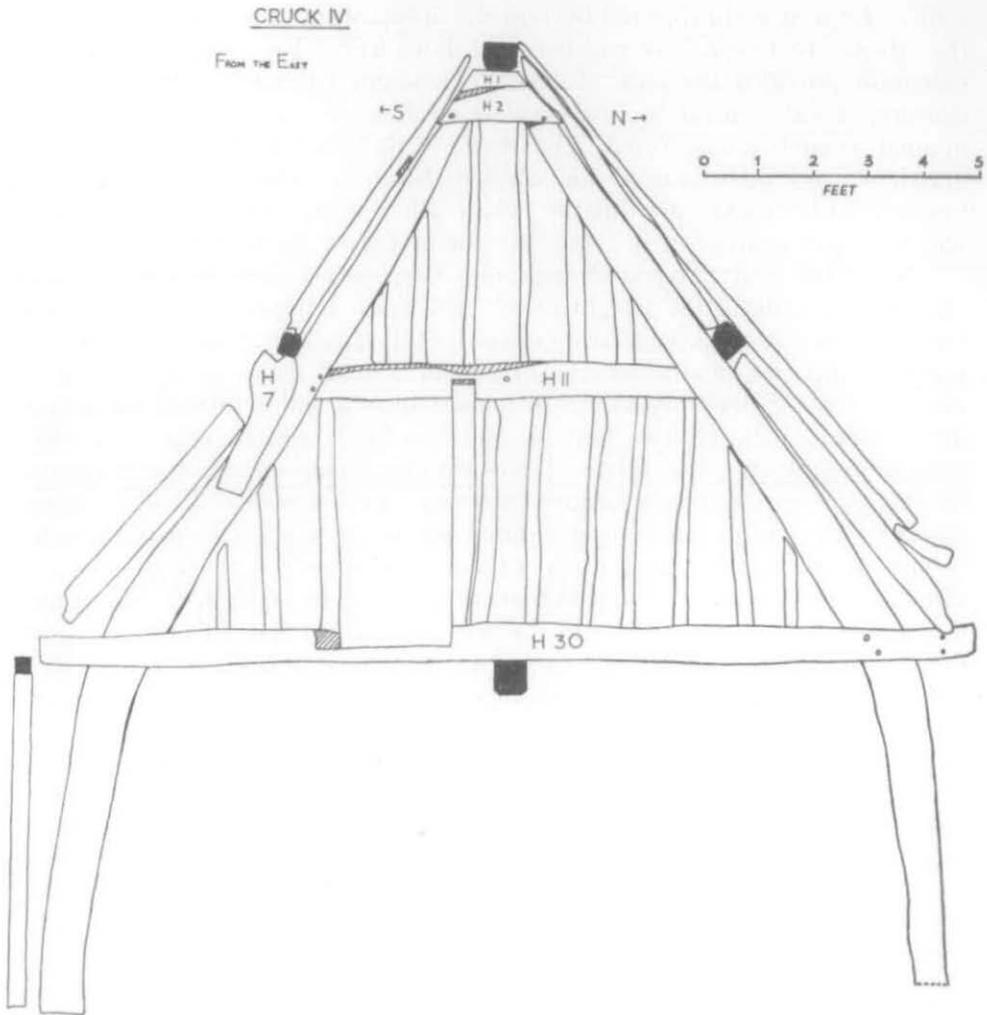


FIG. 11

as in Bay I, so that the studs were able to rest directly on the tie-beam. There was less distance between this and the collar-beam (H 11)—4 ft. as opposed to 5 ft. 9ins. (5 ft. 3 ins. from the upper beam) on Crucks I and II. But the collar-beam was 4 ft. 3 ins. from the saddle-beam (H 1, H 2), against 4 ft. and 3 ft. 6ins. on I and II respectively. A doorway between tie- and collar-beams had been inserted when the Hall floor was ceiled. There were wind-

A CRUCK HOUSE AT LOWER RADLEY, BERKS.

brace slots on the west, but not on the east, faces of the blades. The purlin on the south blade had evidently slipped, because an extra support (H 7) had been fixed to the blade ; but this had also apparently slipped. Both purlins had principal rafter supports. There was no king-post on the saddle-beam, which was in two pieces like that on Cruck III. The northern blade had what might have been a carpenter's mark, a scratched . The partitions between the studs were of daub and wattle, the white-wash on the west side being charred by smoke.⁸

BAY IV (12 ft. 3 ins. \times 17 ft. $4\frac{1}{2}$ ins. internally)

There was no downstairs partition directly under Cruck IV, the division between the Hall and Bay IV being some 2 ins. to the east ; there was nothing on Cruck IV to suggest that one might originally have been there. The timbers of the partition that there was, were very much rotted, and many of them were evidently re-used. There were two doorways in this partition, as Bay IV had been divided down the middle in the 19th century. This division followed the line of a central ceiling beam (Y 5), 8 ins. \times $4\frac{1}{2}$ ins., which continued on from the central beam of the Hall. This passed over the top of the partition, beside which was a stout upright, onto which Y 5 was bracketed—grooves and mortices in this upright showed that it was re-used, having probably been a sill-beam. At its east end, Y 5 rested on a bracket on a post (V 8) in the gable wall, and was then tenoned into V 8. It had slipped 3 ins., however, and the tenon no longer fitted into its mortice, which had been stuffed with moss and a small brick. Auger-holes and mortices in the soffit of Y 5 suggested a partition previous to that of the 19th century. The joists were slotted into it, and were not paired, there being eight on the north and seven on the south side. These were supported on the north by a horizontal timber, $5\frac{1}{2}$ ins. \times 4 ins., which in its turn was supported by an upright post by Cruck V, recessed some 4 ins. from the north front, and $2\frac{1}{2}$ ins. from the gable. It passed over a bracket on one of the uprights (N 8) of the north front, and then over the bread oven to be supported by the partition at its end. The south side joists were built into the brickwork of the south front, being extended and strengthened by iron clamps and wooden extensions. This front had been entirely rebuilt, though its sill-beam at one point was re-used. A 19th-century doorway and window were built into it, and a brick stand for a copper had been added to the corner. The north front, which was of lath and plaster, also had a 19th-century window. Two of its uprights, including N 8, were tenoned into the wall-plate, and may have been of the same period as it.

⁸ See above, p. 26

DAVID A. HINTON

The roof above Bay IV was half-hipped, the ridge-piece ending about 9 ft. from Cruck IV, being supported at its end by a complicated triangular construction of rafters and horizontal pole, pegged together. Both purlins, and the ridge-piece, were cut beside Cruck IV. The south purlin had a 9 in. piece inserted between its two parts, the whole joint taking about 1 ft., starting flush with the cruck blade. The north purlin had a plain 7 in. scarfed joint starting 2 ft. 1 ins. from the blade, and the ridge-piece was cut 2 ft. 2 ins. from the saddle-beam. There was a 19th-century dormer window in the south front of the upstairs room.

CRUCK V (FIG. 12, PLATES III B and IV)

The inside edges of the feet of Cruck V were 16 ft. 4½ ins. apart, and here similarity between it and the other four crucks all but ended. The most obvious difference was that it had been sawn off just above the collar-beam (V 38), which supported rafters. On the south side, the foot of the blade was

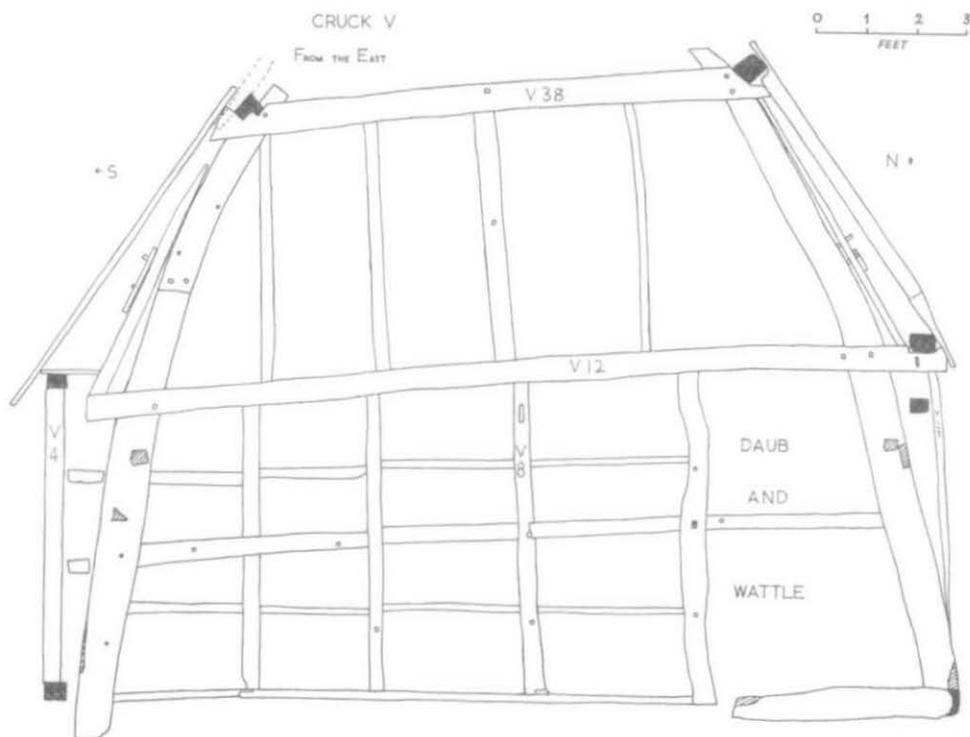


FIG. 12

A CRUCK HOUSE AT LOWER RADLEY, BERKS.

1 ft. 9 ins. lower than on the north, where it rested on a 6½ in. deep sill-beam ; there was no sill-beam on the south. The tie-beam (V 12) sloped 1 ft. 3 ins. from north to south, the collar-beam, being shorter, 1 ft. Compared with Cruck I, the tie-beam was about the same height from the sill-beam under the north blade, the collar-beam about 6 ins. lower. The blades were very much less elbowed, the collar-beam being 9 ft. 2 ins. between the blades compared with 6 ft. 9 ins. on Cruck I ; it was only 4 ft. 7 ins. shorter than the tie-beam. The rebuilding of the south front had left the cruck blade several inches behind it, and the wall-plate (such as there was) rested on an independent upright (V 4). The tie-beam was halved into the cruck, as was the collar-beam ; both projected beyond it. A principal rafter on the south had rotted, but on the north ran up to the purlin. There was a wind-brace pegged to the rafter on the south, which was also pegged to the purlin. On the north, the brace had been broken, but its pegs remained. The south blade of the cruck had been repaired between tie- and collar-beams, the two pieces being pegged together. The purlins were slotted and pegged into the cruck blades and into the collar-beam. The principal rafter on the north, which in fact was only a pole, was pegged to the projection of the collar-beam, and fitted under and round the purlin. The wall-plate was pegged and slotted into the tie-beam projection, and there was a long, thin flanking stud (V 27) fitted into the cruck blade, and under the tie-beam. Several of the timbers in the framing of the partition were old, but were probably re-used. The partitions were filled with brick, except for the two under the tie-beam next to the north blade which were daub and wattle. Various slots and grooves in the cruck were caused by a lean-to shed which had been a continuation of the half-hip roof angle. Re-used timbers in the shed were measured, but it was impossible to prove that they had ever been used in the house itself.

BUILDING PHASES

It seems possible that the whole of Bay IV, and Cruck V, were later additions to the house. Cruck IV, with its tie-beam halved into the blades, may well have been the original gable. There were no wind-brace slots in its east side, and both purlins and the ridge-piece were jointed to extensions a short distance from it—at about the distance to which eaves would extend; this could, however, be just part of the rearing process, as Mr. Charles has shown⁹. The joists in Bay IV went in the opposite direction from those in Bay I, and the whole ceiling appeared to be 16th century. There was nothing to suggest an earlier ceiling. Windbrace slots were also absent on

⁹ F. W. B. Charles, *op. cit.*, 20.

DAVID A. HINTON

Cruck V, so that this form of support for the purlins may have been obsolete when it was erected ; for though there were wind-braces on the principal rafter, all the others in the house had been sawn off, presumably to give more head-room when the upstairs part came into regular use. Cruck V may well have been put up during the reconstruction of the whole house at the end of the 16th century. The use of a cruck blade at this date would have been a mixture of conservatism, and the difficulty of adapting an extension in the new 'framed-truss' style to an existing building in the old 'cruck-truss' style, a difficulty more often circumvented by adding an L-shaped wing. Perhaps Cruck V had been used in a nearby house that was demolished, and so happened to be available ; for it would not necessarily show signs of its re-use. But the lack of any sign of a partition between the Hall and Bay IV makes this all rather uncertain.

It also seems possible that there was in the 19th century a dramatic collapse of the south-east corner of the house. The extreme slope of the tie- and collar-beams on Cruck V, and the greater depth of the foot of the south blade compared to that of the north, suggest that there may well have been considerable subsidence. This perhaps caused a similar movement in Cruck IV, which would explain why the foot of its south blade did not rest on a timber sill-beam, but disappeared into the ground for about 6 ins. from the floor—a total drop of about a foot. This would also explain why the central beam in the Hall rose so noticeably after its horizontal start. The movement altered the whole line of the south front beyond Cruck III, so that it was re-built completely. Unfortunately, the north blade of Cruck IV, which also lacked a sill-beam, could not be measured for depth, but as Cruck V, and the front between Crucks IV and V, still rested on a sill-beam, the north presumably held firm. Slight movement in Cruck III on the south is suggested by the small gap between the lower part of the arch-brace and the blade. Further evidence of this is that the wall within Cruck V had been re-built in 19th-century brick, except for the northern 4 ft., which was daub and wattle—and stood on a proper sill-beam. Subsidence would therefore explain the failure of Cruck IV to stand in a line with Cruck I, the upright F 17, the front door-posts, and Cruck III, its alignment with Crucks I and II being coincidence, caused by the warping of Cruck II.

CONCLUSION

The Radley house may well have been originally a three-bayed building with four cruck trusses, a fairly modest dwelling.¹⁰ It is one of many cruck

¹⁰ Field, *op. cit.*, 113-14, found 50 examples of three-bayed houses quoted, against 8 four-bayed. Of these 8, however, 5 belonged to the last quarter of the 14th century.

A CRUCK HOUSE AT LOWER RADLEY, BERKS.

buildings in the Oxford region, there being another cruck house in Lower Radley itself. The nearest well-known example is the Barley Mow Inn at Clifton Hampden, one of several cruck buildings in the Long Wittenham area surveyed by Mr. D. Portman.¹¹ Here most of the houses were probably two- or three-bayed, except perhaps for the Inn itself. Obviously there was a strong cruck tradition in this part of the Midlands,¹² although it was hardly a cultural backwater, such as the cruck-truss areas of Wales and its borders, or Northern England. Mr. J. T. Smith has recently argued¹³ a strong case for a Celtic origin for the cruck construction, though the prevalence of crucks in such a strong Anglo-Saxon settlement area as the Upper Thames Valley, proves that the cruck had many admirers in the non-Celtic Midlands;¹⁴ as it had also in parts of the south, particularly in Hampshire.¹⁵

Mr. Smith has, however, clearly demonstrated that we cannot ignore European crucks in considering the origin of the construction, and his distribution map shows how widespread was the use of the cruck outside England. I have had the good fortune to stumble upon an upper-cruck building in the south of France, in the Pyrenean foothills, at Argos near Tarbes. This was a stone-built ruin, having four crucks still in place, and slots for two more; the gables were solid stone. The crucks, which were above tie-beams, were built into the wall like those at the barn at Church Enstone, Oxon.,¹⁶ but did not meet at the apex of the roof. This was not an outstanding example of the use of crucks, but was probably one of many in the area. It was very noticeable how the style of building altered from East to West, and curved timbers, in struts, braces, cambered headboards etc., became very frequent. This makes me wonder whether the origin of the cruck may not be conclusively proved until it has been studied in conjunction with the use of other curved timbers.¹⁷

The Society is grateful to the Oxford University Archaeological Society for a grant towards the publication of this article.

¹¹ *Berks. Arch. Jnl.*, Vol. 56 (1958), 35-45.

¹² J. M. Fletcher (a) *Oxoniensia*, xxvi-xxvii (1961-2), 207-214.

(b) *Berks. Arch. Jnl.*, Vol. 62 (1965-6), 45-69.

¹³ *Medieval Archaeology*, Vol. 8 (1964), 119-51.

¹⁴ cf. V. R. Webster, *Leics. Arch. Soc. Trans.*, Vol. xxx (1954), 26-58.

¹⁵ See, e.g., correspondence in *Country Life*, 1965, *passim*.

¹⁶ R. B. Wood-Jones, *Oxoniensia*, xxi (1956), 43-7.

¹⁷ See Fletcher, *op. cit.*, note 12b, for a more useful discussion of this point, and for new results in Radio-Carbon dating techniques.



LOWER RADLEY. A. MEDIEVAL DOOR-FRAME IN
SOUTH FRONT

Photo: P. S. Spokes



B. CRUCK I, NORTH BLADE FROM EXTERIOR

Photo: D.A.H.

PLATE III



LOWER RADLEY. A. CRUCK III, ARCH BRACE OVER HALL, FROM THE EAST

Photo: P. S. Spokes



B. NORTH FRONT, FROM THE WEST

Photo: P.S. Spokes

PLATE IV



LOWER RADLEY. CRUCK V, FROM THE EAST. CHIMNEY LENGTH PROBABLY AS IN
16TH CENTURY

Photo: D.A.H.