

## **Cornwall: an inside-out industrial region**

Maritime history has tended to drift in a sub-disciplinary backwater, marginalised from the concerns of the mainstream agenda.<sup>1</sup> Historians of British industrialisation, for example, while invariably noting the general role of foreign trade, rarely discuss the possibility of the sea framing and directing more generally the course of industrialisation on land. Even maritime historians have viewed the sea as an essentially passive channel for the transmission of land-based processes. It appears as a means of transport or as a source of food, a medium for power projection or a zone of recreation rather than as an active moulding element for processes taking place onshore.<sup>2</sup> For their part too, Cornish historians have displayed ambivalent attitudes towards the sea. John Rowe claimed that the sea ‘played a greater part in the life of the Cornish people than the land whereon they dwelt’. However A.K. Hamilton Jenkin remarkably implied that the Cornish were never a sea-faring people when he asserted (incorrectly) that Cornish fishermen had never taken to deep-sea fishing. More recently, Philip Payton described Cornwall as a ‘sea-girt peninsula’ but then went on to explain Cornwall’s past with reference to a peripherality structured comprehensively by a land-based centre.<sup>3</sup>

In contrast, I argue elsewhere that, in order to understand Cornwall both past and present, we have to recognise that its history has been shaped by two separate lines of cultural connection and influence. The first stretches overland (but also coastwise up the Channel) to and from the metropolitan core of the English, then British, state. The other has been overseas, locally to Europe and its western Celtic periphery and globally to the New World.<sup>4</sup> Cornwall’s maritime location is therefore one important factor among others in shaping the course of Cornish history. Specifically, here I propose that the sea played a critical role in Cornwall’s industrial experience in the years from 1750 to the 1860s. Cornwall’s maritime geography both facilitated and limited the course of its industrialisation, helping to create a particular kind of industrial (or perhaps more accurately proto-industrial) region while reinforcing contrasts with other industrial regions. In short, I will argue that the sea should not, at least in Cornwall’s case, merely be seen as a convenient way to carry goods but, in combination with other factors, as casting the very shape of Cornish industrialisation. In doing this of necessity the chapter paints a picture using broad strokes of

interpretation, offering generalisations that will require testing by more detailed empirical research.

But first we might begin, conventionally enough, by focusing on the sea as a means of transport. As industrialisation gathered pace in the eighteenth and early nineteenth centuries transport demand shifted from ‘small scale movement along a multiplicity of channels to capacity movement over a select few’ and the driving force of this shift was the needs of mines, including the burgeoning metal mines of Cornwall.<sup>5</sup> One of the sites for larger scale commodity movement depended on the sea, a highway for low cost freight transport where speed, regularity and punctuality were not important factors. As inter-regional exchange of goods grew in intensity industrialising areas came to depend on coastal freight carriage.<sup>6</sup>

Yet, while coastal shipping has been viewed as central to the expansion of the industrial areas of the north east of England, so it seems to have been overlooked in general histories of transport. Indeed, John Armstrong has called coastal shipping the ‘Cinderella of the transport world’.<sup>7</sup> The literature on regional industrialisation more usually stresses another form of water transport. In an influential contribution John Langton identified a ‘striking peculiarity’ of English industrialisation; it was ‘based for over a generation upon haulage along a waterway network’. More particularly, canals were critically important in enabling the expansion of low-cost freight movements. But canals were not built evenly across the landscape. Instead there existed ‘dense patches’ which ‘developed highly integrated economies largely separate from each other’. These canal-based economies helped to create a set of ‘more specialised, more differentiated’ but ‘more internally unified’ regions. The sea enters this account as the destination of concentrated flows of goods along canals and rivers, flows ending in ‘export sumps’ and large ports, places such as Liverpool, Hull, Glasgow or, later, Cardiff.<sup>8</sup> Pat Hudson echoes Langton’s conclusions, noting how canals made regional economies more ‘insular’ for a time. Moreover, she suggests this corresponded with a period during which industrial regions became freer of London, conducting their own export trade ‘themselves through their own ports and mercantile facilities’.<sup>9</sup>

West Cornwall was one of Britain's first industrial regions, seeing significant innovations from the 1760s onwards, when 'tin and copper-mining and smelting ... formed the basis of one of the most advanced engineering centres in the world to the 1840s, and of a complex industrial society exhibiting early developments of banking and risk-sharing to deal with the particular needs of local industry'.<sup>10</sup> According to Roger Burt, Cornwall was one of 'the most highly capitalised mining districts', one where 'backward and forward linkages with advanced engineering supply and processing industries created the critical mass ... necessary for sustained growth and the emergence of the region as a leading industrial centre'.<sup>11</sup> But what sort of backward (to raw materials and suppliers) and forward (to processing and secondary industries) linkages were they and what consequences did this have for the shape of regional industrialisation?

In fact, this was an industrial region with some obvious differences from others.<sup>12</sup> The first of these was its dependence on coastal shipping for its fuel supply. The development of copper mining after the 1730s created a growing demand for coal to feed the steam engines that kept the deepening mines dry. By the end of the eighteenth century the location of copper smelters near Swansea had produced a two-way trade of copper ore up-channel to south Wales and coal down-channel to Cornwall. Both backward and forward linkages for copper mining, the dynamic sector in Cornwall's industrial phase, therefore stretched across the sea to Wales. For a brief period in the 1760s and 1770s, as this trade was being established, St Ives, which included the booming ports of Hayle and Portreath, was one of the leading ports for coastal trade outside London in terms of the tonnage of its registered coastal shipping. The trade between Cornish ports and south Wales was the 'vital link in a major industry during the time of Britain's industrial development'.<sup>13</sup> By 1800 Peter Stanier has estimated that there were over 500 annual voyages up-channel. By 1825 this had grown to 1,000 and by 1835 reached 1,500. The peak of the trade occurred in the late 1850s when almost 2,000 voyages were being made annually, reflecting the simultaneous peak of copper mining.<sup>14</sup> After changes in the organisation of the Stannaries in 1836 and the abolition of tin coinage in 1838 more white tin destined for the tinsplate industry was added to the copper ore trade.<sup>15</sup> On the back of this trade, regular steamer links between Hayle and Bristol began in the 1840s, with three boats providing twelve voyages a month by 1850.<sup>16</sup>

This growing shipping trade led to investment in harbours, as at Portreath, where a basin was first dug in 1760 and others added around 1800 and in 1846. A short tramroad between Portreath and the copper mines of Gwennap heralded the beginnings of the railway age in 1806. This was followed in 1826 by the construction of the Redruth and Chacewater Railway from the same mining district south to the new port of Devoran, which supplemented and eventually over-shadowed older and smaller quays at Point and other places further up the Fal estuary. In addition to Portreath and Devoran the other major port in the copper trade was Hayle, where there was expansion in quay facilities in the second half of the eighteenth century, stimulated by the protracted and often bitter rivalry between Harveys and the Copperhouse Company. As copper mining after the 1810s outgrew the relatively circumscribed eighteenth century mining region centred on Camborne and Redruth as new centres of production opened up in the St Austell and Liskeard districts new ports such as Charlestown emerged to cater for trade from these districts. When newly discovered copper reserves in the Caradon district of east Cornwall began to be exploited in the 1840s Looe emerged to join the list of ore exporting ports, linked directly to the mines via a canal and mineral railway in 1844.<sup>17</sup>

Looe was one of the few places in Cornwall to be connected to a canal, the Liskeard-Looe Canal having been cut in 1828, a decade or so before the nearby mines were opened.<sup>18</sup> More usually, ore and coal moved between port and mine by road on the backs of mules or, increasingly after the 1820s, by horse and then steam-drawn rail. Canals did not suit the relatively short distances from mine to port in Cornwall or the cost of construction over hilly terrain. Cornwall was not therefore a canal-based regional economy as were the classic industrial regions of south Lancashire, the West Riding or the west Midlands discussed by Langton.<sup>19</sup> Moreover, there was also no single large 'export sump' through which shipping was concentrated. Instead a series of smallish ports scattered around both north and south coasts served the Cornish mines. By the 1850s and 1860s, the available statistics suggest that the copper ore trade was distributed fairly evenly across these ports, with no one place commanding more than 25 per cent of the trade.<sup>20</sup> As copper-mining expanded, so the export trade may even have become less concentrated. The geography of Cornwall, a long, narrow peninsula surrounded on three sides by the sea, had made this outcome inevitable.

Dispersed port facilities and commodity flows reinforced and reproduced a dispersed settlement pattern. Just as no one port dominated, no single urban centre emerged at the apex of the settlement hierarchy. Instead, a few small towns on the edges of the mining districts – Penzance, Falmouth and Truro – co-existed and competed with newer mining centres at Redruth, Camborne and St Austell. No large town or city emerged as a clear central place as happened in other industrial regions with their dominant cities. Cornwall's maritime geography therefore played a role, in combination with the geography of mineralization, in the peculiar configuration of the Cornish industrial region. Rather than that 'inward-looking' region that Langton identified converging on an urban centre or centres and tied together by a web of canals, early nineteenth century Cornwall was a dispersed industrial region with no unambiguous urban centre and with a transport system of short road and rail hauls oriented towards a series of small ports rather than one large 'export sump'. When compared with other industrial regions Cornwall appears as a centrifugal, 'inside-out' region looking outwards across the sea to its trading partners and not inwards towards a regional capital.

This reminds us that the sea provided opportunities to link Cornwall to other places as well as placed constraints upon its development as an industrial region. In expanding on Langton's concept of industrial region Pat Hudson has emphasised the role of factor markets in delineating the industrial regions of the early nineteenth century. It was, she maintains, the region that was the 'really important spatial unit' for capital, labour and credit markets at this period.<sup>21</sup> Indeed, commodity trade between Cornwall and south Wales had been joined at the end of the eighteenth century by capital investment by Cornish families in the smelting industry of the Swansea valley. In 1800 John Vivian began investing in smelting, transferring his capital from copper mining in Cornwall to copper smelting in Wales. He was soon followed by Pasco Grenfell, who first invested in copper smelting in 1803 and then in 1825 took over sole ownership of the Middle and Upper Bank works at Swansea. And in 1834 the Cornish-based Williams and Foster Company built their giant Morfa works.<sup>22</sup> As John Rowe pointed out, by the 1830s the 'copper industry was becoming closely integrated'.<sup>23</sup> Capital investment and commodity trade were to a lesser extent followed by labour flows as Glamorganshire became, by the 1850s, the third most

important migration destination in the UK for Cornish men after Devon and London.<sup>24</sup> The backward and forward linkages of copper mining were with the coal mining and copper smelting industries of south Wales, as much as with the limited secondary industries located in Cornwall. Perhaps therefore, the relevant industrial region of the 1830s should encompass within its boundaries both Cornwall *and* west Glamorganshire, sutured together by flows of capital and commodities across the Bristol Channel.

I have argued that, economically, Cornwall's maritime geography contributed to the production of an 'inside-out' region in the later eighteenth and early nineteenth centuries. This 'inside-out' region, with its centrifugal transport network, contained an open economy, linked in particular via commodity and, increasingly after the 1790s, capital flows, to the Swansea district and more generally with the south Welsh coalfield. After the 1830s the intensity of these flows and the backward and forward linkages they generated suggest that Cornwall and south Wales could be viewed as a single industrial region. However, Langton and Hudson's concept of industrial region also encompasses cultural attitudes, in that they claim economic regions gave rise to regionalism, to a sense of regional identity.<sup>25</sup> Clearly, the traffic of men and women, money and materials between Cornwall and Wales was accompanied by some exchange of ideas. In this respect, it is worth noting that Trevithick's early steam locomotive trials took place at Penydaren in 1804.<sup>26</sup> And both regions were adopting a wider nonconformist religious identity after the 1840s.<sup>27</sup> But there were equally obvious cultural differences, most notably in terms of language and historical memories. The sea could link economies but it could hardly overcome these cultural barriers.

Its maritime location also indirectly played a part in the internal, and perhaps contradictory, social characteristics of Cornwall that were becoming visible by the 1840s. First, Cornwall's open economy and its place at the leading edge of metal mining combined with the ease of sea communication to foster a propensity for emigration. Overseas links forged by migrating miners taking with them the skills of a leading technological region provided the basis for the mass emigration that set in during the 1840s. The oceans and the routes they offered facilitated the production of a transregional Cornish cultural region during the diaspora of the mid and later 1800s,

weaving alternative global ties of family and community.<sup>28</sup> Yet secondly, the dispersed industrialisation of the inside-out Cornish industrial region also bolstered a small town parochialism that competed with people's sense of regional identity. For example, attempts in the 1840s to merge Cornwall's three major literary institutions, significantly based on the towns of Penzance, Falmouth and Truro, predictably fell on stony ground.

Furthermore, despite its role in shaping Cornwall's economic links and cultural networks, it is also interesting and not a little perplexing that the sea itself seems to have played a limited role in the self-representation of the Cornish themselves during their industrial phase. While outside observers, from Charles Kingsley and the Newlyn School of painters onwards, made the role of the sea central to their representations of Cornwall, insiders rarely mentioned it explicitly.<sup>29</sup> Indeed, if we take the example of local mining journalist George Henwood, mining remained in the 1850s the 'world of the Cornish'. Inland Cornwall and its miners was the focus of his 'Cornwall', the principal source of its wealth; the sea was present in his writings, but as an ancillary source of natural resources. 'Fish, tin and copper' was the Cornish motto, but one that merely listed some of the resources available to the Cornish people. The sea happened to be the location of one of these resources and it was the highway for the shipping and commerce created by the mines but it was the mines rather than the sea that underpinned native representations of Cornwall and the Cornish at this period.<sup>30</sup> In this cultural sense, the Cornish industrial region was just as 'inward-looking' as were other industrial regions.

To conclude, in this dynamic stage of Cornwall's history the sea played a central role. Cornwall's maritime geography helped to structure a particular kind of emerging industrial region. In addition, coastal trade established links with south Wales that made the borders of the industrial region ever more 'fuzzy' as the nineteenth century proceeded. Nonetheless, economic links with places outside Cornwall co-existed with bounded cultural imaginings of a 'Cornwall' almost encircled by the ocean. After mid-century things began to change. With the rapid collapse of copper mining Cornwall's small ports stagnated and the centrifugal transport infrastructure established during its industrial period withered. At the same time, the Cornish connection to the smelting industry of south Wales became less pronounced.

Paradoxically however, as Cornwall became more dependent economically on railway links overland to the east the sea began to figure more centrally in representations of Cornwall. It was not to be too many years before it had taken on a new role as a leisure resource for a post-industrial society rather than a means of transport for an industrial region.

- <sup>1</sup> John Walton, 'Seaside resorts and maritime history', *International Journal of Maritime History* 9 (1997), 126.
- <sup>2</sup> David Starkey, 'Growth and transition in Britain's maritime economy, 1870-1914: the case of south-west England' in David Starkey and Alan Jamieson (eds), *Exploiting the Sea: Aspects of Britain's Maritime Economy since 1870* (Exeter, 1998), 7.
- <sup>3</sup> John Rowe, *Cornwall in the Age of the Industrial Revolution* (Liverpool, 1953), 262; A.K. Hamilton Jenkin, *Cornish Seafarers: the smuggling, wrecking and fishing life of Cornwall* (London, 1932), 121; Philip Payton, *The Making of Modern Cornwall: Historical Experience and the Persistence of 'Difference'* (Redruth, 1992), 35-37.
- <sup>4</sup> Bernard Deacon, *Cornwall: a concise history* (Cardiff, 2007).
- <sup>5</sup> Michael Freeman and Derek Aldcroft (eds), *Transport in the Industrial Revolution* (Manchester, 1983), 5. And see E.A. Wrigley, 'The supply of raw materials in the industrial revolution', *Economic History Review* 15 (1962), 285-303.
- <sup>6</sup> Although Derek Gregory, in 'The production of regions in England's industrial revolution' *Journal of Historical Geography* 14 (1988), 52, makes the point that we know 'astonishingly little' about commodity flows between regions.
- <sup>7</sup> John Armstrong, *Coastal and Short Sea Shipping* (Aldershot, 1996), i. For north-east England see Norman McCord, 'The regional identity of north-east England in the nineteenth and early twentieth centuries' in Edward Royle (ed.), *Issues of Regional Identity* (Manchester, 1998), 108; Graeme Milne, *North east England, 1850-1914: the dynamics of a maritime-industrial region* (Woodbridge, 2006).
- <sup>8</sup> John Langton, 'The industrial revolution and the regional geography of England', *Transactions of the Institute of British Geographers* 9 (1984), 162. The failure of canals to provide an integrated regional scale transport infrastructure, is also cited as the reason for the absence of a clear regional scale to life in the east Midlands – see Jon Stobart, 'Regions, localities, and industrialisation: evidence from the East Midlands circa 1780-1840', *Environment and Planning A* 33 (2001), 1305-1325.
- <sup>9</sup> Pat Hudson, 'The regional perspective' in Pat Hudson (ed.), *Regions and Industries: a perspective on the industrial revolution in Britain* (Cambridge, 1989), 15 and Pat Hudson, *The Industrial Revolution* (London, 1992), 105.
- <sup>10</sup> Sidney Pollard, *Peaceful Conquest: The Industrialisation of Europe 1760-1970* (Oxford, 1981), 14.
- <sup>11</sup> Roger Burt, 'Proto-industrialisation and "stages of growth" in the metal mining industries', *Journal of European Economic History* 27 (1998), 103.
- <sup>12</sup> For a more extended comparison of Cornwall and other industrial regions see Bernard Deacon, 'Proto-regionalisation: the case of Cornwall', *Journal of Regional and Local Studies* 18 (1998), 27-41.
- <sup>13</sup> John Armstrong and Philip Bagwell, 'Coastal shipping' in Freeman and Aldcroft, *Transport*, 150-151.
- <sup>14</sup> Peter Stanier, 'The copper ore trade of south west England in the nineteenth century', *Journal of Transport History* 5 (1979), 18 and 20.
- <sup>15</sup> Rowe, 'Cornwall', 196 and 203.
- <sup>16</sup> John Rule, 'The south western deep-sea fisheries and their markets in the nineteenth century', *Southern History* 22 (2000), 168-188.
- <sup>17</sup> Peter Stanier, 'Lost mining ports of the south Cornish coast', *Industrial Archaeology Review* 3 (1978), 1-16. Rowe, 'Cornwall', 116-117.
- <sup>18</sup> Michael Messenger, *Caradon and Looe: the canal, railways and mines* (Truro, 1978).
- <sup>19</sup> Langton, 'Industrial revolution'.
- <sup>20</sup> Stanier, 'Copper ore trade', 21.
- <sup>21</sup> Hudson, 'Regional perspective', 14.
- <sup>22</sup> Ronald Rees, *King Copper: South Wales and the Copper Trade 1584-1895* (Cardiff, 2000), 20-21.
- <sup>23</sup> Rowe, 'Cornwall', 121.
- <sup>24</sup> Bernard Deacon, 'A forgotten migration stream: the Cornish movement to England and Wales in the nineteenth century' in Philip Payton (ed.), *Cornish Studies Six* (Exeter, 1998), 101.
- <sup>25</sup> Hudson, 'Regional perspective', 18-19.
- <sup>26</sup> Rowe, 'Cornwall', 116.
- <sup>27</sup> See Keith Snell and Paul Ell, *Rival Jerusalems: The Geography of Victorian Religion* (Cambridge, 2000), 121-172.
- <sup>28</sup> Bernard Deacon and Sharron Schwartz, 'Cornish identities and migration: a multi-scalar approach', *Global Networks* 7 (2007), 289-306.
- <sup>29</sup> For outsider views see Philip Dodd, 'Gender and Cornwall: Charles Kingsley to Daphne du Maurier' in Keith Snell (ed.), *The Regional Novel in Britain and Ireland 1800-1900* (Cambridge, 1998), 119-135. For insider views see Bernard Deacon, "'The hollow jarring of the distant steam engines": images of Cornwall between West Barbary and delectable Duchy' in Ella Westland (ed.), *Cornwall: the Cultural Construction of Place* (Penzance, 1997), 7-24. See also Cynthia Lane, "'Too rarely visited and too little known": travellers' imaginings of industrial Cornwall' in Philip Payton (ed.), *Cornish Studies Thirteen* (Exeter, 2005), 170-193.
- <sup>30</sup> Roger Burt (ed.), *Cornwall's Mines and Miners: Nineteenth Century Studies by George Henwood* (Truro, 1972), 185 and 232-233.