

# *Sheetlines*

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

“The Isle of Skye and the Principle Triangulation  
of Scotland”

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*Sheetlines*, 126 (April 2023), pp29-35

Stable URL: <https://s3.eu-west-2.amazonaws.com/sheetlines-articles/Issue126page29.pdf>

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Published by  
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for the Study of Ordnance Survey Maps  
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## ***The Isle of Skye and the Principal Triangulation of Scotland***

### ***Nevis Hulme***

This article has come about from a chance remark about my interest in Gaelic place-names when corresponding with Dave Watt following his talk to the Society in March 2022. He had initially been unable to pinpoint the location of Elms Hill, one of the survey stations in the Principal Triangulation of Scotland in the 19th century. David L Walker had suggested to him that the location may be Sgurr nan Caorach, near Armadale on the southern extremity of Skye, although the sightline to Eaval was agreed to be doubtful. Dave Watt asked me whether Sgurr nan Caorach might mean hill of the elms. The following is the response to this query.

One Gaelic term for elm is leamhan. If a name for Elms Hill was recorded by the OS when surveying this area in 1876 then it would most likely appear in the OS name-books (OSNBs) in its genitive (or possessive) form leamhain.<sup>1</sup> A search of the OSNBs revealed two Inverness-shire results with one on the Isle of Skye. This was an incredibly lucky find because the name had been subsequently altered for addition to maps yet, unusually, the original record had not been altered. Had it been amended, the search facility on Scotland's Places website would most likely have failed to find the name. Search on this site depends on transcription of the relevant page having been conducted and these transcriptions tend not to include amendments; this is a good reason to always refer to the image of the original page where useful information may be found.

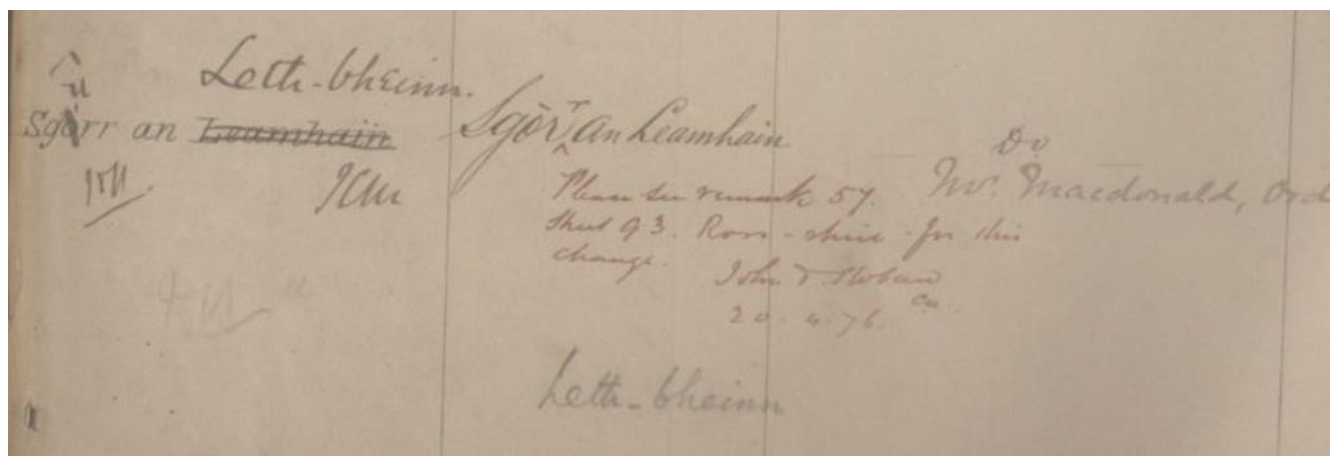


Figure 1: Extract from OSNB OS1/16/11/190 Inverness-shire (Skye), volume 11, page 190 (1876)

The hill was initially recorded in OSNB 1/16/11/190 as Sgùr an Leamhainn (the peak of the elm) but this was changed to Sgùr an Leth-bheinn ('the peak of the half-hill'); see Figure 1. It was this latter form that appeared on the OS First edition map (surveyed 1876) as shown in Figure 2. Inspection of Figure 1 will reveal a further change to the original name, that of sgùr to sgòrr. The comment below the name in column two, possibly only referring

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<sup>1</sup> A common structure for Gaelic place-names is found in most of the names in this article. Meall a' Ghiubhais, *the hill of the pine*, for example, has *meall* in the nominative (naming) case followed by *a'* *ghiubhais* in the genitive case of the definite article and noun.

to this change rather than the more substantial one, has been difficult to track down; searches in OSNBs are often not straightforward. The name of the hill remained Sgùrr an Leth-bheinn on the later printing of the First edition (c 1890).



Figure 2: Inverness-shire (Isle of Skye), Sheet LXIII, surveyed: 1876, published: 1881. NG5700

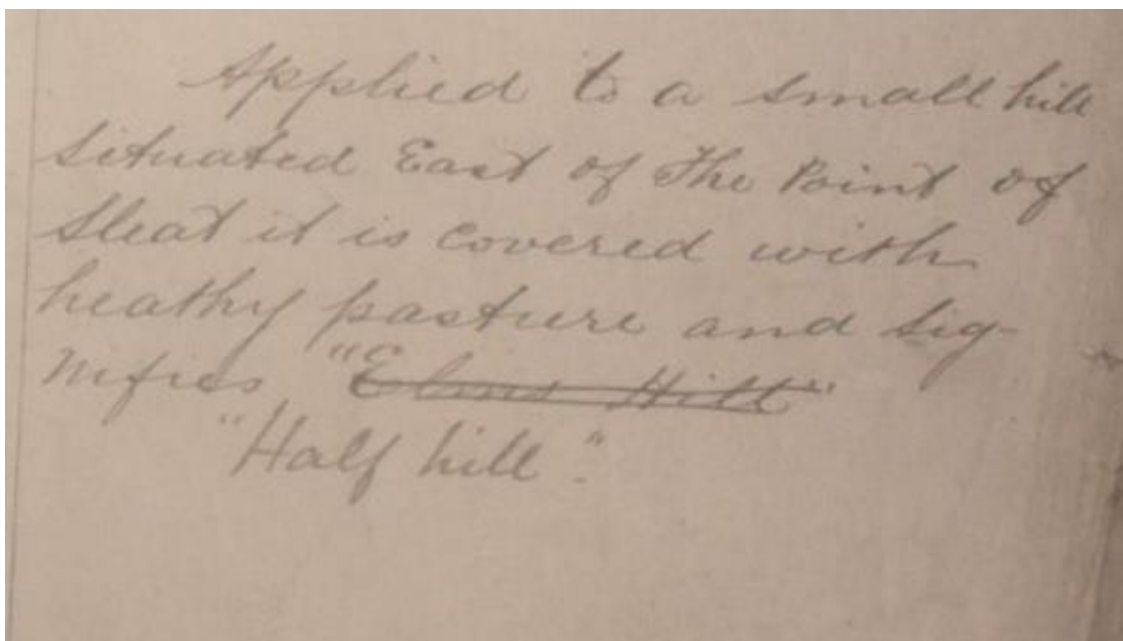


Figure 3: Extract from OSNB OS1/16/11/190 Inverness-shire (Skye), volume 11, page 190

Figure 3 shows the description of the hill with the change in meaning that came about because of the change in name. The names Sgòrr an Leamhainn and Sgùrr an Leth-bheinn are similar in pronunciation. Leamhainn is pronounced [Lʲɛvʌnʲ] while leth-bheinn is [Lʲɛʰvʌnʲ] (this Gairloch pronunciation may be a little different in Skye). Both names raise questions: the first because, although the Slèit peninsula of Skye, on which the hill is found,

is known for its relatively lush vegetation, this part is not and elms seem unlikely; the second, because, in this use, the hill would be expected to have a very steep side opposite a rounded side (like a somewhat less spectacular Half Dome in Yosemite). *Figure 4* shows the hill from the south-southwest (Google Earth vertical exaggeration 1.5). It may be that, when viewed from a particular angle, this hill has the necessary characteristic.



*Figure 4: 'Elms Hill', right of the loch and beyond the road, viewed from the SSW (from Google Earth).*

Those working on the OSNBs did review the names collected and altered them to suit what was believed either to a correct form or to fit what was thought to be represented by the name. In this case, the unsuitability for elms in the area may have led to the adoption of a name thought to be more fitting.

Were it not for the OS recording the name of this hill as Sgùrr an Leamhainn, the explanation for Elms Hill would probably have been lost forever. Forbes, in his book 'Place-names of Skye' (1923), names the hill Sgurr an Leth-Bheinn with no mention of the other name. Elms Hill does, however, appear on Admiralty Charts for the Sound of Sleat from 1856 until 1943, the latest revision available on the National Library of Scotland website. The earliest example, and possibly the earliest record of this name <sup>2</sup>, is shown in *Figure 5*.

The name Sgùrr an Leth-bheinn was replaced by Sgurr an Seilich (probably, A' Sgùrran Seilich, 'the wee peak of willow' or 'the wee willow-peak'<sup>3</sup>) for the Second edition (*Figure 6*) and remains to this day as the name of the hill. Name changes such as this occurred between the First and Second editions but, having not seen the equivalent OSNBs for the Second edition, the reasons for these changes are unknown. Landowners or other worthies sometimes intervened on seeing the First edition and changes were adopted for even later printings of that edition.

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<sup>2</sup> Neither Timothy Pont nor General Roy mapped the island and Murdoch Mackenzie did not include hill names on his nautical chart of 1776 showing *the south part of Skye [sic] Island*

<sup>3</sup> This exhibits another structure common in some areas where the second term, *seilich*, in this case, is in the indefinite genitive. The OS often objected to this form and may have converted this example to \*Sgùrran an t-Seilich, 'the wee peak of the willow'.

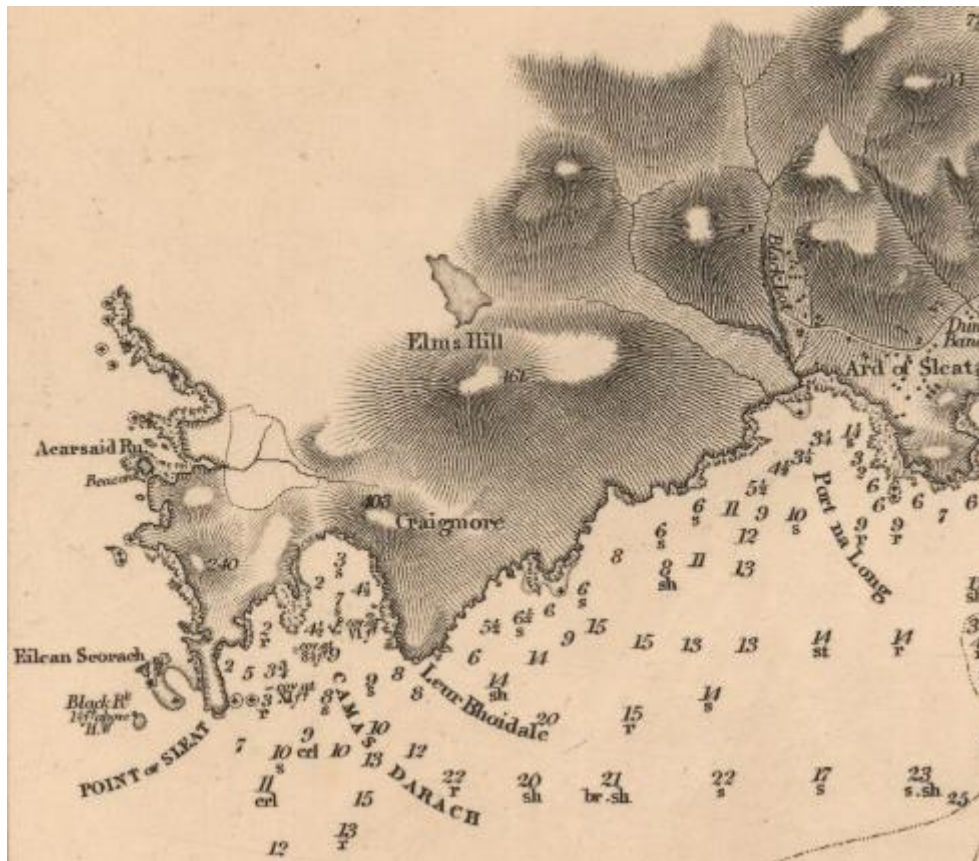


Figure 5: Admiralty Chart - Sound of Sleat, surveyed: 1852, published 1856

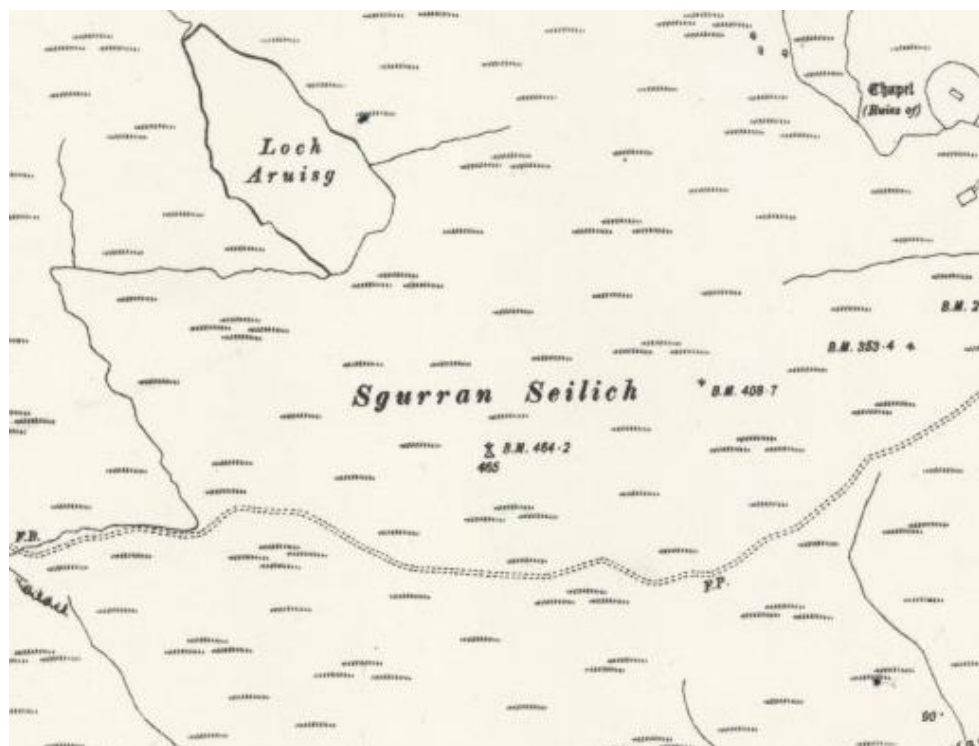


Figure 6: Inverness-shire - Isle of Skye LXIII, surveyed: 1901, published: 1903

| ELMS HILL.  |              |             |        |                   |                 |              |             |        |                   |
|---|--------------|-------------|--------|-------------------|-----------------|--------------|-------------|--------|-------------------|
| 3-ft. Theodolite, R.S.  |              |             |        |                   |                 |              |             |        |                   |
| From 18th March to 1st May 1848. Observers: Corp. WINZER and Private BATE, R.S.M. |              |             |        |                   |                 |              |             |        |                   |
| Objects.  | Bearings.    | No. of Obs. | Range. | Recip. of Weight. | Objects.        | Bearings.    | No. of Obs. | Range. | Recip. of Weight. |
| Ben More in Mull  | ° 54' 10" 27 | 27          | 10" 47 | 0.30              | Ben Ival, North | ° ' "        |             | "      |                   |
| Ben More, South   |              |             |        |                   | Uist . . . .    | 128 10 54.89 | 2           | 3.12   | 2.43              |
| Uist . . . .  | 108 21 55.30 | 28          | 6.30   | 0.21              | Ben Nevis . . . | 292 58 35.71 | 31          | 11.57  | 0.37              |

Figure 7: Extract from Clarke's *Principal Triangulation*, p. 108 for Elms Hill

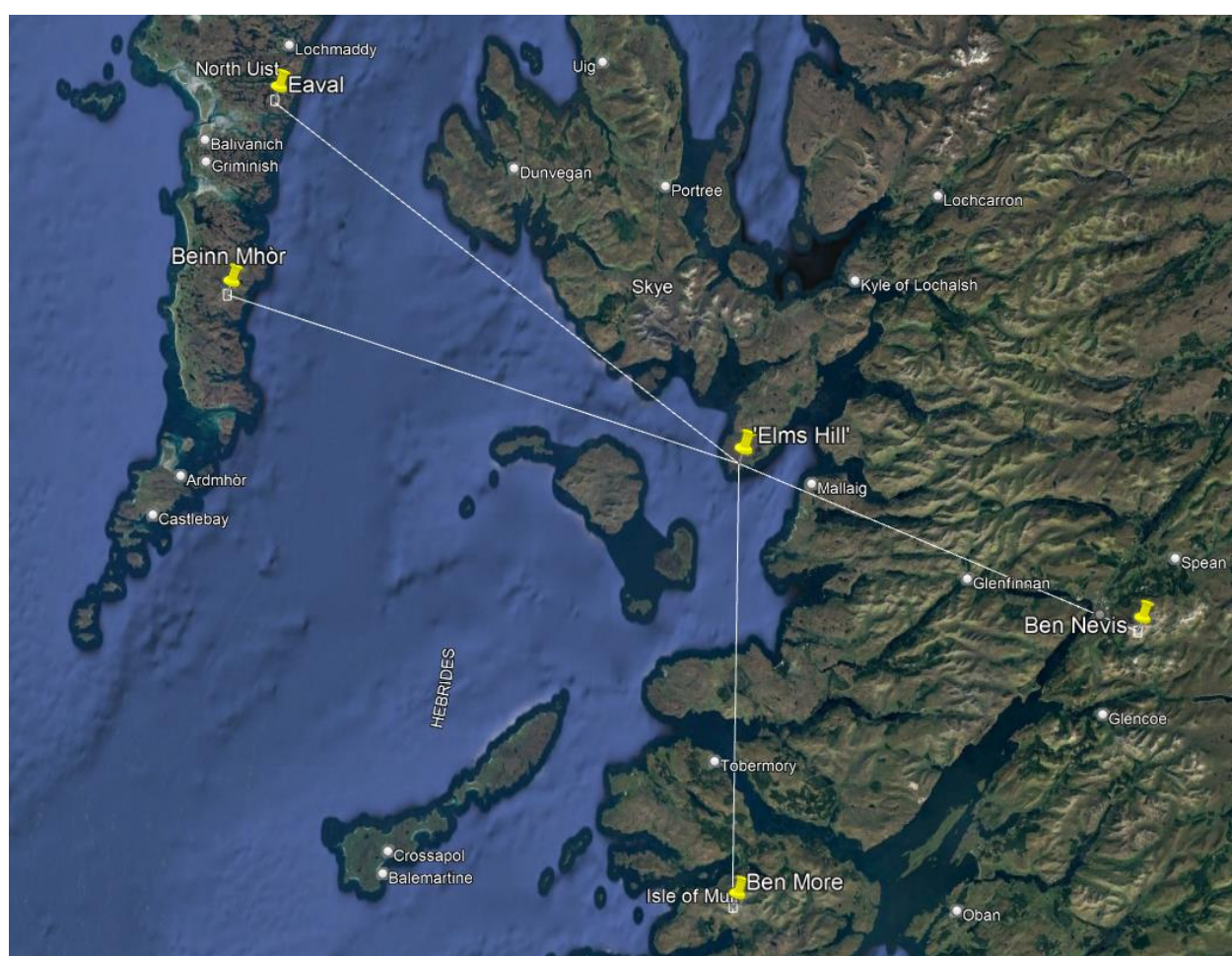
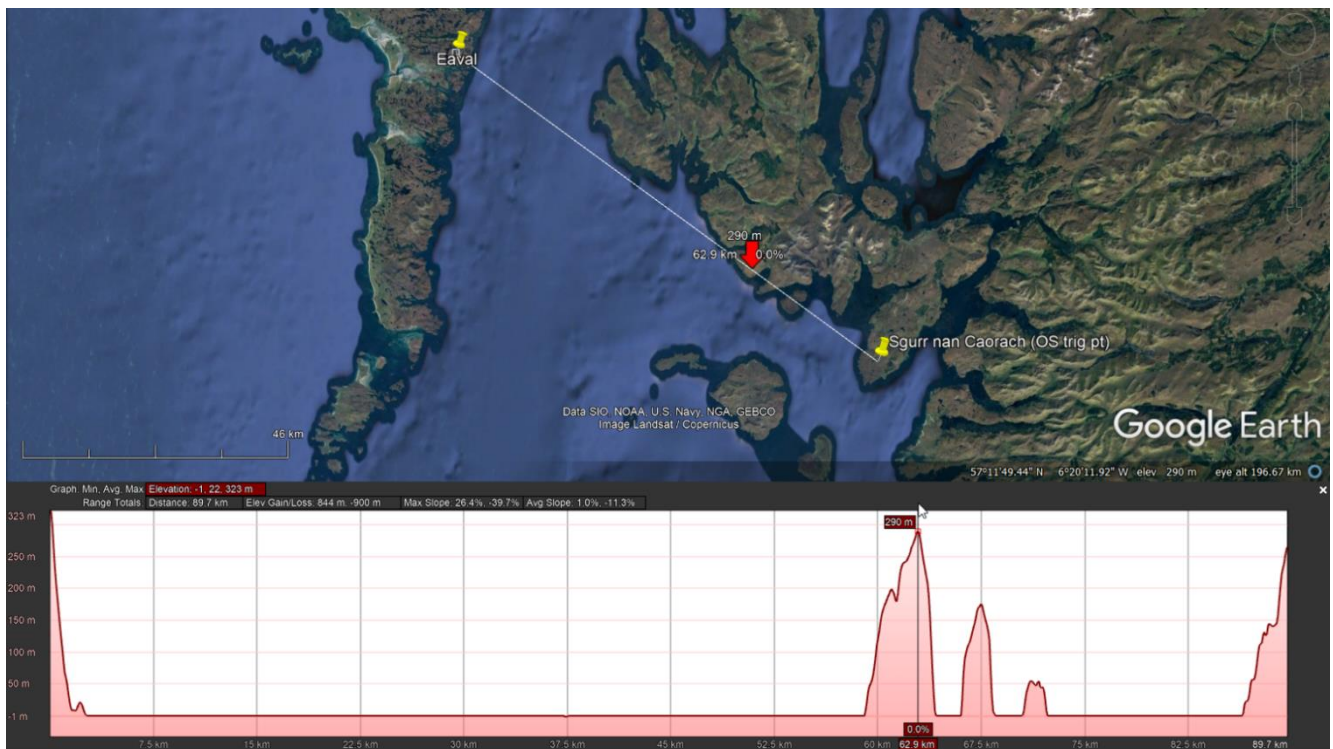


Figure 8: Sightlines to Elms Hill as indicated in Clarke, p.108

Figure 7, published on page 108 of Clarke's *Principal Triangulation* (1858), shows the stations observed from Elms Hill. Examination of these bearings suggests that they indicate observations to Elms Hill but, when it is realised that they are measured from south (rather than north)<sup>4</sup>, the figures make sense. Figure 8 is an image from Google Earth (GE) of the sightlines from Elms Hill.

<sup>4</sup> It is not clear to me why this was done being the opposite of today's convention.

When the Elevation Profile feature of GE was used for each of these lines, it was found that Elms Hill was visible from all of the stations.<sup>5</sup> In contrast, when these were viewed to Sgùrr nan Caorach (NG5802, ‘the peak of the sheep’ (plural)), the site of the nearest trig. point today, the sightlines were good for all but Eaval in North Uist. The west shoulder of Beinn an Eòin (summit NG3820, ‘the hill of the bird’) blocks the view as shown in *Figure 9*. The arrows on the sightline and profile show the obstruction. This may be why the more southerly location of Elms Hill was chosen.



*Figure 9: Sightlines between Eaval and Sgùrr nan Caorach with elevation profile of the line.*

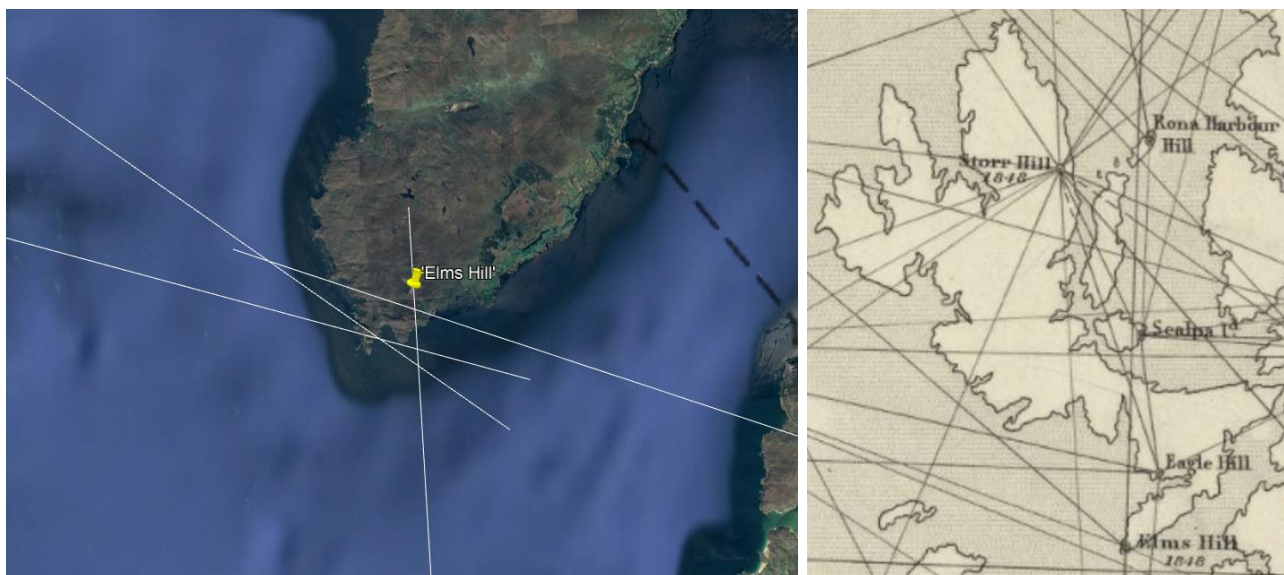
Further use was made of GE to see how accurately the location of Elms Hill could be plotted from the data in Clarke (see *Figure 7*). An initial attempt was crude using Google’s location of hill tops and bearings drawn to an accuracy of  $\pm 0.1$  degree. *Figure 10* (opposite) shows how this would have failed to locate Elms Hill. When this was redone at maximum zoom (on my screen, a scale of c 1:10), plotting the ruler-drawn line between two stations located from Clarke’s data, it was found that the resulting lines were surprisingly accurate. For this purpose, then, Google Earth is an accurate tool.<sup>6</sup>

There are two further triangulation stations on the mainland of Skye on the map. These are shown in *Figure 11*. Storr Hill is easily identified and is located in NG4954. Eagle Hill, on the other hand, proved elusive until it was appreciated that the base map, probably that

<sup>5</sup> The Elevation Profile does not take the curvature of the earth into account but it is possible to factor it in. While in marginal cases there will be doubt, an allowance of the 13 metre ‘depression’ over 100km. can be estimated.

<sup>6</sup> To check this, the bearing between The Storr, on Skye, and Cnoc a’ Ghiubhais (Cnoc Ghiubhais in Clarke), N.W. Sutherland, a distance of some 87 miles, was calculated on GE. This came out at 209.99 degrees cf. 210.0433 in Clarke. No account has been made of any corrections, if required, to the data given in the table on page 155 from which the bearing was taken.

of Aaron Arrowsmith from 1807, contained inaccuracies. Once its mislocation on Skye was realised, a suitable candidate, Sgùrr na h-Iolair (NG6109), ‘the peak of the eagle’, was found in the northern part of the Slèit peninsula. The sightlines, following a similar analysis as that for Elms Hill, are suitable for the rays indicated on *Figure 11*. The sightline to the The Storr benefits from a fortunate a gap through the Red Cuillin.



*Figure 10: (left) First, coarse attempts at drawing sightlines to Elms Hill recorded by OS in 1848.*

*Figure 11: (right) Extract from Diagram shewing [sic] the principal triangulation on the NLS website<sup>7</sup>*

### **Note**

I normally prefer to refer to landscape features by their correct names but, in the case of Elms Hill, it is not clear which is correct and for the sake of this article Elms Hill seems appropriate.

### **Acknowledgements**

Figures 2, 5, 6, 7 and 11 are reproduced with the permission of the National Library of Scotland; figures 1 and 3 with the permission of National Records of Scotland and figures 4, 8, 9 and 10 are reproduced from Google Earth. Thanks also to Dave Watt and David L Walker for commenting on drafts of this article.

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<sup>7</sup> The date 1856 is given on the website but it is probably from 1852-54 and is not the same as diagrams in Clarke's *Principal Triangulation* (1858).