

# **An Litir Bheag**

**le Ruairidh MacIlleathain**

An Litir Bheag is a shortened and simplified version of Ruairidh's Litir do Luchd-ionnsachaidh (also available on the BBC website), designed for those who are at an earlier stage of learning Gaelic. The topic each week is the same as Litir do Luchd-ionnsachaidh so that, once the Litir Bheag is mastered, a student of the language might wish to try the full Litir. This is Litir Bheag 655 (which corresponds to Litir 959). Ruairidh can be contacted at [rodny.maclean@bbc.co.uk](mailto:rodny.maclean@bbc.co.uk).

*I ascended Schiehallion in the summer this year. That famous high mountain is in the dead centre of Scotland in Perthshire. It was at the heart of a scientific experiment in the eighteenth century. I want to tell you about the experiment.*

*The Astronomer Royal, Nevil Maskelyne, spent seventeen weeks living in a bothy on the mountain. He was there to measure the mass of the world. It wasn't known at that time if the Earth was hollow in the middle or full of something.*

*Maskelyne was wanting to find a mountain whose volume was easy enough to measure. He was going to measure what fraction of the earth the mountain was representing. He would then measure the weight of the mountain according to its gravitational pull. From that, he would get the weight of the entire Earth.*

*The first thing was to find a suitable mountain. The Royal Society sent Charles Mason to the Highlands of Scotland. He found Schiehallion.*

*It wasn't easy for Nevil Maskelyne to get there. The roads*

Dhìrich mi Sìth Chailleann as t-samhradh am-bliadhna. Tha a' bheinn àrd ainmeil sin ann an teis-meadhan na h-Alba ann an Siorrachd Pheairt. Bha i aig cridhe deuchainn saidheansail anns an ochdamh linn deug. Tha mi airson innse dhuibh mu dheidhinn na deuchainne.

Chuir an Reultair Rìoghail, Nevil Maskelyne, seachad seachd seachdainean deug a' fuireach ann am bothan air a' bheinn. Bha e ann airson cuideam an t-saoghail a thomhas. Cha robh fios aig an àm sin an robh an Talamh falamh sa mheadhan no làn rudeigin.

Bha Maskelyne ag iarraidh beinn a lorg a bha furasta gu leòr a thomhas a thaobh a meud-lìonaidh. Bha e a' dol a thomhas dè a' bhloigh dhen t-saoghal a bha a' bheinn a' riochdachadh. Bhiodh e an uair sin a' tomhas cuideam na beinne a rèir a h-iom-tharraing, no *gravity*. Às a sin, gheibheadh e cuideam na cruinne gu lèir.

B' e a' chiad rud beinn fhreagarrach a lorg. Chuir an Comann Rìoghail fear Teàrlach Mason gu ruige Gàidhealtachd na h-Alba. Lorg e Sìth Chailleann.

Cha robh e furasta do Nevil Maskelyne faighinn ann. Bha na

*were poor and there were no railway lines. Maskelyne travelled by sea to Perth. He reached the mountain on the last day of June 1774. He gave work to the local people. They built two experimental stations on the mountain.*

*He used the stars to measure the true vertical. He used pendulums and he measured the sideways gravitational pull of the mountain. From that, he obtained the density of the mountain. Then he measured the volume of the mountain to get its weight.*

*He obtained assistance in that from the mathematician, Charles Hutton. Hutton decided that the best way to measure the volume of Schiehallion was to divide the mountain into horizontal slices. For that, he created lines of equal altitude, contour lines. That was the first time that people [had] used contour lines to map a mountain. Where would our maps be without such things today?!*

rathaidean truagh agus cha robh rathaidean-iarainn ann. Chaidh Maskelyne ann air soitheach-mara gu ruige Peairt. Ràinig e a' bheinn air an latha mu dheireadh dhen Ògmhios, seachd ceud deug, seachdad 's a ceithir (1774). Thug e obair do mhuinntir an àite. Thog iad dà ionad-deuchainne air a' bheinn.

Chleachd e na rionnagan airson a bhith a' tomhas fìor-dhìreachdas no 'true vertical'. Chuir e crochadain an sàs agus rinn e tomhas air tarraing na beinne orra don taobh. Às a sin, fhuair e dùmhlachd na beinne. An uair sin thomhais e meud-lìonaidh na beinne airson a cuideam fhaighinn.

Fhuair e taic ann an sin bho fhear-matamataig, Teàrlach Hutton. Chuir Hutton roimhe gur e an dòigh as fheàrr airson tomhas-lìonaidh a dhèanamh air Sìth Chailleann a bhith a' roinneadh na beinne ann an sliseagan còmhnard. Airson sin, chruthaich e loidhnichean co-àirde no *contour lines*. B' e sin a' chiad turas a chleachd daoine loidhnichean co-àirde airson mapa a dhèanamh de bheinn. Càite am biodh ar mapaichean às aonais na leithid an-diugh?!