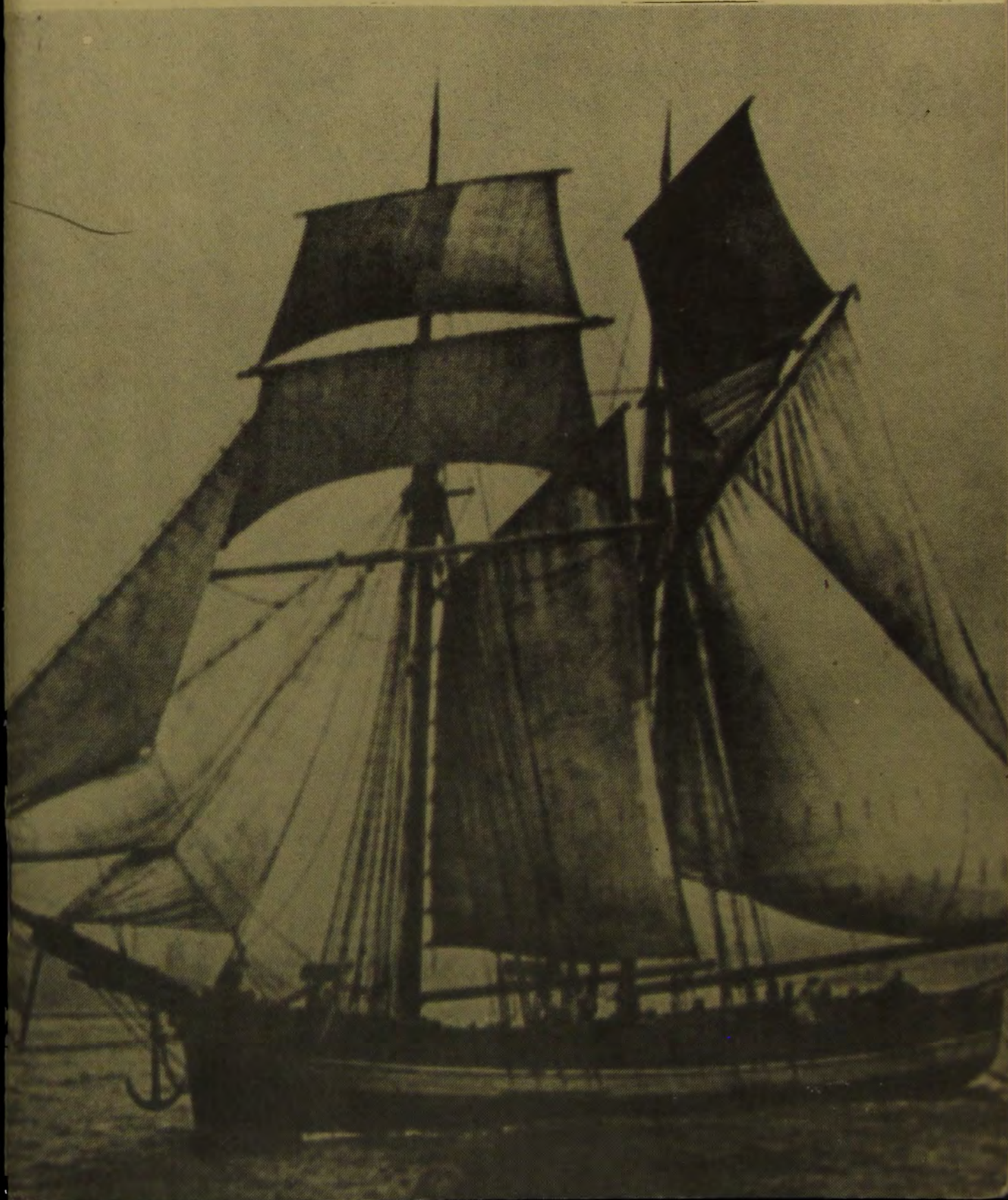




# Transactions

1961 - 1971 volume 10



THE LIVERPOOL NAUTICAL RESEARCH SOCIETY

Vol.X

TRANSACTIONS

1961-1971

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THE LIVERPOOL NAUTICAL RESEARCH SOCIETY  
(founded 1938)

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The objects of the Society are:

1. To encourage interest in the history of shipping (particularly local shipping) by collecting and collating material relating thereto;
2. To undertake an historical survey of Liverpool vessels, their builders, owners and masters;
3. To disseminate such information by publications or by any other available means;
4. To co-operate in every suitable way with other organisations in Liverpool or elsewhere having similar or cognate objects;
5. To encourage the making and collection of scale ship models, and their exhibition.

The annual subscription entitles members to attend meetings of the Society, to read papers before it, to take part in any excursions that may be arranged and to receive "Transactions" and "News, Notes & Queries", issued from time to time.

For further particulars apply to the Hon. Secretary,  
Liverpool Nautical Research Society,  
City of Liverpool Museums,  
William Brown Street,  
Liverpool L3 8EN

## EDITORIAL

This Volume of Transactions covers the long period October 1961 to November 1971. Publication has been made possible by the generous bequest of the late J. Foster Petree and this tenth volume of the Society's Transactions is dedicated to his memory.

James Foster Petree was born at Prenton, Birkenhead on 23rd November, 1893. After serving five years apprenticeship in the marine engineering works of Cammell-Laird & Co.Ltd., he enjoyed a distinguished career in marine engineering. In 1934, he became Assistant Editor of 'Engineering', and later became Editor, serving in the latter position until 1953. Petree was a Fellow of the Institution of Mechanical Engineers, of the Royal Institution of Naval Architects, and of the American Society of Mechanical Engineers. He was a long standing member of the Newcomen Society, and served as its President from 1951 to 1953. He joined the Liverpool Nautical Research Society in 1959, and presented the Society with three papers: in November 1961, 'A Merseyside Retrospect'; in February 1963, 'Mersey Ships of the Past' and February 1967, 'Charles Wye Williams - 1780-1866'. We are deeply indebted to the Newcomen Society for permitting us to reprint the text of Petree's paper on Charles Wye Williams. This excellent paper inspired Dr. P.N. Davies to organise the exhibition to investigate the wreck of the 'Lady Lansdowne' at Killaloe. His report is included in this volume.

J. Foster Petree died suddenly on 14th September 1970 and his death was a great loss to this society and the engineering world.

Only a small number of the lectures delivered to the Society have been published. This is because several were in the nature of illustrated talks and not a few have been published in more distinguished journals or in book form. Reference to these is made in the Summary of the Societys' Meetings.

## SUMMARY OF LECTURES AND PAPERS FROM OCTOBER 1961 to MARCH 1971

12th October 1961: "How copper sheathing came to be introduced into the Navy".

By Professor J.R. Harris, M.A., Ph.D.

Dr. Harris outlined earlier attempts to protect the underwater hulls of ships before the introduction of copper sheathing in the mid-18th century. However the galvanic action between the copper sheathing and the iron fastenings had the disastrous effect of corroding the iron. The problem was so serious that by the end of 1782 coppering was very nearly abandoned by the Royal Navy. Its salvation was due to the copper tycoon, Thomas Williams, owner of the Parys Mountain Mine in Anglesey. He perfected a method of hardening copper so that it was strong enough for making bolts and fastenings. William's copper fastenings were adopted by the Royal Navy in 1784. Coppering meant that a warship could move faster, spent less time in dockyards and that her service life was considerably lengthened. In fact, William's work played a vital role in keeping the Navy at sea during the long struggle with Revolutionary France when its efficiency was necessary to the survival of Great Britain.

Published in Economic History Review 1966 as "Copper and Shipping in the Eighteenth Century" and reported in News, Notes & Queries Volume V (New Series) No.4.

9th November, 1961: "A Mersey Retrospect". By J. Foster Petree, C.Eng., F.I. Mech. E., M.R.I.N.A., Mem.A.S.M.E.

A presentation of slides of the Mersey and its shipping during the last two decades of the 19th century.

Reported in News, Notes & Queries Volume V (New Series) No.4.

14th December, 1961: "The Port of Manchester". By M.R.A. Bell, Assistant Public Relations Officer, Manchester Ship Canal Company (illustrated).

Reported in News, Notes & Queries Volume V (New Series) No.4.

11th January, 1962: "Cross Channel Roadways". By J.F. Jolly.

A talk and film concerning the work of the Atlantic Steam Navigation Company Ltd and their Irish Sea services.

Reported in News, Notes & Queries Volume VI (New Series) No.1.

9th February 1962: "The Armada Fight". By A.N. Ryan.

Mr. Ryan explained the political circumstances leading to the Armada expedition, emphasising the conflicting policies of Elizabeth I and Philip of Spain over the Spanish Netherlands. Mr. Ryan went on to consider the composition and strength of the English and Spanish fleets and vividly described the events of this abortive invasion of England and the reasons for its failure.

Reported in News, Notes & Queries Volume VI (New Series) 1962.

8th March 1962: "The Wallasey Luggage Boats". By E.C. Woods & E. Jones.

Printed in this volume of Transactions.

12th April 1962: "Exhibition on the Life-Boat Service"

Reported in News, Notes & Queries Volume VI (New Series) No.3.

11th October 1962: "Shipowners' Posts - 100 Years Old". By J.A. Birch.

A display of stamps posted and franked aboard ships including a Liverpool ship letter of the 1850s.

Reported in News, Notes & Queries Volume VI (New Series)

8th November 1962: Discussion Evening.

Topics included, the Old Dock Sill, the decline of Sail, the claim of John Smith of St. Helens as the first commercial steamship operator in the world (1797), the future of the Port of Liverpool and sailing model ships.

Reported in News, Notes & Queries Volume VI No.5.

13th December 1962: "Sail Training". By. A.W. Beal.

A history of British Sail Training from apprenticeship aboard commercially run vessels, the specially built square rigged training ships and the current work of the Sail Training Association, including film of the 1956 Torbay to Lisbon Sail Training Ship Race. Reported in News, Notes & Queries 1963 Volume VII (New Series) No.1.

10th January 1963: "The Naval Side of the American Civil War". By. E.W. Paget-Tomlinson.

Both sides in the conflict initially had little or no naval strength. The Confederate States concentrated on commerce raiding and disrupting the blockade that the Federals sought to impose on Southern ports. The duel of the ironclads 'Virginia' and 'Monitor' and the experiment with submarines were significant pointers to the future of naval warfare. The Federal's blockade and the developing Mississippi river campaign cut off vital supplies to the South. Liverpool and Lancashire had a great stake in the war because of the cutting off of the cotton trade, and several Confederate commerce raiders and many blockade runners were built on Merseyside.

Reported in News, Notes & Queries 1963 Volume VII (New Series) No.1.

14th February 1963: "Mersey Ships of the Past". By. J. Foster Petree.

A presentation of historic slides of local maritime scenes from J. Foster Petree's father's collection including, Mersey ferries, Irish Sea passenger steamers especially the LNWR's 'Lily' with her triple expansion steeple engines, ocean passenger vessels, sailing ships and their figureheads, and warships in the river, including the visit of the Channel Fleet in 1907.

Reported in News, Notes & Queries 1963 Volume VII (New Series) No.1.

14th March 1963: "Heavy Lift Ships". By Captain C.R. McCrum, R.N.

A history of the special heavy lift ships of the Belships Co. Ltd. of Oslo with examples of their work including the export of locomotives from Liverpool.

Reported in News, Notes & Queries 1963 Volume VII (New Series) No.1.

18th April 1963: Inland Waterways Films.

Reported in News, Notes & Queries Volume VII (New Series) No.2.

17th October 1963: "Maritime Museums of North America". By. E.W. Paget-Tomlinson.

A report on a wide-ranging tour through Canada and the eastern seaboard of the United States, including Halifax Nova Scotia, the Maritime Museum, Ottawa; the Upper Canada Village open-air museum, U.S.S. Constitution at Charleston; the Peabody Museum, Salem; the New Bedford Whaling Museum, Mystic Seaport open-air museum; the Smithsonian Institution, the Truxton-Decatur Museum; the Naval Academy Museum, Annapolis; the Mariner's Museum, Newport News; the City of New York Museum and the Seamen's Institute, New York.

Reported in News, Notes & Queries Volume VII (New Series) No.4.

14th November 1963: "Fifty Years with Liverpool Ships". By. Sir Ivan Thompson, ex-Commodore of the Cunard Line.

Sir Ivan started his sea career in the 'Drumlanrig', a Liverpool tramp steamer which he left after only one voyage. After various jobs, he joined the Harrison Line as an apprentice in 1911. Early in the first World War he joined the Cunard Line and served in many of their vessels from emigrant steamers to the two great Queens. He served as staff-captain in both the Queens in the Second World War and afterwards became Captain of both vessels.

Reported in News, Notes & Queries Volume VII (New Series) No.4.

12th December 1963: "Unorthodox Techniques in Marine Engineering". By. Nigel W. Kennedy.

Mr. Kennedy described his work with solid carbon dioxide or 'dry ice' to shrink metals by freezing. The value of the shrinking lay in its use to assemble or dismantle machinery.

Reported in News, Notes & Queries Volume VII (New Series) No.1.

9th January 1964: An Evening of Colour Slides of Inland Waterways and Glass Slides from the Collection of Sir Frederick Young, Chief Salvage Officer to the Admiralty during and after World War I, presented by R.B. Summerfield and E.W. Paget-Tomlinson. Reported in News, Notes & Queries Volume VIII (New Series) No.1.

13th February 1964: "Samuel Pepys, Naval Administrator". By A.S. Mountfield. A critical examination of the famous diarist's work as a civil servant. From his appointment as Clerk of the Acts of the Navy Board in June 1660, Pepys began the huge task of reforming naval administration and finances. He also took a great interest in general affairs including the building of ships, the exploration of the North East Passage, and the Surveying of British coastal waters by Grenville Collins. Pepys only just survived in office during the political uproar of the Popish plot, and later enjoyed great influence under James II and afterwards briefly served William III before a well earned retirement. Reported in News, Notes & Queries 1964 Volume VIII (New Series) No.2.

12th March 1964: "The Price of Admiralty - 1811". By A.N. Ryan. A study of Britain's worst naval disaster during the Napoleonic Wars, involving a winter convoy from the Baltic carrying vital naval stores. Reported in News, Notes & Queries 1964 Volume VIII (New Series) No.2. and published in full in Mariners Mirror Volume 50 (1964 p.123.)

9th April 1964: Exhibition on Tugs.

Reported in News, Notes & Queries Volume VIII (New Series) No.2.

17th September 1964: "Some Forgotten Anchorages in the Dee, Mersey and Liverpool Bay". By E.C. Woods.

The silting of the Dee in the 15th century brought about the use of New Quay and Park Gate anchorages instead of vessels attempting to sail up to Chester. Parkgate remained the centre of Irish trade until the 1830s. Hoylake was used by all ships entering the Mersey until the 1830s and these, many unloaded part of their cargoes into lighters to cross the Rock Gut Bar into the Mersey. There was a lesser known anchorage off Wallasey village known as Wallasey Hole (later re-named Leasowe Hole). Within the Mersey, the first anchorage was the Magazines off Liscard where gunpowder was stored until 1854. Wallasey and Tranmere pools were also anchorages until the construction of Birkenhead docks, and the extension of Cammell Laird's works. There was also Gunnel Pool at the mouth of a small stream on the Birkenhead Tranmere Boundary. On the Liverpool side of the Mersey, Pluckington's Bank was used for beaching vessels between the tides.

Reported in News, Notes & Queries 1964 Volume VIII (New Series) No.3.

8th October 1964: "This in our time", a film reviewing the history of Liverpool from about 1900 to 1957.

Reported in News, Notes & Queries 1964 Volume VIII (New Series) No.4.

10th December 1964: Member's Discussion Evening.

Among the topics considered were the state of the British shipping industry, the changing appearance of ships, Mersey ferries, the proposed Maritime Museum and the collection of business archives.

Reported in News, Notes & Queries 1964 Volume VIII (New Series) No.4.

14th January 1965: "The Mersey Shipping Scene - 1865". By T.E. Hughes.

A review of an eventful year in the port's maritime history. These events included the simultaneous launching of five paddle steamers at Jones Quiggin & Co's yard, Liverpool, four of which were designed to run the blockade into Confederate ports, the surrender of the Confederate raider 'Shenandoah', the revival of emigration traffic to North America after the end of the American Civil War, the establishment of the 'Indefatigable' training ship and the beginnings of the Blue Funnel Line.

Reported in News, Notes & Queries 1965 Volume IX (New Series) No.1.

11th February 1965: "The Nigeria Marine". By Captain F.W. Skutil, C.B.E., R.N.N.

Established in 1893, the Nigeria Marine administered the waters of this British colony until 1955. This involved hydrographic work, buoyage, maintenance of lights and marks, water conservancy, pilotage, police work and if the need arose naval work. In 1955, there was a large fleet of vessels for this work together with dockyards for their repair. There was a North and a South Marine before 1914 when they were merged and put on a naval footing to assist in the conquest of the German Cameroons. Between the wars much survey work was carried out. In 1939, the Marine again went over to a naval operation. In 1955, the duties of the marine were transferred first to a new Port's authority and shortly afterwards to an Inland Waterways department and the Nigerian Navy, formed in 1957.

Reported in News, Notes & Queries 1965 (New Series) Volume IX No.1.

11th March 1965: An Evening of Films of Thames Barges and the 1960 Sail Training Race made by and with commentary by Mr. David R. MacGregor.

Reported in News, Notes & Queries 1965 Volume IX (New Series) No.1.

8th April 1965: "Mersey Tugs and Tenders". By W.B. Hallam.

From the very early days of the marine steam engine tugs have been used on the Mersey for assisting vessels in and out of the docks. The large passenger liner companies employed dual-purpose tenders that could ferry passengers and their baggage and act as tugs. All the early tugs were paddle steamers. Mr. Hallam reviewed the histories of the existing tug fleets, the Liverpool Screw Towing Co., the Alexandra Towing Co., the Rea Towing Co., and J.H. Lamey & Co.

Reported in News, Notes & Queries 1965 Volume IX (New Series) No.2. see also Sea Breezes Volume 34 (New Series) p.272, Volume 36 (New Series) p.429, Volume 38 (New Series) p.427, Volume 40 (New Series) p.842.

14th October 1965: "The Copper Sheathing of Ships". By Dr. J.R. Harris.

From 1761, the Royal Navy carried out many unsuccessful experiments with copper sheathing to try and protect vessels against marine growth. The main problem was the galvanic action between the copper and the iron fastenings of the hull. The solution lay in the production of toughened copper bolts. These were first patented by William Forbes in 1783. In 1784, Forbes (in partnership with two other patentees of copper hardening techniques) persuaded the Navy to continue copper sheathing at a time when they had just decided to abandon the idea. The increased demand for copper was to the great benefit of Thomas Williams and his Parys Mine, Anglesey through which he had almost a complete monopoly of copper supplies. After 1800, the Anglesey mine declined because the slackening of demand for new copper. Old sheathing and bolts could be melted down and reused.

The Merchant Service was quick to adopt Copper sheathing. The first Liverpool vessel to be treated was the 'Vulture' in 1778. By 1810, coppering was widespread. It enabled vessels to make better passages with fewer refits - benefits readily appreciated by merchants and shipowners.

Reported in News, Notes & Queries Volume IX (New Series) No.3.

11th November 1965: "Sir Alfred Jones and the West African Trade". By Dr. P.N. Davies. See 'Liverpool and Merseyside', edited by J.R. Harris, p.212, published by F. Cass Ltd., 1969.

Reported in News, Notes & Queries Volume IX (New Series) No.3.

9th December 1965: "Ships of the Nigeria Marine". By Captain F.W. Skutil, C.B.E. R.N.N.

A sequel to the paper on the work of the Nigeria Marine, illustrating the great variety of its vessels. The Laird built exploration vessel 'Däyspring' of 1859 was probably the earliest vessel designed for navigation of the Niger, and her engines are still preserved at Jebba.



From its foundation in 1893, the Nigeria Marine operated stern and quarter-wheel armed paddle steamers for keeping law and order, survey and buoyage vessels, the governor general's yacht, ferries, dredgers, tugs and launches. At the time of his retirement in 1955 most of the old steam paddlers had been replaced by screw propelled motor vessels.

Reported in News, Notes & Queries Volume X (New Series) No.1.

13th January 1966: "Great Britain and the German Navy 1898-1918". By A.N. Ryan.

An account of the development of naval rivalry between Germany and Great Britain up till 1914 and consideration of the naval campaigns of the First World War.

Reported in News, Notes & Queries Volume X (New Series) No.1.

10th February 1966: "English Merchant Ships before 1800". By W. Salisbury.

Before the 19th century English merchant ship builders were generally ignored though many were capable of producing excellent vessels, and foreign owners had a high regard for English vessels. English shipwrights abroad helped to spread English ship-building ideas, in Sweden for example. Before 1830, the designing of a merchant ship was largely based on practical experience and only after 1830 was the theoretical side of the Science of naval architecture worked out.

Reported in News, Notes & Queries Volume X (New Series) No.1.

10th March 1966: "British Short Sea Traders, or Small Bulk Carriers, Not Coasting Vessels". By A.H. McClelland.

A survey of the recent development of the small bulk carrier based on information received from twenty-two firms. Mr. McClelland's conclusions were that whilst some British owners were limited in outlook and bound by tradition, others were forward looking, particularly those who operated in the 1,200 - 3,000 tons deadweight range.

Reported in News, Notes & Queries Volume X (New Series) No.2.

21st April 1966: Exhibition on Early Steam Navigation.

Reported in News, Notes & Queries Volume X (New Series) No.2.

13th October 1966: "The Last Grain Race". By G.E. Rodger.

An account of a voyage in the four-masted barque 'Passat' from Port Victoria, Australia to Penarth with a cargo of grain in 1949.

Reported in News, Notes & Queries Volume X (New Series) No.4.

10th November 1966: "The Irrawaddy Flotilla". By Captain H.J. Chubb.

Printed in this volume of Transactions.

December 1966: 'Lighthouses'. By D.B. Hague.

A survey of the development of lighthouses from Roman times to the Present Day. Mr. Hague cited the example of a Roman lighthouse at Corunna which is still in use. Many lighthouses were built in the Middle Ages but few have survived. In England coastal churches made valuable light towers. While, on the Continent a few examples of specially built lighthouses have survived. The finest is that built by the Black Prince off the entrance to the Gironde in about 1370. Supplying the light with fuel (either wood or coal) was always a problem, but there were considerable profits to be made from light dues. Mr. Hague also examined the history of the five famous Eddystone lighthouses, and also on the important design work of Henry Whiteside, a Liverpool man for the first Smalls light of 1776. A book on lighthouses by Mr. Hague will be published shortly.

Reported in News, Notes & Queries Volume XI (New Series) No.1.

12th January 1967: "The development of internal combustion machinery for ship propulsion with particular reference to Merseyside". By Captain J.A. Smith, R.N.R.

After a brief description of Ackroyd Stuart's patents and the work of Dr. Rudolph Diesel, Captain Smith discussed the early motor ships such as the 'Vulcanus', 1910, the first sea-going motor vessel and the famous Danish 'Selandia' of 1911 with eight cylinder four stroke single acting engines by Burmeister & Wain. The first World War held up progress except in diesel engines for submarines. But in 1920, Cammell Lairds

took an interest in the Fullagar opposed piston design which worked well in an experimental vessel, but proved to be too complex for commercial production. About the same time Doxfords produced an excellent two-stroke opposed piston design. The trend in engine design was towards simplicity. The Scott-Still diesel and steam engines of 1924 in the 'Doliur' and the 'Eurybates' of the Blue Funnel line though successful in service led to serious maintenance problems. The same applied to the huge four-stroke double-acting diesels of the 'Britannic' and the 'Georgic'. Today, therefore the standard marine diesel operates on the two stroke cycle with a gas turbine to assist scavenging. Considerable research work has been carried out on new cylinder layouts such as the V-form and the Deltic for compact but powerful engines.

Reported in News, Notes & Queries Volume XI (New Series) No.1.

9th February 1967: "Charles Wye Williams, a pioneer in steam navigation, 1780-1866". By J. Foster Petree.

Printed in this volume of Transactions.

9th March 1967: "Warships of the 1914-18 War". Mr. Summerfield first described the literature, on his subject and then the evolution of the 'Dreadnought' type of battleship and the subsequent development of battle cruisers with greater speed and less protection. At the battle of Jutland, three British battle cruisers were lost because of their poor internal protection, and British armour piercing shells failed to make much impression on the well-protected German vessels. The Royal Navy also had problems with frequent machinery failures and a lack of large graving docks. If ship losses were considered the battle of Jutland was a British defeat but in a strategic sense it was a British victory because the German High Seas fleet never re-appeared out of port. The Royal Navy learned much from the Battle of Jutland. Mr. Summerfield also touched on the exploits of the British cruisers (including H.M.S. 'Liverpool') and the smaller warships.

Reported in News, Notes & Queries Volume XI (New Series) No.2.

13th April 1967: "Dunmore East, an Irish Fishing Village". By N.R. Pugh.

Dunmore East is the principal herring port of Southern Ireland. Catches have increased tremendously in recent years and a new quay and storage areas for barrels have been built. All the Dunmore boats are of Scottish design and build. In the herring season, they work in pairs with a ring net. For lobster fishing they work singly.

Reported in News, Notes & Queries Volume XI (New Series) No.2.

12th October 1967: "The Canadian Blue Ribband 1867-1967". By W.B. Hallam.

This paper marked the centenary of the Canadian Confederation and it traced the histories of the passenger steamship companies serving Canada. The first was the Allan Line founded in 1854. By the 1870s, it was competing with the Dominion Line and the Beaver Line. In 1902 Canadian Pacific Railway purchased the Beaver Line vessels and the Dominion Line was absorbed into the International Marine Company. The competition was keen, and in 1913, the Cunard Line extended their services to Montreal and Quebec. In 1915, the Allan Line which had fought its rivals with some notable turbine liners was absorbed by the Canadian Pacific Railway. After the first World War, there were many changes including the control by Cunard of the Donaldson Line, and the disappearance of the Dominion Line. The 'depression' brought the withdrawal of many vessels. In 1931, the 'Empress of Britain' was completed for the C.P.R. This vessel set new standards of size and comfort on the Canadian service. Several vessels were lost during the Second World War, and after the war both Cunard and the C.P.R. set about building new vessels. However, by the 1960s the passenger trade was losing out to competition from aircraft, and in 1967 the Cunard Line ended their Canadian service. (The C.P.R. continued sailings from Liverpool till 1971.)

Reported in News, Notes & Queries Volume XI (New Series) No.4. see also the second edition of N.R.P. Bonsor's 'Transatlantic Seaway'.

8th November 1967: "The Ashburners and the schooner trade of the Irish Sea".

By Dr. Dennis Chapman. Printed in this volume of Transactions.

14th December 1967: "Science of the Oceans". By Professor K.F. Bowden.

This paper surveyed both the history of deep sea research from the early 19th century onwards and the current British research programme and especially the work of the research vessel Discovery.

Reported in News, Notes & Queries 1968 Volume XXI (New Series) No.1.

11th January 1968: "Captain Greenville Collins". By A.S. Mountfield.

A survey of the life and achievements of this pioneer hydrographer. Collins was the first person to survey the Dee & Mersey estuaries. In 1693, his charts were issued in the famous folio volume under the title of 'Great Britain's Coasting Pilot' which went through many editions up to 1792. Mr. Mountfield also described Collins's influence on the events of the Revolution of 1689. Published in Mariner's Mirror Volume 56, 1970., also reported in News, Notes & Queries Volume XII (New Series) No.1.

8th February 1968: "Underwater Search".

A film on searching and drilling for oil presented by T. Lloyd-Jones.

Reported in News, Notes & Queries Volume XII (New Series) No.1.

14th March 1968: "The Tidal Institute, Bidston". By Dr. J.R. Rossiter.

A survey of the work of the institute, with particular reference to its current research programme on tidal surges, and the design and effects of proposed barrages across the Dee, Morecambe Bay and the Solway Firth.

Reported in News, Notes & Queries 1968 Volume XII (New Series) No.2.

4th April 1968: "Sail and Camera". By A.W. Pyner.

A review of techniques for photographing shipping illustrated by many examples of the speaker's own work.

Reported in News, Notes & Queries 1968 Volume XII (New Series) No.2.

10th October 1968: "Tramp Trade developments since World War II".

The British tramp fleet has greatly declined since 1939 and among the causes have been conservatism, poor management, lack of government assistance and a decrease in coal exports. The traditional tramp-type vessel is rapidly being replaced by small bulk-carriers and as yet the new Liberty ship replacement designs have not proved themselves.

Reported in News, Notes & Queries 1968 Volume XII (New Series) No.4.

14th November 1968: "Galway and the Aran Islands". By N.R. Pugh.

An illustrated account of a visit to the West of Ireland in June 1968, including the local passenger vessels, the seaweed gathering industry, curraghs, hookers and the city of Galway.

Reported in News, Notes & Queries 1968 Volume XII (New Series) No.4.

12th December 1968: "The Divided Circle". By P.J. Welsh, Esq.

A comprehensive survey of the development of altitude finding instruments of navigation from the time of Henry the Navigator, to the great pioneers instrument makers of the 18th century, such as Harrison the inventor of the Chronometer, Jesse Ramsden and his dividing engine and slightly later John and Edward Troughton.

Reported in News, Notes & Queries Volume XIII (New Series) No.1.

9th January 1969: "The discovery and recovery of the Wasa". By A. Baird Esq.

Mr. Baird described the circumstances of the re-discovery of a 17th century Swedish warship, the Wasa, her good state of preservation and all the stages of the incredibly difficult salvage operation and the subsequent restoration work.

Reported in News, Notes & Queries Volume XIII (New Series) No.1.

13th February 1969: "The Cunard Line". By T. Laird.

A wide ranging review of the work and problems of the famous company between 1923 and 1966, including the great work of Sir Percy Bates in pushing ahead with two great 'Queen' liners and the increasing problems of staffing and costs in postwar years.

Reported in News, Notes & Queries Volume XIII (New Series) No.2.

13th March 1969: "Mersey Excursion Steamers". By W.B. Hallam.

Excursions began in the 1840s with river trips operated by the local tug companies.

In the 20th century the work of river cruising has passed to Wallasey Corporation and now to their successors the Merseyside Passenger Transport Executive. The ferry to the Eastham Ferry Hotel and pleasure gardens was in its day a very popular river excursion service, until it finished in 1929.

The steamship made it possible to run regular coastal passenger services especially to North Wales. But these gave way to seasonal services as provided by Liverpool and North Wales Steamship Company for holidaymakers, and as the speed of ships improved, to local residents making day trips. Further afield, Langlands and later Coast Lines operated an excellent cruising service from Liverpool to the Western Highlands. Today, although the demand for cruises and excursions has declined, one can still sail on the Mersey, or to North Wales or the Isle of Man for a day's outing.

Reported in News, Notes & Queries Volume XIII (New Series) No.2.

10th April 1969: Members' exhibition evening.

Reported in News, Notes & Queries Volume XIII (New Series) No.2.

9th October 1969: "Decorative Canal Painting". By A.J. Lewery.

The great network of canals in England developed in the late 18th and early 19th centuries gave rise to the long distance carriage of goods by narrow boat and therefore a need for cabin space for the crew. From the 1840s the canal carriers began to suffer severely from competition with the railways and boatmen began to economise on labour by moving their families on board. The tiny cabin aft became his permanent home and it was probably at this time that the first urge to decorate and embellish the cabin and the boat arose. Within the closed community of the boatman the fashion of decoration soon spread and acquired certain fixed conventions. Traditionally, much of the painted work depicted flowers and ruined castles with mountains. These may have been derived from furniture, especially painted clock faces. Boatmen took enormous pride in the splendid appearance of their boats, and the urge to cram the cabin with painting and ornaments was intended to give an illusion of more space in the cabin.

Reported in News, Notes & Queries Volume XIII (New Series) No.4. A book by A.J. Lewery on this subject will be published shortly.

13th November 1969: "The Ropewalks of Liverpool". By Miss J. Tallon and Mrs. Bamford.

Ropewalks were first established close to the river but as the town expanded in the 18th century, they were resited on the edges of the urban area. By the 1850s, there were no ropewalks in the City Centre - such was the pressure for land for building. Machinery was introduced in the 19th century and the many small firms were merged into large limited companies. Today, there are only two ropemaking firms in the City and much of their production is based on artificial fibres.

Reported in News, Notes & Queries Volume XIV (New Series) No.1.

11th December 1969: "H.M.S. Eltham, an 18th century frigate". By E.J. Priestley.

H.M.S. 'Eltham' was a fifth rate, two deck frigate built in 1707. Her logbooks between 1736 and 1750 have survived. They give an interesting view of the rigours of naval life and the active career of the vessel that was much involved in the naval campaigns against France and the Jacobite Rising of 1745.

Reported in News, Notes & Queries Volume XIV (New Series) No.1., and published in Mariners' Mirror Volume 54, (1968) p.227.

8th January 1970: "The Bibby Line". By E.W. Paget-Tomlinson.

Established in 1801, the Bibby family ran a sailing ship and merchanting business until 1850 when they joined other local businessmen in a steamship venture in the Mediterranean trade which prospered till the opening of the Suez Canal. After dropping out of shipowning for a few years, Bibbys came back in 1889 to establish their famous passenger and cargo service to Burma. To-day, the family still controls the fleet which now consists mainly of bulk carriers.

Reported in News, Notes & Queries Volume XIV (New Series) No.1., and privately published in full by Bibby & Co. Ltd.

12th February 1970: "Voyage to West Africa". By Dr. P.N. Davies.

An illustrated report on a recent journey to West Africa aboard the Elder Dempster vessels, 'Falaba', 'Daru' and 'Auerol'.

Reported in News, Notes & Queries Volume XIV (New Series) No.2.

12th March 1970: Member's evening. Including a paper by D.G. Sythes (country member) on the Holme Line of Maryport.

Reported in News, Notes & Queries Volume XIV (New Series) No.2.

9th April 1970: "Deep Sea Diving". By R.G. Loram.

A survey of the history of diving from pearl divers, to diving bells and the 19th century invention of the closed diving dress, force pump and non-return outlet valve, to the present day developments.

Reported in News, Notes & Queries Volume XIV (New Series) No.2.

8th October 1970: "The Port of Bristol". By N. Cossons.

A survey of this famous port's history with particular emphasis on the work of Brunel.

Reported in News, Notes & Queries Volume XIV (New Series) No.3.

12th November 1970: "T. & J. Brocklebank Ltd. - past, present and future". By J. Jacks.

The history of Liverpool's oldest shipping company in the year of the bicentenary of its foundation, and the present and future prospects of the company.

Reported in News, Notes & Queries Volume XIV (New Series) No.4.

10th December 1970: "Marine Archaeology". By Dr. P.N. Davies.

After consideration of the development of this branch of archaeology from the 1950s and its techniques, Dr. Davies reviewed some of the current wreck excavations including the work on the Spanish Armada ship, the 'Santa Maria de la Rosa'.

Reported in News, Notes & Queries Volume XV (New Series) No.1.

9th September 1971: "The Brunel Story". By H.V. Coney.

A comprehensive survey of the achievements of Mark Brunel and his son Isambard Kingdom Brunel with especial emphasis on their work on blockmaking machinery and ship construction.

Reported in News, Notes & Queries 1971 Volume XV (New Series) No.4.

4th October 1971: "Firefighting in the Port of Liverpool".

A visit to Liverpool Fire Brigade's new station at Bank Hall.

Reported in News, Notes & Queries 1971 Volume XV (New Series) No.4.

11th November 1971: "Graysons, Shiprepairers of Birkenhead". By R.F. Capey.

This old established firm was started by Edward Grayson who came to work in Liverpool as a shipwright in the 1740s. He did not build his first ship until 1766, and after this date he and his descendants and their partners built many vessels at their Trentham Street shipyard. Among these were the first two steam ferries on the Mersey, the 'Etna' and 'Vesuvius' of 1817. About 1840, the site of yard was taken for the building of the Albert Dock and Graysons concentrated on repairing until the opening of their Garston yard in 1900. Graysons merged with a number of other local repairers and carried out a wide range of repair work. They were responsible for the construction of a huge new graving dock at Birkenhead in the 1950s before they were taken over by Cammell Laird & Co. in the early 1960s.

Reported in News, Notes & Queries 1972 Volume XVI (New Series) No.1.



9th December 1971: Member's Social Evening.

Reported in News, Notes & Queries Volume XVI (New Series) No.1.

14th January 1971: "Over the Water". By W.B. Hallam.

'Over the water' of the title referred to Birkenhead and the ferry steamers of Birkenhead Corporation and its predecessors. Ferry steamers which provided a rapid means of communication across the Mersey were vital to the growth of the new 19th century town of Birkenhead. The first steamer was the 'Etna' of 1817. Until the opening of the Mersey Railway in 1886 the ferry had no rivals. However, the 'luggage boats' still carried all wheeled vehicles across the river until the opening of the Mersey Road Tunnel in 1934. The subsequent decline of the ferry service and the closing of all the stages except Woodside and Seacombe was very much regretted.

Reported in News, Notes & Queries Volume XV (New Series) No.1.

11th February 1971: "The Thames Navigation Service". By Commander R.R. Richardson.

The Navigation Service supervises all shipping movements on the Thames, and is responsible for surveying, buoyage and dredging. There is also a network of radar and radio telephones linked to a central operations room to ensure the safe passage of all ships in this very busy waterway.

Reported in News, Notes & Queries Volume XV (New Series) No.2.

11th March 1971: "Sailing to the Seychelles". By J.C. Robinson.

An illustrated account of a voyage in ketch-rigged tri-maran from Durban to the Seychelles.

Reported in News, Notes & Queries Volume XV (New Series) No.2.

## CHARLES WYE WILLIAMS, A PIONEER OF STEAM NAVIGATION

By J. Foster Petree, C.Eng., F.I.Mech.E., M.R.I.N.A., Mem.ASME  
(past - president)

The genesis of this Paper goes back a long way; in fact, to the Summer Meeting of the Newcomen Society held in Liverpool in 1930, during the celebration there of the centenary of the Liverpool & Manchester Railway. As a part of that celebration an exhibition had been arranged in St. George's Hall of plans, prints, models, contemporary correspondence, etc. relating to the railway and anything associated with it that could be swept into the organisers' net. Among these was a letter dated 28 October 1829, signed "William Laird" and addressed to "C.W. Williams, Esq., Dublin". Most of it was concerned with the Rainhill locomotive trials and a description of the Novelty locomotive of Braithwaite and Ericsson, but at the end was a brief note that "the iron boat is coming along very well" (or words to that effect - regrettably, I did not make a verbatim transcript).

The letter was listed in the official catalogue, but without reference to "the iron boat". To me, however, a native of Birkenhead and sometime an apprentice in the shipyard that William Laird had founded, its significance was obvious: this was the first iron vessel built on the Mersey, the 60 ft. barge that C.W. Williams had ordered in 1829 for his Irish Inland Steam Navigation Company. In 1832 he ordered two more, of identical dimensions. In the list of vessels built by Laird's "Birkenhead Iron Works", as it was called for a century and more, these three craft had no numbers; though evidently they represented a new departure, for they were lettered as A, B, and C. In 1833, however, Williams ordered from the same builder an iron steamer 133 ft. in length. This seems to have decided William Laird that he was no longer just a builder of tanks and miscellaneous ironwork, but was definitely in the shipbuilding business, for she received the Yard No. of "1" and, in due course, the name of 'Lady Lansdowne'. She was the first iron steamer built on the Mersey.

All of this seemed to indicate that Charles Wye Williams was a person whose life and activities might be worth investigation, and the gradual accumulation of data began forthwith, though with no idea at that time of preparing a Paper. That impulse came some 30 years later, from the realisation that, before long, the centenary of his death (1966) would be reached. The search was then intensified, but proved to be beset by unexpected difficulties. The personal details for which, in England, one goes to Somerset House, or, in Scotland, to the Edinburgh Register House, are not to be found in the Republic of Ireland, for the registers were destroyed in the burning of the Four Courts during the "Troubles" of 1916. Williams's grave in St. James's Mount cemetery, Liverpool, is no longer there; his remains were among the many that were reinterred elsewhere to clear the site for the (Anglican) Cathedral. There were other frustrations in tracing his legal, commercial, industrial, and technical interests, some of which may be overcome eventually. Meanwhile, this centenary tribute can only be tendered in an incomplete state.

Charles Wye Williams was born in Dublin either in 1779 or 1780, the second son of Thomas Williams of that City, Secretary of the Bank of Ireland. He was trained in the Law and was called to the Bar of the King's Inns, Dublin, in 1812. It has not been possible to ascertain whether he practised as a barrister, though he did act as arbitrator on at least one occasion; but whether he practised or not seems to be almost immaterial, for at a comparatively early age he displayed a much greater interest in the various technical and scientific studies which would then be classed as 'natural philosophy', and

in their possible commercial and industrial applications. In particular, he was active in striving for the development of Ireland's natural resources and the consequent relief of the distress then rife, especially in agricultural districts. There are indications in some of his writings to suggest that he or his family were to some extent landowners, and that the property included peat bogs; he spent much time studying the combustion of peat.

While still in his early twenties Williams became "acting partner" - a term which appears to be peculiar to Ireland to correspond more or less to the position of a managing director - in a bleaching works in or near Belfast. Shortly afterwards, in 1806, he was responsible for the construction and equipment of a new linen mill in the same district. Into this he introduced two innovations, namely, the finishing process of "beeting" and the use of castiron gearing. It is recorded that both were then employed for the first time in Ireland, though it should be added that this statement rests only on his own claim, in the preface to one of his several published books.

At about the same time (1806-07) he appears to have made the acquaintance of John Oldham (1779-1840), an ingenious craftsman and inventor who was engineer to the Bank of Ireland, and subsequently to the Bank of England. Oldham owed these appointments primarily to his invention of a machine for the consecutive numbering of bank-notes, but he was interested also in the possibilities of steam propulsion of ships, for which he had evolved a system. His first attempts in this field did not lead to a patent; they appear to have consisted of a series of paddle blades, perhaps mounted on a chain running over sprockets, so that they dipped in sequence into the water and then were raised from it.

This scheme was not a success, but soon Oldham devised a better one, mounting his paddles radially on wheels carried at the ends of a shaft projecting beyond the side of the vessel and turned by a steam engine. In the development of this, Williams took an active part, defraying from his own pocket the cost of obtaining a patent, and constructing what might be termed a 'pilot plant'. It was tried in a small boat at Dublin, the engine being supplied by the Horseley Iron Works, and worked satisfactorily. This type of Oldham paddle wheel was selected for use in the 'Aaron Manby' of 1821, the first iron steamer to make a sea voyage. It underwent a number of later modifications, particularly at the hands of William Morgan, so that ultimately it became widely known as the Morgan Wheel.

Shortly before the adoption of Oldham's paddle wheel in the Aaron Manby, developments had been put in hand on the River Shannon which were to affect Williams considerably. The basin of the Shannon contained much low-lying land which was liable to flooding when the river was full. As part of their policy to improve the state of affairs in southern Ireland, the British Government appointed John Rennie to carry out a survey, as a basis for suitable drainage works. There is some conflict of dates here, between different sources. According to one, Rennie's appointment was made in 1821, but elsewhere (in the Proc.I.C.E.) is a definite assertion that the work was put in hand in 1819 under the direction of John Grantham (the elder), who was Rennie's resident engineer. Grantham had an assistant named William Stockes, of whom more later.

The immediate objective was to prevent flooding, not to improve navigation as such, but Grantham, having made a full survey of the river, realised its potentialities as a waterway, for which there was an evident need, and so started (apparently as a private venture) a small steamer service on Lough Derg and the Upper Shannon. Here again there is some conflict of evidence. According to one account, he did this in 1825; according to another, in 1827. Williams, whose association with Grantham became

close, recorded that his personal concern with steam vessels dated from 1823, which was the year of the foundation of the business from which, five years later, evolved the City of Dublin Steam Packet Company. The date of 1825 is recorded on Grantham's memorial in the Cathedral at Killaloe, where he died in 1833.

Williams, at all events, established Charles Wye Williams & Co., to operate a steamer depot at Killaloe from which the Shannon Steam Packet Company (Grantham's fleet) operated. Eventually he bought out Grantham, merging his ships into a new organisation, the Inland Steam Navigation Company. This in turn became absorbed in the City of Dublin Steam Packet Company, but not before it had made a certain amount of history by ordering from William Laird the three iron barges, previously mentioned, which began the shipbuilding activities of the firm who are now Cammell Laird & Company (Shipbuilders and Engineers) Limited, of Birkenhead.

The three barges that Williams had ordered from William Laird were small enough to pass without difficulty through the locks of the Limerick Canal, which connected the port of Limerick with Killaloe, at the southern end of Lough Derg. The steamer 'Lady Lansdowne', was too big to pass through the locks, being 133 ft. long. Her beam is recorded as 17 ft., but this was the breadth of the hull only; over the paddle boxes it was probably more than twice that figure. She was therefore shipped out from Birkenhead (apparently in a sailing vessel) as a collection of plates and angles, to be assembled at Killaloe on arrival. This was done, presumably, in the small dock belonging to C.W. Williams & Co.; in which case, of course, she would be merely floated out on completion, and not spectacularly launched. This may explain why the contemporary issues of the Limerick Chronicle make no mention of her debut, though they do contain a brief mention of the death of John Grantham.

The City of Dublin Steam Packet Company flourished apace, and caused Williams to depart from Dublin, to establish himself in Liverpool, which had become the centre for all repair and maintenance work in connection with the Company's vessels; a course that aroused some adverse criticism on the other side of the Irish Sea. There could be no doubt, however, that Liverpool could offer superior resources for work of this kind and, as a result, Liverpool was the home of Charles Wye Williams for the rest of his life. At his house, "The Nook", St. James's Mount, he provided himself with a laboratory in which he carried out many experiments in the more efficient use of fuel in steam vessels, and, in particular, the improvement of combustion and the reduction of smoke. Precisely when he established himself in Liverpool is not certain, but he was certainly there in 1837, when he took out the first of his many Letters Patent (No. 7468 of 1837), for "Preparing Peat-Moss or Bog for Fuel".

An added inducement to make Liverpool his headquarters may well have been the fact that he was still in close contact with the Birkenhead Iron Works; for the 'Lady Lansdowne' was followed in 1834 by the 'Garryowen', probably the first vessel to be fitted with watertight bulkheads. This claim has been made for the famous 'Great Britain', which certainly had them, but she was anticipated by several years by the Garryowen. It is not clear whether the credit for this notable development should be accorded to William Laird, who built her, or to Williams, who placed the order; but Williams delivered a Paper on "Watertight Bulkheads" to the British Association in 1837 - two years before the 'Great Britain' was laid down in Bristol - and there seems reason to suppose that he was the originator of this development in ship construction. John Grantham jun., a founder member of the (now Royal) Institution of Naval Architects and a close associate of Williams, stated definitely that the 'Garryowen' was the first vessel to have watertight bulkheads.

Between 1829, when Williams ordered his first barge from William Laird, and 1832, when he ordered two more, William Fairbairn had been carrying out a series of experiments on Scottish canals, at the request of the Forth & Clyde Canal Company, to investigate the traction of canal boats. These tests established that it was possible, with a suitable design of boat, to attain a speed of some nine miles an hour with no expenditure of towing horse-power than was needed to haul the ordinary full form of boat at the four miles an hour which was accepted as its maximum speed.

Williams, who seems to have witnessed some of these trials, was shrewd enough to realise that the secret lay in having a boat with a large length/breadth ratio and fine lines, especially in the forebody, so that, instead of pushing a wall of water in front of her (with the effect that she was being constantly hauled uphill on her own bow-wave), she could be jerked forward over the top of the wave and, thenceforward, was effectively sliding downhill, thus greatly reducing the required "drawbar pull". This much he appreciated, but the difficulty in applying the principle to the Limerick Canal, in which he was interested, was that the locks would take nothing longer than the 60 ft. of his Birkenhead-built barges, which had a length/breadth ratio of no more than  $4\frac{1}{2}:1$ .

Williams overcame this difficulty in an ingenious manner, details of which he gave in a Paper presented to the Institution of Civil Engineers (to which he had been elected as an Associate in 1835) on 3 March 1840, and recorded - but in abstract only, without illustrations - in Proc. I.C.E., 1, (1840) 28. It was entitled "Description of the 'Nonsuch' Iron Passage Boat plying on the Limerick navigation, between that place and Killaloe". This vessel was "a sheet-iron boat, 80 ft. long and 6 ft. 6 in. wide at mid-ships, having the stem and stern ends (each 10 ft. long) attached by strong hinges to the body, and susceptible of being rapidly raised to a vertical position by means of winches; thus reducing the length to 60 ft. when required to pass through a lock.

...The boat thus constructed has been found to answer perfectly; ... it is capable of carrying 60 passengers, travelling at a speed of nine miles per hour, with the same power that was required to draw a 60 ft. boat with a less load, and there is a much less action on the canal bank in consequence of the increased length... This boat has been working without intermission for three years between Limerick and Killaloe, traversing twice daily a distance of 15 miles, on a navigation of considerable intricacy, and passing 11 locks, without any accident having hitherto occurred".

The discussion on the paper was brief, but one of those who took part in it was Joshua Field, F.R.S., whose contribution, reading between the lines, suggests that he had probably seen the boat in service. He observed that "So great is the facility in managing the ends that on quitting a lock the bow end is lowered as the gates are opening; the boat is set in motion at the same time, and as it moves on the stern end is let down, and the usual speed is obtained very soon after it clears the lock. When a lock is to be entered, the boat is suffered nearly to reach the gate at full speed, when the bow end being raised, the additional resistance caused by the square section being suddenly opposed to the water stops the boat almost immediately. The weight of one man at each end is amply sufficient to keep down the ends when the boat is in motion".

It may be mentioned that, when Williams was elected to the Institution of Civil Engineers, his application was sponsored by Sir John Macneill, the eminent Irish civil engineer who had been one of Telford's assistants, by (Sir) William Cubitt, F.R.S., and by Robert Sibley.



Williams's interest in steam navigation appears to have been aroused in the first instance by his association with John Oldham and his paddle wheel, and stimulated by the performance of the 'Aaron Manby' in crossing the Channel to France in 1822. "My connection with this improved form of propulsion", he wrote in the preface to his book "On Heat in its Relations to Water and Steam, "and my confidence in its success, became the direct inducement for forming a company which should undertake the conveyance, not only of passengers, but of merchandise, and continue as a regular trader, throughout both winter and summer months, between Dublin and Liverpool, which had not hitherto been attempted". Thus was established the firm of Charles Wye Williams and Company, with a capital of £50,000 in 50 shares of £1,000 each.

Their first two ships were the 'City of Dublin' and the 'Town of Liverpool', built in 1823, shortly followed by four more, the 'Hibernia', 'Britannia', 'Manchester' and 'Leeds'. These vessels speedily built up a vigorous and rapidly expanding trade across the Irish Sea, particularly in the transport to England of Irish cattle, to the great advantage of the Irish farmers. Their existence, however, indicated clearly that the Company had expended beyond the £50,000 of capital which was the upper limit prescribed by the Act under the Company was founded. New powers were therefore sought, and with them came a change of title, to The City of Dublin Steam Packet Company. This new Company, in 1840, absorbed Williams's former undertaking, the Irish Inland Steam Navigation Company.

Before this merger took place however, Williams and his co-managing director, Francis Carleton, began to look farther afield, to the transatlantic opportunities indicated by the all-steam passages in April 1838 by the 'Sirius' and the 'Great Western'. It may be that they were inspired also by the known interest in the possibilities of regular Atlantic services of Samuel Cunard, one of the sponsors of the successful voyage of the Canadian-built 'Royal William' in 1833 from Nova Scotia to the Thames. They moved quickly, formed the Transatlantic Steamship Company, and chartered a steamer, also named 'Royal William', from the City of Dublin Steam Packet Company. She sailed from Liverpool - the first transatlantic steamer to do so - on 5 July 1838, and enabled them to maintain a service pending the completion of a larger vessel, the 'Liverpool', which had been purchased while under construction in Liverpool.

The two vessels made a number of Atlantic passages, but Williams and his associates came to the conclusion that the venture was premature. The 'Royal William' was therefore returned to the City of Dublin Company and the 'Liverpool' was transferred to the Peninsular Steam Navigation Company, with which the Transatlantic Company was merged, and was renamed 'Great Liverpool' to prevent confusion with another Liverpool, already in the Peninsular Company's fleet. This merger gave Williams a seat on the Board of the Peninsular Company (which became the Peninsular and Oriental Steam Navigation Company in 1840) and he retained it until 1854.

The 'Liverpool' (or 'Great Liverpool') caused him some concern, however, on engineering grounds. On her first voyage from Liverpool, which she left on 20 October 1838, she had to put back to Queenstown, which she did not leave until 6 November. From comments that Williams made in the preface in one of his books, it appears that the trouble was associated with her boilers, a department of marine engineering in which he had always taken a particular interest. The subject of steam and the steam engine, he declared, divided itself into three heads, namely, "the management of fuel in the generation of heat, the management of heat in the generation of steam, and the management of steam in the generation of power". The construction of engines and boilers, he admitted,

was the province of mechanical engineers, but, he maintained, "the construction of the furnaces...is strictly and exclusively within the department of chemistry", and he was by no means convinced that engineers were sufficiently aware of this.

It was a subject to which he had given much attention, ever since his interest in the chemistry of combustion was aroused by attending, in Dublin, a course of lectures by William Higgins, a chemist and librarian of the Royal Dublin Society - who, incidentally, claimed to have anticipated the atomic theory of John Dalton. Later, Williams also "sat under" Dalton in Manchester in the pursuance of his chemical studies. Initially, he was mainly concerned with the combustion of peat, this being the fuel used by the steamers plying on Lough Dearg. Subsequently he turned his attention to the reduction of smoke and - a point of importance in ocean-going steamers, with their limited fuel capacity - to the general improvement of the efficiency of combustion.

Contemporary opinions about the value of Williams's work ranged from the laudatory but reasonable, through the reasonable but critical, to the openly derisory; and it is probably true to say that the merit of his commercial and industrial activities, in promoting steam navigation and in improving conditions in the Shannon basin, made him sufficient of a public figure to ensure him a measure of support in other fields, even if some of his ideas on boiler design and handling, and his "New Views of Vaporisation, Condensation, & Explosions" (the subtitle to one of his books), were distinctly bizarre. Fairbairn wrote approvingly of him in *Mills and Millwork*, Part I, though he hedged a little regarding the efficacy of schemes for smoke prevention. John Bourne, writing of Williams's "Argand Furnace" in his *Treatise on the Steam-Engine*, was caustic. "Of all the smoke-burning schemes that have been brought forward, at this or at any other epoch," he declared, "there is none that has been ushered before the public with more noisy pretension than that of Mr. Charles Wye Williams. His furnace...differs in scarcely any respect from the previous schemes of Gregson and others, except in the single feature of admitting the air by many holes instead of by two or three..." Bourne goes on to recount a trial made in the Boulton & Watt works at Soho: "The ordinary boiler in use...was fired with one kind of coal for a period of four months, and the effect and consumption were carefully noted. Williams's improvements were then applied, and with the same kind of coal, the same man firing, and all other circumstances as nearly as possible identical, the consumption...was nearly a pound per horsepower more than before".

In his interpretation of the combustion process, Williams had the support of Dr. Andrew Ure, F.R.S., Professor W.T. Brande, F.R.S., and Sir Robert John Kane, F.R.S., among others. All of these three were chemists of distinction; which led *The Civil Engineer and Architect's Journal* to print in its Vol. V (1842) an editorial article on "Mr. Charles Wye Williams and his Boiler Projects" protesting, *inter alia*, that "Engineers and boiler makers know their business much too well to lack instruction from a pack of effervescent chemists and druggists" - in allusion to the fact that Brande and Kane were professors of chemistry to the Apothecaries' Halls of London and Dublin, respectively.

The obituary notice which appeared in *Engineering* of 6th April 1866, reporting his death on 2 April, was favourable without being unduly fulsome. It was almost certainly written by Zerah Colburn and from personal knowledge, so the expressed opinion that "Mr. Williams's writings on combustion...are unquestionably sound" deserves respect. It is backed by the assertion - perhaps just a little overdrawn - that "In locomotive engines it is only the application of the principle so clearly urged by Mr. Williams, that of a regulated admission of air over the fire, that has enabled us to substitute coal for coke, burning the former with but little smoke - often with scarcely any whatever". This obituary was freely used, many passages being "lifted" verbatim, in preparing the memoir

that appeared two years later in the Proceedings of the Institution of Civil Engineers.

Early in this Paper it was mentioned that John Grantham, in his survey of the River Shannon, had an assistant named William Stokes. In 1842 Stokes produced a guide book, entitled Pictorial Survey and Tourist's Guide to Lough Derg and the River Shannon, with a statistical and topographical account of the country through which it passes, adding that it was "Patronized by the Shannon Commissioners, the Board of Works, and the City of Dublin Steam Packet Company". He dedicated it to "Charles Wye Williams, Esq., Chief Director of the City of Dublin Steam Packet Company", whom he apostrophised at length, both in the dedication and in the "Introduction" which followed. It concluded with this tribute:

"...were it not for the spirited and persevering exertions of Charles Williams, Esq. (the chief conductor of the enterprising Dublin Steam Company), this noble river might still be as a sealed book. Through the instrumentality of this talented gentleman, the Shannon has been brought to great public utility. Under the management and auspices the first iron steam vessels used in Ireland were introduced on the Shannon, and one of those (eighty horse power) was built on the Dublin Steam Company's premises at Killaloe. Mr. Williams's name will be ever remembered with respect and admiration; prior to his exertions, the transit of heavy goods between Limerick and Dublin occupied upwards of a fortnight...; now the trading and commercial intercourse between Limerick and a vast tract of the Kingdom adjacent to the Shannon and the capital is obtained with a certainty, and the heaviest goods, cattle, grain, etc., are conveyed in less than three days, while the tourist or traveller has the most delightful route open to him...performing the journey from Limerick to Dublin about twenty-eight hours or less..."

Elsewhere in the book is mentioned another of Williams's activities, to which no other reference has been found, namely, "A mill, with machinery driven by water, ... used for the cutting and polishing of stone and marble, ... affording employment to about a hundred men daily." It was situated on the west side of the canal. The exact site I have not located, but "the Dublin Steam Company's premises" are still to be seen at Killaloe; they are illustrated in Stokes's book, with the 'Lady Lansdowne' alongside the quay, and the remains of the vessel lie submerged, except for the stem head, in shallow water on the other side of the Lough. Her usefulness ended with the coming of the railway to Killaloe in 1862; it appears that she was deliberately scuttled five years later, as the simplest way to dispose of her.

Williams wrote several books, sundry pamphlets, and a number of papers before various institutions and societies. Of the books, the first was The Combustion of Coals and the Prevention of Smoke chemically and practically considered, published in 1840. It was well received and was translated into French and several other languages. His other principal published work was the treatise On Heat in its relations to Water and Steam, published initially in 1860, when the author was 80 years of age, and in a second edition in 1861. It is of little practical worth, but contains a portrait of the author at 80 years of age thereabout, which is reproduced.

In 1837, when the British Association met in Liverpool, he presented a Paper "On Preventing the Dangers from Collision, and from Fire in Vessels", in which he advocated the subdivision of ships into several compartments by watertight bulkheads, "similar to the plan which has been adopted in the iron steamers". By this time the steamer 'Garry-owen' had been in service for three years with her iron bulkheads, and her builder, John Laird, had constructed seven or eight more steamers, presumably also with watertight bulkheads.

Reference should be made, too, to Williams's monographs of 1831 and 1833 on the unemployment then rife in Ireland, and the need to improve the navigation of the River Shannon as a means to alleviate it; his observations were sound and various of them were carried out, to notable advantage. What was probably the last of his numerous papers was delivered to the (now Royal) Institution of Naval Architects in 1862, when he lectured the professional engineers - "On the Construction of Marine Steam Boilers". Again, many of his observations were sound, especially his remarks on the value of tubular heating surface, though there were others which can have met with little support. The Paper is still worth reading, however; for he did do his best, throughout his working life, to test his theories by careful experiment and, where possible, by actual practice.

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In the gathering of the widely scattered records bearing on Williams and his varied activities, valuable assistance has come from many sources, too numerous to list in extenso; but special mention must be made of the late Dr. Vincent T.H. Delany, Regius Professor of Laws in Trinity College, Dublin, whose article on "The Development of the River Shannon Navigation" in *The Journal of Transport History*, III (4) (November 1958) provided the first indication that the remains of the steamer *Lady Lansdowne* might have been located, as indeed they had. Under the guidance in 1962 the hull was examined as well as it could be from a boat, and the little dockyard at Killaloe was explored, with its wet basin (where the '*Lady Lansdowne*' was almost certainly put together) and the remaining buildings, and the adjacent stretch of the Limerick Canal. Further exploration was planned, but Dr. Delany died 18 months later, before it could be carried out; a loss that was widely and deeply felt. He left unfinished the MS of a book on the Irish Waterways which his wife, as experienced a navigator as himself, courageously undertook to complete, which she did with notable success. Her help, too, is gratefully acknowledged, for the book (*The Canals of the South of Ireland*, by V.T.H. & D. R. Delany; David & Charles, 1966) provided some useful additional information about the steamers on Lough Derg, from Stokes's book. This shows the pierhead at Killaloe. On the left can be seen the road to Killaloe; next, barges in front of the office of the Dublin Steam Packet Co., a building that still stands; then the P.S. '*Lady Lansdowne*' at the quay with the company's stores and workshop appearing over her stern; in the hollow the dry dock for repairs; and labourers' cottages along the road to Scariff to the right.

AN EXPEDITION TO IDENTIFY AND SURVEY THE  
WRECK OF THE PADDLE STEAMER LADY LANSDOWNE

by Dr. P.N. Davies.

Early in 1967 a lecture was given by the late Mr. J. Foster Petree to the Liverpool Nautical Research Society. His topic on that occasion was, "Charles Wye Williams, 1780-1866, A Pioneer of Steam Shipping" and in the course of his talk reference was made to various steam vessels which Williams had introduced on to the River Shannon. Amongst these was the 'Lady Lansdowne' and the speaker indicated that he understood that her probable remains were still to be seen in the Shannon near the small town of Killaloe.

Mr. Foster Petree subsequently gave the author of this article (Dr. P.N. Davies of Liverpool University) the source of his information. This was on page 174 of 'The Canals of the South of Ireland' by V.T.H. and D.R. Delany (David & Charles, 1966) where it was stated:

"...About 1833 the (Inland Steam Navigation) Company acquired one of the largest river steamers ever seen in Ireland, the 'Lady Lansdowne'. She was too large to pass through the canal from Limerick and so was brought to Killaloe in sections by canal boat and assembled in the dock there. She was built by William Laird at the Birkenhead Iron Works and was 133 ft. long by 17 ft. wide, with a 9 ft. 6 in. depth of hold, 300 ton burden and propelled by a 90 h.p. engine; her date of launching or shipment was given as November 1833. William Stokes in A Pictorial Survey and Tourists Guide to Lough Derg shows an illustration of a large paddle steamer alongside the quay at Killaloe, and Paul Gauci in his Select Views of Lough Derg and the River Shannon in 1863, shows a similar illustration. In 1957 we discovered a wreck about 3 ft. under water, a few hundred yards above the Lakeside Hotel's new marina at Killaloe, and without previous knowledge of the dimensions above we sketched out a plan of this wreck. She is lying on an even keel and her stem head projects above the water. We measured her with a surveyor's tape from a dinghy and found her to be 136 ft. long and nearly 17 ft. wide, with the casing for the paddles projecting another 5 ft. 7 in. on either side. It would seem fairly conclusive that she must be the 'Lady Lansdowne'. All the ironwork is intact, and indeed some of the timber decking is in situ, but it is difficult to see her interior arrangements because of silting".

This information stimulated further interest for there are few surviving examples of steam vessels which date back to this period. Additional research then showed that the 'Lady Lansdowne' was a vessel of some historical significance as she was the first powered craft to be constructed at the Birkenhead Iron Works - the predecessors of Messrs. Cammell Laird & Company.

In the light of these circumstances it was decided that it would be valuable to re-examine the wreck and in April, 1967, Dr. Davies visited Killaloe. Mr. J. MacMahon, Manager of the Lakeside Hotel, gave every assistance but it quickly became apparent that the only way to confirm the identity of the vessel was to have her accurately surveyed by a team of divers.



On his return to Liverpool, therefore, Dr. Davies contacted the Merseyside Sub-Aqua Club and they agreed to supply the necessary men. From a large number of volunteers the following were then selected for their experience in diving and their expertise in particular fields:-

D. Morgan, (Leader), J. Hazzard, (Diving Officer), K. Abernathy,  
B. Clow, H. Harrison, G. Hayes, P. Hughes and L. Owens.

It was necessary to make many arrangements in order to ensure a successful expedition but these were eased by the willing cooperation of Mr. Caleb. C. McCutcheon acting on behalf of the Killaloe (Lough Derg) Development Association. By June, 1967, all plans had been finalized and on the 30th of that month Dr. Davies, accompanied by Mr. E.W. Paget-Tomlinson at that time (Keeper of Shipping at Liverpool Museum) proceeded to Killaloe. The diving party, together with their heavy equipment, crossed from Holyhead to Dun Laoghaire and drove to the site, arriving on the morning of Saturday the 1st of July.

A general view of the wreck and its surroundings was made from a launch provided by the Lakeside Hotel and the party then moved to a pontoon (supplied by the Development Association) that had been moored near the 'Lady Lansdowne'. Work commenced at 2.00 p.m. and continued until 5.30 p.m. and then the divers were taken to the accommodation kindly provided by Mr. M. Reddan and Mr. J. Leonard. The Lakeside Hotel provided an enjoyable dinner that evening and, in spite of a rather late night, a further two hours of diving were undertaken the following morning. Diving ended at 12 noon. By then the objects of the expedition had been achieved and it was desirable that the party should commence its long homeward journey by the early afternoon. The drive to Dublin and crossing to Holyhead was safely completed and all the divers were home in time to start their normal work on the Monday morning.

#### The Diving Programme

During the two periods of actual diving the following programme, prepared by Dr. Davies and Mr. Paget-Tomlinson, was carried out:-

1. An underwater cinefilm of the whole structure was made before other activities could disturb the sediment. This was shot by D. Morgan and G. Hayes.
2. A number of still underwater photographs were then taken by J. Hazzard. As visibility gradually diminished because of the sediment, the number was drastically curtailed.
3. The remains of the wreck were accurately measured by B. Clow, G. Hayes and H. Harrison.
4. A systematic search for artifacts was made
  - a) Within the hull
  - b) Outside the hull

This work was organised by K. Abernathy with the assistance of G. Hayes, P. Hughes and L. Owens.

5. The completeness and strength of the structure were examined by D. Morgan and K. Abernathy.
6. An intensive search of the engine room was made in order to supplement the information gained the previous day. It was hoped that visibility would have improved and this proved to be the case but every minute action disturbed the silt and made it difficult to ensure that nothing was missed.

## SUMMARY OF RESULTS

### A. THE VESSEL

The measurement of the wreck clearly proves that this was indeed the remains of the 'Lady Lansdowne' for the dimensions obtained agree with those given by the builders and there were no comparable vessels of this size on the Shannon. Her general construction and design, and the artifacts discovered in association with her are also in keeping with a ship of this era.

The position of the vessel is that she lies alongside the Eastern edge of the Shannon with her stem approximately three feet and her stern some twenty feet from the bank. As a result the stem is partly out of the water at all times (this part of the river is above the weir so is non-tidal) while the stern lies at a depth of about twenty feet.

The main frame and bulkheads appear to be complete but much of the outer plating and all of the decking and superstructure are missing. In addition, the boiler, engine and paddle wheels have all been removed. The rear portion of the wreck contains a great deal of silt and in many places this is up to 3 feet in depth. Nevertheless the divers are convinced that their tactile technique would have revealed all but the smallest of objects.

### B. ARTIFACTS

Details of artifacts recovered by the expedition are to be found in the Appendix which was compiled by Mr. Paget-Tomlinson. The most interesting find was a Cantrell and Cochrane mineral water bottle which contained two pieces of paper with the names written in ink of 'John McEvoy Killaloe 30/7/67' and 'John Brosnan Killaloe 30/7/67'. These names are common ones in the district and it seems likely that they were watchmen who on their last visit on board thought they would leave their identities to posterity. The bottle was found, deep in silt, on the floor of the engine room, so it is improbable that it drifted into the vessel although this must remain a possibility.

Also of particular interest was a brass port hole, complete with glass, which bore the words 'Lilley and Son London'. Evidence supplied by the Guildhall Library suggests that this was made by John Lilley and Son at a date after 1846 and would therefore have been supplied for a refit. This would seem to be a reasonable supposition for none of the other portholes have any name and it is reasonable to assume they were original fittings made by Lairds. The firm of Lilley and Reynolds, however, state that John Lilley established his business in London in 1812 so it is possible that this firm made all the portholes for the 'Lady Lansdowne' as part of her original equipment.

## CONCLUSION

The 'Lady Lansdowne' was built and operated in response to the specific economic circumstances ruling in 1833. These conditions were changed by the advent of the railway to Southern Ireland and by the early 1860's she was no longer a viable proposition. The vessel then lay at her moorings at Killaloe for a number of years and then either sank or was scuttled. Evidence suggested by the bottle indicates that this happened after July, 1867, and this would appear to be confirmed by a House of Lords select committee which sat in 1868, (House of Lords, 1868 (130) XI, 57).

The historical importance of this wreck is, of course, considerably reduced by the absence of her engine and paddle wheels and it is unlikely to repay the large expenditure which an attempt at salvage would entail. In any case it is doubtful if the framework retains much of its original strength. Even in fresh water the effects of a hundred year's immersion cannot be negligible and any serious strain would probably break her up. This would seem to rule out any efforts at lifting for after such a long period there will almost certainly be considerable adhesion between her bottom and the river bed.

In view of the fact that the site is close to the bank in relatively shallow and calm water it would be possible to construct either a permanent or temporary dam round her. Both of these alternatives are likely to be extremely expensive and could hardly be justified at this stage.

The most practical approach would be to use a suction pump to clear out the silt that is obscuring the rear part of the vessel. A more informed decision could then be taken in respect to any future action.

A copy of the above report has been submitted to the Council for Nautical Archaeology in London as this is now the central coordinating authority for the United Kingdom. Full details have also been supplied to Mr. Desmond Brannigan of Marine Research, Dublin, and it is possible that he will organise a further investigation of the 'Lady Lansdowne' in the future.

## APPENDIX

### Details of Artifacts and Information recovered from 'Lady Lansdowne' - at Killaloe

1st July, 1967. Diving commenced 2.00 p.m.

Details: Rudder discovered. Found that vessel had square stern, but transom disintegrated.

Skylight window recovered from near stern, port quarter, also through-bolts, probably from skylight.

Many portholes discovered and port lights recovered.

Both paddle boxes missing but sponsons in position.

Tiller 2'10" long found in position, keyed to rubber post. Tiller presumably linked to wheel by tackles.

Fire-irons recovered, a poker and an ash rake. Urinal or wash basin recovered.

Bottle with message recovered, also jar and another bottle.

Timber from transom recovered, no sign of name.

Large spanner recovered.

Part of sponson handrail recovered, port side. Large diameter steam cock recovered, also piece of lead pipe and brackets and possibly a fitting for a boom or gaff (the vessel had two masts).

Measurements taken of overall length of wreck as she lies, from stem piece to end of counter. Found to be 128'. Lairds' give length of 133', presumably between perpendiculars.

Measurements of beam taken at six points, as follows:-

|              |        |        |
|--------------|--------|--------|
| Transom      | 9' 0"  | across |
| 20' forward  | 13' 9" | across |
| 40' forward  | 16' 3" | across |
| 60' forward  | 18' 6" | across |
| 80' forward  | 15' 9" | across |
| 100' forward | 14' 6" | across |

Paddle box sponsons found to be 20' long.

Diving finished about 5.30 p.m.

2nd July, 1967. Diving commenced at 10.00 a.m.

Beam or stiffener located in engine room. Axe recovered.

Slide bar for valve gear or air pump recovered. Overall length 2'10", width 7 $\frac{3}{4}$ ", length of slide 2'2", width of slide 2 $\frac{1}{4}$ ".

Block possibly for steering gear recovered at stern.

Large conical filler recovered, possibly linked with condensing system. Height 1'7", diameter at top 1'3 $\frac{1}{2}$ ", diameter at bottom 7", hole at bottom 3 $\frac{1}{2}$ " diameter.

Diving ended at 12 noon.

## BURMA, THE IRRAWADDY FLOTILLA AND ITS STEAMERS 1865-1942

by Captain H.J. Chubb.

Burma lies on the eastern side of the Bay of Bengal between 9 degrees 58 minutes and 28 degrees 30 minutes North Latitude and 92 degrees 11 minutes and 101 degrees 91 minutes East Longitude. It comprises an area of 261,839 square miles. It has many rivers and streams and is in general a healthy country except the Arakan Province which is malarial.

It is a lush country and will grow three crops of most things per annum and the people of Mongol stock are a happy people loving bright colours. However, they are not over keen on work if it can be avoided. In addition, it has about everything that stings crawls or bites in the way of snakes and such nice things. It in spite of all is a most delightful land and may well be called a 'land of make believe' as it is so beautiful at all times of the year. There are five months rainy season and seven months dry season.

The River Irrawaddy rises in the foothills of the Himalaya Mountains 29 degrees north in the form of two rivers named at their source Malika and Nanika. These meet 30 miles north of Myitchina forming what is known as the confluence and it is here that the name changes to Irrawaddy. It continues to flow south past many important towns and villages of Burma until 100 miles from the sea it breaks up into a delta of 26 mouths each with a different name. The main mouth is known as the China Bakir River; this enters the sea 38 miles west of the Hlaing River on which stands Rangoon the capital. There are many tributaries and affluents, the greatest of which is the Chindwin which joins the main river 600 miles up and which is navigable 700 miles up as far as Homalin.

The High Water season starts in May when the South West Monsoon breaks, and in October the river begins to fall. It receives a great deal of water from the Monsoon Rains, but most of all from melting snow in the foothills of the Himalayas. The rise averages 45 feet. But it can and does go as high as 70 feet in the three defiles where the river cuts through mountain ranges. The width varies from a few hundred feet to twenty five miles according to type of country it is flowing through. The River is navigable as far as Myitchina for about 1,350 miles. But of recent years Flotilla Steamers only went as far as Bhamo which is 26 miles from the Chinese Frontier of Yunnan.

The Delta has over 2,500 miles of navigable creeks and rivers all of which are tidal. Delta services were operated by screw steamers, whilst the main river paddlers of great size were used, with stern wheel steamers on the Chindwin and other smaller tributaries. The greatest depth of water recorded was 650 feet in the Middle Defile. The working draft of steamers in the Delta was 7 to 10 feet and on the main river 4 foot 6 inches to 6 foot 6 inches according to the season.

The Irrawaddy Flotilla Company was formed in 1865 to implement a contract made with the Government of India for the conveyance of troops, stores, and mails to stations in Lower or British Burma which had been added to the Empire as a result of the Second Burma War of 1854. Traffic was extended into Upper Burma as far as Mandalay by permission of King Mindoon Min. They also had a service along the coast to Moulmein and this was eventually transferred, together with its steamers to the British India Steam Navigation Company. Another activity was the towage of sailing ships in and out of the Port of Rangoon which lies 38 miles up river. The contract involved the taking over of four steamers and three flats all of which had been built in England in 1832 for the Honourable East India Company. These steamers were about worn out when the Company got them, and they soon



had to be replaced. The original contract expired in 1868 and a new contract was made. This included an extended service from Mandalay to Bhamo. The original Houseflag was a Burmese Peacock in a yellow garter on a green or blue flag (I have seen both types). However when the new contract was made the Houseflag was changed to that of the Managers in Scotland. Starting with four old steamers and three flats the fleet steadily grew from year to year until at the time of the Japanese Invasion in 1942 there were 740 vessels in service, plus five seaplanes. The ships ranged from the large Main Line Mail and Cargo steamers of 2,300 tons to smaller type paddle steamers on the Mandalay-Bhamo Service. Stern wheel and Quarter Wheel steamers on the Chindwin with all kinds of screw steamers in the Delta such as fast 20 knot Express vessels with slower 15 knot ships on less important services together with tugs steam barges plus service vessels such as Pilot steamers, Snag Lifters, Dredgers.

The large mail and cargo steamers maintained the long distance runs between Rangoon and Mandalay whilst a slightly smaller type of paddler of the same class plied from Mandalay to Bhamo. Another type of fast paddler was termed a Ferry or Feeder and did sectional runs between Prome and Mandalay; these were 200 feet in length and carried three classes of passenger. Other smaller paddlers maintained services on tributary rivers and screw steamers of 115 to 165 feet in length did Delta services. The Chindwin was wholly run by Stern Wheelers and Quarter Wheelers.

Another large section of the Flotilla activities was in bringing down oil from the oil-fields of Yenangyoung and Chauk to the refineries at Rangoon. During the rice season tugs each towing eight to twelve 250 ton steel barges brought rice or paddy as it was called in from the Delta ricefields to the rice mills at and near Rangoon.

In a normal year the Flotilla carried about 12 million passengers and handled one million two hundred and fifty thousand tons of cargo.

In 1942 the Japanese invaded the country, and due to much bungling on the part of our Government and inadequate troops being available, they ran through the country very quickly and 690 ships of our fleet were scuttled to deny their use to the enemy. A number put to sea and some reached India whilst others were lost on the Arakan coast. After sinking our ships as far up river as we were able to get them we made our way to India by various means, aircraft, on foot etc. via the Hukawn Valley into Assam where a number of us were grabbed by the Indian Army and used to organize and operate the Corps of Indian Engineers setting up dockyards and organising fleets of small craft etc. ready for the re-invasion which finally took place in 1945. However that's another story.

The steamers taken over from Hon. East India Coy were named 'Damoodah', 'Jumna', 'Nerbudda' and 'Lord William Bentinck'. They had been built at Lambeth in 1832 and having run in India for years were then taken to Burma during the Second Burmese War as gunboats. They were worn out when the Flotilla got them and were soon superseded.

The first two steamers built for the Company were named 'Colonel Fytche' and 'Colonel Phayre' and arrived in 1866. They were not altogether satisfactory and in 1877 they were sold for further service in the Straits Settlements to the Eastern Shipping Company and they served there for another fifty years and were eventually broken up at Penang in 1927.

Some steamers were loaned to the Flotilla by the India General Steam Navigation Company but these were not very satisfactory and a programme of building fourteen large paddlers was put in hand. They were designed by Peter Denny on the lines of steamers built for India but modified. All were around 650 tons and were around 250 feet in length (it varied slightly as did their tonnage.) The first four to arrive were named 'Mandalay', 'Bassein', 'Rangoon' and 'Alongpayah'; all arrived at intervals between 1869 and 1872 however the first three were soon lost and these losses gave rise to the building and formation of the company's own pilot service for marking and buoying the river. This started in 1870. After this the new steamers continued to arrive at intervals and this class was completed by the arrival of the 'Rangoon II' in 1878.

Eight more steamers were built by R. Duncan of Glasgow and engined by Ranken and Blackmore but the next five were by Denny of Dumbarton whilst one was built at Rangoon by the Company's own dockyard at Dalla. This was the 'Yunan' of 1874. The names of these new steamers after the first four were 'Ashley Eden' 1873, 'Irrawaddy', 1873, 'Talifoo' 1874, 'Yunan' 1874, 'Panthay' 1876, 'Shin Saw Byoo' 1876, 'Shoaymyo' 1876, 'Doooon' 1878, 'Yankeentoun' 1878, 'Burma' 1879 and finally 'Rangoon II' 1879 (this was a replacement of the one lost in 1873).

In 1877 a special vessel named 'Tapaing' with a spoon bow had been built by Denny but she was not much use as she behaved badly in strong water and was an enormous coal eater. So, in 1884 she was converted into a station ship and her engines and boilers were removed and went into store until in 1886 a new hull was sent out by Denny about the same as the earlier class of fourteen, and the 'Tapaing's' engines and boilers were fitted and she was named 'Mandalay' being a replacement for the one of that name lost in 1869. All the earlier steamers of this class except 'Mandalay' which was broken up in 1925 and 'Rangoon II' which lasted until 1938 were out of commission by 1901. However they gave good service as station vessels after ceasing as running steamers.

'Thooreah' (the Burmese for the Sun) was built by Denny in 1880 and though much the same in dimensions as the earlier steamers she had three docks. She carried the King and Queen of Burma into captivity in 1886 after the end of the Third Burmese War and was lost at Minbu a year later.

In 1879 a smaller type of steamer was built; they had one funnel and one mast and were for intermediate main river services. They all lasted until well into the 1920's and during the 1885 period a few more of this class were built.

In 1885 the first really big steamers were built they being over 300 feet in length. All four were alike in external appearance but two were known as Cargo Steamers whilst the other two were Despatch Steamers. The cargo steamers carried saloon, second class and deck passengers whilst the two despatch vessels were supposed to do 20 knots and were luxuriously fitted. The 'Mindoon' and the 'Yomah' were the cargo ships whilst the 'Dufferin' and the 'Beeloo' were the despatch steamers. Saloons of both these vessels were carved by Burmese craftsmen and in the 'Beeloo' one cabin had a head of the Queen as a young girl then the next cabin had an old gentleman with a beard said to be Peter Denny, whilst over the third door was a carving of the Devil and so on. The 'Dufferin' had heads of the Queen and famous statesmen of the period alternately. The despatch service was to be from Rangoon to Prome and back before a railway was built. 'Mindoon' lasted until 1912 but 'Yomah' was burnt at Yenangyoung in 1904 with considerable loss of life. The other two ended their days as station ships in the 1930's.

We now come to the period of the Third Burmese War. During 1885 the King Theebaw caused to be murdered a number of the royal princes and princesses and at the same time put extortionate fines on to the Bombay Burma Timber Company and imprisoned certain employees of the Irrawaddy Flotilla Company notably the Captain and Officers of the 'Okpho'. As a result of this the Government of India decided to take action and war was declared on the Kingdom of Upper Burma. But only after an ultimatum had been sent to the King at Mandalay by the hand of Captain Cooper of the 'Ashley Eden'.

Captain Cooper in the 'Ashley Eden' left Rangoon on 22nd October 1885 and proceeded to Mandalay where the ultimatum was presented to the King. The steamer was ordered to wait with banked fires not later than November 5th for the answer. When she left Mandalay on the way down stream she was fired on by various Burmese forts though war had not yet been declared. She arrived in Rangoon on 9th November 1885.

As the answer to the ultimatum was not satisfactory the Flotilla big ship's were requisitioned (in all 24 steamers and 23 flats plus six pilot launches totalling 9467 men and 77 guns). This fleet was gathered at Thayetmyo which was nine miles below the border with Upper Burma. On November 14th the Government steamers 'Irrawaddy' and 'Kathleen' silenced the Burmese fort at Sinbaungwai and captured the King's paddle steamer 'Tuluyingyaw' (she afterwards became the 'Sladen'). They also captured a King's Stern Wheeler 'Yaishanyinbyan' and a flat which the King's men were trying to sink in the Sevenoaks Channel. This flat was fitted with pointed stakes in her bottom and would have done considerable damage to our ships had she not been detected and captured. On 15th and 16th November the fleet crossed into Upper Burma. The 'Palaw' and the 'Ngawoon' were acting as gunboats and went ahead of the fleet. On 17th Battery Point and the fort at Minhla were taken. On 21st Pagan was reached and the forts were silenced just before dark and two of the King's Stern Wheel Steamers were found to have been sunk. On 23rd, the two gun vessels went ahead and shelled the earthworks at Pokokku and here one of the 'Shwemyo's' flats capsized causing the loss of a quantity of ammunition and several guns. On 24th Myingyan was reached and was found to be heavily fortified. It took the gunboats four hours to shell and destroy the forts here. The 'Ava' was taken on 26th and the day following the Kings Army surrendered. However, before the fleet could proceed to Mandalay the channel at Sagaing had to be partly cleared as the Burmese had sunk war boats and a steamer in the fairway. The fleet arrived off Mandalay on 28th.

Captains Terndrup and Morgan were used as guides to the force in Mandalay. Captain Morgan accompanied Colonel Sladen to the palace to interview the King. Mrs. Morgan and her husband were well known at the palace as Mrs. Morgan was a friend of the Queen Supayalat.

At 6.15 p.m. on 29th November 1885 King Theebaw and the two Queens together with the Queen Mother and King's daughter were escorted on board the 'Thooreah' commanded by Captain Patterson. After taking on board the royal party the 'Thooreah' moved out to midstream and anchored for the night. She left for Rangoon next morning and on arrival in Rangoon the royal party was transferred to R.I.M.S. 'Clive' and was first taken to Madras but later was moved to Ratnighiri Fort on the Bombay Coast. The 'Alongpayah' took down to Rangoon the lesser members of the Royal Family, also a number of the ministers who, however, refused to go with the King into exile.

The messing allowance allowed to the Commander of the 'Thooreah' was Rs 1 per head and it is said that he claimed Rs 10,000 on arrival in Rangoon. The Manager demurred at this but the Commander said "Sir, have you ever entertained royalty?" The Manager answered, "No I cannot say that I have." Whereupon Captain Patterson is supposed to have

said "WELL I HAVE and I HAVE NEVER SEEN THEM EAT SO MANY MILK BISCUITS AND DRINK SO MUCH CONDENSED MILK BEFORE." He got his Rs10,000. King Theebaw died in 1916 and then Queen Supaylat was allowed to return to Rangoon where she died in 1929.

This war was the third in Burma with the British and resulted in the annexation of the whole of Burma and from that date onwards the Irrawaddy Flotilla went ahead as services were no longer interfered with. Many new ships were ordered and three were purchased from India and renamed 'Shanghai', 'Ningpo' and 'Foochow'. However these Indian Steamers were not satisfactory and were returned in 1891. In 1886, two large steamers named 'Pekin' and 'Canton' were built. These were outstanding as they were the first vessels in Burma with quadruple engines and independent paddles. Also they were the first Flotilla vessels to have electric light and search lights. Another innovation was that each had a steam syren in addition to the more usual steam whistle. Both were designed to tow two of the new 1500 ton oil flats then coming into service as the Burmah Oil Company was now exploiting the Yenangyoung Oilfield.

Between 1887 and 1888 six more large steamers were built and some of these steamed out from Dumbarton. All were cargo steamers but carried large numbers of passengers including about 20 first class passengers. They gave many years of service and were finally relegated to the oil towing run before being converted eventually into station vessels. They were known as the Pago, Shan Class. One of these, the 'Ava' was destroyed by fire four times and each time her engines and boilers were salvaged and a new hull was built around them almost exactly similar to the original 1888 hull. Many smaller steamers were added to the fleet in this period and services were extended all over Burma.

In 1890 a new type of twin screw steamer was evolved for the Delta Services which had been carried on since 1876 by rather large steamers which were in some cases too big for the Delta Creeks of which there was over 2,600 miles of navigable waterways. These vessels were about 100 to 125 feet in length and were fitted with what was termed Rankine Cross Compound engines. They carried quite a number of passengers in three classes in some cases and were steadily improved over the years until by 1938 some of them were up to 15 knots in speed and were running Express services all over Lower Burma. Between 1890 and 1942 nearly 200 of this class were built latterly in large classes such as the "G" "W" & "H" Classes. In addition to these Double Decked Creek Steamers there was a large number of smaller single decked passenger carrying vessels which were used on service in very small creeks or in tending sparsely populated areas.

Tugs were also used in the Delta each towing from six to ten barges each barge being of about 250 tons capacity. These were mainly used for bringing in rice or paddy as it was locally termed to the rice mills for milling and after milling to bring it alongside the deep sea ships in Rangoon and other Burma seaports.

Another feature of the Flotilla's expansion after the Third Burmese War was the construction of an experimental paddle steamer as a prototype for the successors of the ageing Main Line paddle steamers. In 1888 the 'China' was built. She was a very large handsome two funnelled steamer and was built by Denny, but engineered by J. & G. Ingles. Though she was fast, she could not tow the new 1000 ton flats which the Company were now building. Her accommodation was luxurious for those days and her lines were so perfect that similar lines were used for all future large steamers. It is said that when 'China' made her first trip up river all down traffic was ordered to turn and anchor clear of the channels. The 'China' spent many years in service, but not on the mail run. She was eventually hulked in 1923,

becoming station ship at Pokokku where she was finally sunk in 1942 to prevent the Japanese getting her. The next experimental ship was the 'Hindustan' exactly the same size as the 'China' but single funnel and one mast. She was fitted with triple expansion engines and boilers of a higher pressure. All her cargo gear was steam driven and she carried in addition to 28 first class and 24 second, nearly 4000 deck passengers. She turned out to be a great coal eater and was only on the mail run until 1903. She was finally hulked in 1924 to become a station vessel at Yenangyoung being finally scuttled in 1942.

In 1900 the Director asked all Commanders and Officers of the Fleet to put any ideas they might have on paper. These were then sent to Dennys and the result was the 'Burma' completed in 1902. She was exactly similar dimensions to the earlier couple but had two funnels and five boilers. She was too heavy and too slow, and was soon taken off the mail run being hulked in 1926 for use at Maubin. In 1903, the 'India' came out. This was a handsome single funnelled ship of near the same size as the experimental trio but was a great success and was in the mail fleet for many years until her boilers gave out. This was in 1935 and her boilers were removed and were to be sent home for retubing. This never took place due to a much newer steamer having her boilers condemned. The 'India's' boilers were repaired in Rangoon and fitted into the 'Panthay'. Twelve steamers of the India type now followed each being a bit bigger than the previous one until 'Nepaul', built in 1909. She was of 1701 tons and was the biggest ship on the river, (1701 nett, 2700 gross). One ship, the 'Kashmir' was destroyed by fire when only three days old. She was the first to be oil fired and her settling tanks went on fire at Dedaye and there was considerable loss of life. The wreck may still be seen at low water 20 miles below Dedaye. Eleven of these big steamers were from time to time modernized and were in service right up to the Japanese Invasion. During this period many other paddlers were built but these were either for the oil towing services or secondary feeder services and are too numerous to enumerate.

I joined the Company in 1919 and got as a first command an old twin screw steamer named 'Naikban' which had steamed out from Scotland in 1888. She was with her sister 'Syriam' employed on the Bassein Mail Run and was very well fitted for saloon passengers. The Bassein run means leaving the main river and cutting across the delta where there are many wide open spaces of water and one night I got lost and found myself in a Chinaman's garden. I backed out of his garden and anchored until daybreak. As a result I arrived at Bassein very late, and on my return to Rangoon I went to see the 'Marine Super' about lighting parts of the Delta and he took me to the Manager and in due course I was allowed to put experimental lights of red and green in various places in the Shwelaung River. This was gradually extended until the whole of the Delta was lighted as far up the main river as Donabyu. Another innovation which I was responsible for was a large clock face with moveable hands. This was made by my Chief Engineer in the 'Sinkan' and when coming round the corner at Maubin, one gave a certain whistle signal and the Agent would then indicate the correct time from the Post Office clock in order that we might correct our clocks for the time of the tide 100 miles lower down where the oil steamers went through the Bassein Creek. This was a 36 mile long, twisty tidal creek where it would have been fatal to get stuck.

I have already mentioned that the Flotilla had its own Conservancy and pilot service which had been started in 1870. Originally buoyage and channel marking was carried out from Burmese boats drifting down with the current and when each boat reached the end of its beat it was then towed back to its starting point by the next up steamer. Another method used was for an up steamer to drop buoys which were of bamboo weighted with bags of sand,

and chance that they would still be there by the time the steamer came downstream again. Three of the new steamers got into trouble and one was lost on her first trip so a small fleet of buoing launches was built known as the Alecto Class. These were of 9 tons and their boilers were of copper, and these and the engine were removable. These little steamers were able to buoy and mark the river in beats of forty miles each. Their draft was so small that they could be filled with sand to a working draft of four to six feet, and when they themselves got aground looking for channels they then shovelled the sand overboard and so refloated themselves. Once afloat they put in more sand from the nearest sandbank to the working draft. Later vessels of the Alecto Class were fitted with lifting strops so that if they sank it would be possible for the Company's paddle salvage steamer to hook on and lift them after removing the boiler and engine. This class was still in use up to 1916 but after that date two types were built, the largest of which was about 62 feet in length and the smaller type used on the Bhamo run was 45 feet in length. This class or two classes were named after Scottish rivers. The Conservancy fleet was under command of the Pilot Superintendent who was stationed during the low water season in the 'Lanpya'. He only worked five months of the year and was home on leave seven months.

There were five shipyards to maintain this very large fleet the biggest being at Dalla opposite Rangoon Town and this yard did all the big steamer dry-dockings etc. on broad-side and end-on marine railways. Here also were situated boiler shops, erecting shops, machine shops, carpenters' shops and all the other type of shops which go to make up a shipyard. The smaller shipyards were at Rangoon Foundry which dealt mainly with Creek type steamers and there was a small dockyard at Moulmein for the Sittang and Salween fleets; also another at Mandalay which was the Old Burmese King's Yard. Aircraft, of which we had five, were dealt with at Poozendaung.

## SOME HISTORY OF THE WALLASEY LUGGAGE BOATS

FROM 1st APRIL 1880 TO 31st MARCH 1947

by E. Cuthbert Woods, F.R.Hist.S. & E. Jones.

It is 15 years this month since the Wallasey Corporation goods ferry steamer Perch Rock made her last service trip across the Mersey. Although the ferry between Seacombe and Liverpool is very ancient it was not until 1880 that facilities were provided for the carriage of horse drawn vehicles on the steamers.

By long established custom Merseyside residents have always referred to the goods ferry steamers as "the luggage boats" and before commencing to outline the history of this service let us take a glance at the conditions in force before it came into operation. Until the 60s of last century there lay to the south of the parish of Seacombe the mouth of Wallasey Pool. The foreshore at the entrance to the Pool was further inshore than the present line of the river wall between Alfred Locks and the present Seacombe Ferry and then followed the approximate course of Birkenhead Road which runs between the Four Bridges and the lower end of Church Road, Seacombe. What, then, were the facilities offered at Seacombe?

Baines says that in 1826 great improvements were made at Seacombe Ferry by the building of a quay wall with steps leading up to Parry's Seacombe Hotel. On the wall in front of the hotel was a starting bell for the steamers and immediately south of this wall was a stone slip leading down to the water. These improvements were doubtless due to the inauguration in 1822 of the first steam passenger service by the wooden paddler 'Seacombe'.

In 1835 was commenced a new stone slip of some 450 feet in length and 15 feet wide. Built on the foreshore and having an incline of 1 in 20 the slip carried railway metals whereon ran a moveable stage and a steam winding-engine. By 1857 however the great increase in the number of passengers made it necessary to widen the stage and slip to 21 feet. The engine was at the same time moved to an engine-house on shore and thereafter the stage descended by its own weight during the ebb and was wound up by the engine to suit the advancing level of the tide during the flood. The remains of the old slip are still occasionally visible at low water spring tides. (Edward Jones)

Large scale reclamation of the foreshore to the north of Alfred Locks during the building of the docks at Birkenhead in the 1860s provided made-up land which was later used for ship-building yards, the derelict sites of which remain. Between the return wall of this reclaimed land on the new river frontage, and Seacombe Point, a small headland which lay to the north of the present ferry approach, now lay a triangular bay of about 4 acres in area which extended inland to the present junction of Birkenhead Road and Church Road. In this bay lay the old ferry slip. To the left was the return wall of the North Reserve with a coal chute on the water's edge and beyond, in the centre, the old ferry slip with the running-out stage, the winding-engine house.

At that time there were no facilities for the carriage of vehicles between Liverpool and Seacombe. In 1817 there had been built the 'Etna' the first steam ferry boat on service in the Mersey. She was advertised in Gore's Liverpool Directory for 1823 by Mr. Hugh Williams, leasee of Woodside Ferry, as plying between the Etna Slip West Side Queen's Dock, Liverpool and Birkenhead Hotel for the conveyance of passengers, horses and carriages.

Here are the recollections of a lady, one of a family, who moved over from Everton to Seacombe:-

"Our furniture having left Everton at 8 a.m. on a November morning in 1852 did not reach Seacombe until evening, having been round Birkenhead and the Half-Penny Bridge (Poulton) was carried in by the cheerful light of a tallow candle jammed against the door-post." Such, then, were the facilities for vehicles when the family from Everton moved "over the water" 110 years ago. The Mersey ferry services, such as they were, were in those days private ventures, indifferently run and not too efficiently organised. Complaints were made that the steamers acted as tugs when opportunity arose, with scant regard for the convenience of passengers. In 1863 the Seacombe Service was purchased from the brothers Colebourn by the Wallasey Commissioners for the community and by the mid-sixties a luggage-boat service was a feature of cross-river transport. None of the earlier vessels had been built specially for the carriage of goods, livestock and light vehicles, but may have been adapted for such use. The first vessel to be designed and built as a luggage boat was the iron paddler 'Sunflower' in 1879.

In 1876 the annual passenger traffic at Seacombe had reached a million-and-three-quarters and it was obvious that a completely different and more modern ferry should replace the old and rather primitive arrangements then in force.

Although it had been decided that a new type of stage would have to be built, several years were spent in discussing the many plans submitted in competition. The successful plans were those of Mr. W. Carson, M.I.C.E., Manager of the Ferries for the Wallasey Local Board. In the Wallasey Improvement Act of 1872 it was stated that a river wall about 1000 feet in length would have to be built from the ship-yards on the south side of the old ferry, extending northwards to Seacombe Point which then stood at about the south end of Mersey View, Seacombe. Carson's plan envisaged the filling in of the area behind the proposed wall and the construction of the ferry approaches. A floating landing stage was to be built and the access thereto was to be by means of a bridge for pedestrians, a bridge for horse-drawn vehicles, and, between the two, a pair of hydraulic lifts from the stage level to ground level for the use of vehicles.

The area enclosed was nearly 4 acres in extent and approximately two-thirds of the necessary filling was obtained by levelling the grounds and bowling-green of the old Seacombe Hotel and a field beyond. Nearly half of this area was taken by the Mersey Docks & Harbour Board, the remainder of the reclaimed area being used for ferry buildings, approaches and accessories. Thus the whole of the rectangular area now known as Victoria Place whereon in their turn first the old horse trams then, between 1902 and 1933, the electric trams and now the motor buses set down and picked up their passengers, stands upon the site of the little bay wherein until 80 or so years ago the paddle ferry-steamers berthed.

The old ferry was closed on 26th July 1876 but during the extensive rebuilding operations it was of course necessary to maintain the cross-river service with as little interruption as possible. To effect this a temporary floating stage and bridge was moored to the south of the ferry on a piece of land which had once been a shipyard. On this land was a large iron shed on pillars under which carriages could be drawn and it also accommodated a cab stand. The entrance to this temporary stage was from East Street, the old cobbled street which still follows a course from the ferry workshops to Alfred entrance.



The new ferry, which cost about £150,000 to build commenced operations on 5th January 1880 for pedestrians and on 1st April for vehicles, but in this paper it is only necessary to describe the arrangements for the "luggage" traffic in Carson's plan. Of its entire length of 314 feet 6 inches the south part of the floating stage, measuring 186 feet 6 inches was for goods traffic. This section had a recess 108 feet 6 inches long at the south east corner wherein the goods steamers were to berth. Vehicles gained access to this end of the stage by means of a bridge at the south end. To enable the laden wagons to be hauled up the bridge when the incline was too steep for the horses, a capstan was placed at the top of the bridge. In later years the capstan fell into disuse and was removed but chain horses were always available from Messrs. Owens' stables in Birkenhead Road when necessary. When the angle of the road bridge became too steep the two hydraulic lifts were used. As originally planned each lift was to carry a set of railway metals and was sufficiently powerful to lift and lower a fully loaded railway wagon. On the stage a pair of rails ran from each lift to a turntable from which one set led to the end of the embayment for the end loading of steamers, the other ran parallel to the side of the embayment for side loading. Thus it was possible for railway wagons to be hauled by locomotives along the dock system from Birkenhead Road down to the ferry. Thence by hydraulic capstans to the lifts, down to the stage, on to the boats, and so, (as was hoped) to Liverpool Stage. To take a loaded wagon and a nervous, clattering, draught horse into the lift was not always easy. The sight of water was such that even the most docile animal might become restless and in consequence later sheet iron, pierced with holes to let out the water was erected so that the horses could not see the water. After losing a horse and wagon which went straight through the lift into the river, further precautions were taken. Mr. J. H. Croker, a gentleman of inventive turn, who then lived in his home on the site of Belle Vue Road, invented Croker's Patent Scotchies, an ingenious arrangement whereby as soon as the lifts commenced to move the scotchies rose and secured the wheels of the wagons.

The first luggage boat built as such for the Wallasey Ferries was constructed by Messrs T.B. Seath of Rutherglen in 1879. She was the 'Sunflower' an iron paddler with so much overhang at each end that she appeared to be almost circular. Tradition has it that this so much upset her trim that she took a tremendous list under a badly distributed load. As originally designed she was to have had railway lines laid on her deck, but fortunately, for her, she never had a railway wagon on board. When the floating roadway was built on to Liverpool Landing Stage, the Mersey Docks and Harbour Board decided not to have railway wagons on the Stage and all the work of laying down railway lines at Seacombe was wasted for they were never used. Because of this, and as she was not too successful as a luggage-boat the 'Sunflower' was very soon converted into a passenger boat and remained in service until she was broken up in 1905. About this time there was one conversion the reverse way. In 1885 the forward portion of the deck of the 'Waterlily' was removed, together with the saloon, and she was utilised as a passenger-luggage boat.

At this point let us look at the ferry accommodation on the Liverpool side. Pressure had for some time been brought to bear on the Liverpool Corporation, even before steam boats came into regular use, to provide adequate landing places for them as before the river walls were built the passengers were landed on the foreshore. When the walls were built passengers then landed on to wide stone steps built into the walls. Some time about 1840 there was launched from Mr. Cato's yard at Brunswick Dock a new floating landing stage for the Seacombe steamers, moored at the south end of Princes Dock. In 1847 a floating stage constructed by Mr. L. Cubitt was moored off George's Parade for the exclusive use of ferry steamers, and opened on 1st July. Ten years later, in 1857, on 1st September, Prince's Stage was opened to the public. To enable vessels to enter and leave George's Basin a space had to be left between this and Cubitt's stage but the closure of the Basin in 1871 enabled the building of a continuous stage.

In 1872 the Board sanctioned a plan for the construction of a floating bridge on the site of the entrance to George's Basin and the joining of the two stages at the foot of the proposed bridge. When the Liverpool stages were rebuilt as a continuous unit with approach for vehicles from the floating bridge an embayment was left on the river side of the stage and a little to the north of the foot of the bridge. The entire length of the new structure was 2063 feet with a width of 80 feet. It had just been completed and was to have been inaugurated by the Duke of Edinburgh on 28th July 1874 when it was destroyed by fire. It was, however, completed again and reopened for traffic on 8th April 1876 and except for certain modifications and alterations, remains substantially as originally built. The embayment in Liverpool Landing Stage receives very little if any, mention in local history and in consequence not very much is known about it. It would appear to have been about 210 feet in length and, as with its counterpart at Seacombe, allowed end-on and broadside loading. It has not so far been discovered how long end-loading was a feature of the stages but the berthing of steamers is none too easy at any time and the additional hazards of setting-in to such a small space would demand extreme competence on the part of the crews. There was a balanced gangway for end-loading on the stage. When the embayments went out of use has not so far been ascertained, but it is thought that the Liverpool Embayment went out of use about 1904 or 1905. So familiar are we with the floating roadway in Liverpool that we seldom spare a thought for the ingenuity of the engineers who designed and built it nearly 90 years ago. It should be noted that originally the roadway curved to the northward towards the embayment, and did not run straight down to the stage as today.

The second true luggage boat was the 'Wallasey' the second vessel of that name, built by Allsup & Son of Preston in 1881 to replace the unsuccessful 'Sunflower'. The new vessel followed the basic design of Birkenhead's 'Oxton' of 1879, the prototype of all subsequent Mersey luggage boats. The 'Wallasey' was an iron steamer with twin screws at either end, an island wheelhouse structure amidships from which rose the familiar black-and-white funnel, and she carried a lifeboat aft. As originally built the loading facilities for the early luggage boats differed from those in use in later years. They had no gangways, but carried openings in the bulwarks on either side, these being closed by sliding doors. Forward the 'Wallasey' had her deck slightly ramped downwards and a pair of doors which swung inboard. When berthed in the embayment, as seen here, she lay broadside-on to the stage but bow-on to the end of the recess. The bow doors were opened and the balanced gangway lowered from the stage on to her deck. Having loaded, gone astern and swung out into the tideway, especially if there was a bit of sea running, the creaming waters were visible through the narrow space between the bottom edges of the bow doors and the ramped-down deck. Mr. Edward Jones well remembers this, and to those unused to such a sight a fearsome spectacle it was. To steady a restive horse and to prevent it from backing into the horse and cart following was no easy task.

The only two-funnelled steamer in Wallasey's luggage fleet was the 'Shamrock' which came into service in 1891. She was built in 1865 by Scott and Company of Northfleet, with paddle engines by J.C. Mare and Company of Blackwall, for the Woodside ferry service and bore the name 'Woodside'. In 1891 she was purchased by Wallasey and converted into a luggage boat by the removal of her midship saloon. In her new role, and now known as the 'Shamrock' she was not a success for one reason and another but despite this she remained in service until disposed of in 1901.

The Birkenhead ferry steamer 'Claughton' was always distinctive in having two slightly bell-mouthed funnels, her port funnel was before the paddle-box and the one to starboard aft of the paddle-box, and saloon between the paddle-boxes. With this saloon removed as in the case of the 'Shamrock', later 'Woodside', there would be plenty of accommodation for vehicles.

Having had two "bad bargains" in a fleet of three the Local Board decided to repeat the successful design of the Wallasey for their next venture into vehicle carriers and ordered a new vessel from Cochrane & Co. of Annan. The 'Seacombe', the second vessel of that name, was a twin-screw steel vessel built in 1901 and was the last luggage boat to be ordered by the old Wallasey Local Board. For 20 years, in company with the 'Wallasey' she maintained the cross-river service but by the end of the war of 1914 to 1918 the large increase in the number of vehicles using the ferry facilities made it necessary to increase the number of steamers in service. Two further boats, the 'Liscard' and the 'Leasowe' were built by John I. Thornycroft & Co. Ltd., of Southampton in 1921. Their general design followed that of a typical Mersey ferry goods steamers but they were quite distinctive in having a very large and imposing funnel and a flying bridge extending across the full beam. Loading gangways were carried, two on each side, and very large and powerful steamer these ships appeared.

At Seacombe the landing stage and approaches of 1880 had remained more or less unchanged throughout the passing years except that about the turn of the century the embayment had been filled in and the vehicle gangways removed. The railway lines had long disappeared from the stage and lifts and the only lines which still existed were those which served the engine-house for the lifts.

Traffic, both vehicular and pedestrian, continued to increase and as had happened 45 years earlier Mr. Carson's ingenious iron structure in its turn became insufficient and out-dated. In 1925 there commenced a large scale reconstruction of Seacombe Ferry and its approaches. Carson's distinctive projecting iron pier with its hydraulic lifts, the engine house, accumulator tower and all the familiar features of past years were swept away. In its place came a new stage, bridges and approach and in 1926 there was opened by the Earl of Derby a three-tracked floating roadway for the use of goods vehicles. In the same year Wallasey Borough Council embarked upon an ambitious scheme to re-model the whole area which project, completed in 1933, resulted in the lay-out at present in use.

Concurrent with the rebuilding of the ferry buildings and the new stage an additional goods ferry steamer joined the two already in service. In 1929 the 'Seacombe' was withdrawn and to replace her the seventh and last vessel entered upon the scene.

In that year the Caledon Ship Building Co. Ltd., of Dundee built the 'Perch Rock' and introduced a new, albeit familiar, name into the service. The largest luggage boat to have served on the river she was in appearance similar to the 'Leasowe' and the 'Liscard' all three having twin rudders for easier handling, those of the new ship being Flettner type. Her entry into service enabled a more frequent time-table to be maintained.

Despite the more frequent cross-river service the ferry boats were unable satisfactorily to handle the growing amount of traffic requiring to cross the river. Motor vehicles had rapidly increased in numbers but the giant shire horses, for so long a part of the Merseyside dockland scene were still, and for many years were to remain, the principal means of short distance haulage along the line of docks. It was by no means uncommon in the '30s to see a

queue of vehicles extending from the Landing Stage up the floating roadway and along the Pier Head, sometimes as far as the Dock Office and beyond. To add to the already difficult transport problem the appearance of fog would produce conditions leading to immeasurable delay. In connection with these delays there is a story that medical men could obtain a card which, when shown, enabled them to claim preferential treatment. This was quite a good idea in principle but it is said that some who practised in Liverpool and lived in Wirral were in the habit of producing their cards when going home! One further reminiscence which perhaps should be placed on record is the extreme skill with which the cars and wagons were loaded on to the steamers by the crews and the relative speed with which the transport disembarked.

The eventual closing of the luggage ferries was perhaps the inevitable outcome of the opening of the Mersey Tunnel for road transport in 1934. Horse-drawn wagons being excluded from the new tunnel continued to use the steamers but the writing was upon the wall. Traffic dwindled until the service became so uneconomical that it became a burden to maintain and the outbreak of war in 1939 added to the difficulties of the undertaking.

It has been said that war makes strange bed-fellows. Two Wallasey ferry steamers were requisitioned by the Admiralty and the 'Liscard' became a floating crane for the unloading of aircraft from incoming vessels. For 13 years after the opening of the Mersey Tunnel the luggage service struggled on. That of neighbouring Birkenhead was encountering similar difficulties and ceased operating upon the outbreak of war.

The Seacombe service continued until the 'Perch Rock' took the last sailing on 31st March 1947 and the service was closed, having survived its neighbour by a mere 7 years. Upon the closure there arose the problem of disposing of two vessels then 26 years old and one of 18 years. All these vessels had been built for a specialist trade and were therefore unlikely readily to find buyers. However, in 1946 the 'Liscard' was sold to Copenhagen buyers for further service as a salvage steamer and sailed under the name of 'Lisca'. The 'Leasowe' was sold to shipbreakers and left the Mersey on 27th August 1948 in tow of the tug 'Forager' for Troon. The 'Perch Rock', the last of the luggage boats had had occasional spells in carrying passengers to New Brighton at the height of the season up to 1951. In 1954 she too was disposed of, to Swedish interests for conversion into a train ferry under the name of 'Betula'. With her disappearance the luggage boats passed into Merseyside maritime history. Now they are but a memory. Such, then, in veriest outline is the history of a service at one time so well established that, had we ever given it a passing thought, we should have expected it to go on for ever.

## THE ASHBURNERS AND THE COASTAL SCHOONER

by Dr. Dennis Chapman.

The Schooner and the Ketch like the Thames Barge has attracted a romantic interest whereas the Collier Brig and the Mersey Flat have been neglected. It is probably because these coastal sailing vessels were the last survivors of commercial sail that interest has developed. Basil Greenhill's well known work is as valuable as technical study and its descriptions of the social organisation of the industry and of life at sea make it unique. There is however much more detail to be discovered in parts of the coast outside the areas of his special interest and the economics of the trade require systematic study. The dramatic increase in motor transport in the 1920s and 30's brought to an end the extensive coastal trade in all but a few areas like the West Coast of Scotland and the Taw and Torridge estuaries and in the fifty years that has passed much of the evidence has been lost.

The coast line of Britain has small ports, sheltered anchorages, creeks and drying beaches in great numbers, often only separated by a few miles which were in continuous use by small coasters. The frequency with which the remains of Lime Kilns are found on beaches or shown on early maps are one indication of a trade in coal and lime.

Sometimes physical evidence survives a ruined jetty as at Morfa Nevin, the walls that enclosed the ship yard at Porth Dinlleyn, the drydock at Amlwch or the cleft in the cliff below a barn at Port Isagon which was once a dock with its warehouse. Nevertheless it is only the larger ports like Portmadoc that have been studied in detail for the rest only fragmentary information survives. Barlett's engravings made before 1850 show many Irish Sea Ports crowded with small sailing vessels as do the picture postcards of the turn of the century.

The fame of the Ashburners rests on a single vessel, the steel 'Result' built at Carrickfergus in 1893. Its survival is due as with any vessel, to providence, but also to its design that allowed it to trade successfully as a sailing vessel, as a sailing vessel with auxiliary power and as a motor ship with auxiliary sail until the 1960s. In 1971, the 'Result' was bought by the Ulster Folk Museum for preservation.

Few records of this family of shipbuilders and shipowners have survived. Shipbrokers, local insurance companies and local newspapers could be sources of more information but time has not permitted a full exploration of these.

What is new in this paper comes from two disbursement books kindly lent to the author by Captain John A. Smith whose ancestor Robert Latham was master of three of the Ashburner fleet, the 'James Postlethwaite', the 'Margaret Bannister' and the 'Mary Ashburner', he was a share holder in the 'Isabella', the 'M.E. Johnson', the 'Mary Ashburner' and the 'William Ashburner'.

The general pattern of the coastal trade in the second half of the 19th century was that a variety of small craft basically the flat, the barge, the keel and the trow, the schooner and the ketch handled the local small bulk trade and a variety of schooners and brigantines were in the near water trades to Europe, Ireland and the Mediterranean, and to North America, these vessels were steadily drawn out of the distant waters, trade and in consequence became available, often cheaply for the expanding coastal traffic. However

in contrast to the sailing 'lighter' or the ketch these vessels were deep in draft complicated in rig, and had small hatches. The Ashburners were successful in building vessels which had the advantages of the Flat and the sailing qualities of the Schooner.

The Ashburner family and their involvement in the local community were typical of a pattern of economic organisation which was common in coastal shipping and fishing but which had largely disappeared from the industry of the great ports.

A small port could be self-sufficient with relatively simple equipment and technology. Ulverston from which the Ashburners originated had several small shipbuilding yards, a blacksmith, a block-maker, two sailmakers, a maker of mast hoops and a foundry. It was common for school masters and on occasions clergymen to teach navigation although in the larger ports schools of navigation existed.

The technique of wooden shipbuilding was primitive as can be seen in Scottish ports where fishing boats are still built in the open. A saw pit, a steam box, some augers, a quantity of massive cramps, a derrick or sheer legs and some scaffolding was all the equipment needed, the ship's carpenters and shipwrights would supply their own hand tools. It was therefore possible for a ship's carpenter with a good reputation to organise a group of shareholders to set him up to build a vessel. A shipyard could flourish for years then disappear under grass after a year or two of poor trade and its craftsmen find work in other trades.

The system of 64th shares allowed a wide diffusion of ownership in which the builders, the master of the vessel, the traders supplying the timber or materials or hoping to employ the vessel and others could participate. A master could by successful trading increase his shareholding until he became the majority share-holder or sole owner.

Captain Charles Chapman author of a work on 'Seamanship' and later master of the 'Caliph' describes the Schooner 'Nancy Dawson', in which he served as cabin boy, trading from Newport to Cork with coal outward and pigs on return as providing 'an honest living for three or four families'.

Of the many families in Furness district of Lancashire who were involved in the trade two are outstanding, the Ashburner and the much more successful Fishers who are still in business at Barrow and who took over the Ashburners yard.

The family history of the Ashburners is typical, there were two Ashburners, William and John, recorded as boatmen at the end of the eighteenth century in Ulverston and after the building of the Ulverston Canal in 1795 Hart and Ashburner were in business at low yard Canal Side, Christopher Ashburner at Canal Head, and William Ashburner and Richard Ashburner were building ships at Barrow and Greenodd.

The Ashburners were associated with another well known Ulverston firm who were in shipping, shipbroking, and shipbuilding Messrs' Petty and Postlethwaite. The Ashburners of this essay include William Ashburner, who served his time under John Winram, the foreman of Messrs Petty and Postlethwaite. Edward Winram the son of John went from Ulverston to Douglas, to manage the shipyard there and took with him as foreman William Ashburner, who had served his time under his father. They built the first lifeboat for Sir William Hilary one of the founders of the R.N.L.I.

William Ashburner moved from Douglas to Barrow in 1847, and established ship-building there for the first time to serve the expanding trade in iron ore.

The names of these ships reflect the families of their owners and it is likely that the 'Lathams' are of the same family as the Robert Latham of the disbursement books. The 'Margaret Bannister', 'William Ashburner', 'Mary Ashburner' and the 'Isabella' were owned and handled by the family. The 'William Ashburner' which traded to the Mediterranean and which survived until recently was typical of the ocean going schooner with its small hatches and deep draught.

William Ashburner also built fishing vessels, details of which have not been found and yachts, a photograph of one the 'Lulu' found recently is like a Morecambe Bay Prawner in hull and rig.

William's Brother, Richard built ships at Greenodd including wooden steamers the 'Lady of the Lake', and the 'Lords of the Isles' as well as fishing craft. He joined his brother William in Barrow in 1850.

William Ashburner had three sons, Thomas, Richard and William, these took over the business; Thomas as business manager, Richard as manager of the shipbuilding business and William the youngest was in charge of the cabinet work.

In the disbursement books a John Ashburner, presumably a grandson appears as ships husband to the vessels owned by Thomas Ashburner.

Richard Ashburner, the second was almost unique in the business of wooden ship-building as he was a trained naval architect and produced beautiful plans, some of which have survived. Basil Greenhill has reproduced the plans of the 'William Ashburner', the 'Mary Ashburner', and the 'Result' in his 'Merchant Schooners' these show a high level of professional competence.

These plans show the development of a distinct type of hull form, little change in draught from fore to aft, flat floors to take the ground and remain upright alongside and a pointed stern. Greenhill suggests that the hull form owed much to that of the 'Flats' which traded out of Lancashire ports especially the Mersey. He mentions also that these vessels were capable of tacking against the wind in narrow waters to reduce the need for tugs.

A structural drawing of the 'Mary Ashburner' shows the high quality of the Ashburner's shipbuilding. The planking is Greenheart where it might make contact with a jetty, pitch pine to the turn of the bilge, American elm of increased thickness at the turn of the bilge, to take the ground and American elm for the bottom planks, the Kelson was greenheart on pitchpine. The iron knees are shown as continued as straps beyond the turn of the bilge. The material of the frames is not mentioned but the English oak was the only possible timber. Greenhill writes: "It is fortunate that those merchant schooner plans which have survived are of ships of such quality as the Ashburner vessels for Richard Ashburner took pride that his schooners should be, if not like yachts, at least comparable in grace of form. And their quality of construction was shown in the duration of their seagoing lives, for five ships of Richard Ashburner's design were afloat in 1949, four of them still carrying cargoes at sea, and a sixth was lost only two years before."

The Ashburners ceased shipbuilding on the death of their father William in 1883 but they continued in ship owning and from the success of the 'Useful' they decided to build a new vessel which combined their experience and Richard Ashburner's skill. The 'Result' a steel schooner built at Carrickfergus and launched in 1893, was perhaps the finest small sailing vessel built in the United Kingdom. The Ashburners ceased trading in 1909, and their fleet was sold by auction by Coppacks at Connah's Quay.

The Disbursement books of Robert Latham cover a period from February 1878 to 1885. During this time the vessels whose business is recorded were the 'Mary Ashburner', the 'Margaret Bannister' and the 'James Postlethwaite'. The entries in the Disbursement books show the date, the port of loading, the date and port of unloading, the cargo, its weight and the freight charges per ton, all the expenses incurred in port and Reporting, Lights, Dues, Pilotage, tugs, etc, etc. By following successive entries the delays in getting a cargo or in loading can be deduced.

For each journey the total freight charges are recorded and the expenses subtracted. The balance is then divided into two parts, one being the ships share to be divided into 64ths for the partners after paying such charges as insurance, brokerage and major repairs and equipment. In October 1884, the ships share was reduced to one third. There is no indication as to the disposal of the balance in detail. It can be assumed that wages were paid out of this and perhaps any surplus could have been retained by the master as a kind of incentive to keep costs to the minimum but this is pure speculation.

The basic pattern of trading appears to be, as one might expect from the industrial background of Furness and the proximity of the Mersey and the Dee, a trade in iron ore, pig iron, scrap iron, railway iron and purple ore (fluorspar) for steel making. Cargoes were accepted for any British, Irish, Manx or French port if the opportunity arose.

Captain Robert Latham's records begin in the schooner 'Mary Ashburner' in February 1878 and he moved to the 'Margaret Bannister' in August. His voyages were from Barrow to Port Talbot, Port Talbot to Liverpool, Liverpool to Belfast, Belfast to Duddon, Duddon to Cardiff, Cardiff to Ardrossan, Ardrossan to Llanelly, Llanelly to Dieppe, Dieppe to Chester, Chester to Peel, Peel to Liverpool. His cargoes were pig iron, tin plate, coal, iron ore, slack coal, coal boulders (flint?) and gravel. His accounts were settled in April and October and he received a dividend on his share in the Mary Ashburner.

Trade in the 'Margaret Bannister' was mainly in iron ore, pig iron, purple ore, steel scrap and coal between Furness, the Mersey and the Dee. There were occasional variations; tiles and retorts from Ellesmere Port, (products of the brick works of the Wrexham area perhaps), for Belfast, flour for Douglas, wheat for Barrow, Indian corn for Ayr and occasional cargoes of gun powder from Ulverston.

In October 1879, at the settlement he received dividends on 1/64th share of the 'Isabella' and 'Mary Ashburner' and in January, 1880 purchased a 1/64th share in the 'M.E. Johnson' for £35. In the settlement of October 1880 he received dividends totalling £7.11.6d. on his shares. The total profit on the managing of the three schooners for 6 months was therefore £486.18.4d. - not a large amount even in golden sovereigns!

Robert Latham appears to have continued in the 'Margaret Bannister' until March 1882. There is then a gap in the record and the second disbursement book begins on May 1884 and deals with the 'James Postlethwaite' of Barrow, 'Thomas Ashburner', owner and John Ashburner,



ship's husband, to whom all accounts had to be sent in a fortnight at least before the last Saturday in April and October each year.

In these accounts Robert Latham is shown as owning 1/64th of 'William Ashburner', 1/64th of 'Isabella' and 4/64th of 'James Postlethwaite'. It is not clear whether he still held shares in the 'Mary Ashburner' and the 'M.E. Johnson'. The trading pattern of the 'James Postlethwaite' was more varied than that of his previous commands as is shown in the extract.

Whereas the 'traditional' literature of the 'Age of Sail' concentrates on the spectacular fast passages the facts reveal by the disbursement books are very different, from Fleetwood to Plymouth in May 1884 the 'James Postlethwaite' took twenty days, the next passage after ten days waiting was Plymouth to the Thames taking ten days then to Medway to load cement for Eriska in the Orkneys. This passage took fifteen days and it appears that the 'James Postlethwaite' then sailed to Ayr to load pig iron then to Newport, Monmouthshire completing the circumnavigation of England, Scotland and Wales in about eleven weeks of which about three were spent in port.

Except where the voyage from port to port was 'light' delays waiting for or loading cargo were common, usually of 1 to 7 days occasionally longer periods occurred but these are not shown separately from time on passage. The 'James Postlethwaite' arrived in Belfast on October 24th and then sailed light from Belfast to Fowey. She left Fowey, for Runcorn with china clay on the twelfth of December, 48 days in all.

A summary of these voyages is given:

A YEAR'S TRADING BY THE JAMES POSTLETHWAITE

| Voyage | From          | To              | Sailed | Arrived | Time<br>Days | Cargo      | Weight<br>Tons | Freight |
|--------|---------------|-----------------|--------|---------|--------------|------------|----------------|---------|
| 1      | Fleetwood     | Plymouth        | 7.5    | 26.5    | 20           | Coal       | 208            | 4/ -d   |
| 2      | Plymouth      | Thames          | 4.6    | 13.6    | 10           | Bricks     | 220            | 4/ 3d   |
| 3      | Thames        | Medway          |        |         |              | Light      |                |         |
| 4      | Medway        | Eriska          | 24.6   | 8.7     | 15           | Cement     | 160            | 9/ -d   |
|        |               |                 |        |         |              |            | 40             | 7/ 6d   |
| 5      | Eriska        | Ayr             |        |         |              | Light      |                |         |
| 6      | Ayr           | Newport, Mon.   | 22.7   | 31.7    | 10           | Pig Iron   | 220            | 3/ 6d   |
| 7      | Newport       | Dundalk         | 2.8    | 12.8    | 11           | Coal       | 214            | 4/ 6d   |
| 8      | Dundalk       | Whitehaven      | 13.8   | 19.8    | 7            | Timber     | 43             | 4/ -d   |
| 9      | Whitehaven    | Regents Canal   | 23.8   | 8.9     | 16           | Stone      | 210            | 7/ 6d   |
| 10     | Regents Canal | Barking         |        |         |              | Light      |                |         |
| 11     | Barking       | Dublin          | 12.9   | 26.9    | 15           | Manure     | 204            | 5/ -d   |
| 12     | Dublin        | Holyhead        |        |         |              | Light      |                |         |
| 13     | Holyhead      | Liverpool       | 30.9   | 4.10    | 4            | Scrap Iron | 150            | 3/ -d   |
| 14     | Liverpool     | Belfast         | 8.10   | 24.10   | 16           | Pitwood    | 204            | 4/ -d   |
| 15     | Belfast       | Cornwall(Fowey) |        |         |              | Light      |                |         |
| 16     | Cornwall      | Runcorn         | 12.12  | 6.1     | 24           | China Clay | 197½           | 3/ 6d   |
| 17     | Runcorn       | Birkenhead      |        |         |              | Light      |                |         |
| 18     | Birkenhead    | Cardiff         | 13.1   | 23.1    | 10           | Cement     | 205¾           | 4/ 6d   |
| 19     | Cardiff       | Pentewan        | 24.1   | 24.2    | 31           | Coal       | 204            | 4/ 6d   |
| 20     | Pentewan      | Southampton     | 28.2   | 10.3    | 11           | China Clay | 207            | 4/ -d   |
| 21     | Southampton   | Llanelly        | 14.3   | 25.3    | 11           | Railway    | 160½           | 3/ -d   |
|        |               |                 |        |         |              | chairs     |                |         |
| 22     | Llanelly      | Duddon          | 31.3   | 14.4    | 14           | Coal       |                |         |
| 23     | Duddon        | Saltney         | 14.4   | 23.4    | 9            | Iron Ore   | 217            | 2/ 6d   |
| 24     | Saltney       | Connah's Quay   |        |         |              | Light      |                |         |
| 25     | Connah's Quay | Barrow          | 28.4   | 6.5     | 8            | Coal       | 167½           | 1/10½d  |

Apart from the general interest of the disbursement books the details of expenses through light on both the economic problems of the trade and the daily life of the ship and her crew. The expenses of which an example is given here were rarely less than 10% of the freight charges and as in this example often amounted to 50%. Where the vessel sailed light there were expenses but no revenue.

19th February 1881

|                                   | £  | s  | d  |
|-----------------------------------|----|----|----|
| Loaded Purple Ore at Weston Point | 9  |    |    |
| Dues at Weston                    | 9  |    |    |
| Tracking in Canal                 | 8  |    |    |
| Loading and allowance             | 5  |    |    |
| Clearance                         | 2  | 6  |    |
| Pier Head                         | 2  | 6  |    |
| Towing down at 3d on cargo        | 1  | 15 |    |
| Commission                        | 14 |    |    |
| Towing into Workington            | 9  |    |    |
| Harbour Dues                      | 1  | 19 |    |
| Anchorage 4/-d                    |    |    |    |
| Harbour Boat 4/-d                 | 8  |    |    |
| Cranage at 4d - ton               | 2  | 6  | 8  |
| Night work $\frac{1}{2}$ ton      | 5  | 10 |    |
| Filling at 3d - ton               | 1  | 15 |    |
| Allowance                         | 4  |    |    |
| Reporting and Lights              |    | 2  | 11 |
|                                   | 11 | 6  | 5  |

25th February, 1881 Discharged

|   | £  | s  | d |
|---|----|----|---|
| 140 tons Purple Ore at Workington at 4s - ton |    |    |   |
| Amount  | 28 | 0  | 0 |
| Expenses                                      | 11 | 6  | 5 |
|   | 16 | 13 | 7 |
| Share -                                       | 8  | 6  | 9 |

# RUNNING EXPENSES IN THE JAMES POSTLETHWAITE

| 1885                             | £  | s  | d  | 1884                              | £ | s  | d  |
|----------------------------------|----|----|----|-----------------------------------|---|----|----|
| 6th January 1885 at Weston Point |    |    |    | Belfast 30th October              |   |    |    |
| 2 Deck Scrubbers                 | 4  | 6  |    | 1 Deck Brush                      |   | 1  | 2  |
| 2 Shakles at 10d each            | 1  | 7  |    | 1 Cork Fender                     |   | 7  | 6  |
| One set of Can Hooks at Cardiff  | 2  | 3  |    | Carryage on Sails and             |   |    |    |
| Repairs to fore Cross Trees      | 2  | 9  |    | Co-Kirkcudbright. Blacksmith      |   |    |    |
| 5 lb Trimming Candles at 5½d     | 2  | 3½ |    | work and new wire fore Tran-      |   |    |    |
| 28th January Sail Twine and      |    |    |    | seen & Co.                        |   | 5  | 4  |
| Stockholm Tar                    | 2  | 11 |    | Cardiff Lamp Glasses              |   | 1  | 6  |
| Rope and Canvas                  | 3  | 10 |    | 3 lb Trimming Candles             |   | 1  | 6  |
| Ship Carpenter <u>Penturan</u>   | 19 |    |    | Ship Chandler Fowey               |   | 9  | 6  |
| Timber                           | 1  | 2  |    | Deck Scrubber                     |   | 1  | 6  |
| Broom                            | 1  | 5  |    | Weston Runcorn January 1885       |   |    |    |
| 4 Coal Baskets                   | 5  |    |    | Birkenhead January 10th 1885      |   |    |    |
|                                  | 2  | 5  | 9½ | Pump & Co.                        |   | 15 | 7  |
| new tongue for foregaff          | 2  | 3  |    | Oils -                            |   | 8  | 4  |
| ½ Gall Colza oil                 |    |    |    | Leather and nails for Top Galyard |   |    | 11 |
| at Southampton                   | 1  | 9  |    |                                   |   |    |    |
| 3 Gall Paraffin                  | 3  |    |    | Carried Cash                      | 3 | 3  | 7  |
| 1.20 feet shaft                  | 3  | 6  |    |                                   |   |    |    |
| 2 Clay Baskets                   | 2  | 6  |    |                                   |   |    |    |
|                                  |    |    |    |                                   |   |    |    |
| Carried Cash                     | 2  | 19 | 9  |                                   |   |    |    |

The details include 'tracking' by horse on the canal to Weston Point and to Ulverston where an item for 'Perches' was also paid. Payments for oil, tar, canvas, paint, sulphur, for fumigation, candles, nails, leather, a lamp glass, the damage to a smack at Newport, bunting, a deck scrubber, repairs to a clock, a map at 2/-d etc, all occur showing that the crew, with the occasional help of a blacksmith, a carpenter, and a sailmarker kept their ship in order as she traded. On one occasion there is an item 'Coppack for Survey 10/-d'. Only one entry gives any indication of wages, in November 1855 Robert Latham was away for one week and the mate was paid £1.10s.0d wages whilst in charge.

This brief account of the trading schooner shows the business at the margin of survival, it was still possible to acquire an interest in vessels whilst working as a master but expenses were high and dividends low and often, as the disbursement books show none. Passages could be long as were delays in port and the cost of towing high. Auxiliary power could have transformed the situation but the available small steamplants appear not to have been tried and the internal combustion engine came too late except perhaps for the 'Result' which was readily converted to auxiliary power and which provided a model for a generation of vessels of her type not in Britain but in Holland. One such, the 'De Wadden' was the last sailing vessel to trade to the Mersey and is still afloat but out of commission in Eire.

## VESSELS BUILT AT BARROW BY THE ASHBURNERS

(from Furness, Folk & Facts, by William White)

| <u>Name</u>          | <u>When built</u> | <u>Registered tonnage</u> |
|----------------------|-------------------|---------------------------|
| 'Jane Roper'         | 1852              | 94                        |
| 'Tom Roper'          | 1857              | 108                       |
| 'Lord Muncaster'     | 1859              | 97                        |
| 'Mary Jane'          | 1860              | 99                        |
| 'Mary and May'       | 1862              | 97                        |
| 'Elizabeth Barrow'   | 1863              | 95                        |
| 'Furness Maid'       | 1863              | 49                        |
| 'James and Agnes'    | 1864              | 130                       |
| 'Alice Latham'       | 1865              | 75                        |
| 'Nanny Latham'       | 1866              | 75                        |
| 'Catherine Latham'   | 1867              | 73                        |
| 'Margaret Ann'       | 1868              | 77                        |
| 'R. & M.J. Charnley' | 1868              | 154                       |
| 'Henry and Mary'     | 1869              | 78                        |
| 'Elizabeth Latham'   | 1870              | 77                        |
| 'Margaret Bannister' | 1871              | 86                        |
| 'Mary Bell'          | 1873              | 175                       |
| 'William Ashburner'  | 1876              | 205                       |
| 'Mary Ashburner'     | 1877              | 106                       |
| 'Isabella'           | 1878              | 96                        |

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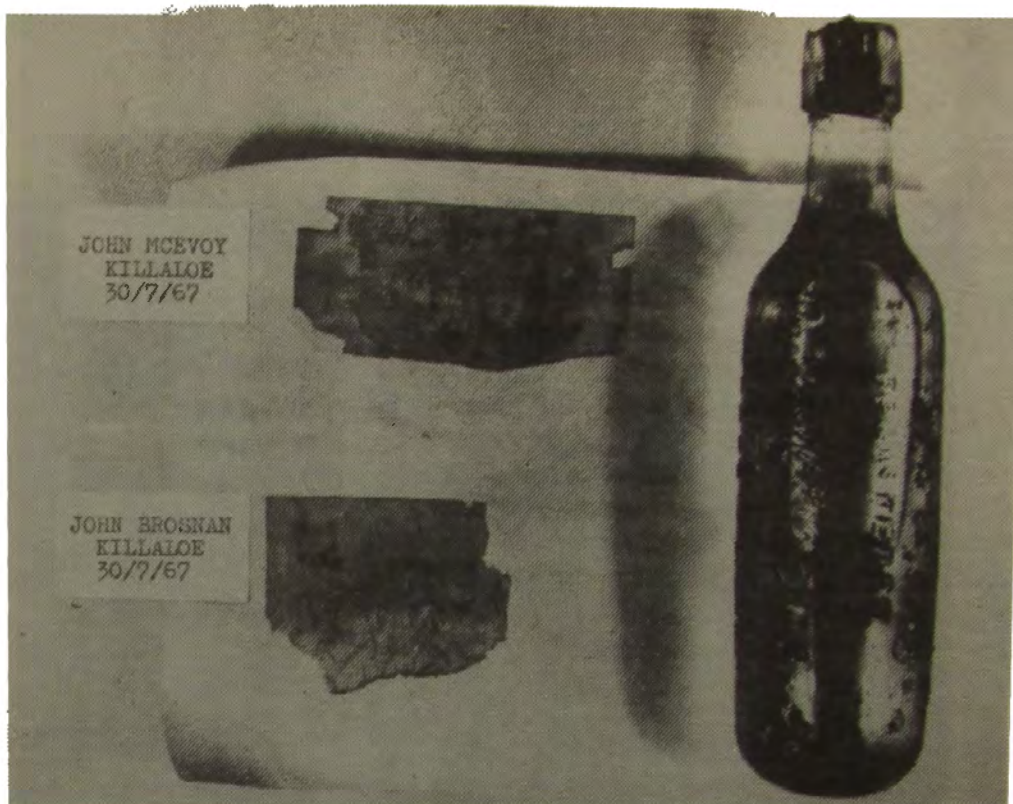


J. Foster Petree, 1893-1970







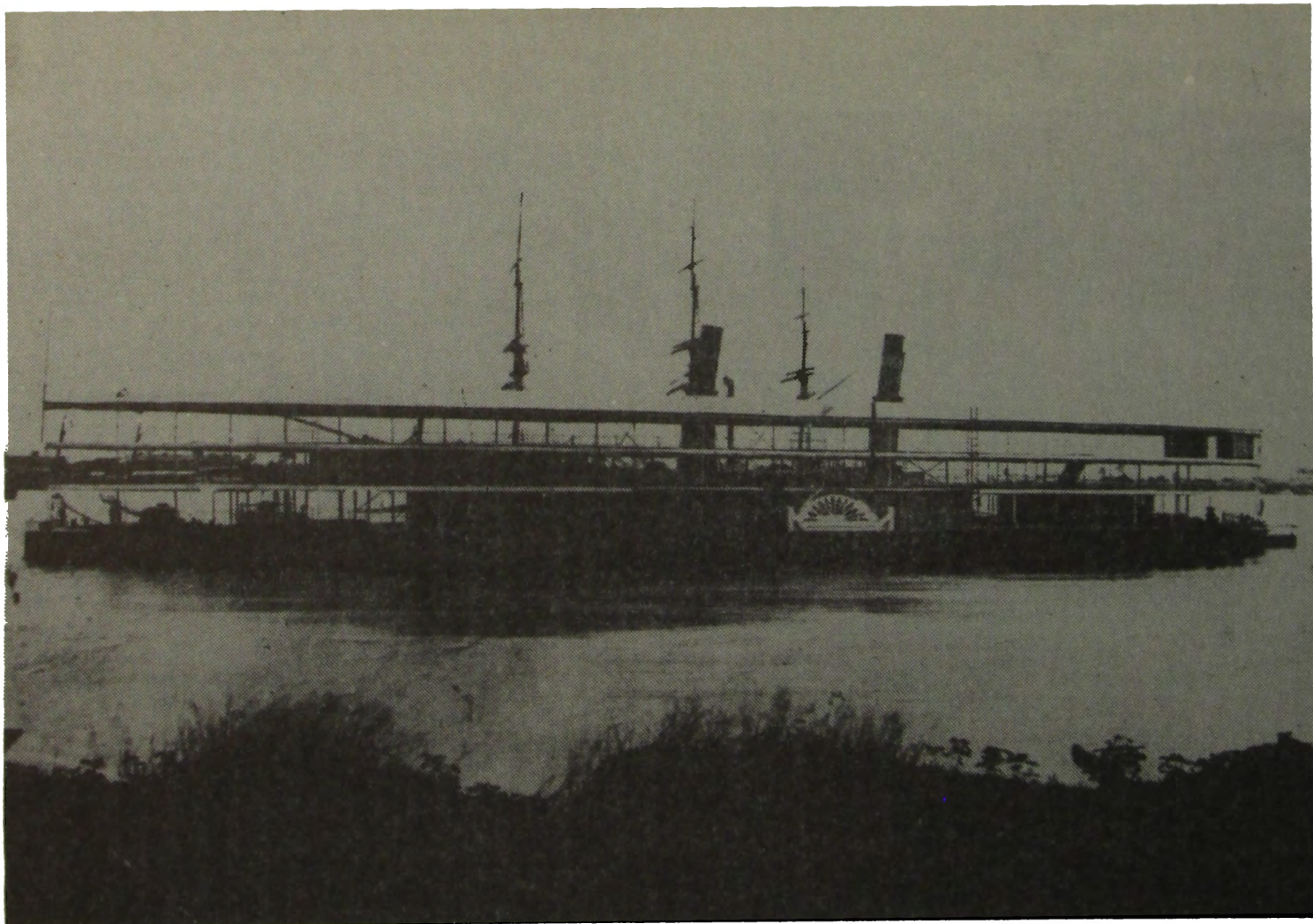


Cantrell & Cochrane mineral water bottle and two pieces of paper found inside recovered from P.S. 'Lady Lansdowne'.  
See 'An expedition to identify & survey the wreck of P.S. 'Lady Lansdowne' pp. 22-26.



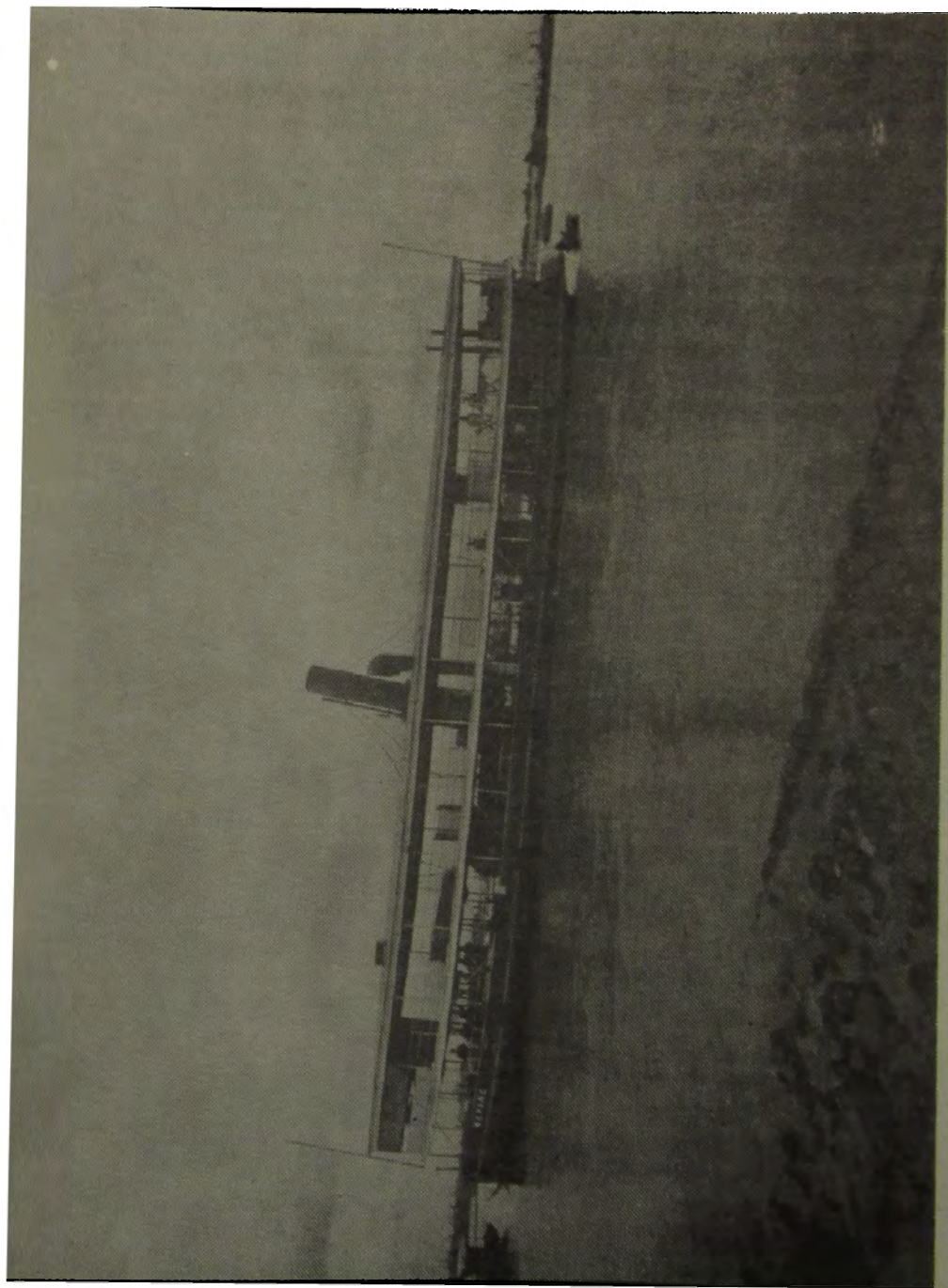
Dr. P.N. Davies, Mr. E.W. Paget-Tomlinson and divers with stem of P.S. 'Lady Lansdowne' in foreground.  
See 'An expedition to identify & survey the wreck of P.S. 'Lady Lansdowne' pp. 22-26.





P.S. 'Thooreah', main line steamer, 552 tons built by Dennys in 1879, carried King & Queen of Burma to Rangoon after 3rd Burmese War, 1885. See 'Burma, the Irrawaddy and its Steamers' pp. 27-33.

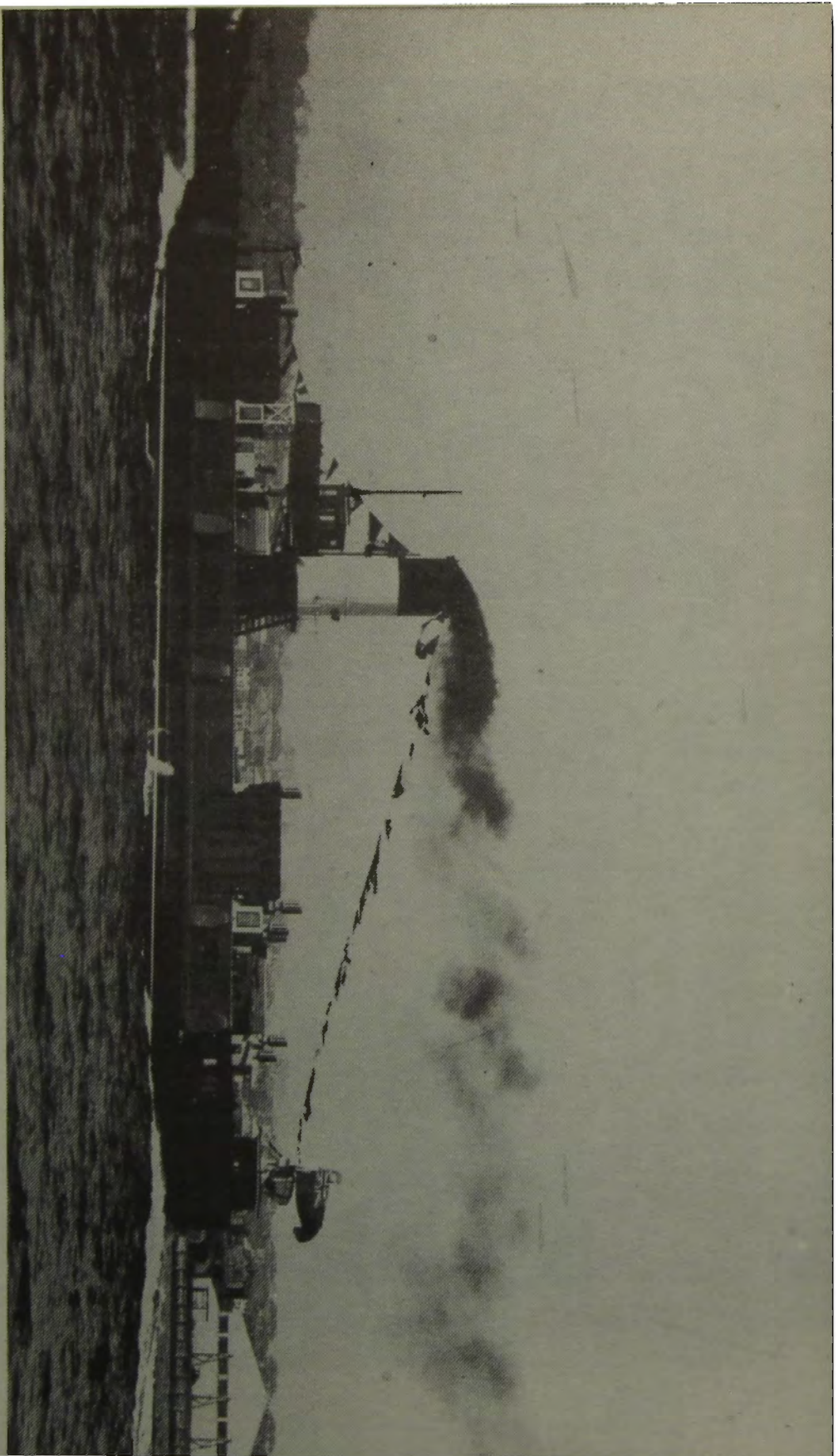




'Meping', a typical double deck creek steamer, 86 tons, built 1910.  
See 'Buma, the Irrawaddy and its Steamers' pp. 27-33.



'Perch Rock', last Wallasey Luggage Boat on trials, March 1929.  
See 'Some History of the Wallasey Luggage Boats' pp. 34-39.







Schooner 'James Postlethwaite' off Seven Heads, County Cork,  
August 1931.

See 'The Ashburners and the Coastal Schooner' pp. 40-48.





Topsail schooner 'Result' at Bridgewater. Photo by courtesy of Basil Greenhill.  
See 'The Ashburners and the Coastal Schooner' pp. 40-48.