

## Sveakratern 1919 – Grímsvötn revisit 2019: The legacy of Erik Ygberg and Hakon Wadell

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**Abstract** — *The first recorded visit to Grímsvötn occurred on the 31st of August 1919. Two Swedish geology students, Hakon Wadell and Erik Ygberg, stood on the edge of a hitherto unknown large caldera. This discovery was the most significant finding in the first west-to-east transect across Vatnajökull, starting at Síðujökull on the 27<sup>th</sup> of August. This was an expedition into the unknown, but a principal aim was nevertheless to find the source of the large jökulhlaups on Skeiðarársandur. They named the ice-filled caldera “Svíagígur”. Studies of written sources in the 1930s revealed that this place was indeed Grímsvötn, well known in the 17<sup>th</sup> and 18<sup>th</sup> centuries but the name and location had been forgotten in the 19<sup>th</sup> century. From Svíagígur they continued eastwards, descending down the crevassed Heinabergsjökull, reaching civilization in the morning the 6th. They announced the news that a huge volcano existed under Vatnajökull and this was the source of the jökulhlaups emerging from Skeiðarárjökull. Upon their return to Stockholm, they received a hero’s welcome, but soon it all changed into no one believing them, as prominent figures in Sweden at this time insisted that a volcano can’t be active beneath a glacier! After they finished their studies, both left Sweden very disappointed. Hakon Wadell had a successful geological career in America presenting a doctoral thesis in 1932 from the University of Chicago. Erik Ygberg worked as an international prospector a few years before his bad health, a result of the hardships experienced at the end of the Vatnajökull expedition, forced him back to Sweden, where he had a career at the Swedish Geological Survey. The name Svíagígur has not been used but the two nunataks marking the highest points on Grímsfjall are named in the honour of the two Swedes, Svíahúkur eystri and Svíahnúkur vestri.*

### INTRODUCTION

In the last days of August 2019 it was 100 years since the Grímsvötn volcano was discovered or re-discovered. It may have been visited during the Middle Ages before the full onset of the Little Ice Age in Iceland. The climate change resulted in growth of glaciers making Grímsvötn more inaccessible. The discovery (or re-discovery) of the volcano was made by two geology students, Hakon Wadell and Erik Ygberg from Stockholm Höögskola (later Stockholm University as of 1960). They decided to explore the interior of Vatnajökull by transecting from west to east, a crossing never done before. At the time, several

short expeditions had been made on the edges of the glacier. One of the few north-south crossings had been made by William Lord Watts and his companions in 1875. They travelled from Síðujökull to Kistufell (Figure 1). This was the second attempt as Watts and his group had to turn around halfway the year before. Hakon Wadell and Erik Ygberg wanted to do something never done before and to explore the interior of Vatnajökull. Also, if possible, find the cause of the jökulhlaups periodically emerging from Skeiðarárjökull.

The Glaciological Society of Iceland (JÖRFI) arranged a trip to Grímsfjall where the Grímsvötn volcano with its large caldera (almost 50 km<sup>2</sup>) is located,