MAPPING MONUMENTS

A landscape archaeology of the Ordnance Survey

Keith D Lilley
Queen’s University Belfast
A life in maps…!

Surveying the surveyors: the landscape legacies of the Ordnance Survey

The modern landscape is well mapped, but it has an overlooked historic component: monuments left by the surveyors themselves. Keith Lilley explains how you can find them.
Maps and landscapes
Slieve Snacht
Inishowen
Co. Donegal
Mapping Monuments

• The early Ordnance Survey in Scotland and Ireland

• Behind the map—an ‘archaeology’ of the Ordnance Survey?
  • Material cultures I. Instruments in the field
  • Material cultures II. Infrastructures in the field

• Landscapes of survey—field-evidence of the early OS:
  • Landscape legacies I. Desktop study of OS archaeologies
  • Landscape legacies II. Field-survey of OS archaeologies

• Mapping monuments—surveying the surveyors:
  • Bicentenary of the OS in Scotland and Ireland
  • Surveying heritage and a landscape archaeology of the OS
‘National’ histories of the nation’s / nations’ mapping agency?
Gillian M. Doherty

The Irish Ordnance Survey
History, Culture and Memory

New in Paperback

Civilizing Ireland
Ordnance Survey 1824-1842
Ethnography, Cartography, Translation

Stiofán Ó Cadhla

Forward by Éamon Ó Cuív TD.
Chronology of the early OS

1921 Col. Close wrote a series of articles for the *The Royal Engineers’ Journal* about the origins and first years of Ordnance Survey.

Published in 1926 as *The Early Years of the Ordnance Survey*. (republished in 1969).

Relied on early OS records, especially accounts of Col. Colby.

Much early OS archive lost in WWII bombing.

Colonel Sir Charles Arden Close, Director-General of the Ordnance Survey, 1911 to 1922
An Account of the
Operations carried on for accomplishing a
Trigonometrical Survey of England and Wales from the commencement in 1784 to the end of 1796. By William Mudge and Isaac Dalby.

The Second Volume, continued from 1797 to the end of 1799, by William Mudge.

The Third Volume, An Account of the Trigonometrical Survey in 1800, 1801, 1803 to 1809, by William Mudge and Thomas Colby.


William Mudge (1762–1820) English artillery officer and surveyor, appointed in 1791 to the Ordnance Trigonometrical Survey.
“Whilst the trigonometrical work in the south-west of Scotland had been in progress [in 1822-23], various hills in Ireland had been marked by signals and were linked up, by intersection, to the Scottish Hills”

Close, p.107.

“Accompanied by Lieutenant Drummond, Colonel Colby traversed Ireland from north to south in 1824, selecting the most suitable mountains for principal stations, and collecting data for determining probable limits of altitude to be represented in the map.” Portlock, pp.122-23.
Chronology of the early OS

Portlock wrote a *Memoir of the late Major-General Colby, with a Sketch of the Origin and Progress of the Trigonometrical Survey* (reprinted in 1869 from Papers on Subjects connected with the Royal Engineers, vols. iii-v.)

Served with Col. Thomas Colby in Ireland on Trigonometrical Survey – a key figure – his memoir is a key source on the OS in Scotland and Ireland in 1820s and 1830s.

“In 1822 he [Colby] was out again with Vetch and myself [Dawson] on the west coast [of Scotland], and taking me with him, explored the whole range of the Western Islands, from the Mull of Cantire to the Butt of Lewis, and returning to Isla he slept for one night only at the Mull of Oe. In 1825 he was on Divis, and in 1826 on Slieve Donard, in Ireland”. In Portlock, Colby Memoir, p.154.
Trigonometrical survey of Ireland linked to Scotland

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Archaeology and the OS—a long and close relationship:

“By far the most important document to the fieldworker is the map, both as a source and as a tool”, M Aston and T Rowley, *Landscape Archaeology* (1974: 59)

Archaeology on OS maps, the legacies of William Roy and O G S Crawford—mapping sites and monuments in the landscape…
Ordnance Survey, six-inches-to-one-mile ‘county series’ of Ireland, 1829-1842.

Looking *behind* the map...
An archaeology of cartography

Full set of OS First Ed 6” vols in QUB Map Library—Elmwood Building
The archive: Records of the Ordnance Survey in Great Britain and Ireland

Accounts of the OS ‘principal triangulation’ (19th cent) and ‘retriangulation’ (20th cent)
Printed and manuscript sources – a ‘paper landscape’
Material cultures I.
Instruments in the field...

Survey of Ireland under Colby & Portlock

Trigonometrical Survey undertaken – stations observed and dates:

- Divis (1825)
- Slieve Donard (1826)
- Sawel (1827)
- Knocklayd (1827)
- Slieve Snacht (1827)
- Trostan (1827)
- Vicar’s Carn (1827)
- Cuilcagh (1828)

Lough Foyle Base measured (1827-28)
Ramsden’s second (Board of Ordnance) 3-foot theodolite.
Science Museum
OS trigonometrical survey in the north of Ireland

**Divis (1825)** – Maj-Gen Colby, Col Ord, Capt Henderson, Maj-Gen Portlock, Capt Drummond, Lt Murphy

**Slieve Donard (1826)** – Maj-Gen Colby, Maj Pringle, Maj-Gen Portlock, Lt-Col Larcom, Sgt Winzer, Sgt Forsyth, 2nd Corp Stewart

**Sawel (1827)** – Maj-Gen Colby, Maj-Gen Portlock,

**Knocklayd (1827), Slieve Snacht (1827), Trostan (1827), Vicar’s Carn (1827)**

**Cuilcagh (1828)** – Maj-Gen Portlock

**Lough Foyle Baseline (1827-1828)** – May-Gen Colby, Lt-Col Pringle, Capt Henderson, Capt Drummond, Lt Murphy, Lt Mould
Divis, 1825. “This station is on the summit of a well-known mountain of the same name, about 3.5 miles west of the Exchange Buildings, in the town of Belfast. It may be approached by the Shanklin Road for rather more than a mile, then by a bye-road skirting the mountain on the east side. The 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. The centre stone has a smooth upper surface, with a well-formed hole in it, 2 inches deep and 2 inches in diameter. It is level with the surface of the mountain. Divis Station is about 140 links due south of a fence which crosses the mountain in an east and west direction”.

All station descriptions from Clarke 1858, vol 1, pp.1-41
Material culture I. Instruments in the field

Divis: “the camp on Divis became a school […] of geodesical […] science…”
“the officer of the day was called at earliest dawn to rise, and kept watch on the weather. If the hill continued clear of fog, he called Colonel Colby at the moment when the light became sufficient to prepare for observation.” Portlock, p.126

“The station of 1826 was Slieve Donard, in the county of Down; and whilst on this occasion the author [ie. Portlock] proceeded to Wales and Anglesey, to refind stations and erect objects, Lieut. Larcom proceeded to Slieve Donard to prepare it for the great instrument, and thus commenced his connection with a survey in which he afterwards filled so important an office. The author, as soon as he had finished his work in Wales, joined him there, and having put up the instrument, began the observations.” Portlock, p.127

Colby left the mountain in November, Portlock “completed the observations of the station about the 4th of November. […] The personal superintendence of the great triangulation was from this time confided to the author [ie Portlock], but Colonel Colby still continued to pay him an occasional visit, and to enter with his wonted ardour into duties of the observatory; nor was it his custom to make these visits on stations of easy and pleasant access, but, on the contrary, he usually selected the most difficult and remote. It was that that he appeared on Sawell, a mountain in a wild district of the county of Derry, early in a most gloomy morning…” Portlock, p.128
Material cultures II. Infrastructures in the field…

OS field-survey practices:

Survey companies formed by Colby from Royal Engineers (Sappers and Miners), trained in practical geometry at Chatham.

Board of Ordnance handed over Mountjoy House as a HQ for the Survey of Ireland under Major William Reid.

Trigonometrical work begins under Colby in the north of Ireland.

“The next problem was to get these resources to work, and then to keep the trigonometrical operations and the detail survey in step with one another”. Andrews, *Paper Landscape*, p.39.
Sketch of the measurement of the Lough Foyle baseline, 1826-28, from Ordnance Survey. “An account of the measurement of the Lough Foyle base in Ireland” ... By Captain W. Yolland (1847)
**Lough Foyle Base, South End.** 1827-28. This station is on a small rising ground called Sheep Hill, about a quarter of a mile south-east from Ballykelly Church, in the townland of Drummond, parish of Tamlaght, and county of Londonderry.

These stations are marked by dots made with the point of a needle in platina wires, eighth of an inch in diameter, run with lead into holes 1.5 inch in diameter and 6 inches deep, bored into blocks of Dungiven sandstone, 4 feet square and 20 inches deep. These blocks are laid in cement above other and similar blocks roughly chiselled, and placed on beds of solid masonry. The whole at each station is enclosed in a chamber of masonry 6 feet square, with walls 2 feet thick and 3 feet deep, covered over with a lid of flagstone, with bolts and rings passing through them, by which they may be removed with safety to the dots. On the upper surface of the flags cross lines are drawn, with the crosses vertically over the dots. This masonry is covered over with a tumulus of earth; and a circular wall 2 feet thick, with eight internal buttresses, is built as a base for an iron railing 4.5 feet high, enclosing a space 30 feet in diameter. The zenith sector station is in the same field with the south end of the base, from which point it is distant 559 feet due east.
Lough Foyle Base, North End. 1827-28, This station is situated in the
townland of Ballymulholland, parish of Magilligan, in the county of Londonderry,
about 2.75 miles south of the martello tower on Magilligan Point at the entrance
of Lough Foyle. The ground between this station and Mount Sandy is
composed of low sand hills, and is much broken and very rugged.
**Slieve Snaght**, 1827. This mountain is in the parish of Carnadongh, in the county of Donegal. The station, which is on the highest part of the mountain at the east end, is marked by a stone about 2 feet square, having a hole 2 inches deep drilled in its centre, with a pile of stone, 14 feet high and 50 feet in circumference at base, erected over it.
Capt Thomas Drummond on Slieve Snacht, October 1825

Drummond writes to Colby:

“The tent is now up and in a few minutes the wall round it will be completed, so that we may consider ourselves safe against any storm…” 28th October

“Of the termination of our labours the letters from Divis will already have apprised you… At the last we had nothing remaining but the lamp tent and the walls of the cooking house. I believe that we should have been compelled to abandon the hill but for the efforts of the men…” 12th November
The camp on Creach Bheinn, Ardgour (NM 879576). Visible are the two massive stone wall windbreaks, between which are four semi-circular stone platforms, possibly bases for tented accommodation and a more substantial building near the lower wall, possibly the cook house or officer accommodation.

From Iain Thornber and Richard Oliver, “Colby’s camps”, *Sheetlines*, 90 (April 2011), pp.18-22
Creach Bheinn, survey camp and cairn - SM11059 - Historic Environment Scotland
“Looking then at the early sheets of the Irish map, the engineer will be struck by the vast amount of data expressed upon them in regard to altitudes, and may also trace, in many cases, the gradual rise of a hill, by following the course of a chain line, and noticing the successive levels marked along it.” Portlock, p.214

“From trig point to trig point the chain was dragged….” Close, p.120

50/37. 25/42.

CHARACTERISTICS AND SYMBOLS

<table>
<thead>
<tr>
<th>County</th>
<th>Townland</th>
<th>Trigonometrical Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barony</td>
<td>Municipal Wards</td>
<td>Antiquities (Site Of)</td>
</tr>
<tr>
<td>Parish</td>
<td>Contours</td>
<td></td>
</tr>
</tbody>
</table>

The Representation on this Map of a Road, Track, or Footpath, is no evidence of the existence of a right of way.
Levelling lines

1837-1843

Primary levelling of Ireland – use of spirit levels to measure heights, linked to trig stations. ‘BMs’ on 6” maps shown by

Field survey for 6 inch mapping completed by 1842, last maps published in 1846.

Estimated cost of £820,000 for Irish survey.

Colby died 1852, having returned to Britain Six-inch scale mapping by OS of Scotland and N England from 1840, following Irish model, E&W from 1858.
Marking the landscape—OS bench-marks and levelling the land...

### Abstract of Levelling from Belfast to Portrush

The Altitudes are referred to a Low Water of Spring Tides in Dublin Bay, which was

<table>
<thead>
<tr>
<th>Numbers and Descriptions of Bench Marks, &amp;c.</th>
<th>Approximate Distances between consecutive Bench Marks</th>
<th>Altitudes (Ft.)</th>
<th>County, and Sheet of Ordinance Map</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ANTRIM TO PORTGLENONE—continued.</strong></td>
<td>Links: 3,064.0</td>
<td>166.840</td>
<td>Antrim 36</td>
</tr>
<tr>
<td>No. 72. Mark on battlement of small bridge; 2'7 ft. above centre of road, and 3'6 ft. above keystone</td>
<td>3,064</td>
<td>156.840</td>
<td></td>
</tr>
<tr>
<td>No. 73. „ on battlement of small bridge over mill race; 2'5 ft. over keystone</td>
<td>1,277</td>
<td>159.058</td>
<td></td>
</tr>
<tr>
<td>No. 74. „ on stone in end of D. Griffin's house; 4'3 ft. above centre of road</td>
<td>2,063</td>
<td>182.610</td>
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</tr>
<tr>
<td>No. 75. „ on foundation stone of small bridge; 3'4 ft. below centre of road, and 1'6 ft. below keystone</td>
<td>3,166</td>
<td>146.399</td>
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</tr>
<tr>
<td>No. 76. „ on rock at side of road near M. McKeown's house; 0'5 ft. below centre of road</td>
<td>3,245</td>
<td>160.232</td>
<td></td>
</tr>
<tr>
<td>No. 77. „ on foundation stone of small bridge; 2'6 ft. below keystone</td>
<td>2,646</td>
<td>186.140</td>
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</tr>
<tr>
<td>No. 78. „ on corner stone of D. Cromie's house at East side of road; 0'3 ft. above centre of road</td>
<td>1,738</td>
<td>163.740</td>
<td></td>
</tr>
<tr>
<td>No. 79. „ on pillar stone of small bridge; 0'2 ft. above keystone, and 0'8 ft. below road</td>
<td>3,215</td>
<td>156.763</td>
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<tr>
<td>No. 80. „ on coping stone of wall over pipe; 2'0 ft. above centre of road</td>
<td>3,802</td>
<td>148.101</td>
<td>31</td>
</tr>
<tr>
<td>No. 81. „ on coping stone of wall over pipe; 4'2 ft. above centre of road</td>
<td>2,028</td>
<td>133.575</td>
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<tr>
<td>No. 82. „ on coping stone of wall over pipe; 3'8 ft. above road, and 7'4 ft. above keystone</td>
<td>2,160</td>
<td>95.063</td>
<td></td>
</tr>
<tr>
<td>No. 83. „ on stonework under iron railing at avenue gate; 2'9 ft. above centre of road</td>
<td>2,478</td>
<td>100.825</td>
<td></td>
</tr>
<tr>
<td>No. 84. „ on blockstone at door of J. Hammel's house in Portglenone; 1'2 ft. above centre of road</td>
<td>866</td>
<td>83.032</td>
<td></td>
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<tr>
<td>No. 85. „ on window sill of J. Daly's house at corner of lane; 3'4 ft. above centre of road</td>
<td>1,388</td>
<td>79.532</td>
<td></td>
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<tr>
<td>No. 86. „ on North battlement over centre arch of Portglenone Bridge; 7'5 ft. above keystone</td>
<td>935</td>
<td>73.537</td>
<td>Londonderry 83</td>
</tr>
</tbody>
</table>

### PORTGLENONE TO KILREA

<table>
<thead>
<tr>
<th>Numbers and Descriptions of Bench Marks, &amp;c.</th>
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<th>County, and Sheet of Ordinance Map</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 87. „ on corner stone at rear of J. McElrnan's house; 0'6 ft. below centre of cross roads</td>
<td>1,789</td>
<td>60.748</td>
<td></td>
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<tr>
<td>No. 88. „ on stone in front wall of F. McEtreer's house; 0'1 ft. below centre of road</td>
<td>3,687</td>
<td>72.959</td>
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<tr>
<td>No. 89. „ on stone in wall of J. Blaney's house; 1'6 ft. above centre of road</td>
<td>1,603</td>
<td>99.810</td>
<td></td>
</tr>
<tr>
<td>No. 90. „ on corner stone of T. McElrnan's house in Clady Village; 3'3 ft. above centre of cross roads</td>
<td>3,162</td>
<td>118.825</td>
<td></td>
</tr>
<tr>
<td>No. 91. „ on West battlement of Clady Bridge; 3'5 ft. above road, and 5'8 ft. above keystone</td>
<td>1,830</td>
<td>91.578</td>
<td></td>
</tr>
<tr>
<td>No. 92. „ on rock at East side of road; 0'6 ft. above centre of road</td>
<td>1,300</td>
<td>135.449</td>
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</tr>
<tr>
<td>No. 93. „ on stile leading to R. Kyle's house opposite old road to Kilrea; 0'6 ft. above centre of road</td>
<td>1,700</td>
<td>141.221</td>
<td></td>
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<tr>
<td>No. 94. „ on corner stone of P. Carey's house at East side of road; 0'6 ft. below centre of road</td>
<td>2,518</td>
<td>98.813</td>
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<tr>
<td>No. 95. „ on corner stone of H. Henry's house at West side of road; 0'4 ft. below centre of road</td>
<td>1,478</td>
<td>99.772</td>
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<tr>
<td>No. 96. „ on corner stone of P. Madden's house at West side of road; 2'1 ft. above centre of road</td>
<td>1,465</td>
<td>120.223</td>
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</tr>
<tr>
<td>No. 97. „ on window sill of B. Henry's house at end of lane; 2'4 ft. above centre of road</td>
<td>2,702</td>
<td>101.889</td>
<td></td>
</tr>
<tr>
<td>No. 98. „ on foundation stone of pier at Lislea Bridge; 3'5 ft. below keystone, and 5'2 ft. below</td>
<td>4,420</td>
<td>157.888</td>
<td></td>
</tr>
</tbody>
</table>
Types of bench-marks
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Following in the footsteps of the OS surveyors...
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Using online web-mapping platforms to locate early OS field-survey sites and monuments, eg National Library of Scotland

https://maps.nls.uk/geo/explore/#zoom=15&lat=57.96373&lon=-6.81255&layers=1&b=1
Cleisham, 1840. This, the highest mountain in the Hebrides, is in that part of the Island of Lewis which is in the county of Inverness. It is near the south and west shore of Loch Seaforth, and, being the most conspicuous object in that part, cannot easily be mistaken. The huts nearest to the mountain are at Marvig, from which it is distant about 3 or 4 miles. West Tarbert, a small village on the south side of the hill, is about 6 or 7 miles distant. On account of the accommodation which the observing party in 1840 required, the men and stores were landed at a farm house and shooting lodge at Mole-na-harig, about 6 miles south-west from the hill. The station is upon the highest point of the mountain. A pile 18 feet high occupied the site of the station previous to the preparation of the ground for the reception of the frame of the instrument in 1840, but on taking it down no centre mark was found. The centre of the pile was therefore ascertained by careful measurement, and the instrument placed over it. On quitting the station the wooden pickets were left in the rock, a large stone with a centre hole in it was placed even with the surface, and a stone pile 21 feet on slope, and 18 or 19 feet in diameter, erected. A few feet from the pile is a large rock.
A.R. Clarke, *Ordnance Trigonometrical Survey of Great Britain and Ireland: 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* (William Spottiswoode, 1858).

https://maps.nls.uk/britain/rec/4139
https://maps.nls.uk/geo/explore/side-by-side/#zoom=15&lat=57.96370&lon=-6.81250&layers=1&right=BingHyb
There is a ‘Colby’ camp, similar to that at Creach Bheinn (see NM85NE 2 for details) situated beside the primary triangulation pillar on Clismor, at NB 1548 0730.

Information from Mr F Bellamy, Superintendent Geodetic Control, Ordnance Survey, November 1971.

https://canmore.org.uk/event/732879
David Walker, “The initial triangulation of Scotland from 1809 to 1822”, *Sheetlines*, 98 (December 2013), 5-15

https://maps.nls.uk/geo/explore/side-by-side/#zoom=16&lat=57.34443&lon=-3.19556&layers=1&right=BingHyb
Mr. Dawson, with whom Lt. Colby was living, and to whose house
he was brought, took every proper step, and amongst others immediately
sent to me. Consequently came with all possible speed. It is ... with
a degree of satisfaction proportionate to my regard for this most excellent
but unfortunate young man that I have to state the confident expectations
entertained of his recovery, without the smallest injury to his intellects.

Colby was a man of unusual strength of constitution, and he
recovered; but for the rest of his life his forehead bore the mark
of the accident. He accustomed himself to observe with the
large instruments, though he had only his right hand. Portlock,
who knew him well, wrote in the Memoir that it was “impossible
to recognise in the injury inflicted on his skull a sufficient cause
both for subsequent bodily ailments and for a reluctance to enter
on long continued mental exertion.” However that may be, there
is abundant evidence that the injury did not, in later years,
materially affect his activity either of mind or body, though we
may, perhaps, attribute to it a certain unwillingness to tire himself
with controversy.

It has been seen how much personal work Colby carried out
during Mudge’s directorate. The following letter from Colby to
Mudge describes some of the conditions of work in Scotland :

Benachull, near Alton,
24th July, 1818.

“The country which we have to deal with is so extremely wild
and destitute of accommodations of every kind, and the mountains
are so high and difficult of access, and, moreover, seem at such long distances,
that they require larger objects than those that were wont formerly
to be erected, in consequence I have been compelled to send two men
together instead of one alone to erect the objects, and the allowance
of 2s. 6d. each object heretofore granted is become obviously too small.
I have, therefore, to request that you will sanction me in raising it to
3s. 6d. each object. ... In this, as in everything else which regards
the Survey, I have paid the utmost attention to economy, and I am
willing to try the effect of what I consider as a minimum allowance...
In the western part of Scotland, from the want of roads and carts, and
the extreme height of the mountains, no station can be visited without
very considerable expense, and I shall, therefore, endeavour to perform
the Survey of it with as few stations as possible by the intersections of
objects on the mountains, which will serve all the requisites of the
map....

Portlock includes in his Memoir an account, written in 1852.
by Major R. K. Dawson, of a season spent under Colby’s command
in the Highlands. This account, from which the following paragraphs
are extracted, gives an excellent picture of Colby’s manner of life
when at work, before he became Director of the Survey:

In the month of May, 1816, Lieutenant Robe and myself
were appointed assistants to Capt. Colby on the Trigonometrical Survey.

On the following morning the really laborious part of the business
commenced, that of conveying the camp-equipage, instruments, and
stores to the top of the mountain. Horses were hired for the purpose
and made to carry the packages slung like panniers over their hacks, so
far as the ground proved tolerably even and firm, but when it became
broken and hummocky, which is commonly the case with peaty soils,
or springy and wet, there was then no alternative but to unload the
horses and carry the things on the men’s shoulders. ... Captain Colby
went on, taking Robe and myself with him, to the summit, where he
selected a spot of ground for the encampment as near as practicable
to the station, and also for the watch-tent, at a point much nearer still.
He then selected a suitable place for a turf-hovel, to be built on the
sloping face of the hill, with a tarpaulin roof, in which to make a fire
for cooking, and for drying the men’s shoes and clothes, and to serve
also as a place of shelter and warmth for the men in tempestuous and
severe weather. When some of the tents had been brought up, and
one or two at them pitched for present use, a party of the men
were withdrawn from this duty, and employed in pulling down the conical
pile of stones built round the station-staff, and in setting up in its place
the observatory-tent. The requisite steps were then taken for securing
the table or stand, for the great theodolite; and the theodolite itself
was then brought up with special care and fixed in its position....
Landscape legacies II. Field-survey of OS archaeologies
“Whilst the trigonometrical work in the south-west of Scotland had been in progress [in 1822-23], various hills in Ireland had been marked by signals and were linked up, by intersection, to the Scottish Hills.” Close, *Early Years*, p.107.
“Looking then at the early sheets of the Irish map, the engineer will be struck by the vast amount of data expressed upon them in regard to altitudes, and may also trace, in many cases, the gradual rise of a hill, by following the course of a chain line, and noticing the successive levels marked along it.” Portlock, p.214

“From trig point to trig point the chain was dragged….” Close, p.120

OS survey bolt on boulder on Black Mountain

Primary trig on Divis summit in the background
Mapping Monuments

- The early Ordnance Survey in Scotland and Ireland
- Behind the map—an ‘archaeology’ of the Ordnance Survey?
  - Material cultures I. Instruments in the field
  - Material cultures II. Infrastructures in the field
- Landscapes of survey—field-evidence of the early OS:
  - Landscape legacies I. Desktop study of OS archaeologies
  - Landscape legacies II. Field-survey of OS archaeologies
- Mapping monuments—surveying the surveyors:
  - Bicentenary of the OS in Scotland and Ireland
  - Surveying heritage and a landscape archaeology of the OS
Surveying heritage - potential for heritage interpretation and tourism

The Ordnance Survey of Ireland
The Lough Foyle Baseline

“The most disagreeable part of the three kingdoms is Ireland, and therefore Ireland has a splendid map.”
— Richard Allen, 1821

The Irish Ordnance Survey, led by Lt Col Thomas Colby, completed the world’s first large scale mapping of an entire country by 1846. The accuracy achieved is still marveld at today.

The maps were based on a framework of triangulated points. The first leg of the first triangle, known as the baseline, was drawn along the flat western shore of Lough Foyle in 1824. The baseline was the largest of its kind, almost 8 miles, and was measured by the highest standards of accuracy ever before achieved. In 1960 it was re-measured using electronic equipment — the new measurement only differed by one inch.

The survey was carried out with the help of tools especially developed for the project, most notably an iron and brass compensator, a strong tripod, and a heliostat reflector for daylight observations, all developed by Lt Thomas Government, a leading mathematician and inventor.

The first 6 inch maps provided the basis for Sir Richard Griffith to complete an accurate survey of property owners between 1846 and 1864 and provide uniform valuations in order to levy government taxes.

Lough Foyle Base Towers

To preserve the baseline, the government acquired three base towers that can still be seen today. A fourth base tower was situated at Dunfanaghy, but has since been claimed by the sea.

Access: The north base tower at Traquair/Shell Island is accessible by private land and are not easily accessible to the public. The south base tower is situated at the end of the Lough Foyle Hotel in Ballykelly and can be visited.
Enthusiast interests in seeking out levelling marks and triangulation pillars of the OS of the 1930s-1960s.

http://www.bench-marks.org.uk/
http://www.trigpointing-ireland.org.uk/

Earlier OS heritage overlooked?
Losing survey heritage—heritage at risk

**Knocknaskagh**, 1831, “in the north of the county of Cork, is about 3 miles south-west of Rathcormac, a village situated on the road from Cork to Fermoy. The station is on the eastern spur of the mountain, which slopes away from this point in a south-west direction, and extends to a distance of about 3 miles. In the immediate vicinity of the station the mountain has a thin covering of peat moss, but without any heath. The centre stone is a piece of sandstone, having a hole about three quarters of an inch deep in its smooth upper surface, and placed about 24 inches under the surface, over it is a pile about 8 feet high. The remains of the old cookhouse are about 100 yards north-east of the station; and from the circumstance of there being a little turf or heath where it was built, it is likely to remain a permanent object”.

[Map of Knocknaskagh]
Sandy Mount Base Tower, lost to the sea (image: Conor Graham)
Next steps in ‘Mapping Monuments’…

1. Undertake desk-top studies and site-surveys of early OS archaeology in our nations and landscapes to:
   • Identify and characterise the remains of OS structures and features;
   • Record and evaluate condition and create interpretative materials;
   • Re-evaluate the ‘history’ of the OS ‘in the field’.

2. Develop community heritage project in anticipation of bicentenary of Trigonometrical Survey of Scotland/Ireland:
   • Mark our nations’ contributions to history of science and geography;
   • Crowdsourcing and ‘Surveying the Surveyors’ outreach project;
   • Publicise protection and recognition of survey heritage and sites.

• Interested? Join us for our ‘Mapping Monuments’ online workshops in 2021!
ARCH and Heritage Hub “Mapping Monuments” community workshops online—Jan 25 and Feb 22 (7.00-8.30pm), more info at http://www.archhighland.org.uk/