Late Holocene Palaeoecology at Ketilsstadir in Mýrdalur, South Iceland

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ABSTRACT

The late arrival of man in the landscape, with the potential for dating events through tephrochronology, makes Iceland of considerable interest in the study of the impact of simple agricultural systems upon a marginal environment. A multidisciplinary approach has been adopted for the examination of macrofossils from a bog at Ketilsstadir in Mýrdalur and these are discussed in the light of the geomorphological, historical and tephrochronological record. The natural bog environment of tussock and pool changes after Landnám, with the great influx of inorganic sediment occasioned by grazing pressure on the surrounding uplands. The insect fauna becomes more diverse, reflecting new habitats created by man. The massive fallout of tephra from the ~1357 eruption of Katla had considerable impact on the bog, although the full process of recovery of the biota could not be followed due to the attendant poor preservation.

INTRODUCTION

For those interested in late Holocene changes in the environment in Iceland, Mýrdalur in southern Iceland is a critical region. Lying between Sólheimasandur to the west and Mýrdalssandur to the east (fig. 1) at the most southerly point in the country, it is both the warmest and wettest part of Iceland with an average annual temperature of +5.7°C at Vik (1931—1960) and an average yearly rainfall of 2258mm (Eythórsson & Sigtryggsson, 1971). Any floral or faunal change resulting from a deteriorating climate should therefore be registered in Mýrdalur, a last refuge for any thermophilous elements in the biota. High rainfall also means that peat bogs are extensive; indeed, the place-name Mýrdalur may be translated as ‘mire-dale’. Although most of the bogs have now been drained to provide better pasturage and increase hay yields, preservation of organic remains is good and the many recent ditch sections allow detailed examination of the stratigraphy; as well as effective sampling. In any study of environmental change, close dating and the ability to obtain further samples of the same date are problems. In Mýrdalur, however, an extensive study of the tephra layers from Katla and other volcanoes (Larsen, 1978; Einarssson et al., 1980) provides a firm stratigraphic framework for research, which would be difficult to equal elsewhere. In 1979, therefore, a bog (fig. 2) near the modern farm Ketilsstadir was selected (G.L., P.C.B. & J.R.A. Greig) for an extensive palaeoecological sampling programme related to detailed tephrochronological research. Additional samples were taken in 1980, both to extend the chronological sequence and to provide further contemporaneous samples for comparative study.

LOCATION

Mýrdalur, bounded by sandur to the east and west, the icecap of Mýrdalsjökull to the north and the Atlantic Ocean to the south, appears as an oasis of cultivated land and settlement in a desert of sandur.

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