

# Weichselian glacial Lake Deposits in the Highlands of North-Western Iceland

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## ABSTRACT

*At the maximum extent of the Weichselian glaciation in North-Western Iceland the ice thickness at the mouth of Dýrafjörður was at least 750 m and at least 600 m in Önundarfjörður. An ice dammed lake was formed between the northern margin of the Dýrafjörður glacier and the bedrock slope of Skagafjall. The remains of the lacustrine deposits is a 7 km long terrace along the south-western edge of Skagafjall. Maximum thickness of the deposits in one locality is about 100 m and total thickness is at least 160 m. The lacustrine sediments are composed of at least five rhythmic beds separated by diamicton. The aggregate thickness of the rhythmites is at least 46 m. It is suggested that the rhythmites are varves and that the lake existed for about 2000 years. A rhyolite tephra layer, at least 10 m thick, rests on the topmost rhythmic bed. Chemical composition indicates that the tephra belongs to the tholeiitic series. Suggested age of the lake deposits is 17000-20000 years B. P.*

## INTRODUCTION

This paper deals with observations made on the peninsula between Dýrafjörður and Önundarfjörður, North-West Iceland (Fig. 1). On the northern side of the mouth of Dýrafjörður is Skagafjall, a highland plateau of 500-720 m altitude, which is a part of Vestfirðir highlands. The plateau is 9 km long and varies in width from about 600 m at Skagi to 2 km between Fjallaskagi and Nesdalsskard.

Along the south-western edge of Skagafjall there are extensive deposits resting on an erosional unconformity. The terrace is about 7 km long and its surface forms an up to 400 m broad rim on the

plateau. The highest level is about 680 m close to Ópoli.

The gradient of the terrace surface is 1:50, but the gradient of the contact between the deposits and the bedrock is 1:80. The bedrock surface on the south-western edge of Skagafjall lies up to 100 m lower than on the north-eastern edge. In the crest at Ópoli there is a little hollow covered by rounded boulders up to 1 m in diameter. Terracettes reaching up to 695 m altitude are situated on the uppermost part of Arnarneshvilft. The surface is covered by sub-rounded boulders up to 1.5 m in diameter. Numerous meltwater channels, cut in bedrock run along the northeastern side of Skagafjall and the highest channels reach to 605 m a. s.l.

## DESCRIPTION OF LITHOLOGIES

The sedimentary successions for three exposures are presented in Fig. 2. The surface of the terrace slope is covered by talus so exposures are very few. The steepness of the terrace slope often makes access to exposure difficult. The section A, at Skörd was measured at meltwater channels. The channels do not reach up to the crest slope so sections are therefore measured in discontinuous exposures. Section B at Skörd was measured about 100 m southeastwards from section A. Because of thick talus cover at the base only the uppermost 30 m were measured. Section C at Ópoli was measured about 1700 m southeastwards from section B. The sections are not complete and it is possible that other beds exist but were not recorded. Geographical location of the sections is shown on fig. 1.

Ingram's (1954) classification is used in the description of bedding thickness. The term rhythmic bed is used to describe laminae of two or three different kinds of composition, texture and color.

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