The Traditional Houses of County Limerick

By Caoimhin Ua Danachair.

Change in the aspect of the Irish countryside is nowhere more evident than in the homes of the people. New houses, built with modern methods and materials are appearing on every side, and almost always the building of a modern house means the destruction of a traditional one. This change is not a matter of gradual growth, but almost entirely a phenomenon of the twentieth century, the three factors which have caused it being the confidence inspired by ownership of the land, the housing schemes fostered by a native government and the introduction of cheap modern building materials.

The traditional house was the outcome of a long chain of slow development. From generation to generation the body of building tradition has been handed on, and though change and development were introduced according to the needs of the time, the main trends of tradition remained, thus making the dwelling house a reservoir of spiritual and material culture heritage for future generations. Now the engineer and the architect have supplanted the peasant builder and another phase of history has come to an end.

It is extremely difficult to assess the antiquity of traditional building features. There is usually no evidence of the date of erection of a particular house, and even in the exceptional cases where the date of building can be discovered, there is no indication of the time or cause of the origin of the material culture-motifs embodied therein.(1) In Ireland building tradition has not developed along the lines which it would have taken in a country with a happier history. Here a centuries-long stagnation was induced by the oppression and exploitation which are the natural concomitants of foreign misgovernment. The result has been the fossilisation of many very archaic features, and the persistence down to the present day of aspects of building which would have long ago disappeared under normal conditions. Now that the great change has come, these are being swept away and it is essential that a record be made of them before they vanish completely.(2)

Fig 8. House with sod walls, Drumreask, Co. Limerick.

BUILDING MATERIALS AND METHODS.

Sod. It sometimes happened that, for reasons of economy or environment, houses were built with walls of sod. These walls had many disadvan-

tages, which rendered them so unsuitable that they were used for dwelling-houses only when no better material could be obtained. They were unstable and likely to subside, causing the roof to distort and leak; the corners were weak, and a sound gable could not be erected. A sod wall was not suitable for the application of a weatherproofing surface, and was severely affected by damp and frost. Nevertheless, sod houses were formerly built in the poorer and less favoured parts of the county (see fig. 8).

The method employed was as primitive as the material. The sods were cut from the surface of a field or bog, from which the grass and heather had already been cut or burned, each sod being about three feet long by two feet wide, and four to six inches thick. In building the walls the sods were laid with the grass surface up, in courses, the joints broken as in stonework, and beaten firmly down with a spade. Usually there was a foundation consisting of a shallow trench filled with loose stones, but sometimes this was dispensed with, and the walls erected on the bare ground. As sod is not suitable for the erection of gables, the walls were built to the same height all around—about seven feet, and a hip-roof constructed. The rough edges of the door and window openings were trimmed with a spade or hay-knife. Door and window frames were then inserted. Instances are related of sod walls being built quite solid and unbroken, and the door and window openings being carved out with a spade.

CLAY was used for dwelling house walls all over the county, and was in most districts the usual building material. The walls were built of a mixture of viscous yellow clay and chopped straw or rushes. When well whitewashed these walls were very sound and weatherproof as long as the roof was kept in repair. Where the roof was neglected or removed, frost and rain rapidly eroded the clay walls and caused them to disappear in a very few years, leaving hardly a trace of the former existence of a house on the spot. Clay is a facile material, from which relatively large and complex buildings can be erected. On the other hand it is difficult to build a gable of clay, which means that clay-wall and hip-roof usually go together. Here is a verbatim account of the building of clay walls by one who took part in it, in 1884.

"The neighbours came to give my father a hand with digging and tempering the mud. They dug it out and tempered it by mixing it with shovels, like a woman mixing dough. It had to be well softened and all the lumps broken and rushes mixed with it. A neighbour came and rode his horse around through it to help to mix it. Then it was left under the weather while they were digging the foundations. These were dug about two feet deep and laid with stone, mortared with some of the mud, and the stonework was built up to a height of about a foot above the level of the ground all around, because if you built a wall with mud from the ground up, the bottom of the wall would always be damp. The western end of the house is built with stone up to the roof, because that is where the worst of the weather comes on it. We got the local mason to do that part of the work, and he laid the stones with some of the mud instead of mortar.

"While he was raising the west wall, the rest of the men built up the mud wall with shovels. They built up about a foot of the wall and walked on top of it to firm it down. The next day that course was fairly dry, and they trimmed it to the right thickness with a spade and put on another course. Every morning they trimmed the course they had put on the day before. It

took about ten days to finish the walls of the house. In this house the door and window frames were put in while the walls were being built, but I saw other houses where they were not put in until after the walls were finished. In this house they put in timber lintels in the doors and the windows, and stone flags for window sills and a door-step."

The same method was used all over the county. The clay-and-straw or clay-and-rushes mxiture was left to "temper" for about fourteen days before use. As each course was allowed to dry until firm before the next was added, good weather was essential during the building. In many clay houses the door and window surrounds and the corners were built of clay-mortared stone for greater strength. In a few places, for instance in the Bruff district, a quanity of broken stone or very coarse gravel was added to the clay; thus less clay had to be procured, but the walls were not as strong as the pure clay-and-rushes walls. In many places it was customary to sprinkle a thin layer of straw or rushes on top of the course completed on that day, before the clay dried. The next course of clay was placed on top of the layer of straw or rushes, which helped to bind the successive layers together. A well built clay wall will last for centuries, if properly cared for, and dwelling houses of all sizes, from the smallest cabin to the largest farmhouse were built of this material.

Dry Stone. There is little evidence of the use of dry stone as a building material in Co. Limerick. I have seen it in the ruins of a house near Knockfierna and in the remains of buaile habitations in the Galtee mountains.(3)

Mortared Stone. This was widely used by those who could afford to do so. Two kinds of mortar were used, clay which was 'tempered' as described above, and lime-mortar—a mixture of sand, water, and lime obtained by burning limestone in a kiln. In the hill district of West Limerick, where there is no limestone, the stone was usually brought from a quarry in the limestone district, such as the great quarry at Newcastle West, and locally burned. In building stone walls, mortared either with clay or lime, the services of a professional mason were usually obtained. Unfaced stone was used on both faces of the wall, while the centre was filled with rubble masonry. Corner-stones and those used in the door and window surrounds were faced by hammering. The corners were square interlocking quoins. Over door and window orifices, wooden lintels were used. The mason's tools were trowel, mortar-board and hammer. Plumb-line and square(4) were used for lining and levelling before the introduction of the spirit-level.

Hearths. All over the county, wide open hearths are usual. These hearths are large, sometimes measuring as much as ten feet wide and four feet deep at floor level. Usually the hearth is quite bare; occasionally there is a thin hob-wall behind the fire, as a protection for the main hearth wall. The fire is at floor level. There is no definite deliniation of the space occupied by the fire, which can be made large or small as required. Occasionally, portions of the main fire are drawn aside, to heat the pot-oven or brew tea, so that one may see two or three independent fires on the hearth at the same time. The hearth is still regarded as the social as well as the functional centre of the house.(5) At night the family and their guests sit around the fire, with some of the chairs on the floor of the hearth at each side of the fire, so that raising one's head, the stars may be seen through the chimney orifice.

Towards the end of the last century the wheel-bellows was introduced and generally adopted in the "non-turf areas" of the county. Where turf is the

traditional fuel, the wheel-bellows has gained no footing. But even in those parts where it is in general use, it is an innovation only in so far as the draught is mechanically produced. Before its introduction, a draught-producing device known as "blow-holes" was widely used in the eastern half of the county. Here the fire was made on a grating over a cavity in the floor, from which a covered channel led under the floor to an opening in the base of the wall on each side of the house. When a draught was needed, the opening on the sheltered side was closed, and the wind, blowing through the other opening, made the fire blaze. For cooking purposes a crane or pot-hanger was used. The floor of the hearth was cobbled or flagged with stone.

CHIMNEYS. A number of different types of chimney, or rather a number of stages in the dual evolution of the Irish hearth-chimney complex are to be found.

SMOKE-HOLES. There are traditions of houses in which there were smoke-holes in the roof over the hearth instead of chimneys, particularly in the barony of Coshlea. Enquiries among the oldest people brought no definite information on this point, other than that they remember having heard of such houses. A Jacobite officer wrote in his diary in 1690, "They say it is of late years that chimneys are used, yet the house is never free from smoke."(6)

WATTLE CHIMNEYS were formerly in general use and are still commonly found. The most usual type is the "súgán" chimney. This consists of a funnel of wattle-work on a wooden frame, shaped like a slender truncated pyramid. A typical specimen measures : height eight feet, cross section at lower end four feet by three feet, cross section at top sixteen inches by one foot. The framework is made from four wooden uprights, in section three

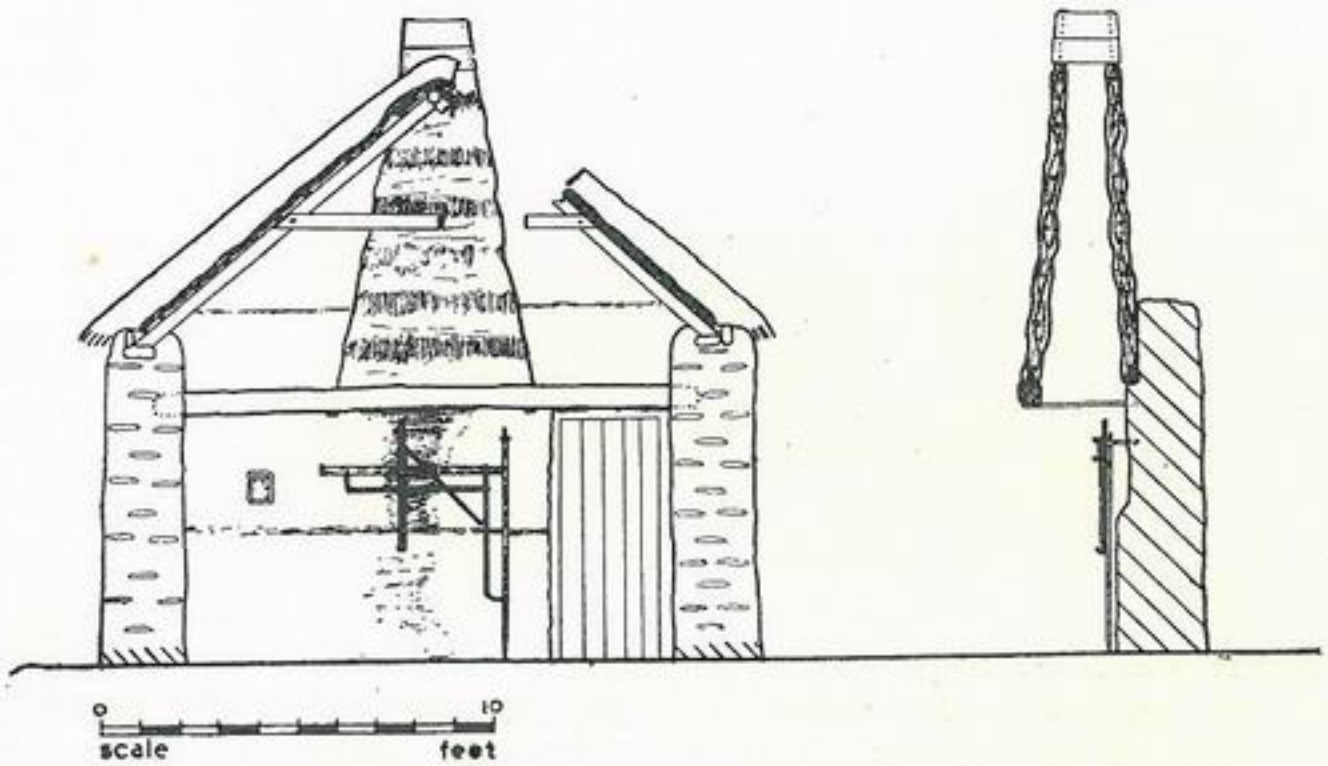

Fig. 1. Elevation and section of a rope-wattle chimney, Athea, Co. Limerick.

inches square, which form the corners of the funnel. These are fastened together by a series of lighter timbers, dowelled or nailed horizontally to the uprights at intervals of about one foot. Hay rope, soaked in semi-liquid clay, is woven through the horizontal rungs to form the covering, and the whole

plastered with clay and allowed to dry. These chimney funnels were usually made on the ground, and lifted into position when ready. When in position the funnel rests on a mantel beam in front, and on top of or in a ledge in the hearth wall in rear. The top of the funnel projects through the roof. Usually a chimney stack is formed by nailing boards across the projecting uprights of the funnel; sometimes the projecting portion is thatched like the rest of the roof; occasionally one sees an old tin bucket pressed into service as a chimney stack. In some cases strong boards are fastened to the top of the funnel, and a small brick chimney stack built on them. In the east of the county the lower end of the funnel is expanded by the addition of shorter timbers set at angle to the uprights, with cross pieces and rope-wattling as usual. This expansion is always to the sides, never towards the front or rear of the funnel. Some more recent specimens have canvas or thin wooden boards as a substitute for the hay-rope and clay wattling (fig. 1).

An interesting variety of this type is the double wattle chimney, sometimes to be found in houses where there is a second hearth on the other side of the hearth wall, or where the hearths of two small 'semi-detached' houses are on opposite sides of the same wall. The double chimney is made of the same materials and in the same way as the single chimney described above, but there are six uprights, the middle pair of which are joined by a screen of rope-wattling dividing the funnel into two flues. The double funnel is placed on the wall which separates the two hearths, so that each fire is servel by one of the flues.(7) (and see fig. 5).

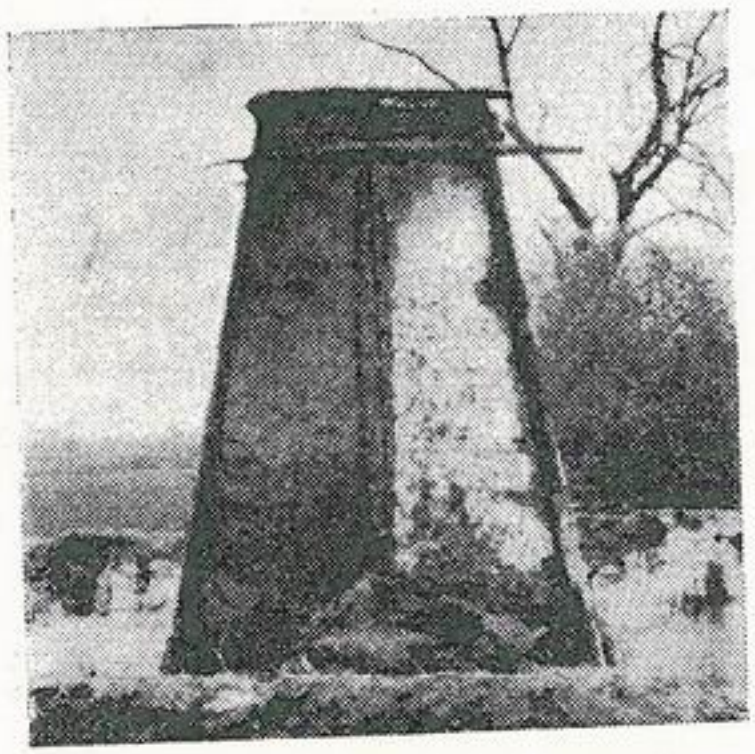

Fig. 5. A double wattle chimney, Knockainey, Co. Limerick.

One other variant must be mentioned. In this, a funnel of rope-wattling on a wooden frame, as described above, is incorporated into the hip-roof at the end of a small one or two roomed house. The funnel rests in front on a mantel beam, and in rear on a ledge in the end wall of the house, and runs up between the arris rafters to penetrate the slope of the roof just outside the apex of the hip. As this type is found only in the smaller houses, it is disappearing rapidly, as the various housing schemes are principally directed against this type of house. In the spring of 1940 I noted fifty-one houses of this type in Co. Limerick. Of these, thirty-five were in the upland district of West Limerick and sixteen in other parts of the county (see figs. 2 and 9).

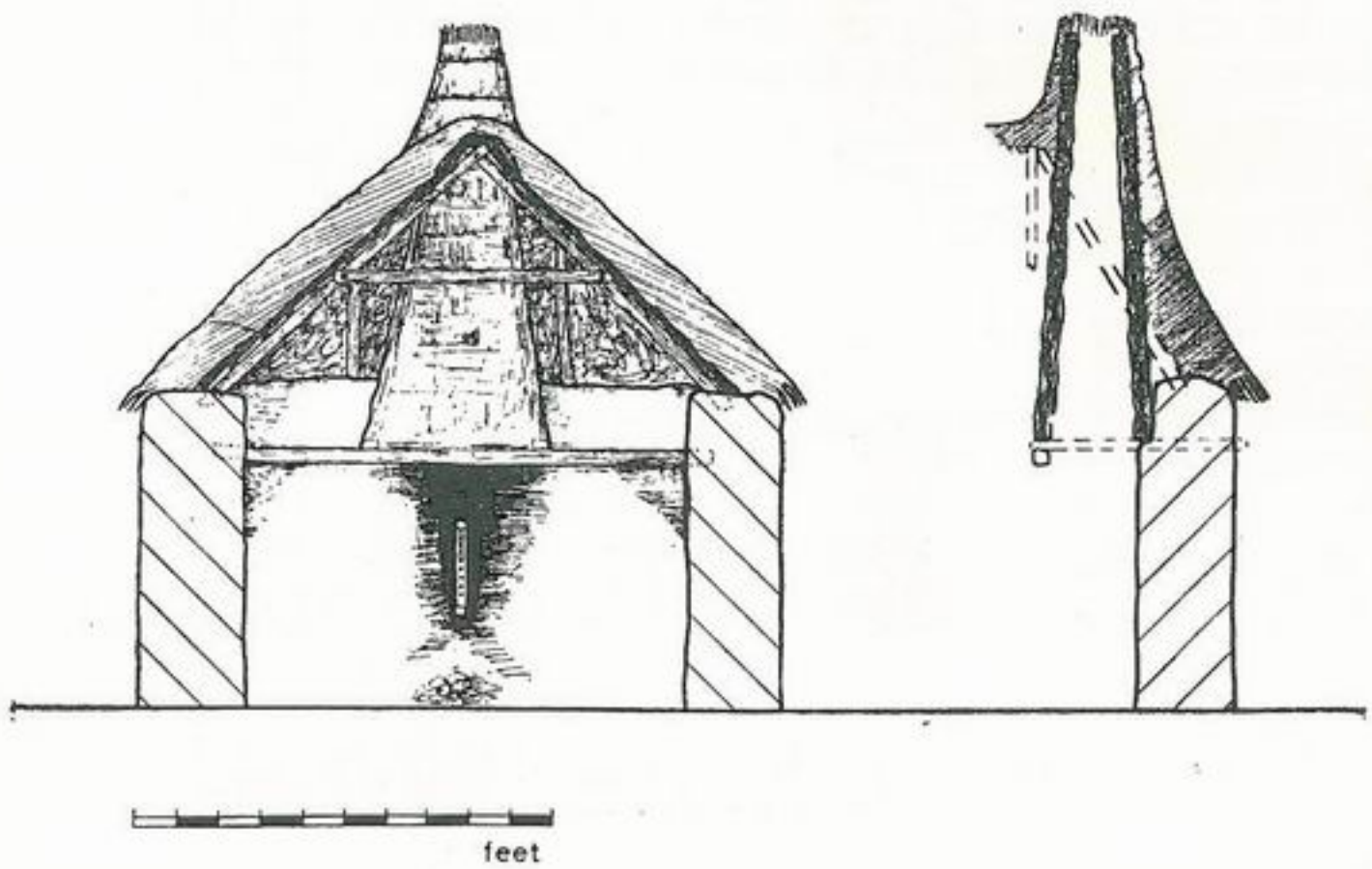

Fig 2. Elevation and section of combination of wattle chimney and hip-roof at Rooskagh West, Co. Limerick.

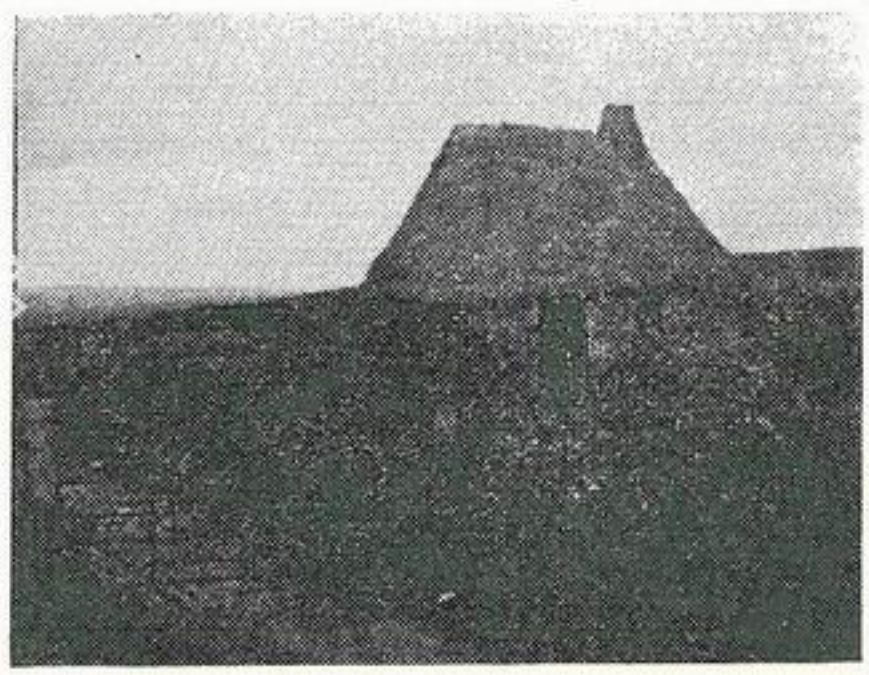

Fig. 9. House at Rooskagh West, Co. Limerick.

An entirely different kind of wattle chimney is also to be found. This type is not as common as that already described. In essence it consists of a three-sided hood of wattle on a wooden frame, attached to the wall behind the hearth, the wall surface making up the fourth side of the flue. This type is not connected with or evolved from that described above. It is the result of an entirely different chain of development, of which the earlier stages have been recorded in other areas. The type usually found in Co. Limerick is more highly developed. Here the stone wall behind the hearth is crowned by a stone chimney-stack, of the same thickness as the wall. The front of the chimney is supported on a strong wooden lintel, and a flue trough, wide at the bottom and narrowing towards the top, slopes into the surface of the wall, to coincide with the lower orifice of the chimney-stack. The open front of the trough is enclosed by a three-sided hood of wattlework (made of hay-rope and clay on a wooden frame, like the funnels described above) which is supported by a mantel beam and spiked to the wall and to the base of the chimney stack (fig. 3).

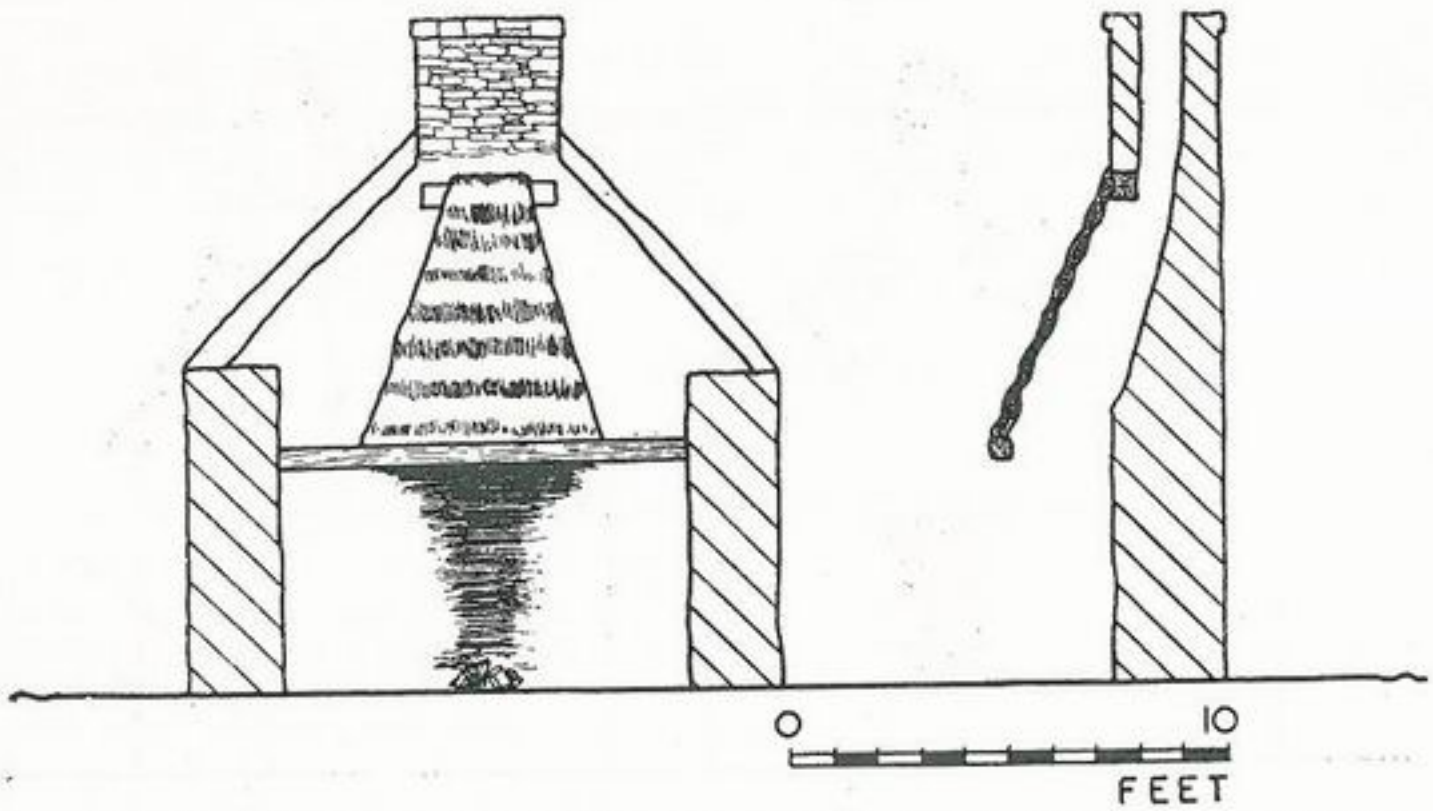

Fig 3. Elevation and section of a wattle hood chimney, near Glin, Co. Limerick.

A few examples of an earlier stage in the development of this type may still be found in the county. In 1936 the present writer observed two such chimneys, one near Mountcollins, and another at Ballygiltinan, south of Glin. It is possible that others may still be in use, but these veterans will not long survive. In these there was no flue trough in the wall and no chimney-stack. The wattle hood ran up to penetrate the roof beside the apex of the gable wall, and the unbroken inner surface of the wall formed the fourth side of the flue.

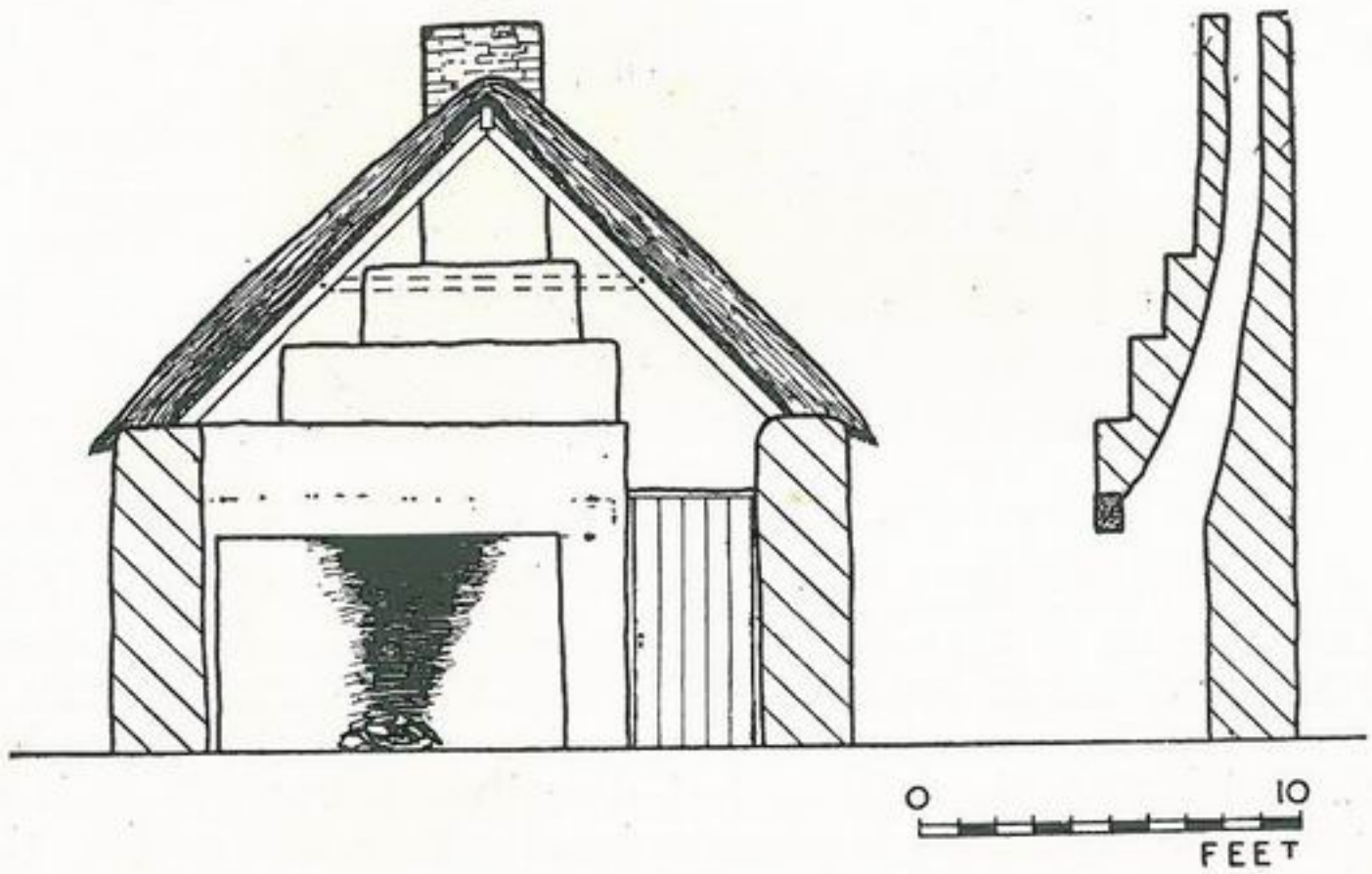

Fig. 4. Elevation and section of stone chimney, Ballyea, Co. Limerick.

STONE CHIMNEYS. It should be note, that in the case of the four-sided wattle funnel chimneys described above, the hearth-wall, on which the chimney rests, is usually no higher (or only very little higher) than the side-walls of the house. Thus, when the chimney is erected, there is on each side of it a triangular opening between the top of the wall and the roof. These openings were closed by screens of wattlework similar to that used in making the chimneys, or in some cases by screens of canvas or boards. This feature recurs in

many of the stone-built chimneys, in which the chimney funnel is entirely separate from the side walls, and is in fact no more than a translation into stone of the wattle funnel. In some instances the space on each side of the chimney was left open during the building, and closed later by screens of lighter material. Usually a light screen of masonry was built to close them, but the independence of the chimney funnel was maintained. The external projection of the chimney is often a massive erection (see fig. 4).

FLOORS. The floors were usually of clay. In laying these floors the earth inside the house was dug away to a depth of nine inches or a foot, and the space filled with 'tempered' clay, which was packed hard, smoothed off and left to dry. The area about the hearth was often floored with stone flags or cobbled. A certain pride was taken in large smooth flagstones, and some of these were of great size (I have seen one measuring eight feet by five feet, which had to be placed in position before the walls of the house were built). Often the whole surface of the kitchen floor was flagged, or portions were cobbled with small stones laid in simple geometric patterns.

DOORS AND WINDOWS. Our Jacobite officer reports "The cabins seldom have any floor but the earth . . . . Some have windows, others none."(8) Nowadays every house has windows of glass—the older ones fixed and not made to open—and doors of wood, with the usual half-doors. In many of the older houses a long recess in the wall behind the door held a short beam, which was drawn across the doorway at night and had its end thrust into a socket on the other side, thus securing the door firmly. Some of the old people remember doors made of bundles of furze or heather tied to a frame of sticks and fastened to this beam when the door was closed. 'Scolpán' was the usual term for these door covers, and also for the heavy doors of bog-oak used in some of the houses. These were made of roughly hewn wood and swung on 'bacáin'—heavy iron hingles made by the local blacksmiths. In some of the poorest houses there were no windows other than mere openings in the wall, into which bundles of hay or straw were thrust to keep out the wind.

Door and window coverings of wickerwork are mentioned by a traveller in County Limerick about the year 1810. .He writes "As I had done in the County of Kerry and elsewhere, I found in the County of Limerick, the common people extremely fond of wickerwork. Their doors with padlocks, windows, cradles, beds, chairs, &c., &c., are in general all of neat wickerwork. In one house I observed a bed of extremely neat wickerwork, sufficient to contain two grown people, shaped like a cradle, the head jutting out as if it had been one."(9)

ROOFS. Thatch is the material used in houses roofed in the traditional mode, and croftsmanship of a high standard was shown in the work of the professional thatchers. Generally the roofs have a fairly high pitch—about fifty-five degrees to the horizontal. Of the houses roofed in the traditional manner, some three-quarters have hip-roofs, the other fourth have peaked gables and only two roof surfaces.(10)

The main timbers of the roof take the form of A-shaped principles or couples, each consisting of two rafters and a collar-brace. The rafters are fastened together at the top, and to the collar-brace by half-joints and wooden trenails. Usually, about three inches of each rafter projects beyond the joint at the top, making an X-shaped bed in which the roof-tree lies. But it should be

noted, that the roof-tree is not an important timber; it usually consists of several shorter lengths of the same substance as the ribberies. Occasionally there is no roof-tree at all, its place being taken by ribberies on each side of the top joint of the couple.

The couples are formed of sawn or axe-hewn timbers of section about four inches by two inches, and are spaced at intervals of three to five feet. Wall plates are extremely rare; the lower ends of the rafters rested directly on the wall tops, a flat stone being placed under the end of each rafter on clay walls. The purlins or ribberies are about two inches by one inch in section, and there are usually eight or nine on each side of the roof. Hip roofs were formed by setting two arris rafters, which extended from the corners of the walls to the apex of the last couple, at each end of the house, with three other timbers, one of which reached from the centre of the end wall to the apex of the roof hip, and parallel to this two shorter timbers, reaching from the centres of the arris rafters to the wall top. Across these, ribberies were fastened. In gabled houses, there is a step or ledge, some three inches deep and a foot high on the inner face of the wall; on this the ribberies rest, and the top of the gable wall is approximtely level with the outer surface of the roof.

In most parts of the county, an under-thatch of sod was used. The sods which formed this were cut with care. They measured about three inches thick, two or three feet wide, and a foot or so longer than the length of the rafter of the roof for which they were intended. As they were cut they were rolled up carefully, left a while to dry and carried to the roof by means of a pole thrust through the roll. They ran vertically from the wall top and lapped over the roof ridge. First one side of the roof was covered and then the other, so that there was a double covering on the roof-ridge. The sods were sewn to the ribberies with rope, a thatcher's 'needle' being used in their operation.(11) In some areas in the east of the county, no sod layer was used. Instead, the first layer of thatch was sewn with rope to the roof framework.

The best available material is used for the thatch, the choice of material being limited by environment as well as by the purse. Where river-reed grows, reed-thatch is popular, and is said to be the best and most enduring material. Elsewhere straw is used, or rushes where straw cannot be had. I am informed by an expert thatcher that reed thatch will last up to twenty years, rye straw about ten, other straws eight years or so and rushes four or five years.

All over the county the thatch is secured by scollops, which are rods of hazel or willow, cut into lengths of about a yard, suitably seasoned, split lengthways and pointed at each end. In securing the thatch, the thatcher laid a quantity of straw on the roof, ear end up, and fastened it by laying one scollop harizontally across it and pinning this to the roof with other scollops bent into staples. The thatcher begins at the righ-hand edge of the roof, and works towards the left in strips of about two feet wide. Each strip is begun at the eave and worked towards the ridge. Each successive bundle of straw is put on a little higher up than the last, so that it covers the scollops which fasten the straw immediately below, much as one slate laps over the one below. As he works, the thatcher trims the ends of the secured straw with his knife, to form an even surface which will run the rain off. At the roof ridge the straw is bent over and pinned on each side with several rows of scollops. As these are seen in the finished roof, they are usually worked into a simple pattern of crosses or lozenges.

An inferior variety of scollop thatching is sometimes seen, in which no care is taken to hide the successive rows of pinning scollops under the straw, and all fastenings are exposed, with the result that water seeps in at every staple, rotting the thatch and causing leaks.

Some thatchers ornament the roof ridge with "bobbins" or "dollies" of twisted straw. Others trim the uppermost layer of straw into a series of wide curves a little above the eaves. Usually the ends of the straw which forms the eaves are fastened by a row of scollops which is seen in the finished roof a little above the eaves.

THE PLAN OF THE HOUSE. A tendency to develop horizontally and not vertically, that is to add on further rooms at ground level instead of building a second story is the main trend of development of the traditional house. This horizontal development occurred in length, not in width, the largest houses assuming the form of a long low building divided up into rooms which open into each other, not into a general passage or corridor. The only vertical development was in the form of lofts, which were low and badly lighted even when intended for sleeping apartments. An occasional exception is found, where a two-storey house or a house of L-shaped plan has been built of traditional materials and in traditional methods. These are almost invariably confined to the towns and villages, where considerations of space as well as external culture contacts affected the building of houses. In the open country the traditional mode persisted until the introduction of modern materials as well as modern methods.

A typical example of the small one-roomed houses, once so common, is shown in figs. 9 and 13 (see fig. 2). This example was situated in townland of Rooskagh West, and has been destroyed. It was examined in 1939, and was said to have been built in the year 1860. Externally it measured seventeen feet long and fifteen feet wide with walls averaging twenty-seven inches thick, and built of brown sandstone mortared with clay. It consisted of one apartment which served as kitchen, livingroom and bedroom. The walls were about seven feet high all round. The roof was hipped, with timbers of axe-hewn boughs and thatch of rushes over a layer of sod. The open hearth extended the full length of the end walls; over it a chimney of hay-rope wattling ran up through the slope of the roof hip. The external projection of the chimney was thatched (see fig. 9). The lower end of the chimney funnel measured four feet six inches by two feet nine inches and the funnel was nine feet high. It rested on a metal beam which ran across the house from wall towall and on a ledge near the top of the end wall. The house had one door and two windows. The door surround and the frame of the front window were of sawn wood. There was no half-door. The front window measured seventeen inches wide and twenty-one inches high, and had four small panes of glass set in a wood frame which could not be opened. The window in the back wall was of similar size; it had a frame of rough boughs and was closed by a wooden shutter, hung on leather hinges. The machinery of the hearth consisted merely of an iron pot-hanger which hung by a short length of chain from an iron peg driven in the wall over the fire. The thatch was of the inferior kind in which all the pinning scollops are visible. It stood in a very small patch of ground measuring about ten yards by ten yards, which seemed never to have been cultivated. At the time of the examination the house had been abandoned and was beginning to show signs of neglect. Since then the roof and walls have collapsed and anything of use has been removed.

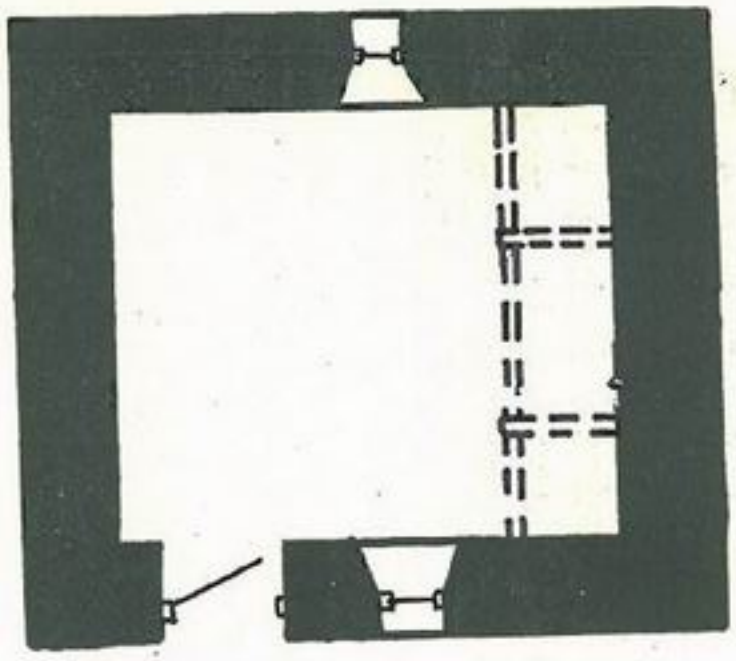

FIG. 13

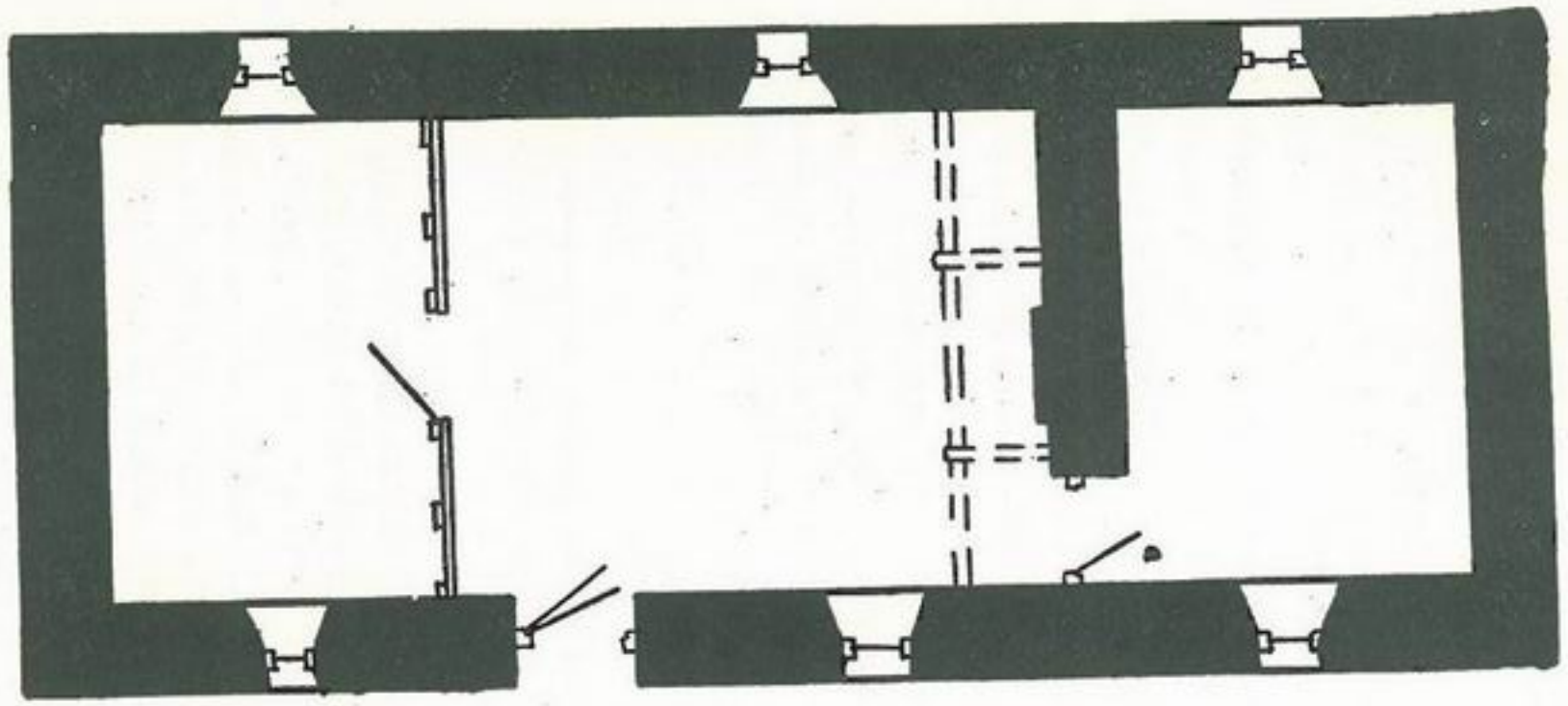

FIG. 15

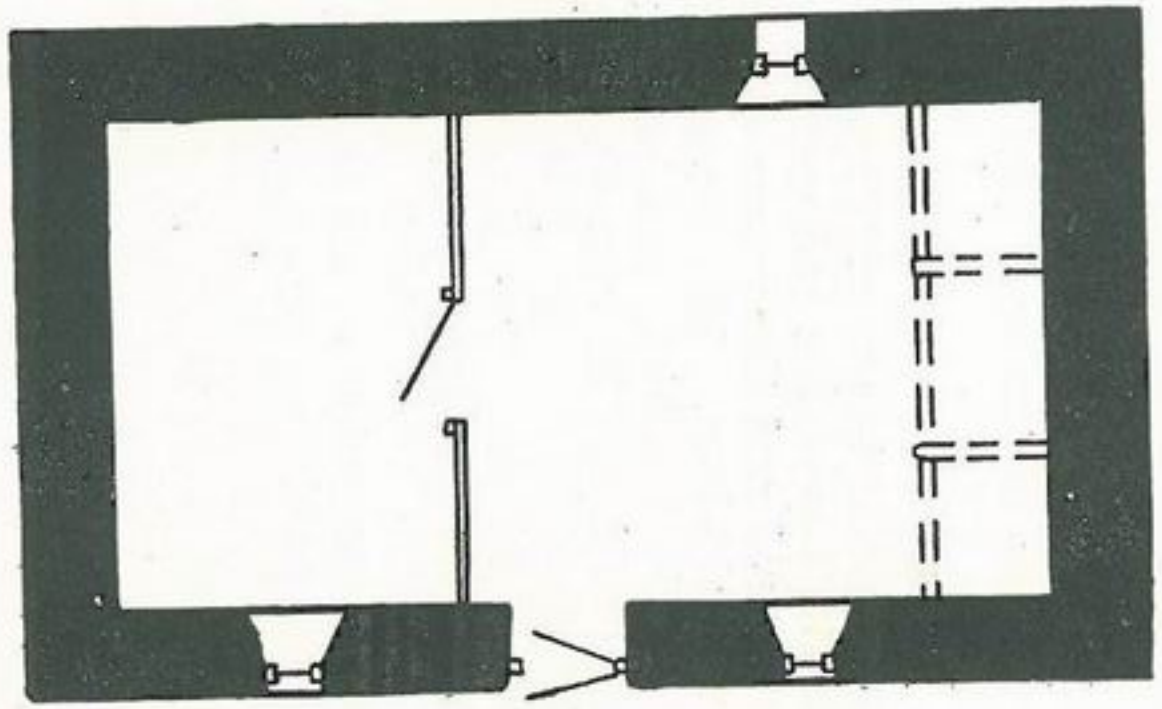

FIG. 14

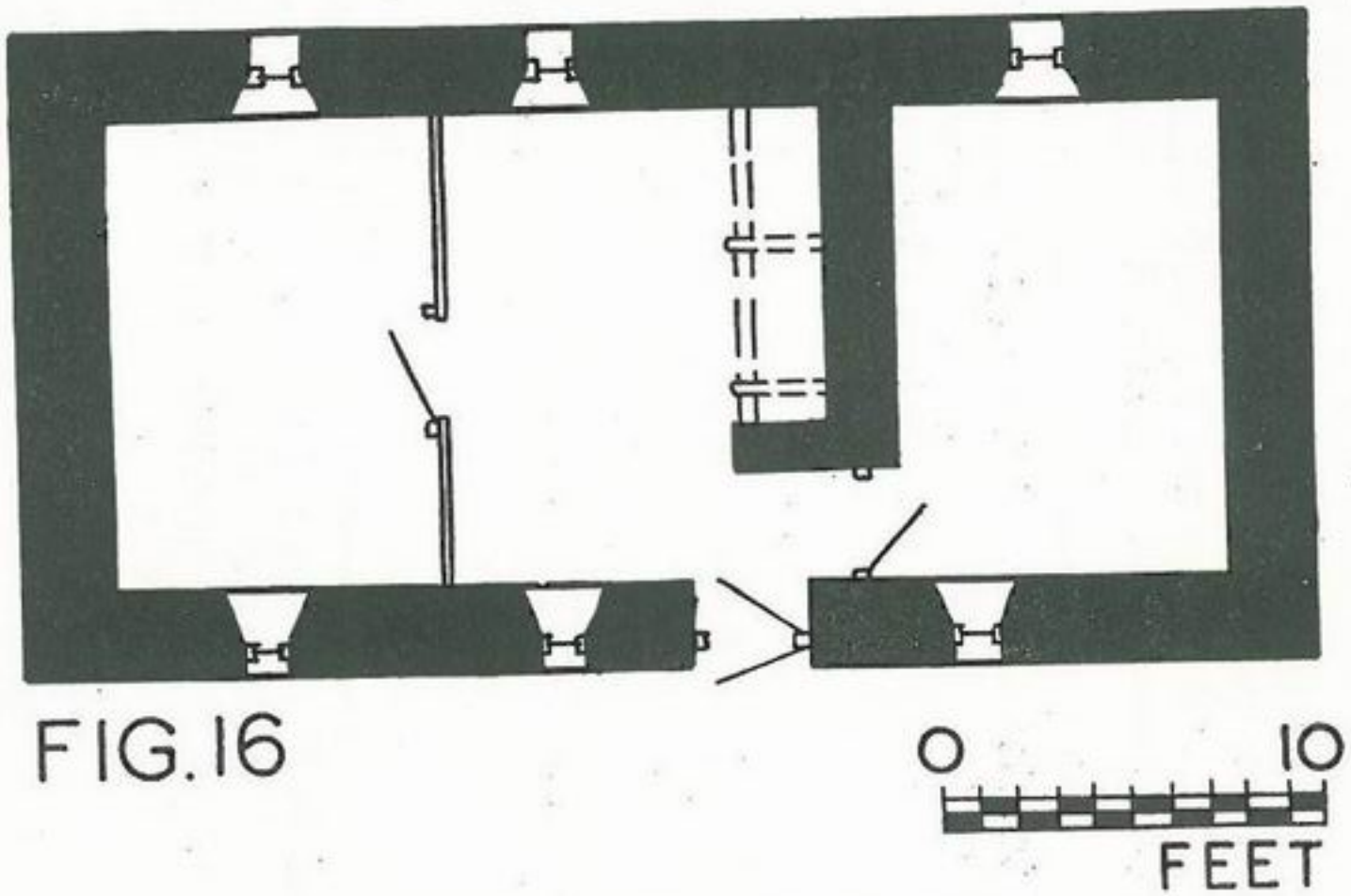

FIG. 16

Fig. 13. Plan of house at Rooskagh West, Co. Limerick.
Fig. 14. Plan of house at Strand, Co. Limerick.

Fig. 15. Plan of house near Athea, Co. Limerick.
Fig. 16. Plan of house near Kilfinane, Co. Limerick.

Fig. 14 shows the plan of a somewhat larger house near the village of Strand. This differs from the last example in being built of clay, and in the dimensions, being twenty-eight feet long and fifteen feet nine inches wide, externally. The roof is hipped, and the chimney of the same type as that in the last example. The roof framework is more carefully made of sawn timber. There are two apartments, a kitchen and a bedroom, separated by a wooden partition which reaches across the house and is pierced by a door in the middle. The floor is of clay.

A larger house near Athea is shown in figs. 10 and 15. It measures thirty-nine feet long and sixteen and one half feet wide. This is the house of which the building is described above in the words of the owner. Thus it is built of clay on a stone foundation, the end wall at the west side being of stone throughout. It consists of a kitchen in the centre and two bedrooms, one at each end and separated from the kitchen, one by the hearth-wall and the other by a wooden partition. The chimney is a funnel of rope-wattle over the open hearth, and is crowned by a wooden chimney-stack. The roof is hipped, with a carefully made framework of sawn timber, and thatch of rushes on a layer of sod. The floor is of clay, except for a flagged area about the hearth.

Another house of similar size near Kilfinane is shown in figs. 11 and 16. This is also built of clay, with hip-roof and wattle chimney, and the arrangement of the rooms is the same. The interesting point of difference is the position of the entrance door in relation to the fireplace. In the western parts of the county the entrance door is almost invariably at the lower end of the kitchen. In the east of the county, on the other hand, the entrance door leads in almost directly in line with the hearth, which is cut off from the door by a jamb wall which projects at right angles to the hearth wall. This jamb wall is usually pierced by a small window, through which a person seated at the fire can observe anyone approaching the open door. On entering the doorway, the visitor finds the entrance to the kitchen on one hand, and on the other the door leading to the room behind the hearth wall. In houses where there are two entrance doors, the main or "hall" door leads in on the jamb wall, and the other—the back door—is situated in the opposite wall at the lower end of the kitchen (see figs. 12 and 18).

Fig. 10. House at Athea, Co. Limerick.

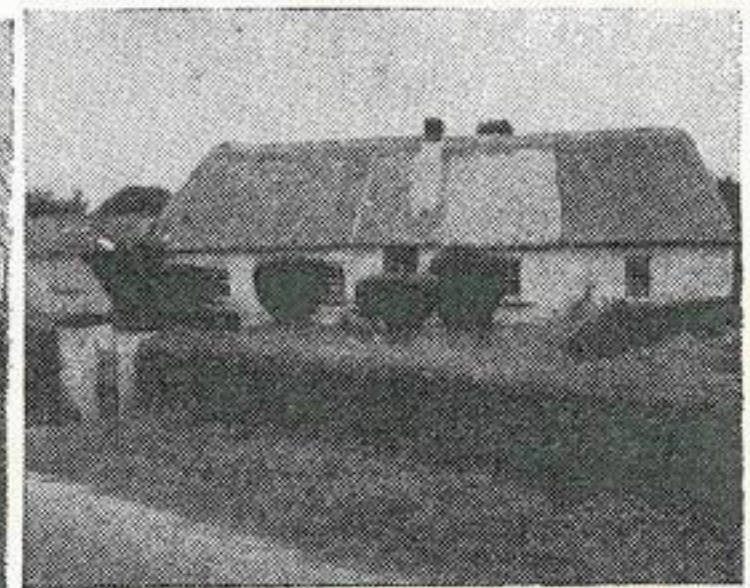

Fig. 12. House at Martinstown, Kilmallock, Co. Limerick.

Fig. 17 is a house at Ballyea, near Rathkeale, which has the opposite front and back doors typical of the western part of the county. This house is built of mortared stone throughout, with a stone chimney as shown in fig. 4.

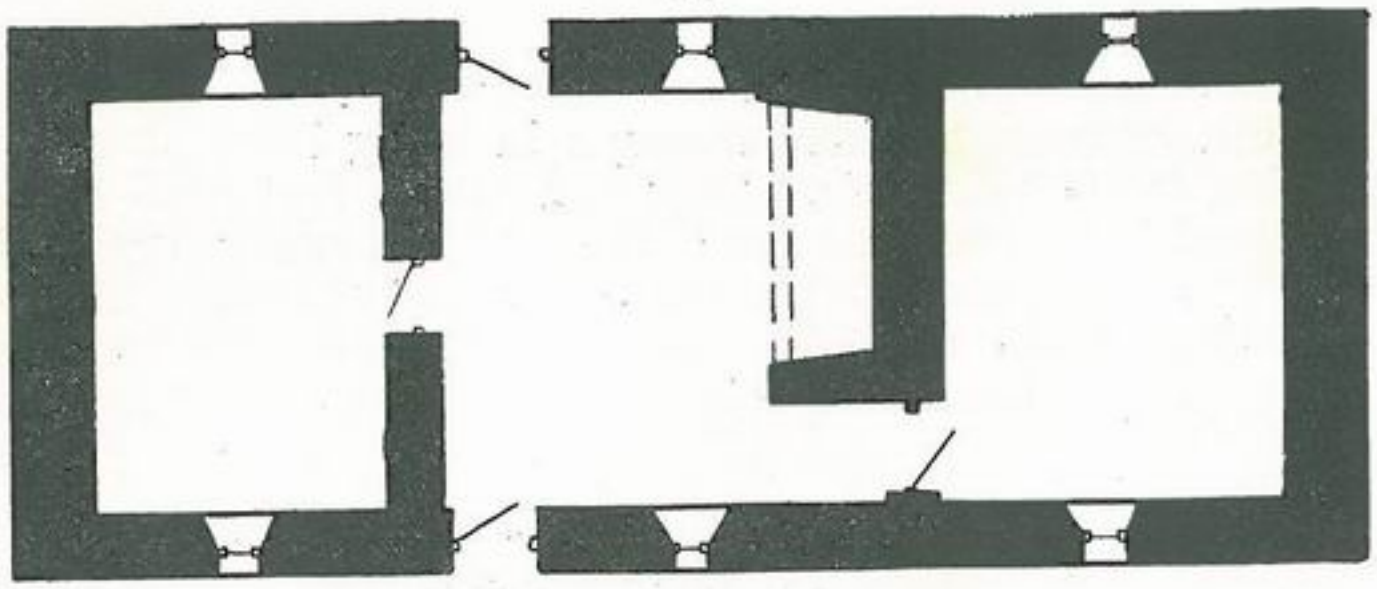

FIG. 17

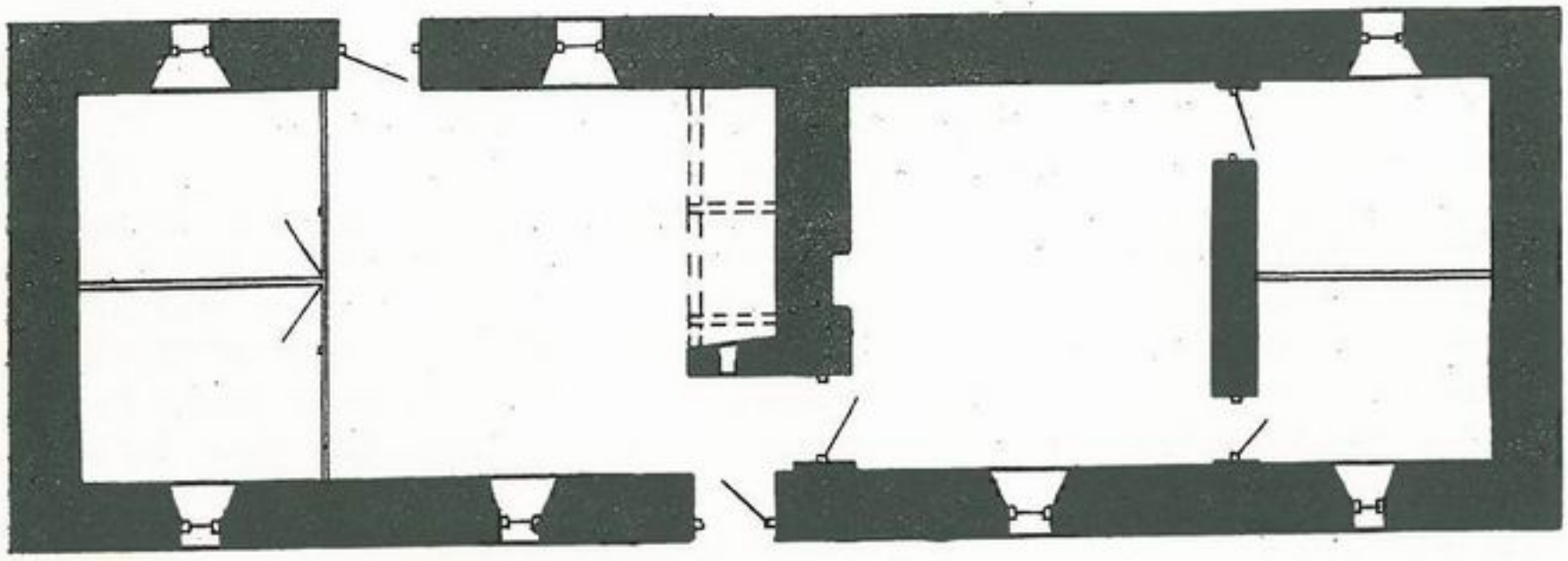

FIG. 18

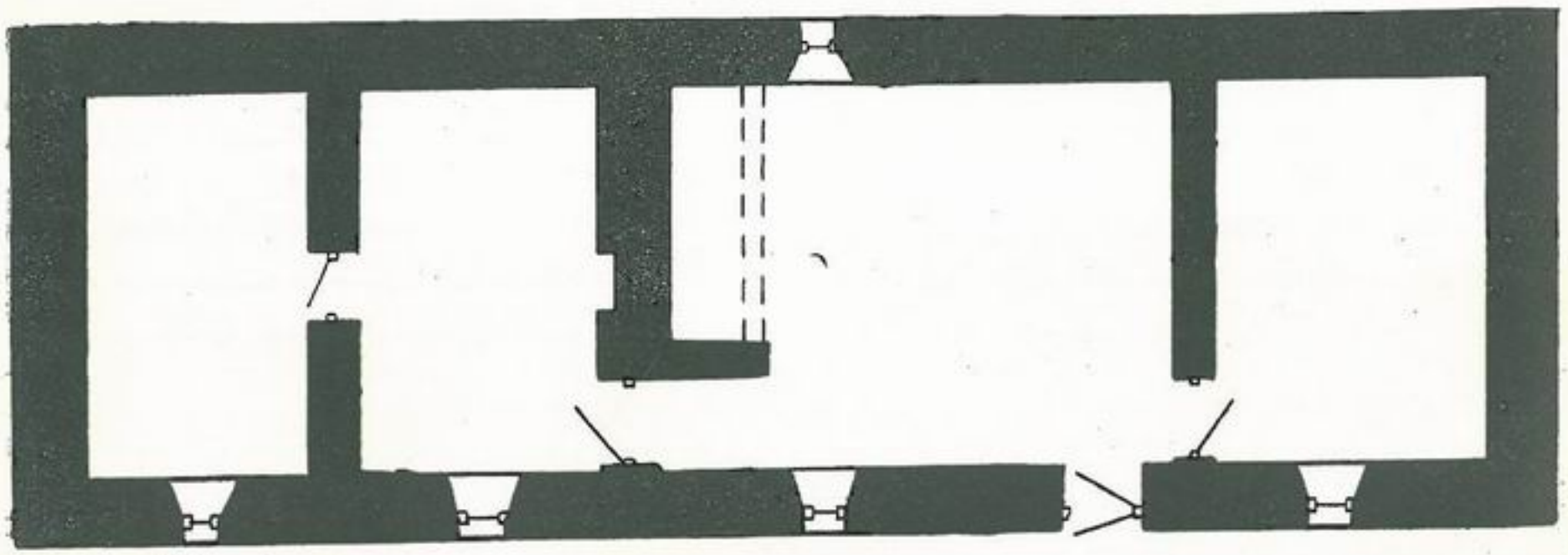

FIG. 19

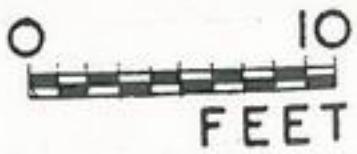

Fig. 17. Plan of house at Ballyea, Co. Limerick.
Fig. 18. Plan of house at Martinstown, Kilmallock, Co. Limerick.
Fig. 19. Plan of house at Gortnagross, Athea, Co. Limerick.

NOTES.

1. In the absence of written record, the date of erection of the older farmhouses is difficult to find. The oldest farmhouse, definitely dated, which I have been able to discover in Co. Limerick, was built in 1696. It is in the townland of Ballyallinan, near Rathkeale, and formerly belonged to the Moylan family. Another farmhouse, dated 1710, is describd in "Old House Types near Lough Gur, Co. Limerick," S. P. O'Ríordáin and M. J. O'Kelly in *Féil-Sgríbhinn Eóin Mhic Néill*, p. 229-232.

2. This article is chiefly based on a preliminary survey of the traditional houses of Co. Limerick, carried out in April, 1940, by the present writer on behalf of the Irish folklore Commission. Permission to publish this material was kindly granted by that body.

3. See "Traces of the *Buaile* in the Galtee Mountains," Caoimhín Ua Danachair, in J.R.S.A.I., Dec., 1945.

4. The mason's 'square" was a triangle of wood measuring five feet by four feet by three feet, or proportionate to these measurements, and thus a true right angle.

5. In many countries of Europe, the hearth is purely functional, and the table is the social centre of the house.

6. *The Journal Of Captain John Stevens*, ed. R. Murray, p. 139.

7. For a description of another chimney of this type, see Ó Ríordáin and O'Kelly, op. cit., p. 230.

8. *The Journal Of Captain John Stevens*, ed. R. Murray, p. 139.

9. Rev. J. Hall, *A Tour Through Ireland*, 1813, i, p. 277.

10. The proportions given here are based on observation of about 800 houses with traditional roof types in Co. Limerick.

11. The thatcher's needle is a slender iron rod with an eye at one end and a short transverse handle at the other.

Fig 11. House near Kilfinane, Co. Limerick.