

The Irish Timber Trade in the Seventeenth Century

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THE purpose of this article is to discuss the use made of standing woods in the seventeenth century in so far as they were directly drawn on for the timber trade and not for the making of iron and glass or for the tanning of leather where their function was simply to supply fuel for smelting or tannin for processing. The Irish timber trade was concerned with articles both for home use and for export but it appears that before the provision trade developed the export trade in timber as timber was the more important. The native timber was used mainly in the making of staves* for barrels, in shipbuilding and in the construction of house frames. The staves were made for the casking of provisions and also for an export commodity in themselves. The ship-building yards produced ships for local service and also for use in the trade with the Far East and the Americas. House frames were used locally but Irish timber also went to help rebuild London after the Great Fire.

One of the inducements used to persuade the English to settle in Ireland at the end of the sixteenth century was the possibilities the exploitation of the woods offered. In a document setting out 'Motives and Reasons' as to why the City of London should undertake the Plantation in Ulster the abundance of wood was stressed: 'All sorts of wood do afford many services for pipe staves, hogshead staves, barrel staves, clapboard staves, wainscot . . . :¹ The making of staves in England was a well established industry and in 1596 their export from either England or Ireland was forbidden as large numbers were being shipped to Spain and other places for the use of 'the enemies of Her Majesty'. During the following year the necessity was stressed of keeping an adequate supply of staves ready for the navy and the Surveyor General for the Victualling of the Navy was instructed to see that quantities of staves were always ready for cask making.

In Ireland the making of staves seems to have been carried out chiefly in three areas: the Bann valley, county Wexford and in parts

* See glossary at end of article for technical terms.

of the south west. This distribution is in contrast to that of ironworks which were found in virtually all wooded areas. Timber had to be within reasonable distance of a port and as the road system was rudimentary the easiest way of transporting it was by river. In Wexford wood was brought down the Slaney on which in the mid-seventeenth century a hundred men were employed in rafting timber. On the Bann trans-shipment was necessitated by rapids and there were twelve men bringing timber down the river. By the end of the century cotts capable of carrying over 20 tons of wood were used on the Shannon. Large beams were lashed to poles fastened across the cotts. On the south coast

timber was shipped down the Blackwater and its tributaries although this route was only usable in the summer months. In the middle part of the century staves were being shipped from Kenmare; Spanish ships coming from Galway called to load them as early as the sixteen thirties but even by 1670 the cost of transporting timber to Kenmare from woods only a mile from the river was more than the cost of felling. Wood from the valley of the Glenflesk, which enters Lough Leane at Killarney town, had to be carried on horseback to Castlemain Bay and similarly it was extremely difficult to bring wood from the Carragh valley to the coast. Eventually the wood in these two valleys was used up in ironworks in the latter part of the century.

The chief ports from which timber was exported were Londonderry, Portrush, Coleraine, Carrickfergus, Belfast, Wexford, Ross, Waterford, Youghal, Cork, Kinsale, Kenmare, Castlemain Bay and Limerick. Some smaller ports were also engaged in the trade. For example in 1685 Bristol imported 160 tons of timber from Dingle and 2,500 barrel staves from Killybegs. The countries to which timber and staves were shipped included Scotland, England, Holland, Spain, France, the Canary Islands and Mediterranean ports. Ireland by 1615 sent 30 cargoes of staves annually to the Mediterranean and by 1625 it was said that France and Spain casked all their wine in Irish wood. Scotland was importing wood from the north early in the century, although this trade was prohibited but there was also some importation of pine masts from Scotland for the shipyards at Coleraine.

The exploitation of the woods was well under way by the first decade of the century both in the Bann valley and in south Cork; and the attack on the Shillelagh woods was beginning. By 1601 Sir Walter Raleigh, who had a monopoly for exporting staves, had carried on their manufacture for ten years and in the north staves were being sold in great quantities. In 1611 the Lord Deputy Chichester, requested the Privy Council to send a skilful surveyor to select some woods which could be retained to the crown. 'I find it', he wrote, 'almost impossible to restrain the making and working of the timber into pipe staves without seizing on them when wrought and brought into the port towns which will beget much clamour and offence'. He was upbraided two years later for permitting the woods to be cut and worked into staves, not only by British subjects, but also by 'divers strangers' and he was directed to take steps to preserve the woods and to prevent the export of staves. Bristol, in 1613, imported 32,000 barrel staves, 22,700 hogs-head staves, 8,500 pipe staves and 4 tons of timber. The country of origin is not given in the document concerned but presumably it was Ireland. Partly in an effort to control the export of staves, a licence was granted in 1616 to Henry Milton of Youghal granting him the sole right to make and export staves. Milton abused his monopoly and it was withdrawn from him. There is a record of a transaction between Milton and Richard Boyle, Earl of Cork, in June 1618 whereby the latter paid Milton 6/8 a thousand to export 71,000 staves (13,700 cubic feet). Further attempts at restrictions in 1625 brought renewed protests

from Chichester who asked that permission be granted to export staves to London as the prohibition on export had 'given rise to much complaint among those who had hired ships for the purpose'. Calcott Chambers complained that as a result of the embargo nearly a quarter of a million staves (48,000 c.ft.) were left on his hands.²

Thomas Wentworth, Earl of Strafford, when Lord Deputy, made a determined effort to control the trade in staves by enforcing an export licence of 10/- a thousand and later he raised the cost to £3, arranged for all licences to be granted through himself and fixed the number to be exported annually at half a million. Exemption was however sometimes granted. For example Samuel Neale obtained permission to send 120,000 pipe staves, 40,000 hogshead staves, 30,000 barrel staves and 20,000 pipe headings (37,000 c.ft.) from Wexford to London annually, tax free. Permission was also granted in 1641 for Stafford's agent to export timber from Shillelagh 'for private advantage of the Earl'. One of the charges made against Strafford at his trial was that he exploited the woods for his own advantage.

In 1703, when the greater part of the Irish woods had been cut, the import duty on staves imported from outside of the British Isles was reduced to 1/- a thousand and an additional duty of £3 per thousand was imposed on staves exported from the British Isles. One of the last efforts to prevent the export of staves was made in 1729 by the Trinity Guild of Dublin which urged the government to prohibit the trade entirely.³

It is not possible to estimate, even approximately, the volume of the wood trade. All that can be done is to note the quantities which were sometimes quoted, the custom returns which are available for a few years and the number of workers at some of the sites. It is likely that the men who cut and shaped the timber were often English. As early as 1584 it was urged that 'immigrants . . . and other artificers of timber workers' should be brought over. Certainly in the ironworks the workers were usually English and permission had to be obtained to use Irish labour: at the Mountrath ironworks permission was given to Coote in 1654 to employ 500 Irish workers provided that they lived within musket shot distance of the works. Raleigh employed 200 men in his woods near Youghal and there is evidence which suggests that they were English, making staves which he exported to Spain and the Canaries. A hundred men laboured in the woods of the Lower Bann in 1611. They included 32 fellers, 20 lath tenders, 15 engaged in rafting timber down the river with 9 working the cotts, 9 sawyers, 8 wainsmen, 4 timber squarers, 4 shipwrights and 3 overseers. On the Slaney in the 'thirties a hundred men were working transporting timber downstream. Oxen as well as horses were used; 33 were in use in Glenconkeyne (north west of Lough Neagh) and they were also used in Cork. Work was carried on during the summer months; an English buyer in 1670 stated that the maximum amount of timber which could be cut and moved in a single summer to the riverside at Kenmare was 1,000 tons and he also considered that it would be necessary to bring

over English workers. Although sawmills were in use on the continent by the fifteenth century, in England handsawing was general until the eighteenth. An attempt to set up a sawmill near London in 1663 was prevented by handsawers. In view of this it is interesting to find a patent to set up sawmills in Ireland granted to Sir Hugh Mydleton in 1667. Charles II wrote to the Lord Lieutenant 'We hear that Sir Hugh . . . is anxious to set up windmills in several places for the more speedy, easy and cheaper sawing of timber and boards, a thing not formerly used or known among our people in Ireland. As the setting up and erecting of such mills will cost much money, we authorize you to grant Sir Hugh Mydleton by patent the sole right to set up and use such mills for fourteen years in such places as he shall think convenient.' ⁴

It is not possible to say how many staves were exported during the century but there are figures for some years. From the Londonderry woods hundreds of thousands of staves were exported to Spain before 1613. At the trial of the City of London in 1635 an employee declared that he had made 50,000 to 70,000 staves a year since 1618 and the City's cooper estimated that he made 32,000 barrel staves (5,300 c.ft.) a year for fish casks. ⁵

TABLE 1.
Exports of timber from Ireland, 1635 to 1691 ⁷

	1635-40	1641	1665	1669	1682	1691 *
Pipe staves	2,153,650	144,700	45,000	122,000	533,600	1,040,000
Hogshead staves	3,759,450	663,000	229,800	281,000		
Barrel staves		941,000	265,300	634,000		
Timber (tons)		384	191	600	666	
Plank (tons)		209		159	91	
Volume in cubic feet	1,073,000	323,900	100,600	209,500	125,590	185,700

Table 1 gives the quantities of timber and staves officially exported from Ireland during various years of the seventeenth century. In table 2 the various ports and their timber exports to England are given for 1682/3.

TABLE 2.
Export of staves to England, 1682/3.

Wexford	...	182,300	Limerick	...	22,000
Sligo	...	34,400	Dublin	...	19,000
Kinsale	...	29,300	Ross	...	16,300
Baltimore	...	28,000	Waterford	...	13,300
Belfast	...	27,000	Cork	...	13,300

* Exports to England only.

Boyle, who owned a great deal of land in south Cork, including some originally granted to Raleigh, made part of his fortune from the export of staves. In his diaries he recorded transactions involving four million staves (768,000 c. ft.) between 1616 and 1628. The East Indian Company was engaged, among other activities, in exporting staves from Cork for which purpose they 'employed many vessels'.

Although the export of staves was prohibited in 1615, the Company was granted leave to export 'the provision of timber' which they had made in Ireland for casks and ships. In 1636 they commissioned Mr. Stevens to treat for about 4,000 cubic feet of timber annually, or more if obtainable. In 1640, acting on the Lord Lieutenant's warrant, they contracted for 20,000 pipestaves, 50,000 hogshead staves, 50,000 barrel headings and 30,000 barrel staves (56,800 cubic feet of timber). During the same period the navy was experiencing difficulty in obtaining staves: the Lord Deputy informed the Admiralty in 1636 that staves were things which could not be got at once—one had to know beforehand.⁶

By the date 1682, 80 per cent. of the staves which were exported went to England. Of those sent abroad 50,000 went to France from Ross and 24,000 from Limerick; of those sent to Scotland 34,500 were shipped from Belfast. Wexford and Dingle between them accounted for the total export of plank. Wexford also handled just under a third of the timber exports and Dublin just over a third. Of the remaining 240 tons Ross shipped 78 tons, Coleraine 57 tons and Cork 50 tons. The remainder was sent from Baltimore, Belfast, Sligo and Waterford. The overall picture which emerges from these figures is that Wexford was the chief exporting port and Dublin came a rather poor second.

The Navy Commissioners sent Peter Brousdon to Ireland in 1670 to seek out suitable timber for the navy and, initially at any rate, he only considered pieces of over 2 tons weight. He reported in July that there was a Dutch ship lying in Castlemain Bay laden with oak timber from Sir Francis Brewster's estate and bound for Amsterdam but that he could obtain this cargo for the navy if the Commissioners so desired. He narrowly missed securing 300 loads (12,000 c. ft.) of compass and knee timber at Kinsale but was able to load the *St. Jacob* lying at Cork with just under 7,500 cubic feet. The timber of the woods around Bantry Bay he found too small for his purpose but he reported that on Sir William Petty's lands at Kenmare there was over 2,000 tons of 'good serviceable timber for compass timber, knees and standard', as good as any he had seen in Ireland and of which a sixth could be used for planks. Brousdon complained that much of the Cork-Kerry wood has been destroyed by tanners who stripped off the bark for 3 or 4 feet above the ground and left the trees to decay so that they were only fit for staves. Sir William Petty's woods, however, had on the whole escaped the tanners partly because the Kenmare region was so thinly populated that there was little demand for brogue makers. The Shillelagh woods on the Strafford estate he found unfit for his purpose, although still extensive. The timber he described as 'generally straight and large but that which is big enough to make 3 or 4 inch planks is

very much shaken and some full of small worm holes . . . the timber is given so much to defects that I cannot encourage dealing for it'. This comment on the state of the Shillelagh woods is interesting as the previous year (1669) William, Earl of Strafford had sold several hundred thousand staves to a London merchant, and in 1692 ironworks were set up in Shillelagh.

Brousdon also visited the woods in the Bann valley and reported that there were 1,000 loads (40,000 c. ft.) of 'good knee and compass timber with standards and some very good timber for planks and tree nails'. He further commented that 'the timber some of it very large but the most part of it is sizeable for our use . . . we only take what is sound and there is plenty of that . . . I cannot promise that it is generally so strong and tough as our English oak but some is good'.⁹

The trade in timber was related to the provision trade in that until the end of the century goods were casked in Irish wood. The expansion of the provisions trade, which had been carried on on a relatively small scale since the beginning of the century, dates from the mid-sixties when the export of live cattle to England was prohibited to protect the interests of English cattle owners. The effect of this embargo on the Irish trade was disastrous: in 1660, 60,000 live cattle were exported to England and in 1669 the number had fallen to 1,454. Denied an outlet for live cattle the Irish concentrated on exporting salted meat, pork, butter, cheese and tallow. In order to protect and regularise the trade in 1698 it was enacted that provisions were to be exported in casks of 'sound, dry and well seasoned timber' weighing 40 lbs. (10 William c. 11). Thus one can reasonably assume that prior to that date the weight of a cask was in the region of 40 lbs. and indeed they may have been heavier as two of the reasons for the Act were to prevent the use of unseasoned timber and to ensure that the cask was not unduly heavy thus reducing the weight of the contents which was standardised at 2 cwt. The volume of the export trade in certain years is shown in table 3 together with the amount of wood used to cask the provisions.

TABLE 3.
*The provision trade, 1641 to 1691.*¹⁰
(Numbers of barrels)

	1641	1665	1669	1682	1685	1691 *
Beef	15,200	29,200	51,800	79,240	72,200	25,000
Pork		1,250	770	594	2,510	1,000
Butter	17,410	13,200	29,000	68,510	134,700	165
Cheese	6	159	615	2,043		4
Tallow	10,050	10,500	19,100	18,990	20,700	169
Fish	41,610	23,620	30,940	8,440		28,200†
Volume of wood in c. ft.	59,100	54,500	92,600	124,500	161,100	38,300

* Exports to England only.

† Does not include 900,000 hake.

During the year 9th November, 1654 to 27th October, 1655, Bristol imported the following timber and provisions from Ireland:¹¹

60 barrels of butter and beef;
1,558 barrels of herrings from Wexford;
102 barrels of beef, 124 barrels and 18 firkins of butter from Limerick;
45 barrels, 5 hogshead, 14 cwt. tallow from Kinsale and Limerick;
52,700 staves from Cork, Waterford, Wexford and Youghal;
16 cwt. log wood.

Table 4 shows the results of adding the amount of timber used in the provision trade with the amount exported as staves, etc.

TABLE 4.

Volume of wood exported, 1641 to 1691.
(Figures in cubic feet)

1641	1665	1669	1682	1685*	1691
383,900	155,100	302,100	250,100	161,100	224,000

* Figures for provision trade only.

On the basis of the available figures it appears that approximately between a quarter and a third of a million cubic feet of timber were exported a year. The low figure for 1665 is accounted for partly by the repercussions of the Dutch war on trade with the continent and partly by the fact that the expansion of the provision trade, which followed on the prohibition of export of live cattle, was only beginning. As has been previously indicated the figures for 1691, that is during the Williamite war, are only for exports to England, and those for 1685 are only for the provision trade.

Sufficient evidence is extant to compare the price of timber in different parts of Ireland at various times during the century. On the whole the more accessible timber was dearer but in remote parts the lesser price had to be set against the cost of transport. About 1620 Boyle paid £5 a 100 for big oaks in a wood near Clonakilty. In 1637 he bought a wood from Lord Kilmallock for £1,300 which Boyle estimated would yield 8,000 tons of timber which would fetch between 4/- and 4/6 a ton exclusive of the bark which was worth £400. Sir William Petty, who in 1672 advocated planting 400 million trees in Ireland, quoted timber as worth 10/- a ton in support of his project.¹²

The *Civil Survey* which was undertaken by Sir William Petty in the early 'sixties, gives the value of timber in a few parishes in counties Kildare, Cork and Waterford. The original figures are in Plantation or Irish acres and are only approximate; in table 5 which summarises the information the acreages have been changed into English measure. The general picture which emerges is that in Kildare land carrying ash wood was worth between 113/- and 150/- an acre, and land carrying wood mixed with scrub between 2/6 and 7/6 an acre. In Cork building timber fetched between 8/- and 50/- an acre and land with unspecified

wood from 8/- to 150/- an acre with the bulk of the land around 25/- an acre. The 897 acres in Ballyvourney described as fit for ship-building was valued surprisingly low at 15/6 an acre. There is an explanatory note which reads 'Great store of timber which is of little use as a commodity by reason of the roughness of the ways and of the depth of water and bogs and also the long distances from any traffic or navigable river'.¹³

TABLE 5.
Value of land carrying timber, 1654.

KILDARE

Salt barony

Laraghbryan parish : 2 acres timber wood	...	...	£20
386 acres timber wood mixed with shrubby wood	...	...	£155
42 acres timber wood mixed with shrubby wood	...	...	£40
Straffan parish : 2 acres ash wood	...	...	£18
Killadoon parish : 13 acres ashwood	£100

Narragh & Reban barony

Davidstown parish : 320 acres timber	£100
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Carbury barony

Carrick parish : 3.2 acres ash saplings, £3; 24 acres timber	£30
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CORK

Muskerry barony

Moviddy parish : 48 acres timber wood fit for building	£40
Kilmartin parish : 74 acres timber	...	...	£100
704 acres timber fit for building	...	...	£540
Macroom parish : 48 acres timber	...	...	£130
Aghinagh parish : 960 acres timber wood	...	...	£1,200
Aghabolluge parish : 16 acres timber wood fit for building	...	...	£40
740 acres timber wood	...	...	£760
Inishcarra parish : 4 acres timber wood	...	...	£50
Ballyvourney parish : 896 acres timber wood fit for ship-building	£1,400

WATERFORD

Lismore parish : 400 acres wood	£650
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The timber in regions difficult of access and also the poorer timber in areas engaged in the timber trade was used to make charcoal for the ironworks. Timber was generally cheaper in Ireland than in England and that used in ironworks in England in the mid-seventeenth century cost from 4/- to 7/- a cord (128 cubic feet) whereas in Ireland comparable timber was 1d. a cord on the Shannon, 1/- a cord in the woods near Cork, 6d. a cord in Wicklow and Wexford and 4d. to 10d. a cord in Armagh.¹⁴

Peter Brousdon in his report on the available timber gives the cost both of wood and transport. The actual price of timber was cheaper in the north than in the south but transport was dearer. His findings are summarised in table 6.

TABLE 6.
Cost of timber and transport, 1670.

Kinsale

1 ton compass and knee timber	...	...	...	...	18/-
3 ft. treenails, a hundred	...	...	...	...	48/-

Kenmare

1 ton timber	...	...	...	...	5/-
Hewing 1 ton	...	...	...	...	3/-
Transport to riverside (1 to 2½ miles), per ton	...	...	...	...	5/-
Sea carriage to England, per ton	...	...	...	...	30/-

Shillelagh

1 ton timber	...	...	...	...	8/6
Felling and squaring 1 ton	...	...	...	...	2/6
Sawing into planks, per 100 feet	...	...	...	...	3/-
10 miles land carriage to Enniscorthy, per ton	...	...	...	...	10/-
Enniscorthy to Wexford, by boat, per ton	...	...	...	...	2/-
Sea carriage to England, per ton	...	...	...	...	28/-

Coleraine

Compass timber, per ton	...	...	...	...	1/-
Felling and hewing, per ton	...	...	...	...	2/6
Land carriage to Bann and drawing over rapids, per ton	...	...	...	...	3/9
Water carriage to Coleraine, per ton	...	...	...	...	1/8
Land carriage from Coleraine to Derry or Portrush, per ton	...	...	...	...	2/1
Making of treenails, 2 ft. to 3 ft., per 1,000	...	...	...	...	2/6
Transport to vessel, per 1,000	...	...	...	...	4/-
Total cost of treenails, including timber, per 1,000	...	...	...	...	30/-
Felling, sawing and squaring plank, per 100 feet	...	...	...	...	20/-
Transport of plank, per 100 feet	...	...	...	...	20/-

Brousdon asserts that the timber could not be shipped from Coleraine as the estuary did not take ships drawing over eight feet of water. Presumably the navy used larger ships than were general in the coast and cross channel trading. It can be seen that the cost of preparing and moving a ton of compass timber to the coast was ten times the cost of the timber.

At Kenmare timber was cheaper than at Shillelagh but hewing was slightly dearer. Transport costs were lower because the distances were less although relatively the cost was greater at Kenmare as it took 5/- to move a ton of timber 2½ miles there as against 12/- to move a ton

18 miles in Wexford. The preparation of plank timber in Wexford was less expensive than in the north, 5/6 a hundred feet as against 20/-.

Pipestaves in general fetched £6 a thousand in the north and £5 in the south at the ports. It is, however, possible to obtain more about costs in 1620 from the Earl of Cork's diaries. The lowest price which he paid for staves was 32/- a thousand and the highest price at which he sold was £7 a thousand. For hogshead staves, which were smaller, the price ranged between 32/- a thousand and 54/-. The cost of transporting staves about 15 miles to the coast in Cork was 6/- a thousand.

At Enniscorthy, where most of the wealthy men were said to be timber merchants, the price was £5 per thousand in the 'thirties. By the 'sixties the price had risen to £10 for pipe staves, £4 10s. 0d. for hogshead staves and £2 10s. 0d. for barrel staves.¹⁵

A certain amount of timber found its way to the shipbuilding yards. In the seventeenth century ports which built ships included Limerick, Cork, Youghal, Ross, Wexford, Belfast, Coleraine and Londonderry. Very little is known about the industry and probably ships were constructed at other ports as well; likewise little is known about the number or size of ships built. For this reason it is of interest to know that in 1676 half of the ships described as 'belonging to Carrickfergus' were Irish built and included one of 120 tons, one of 70 tons, one of 50 tons, five of 40 tons, one of 30 tons, two of 25 tons one of 24 tons and one of 18 tons.¹⁶

Irish wood was used for building ships for the navy and Cork, Youghal, Wexford and Belfast were cited as possible ports where they could be built. Philip Cottingham, a carpenter of London, was sent in 1608 to survey the woods to see which ones contained suitable timber for ships for the navy and he was authorized to employ workmen to hew and square the timber. The following year he was paid £71 3s. 4d. for 'hewing and carriage of timber' in the woods of Waterford. At the same date Chichester suggested that the woods of Shillelagh could be used up in the building of ships at Milford Haven. In 1611, 7,500 trees were marked near Youghal, 3,450 near Cork and 3,250 near Kinsale to be reserved to the crown for the use of the navy. To secure an adequate supply of wood for the navy, after 1621 it was declared illegal to cut timber within 10 miles of any navigable river or the sea. The cutting of woods reserved to the crown was forbidden for any purpose except that of shipbuilding by Charles II but Sir John Bennet in 1668 was granted special permission to take 2,000 tons of timber from the Londonderry woods on condition that he built three vessels of 30 tons each to be used for carrying mail. Drake's ship, *The Golden Hind*, originally *The Pelican*, which was about 100 tons and carried 80 guns, was constructed of ribs 16 inches square set 16 inches apart. The outer and inner planking of the hull were 6 inches and 4 inches thick and the keelsons were shaped out of single pieces of oak 16 inches thick, 6 feet wide and 8 feet long. Although these ships were of negligible size by modern standards, a ship of 100 tons drawing 6 feet of water

was considered the maximum size safe to use in the largely uncharted estuaries of the coast and the majority of ships engaged in the coastal trade and on the Irish sea were of 20 tons. In general it took about 60 to 70 cubic feet of timber to build a ton of shipping.

The East India Company built vessels in Ireland and also exported Irish timber to their yard at Plymouth. They built ships at Limerick and at Downdaniel in Cork. At the former yard the first ship built was fitted with iron from the Drumshambo ironworks. The Downdaniel yard had produced two ships of 500 tons each by 1613 and in that year the dock was enlarged. At Coleraine by 1637 several ships, some of 100 tons, had been launched and ten, all under 30 tons, were then on the stocks. Charles Moncke, the Surveyor General of Customs, alluded to these and marvelled that shipbuilders had 'continued there so long without contradiction, consuming of ship timber, which His Majesty may have occasion to use'. For county Cork there are records of two ships built in Cork and three in Youghal in 1678, of which the larger Cork vessel was of 60 tons and the largest Youghal one 100 tons.¹⁷

With the settlement of English and Scots colonists in Ulster in the early years of the seventeenth century came the introduction of half-timbered houses. Numerous illustrations of these houses can be seen in T. Phillip's *Londonderry and the London Companies*, (1928). Various attempts were made to restrict the use of timber on the Companies' lands to house building and each Planter was allotted 200 'good oaks of several sizes' for building. Some of the wooden houses were quite large. The Earl of Abercorn had erected timber houses near Strabane by 1611 which were 116 feet long and 87 feet wide. The groundsels were oak and the rest of the timber parts were of alder and birch. Chichester put 600 oaks into his houses at Carrickfergus and Belfast and 600 oaks were allotted to Sir Henry O'Neale to build his house at Killyleagh in 1666. Galgorn Castle, built in the seventeenth century, was wainscoted with oak from the woods of Largy and Grange. The parish of Ballyscullion in Glenconkeyne was locally famed for the manufacture of wooden house frames and wooden floors which were sent to other districts.¹⁸

In spite of the export trade in oak and ash during the seventeenth century, the absence of pine woods in Ireland necessitated the import of soft wood. Limerick and Cork were importing Norwegian deal boards in the 'sixties. Sir George Rawdon of Lisburn complained in 1665 that the war with the Dutch was obstructing the trade in deal and had pushed the price of timber up to between 35/- and 45/- a ton in Dublin. In 1682, 204,000 deal boards, 24,000 spars and 200 balks were imported from Norway into Belfast when she was exporting hardwood.

The total import of timber from abroad for 1682/3 is given in table 7. It can be seen that the imports were chiefly of coniferous wood and exotics such as walnut which could not be supplied from the native forests.

TABLE 7.

Timber imports from abroad, 1682/3.

<i>Country of supply</i>					<i>Description</i>
France and Flanders	...	...	...	...	2,327 ft. walnut plank.
English colonies	...	...	...	...	720 feet of plank.
Holland	...	...	...	...	13,400 deals.
Denmark	...	...	...	...	232,900 deals. 1,530 feet plank. 14,100 spars. 160 pieces wainscot. 110 tons timber.
Scotland	...	...	...	...	1,470 deals. 237 tons timber.
England	...	...	...	...	65 tons timber.

The importation of timber increased considerably during the eighteenth century and in 1735, 2,075 tons of timber at £2 a ton, 137,000 barrel staves at 35/- a thousand, 25,000 balks at £20 a hundred, £13,700 worth of deals at £25 a thousand and £1,125 worth of plank were brought into Ireland.¹⁹

It is extremely difficult to translate money values of the seventeenth century into present day values. The seventeenth century was not the twentieth century writ small—the economy was different. Manufactured articles were few and outside of the larger towns the production of food, often of clothes, and the building of cabins was a family affair. Perhaps the best pointer is to be found in labourers' wages; according to Petty they were 4d. a day. It appears possible that ironworkers were paid by production; Petty, for example, paid wages of between 12/- and 13/8 per ton of iron produced, or 10/- if grazing rights and other amenities were granted. Possibly it could be said that the value of money in Charles II reign, exclusive of expensive items such as travelling and purchased clothes, was in the region of ten times its value in 1939.²⁰

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Glossary of terms in text:

Pipe staves: staves each weighing 10.8 lbs. of which 25 are used in a pipe or butt holding 105 Imperial gallons.

Hogshead staves: staves each weighing 9.8 lbs. of which 23 are used in a hogshead holding 52 Imperial gallons.

Barrel staves: staves each weighing 9.3 lbs. of which 21 are used in a barrel holding 32 Imperial gallons.

Pipe, hogshead and barrel headings: pieces of wood forming base and top of casks and weighing 7.4 lbs., 6.7 lbs. and 5.1 lbs. respectively.

Compass timber : a piece of curved timber used in shipbuilding.

Knee timber : a piece of timber with a pronounced bend used in shipbuilding.

Treenails : cylindrical pieces of wood used to secure the planks of a ship to the timbers.

Wainscot : panneling for the walls of a room.

Clapboards or cleftboards : fan-shaped pieces of wood used for roofing, also called weatherboards.

Notes.

Life of ships : wooden vessels generally had a working life of 15 to 20 years. Smaller ships lasted longer than larger ones because of the difficulty of seasoning large pieces of timber. Until 1719 the timber was prepared by wetting one side of the plank and charring the other.

Tonnage : in the seventeenth century the tonnage of a ship was not reckoned according to the displacement but from the number of tuns of wine (252 gallons or 40.32 cubic feet) which could be placed in the hold.

Tons burden : weight or measure of any species of merchandise a ship will carry when fit for sea.

References.

The following abbreviations are used :

C.S.P.D., *Calendar State Papers Domestic*.

C.S.P.I., *Calendar State Papers Ireland*.

P.R.O.N.I., Public Record Office, Northern Ireland.

U.J.A., *Ulster Journal of Archaeology*.

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