Navigations and the Mid-Lincolnshire Economy, 1790-1830

R. Acton

Between 1777 and 1816 a great new network of Pennine and north Midlands waterways fed into an improved River Trent — a system which has rightly received much attention. Much less, however, has been said of the mid-Lincolnshire navigations to the east, possibly because of the complex relationship with drainage and the paucity of certain financial records. Nevertheless it is clear that well over £400,000 were spent in transforming this rural system between 1740 and 1830 — to say nothing of the £130,000 spent on the Grantham and the Sleaford Canals. The Foss Dyke, Lincoln’s eleven mile link with the Trent, was made and maintained as a 3 foot 6 inches waterway by the lessees, the Ellison family, at a cost of £30,000, spent mainly between 1740 and 1760 and 1820 and 1830. The Witham Navigation Commission and the Witham Drainage Commission improved the Lincoln–Boston link with the expenditure of nearly £10,000 and over £50,000 respectively, after which the Witham Navigation Company, set up in 1812, finished the works up to Lincoln for nearly £300,000, mainly in the periods 1812-16 and 1826-30, thus creating a 6 foot waterway. Meanwhile, the eleven mile Horncastle Navigation (1793-1802), which opened up considerable markets in the Wolds, raised £22,600. By 1830, the Foss Dyke and Witham alone were producing gross annual toll receipts of nearly £24,000.
Annual average toll receipts, gross (£)

<table>
<thead>
<tr>
<th>Year</th>
<th>Foss Dyke</th>
<th>Witham</th>
</tr>
</thead>
<tbody>
<tr>
<td>1775-9</td>
<td>1389</td>
<td>332</td>
</tr>
<tr>
<td>1780-9</td>
<td>1631</td>
<td>374</td>
</tr>
<tr>
<td>1785-9</td>
<td>1963</td>
<td>561</td>
</tr>
<tr>
<td>1790-4</td>
<td>1968</td>
<td>850 (approx.)</td>
</tr>
<tr>
<td>1795-9</td>
<td>2424</td>
<td>n.a.</td>
</tr>
<tr>
<td>1800-4</td>
<td>2926</td>
<td>n.a.</td>
</tr>
<tr>
<td>1805-9</td>
<td>3834</td>
<td>n.a.</td>
</tr>
<tr>
<td>1810-4</td>
<td>5085</td>
<td>n.a.</td>
</tr>
<tr>
<td>1815-9</td>
<td>5535</td>
<td>n.a.</td>
</tr>
<tr>
<td>1820-4</td>
<td>6907</td>
<td>11,546</td>
</tr>
<tr>
<td>1825-9</td>
<td>7783</td>
<td>12,813</td>
</tr>
<tr>
<td>1830</td>
<td>8481</td>
<td>15,415</td>
</tr>
</tbody>
</table>

(n.a. = not available)

Sources:
Lincolnshire Archives Office B.S. 4/4/1, 4/7/19 and 12/3/1/3 (149)
Spalding Gentlemen’s Society Banks, Stanhope (subsequently B.S.) 2/1.

While such development offers an insight into the relationship of navigational and drainage interests and the problems of capital raising and labour recruitment in an area outside the mainstream of canal development, our concern here is with the light thrown on the growth and re-orientation of the mid-Lincolnshire economy in a period of quickening local agricultural change and marked industrial development to the west.

The improvers assisted with the provision of trading facilities. The Ellisons developed the large Torksey basin — a haven from the difficult Trent — where there was much offloading onto or from lighters. Both navigation bodies on the Witham received some income from wharves; the Navigation Commission in addition built a warehouse at the Grand Sluice wharf in Boston, which was rented out to merchants. The Witham Company hired out a crane at Stamp End and a wharf and warehouse at Dalderby, owned by the Horncastle Navigation Company, were followed by the provision of the River Bain and River Waring basins in Horncastle. Brayford (Lincoln), however, enjoyed public wharves, built by the Corporation, a substantial landowner in ‘below hill’ commercial Lincoln.

Grain and mall moved westwards, mainly to Yorkshire, and down to Boston, London’s leading supplier of oats by the 1820’s. Soon after the canal reached Horncastle, 30,000 quarters of grain were despatched annually. In 1840, Boston handled 140,000 quarters. Grain was also moved to the many mills around Lincoln where flour prices rose with every ‘lag of wind’; however, in the 1826 drought which so badly affected the Foss Dyke such an accumulation of grain developed that prices fell by 3s. and 4s. a quarter. For a while, grain shippers from Sealord were using the Boston route to Gainsborough and Nottingham which could be reached at 9d. a quarter less than via Lincoln.

Livestock, too, moved by water to Yorkshire — John Cartwright using specially constructed livestock boats. Most wool moved westwards through the hands of a variety of middlemen — independent dealers trading on their own account (like Joshua Morris) or on commission (like William Hartley at the Grand Sluice) or local agents of Yorkshire dealers (like W. Soulby of Horncastle buying for Thomas Dickinson of Wakefield and Ben Gilliat and John Gibson purchasing for John Soulby of Wakefield).

Several tea warehouses were built, like Morley’s Indian Tea Warehouse in Horncastle. Wine, London porter after 1818, and Herefordshire cider after 1825 also called for increased capital expenditure and specialisation in waterside premises. The Nottingham trade was important for its cheeses: Cheshire and Gloucester cheeses met at Shardlow and were augmented by Nottingham’s own speciality. Salt also came from Cheshire — for household and fertiliser purposes; it was so scarce in Boston during the freeze-up of early 1823 that a Trent ketch tried (albeit in
tain) to force its way down the Witham hauled by five horses.

Late eighteenth century supplies of lime came from Warmsworth, near Doncaster but the Crich quarries, using the Cromford Canal, were the major supplier by 1814, for, according to a Horncastle firm it was 'the best manure yet and excellent for cement', except in waterwork. Much lime was handled by the Butterley Company and associates. In 1806, Edward Banks began to run two boats a week from Codnor Park to Lincoln and Boston; later, however, Gabriel Brittain of Butterley took over transport, charging between 1d. and 1½d. per ton per mile. Thus lime at 2s. 11d. a quarter, at Codnor, cost 5s. at Torksey, £1 2s. 6d. a chaldron at Lincoln, £1 5s. 6d. at Boston and a shilling more at Horncastle and Sleaford (i.e. well over double the price of a chaldron at Codnor Park).

The Butterley Company supplied cast iron to a wide area; it constructed the Maud Foster bridge in Boston in 1811 and supplied pipes and barrels to the Witham works in 1814. In 1812 T. Copeland of Nottingham established the Phoenix Foundry in Lincoln but continued to receive products from his Nottingham foundry. Several waterway towns and villages had agents for Staffordshire iron goods and tools (e.g. William Darby in Horncastle) but most tools came from Rotherham and Sheffield.

'Manchester goods' moved across the Pennines by the Rochdale Canal or round by the Preston Brook-Shardlow route, though drapers like Charles Ellwood of Horncastle, travelled to Lancashire and London, bringing back latest fashions with them, ahead of their main stock.

While local brick supplies were adequate, stone and timber came from the Pennines and the Baltic respectively. Most valued for weight bearing stonework (locks and bridges) was Bramley Fell stone supplied by two large quarries near Leeds operated by Thomas Wade who sent stone to several Lincolnshire projects (among which was the building of the Witham walls from above the High Bridge down to Stamp End Lock) and by John Rogerson (for the Earl of Cardigan) whose Lincolnshire work included the Witham locks of 1812-17. The Derbyshire Peak sent grinding stones and, after the canal mania, challenged Yorkshire building stone prices and won favour with the Horncastle Navigation which employed Derbyshire stone and stone dressers in the 1820's. Lincoln paving was with Elland flags from the West Riding while its roads used Trent gravel. Slate made little impact before the railway age in a county of cheap thatch and pantiles. By 1820 Hull had probably passed Boston as the leading timber port for mid-Lincolnshire.

Following early supplies of crushed bones from Hull and Nottingham came the development of local steam powered bone mills making the Witham resemble 'a vast charnelhouse'. Hull was the leading supplier of linseed cake and among the dealers and retailers were several with shares in waterways — such as John Keyworth who found room for it in his coal, malt, wines and spirit business and two druggists, Barton and Caparn, who formed a partnership to sell it in Horncastle.

The mid-Lincolnshire system was no exception to the Duke of Bridgewater's dictum that all successful navigations must have coal at their heels. Waterborne coal played no small part in the agricultural revolution: it burned lime, dried grain, roasted malt, brewed ale, fuelled

Plate II Waterside North, Lincoln, east of the High Bridge, in the 1890's. Such frontages received lift-rails in 1830 when the town walls were completed. Lincolnshire Library Services. Copyright.
steam powered bone crushers, heated brick and tile kilns, forges and foundries and, after 1832, was used by Witham Fens' steam pumps. Of primary importance was cheap distribution of coal. By 1810, the consumer had a wide choice of coals for various purposes: Chesterfield, Codnor Park, Best Brinsley, Beggalee, Flockton, Pinkstone, Gawber Hall (Barnsley) and Silkstone (Barnsley). The emphasis had swung away from the early use of Chesterfield and then Codnor Park to the Barnsley coals after 1820. Coal moving down the Witham rose from 12,000 chaldrons per annum at the Grand Sluice (early 1800's) to 30,000 per annum by 1830.

Possible extensions to the system were considered in the light of the growth of Witham traffic in the late 1820's, the more so following the serious disruptions on the Foss Dyke following the 1826 drought. By 1828 the Anholme Navigation had extended southwards to Bishop Bridge, only 13 miles north of Lincoln and while Market Rasen was soon disappointed in its hopes of a canal connection, J. S. Padley reported to the Witham Company that a connection of fourteen miles from Bishop Bridge to a point east of Fiskerton on the Witham was feasible at a cost of £7,000. It would cut out the sea route and the Foss Dyke route to Hull and drain cold clay lands. R. Swan and a subcommittee of E. Fowler and J. Merryweather had several meetings with the Anholme interests but nothing came of it, probably owing to the Witham Company's financial problems stemming from its building programme which necessitated a new bill in 1829. Also in 1828, another subcommittee visited Wilsford quays, near Selby, to consider ways of getting the stone to compete with Bath stone in the London market. A trial 20 tons sold there at £2, under Bath prices but there was no further action. In 1833 the survey of a new 16 mile line from Selby to Grantham via the quay, the Ancaster Gap, a tunnel east of Manthorpe and a sweep round Grantham to the Grantham Canal near Harlaxton Road, was not taken up.

If Boston's sea vessels averaged 50 tons each and Brig and Gainsborough could welcome sea boats, then there was little reason why the Witham should not be a 'ship canal'. On 2 June, 1829, the Company promised 2 guineas to the first arrival direct from London; several days later St. Peter's church bells rang out as 'The Blessing' arrived, band on deck, diverting the public gaze from the laying of the High Street gas mains. While the Company's request for speedy customs clearance at Boston and for the granting of 'port of entry' status to Lincoln was considered by the Customs Commissioners, one master, bound for Lincoln, decided he could not afford the expense of waiting for clearance at Boston, used a chain for towing when officers cut his haling line and knocked down one officer who had brought his pistol to bear. The Lords of the Treasury approved of Lincoln as a port of entry in August, 1829.

In contrast with the Foss Dyke and the feeder canals, the Witham was a cheap waterway. There was not much incentive for the Horncastle Navigation to lower tolls as the Navigation Commission in such a case could raise its tolls on Horncastle boats. "None ever dreamed that the fat fenland would ever stand in need of manures." The Witham Act of 1762 allowed no toll concession on manure and the Navigation Commission twice turned down John Cartwright's request for one in the 1790's, for it feared the frauds it felt had been perpetrated on other waterways. Yet economic change and the advent of the Witham Company encouraged experiments with tolls which had the aim of increased receipts. It is true that the area of charges widened e.g. a 2 ton toll (6s. from Lincoln to Boston) on passenger packets and a maximum of 1s. on small craft under 1 ton were introduced. From the Witham in 1816 and a 1 ton toll (£1.6d. maximum) was imposed on Horncastle Navigation passenger packets in 1815. Yet at the same time the rate of tolls came down on many commodities. There were general reductions irrespective of origin or destination. Owing to gradual cuts in tolls on lime, manure, bone manure and road gravel (1819-21 and 1826-9), the Witham Company charged these items only a 50% toll (1.5d., maximum) when the full tolls of the 1812 Act were made effective in 1829. Ellison allowed a lower Foss Dyke gravel toll, but little else; and at 1s. per ton for 11 miles the Foss Dyke was becoming a dear waterway. The Horncastle Navigation Company was very sparing too; it gave a 3d. 'drawback' on road gravel (in effect a general reduction on all gravel), but coal tolls were not significantly reduced until 1844.

Drawbacks were specific reductions which had a long history. Canals used them to encourage users to open up or retain markets — hence the Erewash Canal drawback in 1781 on Gainsborough-bound coal and that granted to Gabriel Britain's stone on the Cromford Canal. The mid-Lincolnshire waterways had few very important individual or company users, nor were they threatened by early railroads. But the Witham Company desired direct London trade and needed the long coal haul from the Trent to the Wash. Thus in 1829 the Company resolved to grant a 50% drawback in either direction on London trade moving to or from Nottinghamshire.

When sea coal duty was removed in 1830, the drawbacks given by coastal users to the carriage of sea coal were retained. At once, the Company, which had hoped to exceed its toll receipts of £15,415 (1830-1), was so hard hit that receipts had fallen to £7,631 by 1835 and share prices had tumbled 32% (1831-6), though other factors were at work too. The fears of those who dreaded the effect of full tolls were not realised. Newcastle coal was now much more attractive in Boston, especially as the Barnsley collieries were switching their higher grade coals to the London market.

The Company was soon prepared to grant a drawback on inland coal if waterways to the west would do the same, but the Aire and Calder, now feeding the non-penalised coastal run, refused. However, by May 1833 a limited scheme was agreed upon whereby wharf prices could be lowered 15% in Boston. Slowly a recovery was made after 1835: in 1840, toll receipts were within 15% of the 1830-1 peak.

Under an Act of 1795, designed to help the Admiralty's quest for men, all vessels over thirteen tons on inland waterways were to be registered. The Lincoln Boat Register Book for the mid-Lincolnshire waterways recorded initially 110 boats: nearly three quarters of the owners were Lincoln merchants, the majority of whom owned several boats for the various areas and purposes of their trade. Some, like James Cuthill, built up fleets of ten or more boats. The canal boats were owned by merchants who possessed few, if any, vessels for the Yorkshire trade. The larger fleet owners were somewhere between the merchant who owned boats entirely for his own business, as in the earlier eighteenth century and the specialist carrying firm of the mid-nineteenth century. One quarter of the owners, however, were watermen who often acted as their own masters and who came from a wider geographical area than the merchants — from Trentside villages down to Billinghay and Bardney on the Witham. The masters of the vessels came from an even wider area: most canal boats, for instance, had masters from the colliery areas.
<table>
<thead>
<tr>
<th>Type</th>
<th>Stoop</th>
<th>Keel</th>
<th>Ketch</th>
<th>Canal Boat</th>
<th>Lighter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>37</td>
<td>19</td>
<td>4</td>
<td>18</td>
<td>32</td>
</tr>
<tr>
<td>Reg. at</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lincoln</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approx.</td>
<td>55 x 14</td>
<td>Various</td>
<td>72 x 6' 10&quot;</td>
<td>Various</td>
<td></td>
</tr>
<tr>
<td>Dimen's</td>
<td>(Ft.)</td>
<td>up to</td>
<td>up to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tonnage</td>
<td>40-50</td>
<td>Mostly</td>
<td>Mostly</td>
<td>Mostly</td>
<td>20-25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>about 30</td>
<td>30-40</td>
<td>16-20</td>
<td></td>
</tr>
<tr>
<td>Crew:</td>
<td>2M or</td>
<td>2M</td>
<td>2M or</td>
<td>M + B or</td>
<td>M</td>
</tr>
<tr>
<td>Men/Boys:</td>
<td>M + B</td>
<td>3M'</td>
<td>M + B</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>Employment</td>
<td>As keel,</td>
<td>Lincoln,</td>
<td>Lincoln to</td>
<td>Lincoln to</td>
<td>Lincoln to</td>
</tr>
<tr>
<td></td>
<td>plus Rother-</td>
<td>to Boston,</td>
<td>Chester-</td>
<td>G'boro' or</td>
<td>G'ton or</td>
</tr>
<tr>
<td>Max. Out-</td>
<td>ham</td>
<td>to Yorks.</td>
<td>field</td>
<td>to Boston,</td>
<td>to Boston,</td>
</tr>
<tr>
<td>ward Mile-</td>
<td>Pennines</td>
<td>Trent</td>
<td>Collieries</td>
<td>Seaford</td>
<td></td>
</tr>
<tr>
<td>age, Ex</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lincoln</td>
<td>160</td>
<td>160</td>
<td>92</td>
<td>76</td>
<td>32</td>
</tr>
</tbody>
</table>

1 One for lock operation, one in charge of horse and one for steering; enforced by Trent Company byelaws soon afterwards.
2 And many intermediate points.


Of the 53 further registrations by 1807 (which probably included re-registrations of existing vessels), only two were of canal boats. Either their registration took place elsewhere or the existing boats were sufficient for the Chesterfield coal trade which, on the Chesterfield Canal, had reached a peak in 1795 exceeded twice only by 1830. It seems unlikely, too, that canal boat owners were expanding into the Yorkshire trade. These additional registrations show clearly how Horncastle traders, unlike those of Seaford, entered into boat ownership. Even before the canal reached the town, Bell and Allenby followed by Ben Gilliat and J. Willson owned respectively a Yorkshire keel (for Wakefield) and a ketch (for Lincoln). Gilliat and Willson expanded by 1807 and two more traders purchased boats, though James Cutthill shared the Horncastle—Lincoln run.

Increasing numbers entered the coal trade, like John Bird, a Skellingthorpe farmer and Thomas Colton, a butcher, who, on becoming a coal merchant, moved to Waterside, Lincoln and bought a canal boat. Later, however, he sold out and entered the wine and porter trade. Many others successfully added coal trading to their existing activities; like Ben Gilliat (corn merchant), Thomas Armstrong (seed merchant) of Horncastle and Harrison and Squire (wool dealers), many wished to secure laden vessels in each direction. In 1835 over half the 32 Lincoln grain and coal merchants' properties were on Brayford and Waterside: most possessed a granary for several thousand quarters, a coalyard for up to 5,000 tons, a warehouse, brewhouse and stable; several had pigyards as well as drying kilns which used coal. Mid Lincolnshire seemed to be well supplied with coal compared with Oakham where a company was formed to ensure more regular supplies along the water-starved canal. One Lincoln grain merchant entered into a partnership to operate New Birchwood Colliery in Derbyshire.

The coal trade was a highly competitive and risky business full of malpractices. Masters were tempted to make false declarations of lading, enter into collusion with...
keepers, 'accidentally lose' coal at certain locks and sell coal along the route. Merchants tried to imitate the well-known kinds of coal and deliverers tried to charge exorbitant rates. In 1810 Lincoln Corporation revised and re-issued the coal regulations of 1755, and merchants used the press to warn of public imitations, the Butterley Company urged that no coal should be accepted as that of Codnor Park unless the boatmen produced the Company's bill of lading, the navigation companies fined false decliners, the Foss Dyke lessee and the Witham Company after 1823 enforced the gauging of all boats at their expense by the Trent Navigation Company and various collieries urged Lincolnshire merchants to inform the colliery selling agent of any short weight.

By 1820 there was an extensive network of freight services which boosted rather than damaged road services. The former had a north-west—south-east axis while the latter ran north-south (Brigg-London). The roads used waterborne gravel. Road transport firms often used the waterways for sections of their runs and a few families had a foot in both camps. Passenger services developed out of the market day services which by 1800 were replacing the little family boats ('schufts'), owned by market traders and customers alike. With no direct turnpike links between Gainsborough, Lincoln and Boston, regular horse drawn packets flourished on the Witham and Foss Dyke by 1809, pioneered by Charles West and Nathaniel Clayton. By 1818 the Humber, the Yorkshire Ouse and the Trent were enjoying the new steam packets which were built at Nottingham, Stockwith, Gainsborough and Hull and were capable of 10 miles per hour over several hours against the wind.

Having secured a propulsion patent (probably for a screw), John Merryweather built for the Lincoln-Boston run the steam packet 'The Witham', launched at Shuttleworth and Robinson's Stamp End yard on 20 March, 1816. By November, 1819, the 'Favourite' and 'The Countess of Warwick' had arrived. A period of bitter competition ended with co-ordinated prices and timetables 'to prevent those disagreeable consequences attendant on oppositions'. To his reputation for carelessness and a disregard of locking procedures, Nat Clayton added one for violent opposition to these developments, unceasing and colliding with a steam packet, running into the 'Favourite' and assaulting a steam packet operator. By 1825, however, as master of 'The Countess of Warwick', he had joined the opposition and his wife Mary owned a steam packet after his death in 1827. Their son, Nat, acting as captain for 30s. a week and a share of the profits, became entangled in another price and timetable war in the late 1820's but survived and introduced the first iron steam packet in 1837. Later, with Joseph Shuttleworth of the boat building family, he was to be one of the founders of the Lincoln agricultural engineering industry. Despite drownings and boiler explosions, the packets were undoubtedly popular. At the beginning, three shillings secured a common cabin between Boston and Lincoln, refreshments were served and 'a respectable female' attended upon the ladies. By 1829, the same sum secured the best cabin, whilst a common cabin was down to 1s. Before the steam packets, 3s. would convey the Boston road traveller only a third of the way to Lincoln. A traveller could leave Hull early for Gainsborough (1s.), reach Lincoln by 'tide coach' (1/6d.) and proceed by packet to Boston, reached in the early evening — 102 miles for 3/6d.

The vessels also took people to market, parcels of London groceries upstream from Boston, Lincoln spring water to Boston in the 1826 drought, witnesses to the Assizes, prisoners to ships bound for the hulks and Lincoln Methodists on outings to Boston. However, while the earlier steam packets were allowed on Sundays, a ban was introduced in 1829, the Witham Company showing a concern for both Sunday observance and the state of the banks. Of those which claimed to cut down the wash, only the ideas of William Poole, a Lincoln whitesmith, reached the patent stage. His 'adjusting floatboards' (i.e. wheel blades which feathered) allowed the 'Favourite' to reach Boston in 5 hours and later beat the new narrow 'Duchess of St. Albans'. The river's slowest boat, 'The Countess of Warwick', was transformed into the swiftest at 8 miles an hour. The earliest steam engine made in the eastern counties was probably that of 2½ horse power by W. Howden, Jnr. of Boston who fitted it to a Witham pleasure craft in 1827. He had been the owner of the 10 horse power 'Duke of Sussex' which later blew up. In 1829 he sought a patent for a one wheel packet to comply with
the Company's regulations. In 1848, however, Lincoln was linked directly with Boston by a railway along the valley; within ten years the steam packet business had collapsed.

Thus the waterways were important in the growth of urban industries and marketing functions: Lincoln enjoyed a vigorous building programme not entirely devoted to places of worship and punishment. Warehouses, mills, taverns and breweries fringed Lincoln's navigable water and in the period 1793-1809 a fatstock market, a spring stock market and a horse fair were established. In the same period, Horncastle built a new corn market and butchery and the price of its town land rose from under £100 per acre just after the Napoleonic Wars to over £1,200 by 1825. Its internationally known horse fair — to which horse market packets contributed — expanded greatly and flourished well into the railway age. By 1830, Lincoln, Horncastle and Boston, as well as Louth and Stamford further afield, were all served by gasworks which were erected close to navigable water. Coal, mostly for the gasworks, was the main factor in extending into the 1880's the life of the Horncastle Canal after the shock of the opening of the Horncastle-Kirkstead Junction Railway 30 years earlier. Between 1801 and 1831, Lincoln's population rose by 65% to nearly 12,000, while that of Horncastle increased by no less than 99% to almost 4,000.

With the rise of the provinces towards 1800, the Witham valley and Horncastle looked less to London and joined Lincoln in seeing the Pennines as the major trading area. Boston business backed the 1762 drive to penetrate the valley and the 1792 attempt to reach Horncastle. By the early 1800's, such interest was of minor importance. It was now Lincoln, with its individual and corporate investments which sought to open up the valley; the London-Boston axis had not declined absolutely but was being overshadowed by the Lincolnshire-Pennine axis. By 1830 Lincolnshire farming was being pulled up to new peaks of efficiency and the earliest and most spectacular advances were in wool and grain production on the higher, lighter soils of the Wolds; hence the interest after 1790 in a Horncastle Navigation and the insistence in the Horncastle Navigation Act on the removal of the high floor or sill of the Witham under the High Bridge in Lincoln, a barrier which hitherto had necessitated the transporting of cargoes by porters between Brayford Pool and the Witham below the High Bridge. Only later came the better use of lower lands — hence the buoyancy of the Witham toll receipts in the 1820's and the drive to complete the works after 1825. Moreover, the system was a vast drainage scheme up-valuing the price of land and although some incomplete Witham works before the 1820's made some parishes more liable to flooding, it can be shown that in general the massive drainage and enclosure schemes around the River Slea and in the Fens were dependent on the progress of the Witham — as indeed were the watering of cattle and the vastly increased system of navigable side-drains. By 1815 the great age of extensive growth in farming was ending; the huge Witham investment had
allowed a spread of arable into drylands. After 1815, producers, faced by sagging prices, were forced to increase productivity through mixed farming methods which involved the investment of smaller but frequent amounts of capital. This approach was greatly facilitated by the wider range of inputs transported by the navigations, which, to a local movement of building materials, seeds and animal manure, added the longer movement of crushed bones, dried blood, lime, tiles and machinery. In Young's time, experiments were being conducted by those very characters involved in waterway history — Chaplin, Ellison, Banks, Cartwright, Elmhirst and Linton. After 1825, general application boosted and was boosted by the navigations.

FOOTNOTES

1 These figures for expenditure are derived from the following deposits at Lincolnshire Archives Office (subsequently L.A.O.): Lincoln City Council (L.C.C.); Lincolnshire River Authority (L.R.A.); Burton, Scorer (B.S.); Toyneby, Larken and Telford (L.E.T.).


3 Until the autumn of 1971, the Co-operative mill, east of Thorn Bridge, was served by 70 ton grain barges from Hull. The nearby Barker's Mill, formerly Doughty's Oil Mill, still used barges in its feedstuffs and seed business until the same time.

4 The Lincoln, Rutland and Stamford Mercury (subsequently L.R.S.M.), 4 August, 1826.

5 L.A.O. B.S. 4/11/3, Messrs. Sanders and Co. (Boston) to R. Swan, Clerk to the Witham Company, 4 August, 1826.

6 A. Young, General View of the Agriculture of the County of Lincolnshire (1813), 1970 edn., pp. 91-2.

7 Who in one day in 1795 packed 1202 tons of wool in Lincoln. In 1806 a dog was packed as well, and arrived safely at Wakefield 18 days later.

8 A. Young, op. cit., p. 27.


10 The Witham Company established two brickyards (Stamp End and Fiskerton) for the building programme of 1826-30. By 1831, most of its output of 2.16 million bricks was sold to the public.

11 L.A.O. B.S. 4/5/1 and 2, B.S. 4/11/1. Delivered stone cost about 1/3d. per cwt. in 1793, 1/4d. (1812-30) and 1/2d. (1835).

12 L.R.S.M., 28 January, 1826. Chambers' Foundry (Lincoln) supplied stone from the Witham works, 1826-30, but had added bone-crushing by steam power to its activities in 1825.

13 Though he, as sole proprietor, made greater profits from freightage. The mid-Lincolnshire waterway bodies could not become carriers before 1845.

14 In 1850, Clayton's Foundry (Lincoln) alone sold 140 portable steam engines for use by farmers.


17 L.C.L. J. Roef and Son, Description of a Plan for a Junction Canal etc., Birmingham, 1833.

18 L.R.S.M., 12 June, 1829.

19 Ibid., 7 July, 1829.


21 Spalding Gentleman's Society (subsequently S.G.S.) B. St. 11A.


25 L.A.O. B.S. 4/1/8, Petition of Nottinghamshire and Newark traders (mainly grocers and druggists) in the 'New Lincoln Contract'.

26 Low water in the summer of 1831, the opening of Dunham Bridge over the Trent, a landowners' dam on the Upper Witham in 1832 and major repairs to Horsley Deans Lock (Barney In 1834.


31 L.R.S.M., 19 August, 1825.


33 A considerable advance on the general purpose sailing vessel used by Thomas Thistlewood (L.A.O. Monson 31/92; 1 April 1793).

34 A. Smith, Steam Packets on the Witham, Lincolnshire Chronicle, 1, 8 and 15 January, 1827.

35 Founded on land leased from the Corporation by Joseph Shuttlesworth (d. 1809). By the time of their bankruptcy in 1820, Ann Shuttlesworth and George Robinson (who were also dealers and Chapman) built up a property with a 106 foot frontage, the only dry dock in town, a dwelling house, boatyard, boatshed for building 60 ton vessels and a blacksmith's shop. Ultimately the Shuttlesworth and Claytons were linked by marriage and by a partnership which established the Lincoln agricultural engineering industry in the mid-nineteenth century.

36 L.R.S.M., 10 October, 1820.

37 Ibid., 16 July, 21 August, 9 October, 1829.


40 Sent out as far as Hull, Lincoln porter was a strong drink which, according to the Stamford Mercury, was responsible for converting the Lincoln gasworks labourers, who came from Sheffield, into an intemperate and disolute crew.

41 L.R.S.M., 26 August, 1825.


43 Ibid., p. 132.

Book Review

PATTERNS OF FOLKLORE by Hilda Ellis Davidson, x + 133 pp., D. S. Brewer, 1978, £5.00.

This is a useful book for anyone who wishes to study folklore and its various aspects that come to the fore in the past. The cobwebs have been well swept away from some theories, thus leaving the way clear.

Popular figures are dealt with, such as Lady Godiva, Robin Hood, Guy Fawkes and Thomas Becket, all of which have a growth of tales about them that do not belong. Peeping Tom is a very late addition to the Godiva story, for instance. Guy Fawkes and his gunpowder plot to blow up Parliament caught the popular imagination. There had always been a fire festival in the autumn so that Guy Fawkes fitted in very well, especially as a public holiday was held as a commemoration of his death, and we still celebrate it, only his effigy is now burnt — the original Guy was hung.

In Lincolnshire we are well off for stories of Thomas Becket. The killing of the archbishop in his own cathedral in 1170 shocked the world; the news spread rapidly; an account of his death is given in an Icelandic saga in which it is said that the knights were unable to drag his body out of the cathedral because the marble pavement became as soft as snow so that his feet sank into it and that the marks of this could be seen in Canterbury. (p. 35)

Being herself an expert in Norse and Scandinavian mythology, Dr. Davidson fills the rest of the book with stories of Norse heroes, for example Thor and his hammer that makes the thunder when he is busy forging weapons and how the hammer became a sign of protection that later vied with the Cross. There are also several references to swords, showing their great veneration and use; being wrapped up in the family to which they belonged. In Grimm's collection of ancient laws the sword was carried in a Frisian wedding ceremony as a reminder to the bride of the consequences of unfaithfulness.

This is a book to be recommended.

E. H. RUDKIN
TOYNTON ALL SAINTS