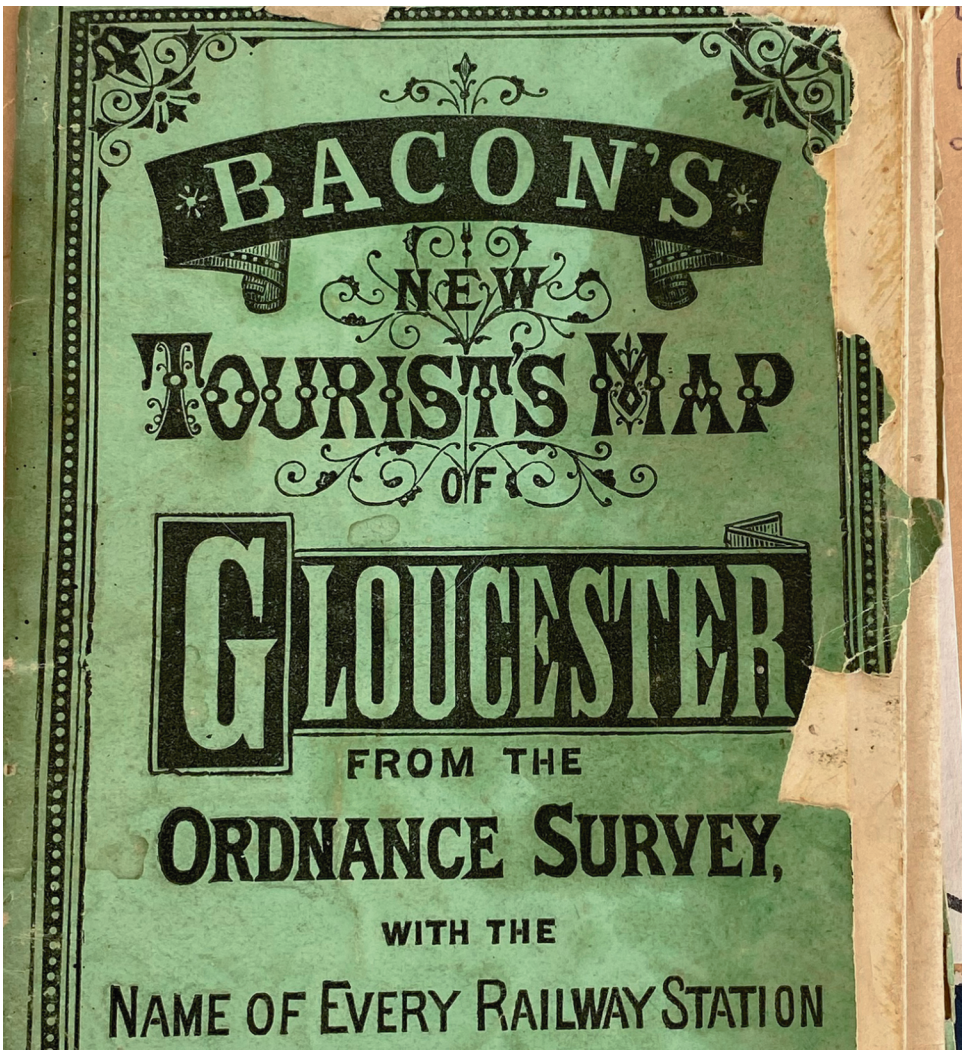
Sheetlines

The Journal of
THE CHARLES CLOSE SOCIETY
for the Study of Ordnance Survey Maps

Number 131 **December 2024**



Sheetlines

Number 131 December 2024

This year has seen a variety of live Society events and visits, including several of our show-and-tell meetings at Highgate, London; and at Wall in Staffordshire, led by Lez Watson. In addition, there have been monthly online talks by notable speakers, mostly with the benefit of online recordings available to all. This is a feature which has already been enjoyed over a thousand times this year, and remains free to all.

During May, after the AGM in Grantham, twenty of us enjoyed another of John King's London walks. This two-mile route in the area around St James's Park included the station as well as 55 Broadway (London's first skyscraper), two garages, 19th-century apartment blocks, the Blewcoat School, Caxton Hall, Victoria Street, the Devil's Acre, a mosaic of Peabody Trust buildings, a cock fighting site, early 18th-century grand housing, 20th-century spies and lots more. Not specifically a cartographic walk, it revealed many rich layers of history. As is usual with John's walks, a map souvenir was provided, for which generous donations were received to the Maggie's Centres charity. Even the lunchtime pub had maps!

In June. we enjoyed a return visit to Frome to see Dennis Maps in action, thanks to their CEO and CCS member Steve Burry. Some twenty members celebrated the tenth anniversary of Dennis's high-tech works, home to printing of Ordnance Survey maps and many other official surveys and cartographic customers, including CCS.

Our Society's thanks also go to the following recent speakers for their excellent talks: Prof Keith Lilley (Beneath the lines: mapping medieval townscapes using large scale OS maps); Dr John Cruickshank (AGM talk: The Evolution of Soviet topographic maps as shown by their documentation); Giles Darkes (Turning an OS into history: publishing a Town & City Historical map); Prof Peter Vujakovic (Catch them young! Introducing children to meaningful mapwork); Nevis Hulme (Scottish OS Name Books); and Scott Lloyd (Ordnance Survey's County Survey and the historical boundaries of Wales).

In July, we had a sales stand at the London Topographical Society's AGM talk in the City of London, and in September we opened Mole Valley District Council's '2024 Heritage Open Days' with a CCS presentation of the area's history in OS (and other) mapping. This was a popular event in Dorking with more than a hundred people attending, where we were honoured to welcome the Mayor and others as new members of CCS. My thanks to John Davies, Stuart Dennison, and Nick Krebs for all their help and hard work preparing the show.

More live and online meetings are already being lined up for the new year. Two online talks with a transport theme will be John Davies' *The Rise and Demise of the Bus Map* in November and Stuart Dennison's Railways show-and-tell meeting on January 14. Please refer to your next CCS Newsletters for Zoom invitations.

I hope that you continue to enjoy your membership of Charles Close Society, and can attend future events, whether live or online. For those who cannot commute or compute, please continue to enjoy your regular copies of *Sheetlines*. My thanks and congratulations to editor Andrew Darling for producing our excellent journal.

May I wish you and yours a happy Christmas and an enjoyable new year with CCS.

And talking of Christmas … thanks to Giles Darkes and Historical Towns Trust, all HTT maps are available online at a special 15 percent discount to CCS members until 31 December 2024. Use the special code CCS2024 at their website: www.historictownstrust.uk/maps. (CCS sponsored this autumn's new Bath map, and Alnwick in 2021).

Gerry Zierler, Chairman

The 2025 AGM will take place on Saturday 10 May at the Tiffin School, Kingston-upon-Thames. Business will commence at 1200, being preceded by a talk. Coffee will be available from 1030. Members proposing to offer themselves for election should note the provisions in the constitution regarding the notice required.

Rob Wheeler, Hon Secretary

One-inch mapping before the Ordnance Survey

John Henry

As a young geologist, I took for granted the Ordnance Survey (OS) base map upon which the geological features and formation boundaries were drawn and coloured. In *A Geological Manual* (1832), Henry De la Beche declared,

> *"Respecting the maps of our own country, too much praise cannot be given to the late sheets of . . . the Ordnance, remarkable not only for their general fidelity, but also for the shading of the hills; in this last respect very superior to the earlier sheets. . . . With these maps in his hands the geologist . . . is subsequently enabled to soar, as it were, above the country he has examined; and by combining his various observations, he may arrive at general conclusions, with which he might not otherwise feel satisfied, and to which he might not have been led without an exact document of this nature".*

In 1835, De la Beche went on to become the first professional geologist, occupying the Geological Office of the Ordnance Survey. He established the separate Geological Survey of England and Wales in 1845, whose mapping programme followed the progress of the OS one inch mapping as the necessary base maps became available.

But the first geological map, *A Delineation of the Strata of England and Wales and part of Scotland*, published by William Smith at one inch to five miles in 1815, was the product of a decade and a half of solo geological field work. This begs the question, on what maps did Smith plot his observations in the field? My initial research led me to discover maps that Smith referred to in his diaries, in John Phillips' biography, and to his only surviving one-inch field maps of Northumberland and County Durham that he marked and coloured (Henry, 2016). Subsequently, I researched the wider history of 'large scale' mapping in the late 18th century.

By the mid-18th century, the need for better maps was widely appreciated. Canal builders needed maps for the infrastructure needed to assemble and distribute resources and products developing industries.[1] Military considerations, developed during his mapping for the 1745 campaign against the Highland Scots, led William Roy to lobby for accurate national mapping which resulted in the establishment in 1791 of the OS. National pride was an element in his lobbying, as the French were publishing the first sheets of a systematic triangulated national survey at a common scale under the Cassini dynasty. The enclosure acts required accurate detailed maps. Surveying

[1] William Smith began his career in 1793 surveying an estate with coal mines and was recruited in the following year as engineer for the Somersetshire Coal Canal Company. He inspected existing canals in the Midlands and North before selecting and surveying the alignments of the SCC's two arms to connect with the Kennet and Avon Canal.

technology improved with the introduction of shorter telescopes, spirit levels, more precise degree graduations and vernier adjustments.

Within this context, the Society for the Encouragement of Arts, Manufactures and Commerce was founded in 1754. Its ambitions were boldly stated in its long title, generally shortened to the Society of Arts [2] (SofA). It was a subscription society to incentivise invention, discovery and accomplishment in a wide field of endeavors. Its very existence attracted many proposals for improvements and subscriptions to support prizes. Among them, a letter from William Borlase, author of *The Natural History of Cornwall*, in 1755, opined that,

> *"our maps of England and its counties are extremely defective. We have but one good county map that I know [Cornwall], and the headlands of all our shores are disputed . . . .As what your Society appears to relish is likely to be soon generally approved, if among your premiums for Drawings some were offered for the best plan measurement and actual survey of a city or District . . . it might move the attention of the public towards geography, and in time, incline the Administration to take this matter into their hands . . . and employ proper persons every year from actual surveys to make accurate Maps of Districts, till the whole Island is regularly surveyed.* (Harbeson, 1963)

What was this 'extremely' defective state? The majority of published maps were county maps at atlas page scales of five or more miles to the inch. While they showed road networks, main towns, major estates and administrative divisions, they were ineffective for navigation. They lacked detail, were blank beyond a county's boundaries and they did not join up. John Ogilby's ribbon maps had more information along the corridors of main routes at an inch to the mile, but nothing beyond the corridor, rather like satnav maps today. The ribbon or strip constantly changed orientation and the atlas was too large for ordinary travellers, although plagiarists produced pocket sized editions.

The Society of Arts' Map Awards Scheme

The SofA committee for Polite Arts [3] included maps. It recognised that 'A complete knowledge of the situations, bearings, levels and other topographical circumstances' would be of great use for improving highways and river navigation and that rather than an 'unrelated succession of maps of individual counties', it would be desirable to encourage surveyors to make accurate maps of two or three adjacent counties in order assemble a national survey of fairly uniform maps.

---

[2] The Society was granted a Royal Charter in 1847, and the right to use the term Royal in 1908, since when it has been known as the RSA, the Royal Society of Arts

[3] The other committees were Agriculture, Manufactures, Mechanics, Chemistry and Colonies. Polite Arts included painting and drawing, sculpture, casting moulds, and designs for manufactures and literature.

The initial advertisement in 1759 offered a premium of up to 100 guineas, (£105), for an accurate survey of any district, county or city. There was nothing specific about scale or method. There was an extra award for an exact levelling of rivers capable of being made navigable, although there were no applications for this extra award).
At the time of the advertisement, twelve counties had published one-inch-to-the-mile or larger [4] scale maps (*figure 1*).

Figure 1. One-Inch Map availability in England and Wales in 1760

[4] Rocques' map of Berkshire first published in 1754 was at a scale of 2 inches to the mile

A revised advertisement in 1762 specified a scale of one inch to the mile, which was regarded as a large scale in the context of existing county maps published in atlases. The advertisement further specified accurately 'laid-down' coastlines of maritime counties with correct latitude and longitude and completion within two years of the Society's acceptance of a surveyor's notification. No specifications for a standard legend, or verification of accuracy or completeness were provided. Applicants' proposals often referred to triangulation and to the use of a theodolite. Although these were never mentioned in the annual advertisements or committee minutes, they must have been discussed in interviews.

A review of the maps awarded a prize (*table 1, below*), and those rejected (*table 2, following page*) reveals something of a 'muddling through' process at

County and Date	Winner	Award	Comment / other 1 inch maps
1765 Devonshire	Benjamin Donn, maths teacher	£105	
1767 Derbyshire	Peter Perez Burdett, artist	£105	Cheshire, Lancashire
1769 Northumberland	Andrew Armstrong, retired army officer	£52.50	Durham, Lincolnshire, Rutland, several Scottish counties
1782 Somersetshire	William Day, surveyor & Charles Masters, architect	£21 + silver medal	
1779 Leicestershire	John Prior, school master & clergyman	£21 + silver medal	
1783 Suffolk	Joseph Hodskinson	Gold medal	Surveyor for three of Thomas Jeffreys' maps
1786 Lancashire	William Yates, surveyor	Gold medal	Warwickshire, Staffordshire
1791 Hampshire	William Faden, Geographer to the King, surveyor, engraver, map & atlas publisher	Gold medals	Five counties as contractor/publisher. 22 counties buying, revising and publishing others' surveys
1795 Sussex			
1795 North Wales*	John Evans, surveyor	£47.25	Awarded in 1802
1797 Oxfordshire**	Richard Davis, farmer & enclosure commissioner	£52.50	
1803 London***	Richard Horwood, surveyor	£52.50	Liverpool
1803 Cardiganshire	John Cary, engraver, map & atlas publisher	Gold medal	Derbyshire, Durham, Oxfordshire, Glamorganshire, Middlesex
1808 Shropshire	Robert Baugh, surveyor & engraver	£15.75	Engraved Evans map of North Wales

*3/4 inch to a mile, **2 inches to a mile, ***26 inches to a mile

Table 1: Maps winning a Society of Arts award

the SofA, with early awards to maps by amateurs and the rejection of submissions by professionals. Although the size of the awards diminished over time, it was never enough to begin to cover survey costs. Before the OS, surveys were funded by subscribers who were signed up before work commenced, nevertheless it was a seal of approval to encourage subsequent sales.[5]

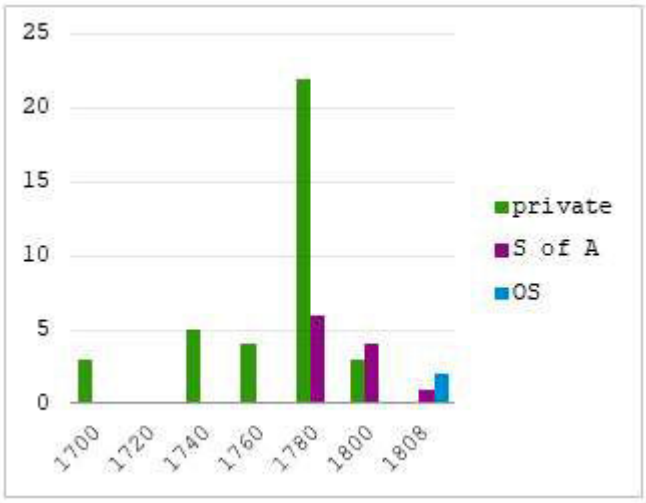
County and Date	Rejected	Reason	Other 1 inch maps
1761 Berkshire*	John Rocque, Topographer to the King, surveyor, map & atlas publisher	Started before the awards scheme	Shropshire, Surrey
1765 Bedfordshire*	Thomas Jefferys, Geographer to the King, surveyor, map & atlas publisher	Late subscriptions as member of Society of Arts	Huntingdonshire, Northamptonshire, Nottinghamshire, Westmoreland, Yorkshire
1765 Dorsetshire			
1767 Oxfordshire			
1770 Buckinghamshire			
1779 Lincolnshire	Andrew Armstrong, retired army officer	Not known	See table 1
1780 Rutland			
1797 Norfolk	William Faden, see table 1	Not within time	See table 1

*2 inches to a mile

Table 2: Applications rejected for map award

Inspection of map accuracy increased over time. In 1767, Burdett submitted letters from all parts of Derbyshire confirming that he had surveyed those parts, which were accepted as sufficient. By 1778, John Prior's triangulation network for Leicestershire was checked by Joseph Hodskinson who found it was planned with accuracy. In 1782, William Day's and Charles Masters' map of Somersetshire was checked by three referees who between them checked 83 miles of roads to verify bearings and distances. By 1803, John Cary submitted eighteen certificates of accuracy for his map of Cardiganshire. Gradually the checking became more rigorous. This may have had a positive influence on the survey standards in general, although the Society of Arts was not in a position to regulate surveying.

[5] Andrew Armstrong's 1769 survey of Northumberland cost £560.50. Benjamin Donn's 1765 survey of Devon cost nearly £2000. William Day's survey of Somerset cost £1050.



The impact of the Society of Arts awards can be appreciated directly and indirectly. The statistics presented in *figure 2 (left)* were gleaned from the Bodleian Library's *Union List* (Rodger, 1972). It shows that twelve county maps at large scale were published in the six decades prior to the Society of Arts. In the twenty years subsequent to its map awards scheme, there was a great spike in large scale county map publishing; 28 maps of which six won awards. During the entire period of the awards scheme from 1759 to 1808, 36 large scale English county maps were published [6] of which eleven won awards. Of the remaining 25, seven were rejected and the remainder were published without reference to the Society of Arts. In Wales, of the 13 counties, seven were mapped by 1803, albeit six were covered by John Evans' 1795 map of North Wales. Both Evans' map and John Cary's of Cardiganshire won awards. The remaining six counties, four waited to be mapped by the OS between 1818 and 1831. In Scotland, although the Lowlands were mostly mapped at one inch scale by the end of awards scheme, none were applied for. Most of the Highlands and Islands waited for the OS.

Summary

It is arguable that at the beginning of the SofA large scale map awards scheme, it stimulated a surge in mapping activity. In its first years it certainly attracted amateur interest that was not likely to have undertaken a county's survey. Perhaps more realistically, the Society's scheme concentrated the peak in the statistics rather more than it would have been. Although it was widely accepted that the awards scheme gave a public seal of approval that assisted sales, as time passed delays by the committee processing the awards discouraged professionals from applying; the time and effort were not worth a prize.

The early ambition that the individual county surveys might be assembled into an accurate national map was not achieved, nor was it achievable without coordination and a rigorous national triangulation to provide accuracy. The private enterprise approach, which the Society wished to encourage, could not bear the costs of improved instruments, or establish and maintain at standard across the nation. The efforts of the Society did lead to this recognition and strengthened the case of those arguing for government involvement which led to establishment of the Ordnance Trigonometrical Survey of the Board of Ordnance in 1791.

---

[6] Of the 36 large scale county maps published in this period, some duplicated previous publications. Of the 38 English counties, 37 had one inch maps. Cambridgeshire waited until Richard Baker's map in1821.

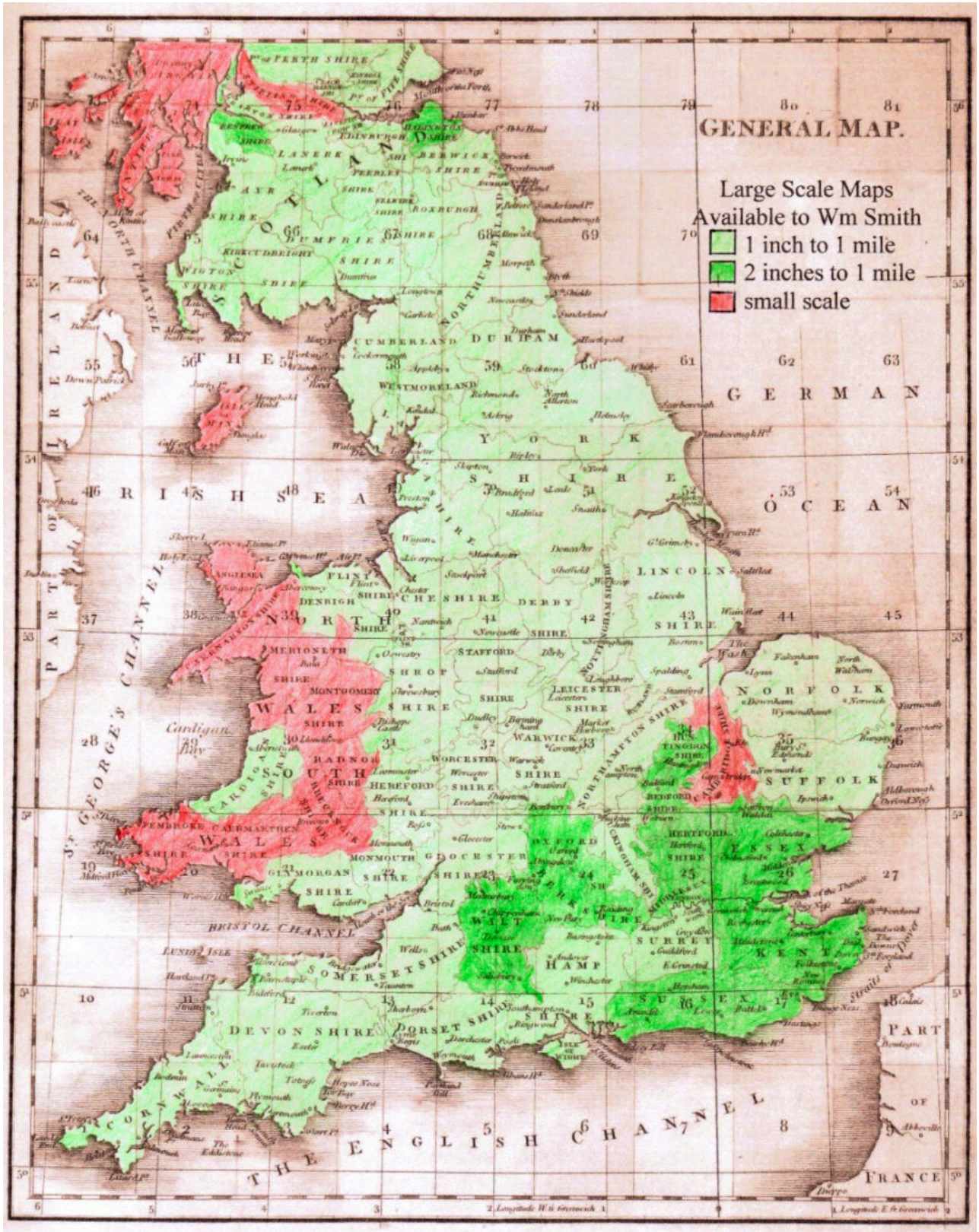


Figure 3a. Extent of large scale County mapping available in William Smith in 1800

Figure 3b: County Maps receiving Society of Arts Awards

The absence of a standard legend or method of depicting topography became increasingly apparent as the many individual county maps were published in the late 18th century. A standard legend began to evolve particularly as major publishers William Faden and John Cary emerged. Faden, not only initiated surveys, he also bought the engraved copper printing plates for several county maps from financially distressed surveyors and engravers, either directly or at auctions. John Cary played a similar role to a lesser extent. They both published second and third, revised editions of many county maps acquired this way.

In mapping and revising English and Welsh topographies and observing each other's published maps, it is not difficult to imagine a convergence of styles and symbols. Hellyer and Oliver (2015) have observed:

> *'By the time of the Donald-Milne-Faden map of Norfolk, 1790-1797, the basic content of the one-inch county survey was well established, with a common vocabulary of roads, buildings, watercourses, woods, parks, wetland, heath and other uncultivated land, landmarks such as parish churches and windmills, and some indication of relief. The Donald-Milne-Faden Norfolk bears a recognisable relationship to early Ordnance Survey mapping'.*

The SofA awards scheme was last advertised in 1802, although maps were considered until 1809 if the application was made before 1803. The OS's first one inch map of Kent was published in 1801. It was a transitional map in that areas beyond Kent's boundaries remained blank. William Faden reduced it from surveyors' drawings, engraved and published it. The subsequent editions was produced by OS staff in the Tower of London, with the blank areas of adjacent counties filled in to the map borders, and published in 1805. Adjacent areas were progressively mapped in abutting sheets in a numbered series published over the following decades as the survey progressed westwards, then northwards. The writing was on the wall for private surveyors. From the SofA's point of view, it no longer necessary to encourage them[7].

It is probable that large scale mapping of the nation would have occurred without the existence of the Society of Arts large scale county mapping award scheme. There was already a demand from canal builders, industry and the military. However, it addressed a great need and supported a solution. It gave the *zeitgeist* a strong push and perhaps accelerated the process. It did specify the one inch scale, arguably helping to establish its use and adoption by the OS.

---

[7] That is not to say that private large scale map production ended. Given that the roll out of Ordnance maps took decades to complete, there was time for revised editions of existing county maps to be published, particularly in the North. It is noteworthy that the surveyors and map publishers, Christopher and John Greenwood produced one inch maps of 33 of the 39 English counties between 1817 and 1830, before competition from the OS put them out of business.

This article is based on the first half of my paper, 'The Society of Arts and the Encouragement of Geological Mapping', published in Earth Sciences History, vol. 37, pt.2, in 2018. Complete references and footnotes may be found there.

References

HT De la Beche, (1832). *A Geological Manual*. 2nd edition.

J Harbeson, N Wallis, and JB Harley, The Society of Arts and the Surveys of English Counties 1759-1809, in *Journal of the Royal Society of Arts* n.5089, 43-46.

JB Harley. The Society of Arts and the Surveys of English Counties 1759-1809, in *Journal of the Royal Society of Arts* n.5090, 538-543.

Note: J.B.Harley wrote and co-authored informative introductions to facsimile editions of one inch county maps encountered in this article, namely, Kent (1990), Lancashire (1968), and Somerset (1981).

R Hellyer and R Oliver, *The First Ordnance Survey Map: A History and Cartobibliography of the One-Inch Old Series of England and Wales*.

EM Rodger, *The Large Scale County Maps of the British Isles 1596-1850: a Union List Compiled by the Map Section of the Bodleian Library*, 2nd edition.

HT Wood, *A History of the Royal Society of Arts*.

Ordnance Survey camps and cairns of 19th century northern Ireland : 1. Trostan, Knocklayd and Divis

Peter Wilson and Frances Wilson

The Ordnance Survey in Ireland celebrated its bicentenary in 2024, and conferences in Ballykelly (Co. Londonderry), in November 2023, and Dublin, in June 2024, commemorated 200 years of Survey mapping across the island. Focussing on legacies of the past and prospects for the future, the conferences successfully brought together members of the public, academic scholars and Survey personnel. A variety of topics pertaining to the history of the Survey were covered by speakers from home and overseas and provided delegates with a comprehensive overview of how the Survey began and progressed, along with its significance and relevance in the 21st century.

Although the Irish OS was originally constituted as a whole-island body, separate institutions for Northern Ireland, based in Belfast, and the Republic of Ireland (initially called the Irish Free State), based in Dublin, emerged following partition of the island in 1921. Irrespective, the two organisations remain closely associated, partly as a consequence of their 97 years of shared history; and since 1970 they have once again shared a sea-level datum – this time at Malin Head, Ireland's northernmost point. Prior to partition the sea-level datum was at Poolbeg lighthouse on a Dublin Bay breakwater. Following partition, the OS of Northern Ireland adopted a datum at Belfast docks for a number of years.

Although many still regard them as "Ordnance Surveys", both institutions have been subsumed within broader state bodies – Land and Property Services in Northern Ireland, Tailte Éireann in the Republic of Ireland. However, it is with the past that this series of three articles is concerned. In this regard we have visited and recorded details of the evidence that survives on nine summits in the north of Ireland (*figure 1*) that functioned as survey stations during the Principal Triangulation of the island conducted between 1824 and 1832. In some cases very little, if any, evidence of that initial activity remains on the ground, in other cases there are substantial stone structures, some of which are likely to be the remnants of the camps and cairns that played a vital role in mapping the island. Some details of the survey stations and the observations made therefrom are taken from Clarke (1858).[1]

---

[1] AR Clarke, *Account of the observations and calculations of the Principal Triangulation; and of the figure, dimensions and mean specific gravity, of the Earth as derived therefrom.* Eyre & Spottiswoode, London, 1858

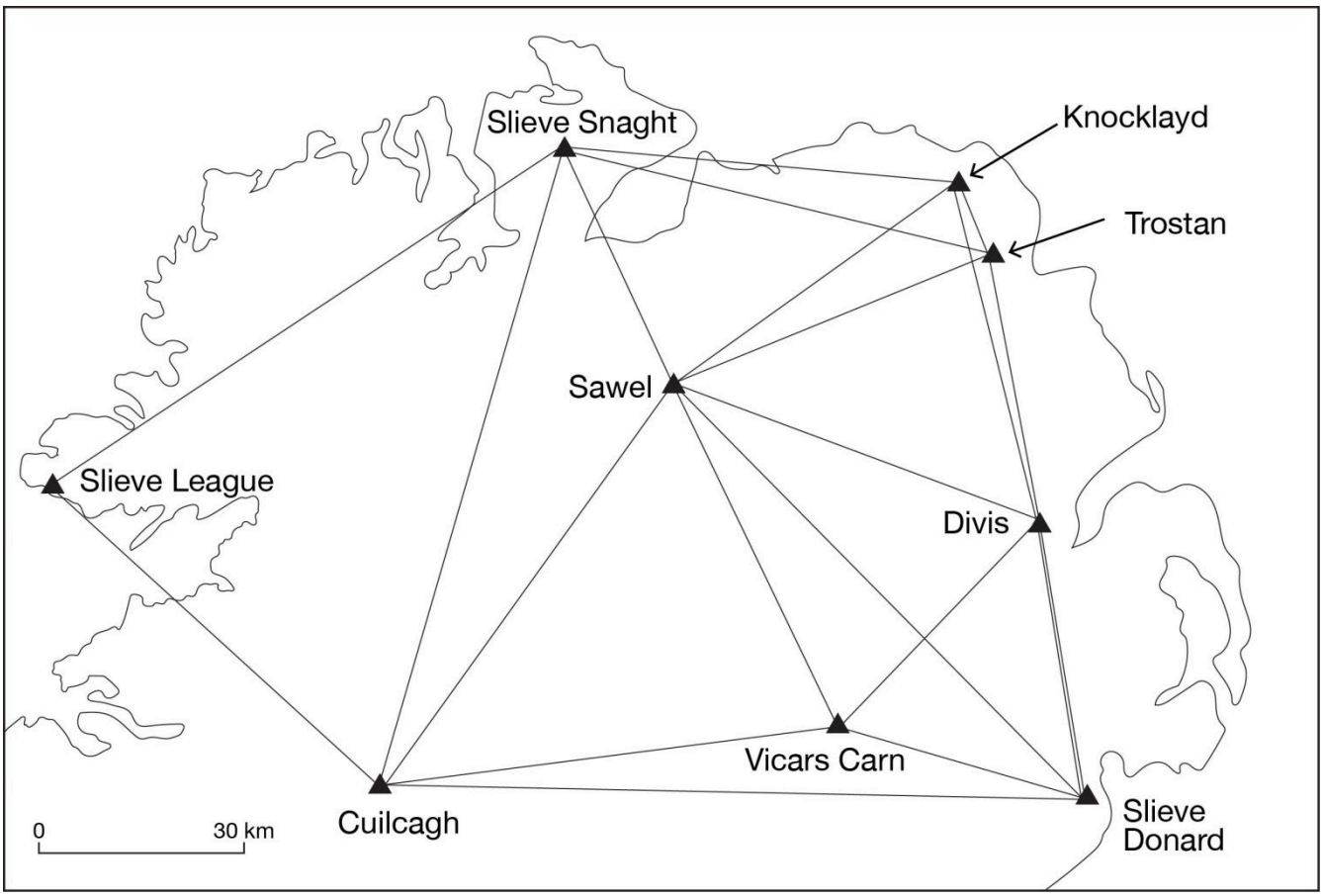


Figure 1. Locations of summits in the north of Ireland used as survey stations for the Principal Triangulation 1824-32. Surveyed lines to stations in Scotland, the Isle of Man, northern England and the rest of Ireland are omitted for clarity.

Trostan

At 550m OD (Ordnance Datum), Trostan is the highest point of Co. Antrim. It lies in the northern part of the county (Grid ref. D 179 236) within the Glens of Antrim Area of Outstanding Natural Beauty. The summit was occupied by Lieutenant Joseph Portlock and a detachment of men from 3 June to 5 July 1827 and observations were taken using the 3-ft theodolite. Twenty-one stations were observed from Trostan, including summits on the Scottish isles of Islay, Jura and Arran, and the southwest Scottish mainland. A few stations were observed on only two or three occasions, two nearby stations (Divis and Knocklayd - see below) were observed 30 and 31 times respectively.

The description of Trostan and its station is reported as "....on top of the mountain, and is marked by a pile of turf 15 feet in height, and 50 feet in circumference at base. The top of the mountain is long and flat, and exceedingly boggy and wet."

Previously, the summit of Trostan was covered by peat (turf) but this has been eroded to leave a surface of basalt bedrock and small rock fragments. Thick peat survives around the margins of the summit plateau. We have been unable to trace any evidence for the OS encampment – there are no surviving stone structures; indeed the stones of the summit are of small calibre and

unsuited for the construction of shelters or huts. We therefore conclude that Portlock and his men must have relied solely on tents for their accommodation. These were likely to have been pitched to the east (leeward) of the summit.

Figure 2. The summit of Trostan with the OS cairn of 1827 and 20th century triangulation pillar. Note the eroded area on right-hand side of cairn in which a mix of peat and small boulders can be seen.

However, what does survive on Trostan is the cairn or "pile of turf" that Portlock's men built and on which they mounted the 3-ft theodolite in order to make their observations. This cairn rises above the general level of the summit plateau and erosion scars show that it consists of a mixture of peat and small boulders (*figure 2*). This combination of materials on the highest point of the hill cannot be a natural occurrence. Furthermore it corresponds to the cairn dimensions as reported in Clarke (*fn1*). We therefore regard it as the 1827 cairn that was built to support the 3-ft theodolite.

During the re-triangulation of Northern Ireland in the 1950s a concrete triangulation pillar was placed on top of the Trostan cairn. This is in good condition and carries flush bracket OSNIBM 3056. Although the cairn is now showing signs of erosion it is still largely intact; but placement of the triangulation pillar on its top simply serves to encourage walkers to climb to the top to touch the pillar, thus contributing to the erosion. The cairn has no statutory protection.

Knocklayd

Situated *c.* 15 km north of Trostan, Knocklayd (514m OD, Grid ref. D 115 364; *figure 3*) rises steeply above the coastal town of Ballycastle. It too is within the Glens of Antrim AONB. The highest point of Knocklayd is occupied by a Neolithic (*c.* 4000-2000 BC) passage tomb called *Carn an Truagh,* which is itself buried within a cairn of stones. The cairn is covered by a thin layer of vegetated peat. It rises *c.* 7m above the surrounding ground and has a basal diameter of *c.* 25m north-south and *c.* 29m east-west,[2] making it sub-circular in plan. Around the southern and western margins of the cairn large kerb stones are visible; these were placed by the cairn-builders to prevent the stones of the cairn from creeping or spreading outwards.

Figure 3. The summit of Knocklayd showing the Carn an Truagh *cairn surmounted by the 20th century triangulation pillar.*

The summit of Knocklayd was occupied by Portlock and his men from 8 July to 17 August 1827 – they went there two days after completing their work on Trostan. The top of Knocklayd is described in Clarke (*fn 1*) as "covered with bog or peat to the depth of nearly 10 feet. In many parts this turf has been abraded to considerable extent, and on the highest of the lumps thus formed is the station. A large hole was dug through the turf, and the frame for supporting the instrument made to rest on the firm ground; this frame was left in position, and a very weighty centre stone was placed at the bottom of the hole; another stone was placed under the hole marking the station."

Clearly, this description of the location selected as the instrument station does not correspond to the cairn of *Carn an Truagh* and therefore the 3-ft theodolite was not set up on the highest part of the hill. Indeed, it is perplexing that the description of the summit given in Clarke makes no

[2] Sites and Monuments Record Northern Ireland, SMR number: ANT-008-001.

mention of the existing cairn. On several other summits the tops of archaeological cairns were used to set up the instrument.

We have examined the area surrounding *Carn an Truagh* in an attempt to locate the instrument station. At no point did we find the peat to exceed a depth of *c.* 1.5 m (*c.* 5 ft). Furthermore, from many points on the summit plateau *Carn an Truagh* blocks the view such that we only found one small area from which all 25 stations observed by Portlock's team could be seen. This, then, may have been the location of the station unless the wooden frame that supported the instrument was tall enough to provide a view across the top of *Carn an Truagh* – in which case the station could have been anywhere on the plateau. In addition, we cannot find any trace of Portlock's encampment, again suggesting that the team relied on tents rather than stone-built huts. The leeside of *Carn an Truagh* would have afforded the surveyors some degree of shelter.

The concrete triangulation pillar that stands on top of *Carn an Truagh* is in good condition and carries flush bracket OSNIBM 2074.

Divis

To the west of Belfast, a range of hills separates the city from the lowlands around Lough Neagh. Divis, at 478m OD, (Grid ref. J 280 755 *figure 4*) is the highest of these hills and was occupied by an OS team from 24 July until 11 November 1825. At various times Thomas Colby was present along with Portlock and Thomas Drummond. The survey station "….is marked by a pile of large coarse stones, having a diameter at base of 16 feet and raised to a height of about 5 feet; this truncated section of a pile has a small quantity of bog turf on its top." (Clarke).

Figure 4. Divis with its prominent communications facility.

Sadly nothing remains of the Divis station, although it is marked by a metal disc set into a concrete block flush with the ground surface and adjacent to the boundary fence of a large communications facility. We do not

know if the survey cairn was destroyed or deliberately dismantled but during the Northern Ireland 'Troubles' of the 1960s-90s, the summit of Divis was occupied by a British army base, the irony of which will not be lost on members of the Charles Close Society.

Figure 5. The metal disc that marks the location of the former Principal Triangulation station on Divis.

Exactly where the OS had their camp on Divis is not known to us, although below the summit on the east (leeward) flank the hillside has several near-flat natural platforms that may have been favoured.

A triangulation pillar stands just a few metres away from the commemorative metal disc and bears the flush bracket OSBM 3211. The pillar has had a chequered history. It was removed from the summit when the army base was established and spent the 'Troubles' at OS locations in the city below. It has since been returned to its rightful home on Divis.

Endpiece

Our examination of the early OS activity on the three county Antrim summits dealt with above raises more questions than it has been able to answer. But that is part of the fun that comes from delving into past events for which so little detail exists and for which conjecture and logic must be invoked.

The second article in this series will appear in the next edition of Sheetlines.

Misnaming a Cambridge college and its street

Simon Morris

Visiting a once-familiar town can be a troubling business. You more or less remember where places are, but cannot recall how to reach them – which is, of course, where maps come in handy. Earlier this year I returned to Cambridge to visit an exhibition at the Fitzwilliam Museum and, travelling by train, needed to plot the best route from station to destination.

I went to my shelf and pulled out the Ordnance Survey Town Map of Cambridge; this, surely, would be an unfailing guide even if a hundred years out-of-date. And reliable it seemed, as I planned my proposed route up Station Road, along Bateman Street and thence up Trumpington Street. But – hang on a moment – what on earth is this building on my route? A Chestnut College on St Elgius Street? Impossible – there is no such place! But there it is, in black and white, a seemingly phantasmagorical foundation in the midst of a university town.

This was, alas, no Hogwarts incarnate but, instead, a howlingly misnamed Cheshunt College. Even worse, the street on which it stands is misspelt: it is in fact St Eligius Street. The College was a theological institute dedicated to training ministers for the Congregational church. It closed in 1967 on merger with Westminster College, although its former buildings still stand.

So how did the Ordnance Survey, an institution with the highest reputation for accuracy and reliability, come to make not one but two contiguous blunders? Errors are, of course, only to be expected, and *Sheetlines* has published many articles on mistakes concerning London underground stations, on those at specific places, and more generally.[1] But misnaming a Cambridge college – even a small theological college – and its road is egregious by any standard, akin to finding a Sennit House Passage running alongside a Bourneville and Keys College.

The Chestnut error is explicable, possibly even forgivable. Cheshunt College, which moved to Cambridge in 1914, is not shown on the Cambridgeshire 6-inch sheet XLVII NW revised in 1901, but does appear on the subsequent edition revised in 1925.[2] The Cambridge Town Map, dating from 1920, was thus based on an ad-hoc revision of the 1901 survey. This revision was evidently done at pace, which would be consistent with Seymour's observation that the Town Maps were a commercial initiative where local booksellers were approached to sell specially produced editions.[3] Further, Cheshunt can easily be misread as Chestnut, and the Cambridge Town Map is not unique in mangling this name. The College was misnamed as Chestnut College in local newspapers on no fewer than 50 occasions from

---

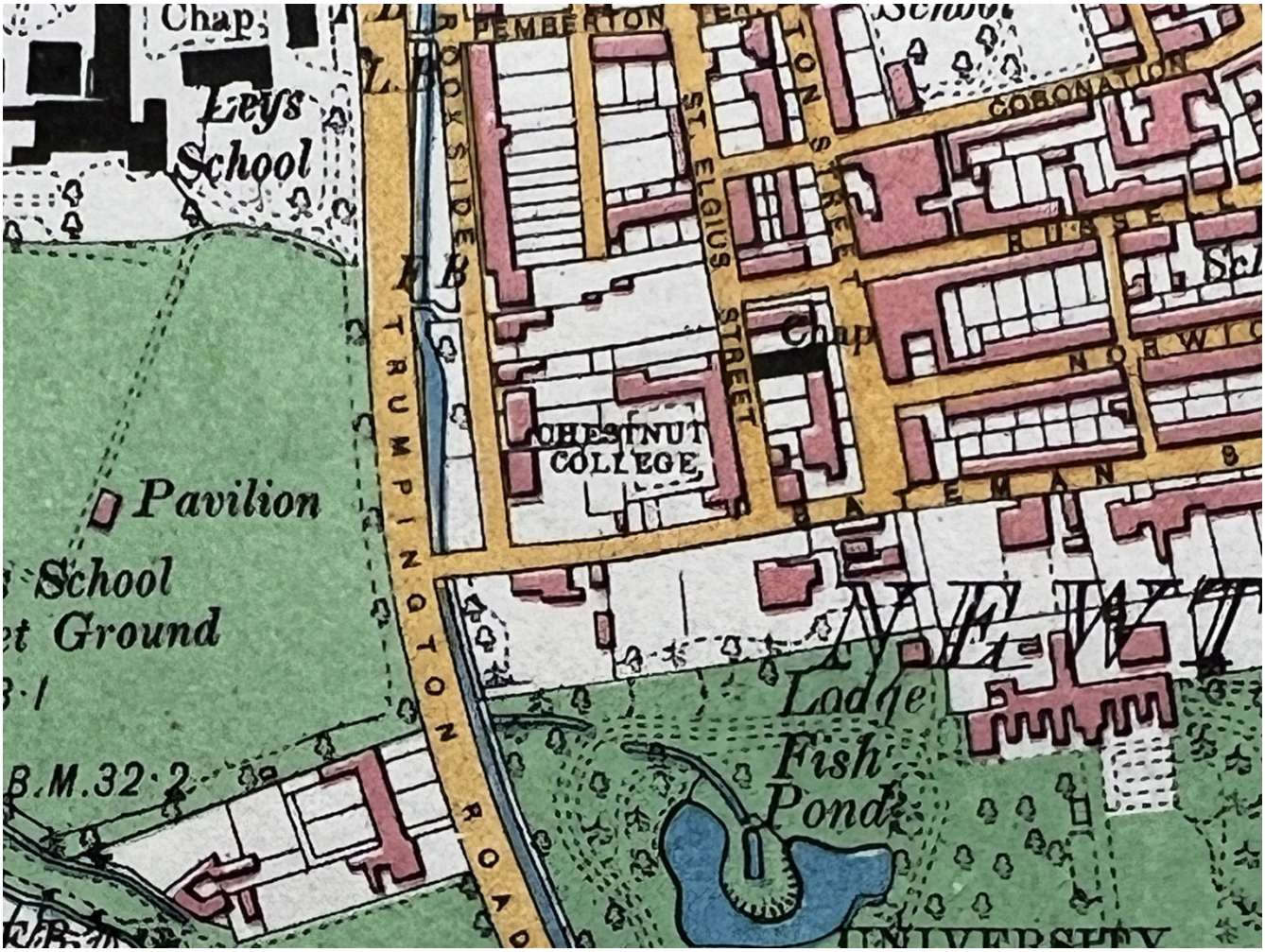
[1] See, for instance, *Sheetlines* 60, 29; 55, 37; 52, 3 and 87, 29

[2] Available on the National Library of Scotland website

[3] For the date, see *Sheetlines* 6, 20. For the reference to the origin of the Town Maps, see Seymour (ed) *History of the Ordnance Survey* 1980 page 231

1894 in the *Wharfedale Observer*, which may be forgiven, to 1971 in the nearby *Haverhill Echo*, which should have known better.[4] Misspelling St Eligius Street is less excusable. It appeared unnamed on the 1901 revision, meaning that the surveyor of the Town Map had to note the name from the street nameplate or from making local enquiry, and was so careless as to get it down wrong.

So is Chestnut College on St Elgius Street the wooden spoon of all OS errors? Probably not – there must be worse mistakes and misprints of far greater significance, although two adjacent unconnected howlers is an unenviable achievement. The real interest in these errors lies in confirming the understandable human fallibility of the OS surveyors who must, on many occasions, have misheard, mis-noted or miscopied a name, its engravers who could so easily misread a manuscript entry, and its proofers who might fail to spot a mistake in time.



[4] See the British Library's British Newspaper website

OS First Edition place-name collection and preparation

Nevis Hulme

The following has been written after further research into this topic since writing in *Sheetlines* 122.[1] This was carried out by examining more of the Scottish OS name books (OSNBs) [2] and other information that has come to my attention. I now see that what I had conjectured in my earlier article about the collection process was correct but some detail continues to elude me.

OSNB online references

The system used on *Scotland's Places* website is used throughout. First edition OSNBs begin with the reference OS1/ followed by a number for the county, the volume number and finally page number, e.g. OS1/28/12/113. This can be searched directly from a browser making location of a page easy. It is also possible, with care, to alter a county's URL directly to jump between pages across different volumes.

The title page, which would be the front cover of the volume, is usually [3] towards the end of the list of pages in any volume. I suspect that the title page was moved to the end of the name sheets to avoid having a page zero in each volume list of pages. It is worth noting that footnote 35 in Withers,[4] writing before the OSNBs were online, states that the 'name books are not paginated' but this cannot have been the case for the reason already given.

The collection process

In the Highlands, the laird (landowner) would have been approached before any survey work had been started in the area and would have been asked to identify potential informants.[5] We can see from what James writes[6] that once a manuscript plan had been drawn and traced, an examiner 'who should be a surveyor and plotter, and sufficiently a draftsman [sic]' would add detail and 'He at the same time collects information relative to the names of hill features, houses, streams, woods, plantations, bridges, &c.' I don't think that this should be taken too literally; the examiner would have to be accompanied by his informants for the names and I cannot see this being done while the other

---

[1] OS Name books of Scotland and the study of place-names; *Sheetlines* 122, 6-14.

[2] The address for accessing these is https://scotlandsplaces.gov.uk/digital-volumes/ordnance-survey-name-books.

[3] This may be 'always' but, without viewing all 1831 volumes, it is not possible to be certain.

[4] CWJ Withers, *Authorizing landscape: 'authority' naming and the Ordnance Survey's mapping of the Scottish Highlands in the nineteenth century,* Journal of Historical Geography 26, 532-544.

[5] Informant is used to distinguish the people offering names on the ground as opposed to those consulted later and other sources such as gazetteers and parish records. See Hulme (*Sheetlines* 122, 8) for an explanation of the hierarchy of authorities.

[6] H James, *Account of the methods and processes adopted for the production of the maps of the Ordnance Survey* …, HMSO, London, 1875, 45-6.

tasks were carried out. I think that the examiner would have arranged with his informant to spend a day in the field naming features in the landscape that the examiner had possibly identified as important in advance. Examination of the maps produced from this work, especially of areas with which one is familiar, does lead one to wonder why some features were chosen to be named.[7] It could not have been up to the informant to choose the features to be named; evidence from a sparsely populated moorland and coastal area in Wester Ross has shown how few of the names known appear on OS maps.[8]

An analysis of one small area comparing 115 distinctive names appearing on OS first edition 6-inch maps with equivalents collected from the 1980s to early 2000s revealed the OS name collection was more than 84 per cent accurate when various factors were considered.[9] There were very few cases where names had been mislocated; this strongly suggests that names were written on a map when they were collected as otherwise errors could easily have occurred. In the wider area of Gairloch parish studied, at least, very few misplaced names were discovered.

In Gaelic-speaking areas, most of the informants, other than landowners often, would have been Gaelic speakers. They may not have been literate or necessarily have spoken English, in which case the examiner and the informant or informants would most likely have been accompanied by someone who spoke both Gaelic and English and were able to spell Gaelic. It is probable that the examiners did not speak Gaelic; this was not necessarily so but, looking at many of their personal names, it is likely that this was the case.

The OSNB forms would have been written up later at a desk rather than in the field. A pencil note on the form shown in *figure 1* shows both that checks were made to ensure accuracy and that the place-names were copied from a manuscript; this was presumably the tracing referred to above. There were a number of versions of form used: an example is shown in *figure 2*. These forms were later bound into the volumes now generally known as OSNBs.[10]

---

[7] For example, https://maps.nls.uk/geo/explore/#zoom=16.9&lat=57.81289&lon=-5.79864&layers=257&b=1&o=100: the decision to include the name of an area adjacent to that of a minor burn is inconsistent when other more significant features remain unnamed.

[8] N Hulme, *Ordnance Survey Name Books: their breadth of collection and reliability*, SPNS News 51, 2-4.

[9] A comparison of the names collected by the OS and all those known in an area is found in the online presentation https://spns.org.uk/presentations-from-spns-spring-conference-2021, summarised in Hulme (*fn7*).

[10] Officially, the books are called Object Name Books.

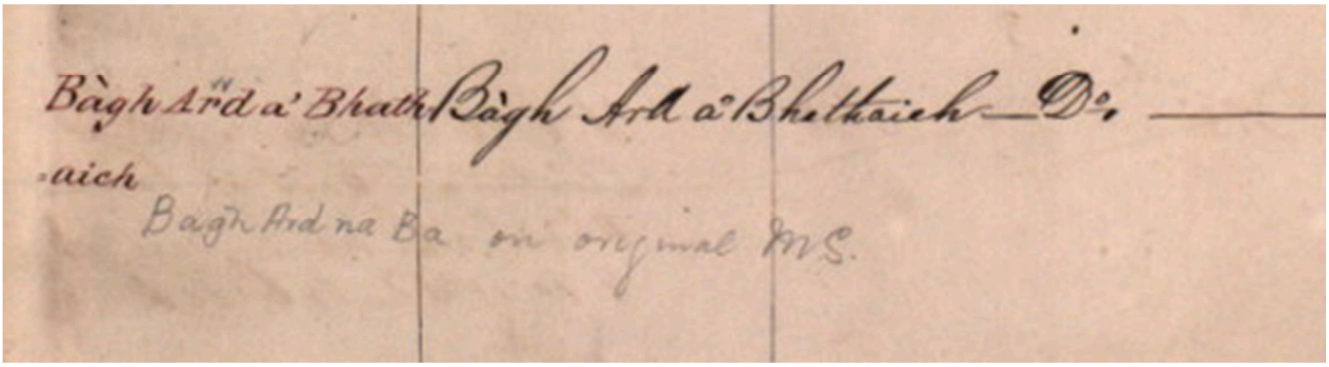


Figure 1. Extract from OS1/28/12/113, Gairloch Parish, Ross and Cromarty: reference to an original manuscript.

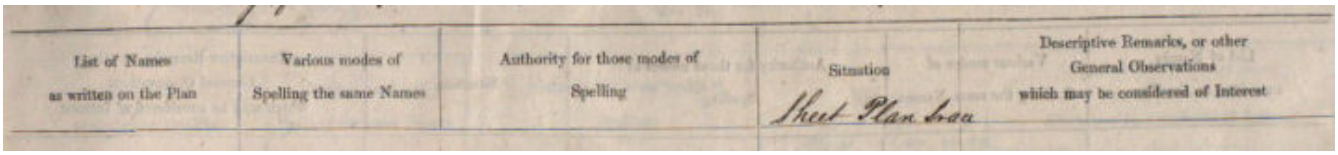


Figure 2. An example of a form used to record names.

There appear to have been no instructions issued on how to complete the forms and this may be the reason that the forms were completed with a great deal of variation over the years and across the country. The Situation column sometimes contains a description of the location of a place-name while other OSNBs use it to indicate the sheet, plan and trace on which the name is found (*figure 2*). Sometimes the 'Various modes of spelling …' column had the translation of Gaelic names although this was more commonly added to the 'Description' column.

Looking at the descriptions, it is clear that these were derived from examination of the map rather than being given by the informants. The descriptions are given as directions and distances from other features, something the informant would not have accurate knowledge of. Many forms also use this column to indicate the owner of the property described.

Also noted on the forms, in the 'Authority' column, were the names of the informants. In addition, sometimes there would be written sources for the place-names but this was rare in the case of the Highlands. Extensive quotes from these sources often appear in the 'Description' columns.

Figure 3 shows an extract from an analysis of the place-names collected for OS Ross and Cromarty (Mainland), 6-inch sheet LVI (56). To understand the numbering, 91.4, for example, is entry 4 on page 91 of volume 39 for Ross and Cromarty (Mainland), OS1/28/39/91). The head of an arrow shows the place used in the description of the place at the tail end of the arrow, so, for example, Fiadhair Mhór (110.2, in the northwest of *figure 3*) is described in relation to South Erradale (91.4). It will be seen how many names are described in relation to that township. *Figure 4* is an extract from page 116 of the same OSNB showing entry 116.1-116.3 which, when viewed on *figure 3* gives an indication of how the descriptions relate to other entries (names 116.1-3 are towards the east of the map; Abhuinn Ruadh, the Erradale River,

is 92.1). It would be difficult to pinpoint the locations of these places just from these descriptions.

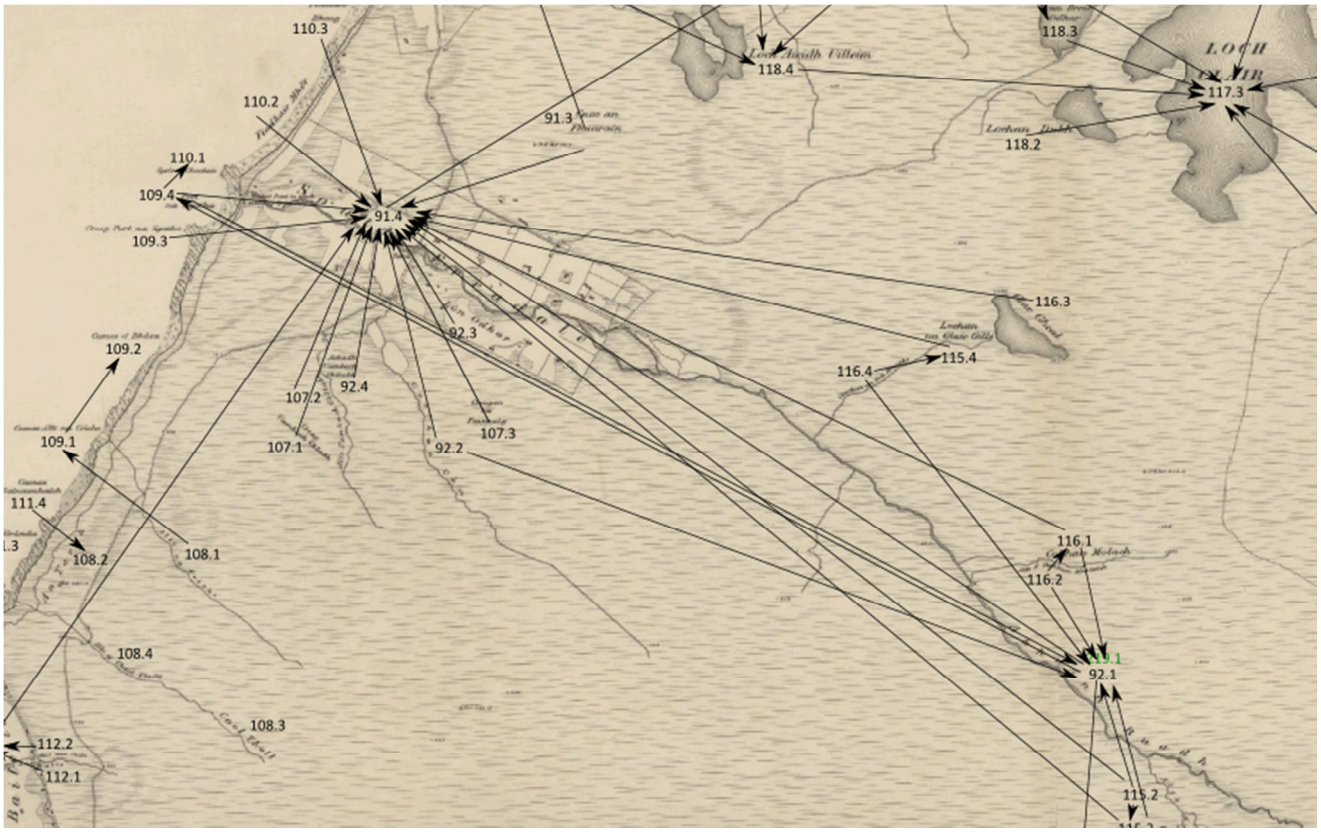


Figure 3. Extract of Ross and Cromarty, 1st ed. 6 inch, sheet 56 showing relationship between descriptions with other place-name entries in OSNB1/28/39.

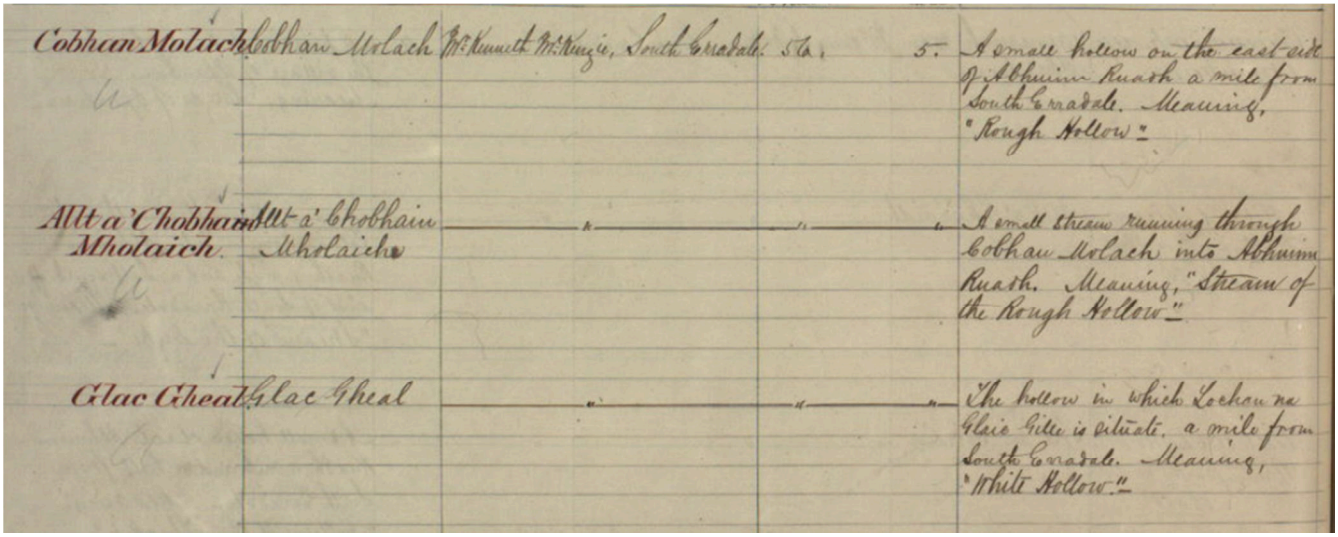


Figure 4. Extract from OS1/28/39/116 as examples of the descriptions given in OSNBs.

It is clear that it was the examiners who created the descriptions from an advanced version of the map in the description for Toll Eala Sheadha.[11] *Figure 5* shows the description of this place, on the Isle of Lewis; it is described in relation to the map and the lettering on the map as being, 'On the southern side of the plan, 23 chains north of the letter U in Uig parish name, and 55 chains NNE of Valtos Village.' No informant could have come up with that! The Uig parish name has not been found on any of the relevant maps making the description even more unusual.

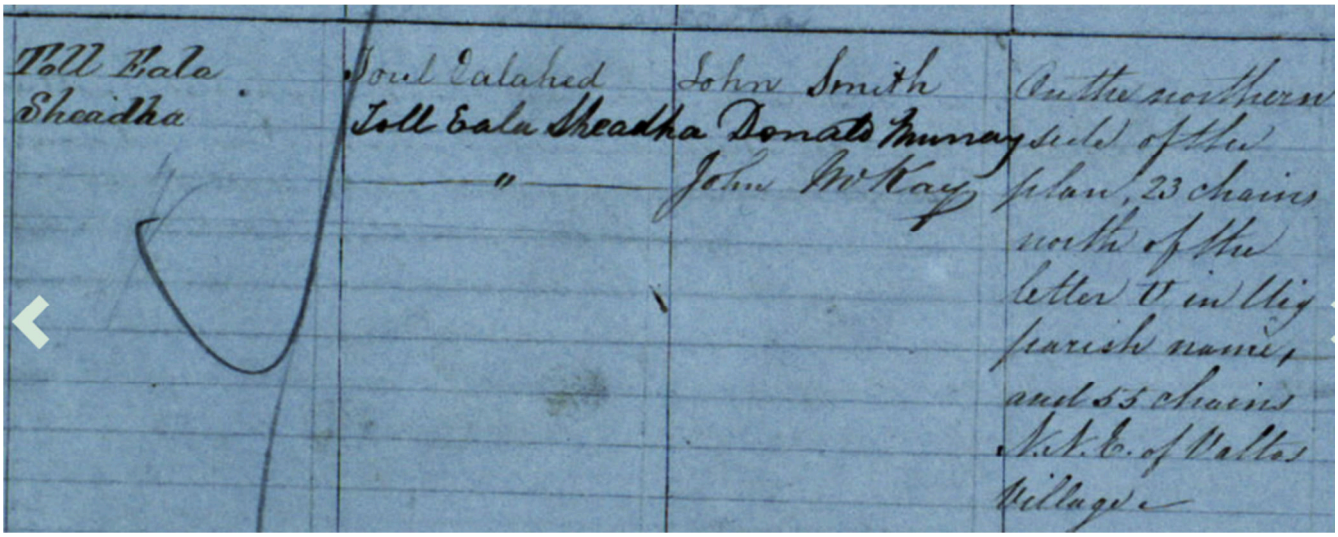


Figure 5. Extract from OS1/27/42/92 showing a description based on the map itself.

The meanings of names were often given in the 'Description' column after the abbreviation 'Sig.', standing for signification or signifies, or 'Meaning'. As will be seen, it is surprising the effort that often went into finding the meanings of names that had been collected although not every examiner noted the meaning of the place-names collected. Some were consistent in giving meanings where appropriate. There was an understanding of which names were Gaelic and those that had been Anglicised, were English or were Norse. Only the Gaelic names were translated. 'Meaning not given', or similar, was used when the names could not be translated.

Some examiners seemed to have not taken the task of translation so seriously and could fail to give a translation when they are readily apparent. For example, on the Isle of Skye (NG1843, name book reference: OS1/16/6/80), the name 'Creag a' Bhealaich-airidh' is one of those listed as 'English meaning not given' but can be translated, mimicking translations of the time, as 'Rock of the Shealing Pass'.[12]

---

[11] This is a curious name in which the final element has not been interpreted. 'Toll' is a 'hollow' and 'eala' is a 'swan' but the meaning of sheadha is unknown in this context. It may be that 'Eala Sheadha' has been wrongly recorded.

[12] This is only used as an example and does not necessarily reflect on this sapper's work in general.

The source of these translations requires more research. It may be that the informants gave them, probably through the Gaelic-English speaker, if necessary. 'Meaning not given' could suggest this. For example, on hearing 'An Abhainn Dhearg', the meaning 'the red river' would be understood by all Gaelic speakers.[13] This, however, would be less likely in the case of a name involving more obscure elements; Toll Eala Sheadha, mentioned above, would be an example of this.

It may be that people were specifically retained for the purpose of translation. It is clear that, at least in some cases, lists were sent to people regarded as Gaelic scholars who made suggestions as to the final form to appear on the maps. The Rev. A. Mathseon was such a person who was sent at least two lists and, as will be seen in *figure 6* was happy to adopt a change to a name that he and another had previously given. It is not clear on what basis this was done.

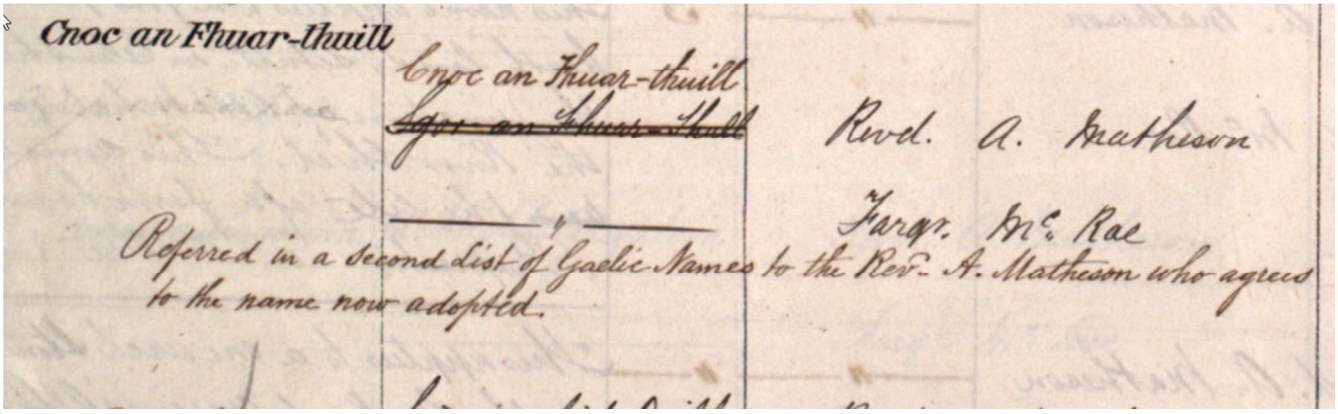


Figure 6. Extract from OS1/28/51/14: an example of a change made to a name from reference to a Gaelic scholar.

Another example of reference to a scholar to decide on the final form of a name is taken from Aberdeenshire where, at the time of name collection in late 1865-7,[14] Gaelic was not so commonly spoken. This inevitably led to problems interpreting the names collected with the names often corrupted having been passed down by non-Gaelic speakers. *Figure 7* is one example of many in the pages of Aberdeenshire volume 9 displaying difficulties. The remarks in pencil were from a Mr James Macdonald of Huntly as we are informed in OS1/1/19/11A.

Lach na Gualainn is given as the name to be entered on maps and the name appearing to this day for a peat-covered, gently-sloping, round hill with heather vegetation and no discernible rock outcrops. The name would translate as 'the duck of the shoulder' and, while shoulder, as of a mountain,

[13] The OS tended to omit most leading definite article so this name would have been recorded simply as Abhainn Dhearg. Other spellings of 'abhainn' are to be found in the OSNB, e.g. amhuinn and abhuinn.

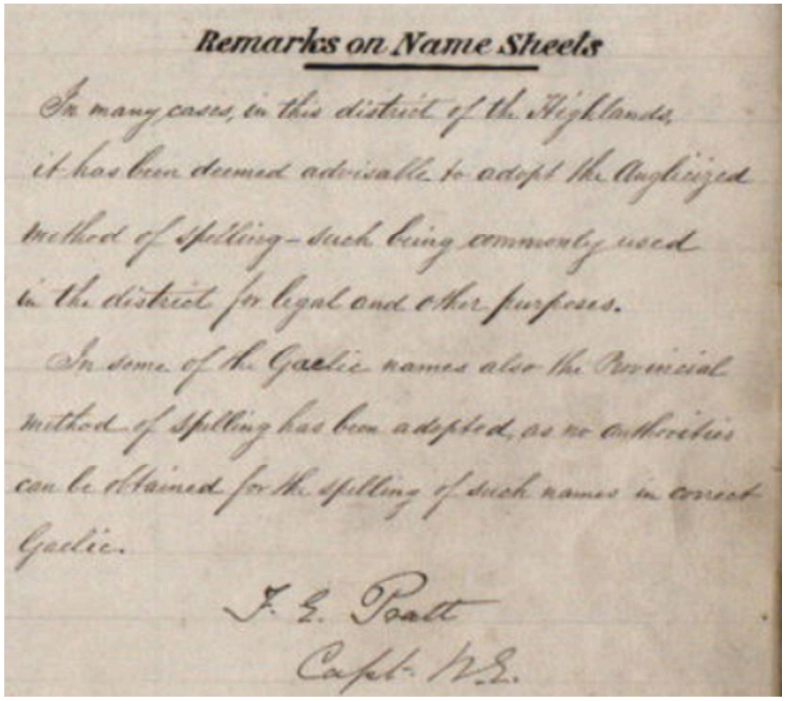
[14] No date was found in OS1/1/9 but may be written somewhere in its 187 pages. Some examiners signed pages regularly with dates while others did not. The map on which the name appears, Aberdeenshire, sheet XCII, was surveyed 1865-7.

is found in place-names, the first term is unlikely as the generic of a place-name. Those working on this name went to great trouble to make sense of it, presumably scouring dictionaries, in addition to consulting another authority, to find terms that may fit the pronunciation heard. 'Leac' referring to a slab of rock, 'làthach' for a boggy area and 'nan Calman' for 'of the pigeons' (or 'doves') all appear in other place-names. Mr Macdonald suggested 'Lack' which does call into question his Gaelic, 'k' not being found in that language. It appears that Làthach na Gualainn was decided as being the best rendition of the name with the following stated next to this: 'The pronunciation of this in the North Highlands is as near as possible Lach-na-Gualainn, and is considered to be a good rendering of the word[s].' It is not clear why 'lach' was adopted for rather than 'làthach' after all the analysis of this term. Another term that is possible in this name, but was not considered, is 'lag' (pronounced like 'lack'), meaning 'hollow'.

Figure 7. Composite extract from OS1/1/9/14: a name giving rise to many possible interpretations.

This example has been included to illustrate the uncertainty that existed (and continues to exist) with Gaelic names in areas where Gaelic was not so well known. It is possible to spend a great deal of time trying to interpret these names but, without earlier records of the names, no firm conclusion can be reached. In other words, doubt has always to remain as to the names that appear on the maps in such areas.

The difficulty recording correct spelling of Gaelic names was recognised in Perthshire name-book volume 19. *Figure 8* describes the actions that had to be taken to overcome this. In the description of names obviously still given in a form of Gaelic, e.g. on page 106 of Perthshire, volume 19, Allt na Corrie Bowie (Allt a' Choire Bhuidhe, possibly), is written 'It is a(n) Anglicized Name.


Remarks on Name Sheets

In many cases, in this district of the Highlands, it has been deemed advisable to adopt the Anglicized method of spelling – such being commonly used in the district for legal and other purposes.

In some of the Gaelic names also the Provincial method of spelling has been adopted, as no Authorities can be obtained for the spelling of such names in correct Gaelic.

J. E. Pratt
Capt. R.E.

'In many cases, in this district of the Highlands it has been deemed advisable to adopt the Anglicized method of spelling – such being commonly used in the district for legal and other purposes. In some of the Gaelic names also the Provincial method of spelling has been adopted, as no Authorities can be obtained for the spelling of such names in correct Gaelic.'

Figure 8. Extract from OS1/25/19/120: the problems spelling Gaelic names recorded where reliable authorities were not available.

While 'provincial spellings' were referred to in the Perthshire example, the term 'provincial names' is also to be found. In the OSNB for the parish of Glenshiel, Ross and Cromarty, where he was Parish Minister, the Rev A Matheson, mentioned earlier, was the authority for two names that he later declared as 'provincial' (*Figure 9*). It is not clear either what this means or why they have been highlighted.

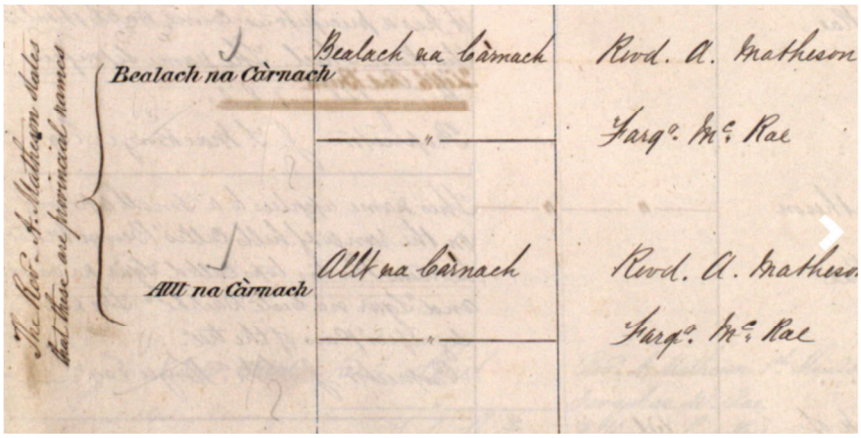


Figure 9. Extract from OS1/25/51/7: names declared 'provincial names'.

Reading through the OSNBs gives the impression that at least some of the translations are unlikely to have been given by the informants who were familiar with the places involved. Some translations suggest reference to a dictionary. Take, for example, the term 'camas' or 'camus'. The meaning is given as 'creek' by some examiners and 'bay' by others when the latter would be more appropriate. The former may reflect Victorian usage but the current British use of 'creek' means 'a small tidal inlet' and appears wrong for the examples in the northwest of the Highlands.

Caution, however, is needed when determining the source of translations. The term 'na nathrach,' appears five times in the OSNBs.[15] It is translated as 'of the serpent' in each case rather than 'of the snake', which would be more likely nowadays. It may have been the case that there was a specific story involving serpents related to these places[16] or that snakes were generally known as serpents in the nineteenth century from the Biblical use. More work on translations in the name books is required.

The final entry on the name book form, in column one on the latest version (see *figure 2*), would have been the spelling to be adopted on the OS map. This tended to follow the place-name given by the authority. Even at this stage, this could have been amended (*figure 10*) following consideration by the 'Examination Office(r)'. These amendments could occasionally be uncompromising. The name Maol Dìsnich is recommended for change to Maol Disneach, as seen in *Figure 11*.

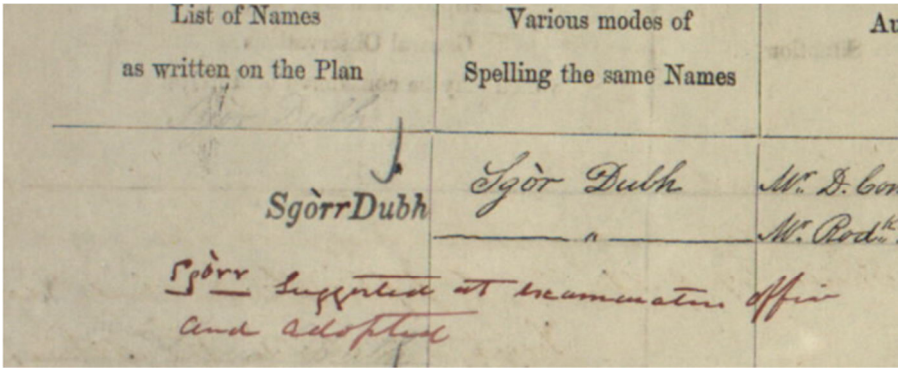


Figure 10. Extract from OS1/28/41/130: Examination Office(r) makes an amendment.

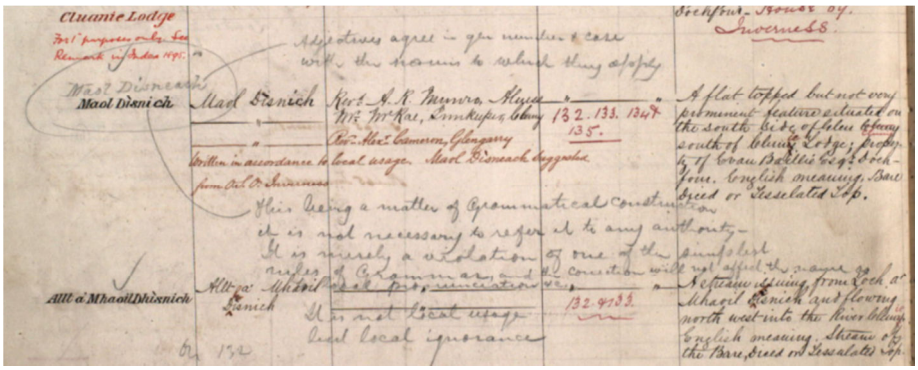


Figure 11. Extract from OS1/28/51/54: local usage dismissed; corrections made, in no uncertain terms.

That page includes the following notes, 'Adjectives agree in gen[der] number and case with the names to which they apply. This being a matter of Grammatical construction it is not necessary to refer it to any authority – It is

[15] The limitations of the online search facility notwithstanding.

[16] The term 'snake' does appear in the name books but not as a translation. See Kirkcudbrightshire, volume 37 page 31 (OS1/20/37/31) for story associated with Snake Bank.

merely a violation of one of the simplest rules of Grammar and the correction will not affect the name as in[?] local pronunciation, etc. It is not local usage but local ignorance.' Gaelic, like most languages, has dialects and usage from one place to another does vary. Gairloch Gaelic, with which I am most familiar, regularly breaks the rules of standard Gaelic but that does not make it wrong. Victorian times were less appreciative of these differences although, even to this day, people are derided for speaking non-standard English.

Names were also amended following comments from other authorities, including landowners and even a Director General of the OS [17], who objected to a spelling or name selected. Some of the letters or notes conveying these requests or suggestions to the OS appear as additional pages in the OSNBs.[18]

The problem with outside authorities making alterations was that often this person would not have heard the place-name spoken by the local person giving it and so could corrupt the name to create what it was thought that it should be. If a name was not understood either because it was non-standard or used elements that were not understood, it was often shoe-horned into an 'improved' name. The example in *figure 11* shows how what was heard is being changed into what is believed to be correct.

Having gone through all these steps, the names were ready to be engraved on the First Edition O.S. maps. As described above, even then amendments came about for later printings of the maps.

There remain many points that require clarification to understand how the OS collected and prepared the names that appear on maps. *Figure 12*, for example, refers to a Gaelic List but it is not known what this is. Somewhere in the pages of the 1831 volumes will be further clues about how the OS went about its work but an examination of these is bound to throw up further queries.

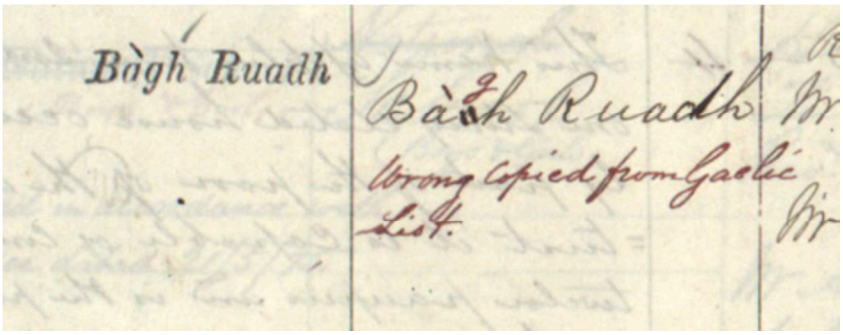


Figure 12 Extract from OS1/28/24/38, Lochcarron Parish, Ross and Cromarty: reference to a Gaelic List.

Acknowledgement

Images of OSNBs reproduced by permission of National Records of Scotland.

---

[17] D Walker, *Col Sir John Farquharson and the Ordnance Survey Name Books for Strathdon,* Cairt 18, 6-7 (www.nls.uk/media-u4/905378/cairt18.pdf).

[18] See, for example, OS1/28/31/37A and 37B in which the spelling of Conon and Conan is explained.

Border dimensions on the Old Series

Michael Spencer

On beginning a cursory examination of the remarkable publication regarding the history of the One-Inch Old Series,[1] I was struck by a paragraph near the start of Chapter 10, "Map content", which reads as follows:

> "It is unclear how the dimensions of the standard border used from the mid-1820s were arrived at: the gap between the neatline and the edge of the 'piano keys' was about 1.8mm, the keyboard proper was about 10.5mm wide; a gap of about 1.7mm was followed by a thick line, of some 1.6mm; and another gap of about 1.7mm to the outer frame [followed that] . . . However they were chosen, they do not obviously relate to rounded distances on the ground."

Now members who, like me, were engineering apprentices in the mid-1950s will remember setting up our lathes and milling machines to turn out objects made to the nearest sixty-fourth of an inch, with tolerances measured in thousandths of an inch. (I seem to remember that a tolerance of about five thou gave a "tight fit," while anything less than that was a "grunting fit.") This system of using Imperial measures was standard practice throughout the British engineering industry, and had been since Joe Whitworth turned his first screw. You don't see working drawings of railway engines designed by the North British Locomotive Company with dimensions specified in metric units.

To add to the fun, we should not lose sight of the fact that this is a *printed* border, made up of three printers' rules—the neat line, the outer frameline, and the thick line—and the keyboard, which is a very special sort indeed. The thicknesses of these lines would have been measured in *points*, which is a minefield that we don't need to go into here. Even if the whole thing was engraved, it seems likely that the printers' dimensions were used. This border was going to be used dozens of times—four on every quarter-sheet, in fact—and accurate reproducibility was vital.

I am certain, then, that 130 years earlier than my amateurish efforts in the machine shop, the Ordnance Survey and its engravers and printers were unlikely to have been thinking in metric dimensions. Moreover, to quote David Archer [2] in another context, "[t]he fineness of engraving surely reflects the essence of the OS in the nineteenth century: Precision. Precise, painstaking measurements and mathematical calculations, superb engraving and the need for spot-on registration of the different printing plates." While I hate to seem to be denigrating any part of the Good Doctors' text, I could not avoid the feeling that the frequent references here to "about x mm" were unfortunately inappropriate, not to say less than precise. I was sure that if

---

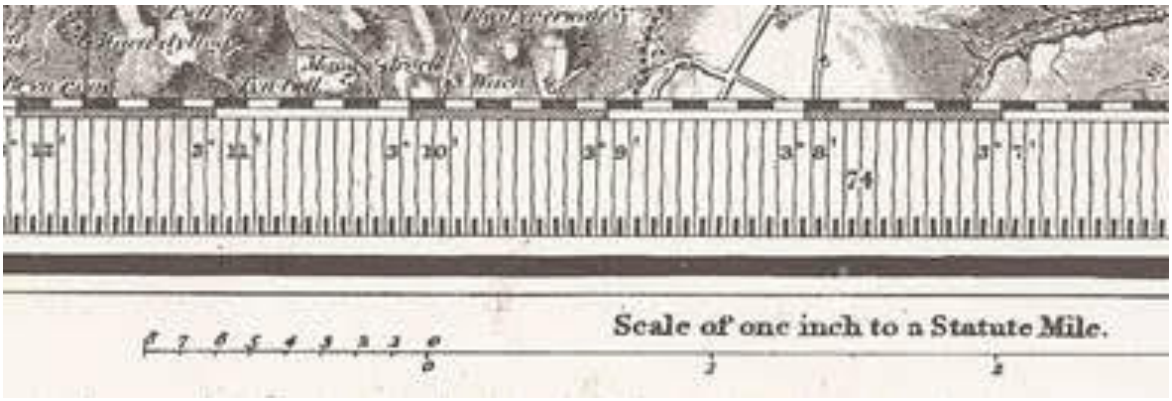
[1] R Hellyer and R Oliver, *The First Ordnance Survey Map: The one-inch Old Series of England and Wales*. The Charles Close Society, 2015.

[2] David Archer, Kerry Musings, *Sheetlines* 80, 66.

the dimensions of the Old Series borders were measured with an old-series steel rule, more understandable values would emerge. So I tried it.

It would have been nice to be able to use the composite figure on p89 of the book, which shows a variety of styles of border for the Old Series. These have every appearance of being reproduced same-size, but unfortunately on examination under magnification it turns out that the reproduction of the fine lines suffers from a degree of half-tone fuzziness. But on my map shelf there's a copy of the David and Charles facsimile of Sheet 26, Denbigh, as engraved in 1840, and that gives a much clearer basis for measurement. It's also precisely to scale, as measurement of the printed scale shows. Its border is that shown in Figure 10.1.6 of the book. The gap from the neatline to the keyboard is filled with "dicing", but its width is not affected by this. The neat line and the outer frameline are below the limits of measurement, but the other intervals, those listed in the extract above, are:

Neat line to keyboard	1/16 in
Width of keyboard	13/32 in
Keyboard to thick line	1/16 in
Width of thick line	5/64 in
Thick line to outermost frame	1/16 in
Total width of "printed" border across outer edges of neatlines	11/16 in



The border on the David & Charles facsimile. The "Scale of one inch. . ." can be used to scale the drawing and verify my measurements

Notice that the width of the "thick line" is greater than that of its surrounding white spaces, in contradistinction to the statements in the extract, and that the overall width is 1/64 greater than the sum of the intervals listed. This leaves the neat line and the outer frameline to be each 1/128 in, which is less than 1 point. So engraving triumphs.

I suggest that none of these dimensions reflected or was required to reflect any "rounded distances on the ground"; but they are certainly within the Zeitgeist of their time.

Junction Symbols on Scottish 25-inch First Edition Plans

Fraser Donachie

One of the pleasures of re-joining the Society after a long hiatus is the exploration of its excellent online resources, including the *Sheetlines* archive and a growing collection of YouTube-hosted talks. As a collector of large-scale plans, I particularly enjoyed catching up with Rob Wheeler's talk '*Publication of the 25-inch by Parishes, was Scotland treated differently?*' In his talk Rob showed examples of first edition 25-inch plans held by the National Library of Scotland (NLS) that depict single parishes (anywhere beyond the specific parish is shown as blank space).

Quite often the parish being depicted could have more than one adjoining parish on the same sheet. There would then be a junction point where, for example, three parishes meet. In these cases there would be one depicted parish and effectively two blank parishes. Rather than indicate a boundary between the two 'invisible' parishes, the Ordnance Survey (OS) used a junction symbol to indicate the precise point where the three parishes meet on the boundary of the depicted parish. The symbol points out into the blank space, as shown in *Figure 1*.

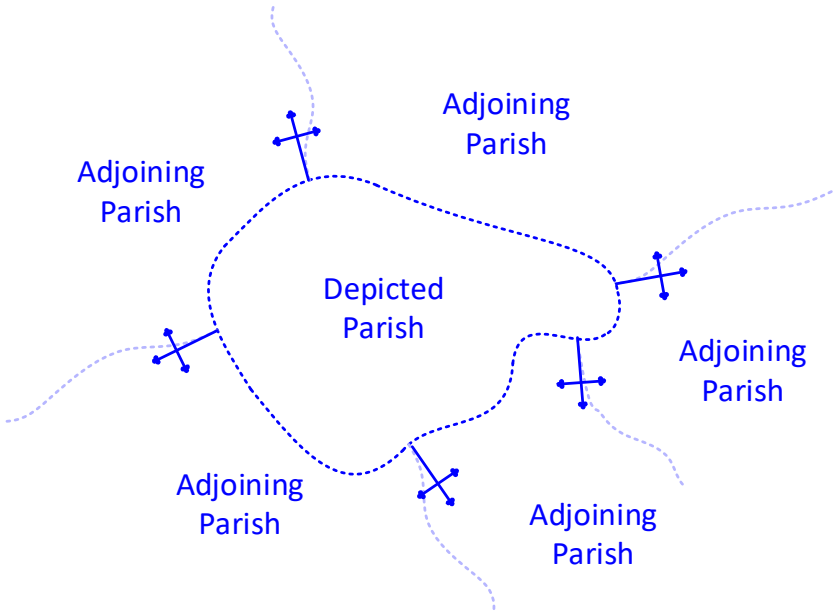


Figure 1 – A depicted parish with adjoining parishes

These junction symbols comprise a simple cruciform with a single 'cross-bar' (a first-order junction symbol) and were routinely adopted for parish-to-parish three-way junctions. They appear on the 25-inch plans and also on the small scale index maps included within the associated Book of Reference (BoR) or Area Book for the parish.

Sometimes an adjoining parish might also be in an adjoining county and so a different symbol was used to indicate this, comprising a cruciform with two cross-bars (second-order junction symbol). The second-order symbols are used in two standard ways:

i) at the two points where a parish boundary is shared with a county boundary, as shown in *Figure 2*. Note that counties were often mapped on different meridians and therefore the adjoining county as well as the adjoining parishes would be shown as blank space.

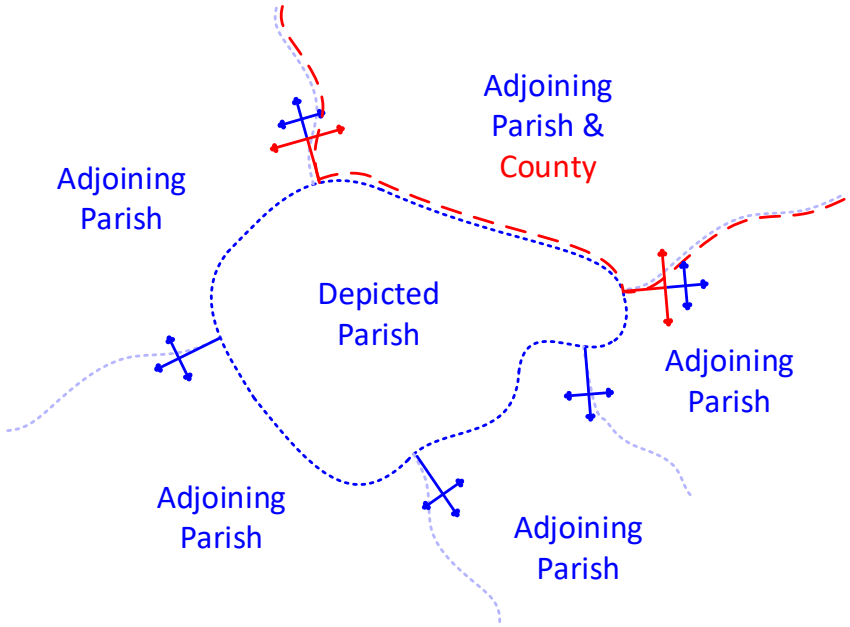


Figure 2 – A depicted parish with adjoining parishes and an adjoining county

ii) at the two points where a county boundary enters and exits a parish that is shared between two counties. If the counties were mapped on different meridians the shared portion of the parish in the adjoining county and the adjoining county itself would be blank resulting in the arrangement shown in *Figure 3*.

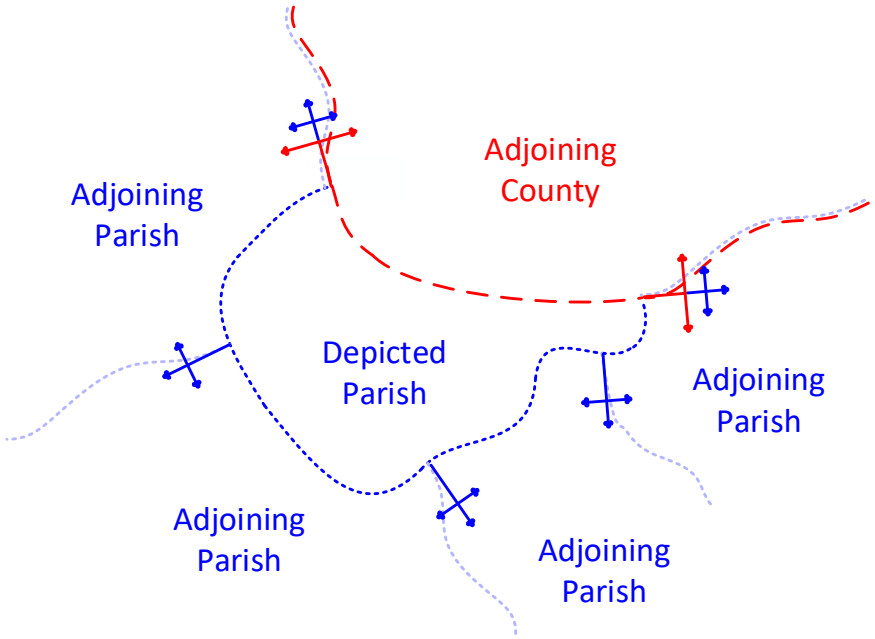


Figure 3 – A depicted parish shared by two counties

So far so good, you might think. However, if you explore the excellent NLS website you will discover that higher order symbols can be found on these

early plans; i.e. third-order junction symbols (three cross-bars) and even fourth-order ones (four cross-bars). In a modest effort to unravel the mysteries of these higher order symbols (shades of *The Da Vinci Code*) I wanted to see if I could reverse-engineer some possible rules for their application. I decided to start by assessing the junctions at which three counties meet, in the hope that this might offer some insights. I therefore made a list of these junctions for Scotland and, using the NLS site, collated the symbols being used on the plans and on the associated BoR index maps. Many of these junctions are either located on 'uncultivated' land, and therefore not mapped at 25-inch, or were only mapped at 25-inch later in the 1890s by which time parishes were no longer shown as single entities. Of the 32 selected Scottish junctions, only 16 were mapped on 25-inch first edition plans – *Figure 4, p36*.

The results of this assessment are set out within Appendix A, and confirm that second-order junction symbols were also used in two further ways:
iii) where a parish might border more than one county, as shown in *Figure 5*.

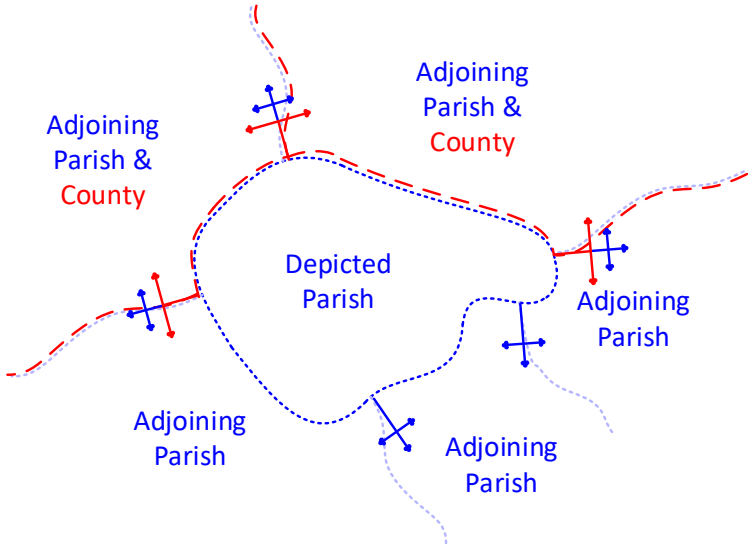


Figure 5 – A depicted parish with two adjoining counties

iv) where three counties meet but there are no parish boundaries, as shown in *Figure 6*.

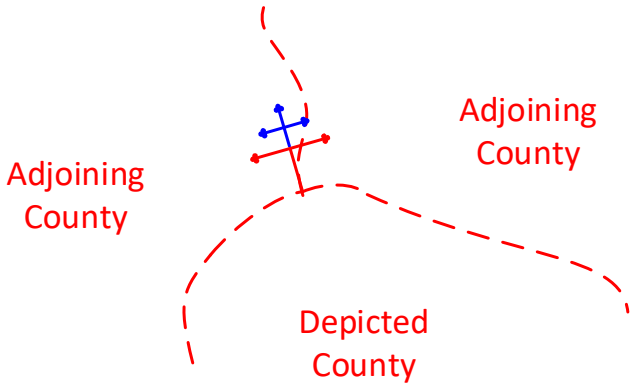


Figure 6 – Three-way county junction (no parish boundaries)

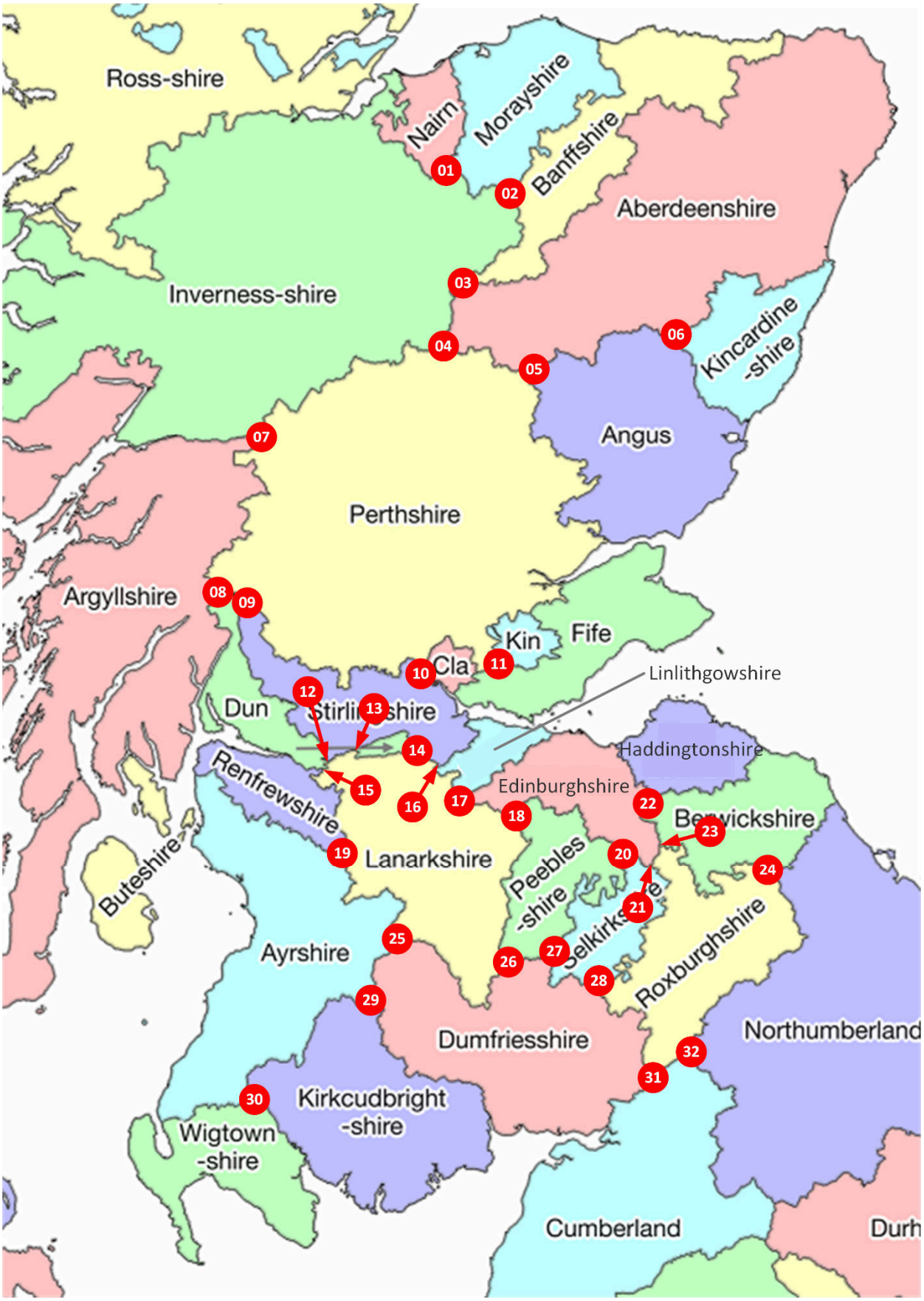


Figure 4 - Scottish counties and their three-way junctions

So a key conclusion, rather unsurprisingly, is that parish-to-county and county-to-county junctions were generally identified using second-order symbols. However, three third-order junction symbols were noted. These only appear on plans and never on BoR index maps. Examining the administrative boundaries where these third-order symbols are used doesn't reveal any particular additional rule being applied (Scotland didn't have townships or hundreds) and therefore a tentative conclusion is that they were 'mistakes'.[1] Other 'mistakes' have been spotted; e.g. using a first-order symbol instead of a second-order symbol. But I appeal to more knowledgeable and experienced CCS members who may take a different view.

As part of this exercise I also examined a three-way county junction that is arguably more English than Scottish; i.e. that located at *Scotch Knowe* where Roxburghshire, Northumberland and Cumberland meet. This particular junction was not mapped on Roxburghshire or Northumberland sheets ('uncultivated' areas) but did find itself on Cumberland II.2 (published ca 1866). It is identified using a fourth-order junction symbol. I have also seen this symbol used on Cheshire XLVI.9 at the England-Wales border. So a tentative conclusion is that the fourth-order symbol was an exclusively English one used to denote a township + parish + hundred + county boundary and junction (there was no specific boundary identification for national borders).

My assessment has also revealed the timeline for the introduction of the symbols. The first appearance of the cruciform symbols on the Scottish BoR index maps occurs in 1856 where they are rendered as primitive crosses without ornamentation. Prior to this date junctions were identified using a short section of boundary heading off into the blank space. This is noted on some of the early BoR index maps and, for example, on the plan Peeblesshire IV.7 (Linton). By 1857 the symbols are depicted with far greater consistency and are ornamented with three small circles or dots on the ends of the cross-bars and at the top, as shown in *Figure 7*.

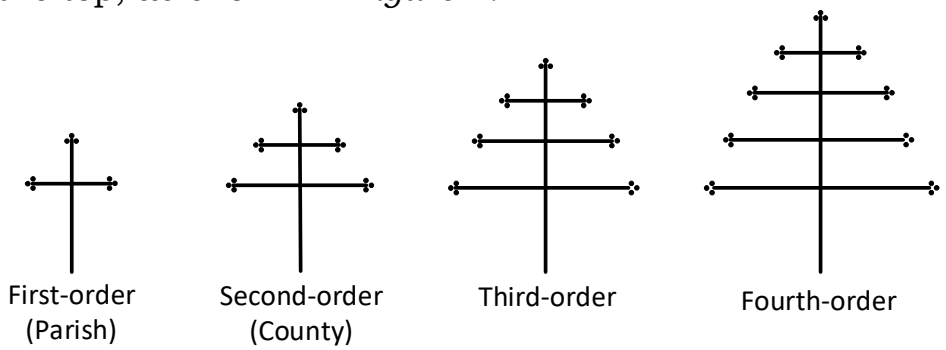


Figure 7 – Junction symbols used on 25-inch first edition plans

[1] Rob Wheeler suggests that these anomalies may have been caused by the employment of English draughtsmen working on Scottish plans who perhaps interpreted parish+county to be parish+hundred and conjured-up a third-order symbol. Note also that the symbols applied to the 25" plans would have been added at the litho-tracing stage (rather than at an earlier stage in the process by boundary specialists) and were therefore perhaps more prone to error or the misinterpretation of instructions.

I wonder if these (or similar) symbols may have been used on non-OS maps, for example in the first half of the 19th century, or whether they are entirely unique to the products of the OS. Answers on a postcard please!

In conclusion, it seems that Scottish 25-inch plans used first-order symbols for parish-to-parish junctions and second-order symbols for parish-to-county and county-to-county junctions. Third-order symbols do occur but perhaps these were erroneously applied. Further research will be needed to investigate the use of these symbols on English/Welsh sheets, where the administrative boundaries included townships, parishes, hundreds and counties … once the first edition plans become more readily available for study on-line.

Many thanks to Rob Wheeler for his insights and explanations whilst I researched this topic.

[The appendix begins on the next page; it can also be viewed online on the Charles Close Society website, at www.charlesclosesociety.org]

Appendix A – Junction Symbol Assessment

Table 1 – Three-Way County Junctions on Scottish 25" First Edition Plans

Ref	Location			Counties Note 1		Notes
	Name	Lat/Long	NGR			
10	Bridge of Allan	56.14564,-3.91178	NS 81319 96417	STL	PRT/CLM	Note 2
11	Pow Burn	56.15576,-3.54474	NT 04146 96972	PRT/CLM	FFE/KNR	Note 2 & 3
12	Kessington	55.91162,-4.29388	NS 56718 71102	DUN/STL	LNK	Note 4
13	Kirkintilloch	55.93947,-4.17684	NS 64130 73965	LNK	STL	DUN(D)	Third-order symbol on DUN plan
14	Jawhills	55.93673,-3.89812	NS 81528 73147	STL	LNK	DUN(D)	
15	Temple	55.89301,-4.32589	NS 54648 69099	DUN	RNF	LNK	Third-order symbol on RNF plan
16	Whiteside	55.89643,-3.82280	NS 86114 68536	STL	LNK	LLG	
17	Wellhill	55.81490,-3.71530	NS 92611 59291	LLG	LNK	EDB	Note 5
18	White Craig	55.77092,-3.47198	NT 07753 54046	PBS	LNK	EDB	PBS plan pre-dates use of symbols
19	Muir Hill	55.67907,-4.24739	NS 58783 45132	AYS	LNK	RNF	
21	Bowland	55.64937,-2.86109	NT 45908 39873	SKK	RXB	EDB	Note 5
23	Muirhouse	55.70014,-2.82811	NT 48051 45498	BRW	RXB	EDB	Note 5
24	Carham	55.63446,-2.33501	NT 79007 37928	BRW	RXB	NHB	Third-order symbol on BRW plan
30	Carrick Burnfoot	55.05160,-4.63370	NX 31856 76183	AYS	WGT	KCB	Note 6
31	Liddelbank	55.10828,-2.85852	NY 45327 79656	RXB	DMF	CUM	
32	Scotch Knowe	55.18892,-2.68990	NY 56173 88511	RXB	NHB	CUM	Fourth-order symbol on CUM plan

Note 1 – code letters as generally as used by the Historic Counties Trust

Note 2 – Perthshire (PRT) and Clackmannanshire (CLM) were treated as a single county on OS plans at this time.

Note 3 – Fife-shire (FFE) and Kinross-shire (KNR) were treated as a single county on OS plans at this time.

Note 4 – Dumbartonshire (DUN) and Sterlingshire (STL) were treated as a single county on OS plans at this time.

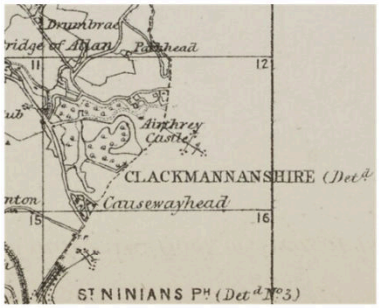
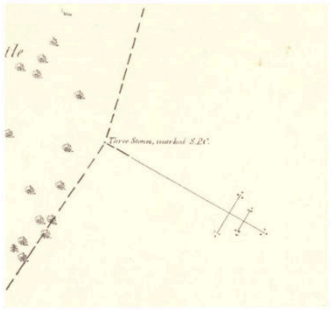
Note 5 – Edinburghshire (EDB) was not mapped at the 25" scale until 1894.

Note 6 - Kirkcudbrightshire (KCB) was not mapped at the 25" scale until 1895.

County Junction No. 10

Bridge of Allan
56.14564, -3.91178
NS 81319 96417

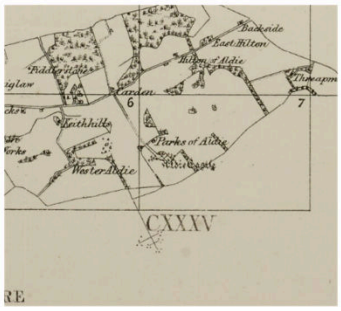
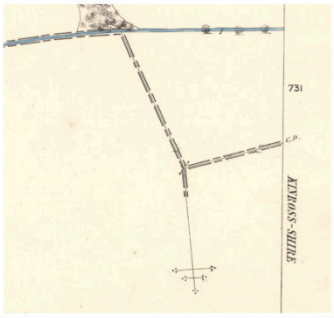
Notes:
Perthshire & Clackmannanshire were treated as a single county by Ordnance Survey on 25 inch plans, so this three-way junction qualifies for a second-order junction symbol only on the Stirlingshire sheet. The symbol reflects administrative boundaries and is not an Ordnance Survey 'rationalisation'.

Stirlingshire	Perthshire & Clackmannanshire (Det)	
		
BoR Stirling, Logie (Part of), 1864	BoR Stirling, Perth, & Clackmannan, Logie, 1864	
		
Stirlingshire X.12 (Logie) Sur. 1860, Pub. 1864	Perth and Clackmannanshire - Perthshire & Clackmannanshire (Det.) CXXXIII.9 (Logie (Part of)) Sur. 1862, Pub. 1864	

County Junction No. 11

Pow Burn
56.15576, -3.54474
NT 04146 96972

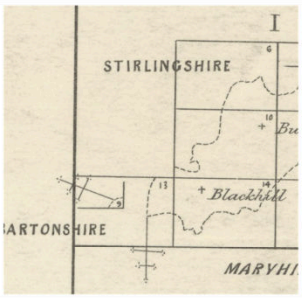
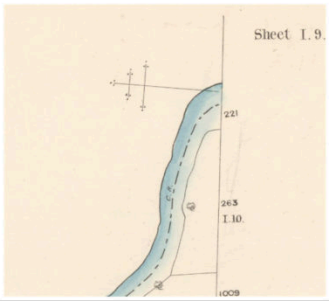
Notes:
Perthshire & Clackmannanshire were treated as a single county on 25 inch plans. Similarly, Fifeshire & Kinross-shire would have been treated as a single county but were not mapped at the 25 inch scale. The junction qualifies for a second-order symbol on the Perthshire sheet.

Perthshire & Clackmannanshire	Fifeshire & Kinross-shire	
		
BoR Perth, Fossaway 1861	Not mapped at 25 inch scale.	
		
Perth and Clackmannanshire CXXXV.6 (Fossaway (Part of)) Sur. 1859, Pub. 1860	Not mapped at 25 inch scale.	

Junction No. 12

Kessington
55.91162, -4.29388
NS 56718 71102

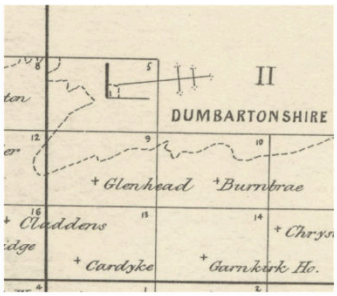
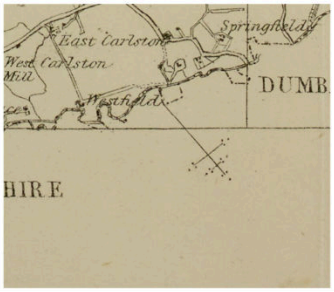
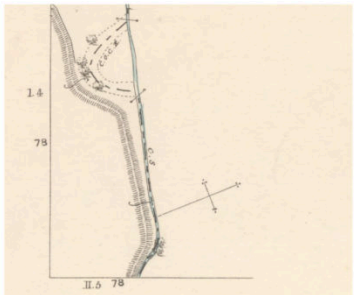
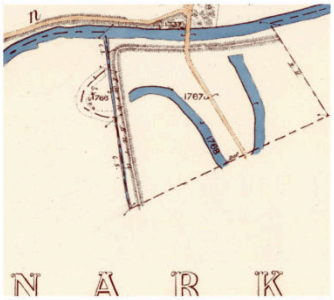
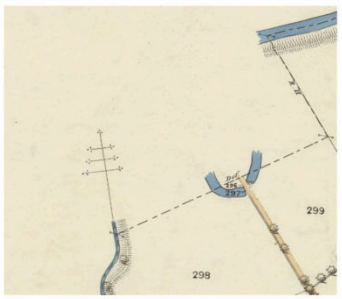
Notes:
Dumbartonshire & Stirlingshire were treated as a single county on 25 inch plans. The junction qualifies for a second-order symbol on the adjoining Lanarkshire sheet.

Dumbartonshire & Stirlingshire	Lanarkshire	
		
BoR Dumbarton and Stirling, New Kilpatrick, 1863	BoR Lanark, Cadder, Parcel Numbers 1 to 279, 1859	
		
Dumbartonshire - Dumbartonshire & Stirlingshire XXIV.13 (New Kilpatrick) Sur. 1859, Pub. 1863	Lanarkshire I.13 (with inset I.9) (Cadder) Sur. 1857, Pub. 1859	

County Junction No. 13

Kirkintilloch
55.93947,-4.17684
NS 64130 73965

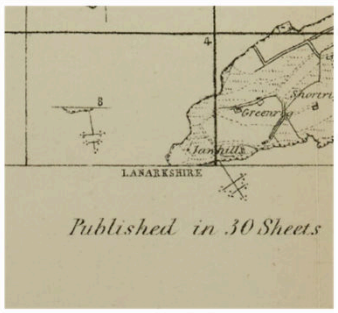
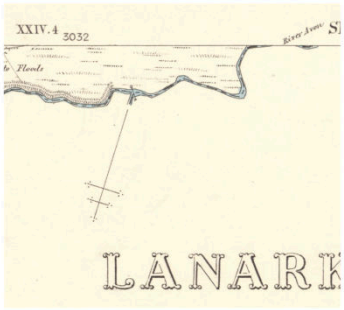
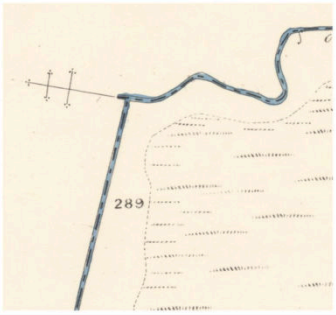
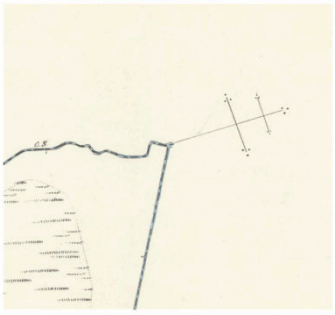
Notes:
Lanarkshire II.1 shows a first-order parish junction symbol instead of a second-order county one.
Stirlingshire XXXIII.1 fails to show any symbol.
Dumbartonshire (Det) XXIV.8 shows a third-order symbol.
There are no such anomalies on the BoR index maps, however.

Lanarkshire	Stirlingshire	Dumbartonshire (Detached)
		
BoR Lanark, Cadder, Parcel Numbers 1 to 279, 1859	BoR Stirling, Campsie, 1862	BoR Dumbarton (Det.), Kirkintilloch, 1862
		
Lanarkshire II.5 (with inset II.1) (Cadder) Sur. 1857, Pub 1859	Stirlingshire XXXIII.1 (Campsie) Sur. 1859, Pub. 1862	Dumbartonshire (Det.) XXIV.8 (Kirkintilloch) Sur. 1859, Pub. 1862

County Junction No. 14

Jawhills
55.93673,-3.89812
NS 81528 73147

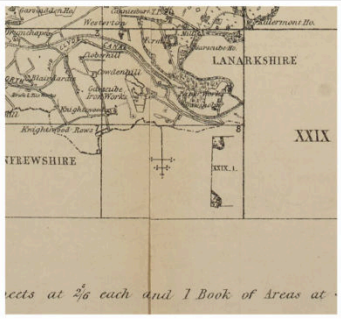
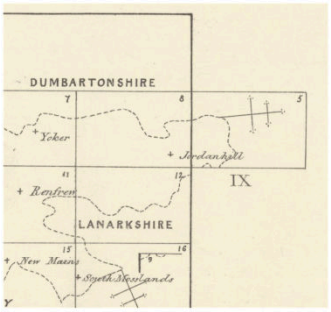
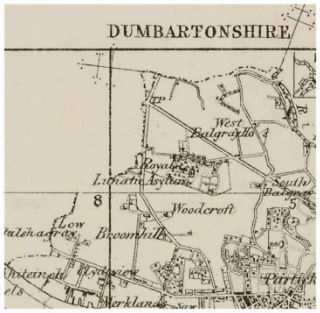
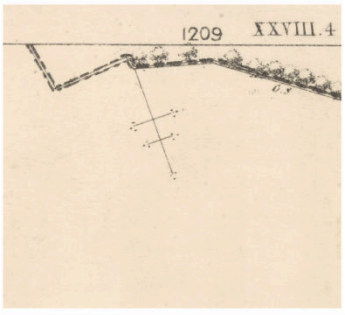
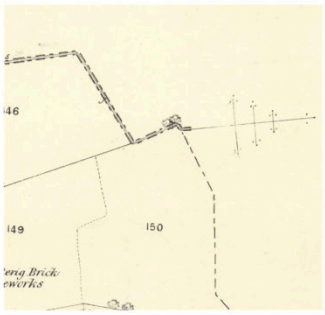
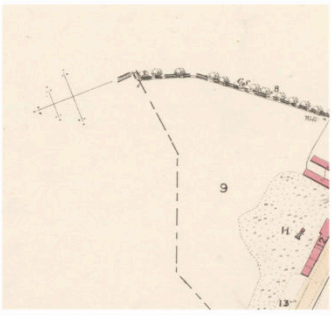
Notes:
Consistent use of second-order junction symbols.

Stirlingshire	Lanarkshire	Dumbartonshire (Detached)
		
BoR Stirling, Falkirk, 1862	BoR Lanark, New Monkland, 1860	BoR Dumbarton (Det.), Cumbernauld, 1862
		
Stirlingshire XXXIV.4 (with inset XXXIV.8) (Falkirk) Sur. 1860, Pub. 1862	Lanarkshire III.8 (New Monkland) Sur. 1859, Pub. 1860	Dumbartonshire, Dumbartonshire (Det.) XXVI.7 (Cumbernauld) Sur. 1859, Pub. 1862

County Junction No. 15

Temple
55.89301,-4.32589
NS 54648 69099

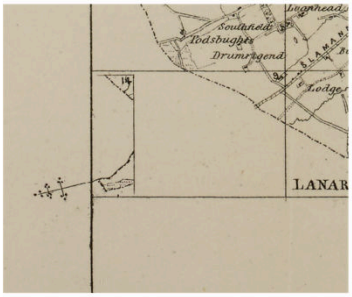
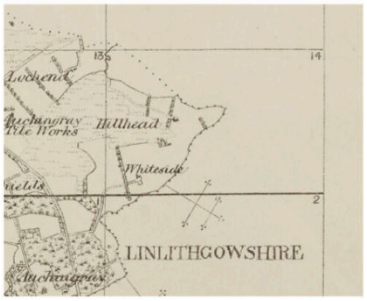
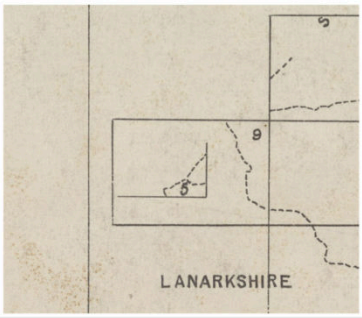
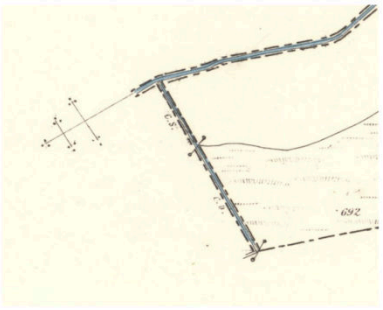
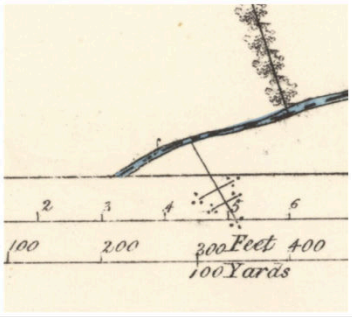
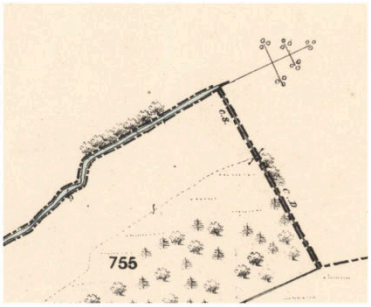
Notes:
Renfrewshire IX.5 uses a third-order junction symbol.

Dunbartonshire	Renfrewshire	Lanarkshire
		
BoR Dumbarton and Stirling, New Kilpatrick, 1863	BoR Renfrew, Renfrew, Parcel Numbers 1 to 276, 1859	BoR Lanark, Govan; also Gorbals, 1861
		
Dumbartonshire XXVIII.8 (with inset XXIX.1) (New Kilpatrick) Sur. 1860, Pub. 1863	Renfrewshire, IX.5 (Renfrew) Sur. 1857, Pub. 1859	Lanarkshire VI.1 (with inset VI.2) (Govan) Sur. 1857-58, Pub. 1860

County Junction No. 16

Whiteside
55.89643,-3.82280
NS 86114 68536

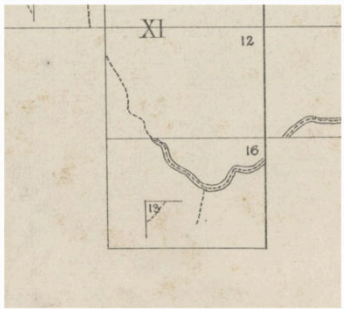
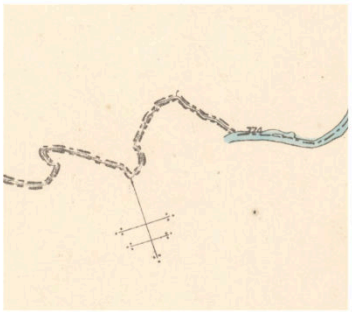
Notes:
BoR Linlithgow index map (1856) doesn't use a second-order junction symbol but instead shows a considerable length of boundary wandering off into unmapped space. This treatment seems to pre-date the introduction of the junction symbols. The symbol on Linlithgowshire VIII.9 is one of the earliest noted in this assessment of three-way county junctions in Scotland.

Stirlingshire	Lanarkshire	Linlithgowshire
		
BoR Stirling, Slamannan, 1862	BoR Lanark, New Monkland, 1860	BoR Linlithgow, Torphichen, Parcel Numbers 1 to 259a, 1856
		
Stirlingshire XXXV.9 (with inset XXXV.14) (Slamannan) Sur. 1860, Pub. 1862	Lanarkshire IV.14 (with extension IV.10) (New Monkland) Sur. 1858, Pub. 1860	Linlithgowshire VIII.9 (with inset VIII.5) (Torphichen) Sur. 1854-55, Pub. 1856

County Junction No. 17

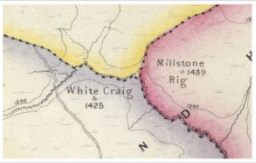
Wellhill
55.81490, -3.71530
NS 92611 59291

Notes:
BoR Linlithgow index map (1856) doesn't use a second-order junction symbol but instead shows a considerable length of boundary wandering off into unmapped space. This treatment seems to pre-date the introduction of the junction symbols. The symbol on Linlithgowshire XI.16 is one of the earliest noted in this assessment of three-way county junctions in Scotland.

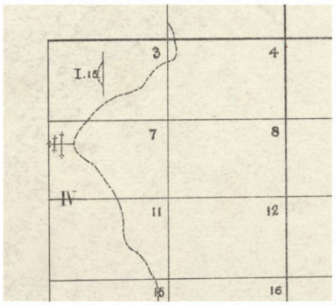
Linlithgowshire	Lanarkshire	Edinburghshire
		
BoR Linlithgow, Whitburn, Parcel Numbers 1 to 272, 1856	BoR Lanark, Cambusnethan, 1860	Not mapped at 25 inch scale until 1894.
		
Linlithgowshire XI.16 (with inset XII.13) (Whitburn) Sur. 1854-55, Pub. 1856	Lanarkshire XIII.8 (Cambusnethan) Sur. 1859, Pub. 1860	Not mapped at 25 inch scale until 1894.

County Junction No. 18

White Craig
55.77092,-3.47198
NT 07753 54046



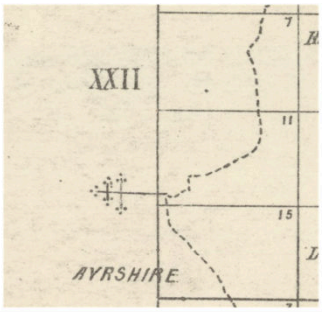
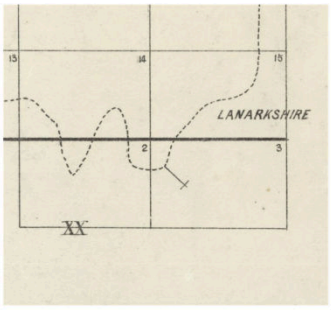
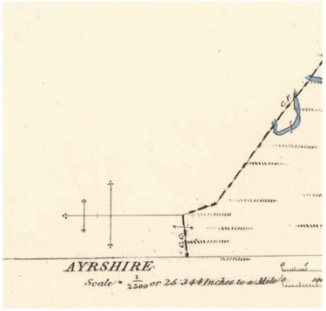
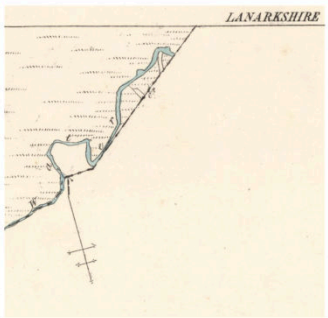
Notes:
Peeblesshire IV.7 (1856) shows the Lanarkshire <> Edinburghshire boundary using a small boundary heading into unmapped space, so it seems to pre-date the introduction of junction symbols.

Peeblesshire	Lanarkshire	Edinburghshire
		
BoR Peebles, Linton, Parcel Numbers 1 to 260, 1856	Not mapped at 25 inch scale (uncultivated).	Not mapped at 25 inch scale until 1894.
		
Peebles-shire IV.7 (Linton) Sur. 1856, Pub. 1856	Not mapped at 25 inch scale (uncultivated).	Not mapped at 25 inch scale until 1894.

County Junction No. 19

Muir Hill
55.67907,-4.24739
NS 58783 45132

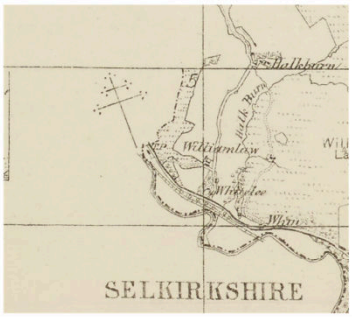
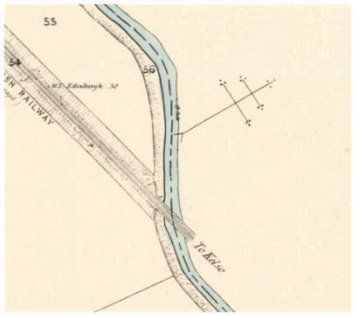
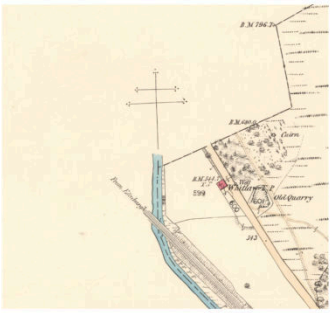
Notes:
BoR Renfrewshire index map (1857) uses a primitive first-order symbol rather than a second-order symbol. It may just pre-date the adoption of consistent rules for the use of junction symbols in BoRs.

Ayrshire	Lanarkshire	Renfrewshire
		
Not found	BoR Lanark, East Kilbride, Parcel Numbers 1 to 279, 1859	BoR Renfrew, Eaglesham, Parcel Numbers 1 to 272, 1857
		
Ayrshire XIV.12 (Loudoun) Sur. 1856, Pub. 1858	Lanarkshire XXII.11 (East Kilbride) Sur. 1857, Pub. 1859	Renfrewshire XX.3 (Eaglesham) Sur. 1856, Pub. 1857

County Junction No. 21

Bowland
55.64937, -2.86109
NT 45908 39873

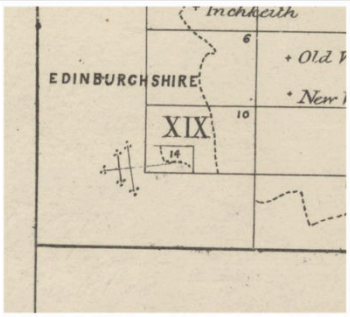
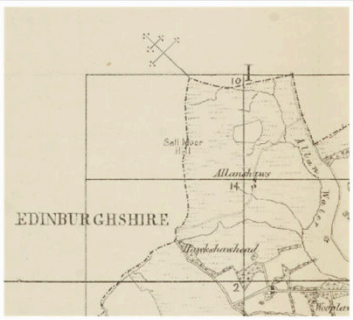
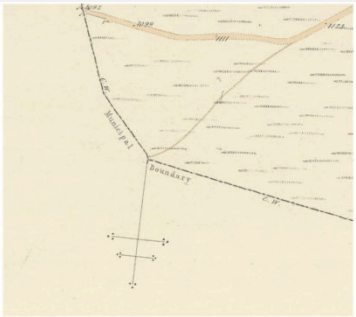
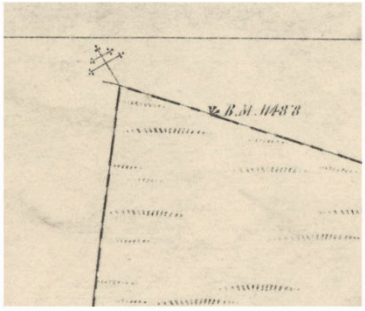
Notes:
Consistent use of second-order junction symbols.

Selkirkshire	Roxburghshire	Edinburghshire
		
Not found in NLS.	BoR Roxburgh, Melrose, 1861	Not mapped at 25 inch scale until 1894
		
Selkirkshire III.12 (Stow) Sur. 1858, Pub. 1859	Roxburghshire III.5 (with inset III.1) (Melrose) Sur. 1858, Pub. 1861	Not mapped at 25 inch scale until 1894

County Junction No. 23

Muirhouse
55.70014, -2.82811
NT 48051 45498

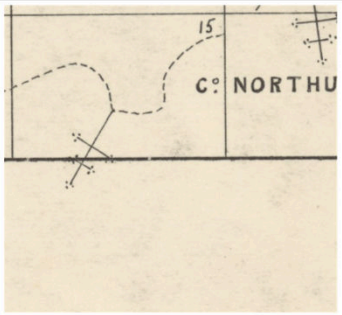
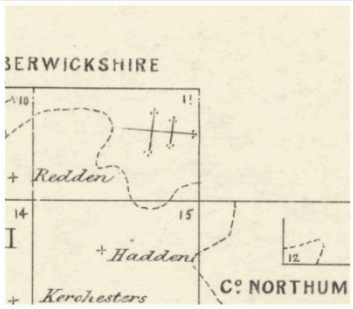
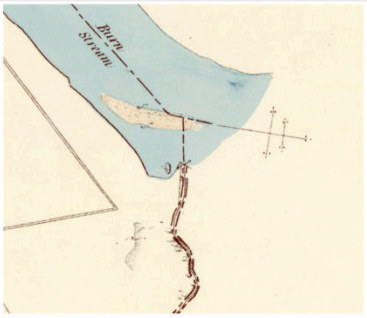
Notes:
Consistent use of second-order junction symbol.

Berwickshire	Roxburghshire	Edinburghshire
		
BoR Berwick, Lauder [& Lauder (Det'd)], 1859	BoR Roxburgh, Melrose, 1861	Not mapped at 25 inch scale until 1894.
		
Berwickshire XIX.10 (with inset XIX.14) (Lauder) Sur. 1857, Pub. 1859	Roxburghshire, I.10 (Melrose) Sur. 1859, Pub. ca 1861	Not mapped at 25 inch scale until 1894.

County Junction No. 24

Carham
55.63446,-2.33501
NT 79007 37928

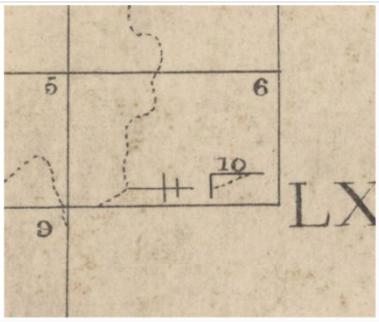
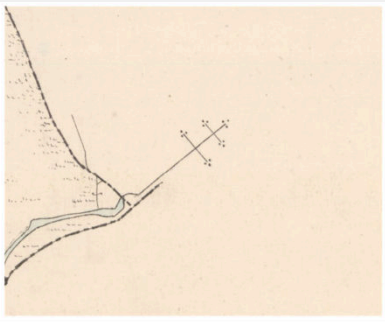
Notes:
Berwickshire XXVIII.15 uses a third-order junction symbol.

Berwickshire	Roxburghshire	Northumberland
		
BoR Berwick, Eccles, Parcel Numbers 1 to 278, 1859	BoR Roxburgh, Sprouston, Parcel Numbers 1 to 280, 1859	
		No copy in NLS
Berwickshire XXVIII.15 (Eccles) Sur. 1858, Pub. 1859	Roxburghshire VI.11 (Sprouston) Sur. 1859, Pub. 1859	Northumberland (Old Series) VIIIA.16 Sur. 1860, Pub. ca 1866

County Junction No. 30

Carrick Burnfoot
55.05160, -4.63370
NX 31856 76183

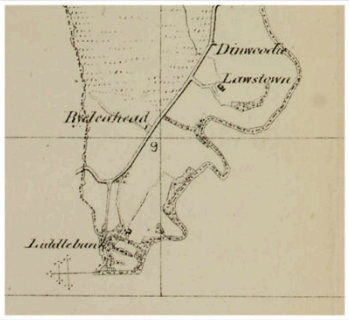
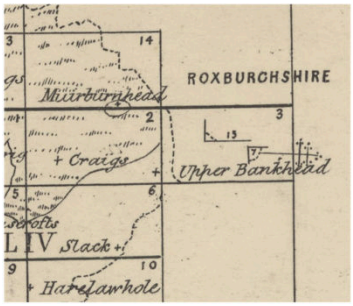
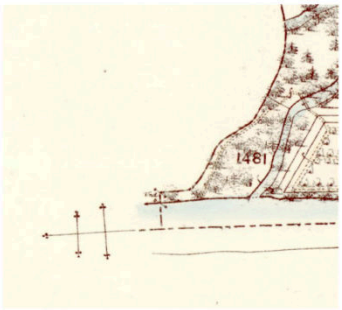
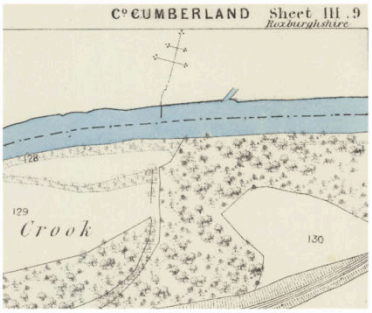
Notes:
The BoR index map (1856) uses a primitive second-order junction symbol. It may just pre-date the adoption of consistent rules for the use of junction symbols.

Ayrshire	Wigtonshire	Kirkcudbrightshire
		
BoR Ayr, Colmonell, Parcel Numbers 1 to 269, 1856	Not mapped at 25 inch scale.	Not mapped at 25 inch scale until 1895.
		
Ayrshire LXXII.6 (with inset LXXII.10) (Colmonell) Sur. 1855, Pub. 1856	Not mapped at 25 inch scale.	Not mapped at 25 inch scale until 1895.

County Junction No. 31

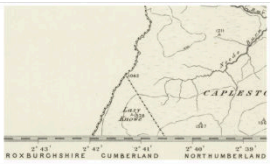
Liddelbank
55.10828,-2.85852
NY 45327 79656

Notes:
Fourth-order junction symbols have been noted on English sheets where they border; e.g. Scotland and Wales. In this case the Co. Cumberland sheet uses a standard second-order symbol.

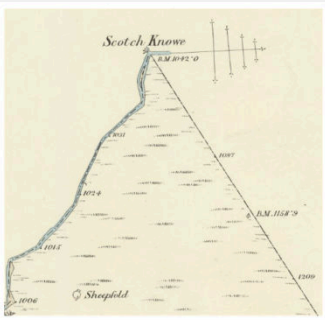
Roxburghshire	Dumfriesshire	Cumberland
		Not in NLS
BoR Roxburgh, Castleton, 1860	BoR Dumfries, Canonbie, Parcel Numbers 1 to 275, 1859	BoR Cumberland, Nicholforest
		
Roxburghshire XLVIII.9 (Castleton) Sur. 1857, Pub. 1859	Dumfriesshire LIV.3 (with inset XLVI.15 and LIV.7) (Canonbie) Sur. 1858, Pub. 1859	Cumberland III.9 (inset IIA.16) Sur. 1865, Pub. 1866

County Junction No. 32

Scotch Knowe
55.18892,-2.68990
NY 56173 88511



Notes:
Here we see the use of a fourth-order Junction symbol at the Scotland <> England border on the Co. Cumberland sheet. A fourth-order symbol has also been noted on Cheshire XLVI.9 at the Wales <> England border.

Roxburghshire	Northumberland	Cumberland
		
Uncultivated area, not mapped at 25 inch scale.	Uncultivated area, not mapped at 25 inch scale.	Cumberland II.2 Sur. ca 1864, Pub. ca 1866

A poet's map

Andrew Darling

'Ivor Gurney's Map Therapy' (*Sheetlines 119*) described how the poet and musician derived comfort from maps during his dismal final years in the City of London Lunatic Asylum.

One day in 1932, Gurney was visited by Helen Thomas, the widow of the celebrated poet Edward Thomas. She brought with her a selection of maps which had been her late husband's, and together Helen and Ivor traced the familiar footpaths and lanes of Gloucestershire – Gurney's home, to which he would never return. In her memoir *Under Storm's Wing,* she recalled how 'he and I spent the whole time I was there tracing with our fingers the lanes and byways and villages of which Ivor Gurney knew every step and over which Edward had also walked.

'He spent that hour in revisiting his home, in spotting a village or a track, a hill or a wood, and seeing it all in his mind's eye, with flowers and trees, stiles and hedges, a mental vision sharper and more actual for his heightened intensity. He trod, in a way we who were sane could not emulate, the lanes and fields he knew and loved so well, his guide being his finger tracing the way on the map. It was most deeply moving.'

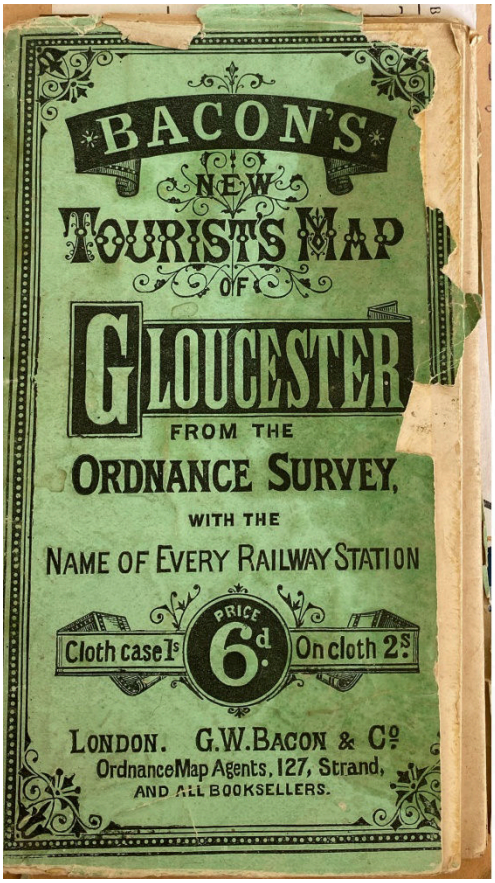
Helen Thomas did not, of course, itemise the maps in her book; but it is now possible to be certain about one of them. Earlier this year, Edward Thomas's great-grandaughter Lucy Milner discovered his battered copy of Bacon's New Tourist's Map of Gloucester – 'with the name of every railway station'; including – of course – Adlestrop.

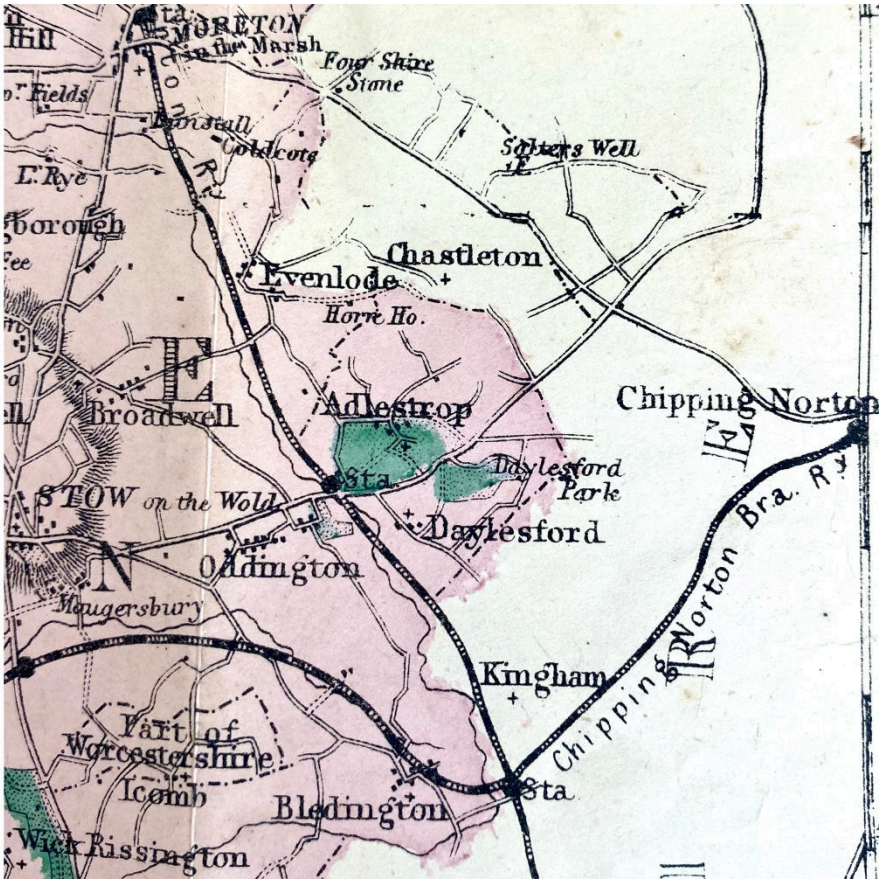
Edward Thomas, who was killed on the first day of the Battle of Arras in 1917, knew and enjoyed maps. They accompanied him on his numerous excursions around southern England and Wales; and when he enlisted in the Artists' Rifles in 1915, the Army put his knowledge to work, as a map-reading instructor for other recruits.

'I am a Lance-corporal now, instead of private', he wrote to his old friend Robert Frost. 'This means a schoolmasterish life. I (and several others) help the men during lectures, explaining, doing their problems for them &c, and sometimes taking them out on Hampstead Heath and showing them how to sketch a map with the help of a prismatic compass and a little mathematics.

'Map reading and the use of the compass are very important for tactics and artillery work, and all officers are supposed to be able to do a useful map or field sketch to scale on the spot in quick time, so there have to be instructors.'

Helen later recalled: 'The map reading and the work with the prismatic compass he enjoyed; he also got a certain satisfaction from the route marches in Essex – a county he had not known before, which he found interesting and beautiful.'





Yes. I remember Adlestrop—
The name, because one afternoon
Of heat the express-train drew up there
Unwontedly. It was late June.

The steam hissed. Someone cleared his throat.
No one left and no one came
On the bare platform. What I saw
Was Adlestrop—only the name

And willows, willow-herb, and grass,
And meadowsweet, and haycocks dry,
No whit less still and lonely fair
Than the high cloudlets in the sky.

And for that minute a blackbird sang
Close by, and round him, mistier,
Farther and farther, all the birds
Of Oxfordshire and Gloucestershire.

Reflections on the 80th anniversary of D-Day

John Millard

The powerful images created by the media coverage of celebrations both in Portsmouth and at Sword Beach of the events of June 1944 cannot have failed to move many of us to tears and a deep reflection of what ensured our long term freedom in so many aspects of life.

The cartographic input which contributed to the success of the invasion has already been comprehensively researched and written up in publications such as *The Cartographic Journal* and *The Journal of Defence Surveys Association*. These carry many articles relating to the work of geologists, hydrographers, soil scientists and geographers in preparing the groundwork for the invasion of Normandy. The Index for our own journal, *Sheetlines*, has numerous articles which relate to the study of specific maps which were produced in the run up to June 1944. Apart from the logistical nightmare of having to land many thousands of troops on the beaches it was essential, for example, to have had detailed prior knowledge of the geological base for the building of temporary air strips, water supplies or the profile of beach landing zones and depth of water on the approach. One of the most comprehensive collections of maps created at the time, apart from those in the National Archives, is to be found in the Shotton Archives of the Lapworth Museum at the University of Birmingham.

However, one moment during the celebrations at the new British Memorial above Sword Beach was significant to this article and occurred when President Macron presented Christian Lamb with the Legion d'honneur, the highest order of merit for both military and civil achievement given by France. It recognised once more the contribution of individuals to the success achieved in 1944 but on this occasion focused on the contribution made by women.

President Macron reads the citation to Christian Lamb (BBC)

Christian Lamb is now 103 years of age. Recognition of her contribution is important in two ways; firstly, until recently the role women generally played during the period 1939-45 has been undervalued and secondly, she made a significant contribution to our understanding of cartography and its applications as a map maker. In her autobiography, 'Beyond the Sea', and during an interview on BBC News in January 2024, Christian related how she had studied every air reconnaissance photograph carefully and was aware that what she put on a map was vital to the men on the ground. Her brief was to delineate everything that could be seen on every compass bearing from each landing position and from the bridge of approaching landing craft so that her maps could provide identifiable confirmation of location, whether it was a main road, a chateau or a station. She reflected that her work was so secretive, even she did not know at first what her maps were to be used for but it was vital they were accurate because lives depended upon it.

Christian Lamb was one of a number of women the Ordnance Survey and GSGS were obliged to employ during the period 1939-45 because the male workforce had become seriously depleted. I understand that a memo exists in the OS Archives to the effect that it would be desirable that the whole recruitment should not be from women and that continuation of their employment after peace must not be anticipated. The map girls, as they were called, were belittled, underpaid and then immediately dismissed at the end of the war. It was even suggested that they should not be called mapping assistants but learning tracers or just tracers.

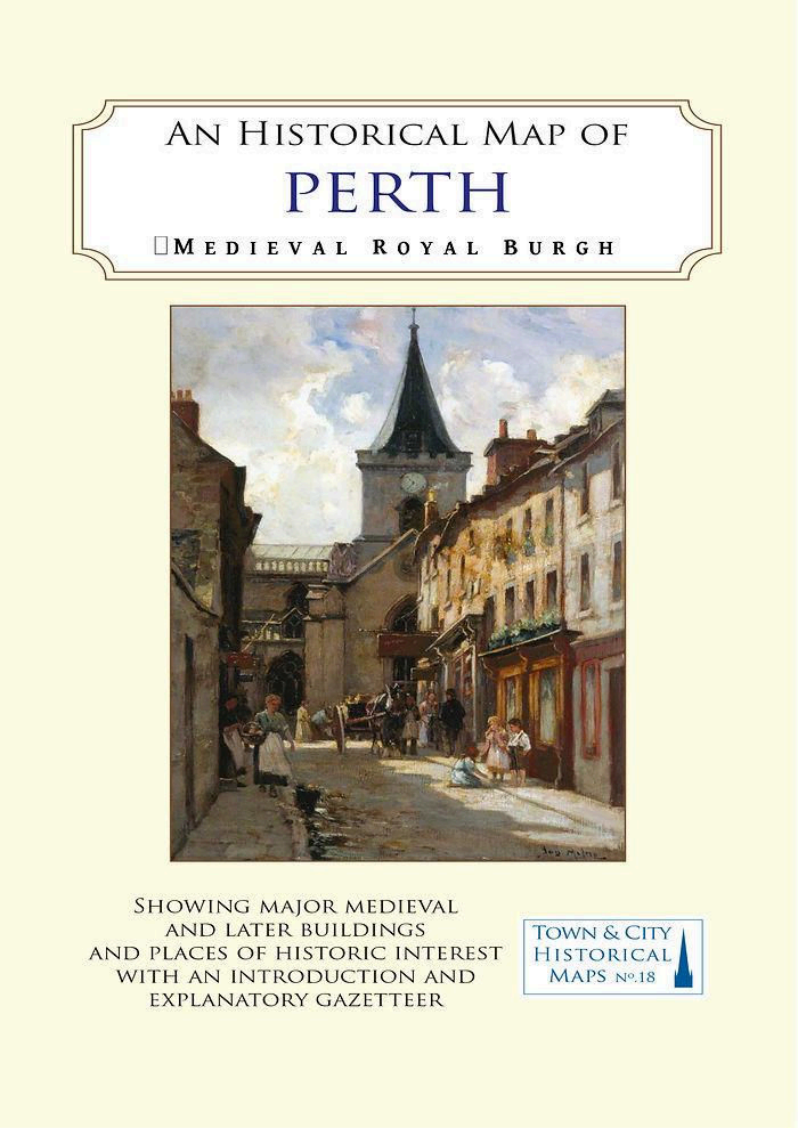
Coincidentally, a novel published in paperback this year focuses on the work of the map-girls. Liz Fenwick's *Secret Shore* tells the story of Dr Meredith Tremayne, an Oxbridge geography graduate who became one of the wartime cartographers. I believe this fictional character to be based on the real-life Margaret Godfrey (1901-95), a Cambridge graduate who was employed during the war at Bletchley Park. Her husband was Rear Admiral Godfrey, head of naval intelligence, Ian Fleming's boss. Margaret was responsible for providing the topographical information needed in the war through the printing of maps, photos and illustrations. She was a founder of the Inter Service Topographical Department, having started as a cartographer on the Oxford War Agricultural Committee.

It wasn't until 2005 that the seven million women who played a role in all types of war work were finally acknowledged with the unveiling of The Women of World War Two Memorial, next to the Cenotaph in Whitehall. Christian Lamb's comment during the BBC News interview sums it all up; when complimented for her special contribution to the success of D-Day, she said everyone else would have done the same.

Historic Towns Trust heads North (and West)

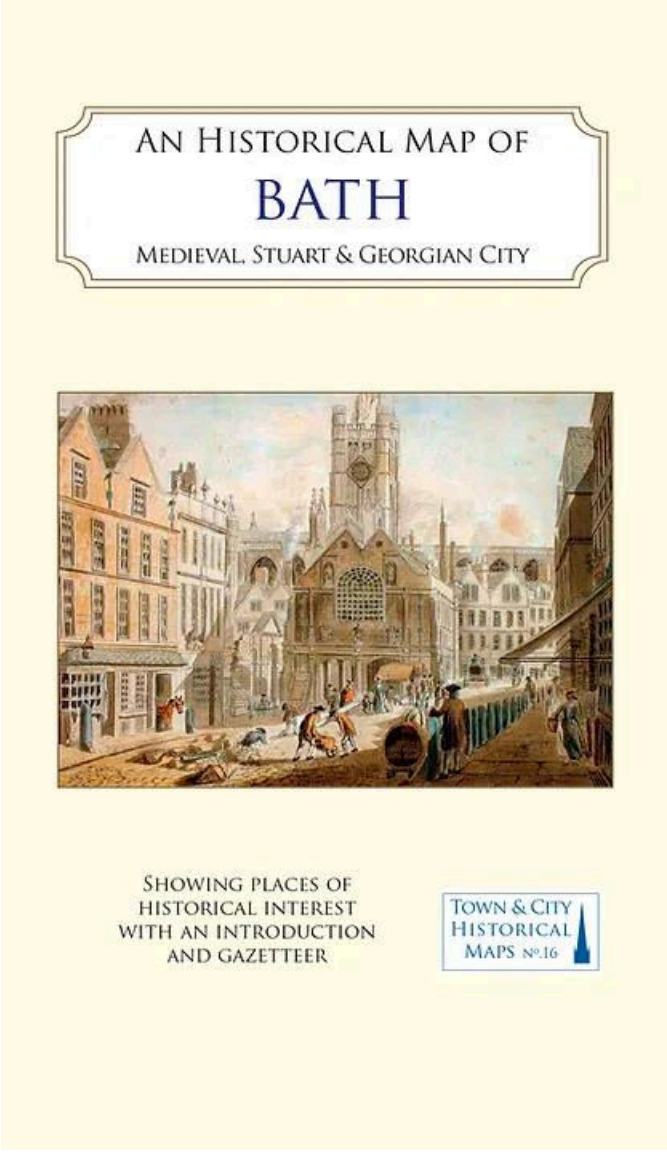
John Moore

Many readers of *Sheetlines* may be familiar with the work of the Historic Towns Trust in publishing historical maps of major British cities and towns as part of an international programme to promote the understanding of our urban past. These maps are firmly based on raster scans of relevant editions of Ordnance Survey 1:2500 mapping, usually of the later 19th or early 20th century, supplied by the National Library of Scotland and subsequently vector digitised under the direction of our Cartographic Editor, Giles Darkes. Working in close association with the Perthshire Society of Natural Science and several local sponsors, the Trust has recently published its eighteenth historical map, covering Perth, its first such work in Scotland. The Perth map is based on the OS 1:2500 of 1901, which shows a flourishing city with some 35,000 inhabitants, served by railway connections and a river port, and an array of industries from distilleries to dry-cleaning around the medieval centre.



Following a very successful launch of the map at the AK Bell Library in Perth, the map is now on sale, priced £11.99, and can be purchased from bookstores and directly from HTT through its website via 'Shop'.
Maps of Ripon and Bath are due to be published later this year, and, with additional administrative and cartographic support, the Trust aims to increase its publication programme to cover maps of Chester, Ipswich and Bradford, as well as pursuing the production of atlases of Canterbury and Perth.

Underpinning all of this work is the commitment to a much-expanded programme of education and outreach to help local communities use our work to shape their home towns for the future. As ever, the Trust welcomes approaches from any local group interested in creating a map of its own local area. Initial enquiries should be directed to the Trust's Chair, Professor Vanessa Harding at *chair@historictownstrust.uk*



Looking after your maps?

John Marjoram

I bought a few maps from the Batchelor collection sold via CCS and had a brief conversation with David Watt about future planning for disposal of map collections – a concern noted in *Sheetlines* 127, 1 and at the 2023 AGM. Rob Wheeler's article in *Sheetlines* 128, 41 regarding cataloguing was subsequently published.

Having spent my whole career working in museums (including contributing to museum standards), I am very much aware of the need to manage collections responsibly particularly in a corporate setting. Institutions such as museums, archives and libraries holding collections of maps will of course have their own procedures and standards. However, the principles within these standards can and should apply equally to private collecting. Many CCS members will hold collections of maps and these notes here are directed towards those private collectors to enhance and care for their holdings.

Collection and Disposal Policy

A written statement of collection and disposal is needed - not in your head.

Collecting – what is collected. Be as specific or as wide ranging as your interests e.g., a specific area or a specific map series. Even with wider collecting detail is needed. A policy can also address issues around the inclusion of items with marginalia or in varying condition etc.

More important is what you do NOT collect and state this very clearly. It is easy to be attracted to that pristine map but if it is outside your collecting area – don't.

Disposal. Disposal of museum collections is emotive and much debated but is well understood nowadays. Private individuals are not held by such tight standards but it is important to be clear how items (or the whole collection) may be disposed. Private individuals can trade up and dispose of older or damaged items (note this within the policy), or can downsize or redefine collection parameters as time goes on.

However, all this will become more important for those who have to deal with disposing of a collection after one is no longer around. In some respects, it is like a wish list or bequest. This can include:

- Any items of special interest should be transferred to the CCS archive
- Items of local interest/value could be offered to local museums or archives
- Offering to other collectors via CCS
- By sale through other sources
- Charity

Recycling of private collections is nothing new – examples include art, and agricultural collections such as tractors etc.

Care of collections

Maps are particularly fragile items, especially those paper based.

Storage - how do you store your collection – on shelves in old cardboard boxes easily prone to damage? Consider the purchase of conservation grade storage boxes tailored to the dimensions of maps. Keep your maps out of light (we have all seen evidence from items previously kept for long periods in strong light etc.). Use acid free tissue to wrap maps or as packing within boxes.

Use conservation grade polyester pockets for rare/valuable/ fragile items (not ordinary plastic bags).

Special care is needed with rolled items.

Handling - avoid excessive handling to ensure long term preservation.

Conservation and care.

- Repair if needed by experts (or at least seek advice) (avoid ordinary sticky tape).
- Consider the use of gloves – dirt and sweat from hands can stain items.
- Ensure incoming items and collections are free from pests (quarantine items if needed).
- Address dust issues and damp (many older maps have been affected by damp, so ensure that is not introduced to existing collections).
- Use of silica gel to regulate humidity.
- Regular checking of stored collections to assess condition (link to collection audits and documentation).

Display - if any items are on display be aware of the needs of the object particularly protecting from excessive light, humidity and damage.

Documentation. Keep comprehensive documentation of your collection – commonly available spreadsheets are just as good for private collections (detailed collection specific documentation software is available). We are fortunate that there are good resources available via CCS publications and website to inform detailed catalogues of holdings. If needed a soft pencil can be used to cross reference documentation to the object itself.

Audit. Collections should be checked from time to time against documentation, and particularly to check on condition.

Use of collections. How you will use the collection influences approaches to collection care. Private collections potentially have more use that museum collections and polices should reflect this e.g., research, display etc.

Conclusion

These notes are not meant to be comprehensive. There are good online (museum specific) resources to help. However, it is important that if an individual builds a collection of maps and related ephemera, they seriously consider writing a Collection, Disposal and Care policy (or policies) for their collection – and let others (who need to know) that this has been done.

Letters

Near the end of last year I addressed this note to the Ordnance Survey:

> In your fascinating *Guide to Co-ordinate Systems in Great Britain*, you state the scale reduction factor you use as 0.9996012717, without any indication of the source of this remarkable number. Was it chosen, as I suspect, to make the departure of the secant lines of the Transverse Mercator projection exactly 180km from the central meridian; or has it some more arcane explanation which I can never hope to understand?

Their reply:

> Our projection central meridian scale factor is a little different from the "standard" 0.9996 used, for example, in the Universal Transverse Mercator projection. A UTM projection zone is designed to span 6 degrees in longitude.
>
> When British National Grid was being specified it needed to span approaching 10 degrees of longitude to cover the whole width of Great Britain. The chosen scale factor of 0.9996012717 is the "sweet spot" that allows for manageable map projection scale distortion across the whole projection width whilst still keeping it as compatible as possible with OS large scale mapping even at the projection width extremities.
>
> The value may have been tweaked to also bring the SF = 1 parallels to a nice round 180km either side of the Central Meridian but at over 88 years since the projection was first accepted (by the so called "Davidson Committee") and maybe almost 100 years since it was actually first specified we will never know."

My reaction:

> I don't believe that a difference of 0.000001 (one part in a million) in the scale factor is going to make the slightest difference to anything, let alone "manageable distortion". What would be the difference in the finished map if the factor was 0.9996022717? We need a lot more information for the reply to mean anything at all. And why "so-called" Davidson Committee? That's been the way it's been referred to for almost ninety years.
>
> And let's face it, when the projection was first used (1933) the OS was still fixated on Imperial values: metrication was still a twinkle in someone's eye and nobody thought in values of 180km.

Michael Spencer

May I correct a small omission made (by me) on p32 (and by the editor as a result) of *Sheetlines* 102, April 2015?

Missing from the list of 1:50,000 railway stations depicted by outline or rectangle were Manchester Piccadilly (formerly London Road), Manchester Victoria, Bournemouth West and Central, and also Southampton Terminus and Central.

There may be others, but these were the worst!

John Cole

Sheetlines **Number 131 - December 2024**

Published by
The Charles Close Society for the Study of Ordnance Survey Maps
www.charlesclosesociety.org

Printed by Ludo Press