PEMBROKESHIRE SEA-TRADING BEFORE 1900

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I. SOURCES

THE early history of maritime trading around the Pembrokeshire coast is poorly documented. The surviving Customs Accounts compiled between the 13th and mid-16th centuries have been analysed by Lewis (1913) and various medieval Chancery Rolls have been summarized by Owen (1911 and 1918). More detailed information is in the Exchequer Port Books which originated from measures taken in the middle of the 16th century to improve the administration of the English Customs Revenue and to control the coasting trade (Lewis, 1927).

Three Head Ports were established for Wales of which the Head Port of Milford* had jurisdiction from Worm's Head to Barmouth. Two series of Port Books were returned annually to the Head Port of Milford, one for Carmarthen, the other for Milford which recorded trade from all Pembrokeshire ports. After 1600, however, Tenby trade returns were sometimes made to Carmarthen. Coastwise and overseas trade were kept in separate books, Ireland and Scotland being classed as overseas.

So many Port Books have been lost and so many of the survivors are damaged, incomplete or illegible that selecting books at regular intervals or analysing overseas and coastwise trade of the same year is often impossible. Moreover, the size and port of origin of the cargo are not always recorded and cargo-sizes, even when quoted, are not always reliable; different officials sometimes kept separate books for the same year and their records do not always correspond.

After the establishment of the Board of Customs and Excise in 1696 fewer entries were made every year in the Port Books. Apart from Carmarthen Books for 1784–5 the series for the Head Port of Milford ended in 1714.

From the 16th century onwards various tours, reports, local histories and guides comment on the county's trade, its ports and its ships. Of the few surviving log-books the one kept by Captain Abel Hicks between 1751 and 1764 has been summarized by Green (1921), and another, owned by Mr. B. R. Lewis of Fishguard, has been examined. The Bristol Bills of Entry refer often to Pembrokeshire trade. Ships calling at Milford and Pembroke Dock were listed in the Shipping Intelligence of the *Pembrokeshire Herald*.

II. THE PORTS AND CREEKS

The drowned coast of Pembrokeshire, with its many creeks and long tidal rivers, had many sheltered harbours; breakwaters were not often needed (Map 1).

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* Milford in this context refers to all the ports inside Milford Haven; the town of Milford did not exist until the late 18th century.

MAP 1.

Map of Pembrokeshire showing the ports, creeks and quays. Asterisks denote the places where ships were built between 1750 and 1900 (see Table 6).

MAP 2.

Pembrokeshire ports and creeks, with the numbers of households at each, as listed in the Report of the Commission to suppress Piracy, 1566.

Haverfordwest, Pembroke and Tenby originated as Norman castle towns and became important sea ports during the Middle Ages when all three had commercial relations with Irish and continental ports as well as with coastwise markets in England and Wales.

The 12th century dominance of Pembroke relied upon the inhabitants' privileges conferred with the town's incorporation in 1100 and an 1154–89 Charter which required ships entering Milford Haven to buy and sell only at Pembroke Bridge and to export to England only from Pembroke or Tenby. By the early 13th century, however, cargoes could also be discharged at Haverfordwest (Darby, 1951). Between 1326 and 1353 Haverfordwest was the only Welsh staple port for wool and hides and its merchants were exempted from port dues in 1383 (Owen, 1911).

Shipping used Tenby at least as early as the mid-12th century but the first breakwater was not built until 1328 when the town received a grant from Edward III (Leach, 1901). During the 14th century Tenby was one of the principal herring ports of South Wales (Lloyd, 1958).

The Customs Accounts show that from the early 14th century to the early 16th wine and salt and occasionally other goods were brought to all three ports from France, Spain and Portugal (Lewis, 1913). Twice as many cargoes came to Tenby as to Haverfordwest or Pembroke, usually in foreign ships, though some of the local merchants, especially those from Tenby, had their own vessels (Owen, 1918). Tenby also enjoyed a close relationship with Bristol; on his tour in 1536–9 Leland observed that the town was "very wealthy by merchandise" (Smith, 1906).

The Report of the Commissioners appointed to suppress Piracy (Lewis, 1927) contains a list of the ports, creeks and landing places in Pembrokeshire in 1566 and shows that Tenby with two hundred households was the most important port in the county and twice as large as Pembroke. No other port listed had more than forty households (Map 2), but Haverfordwest was not mentioned although it had a population of between two and three thousand in the late 16th century (Phillips, 1896); Owen (1603) described it as the largest and most prosperous town in the county.

Apart from Tenby the Port Books (1565–1713) tell little about individual ports, even Haverfordwest and Pembroke being named only occasionally, but Fenton (1811) notes the wealth of Haverfordwest merchants in the mid-17th century and their dealings in a wide range of commodities.

Tenby handled up to one fifth of the total foreign shipments, including half of the county's trade with France, and between one third and one fifth of the coastwise shipments, mostly with Bristol, North Devon and Somerset. Although negligible until about 1670 much coal was being exported from Tenby in 1724 (Defoe, 1769) and by 1800 the town's share was between a quarter and a third of all that left the county (Nef, 1932). After 1800 Tenby became a fashionable resort, trade virtually ceased and its harbour only served as a refuge for passing ships (Treble, 1818).

By 1724–6 Pembroke was the largest and richest town in South Wales, with nearly two hundred sailing ships based there (Defoe, 1769), but Haverfordwest, and to some extent Milford, captured much of this trade by the end of the 18th century (Davies, 1951; Evans, 1804; Donovan, 1805; Malkin, 1807).

Much corn was exported from Haverfordwest from 1800 (Phillips and Warren, 1914) until 1883 (Bristol Bills). The ruins of contemporary granaries rot away today below the Old Bridge.

During the 19th century the new towns built beside Milford Haven were more conveniently placed for ships now often so large that access to Haverfordwest was possible only at high tide; the river was never navigable to boats of more than 200 tons. The arrival of the railway in 1853 finally killed Haverfordwest's coasting trade.

The Pembroke river was even shallower than the Cleddau and Pembroke lost most of what trade remained in 1814 to Pembroke Dock (Davies, 1951).

The North Coast had at Fishguard a "good harbour for barks and ships of small burthen" which was used as early as 1566 (Map 2) and was particularly busy during the herring season (Owen, 1603). The Port Books indicate that its Elizabethan trade was with Ireland, with some corn to Merioneth and Chester.

Trade increased during the late 18th century; in 1811 Fishguard was the only sizeable port on the north coast and second only to Haverfordwest in the whole county (Fenton, 1811) and in its population of about two thousand were many mariners and fishermen (Malkin, 1807). In 1792 about fifty coasting vessels, varying from 20 to 100 tons, were based there (Cambrian Register, 1796) and the trade with Bristol persisted into the mid-19th century (Bristol Bills). The Old Port finally died with the arrival of the railway and the modern harbour in 1906.

In 1566 Newport was the same size as Fishguard and already trading with Bristol (Lewis, 1927) and supporting a woollen industry (Fenton, 1811). The port's development was handicapped by a dangerous sandbank across the river mouth (Owen, 1603), but despite this slates were being exported in the 18th century (Morris, 1748). According to local residents, domestic coal was imported up to the mid-1930s.

St. Dogmael's was smaller than either Fishguard or Newport in 1566, but although the mouth of the River Teifi was obstructed by a sandbank (Owen, 1603), brigs up to 150 tons could reach the Cardigan quay (Evans, 1804). Those still alive recall boats arriving at St. Dogmael's with timber, coal and limestone and taking away wool from the mill by the old quay.

Abercastle was a small safe harbour in 1566. Sloops based there in 1811 took corn and butter to Bristol and returned with general merchandise (Fenton, 1811). In the 1920s oats were still being shipped up the Bristol Channel and coal landed from Hook or Saundersfoot. An old warehouse above the harbour and two in the village bear witness to the trade.

Porth-gain harbour was improved between 1902 and 1904. The disused stone-crushing plant (Fig. 1), the quarries and the old brick kiln remain as evidence of the industries which flourished at Porth-gain during the late 19th and early 20th centuries.

Although most of the slates quarried at Aber-eiddy were shipped from Porth-gain, small vessels of twenty to thirty tons were sometimes loaded direct at the Aber-eiddy quarry slip.

Cwm-yr-Eglwys also had a small trade and in the late 18th century it was known as Dinas Harbour (Morris, 1748).

St. Bride's Bay's best harbour was always Solva, despite a very dangerous entrance. Known to Leland in 1536-9 as "a small creek for ballingars and fishing boats" (Smith, 1906) it was also included in the 1566 Report. Solva, "a portlet for small shipping" (Owen, 1603), occurs in the Port Books only in 1602 when Irish timber and cloth arrived from Wexford. Morris (1748) saw Solva as an excellent harbour that needed improving. A shipping company was formed at the port in 1756 and by 1773 six or seven vessels were based there (Warburton, 1944). In 1775 the iron and oak of the first Smalls lighthouse were shipped from Solva.

The place prospered in the early 19th century, with about thirty vessels from 20 to 250 tons; corn went to Bristol and coal, culm and limestone were imported (Fenton, 1811). By 1851 the population was 1,252, and at least nine warehouses stood in Lower Solva (Warburton, 1944). In 1843 four brigs of 150-200 tons and at least fifteen smacks were still based there (Warburton, 1944). A few cargoes of oats, barley and butter went to Bristol in 1852 (Bristol Bills) but by 1856 Solva's trading days were finished except for one vessel which continued to ply to and from Bristol until 1914 (Warburton, 1944). There was short-lived excitement in 1860-1 over the building of the second lighthouse for the Smalls. The granite from Bodmin was dressed at Solva and then shipped from Trinity Quay, specially built for the purpose, in 40-ton barges towed by steam tugs. By 1900 the population had fallen to 730.

Porth-clais was the nearest landing place to St. David's, and boats were arriving with cargoes for the cathedral as early as 1385 (Green, 1923). Two 8-ton vessels belonged to Porth-clais in 1566. St. David's appears in the Port Books once or twice between 1585 and 1620 with timber from Ireland and corn, malt and wool for Merioneth, Bristol and Barnstaple. Both Fenton (1811) and Treble (1818) note a few boats at Porth-clais but no trade, Fenton adding that the breakwater had been repaired early in the 18th century.

Milford Haven from early times was the base of much of Pembrokeshire's trade (Map 2). In 1566 Dale and Angle were the largest villages, Dale being as big as Fishguard and owning three 8-9 ton ships. Its 18th century exports included beer to Bristol (Phillips and Warren, 1914), but the village jetty was in ruins in 1748 (Morris, 1748). By 1800 trade had fallen away and the village was ruinous and deserted (Fenton, 1811). However, the 1841 census shows that of the 382 inhabitants nine were shipwrights and five were fishermen; in 1851, out of 404 inhabitants, seven were shipwrights, five were fishermen, three were sailors and one commanded a merchant vessel.

The River Cleddau bisects the South Pembrokeshire coalfield and was extensively used by coal boats. In some places vessels could be loaded alongside the banks but small quays were built at Black Hill, Little Milford, Hook, Lower Hook, Sprinkle, Landshipping and Landshipping Ferry and at Cresswell (Edwards, 1963). Sizeable cargoes went up the Eastern Cleddau to Blackpool (Oldisworth, 1810). When ships outgrew the quays barges took the coal downstream to Llangwm pool or Lawrenny to be reloaded into sea-going vessels (Edwards, 1963). Limestone from West Williamston was also transhipped at Lawrenny.

In 1774 the little harbour of "Harbarston Haikin" was generally full of ships

loading and unloading corn, coal and limestone (Lyttleton, 1781); Castle Pill was busy in the same way.

Trade deserted these village creeks and quays when the towns were built. Milford Haven was started in the 1790s and its docks were built in 1888; Pembroke Dock grew in 1814 round the naval dockyard and in 1856 Neyland developed at the end of the railway line (see Gilpin, 1960, for a full account of these towns). That the county's mid-19th century trade was dominated by Milford Haven and Pembroke Dock can be read in the 1844, 1846 and 1857 issues of the *Pembrokeshire Herald*. In 1832 43 per cent of the corn shipped to Bristol went from Milford Haven; in 1842 28 per cent and in 1852 39 per cent (Bristol Bills).

The South Coast trading was from open beaches until Saundersfoot harbour was finished in 1835. Exports quickly increased, especially coal, but also iron ore, pig iron and fire bricks; imports included timber, seed-corn, manure, and general merchandise (Edwards, 1963). Coal was last shipped from the harbour in 1930.

Much coal was also shipped from Wiseman's Bridge in the late 18th and early 19th centuries (Oldisworth, 1810), to the extent that ten coal ships sailed from there between 23rd October and 5th December, 1789 (Picton Castle MSS.). At Stackpole ships had to off-load onto the open beach until the quay was built (Treble, 1818). Local people still remember coal and culm* being landed but limestone was apparently never taken away by sea.

The Decline of the Pembrokeshire Ports was rapid after 1865. Increasing competition from the railways, larger ships which drew too much to get alongside the quays and the continual silting up cut into the activities of village trade. The seas, which had been the means of life and communication for many centuries, became for the first time a barrier separating Pembrokeshire from the outside world and the coastal villages from each other. Many settlements decayed; a few turned to the possibilities of the tourist trade.

III. THE COASTWISE AND OVERSEAS TRADES

(1) *General Trends*

1565–1713. The Port Books show that the considerable trade of 1565 was expanding, particularly exports (Table 1). Most overseas cargoes went to Ireland, mainly to Dublin (see Maps 3, 5 and 6) but regular cargoes were sent to La Rochelle and Brittany and, in the 17th century, to Rotterdam and Dordrecht (Table 2). Imports were only a fraction of exports; most came from Ireland, usually Wexford (Map 4, Table 2), and some regularly from La Rochelle, Bordeaux and Brittany.

Coastwise out- and in-shipments are summarized in Table 3; the destination of the exports is shown on Maps 3, 5 and 6 and the origin of the imports on Map 4. Ports in South-west England obviously dominated the Pembrokeshire trade from 1565 to 1713, above all Bristol.

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* Culm is a Pembrokeshire word for very small shattered coal mixed with dust. A large proportion of the high-quality anthracite mined in the county was in this form.

Table 1. *Shipments to and from Pembrokeshire, 1565-1713, as recorded in the Port Books in selected years*

Year	Overseas in	Overseas out	Coastal in	Coastal out	Year	Overseas in	Overseas out	Coastal in	Coastal out
1565-6			39	29	1617			36	154
1566-7	20	42	36	31	1620	46	102		
1585-6	15	46	21	39	1638			24	344
1586-7	13	44	8	35	1639	29	133		
1587-8	12	41			1662	43	163	65	425
1592-3			9	33	1680	44	133	49	567
1593-4	28	51			1698			78	579
1598-9	44	62			1699	39	108		
1600-1	45	81			1713*	14	103	96	361
1601-2	51	99							
1602-3	53	87	17	60	* Excludes Tenby shipments.				

18th and 19th centuries. During the 18th and early 19th centuries the coasting trade continued to flourish, still above all with Bristol and in vessels known as "Bristol Traders" which regularly berthed at the quay in Bristol called the "Welsh Back". Although 64 ships exported cargoes other than corn to Bristol in 1852, 78 in 1863 and 57 in 1872, the imports were rapidly falling from 175 shipments in 1832 to 98 in 1842 and only 65 in 1852 (Bristol Bills).

The *Pembrokeshire Herald* in 1844 notes coastwise trade with London, Liverpool, Chepstow, Newport, Carmarthen, Cardigan and about a dozen other ports as well as Bristol, whilst the overseas contacts were with Irish ports (notably Dublin, Wexford, Waterford, Drogheda), with Italy (Ancona and Leghorn), France (St. Malo), Canada (Quebec and Miramichi), Chile (Valparaiso) and Sierra Leone.

(2) *The Export Trades*

Coal

16th and 17th centuries. Coal was landed at Porth-clais as early as the 14th century (Green, 1923), but the Pembrokeshire coal trade remained small until foreign exports began to rise in the 1560s. Owen (1603) placed "sea-coales" eighth in his list of Pembrokeshire products. Table 4 summarizes the subsequent increase in coal and culm shipments. The gross weight was about 200 tons in 1566-7, over 800 tons in 1602-03 and increased to over 30,000 tons per annum by 1700 (Nef, 1932). Average cargoes increased from 4-5 tons in the 1560s to 12-14 tons in 1600 and to about 30 tons by 1700.

Elizabethan exports were largely overseas and, particularly of culm, to Ireland (Map 5). Some went regularly to France, mainly to La Rochelle. During the 17th and early 18th centuries a small trade was maintained regularly to Rotterdam and Dordrecht with minor loads until 1662 to the Isle of Man, to Spain in 1566-7, to Barbados in 1680 and to Lisbon in 1713 (Table 2). The special qualities of Pembrokeshire anthracite account for the occasional distant shipments (Nef, 1932).
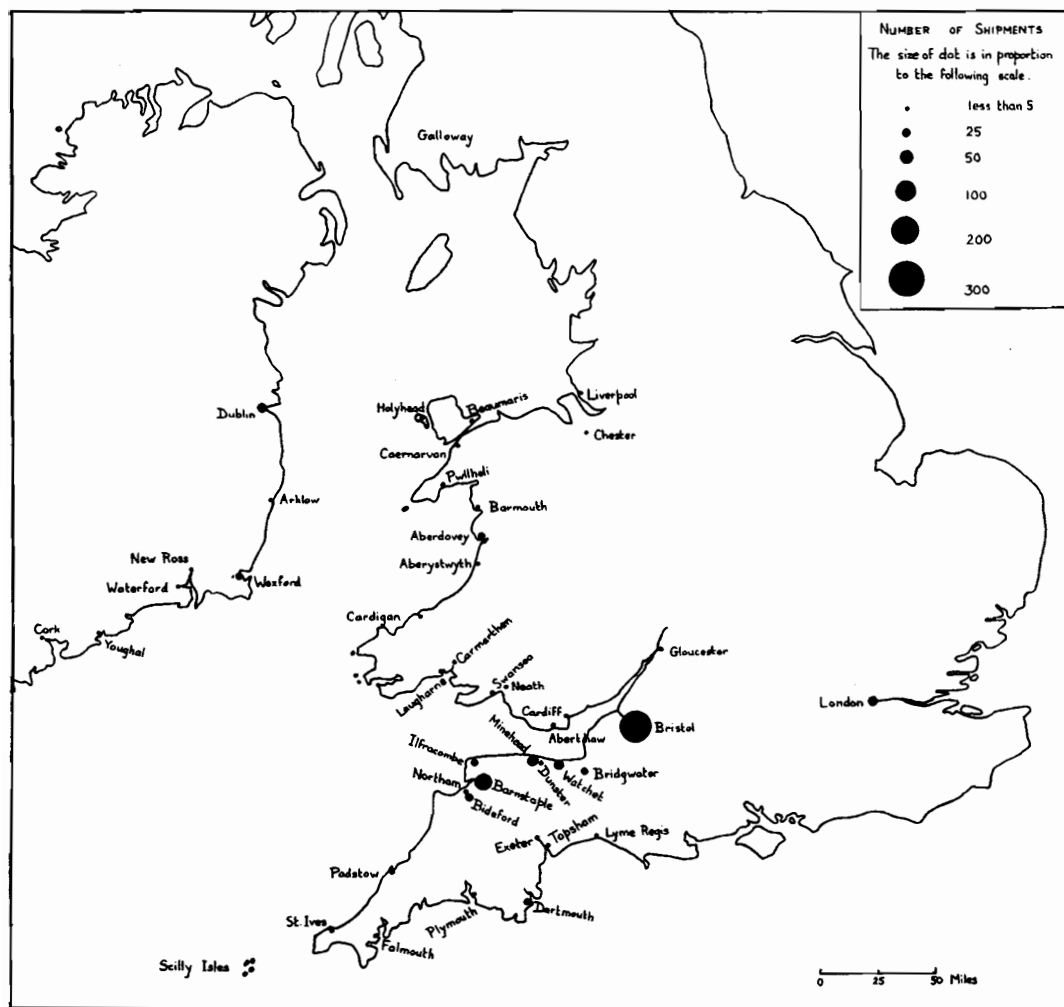
MAP 3.

The destinations of Pembrokeshire exports, other than coal, corn and malt, between 1565 and 1713, based on the Port Books for the years quoted in the text.
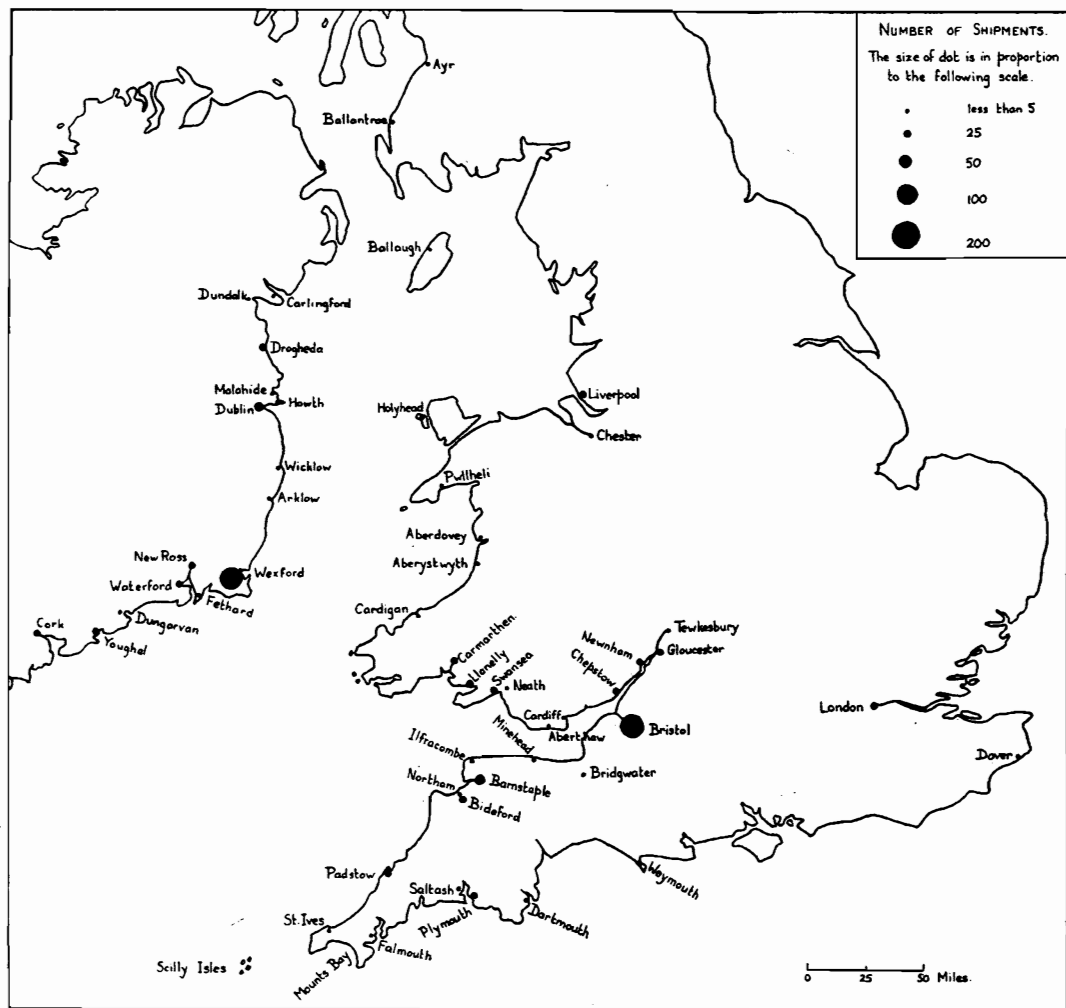
MAP 4.

The sources of Pembrokeshire imports between 1565 and 1713, based on the Port Books for the years quoted in the text.

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Table 2. *Shipments to and from countries overseas,*

	1566–7		1585–6		1586–7		1587–8		1593–4		1598–9		1600–1	
	to	from	to	from	to	from	to	from	to	from	to	from	to	from
Ireland ..	35	2	11	13	38	6	1		40	16	55	26	76	29
Isle of Man ..												1	1	1
Scotland ..											1			
France ..	5	14	2	2	6	6	4	10	11	12	6	14	4	14
Spain	2	3						1						
Portugal ..								1				3		
Holland ..														
Germany ..														
Norway ..														
Sweden ..														
Madeira ..														
Barbados ..														
Virginia ..														
Newfoundland		1												1
East Indies ..														
Unknown ..			33			1	36							
Total ..	42	20	46	15	44	13	41	12	51	28	62	44	81	45

The only Elizabethan records of coastwise coal shipments were to London, Plymouth and Dartmouth in 1585–6 and to Aberystwyth and Pwllheli in 1586–7 yet by the 1630s twice as much coal went coastwise as overseas and three vessels loaded coal for every one that loaded anything else. Table 4 and Map 5 emphasize this expansion of trade to English and Welsh ports.

In the 17th century Pembrokeshire anthracite was shipped to London and East Anglia for salt drying, competing successfully against short-haul Northumberland coal, and to Exeter where it was used in the woollen mills (Clark, 1960). In 1700 over 6,000 tons, 53 per cent of Exeter's requirements, came from Pembrokeshire, but by 1784 the 5,500 tons from Pembrokeshire was only 18 per cent of Exeter's total import.

18th and 19th centuries. During the 18th century the Pembrokeshire coal trade

1566-1713: *based on the Port Books*

1601–2		1602–3		1620		1639		1662		1680		1699		1713*	
to	from	to	from	to	from	to	from	to	from	to	from	to	from	to	from
90	40	77	39	96	40	129	19	150	29	118	38	98	19	95	11
3	1	3	1	5		2		1							
	1														
6	9	6	8	1	5		5	1	6	2		1	6		
			1							3	3		1	2	
											1		1	2	
						2		7		6		9		4	1
															1
													3		
									1						
										1	1				
										3			1		
											1		2		
			1												
		1	1				5	4	7				6		1
99	51	87	51	102	45	133	29	163	43	133	44	108	39	103	14

* Excluding shipments to and from Tenby.

expanded fourfold and in 1792 a total of 121,000 tons was exported (Hassall, 1794), 108,000 tons going coastwise and the remainder overseas; almost five-sixths was culm. The Coal Commission Report of 1871 records that in 1745 Pembrokeshire sent 1,814 tons to London but by 1765 was sending 3,929 tons.

Typical of the county were coal sales from Hook Colliery in the late 18th century and from Landshipping Colliery in 1801, to harbours along the west coast of Wales and to the south-west and south coasts of England. The only overseas trade was a single cargo to Barbados and a few to Ireland, notably Dungarvan. From Begelly Colliery between 1833 and 1838 coal went along the Bristol Channel and to the south coast of England (Edwards, 1963).

Coal production and exports continued to rise until about 1865, stimulated by the construction of Saundersfoot harbour in 1835, from which 11,500 tons

Table 3. *The destination and origin of coastwise*

	1565–6		1566–7		1585–6		1586–7		1592–3	
	to	from	to	from	to	from	to	from	to	from
Norfolk										
Suffolk										
London					1	1				
Kent										
Hampshire										
Dorset										
South Devon ..		1			2	4		1		
Cornwall	1			1		1			1	
North Devon	11	12	10	8	10	6	7	1	3	
Somerset	2		2	1	4		2		7	
Bristol	14	20	16	24	17	7	17	5	20	9
Gloucestershire (except Bristol) ..		2	1	1		1	2	1		
Monmouthshire ..							4			
Worcestershire ..										
Glamorgan		1								
Carmarthenshire ..										
Cardiganshire.. ..				1			1			
Merioneth	1		2		2		1		1	
Caernarvonshire ..							1		1	
Chester					1	1				
Liverpool										
Unknown		3			2					
Total	29	39	31	36	39	21	35	8	33	9

shipments, 1565-1713: *based on the Port Books*

1602–3		1617		1638		1662		1680		1698		1713*	
to	from	to	from	to	from	to	from	to	from	to	from	to	from
				3		11		16		4		6	
								1				1	
		1		1		1		30	6	35	8	8	4
									1				
						1		5		3			
		1		20		34		13		10		11	1
1	1	31		135		121		128	1	131	4	105	
				1		22		21	2	32	8	45	6
8	4	26		11		83	1	195	7	194	8	99	1
5		9		25		31		90	1	91	1	14	2
20	9	30		50		78	3	43	20	40	24	47	39
		2		6		7	3	4		4	1	1	4
						1	1			2	4	2	6
						2							
						3		1	4	10	5	7	13
1	2	5						1	2	2	1		10
1		1		3								2	1
7		30		8		22				2	1	7	1
11	1	10		7				2	3			4	2
2										1			
									2	9	12		6
4			36	76	24	5	57	17		9		2	
60	17	146	36	346	24	422	65	567	49	579	77	361	96

* Excluding shipments to and from Tenby.
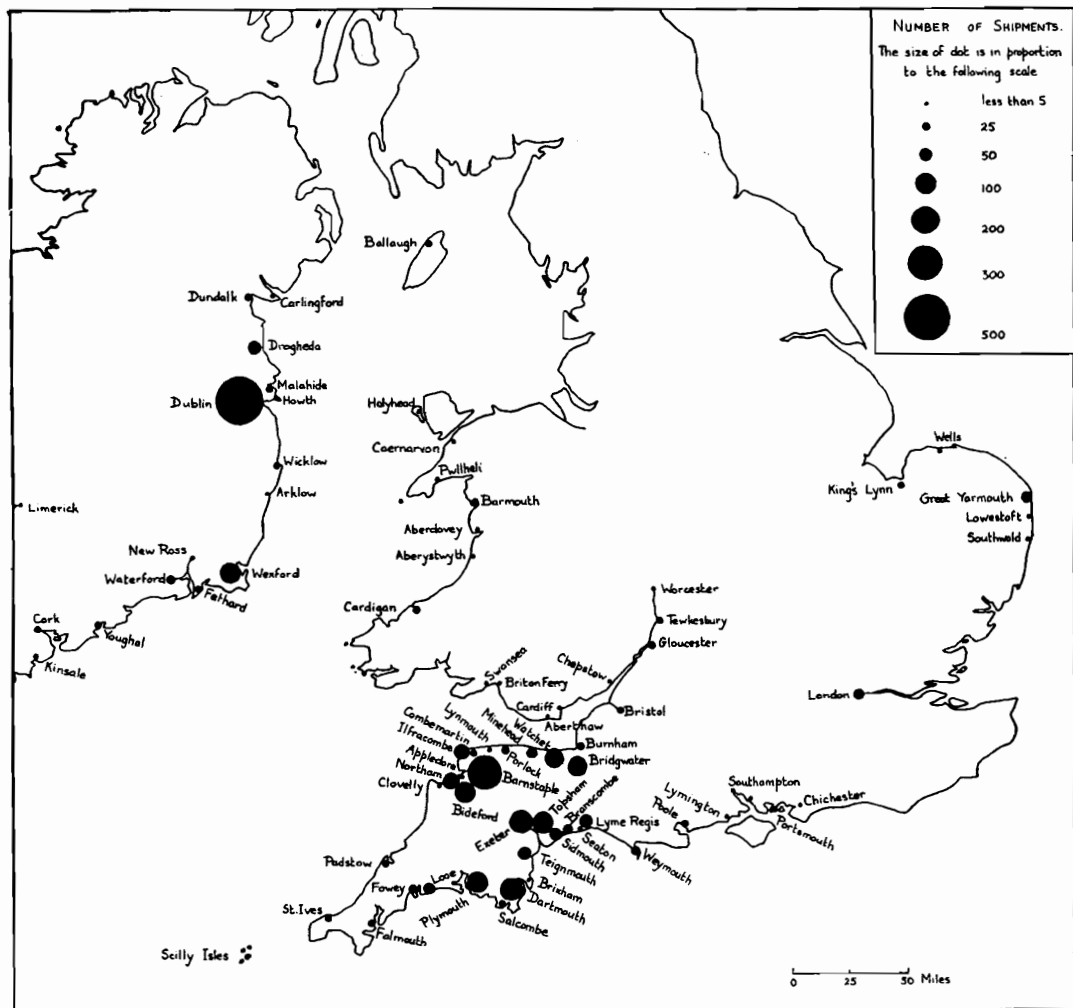
Map 5.

The destinations of coal exported from Pembrokeshire between 1565 and 1713, based on the Port Books for the years quoted in the text.

Table 4. *Details of the more important commodities exported coastwise, 1565-1713: based on the Port Books*

	1565-6	1566-7	1585-6	1586-7	1592-3	1602-3	1617	1638	1662	1680	1698	1713*
Number of shipments												
Coal							41	243	322	470	502	272
Corn	6	1	9	7	6	27	101	74	96	65	98	73
Malt		2	1	1	2	10	34	19	10	23	58	53
Ale										27	40	16
Cloth	16	22	10	11	3	1	1	1	3	2	24	3
Wool	9	11	25	25	25	21	26	21	28	30	12	9
Skins and hides	3	6	6	4	5	5	3	1	7	7	19	4
Leather	4	6	6	4	6	6					11	3
Butter	1					1	8	2	5		11	
Cheese	1						5	1	1	4		
Herrings	1	1				6	2	1	2	4	12	13
Approximate quantity where known												
Corn (bushels)	690	40	3,033	4,560	3,952	5,917					57,383	46,436
Malt (bushels)		380	480	768	960	4,007						20,800
Cloth (pieces)	597	1,200	655	545	90	6						
Wool (stones)	1,057	1,560	5,533	5,000	7,090	6,948						1,800

* Excluding shipments from Tenby.

2

NUMBER OF SHIPMENTS

The size of dot is in proportion to the following scale.

.   less than 5
•   25
●   50
●   100
●   200

Lough Foyle, Carlingford, Drogheda, Dublin, Beaumaris, Liverpool, Chester, Caernarvon, Pwllheli, Barmouth, Aberdovey, Aberystwyth, New Ross, Waterford, Wexford, Cork, Youghal, Kinsale, Carmarthen, Worcester, Tewkesbury, Gloucester, Swansea, Neath, Newport, Burry Port, Minehead, Aberthaw, Bristol, London, Ilfracombe, Combemartin, Watchet, Bridgwater, Northam, Barnstaple, Clovelly, Bideford, Exeter, Topsham, Lyme Regis, Padstow, Newton Abbot, Weymouth, St. Ives, Dartmouth, Falmouth, Scilly Isles

0   25   50 Miles

MAP 6.

The destinations of corn and malt exported from Pembrokeshire between 1565 and 1713.
Weymouth, Lyme Regis, Topsham, Exeter, Tewkesbury and Burry Port received corn only;
Newton Abbot and the Scilly Isles received malt only. Based on the Port Books for the years
quoted in the text.

were shipped in 1833 and 38,000 tons in 1864 (Edwards, 1963). Exports from Milford Haven also increased, from 21,400 tons in 1825 to 66,100 tons in 1845 (Coal Statistics).

1865 was the peak production year; 146,000 tons were mined and 82,000 tons exported (Edwards, 1963). Even though the Great Western Railway reached Tenby in 1866, the largest Saundersfoot colliery continued to send nearly half its output by sea until it closed in 1930. The last shipment of coal mined at Hook on the River Cleddau was not until 1936 (Edwards, 1963).

Corn. The Port Books show that by 1565 some corn was regularly exported coastwise but never more than 9 shipments or 4,600 bushels annually. Even so only wool and cloth were more important until the turn of the century. By 1600 more revenue derived from corn than from any other commodity (Owen, 1603). Table 4 makes clear the scale of development.

Wheat, barley and oats, with some pilcorn and rye, were sold to the ports shown on Map 6. Trade to Bristol, North Devon and North Wales was regular throughout the period 1565 to 1713, but London, Somerset, South Devon and Dorset received cargoes only from 1617 onwards.

Table 5 shows how irregular was the overseas export of corn between 1566 and 1680. Most of it went to Ireland (see Map 6), with an occasional load to France (La Rochelle and Rouen), Spain (Seville, Cadiz and St. Sebastian) or even as far as Barbados and Madeira. The abnormal quantities sent to Ireland between 1600 and 1602 were for the garrisons in Leinster and Munster.

The coastwise trade continued to expand during the 18th century. Over 160,000 bushels of corn, malt and oatmeal left Milford Haven annually, much of it grown in the north-east of the county (Morris, 1748; Green, 1921). Abel Hicks often sailed with cargoes of grain:

Date	Route	Cargo	Vessel
1751	Milford–Bristol	1,952 bushels of oats	*Priscilla*
1751	Pembroke–Dublin	259 barrels of wheat	*Priscilla*
1760	Pembroke–Dublin	Barley	*Illustrious Bee*
1761	Pembroke–Liverpool	Wheat, barley and oats	*Illustrious Bee*

Corn was exported from "Harbarston Haikin" during the 1770s (Lyttleton, 1781; Wyndham, 1781) and about 36,000 Winchesters of oats were shipped annually from Fishguard during the 1790s (Cambrian Register, 1796). The trade declined temporarily at the end of the 18th century (Hassall, 1794), and there was even a shortage of corn within the county in 1803 (Evans, 1804). However, by 1811 corn was again being taken from Abercastle to Bristol and Liverpool and from Solva to Bristol (Fenton, 1811). The Bristol Bills of Entry confirm the revival—see Table 6:
Most of these cargoes came from Haverfordwest and Milford, with a few from Tenby, Saundersfoot, Pembroke, Fishguard and Solva.

But London and Liverpool shared with Bristol the 61,800 bushels of oats, 4,300 bushels of wheat and 5,100 bushels of barley which left Haverfordwest in 1830 (Phillips and Warren, 1914). Cardiff had corn from Pembroke Dock in 1846 (*Pembrokeshire Herald*). The 40-ton sloop *Ranger* sailed from Fishguard with oats for Newport (Mon.) in 1835, to Gloucester in 1836 as well as to Bristol in 1834 and 1839 (Log-book held by B. R. Lewis).

Table 5. *Details of the more important commodities*

	1566–7	1585–6	1586–7	1587–8	1593–4	1598–9
	Number of shipments					
Coal	38	42	38	39	51	57
Corn	2	1			6	
Malt		2				
Ale						
Cloth	3	2	6	4		5
Butter						
Cheese	1					1
Herrings	1					
	Approximate quantity, where known					
Corn (bushels)	184	100			704	
Malt (bushels)		300				
Cloth (pieces)	20	42	88	35		38

After 1852 trade began to be lost to the railways but the old people of Abercastle remember sailing ships and steam coasters loading grain for Bristol Channel ports as late as the 1920s.

Table 6. *Nineteenth century corn exports to Bristol*

Date	Number of shipments	Oats	Quantity in bushels Wheat	Barley	Total
1832	85	120,536	34,992 (and 31 sacks)	39,952	195,480 (and 31 sacks)
1842	56	85,715	6,654 (and 122 sacks)	1,285 (and 10 sacks)	93,654 (and 132 sacks)
1852	38	55,109	224	1,620	56,953
1863	7	13,294			13,294
1872	2	3,544			3,544
1883	2	4,200			4,200
1892	1	3,130			3,130

Malt. The extent of the malt trade after 1566 reflects the expansion of corn growing (Table 4). Almost all the 16th century cargoes went to Welsh ports but after 1600 malt was shipped to virtually the same markets as corn (see Map 6).

exported overseas, 1566-1713: based on the Port Books

1600–1	1601–2	1602–3	1620	1639	1662	1680	1699	1713*
			Number of shipments					
62	68	73	93	133	159	124	103	102
7	27		4		2	7		
5	27	8	10					
						6	4	4
1	3	2				1	1	
1						4		
1								
5	6	3					7	
			Approximate quantity, where known					
2,590	6,860							
584	5,548	824						
10	22	40						

* Excluding shipments from Tenby.

The coastwise trade from Milford Haven continued to about 1750 (Morris, 1748).

In some years a little malt went to Ireland though between 1600 and 1603 a large amount was dispatched to the English garrisons (Table 5). The cargoes taken by Abel Hicks to Dublin in 1751 and 1760 are the last records of this trade.

Ale was exported from 1662 (Tables 4 and 5). More than half the coastwise shipments went to Bristol but frequent cargoes went to London and some to Barnstaple, Dartmouth, Exeter, Bideford, Falmouth, the Isles of Scilly, Bridgwater, Liverpool, Chester and Aberthaw. Most of the overseas cargoes were sent to Dublin though, in 1680, over 100 tons went to Cadiz and Barbados.

In the mid-18th century Morris (1748) comments on "the fineness of the local ale which is prepared in several breweries and exported in considerable quantities", and Abel Hicks took cargoes containing ale to Bristol in 1751 and to Dublin in 1760.

Cloth was the principal coastwise export during the 1560s and was carried in two-thirds of the ships leaving the county (Table 4). By 1590 Pembrokeshire

could not compete with new fabrics produced in England although a residual trade lingered on into the 18th century. Frieze, a rough woollen cloth, was the most important in the trade but cotton, linen, calico, lockram and flannel were all exported occasionally, mostly to Bristol and North Devon and the rest to Gloucester, Plymouth, Dartmouth, Watchett, London and Liverpool.

Shiploads of cottons, friezes and pagaments were taken overseas by French, Spanish and Portuguese vessels in 1559–60 (8) and 1563–4 (19) (Customs Accounts). Table 5 shows that this irregular foreign trade finally petered out at the beginning of the 17th century. La Rochelle had been the chief market.

Wool. In the early 14th century Haverfordwest was the only staple town in Wales for wool and hides and so benefited from their export. For example, from 1318–20, 22 shipments, containing 143 sacks of wool, left the town (Customs Accounts). However, in 1353 Carmarthen became the Welsh staple port and Pembrokeshire records cease until Elizabethan times by when wool was the most important export from the county after corn and cattle (Owen, 1603; Table 4) and was sold to the west of England manufacturers, more than half through Bristol and the rest to Barnstaple, Minehead, Ilfracombe, Bideford, Northam and Dunster, with occasional cargoes to Dartmouth, Topsham, Aberdovery, Barmouth, Pwllheli, Swansea and London. Only nine shipments (1,800 stone) were made in 1713 and the trade died out soon afterwards.

Hides, Skins and Leather. The export of hides was an old established trade. In 1319–20, 19 shipments containing 148 "dikers" left the county (Customs Accounts).

By Elizabethan times the trade was sufficient (Table 4) for hides, sheep and lamb skins to rate as ninth most important export (Owen, 1603). Calf, goat and coney skins were also exported. Lamb skins rose sharply to 21,000 in 1585–6 and 33,000 in 1592–3 reflecting the increase in sheep farming already noted in connection with the wool trade.

The coastwise trade was largely with Bristol and Barnstaple and continued into the early 18th century. Part cargoes for St. Malo in 1563–4, 1566–7 and 1699 and calf-skins to Madeira and Barbados in 1680 are the only records of an overseas export.

Despite two large tanneries in Haverfordwest during the 18th century (Phillips and Warren, 1914) there are no records of an export trade after 1713.

Dairy Produce. Although Owen (1603) claimed that butter and cheese were the fourth most important exports from the county in 1600, the Port Books record only occasional cargoes (Tables 4 and 5) and quantities were small, e.g. 20 barrels of butter and 4 cwt. of cheese to Scilly in 1565–6 and 7½ cwt. of butter to Plymouth in 1602–3; Galloway had 180 cwt. of cheese in 1598–9; 90 cwt. of cheese and 15 cwt. of butter went to the Dublin garrison in 1600–1.

Most of the increasing trade of the 17th century went to Bristol and Barnstaple but both butter and cheese were sometimes sent to Dartmouth, Bridgwater, Watchett, Swansea and Lyme Regis. In 1680, butter was even shipped to Barbados, Cadiz and Madeira.

By the end of the 18th century, the demands from London and Bristol for butter and cheese stimulated dairy farming (Hassall, 1794). About 1,000 casks

of butter (*c.* 660 cwt.) were exported annually from Fishguard (Cambrian Register, 1796). Butter also went from Abercastle to Bristol and Liverpool (Fenton, 1811) and from Haverfordwest to Liverpool and London in about 1830 (Phillips and Warren, 1914).

As late as 1852 the Bristol Bills of Entry record 44 shipments of butter (1,315 casks and 287 pots) and 16 of cheese (1,345 cheeses), mostly from Haverfordwest and Milford, with some from Fishguard and Solva.

Livestock. Although Owen (1603) listed cattle second and sheep and swine fifth in his list of Pembrokeshire exports the animals were driven overland to the English markets. Apart from 3 mares and 4 kine to Ireland in 1586–7, animals did not go by sea until about 1662 when six shipments were made, increasing to 26 by 1680. Fifteen of these cargoes detailed sheep (20–110 in each), thirteen cattle (4–36 in each) and thirteen swine (20–420 in each). In 1698 swine were shipped off seventeen times but sheep and cattle only once. Most went to Somerset and North Devon, with single shipments to Barmouth, Padstow and Exeter.

Rather surprisingly the livestock trade is totally unrecorded in the 18th century even though Hassall (1794) comments that pig farming and calf rearing were widely practised.

Herring exports developed in about 1600 when Owen (1603) rated them sixth in his order of importance. The trade was flourishing a hundred years later (Tables 4 and 5) above all to Bristol, Dublin and Wexford, with occasional loads to London, and French ports. In the 1740s about 1,000 barrels were cured annually in Fishguard and Newport alone (Morris, 1748) and many cargoes went to the Mediterranean (Fenton, 1811). After 1750 the fishery rapidly declined and by 1795 exports had practically ceased (Cambrian Register, 1796).

Oysters were already an important export in 1600, travelling either overland or in "barkes to Bristowe" (Owen, 1603). A typical cargo of 20,000 went to Barnstaple in 1592–3. The trade continued throughout the 17th and 18th centuries. In 1662 five shipments went to Ireland and in 1698 six to Bristol, five to London, one to Liverpool and one to Bridgwater. Oysters were included in a mixed cargo to Lisbon in 1713. Milford Haven abounded in oysters in the 1740s and many were shipped to Holland and other places (Morris, 1748).

In the early 19th century the oyster fisheries in Milford Haven were famous, especially those at Pennar Mouth (Cambrian Register, 1818) and Llangwm (Fenton, 1811): very large quantities were pickled and sent to Bristol. Tenby also had an important fishery (Malkin, 1807; Oldisworth, 1810) and large numbers were exported "in the shell" or pickled in small jars (Lloyd, 1958).

From 1850 onwards the fisheries rapidly declined but a few oysters were still going to Bristol in 1866 (Sea Fisheries, 1866).

Kelp. 16th, 17th and early 18th century records of "ore ashes" (or sometimes "kelp") being shipped include 30, 12½ and 4 cwt. to Bristol in 1585–6, 1 ton in 1602–3 and 2–3 tons in 1698. In 1699, 30 tons went to Rotterdam and, in 1713, 20 tons to Bideford and four cargoes of at least 24 tons to Bristol.

Paper was milled at Haverfordwest in the 19th century (Ballinger, 1923) and the Bristol Bills for 1852 record 24 cargoes of paper from Milford and three from Haverfordwest, a total of 2,159 "parcels".

Slates. Although Owen (1603) states that fine quality black slates, quarried from cliffs near Newport and Dinas, were "sent by water to Haverford, Pembroke, Tenby and divers parts of Ireland", the only mention of slates in the Port Books examined is a cargo of 11,000 sent to Bristol in 1565–6. Some quarrying continued until the 19th century when the trade expanded. Slates were shipped from various north coast quays, in particular from Old Fish-guard (Davies, 1951). After 1850, slates from Aber-eiddy and Porth-gain went up the Bristol Channel and to the south coast of England, e.g. to Newhaven. These quarries finally closed down in 1904, unable to compete with those in Caernarvonshire.

Crushed Stone. Igneous rock, crushed at Porth-gain, was being exported by 1878 (Porth-gain Village Industries Ltd.). Sailing ships called regularly and the
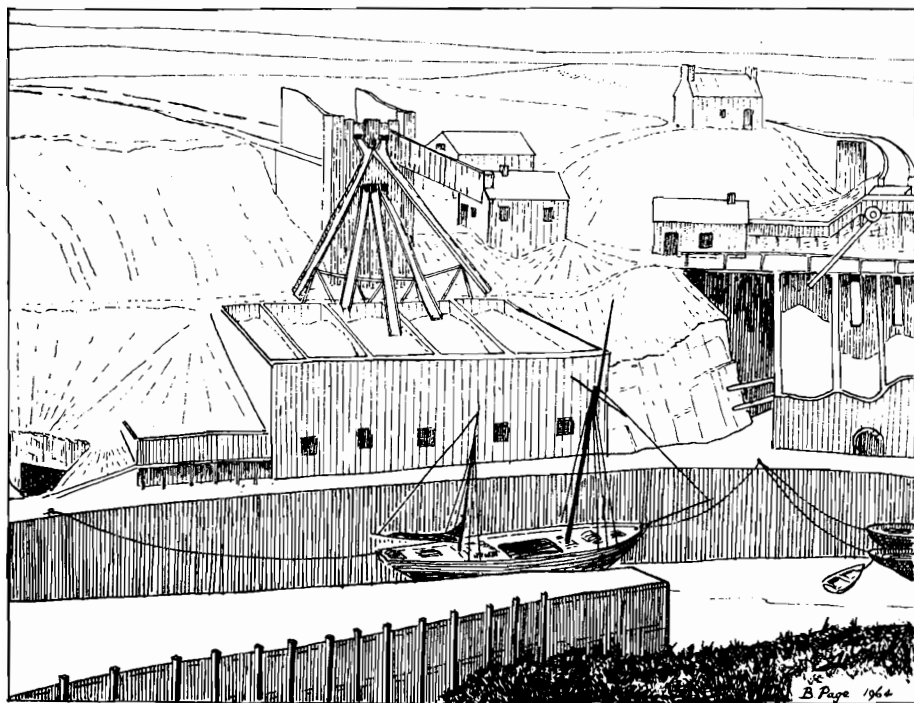
FIG. 1.

North Devon vessels loading crushed stone at Porth-gain between 1904 and 1910. The crushing and grading plant can be seen in the background. (Drawn from a photograph by kind permission of Michael R. Bouquet.)

company itself ran a fleet of six specially built steam coasters, each about 350 tons. A new harbour with larger quays was built between 1902 and 1904 and business reached its peak between 1900 and 1914. It never recovered after 1918 and finally ceased altogether in 1931. Table 7 suggests the extent of the trade.

Table 7. *Porth-gain stone exports*, 1909 and 1931 (from Account Books of Porth-gain Village Industries Ltd.)

June, July and August, 1909			June and July, 1931	
Destination	Shipments	Quantity in tons	Destination	Shipments
Bristol	25	3,479	Bristol	6
Newhaven (Sussex) ..	18	3,990	Highbridge ..	3
S. Pembs. ports*	18	1,168	Bridgwater ..	1
Braunton	13	1,108	London ..	1
Barnstaple	1	75	Llanelly	1
Bridgwater	8	793	Carmarthen ..	1
Highbridge	7	581		
Minehead	1	95	Total ..	13
Watchett	1	140		
Newport (Mon.)	3	650		
Whitstable (Kent) ..	2	440		
Sharpness	2	143		
Cardiff	1	55		
London	1	180		
Total	101	12,897		

Other destinations during 1909:			Other destinations during 1931:
New Quay	Littlehampton	Grays	Bideford
Cardigan	Portland		Ilfracombe
Neath	Rye		Littlehampton
Bideford	Faversham		
Lynton	Woolwich		

* Haverfordwest 6, Castle Pill 5, Neyland 5, Nolton Haven 2. At least some of this was for transhipment.

Bricks. Firebricks, made at Wiseman's Bridge from about 1850, were exported from Saundersfoot (Edwards, 1963) but the kiln was closed before 1900 (Leach, 1900).

The kiln at Porth-gain originally made bricks for building the stone-crushing plant but afterwards it baked for export, particularly for Bristol Channel ports such as Bridgwater and Appledore. The 1909 Account Book records 47,000, 66,000 and 230 tons of bricks to Llanelly between June and August and a cargo of 37,000 "seconds" to Dublin.

Iron. The completion of the harbour at Saundersfoot was followed in 1849 by the establishment of an ironworks at Stepaside where pig-iron was made from

Table 8. *The more important commodities imported*

	1566–7	1585–6	1586–7	1587–8	1593–4	1598–9
			Number of shipments			
Salt	10	3	7	9	14	16
Wine	8					10
Timber		4	2		3	3
Livestock						15
Cloth					3	1
Iron		1	3	6		5
			Approximate quantity where known			
Salt (tons)	194	29	47	102	135	305
Wine (tuns)	103					18
Iron (tons)		1	1	13		18

local ironstone and coal. Exports were at their peak from 1857 to 1868. Iron ore was also occasionally exported. In 1861, for instance, 4,700 tons of pig-iron was shipped and over 1,500 tons of ore went to Port Talbot. The Stepaside works closed in 1877 in face of South Wales competition (Edwards, 1963).

Miscellaneous Exports and the Entrepot Trade. A wide variety of other exports are noted in the Port Books. Many of these were re-exports, the entrepot trade being of great importance in the county's economy prior to the Industrial Revolution. In Elizabethan times some salt from the Continent was redirected to ports in Wales, Ireland and the west of England, while French and Spanish wines and dried and citrus fruits were similarly handled. In the 17th century iron, brandy, Virginia tobacco, timber and train-oil were among the re-exports, perhaps after temporary storage.

Amongst the county's own products peas and beans, oatmeal, meat, eggs, tallow and beeswax, brass and pewter, earthenware, clothing, Pembrokeshire mats, soap and candles were all exported. Late in the 19th century sand was exported from Saundersfoot and Tenby and scrap-iron from Pembroke Dock and Milford (Bristol Bills, 1863, 1872, 1892).

(3) *The Import Trades*

Salt for use as a preservative was the principal medieval import and is almost invariably mentioned whenever the surviving Customs Accounts record the nature of the cargo; e.g. in 1387, 1478, 1479 and 1480. Between 1500 and 1564

from overseas, 1566-1713: based on the Port Books

1600–1	1601–2	1602–3	1620	1639	1662	1680	1699	1713*
				Number of shipments				
10	12	8		4	7	2	11	22
3	5	2	1	1	1		1	1
19	29	31	28	5	8	13	14	6
11	10	7	5		21	23		
2	4	3	1	2	1	4	5	
1	2							2
			Approximate quantity where known					
222	114	165						
27	37	15						
¼	3							

* Excluding shipments to Tenby.

Spanish, Portuguese and French ships brought in salt from the Continent, from 4 to 14 shipments annually, each of between 250 and 600 tons (Customs Accounts).

The Port Books from 1566 to 1713 record a continuing trade (Table 8). Most came from France, mainly from La Rochelle and Croswick, with a little from Spain and Portugal.

Some salt also arrived coastwise (Table 9) but most of this too originated on the Continent and was transhipped from Bristol, Barnstaple, Plymouth, Dublin, Wexford and Waterford. Most was dried and calcined "white salt" but six cargoes of rock salt from Liverpool in 1713 probably came from Cheshire.

The import of salt remained important through the 18th and 19th centuries. Shipments from Aberdovey and the Cheshire mines arrived at Fishguard each autumn and were used for curing fish, especially herrings, and meat (Lewis, *in litt.*), and salt arrived at Pembroke Dock from Gloucester in 1846 (*Pembrokeshire Herald*). A typical load was the 49 tons shipped by Abel Hicks from Liverpool in 1761 (Green, 1921).

Wine figures in the medieval records for the years 1304–05 and 1392–4 when 6 and 19 tuns respectively were imported. By 1516, however, the Customs Accounts show from 1 to 12 cargoes each year, bringing 25 to 180 tuns. Most was French (Gascony, Red Nantes or White Rochelle), but cargoes of Spanish white and Portuguese "Caprik" were imported occasionally. Elizabethan im-

Table 9. *The more important commodities imported coastwise, 1565-1713: based on the Port Books*

	1565-6	1566-7	1585-6	1586-7	1592-3	1602-3	1617	1638	1662	1680	1698	1713*
Number of shipments												
Salt	2	2	7	3		2	4	4	5	3	4	
Wine	7	6	4		1	4	2		11	3	7	
Timber	7		2	2		2	6	1	15	10	24	42
Cloth	22	15	12	6	4	5	9	6	21	11	23	11
Iron	21	22	10	7	3	6	19	8	11	7	19	17
Approximate quantity where known												
Salt (tons)	15	15	90	4		6						
Wine (tuns)	9	18	3		2	4						
Iron (tons)	40	39	21	28	5	19						

* Excluding shipments to Tenby.

ports were from La Rochelle and Bordeaux, 100 tuns in 1566-7 and 15 in 1602–03, falling away to single cargoes in 1620 and 1639 (Table 8). The only direct Spanish shipment was in 1699.

Some of the 16th century wine came from entrepot ports, particularly Bristol and Wexford. In the 17th century Bristol and London re-exported 2 to 11 cargoes a year to Pembrokeshire (Table 7).

Timber and "timber wares" were important imports by 1600, and until 1713 they were in twice as many cargoes as any other commodity (Tables 7 and 8). Ireland, particularly Wexford, was the usual foreign source and the loads consisted largely of boards, laths, draught timber and poles, rasters, beams, bars, "Norway deals" and planks, with hoops, studs and barrel staves for the coopers. "Norway deals" came from Stockholm in 1662, three times from Norway in 1699 and from Hamburg in 1713.

Most coastwise shipments were from Bristol with a few from London and occasionally one from Llanelly, Liverpool or Plymouth. They mostly contained deal boards but also "Norway deals", laths and hoops, planks, "jumps", staves, baulks and spars.

The 18th and 19th century trade expanded to supply the demand for pitprops and shipbuilding. The Carmarthen Port Books record ten shipments of oak planks and poles and a cargo of 100 deals to Pembrokeshire between 1784 and 1785. The timber and shipbuilding yards at Fishguard received Baltic and North American timber throughout the 19th century (Lewis, *in litt.*). The brig *Eclair*, for instance, arrived in 1826 from Quebec with best quality pine and lathwood (Ballinger, 1923). Pitprops were brought to Saundersfoot in the 100-ton brig *Mary Anne* which belonged to the Begelly Coal Company (Edwards, 1963). The *Pembrokeshire Herald* for 1846 records between 22nd May and 31st August eighteen timber boats arriving at Pembroke Dock, five from Bridgwater, four from Chepstow and one each from Barnstaple, Carmarthen, Sierra Leone, Ancona, Leghorn, Quebec, Cuba, Memel and Moulmein.

Livestock. Many ships arriving in Pembrokeshire between 1598 and 1620 carried horses, especially "garrons", i.e. plough horses, needed on the increasing acreage of corn land. Seventy-seven horses came in 15 ships in 1598 and a further 140 arrived in 28 ships between 1600 and 1603; 9 horses came in 5 ships in 1620. Most were from Wexford, with some from Fethard, Youghal, Carnswood, Dublin, Carlingford and Drogheda; a single load arrived annually from Ballaugh in the Isle of Man.

In the late 17th century the livestock trade was dominated by Irish oxen and sheep from Waterford, Wexford, Youghal, Cork, Dungarvan, Ross and Dublin. Twenty-one cargoes, together about 700 sheep, 420 oxen, 50 pigs and some "cattle" arrived in 1662 and, in 1680, 23 cargoes contained about 1,580 sheep, 179 oxen, 110 bullocks, 34 pigs and 7 horses. As late as 1857 six cargoes containing 876 cattle, over 750 pigs, sheep, poultry and 1,300 "other animals" were imported from Waterford (*Pembrokeshire Herald*).

Cloth of various types was imported during the early 16th century—a cargo of linen in 1500–1, five cargoes of canvas and "bleche and crest" cloth between 1516 and 1518 and a cargo of lockram in 1517–8.

Cloth was imported from England between 1565 and 1713 (Table 7). Many of the shipments were of linens and woollens but, amongst others, calico, canvas and lockram were included occasionally, some being of foreign origin. Most of the ships came from Bristol but a few were from Barnstaple, Bideford, Liverpool and London, with some from France bringing lockram from La Rochelle between 1598 and 1603, canvas from Normandy in 1620 and linen yarn, dowlas, shatin and lawnes in 1662. Between 1593 and 1603 "cadowes" (Irish cloth) and linen came from Wexford; linen and friezes from Wexford and Dublin and yarn from Waterford arrived in 1680 and 1699 (Table 8).

The only known 18th century record is of Irish yarn in 1748 (Morris, 1748).

Fish. Herrings were sometimes imported during the 16th century, usually from Ireland, and were either "red" (cured and dried) or "white". Two loads arrived in 1559–60, five in 1563–4, four in 1585 and two in 1586–7. Shipments ceased when the local herring industry prospered at the beginning of the 17th century, but had been resumed by 1620; eleven cargoes arrived from Ireland that year and ten more in 1639. Single shipments were received from Bristol in 1617, 1662, 1698 and 1713, from Cardigan and London in 1713 and from overseas in 1662.

The earliest reference to a trade with Newfoundland occurs in 1566–7 when the barque *Perrott* of Milford (50 tons) arrived in Milford Haven with 19,000 "Newlande" fish. Parts of such cargoes were probably re-exported since 5,000 "Newlande" fish were sent to Bristol in 1565–6, 3,000 and 4,000 to La Rochelle in 1592–3 and 1600–1 respectively and 22,000 "small" were dispatched to Martellyns in 1601–2. "Newlande" fish arrived in the county from Barnstaple in 1566–7 and 1585–6 and two ships came from Bristol the same year with 5,300 fish on board. The last record of "Newlande" fish is of a cargo of 3,000 sent to France in 1620.

Irish and Scottish boats occasionally landed ling, codfish and salmon whilst pilchards and "cungars" sometimes arrived from Barnstaple.

Fruit was little grown in the county before 1600, and apples and pears arrived every year from the Forest of Dean and Somerset (Owen, 1603). Dues payable at Haverfordwest on apples from the Forest of Dean and from the ports of Minsterworth, Ellmore and Westbury formed a regular source of revenue between 1586 and 1619 (Charles, 1955), from 3 to 12 apple boats sailing up to Haverfordwest annually with between 22 and 160 tons of apples.

The Port Books show that 11 shipments of apples were imported in 1662, including 3 from Gloucester, 2 from Bristol and 1 from Chepstow. Of the 6 cargoes received in 1713, 3 came from Bristol, 2 from Newnham and 1 from Minehead; their size varied between 30 and 300 bushels.

The earliest reference to the import of dried fruit is in 1517 when figs and raisins came from Oporto. Currants, raisins, figs, prunes and grapes were imported regularly in Elizabethan times. Sometimes these arrived direct from France, but more usually they were sent on from entrepot ports such as Barnstaple.

Imports of dried fruits declined in the 17th century, but 8 cwt. of figs, together with 1,000 oranges, came from Virginia in 1699. The first oranges known to

have been imported by Pembrokeshire were from Portugal in 1565–6. Oranges and lemons came from Malaga in 1620, and in 1699 ships from Viana (Portugal) and Spain each brought 1,000 oranges and 1,000 lemons.

Iron imports into the county begin with two shipments in 1480–1; one was of 26 tons (Customs Accounts). Single cargoes arrived from overseas in 1516–17, 1550, 1559–60 and 1563–4. During Elizabethan times, iron was frequently included in general cargoes from Bristol and North Devon, supplemented in most years by one or two shipments from France, usually from Rochelle.

Between 7 and 9 shipments arrived annually during most of the 17th and early 18th centuries, some for re-export but most for local use. Except for loads from Ireland and Rotterdam in 1713, all came from English ports, mainly from Bristol and Chepstow, with some from London, Newnham, Bideford, Barnstaple and Padstow. The 17 cargoes received from Bristol, Chepstow and Newnham in 1713 together contained about 760 tons of pig iron.

The iron import trade is seldom recorded after 1713. Abel Hicks carried iron from London to Haverfordwest in 1764 (Green, 1923) and about 150 tons of pig-iron and 5 tons of "bar iron" were imported in 1784–5 from ports in Carmarthenshire (Exchequer Port Books). The last records are of two cargoes from Gloucester and one from Newport which arrived in Pembroke Dock in 1846 (*Pembrokeshire Herald*).

Tobacco was first imported in 1617 and by 1650 at least 20 shipments arrived annually, direct from Virginia in 1680 (774 lb.) and 1699, but mostly via the English entrepot ports, notably Bristol. Tobacco was frequently included in the mixed cargoes received during the 18th, 19th and 20th centuries.

Household Coal. The hard Pembrokeshire anthracite was not suitable for domestic use and from the 17th century onwards the demand for household fuel was met from ports in Carmarthenshire and Glamorgan. Three to seven annual shipments were sufficient at first but consumption increased gradually to 334 tons in 1713, of which 247 tons arrived in 10 ships from Swansea and the remainder in 7 ships from Llanelly.

Domestic coal was still being imported in the 19th century. Cargoes arrived at Fishguard from Llanelly (Lewis, pers. comm.), at Saundersfoot (Leach, 1900), at Solva (Warburton, 1944) and at Pembroke Dock from ports in South Wales and Ayrshire (*Pembrokeshire Herald*, 1846).

Millstones were imported occasionally from Bristol during Elizabethan times and large numbers seem to have been obtained from time to time during the 17th century. The sources are not usually recorded, but six ships in 1698 and two in 1713 brought cargoes from Padstow. Each ship carried between 20 and 40 pairs of stones.

Fertilizers were landed during the 19th and early 20th centuries at various ports, including Saundersfoot (Leach, 1900) and Fishguard (Lewis, pers. comm.). Old residents remember fertilizer boats unloading at Landshipping Quay.

Peruvian guano, available at Haverfordwest and Milford, was advertised in June, 1844, and several times in 1850 (*Pembrokeshire Herald*). Rees (1954) records that attempts to establish a guano import and storage business at Milford failed during the 1870s and the stock of several thousand tons, including at least four cargoes of phosphates from St. Domingo, was bought up by a French firm and re-shipped to France.

Miscellaneous Imports. The county relied on importing most of the necessities of life. The Port Books record large, mixed cargoes arriving in small trading vessels from Bristol, or less frequently from London and Barnstaple, and containing groceries more often than anything else besides a bewildering variety of goods lumped together by the clerks as "grocery and saltery"; vinegar and brandy, butter, cheese, sugar and honey, beef and bacon, ginger, cinnamon and cider, hops, train oil, pitch and tar, with alum, madder and other dyestuffs, teasels, wool, flocks, hides and skins, leather, resin, tallow, hemp, lead, cork and hair. Soap, candles, furniture, brass and pewter, tobacco pipes, earthenware, ironmongery, brushes, clothing, whale bones, haberdashery, mercery and drapery all had to come by sea if they were to come at all.

Some unlikely consignments came in direct from foreign ports: 8 cwt. of cloves in a Dutch ship bound from the East Indies in 1602, "train oil" from Newfoundland in 1600 and 1602, and Muscovado sugar from Barbados in 1699.

During the first half of the 19th century Bristol remained the main source, but London and Liverpool also sent general merchandise. An account book kept by John Phillips of Haverfordwest between 1839 and 1845 records that he obtained household goods from these three ports, and the 1846 issues of the *Pembrokeshire Herald* show that miscellaneous cargoes also arrived at Pembroke Dock from Chester and Waterford. These cargoes were traded on all the village quays and open beaches. The owner of a vessel loading at Bristol in 1826 announced that he was prepared to call at twenty-two ports within 20 miles of Cardigan (Ballinger, 1923).

IV. LOCAL TRADE

Limestone and Coal for Lime-burning. The acid soils of Pembrokeshire have always needed lime. Up to 1900 limekilns and lime-burning was an integral part of the rural scene and economy. Kilns were built in every sheltered nook and corner round all the coasts and inland across the exposures of the Carboniferous Limestone. The coastal kilns were supplied by sea while only coal had to be carted to the inland sites.*

This two-fold distribution is clear on Map 7, but even before 1908 a number of kilns had been destroyed, e.g. four of the original twelve at Solva (Warburton, 1944).

* Small unlined "pot-kilns" required from 7 to 10 cwt. of culm to produce a ton of lime, the charge burning out before removal. The larger "draw kilns" (mainly on the Castlemartin peninsula) were more efficient, producing a ton of lime from 4 to 7 cwt. of culm. Lined with firebricks they burnt continuously, the lime being removed periodically from the bottom. One of the last "draw kilns" still operated at Haverfordwest in 1930 and was then producing about 1½ tons of lime per day from 7½ cwt. of culm (Jones, 1930).
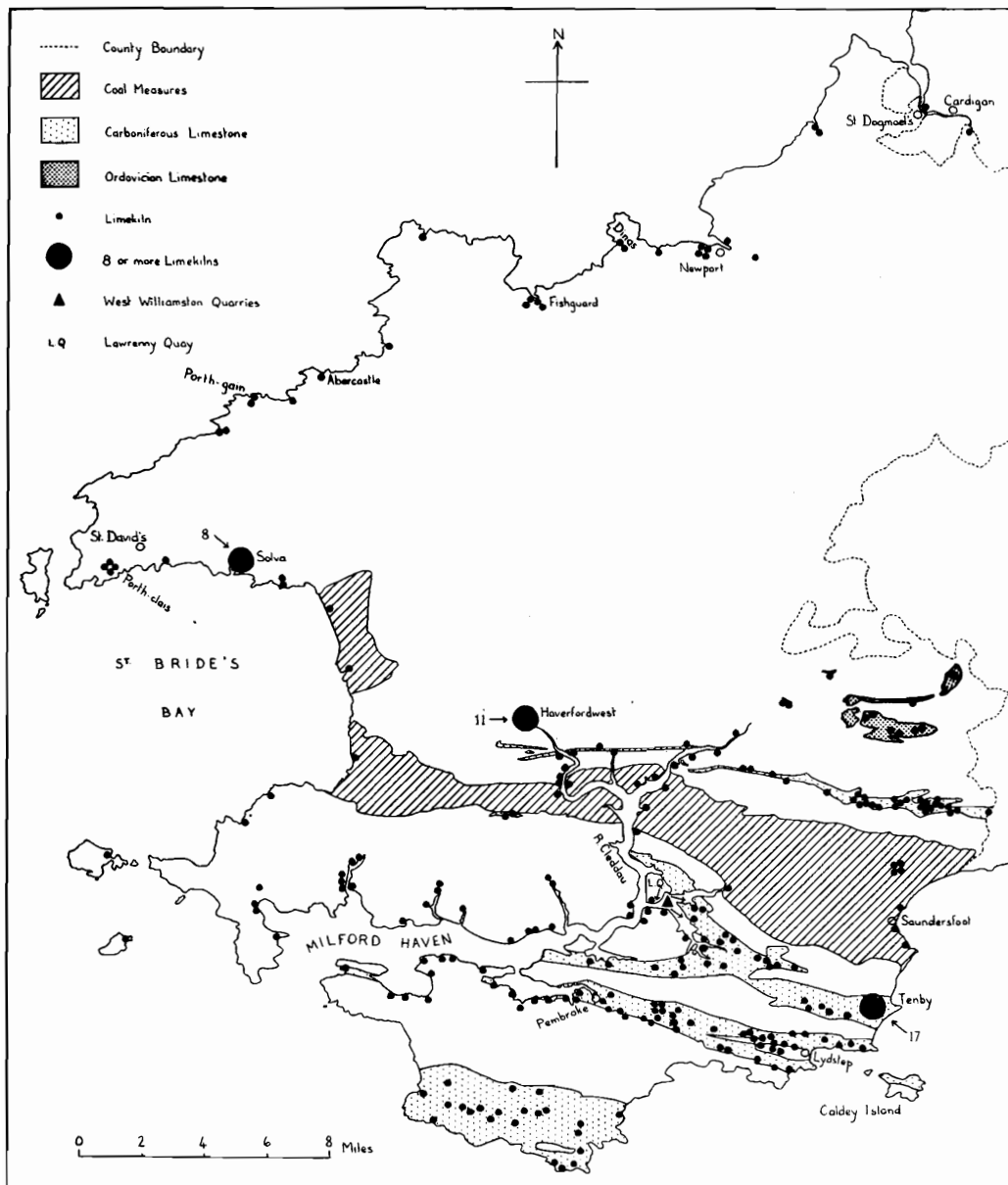
MAP 7.

The distribution of limekilns in Pembrokeshire. Based on the 25 in. O.S. maps of 1907-8 and the 50 in. maps of Haverfordwest and Tenby, 1888-9.

The St. David's cathedral record of two loads of limestone and one of coal (40 bushels) at Porth-clais in 1384 (Green, 1923) is the first mention of this trade. By 1600 the agricultural benefits were being increasingly accepted (Owen, 1603). Although occasional shipments of limestone beyond Pembrokeshire were entered in the 17th century Port Books (to Aberdovey in 1617, to Waterford and Wexford in 1620 and to Cardigan in 1662) the local trade is not recorded until the great activity of the late 18th and early 19th centuries. The voyages of the 40-ton sloop *Ranger* (Table 10) typify the work of many contemporary boats.

Table 10. *Voyages recorded in the logbook of the* Ranger

Year	No. of cargoes	Commodity	Source	Destination
1835	several	limestone	Pembroke area	Dinas Island, Abercastle
1836	6	limestone	Pembroke area	Farmers on N. coast of Pembs.
	1	culm	Saundersfoot	Fishguard
1837	4	limestone	Pembroke area	Abercastle, Porth-gain, Dinas, Fishguard
	2	culm	Little Milford	Abercastle, Porth-gain
1839	4	limestone	unknown	Fishguard (mortar for pier)
	10	limestone	Lawrenny	Abercastle
1845	5	limestone	unknown	Dinas, Fishguard
	1	culm	unknown	Abercastle

The limestone from the "Pembroke area" is likely to have come from quarries just downstream from the castle, whilst that from "Lawrenny" almost certainly came from West Williamston, where channels were cut from the river to give barges of 15–20 tons access to the quarries. The barges sometimes carried the limestone up river to Haverfordwest but more usually it was transferred into sea-going boats at Lawrenny.

In the 19th century limestone from West Williamston was shipped not only around the Pembrokeshire and Cardiganshire coasts (Strahan *et al.*, 1914) but also, according to an old quarryman, to North Devon and Cornwall. Quarries on Caldey Island (Jenkins, 1958) and near Lydstep (Oldisworth, 1810) served Devon, Cornwall and North Wales.

Some of the culm was from pits near Saundersfoot and a little from the St. Bride's Bay area, but most of it was from collieries along the River Cleddau.

The large scale industrial product distributed by rail was overwhelming this rural activity by 1890. Table 11 lists some last survivors.

Coal for Domestic Use was sometimes imported (see p. 29), but culm supplied by sea from the Pembrokeshire coalfield was commonly used in the county, being mixed with wet clay to make "bricks" that burnt slowly and very hot. The culm boats are remembered all round the coast and several were working from Hook in the 1920s.

Corn for Milling went to a few large mills by sea. The tide mill at Carew, according to a local resident, ground corn shipped from Sandy Haven and other creeks in Milford Haven. Ships could tie up alongside Pembroke and Haver-

Table 11. *The last use of limekilns in Pembrokeshire*

Locality	When last used	Source of record
Slade, Fishguard (2)	1880 or earlier	Jones (1930)
Musland, Lower Fishguard	,,	,,
Kingswood, Ferry Lane, Pembroke Dock	about 1880	,,
Williamston Mountain	probably before 1890	,,
Tenby (12)	1890	,,
Milton, Burton, near Neyland	about 1890	,,
Cresswell Quay	1895 to 1905	,,
Sandy Haven	about 1924	,,
Saundersfoot	about 1926	,,
Catshole Quarry, Monkton	in use 1930	,,
Stackpole Quay	in use 1930	,,
	1930 to 1940	resident aged *c.* 70
Haverfordwest	1 in use 1907	Strahan *et al.* (1914)
	1 in use 1930	Jones (1930)
	1 in use to *c.* 1936	Quarryman at West Williamston
Solva	1 at foot of Gribbin Path in use to *c.* 1900. Others ceased some years before.	Warburton (1944)
Wear Point, Llanstadwell	Used in 1908 after long period of disuse	Strahan *et al.* (1914)
Pickleridge, Dale	1920s	Quarryman at West Williamston
Abereiddy	1880 or earlier	Resident of *c.* 80–90 years could not recall it burning but remembers his mother telling him about it ..
Newport	1910 to 1920	Resident *c.* 75 years old

fordwest mills; a notice in the *Pembrokeshire Herald* for 3rd May, 1850, states that Blackpool mill was to let and that "vessels of 80 tons burthen could load and unload on the spot".

V. Ships and shipbuilding

It is not known how many vessels were based on Pembrokeshire ports during the Middle Ages, but they carried a significant proportion of the coastwise and Irish trade; only a few vessels were engaged in the foreign trade (Lewis, 1913). According to the Report of the Commission to Suppress Piracy, the situation was much the same in 1566 when only 2 out of the 18 vessels belonging to Pembrokeshire ports traded with France. These were both 40-tonners and had crews of 16 and 12 respectively. The remaining 16 vessels traded with Ireland or North Wales, were smaller in size (6–16 tons) and generally carried a crew of four only.

The Port Books show that between 1565 and 1603 the number of Pembrokeshire-owned ships varied from about 18 to 26. These local ships carried more than two-thirds of the coastal trade but less than half the Irish traffic and only about a third of the foreign trade. The majority were less than 20 tons and even the larger vessels of the continental trade rarely exceeded 40 tons. Notable

Table 12. *Sailing vessels built in Pembrokeshire and registered at the*

Place where built	Number of vessels built											
	1760s	1770s	1780s	1790s	1800s	1810s	1820s	1830s	1840s	1850s	1860s	1870s
Milford					2	16	22	21	20	10	12	7
Lawrenny			1		4	8	17	18	13	1		
Newport	1	3	1	4	8	15	7	10	1			
Neyland						2	7	10	2	3	2	1
Pembroke Dock								7	2	4	7	2
Fishguard			1	2	6	7		2	1			
St. Dogmael's		2	3		2			1	4	4	1	
Pembroke Ferry								5	2	3	5	1
Pembroke					3	1	6	2	1			
Hakin and Hakin Back						4				1		7
Solva				1	2	2	2	3				
Saundersfoot									3	3	1	2
Cosheston											4	3
Landshipping						2		6				
Tenby					1	1	1		4			
Abercastle				1	1		1					
Churchlake									2		1	
Castle Pill												
Haverfordwest					2							
Dale										2		
Dinas							1					
Monkton												
Hobbs Point								1				
Hook						1						
Cresswell Quay								1				
Black Tar			1									
Upton Castle Beach			1									
Angle						1						
Goodwick			1									
Total	1	5	9	8	31	60	64	87	55	31	33	23

Ports of Milford, Pembroke and Cardigan in the period from 1814 to 1900

							Tonnage of vessels built								
1880s	1890s	1760s	1770s	1780s	1790s	1800s	1810s	1820s	1830s	1840s	1850s	1860s	1870s	1880s	1890s
6	12					46	1,027	1,136	1,369	1,550	1,337	725	372	326	636
				32		279	537	800	703	543	28				
		15	79	60	219	614	1,793	655	667	94					
3	2						160	297	993	193	253	99	127	318	311
1	4								870	38	394	409	57	549	248
				29	95	342	907		52	120					
			54	83		52			10	268	153	41			
									157	78	238	360	79		
						167	34	471	84	140					
							267				21		682		
				112	161	65	40	82							
										83	104	38	107		
1												88	201	27	
						203		298							
						83	10	43		92					
				25		34		30							
										150		191			
1	1													24	39
						87									
											43				
								28							
	1														37
									18						
							69								
									30						
				48											
				28											
							29								
				26											
12	20	15	133	306	451	1,865	5,101	3,500	5,333	3,349	2,571	1,951	1,625	1,244	1,271

Table 13. *The size and rig of sailing vessels built in Pembrokeshire and registered at the Ports of Milford, Pembroke and Cardigan in the period from 1814 to 1900*

Decades when built	Fore-and-aft rigged					Square-rigged		Total number of vessels built	Total tonnage of vessels built
	Sloops	Smacks	Schooners	Cutters	Ketches	Brigs, Snows, Squares, and Brigantines	Barques		
Normal size Range — Burthen (tons)	20 to 40	20 to 50	70 to 120	20 to 80	20 to 50	100 to 200	250 to 550		
Normal size Range — Length (feet)	30 to 50	30 to 60	50 to 80	40 to 60	50 to 70	70 to 100	100 to 160		
1760s	1							1	15
1770s	5							5	133
1780s	9							9	306
1790s	6		1			1		8	451
1800s	18		4			9		31	1,865
1810s	14	9	6	4		26	1	60	5,101
1820s	31	15	12	2		4		64	3,500
1830s	25	30	23	2		6	1	87	5,433
1840s	3	24	20	2		5	1	55	3,349
1850s	1	11	11			6	2	31	2,578
1860s		13	13	2	2	3		33	1,951
1870s		3	12	2	4	2		23	1,625
1880s	1	3	4		3		1	12	1,244
1890s			5		15			20	1,271

exceptions were the *Perrott*, a 50-ton barque owned by Sir John Perrott of Carew, which traded with Newfoundland in 1566, and the *Lion of Milford*, a vessel of 100 tons, which traded with France and Newfoundland between 1600 and 1603.

Local shipbuilding did not keep pace with the great 17th century increase of trade and the Port Books show that although 80 to 105 cargoes were annually shipped coastwise in local vessels their share of the total trade fell from 54 per cent in 1617 to 13 per cent in 1680. Fifty per cent of the Irish trade was carried by local ships in 1620; only 17 per cent in 1680. However, local ships remained responsible for about a quarter of the foreign trade throughout the century.

The number and size of ships registered in Pembrokeshire ports during the 17th and 18th centuries were not usually entered in the Port Books. However, ships sailing coastwise from Carmarthenshire ports in 1785 varied from 12 to 90 tons; the majority were between 20 and 40 tons. The usual crew was two or three and only occasionally as many as seven (Exchequer Port Books).

Shipping Registers for the port of Cardigan from 1814 onwards and for the ports of Milford and Pembroke for 1815 contain detailed descriptions of ships built in the local shipyards (Tables 12 and 13) and of those built outside the county and then registered in Pembrokeshire. The totals do not include ships built in the county and registered elsewhere.

The 19th century boatyards listed in the Registers are shown on Map 1. Some of the timbers and spars were grown locally and the sails, fittings and ropes were usually the work of local craftsmen.

The yards at Fishguard, Newport and Lawrenny, famous in the early 19th century, built all the schooners registered locally before 1850, and the majority of the square-rigged vessels built before 1830.

The shipyards around Milford Haven increased in importance after 1830 and some of the largest sailing ships ever built in the county were launched from Milford and Pembroke Dock. The important shipyards in Hubberston Pill had to close during the 1870s to make way for the new docks, and Castle Pill then became Milford's main yard (Rees, 1954). J. and W. Frances built schooners and ketches in Castle Pill until 1909, when they launched the *Democrat* for owners in Braunton. Another of their ketches, the *Enid*, was still trading in 1951 (Greenhill, 1951).

After 1830 several large shipyards at Pembroke Dock built barques and brigantines. The *Cambria* (405 tons) was launched in 1838 and the *Resolution* was well known in the timber trade (Peters, 1905).

Most 19th century smacks and sloops had a crew of two, but the schooners and square-rigged vessels usually had at least three. The *Gwaun Maid*, a brigantine of 120 tons, built at Fishguard in 1846, had a crew of eight (B. R. Lewis, pers. comm.).

The Shipping Registers show that Pembrokeshire ships were sometimes owned by a dozen or more people and it seems that shipwrights, merchants, joiners and even "gentlemen", as well as shopkeepers and farmers, might have part-shares in a vessel, thus linking themselves directly to the import/export trade facilities.

Despite competition from railways and the dangers inherent in sailing small ships along the western coasts a number of sailing coasters worked well into
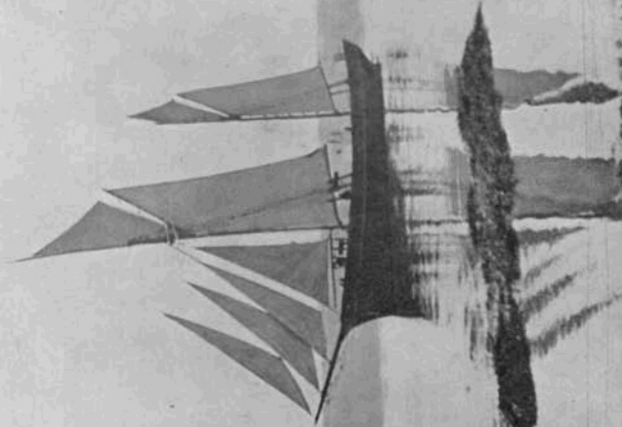
PLATE I.

The ketch *Garlandstone* in Dale Roads about 1910. This vessel was built at Calstock on the River Tamar in 1909 for Captain John Russan of Dale. In 1912 she was fitted with a twin cylinder, 40 h.p. oil engine and became the first motor cargo vessel to be based on Milford Haven. (Photograph by kind permission of Michael R. Bouquet.)

the 20th century, their life being prolonged by fitting small auxiliary diesel engines. Not until the motor lorry arrived in the 1920s to deliver from door to door did the fleet finally disappear. Many were abandoned in creeks and are still rotting away all along the edges of tidal rivers.

The last survivor was the *Kathleen and May*, a wooden three-masted schooner built in 1900, which continued to visit Milford Haven regularly until she was finally withdrawn from service in 1960 (Bouquet, 1961).

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