

Dissertation Improvement Grant: Paleoethnobotanical Study of Economic Change (c. 900-1400AD) at Quoygrew Farm, Orkney

The late 10th through the early 13th century was a period of drastic economic change in the North Atlantic. The period involved a burgeoning population, religious conversion, state formation, and increases in surplus production. By the 14th century, the economy was in decline, even before a series of famines followed by bubonic plague led to drastic drops in population.

This period of economic growth and decline is well studied by historians and economists working with manorial records from England. Debates exist, however, about how the dynamic rise and fall in surplus production and population affected areas and populations less well represented by the historic record. There is a dearth of historic information on how rural farmers were affected by the general economic rise and fall, as well as the population surge and retraction occurring during this period. Scotland and Norway are underrepresented in the historic record, although these areas were linked by trade to well documented English and European centers.

Orkney, at the time an earldom of Norway, was an important source of grain to Northern Norway, Shetland, and Iceland, and exported dried fish and other animal products to supply the urban centers of Europe. Most farms in Orkney exploited a range of resources; fishing, farming, and raising cattle and sheep. Increasing commodity production would have involved integrating these avenues of production, and intensifying use of natural resources of the islands.

The proposed paleoethnobotanical study of Quoygrew, a high-status, economically diverse settlement in the North Atlantic occupied from the Viking age through the post-Medieval period, will provide novel information on economic changes taking place at Quoygrew, which can be used to meet the following objectives: 1) to identify economic activity patterns at the site across time and space; 2) to understand the relationship between fishing, farming, and animal husbandry practices during a period of drastic economic change in the North Atlantic; and 3) to understand how increased production of commodities affected availability of natural resources in an island environment.

Analysis of carbonized macroremains in samples from diverse contexts at Quoygrew, including analyses of exotic seeds, crop production/consumption patterns, weed seed assemblages, and an experimental study of macrobotanical contents of common fuel types, will provide raw data necessary to meet the three objectives. Correlation of the results with other specialist studies ongoing at Quoygrew, and with published paleoethnobotanical data from sites contemporaneous with Quoygrew will put the botanical data obtained through this study in perspective.

Intellectual merit: The proposed study will provide information of interest to anthropologists and historians on how broad economic trends documented in Northern Europe affected site level economic decisions at an undocumented rural farm in Orkney. It will provide archaeologists working in the North Atlantic with paleoethnobotanical data related to economic trends at the site, but also with an integrated picture of economic activity across the site, a rare opportunity made possible by the large number of flotation samples collected at the site, and by the many ongoing specialist studies at Quoygrew. Analysis of charred macroremains enabled by this grant will provide important details on how intensification evidenced by plaggen soil and fish middens affected plant use, and on interactions between animal husbandry, agriculture, and land use.

Broader impact: The Viking/Medieval period in the North Atlantic was a period of increasing international trade in staple goods. How and to what extent local producers make economic decisions in response to economic pressures from outside their communities is a relevant question for today's increasingly global market. As trade networks widen, local economic decisions are increasingly affected by fluctuations in demand for local products based on non-local conditions. Poor local harvests can have far-flung consequences; conversely, foreign competition can have significant effects on producers and consumers at the local level. Producers at Quoygrew may have dealt with similar issues, adjusting economic strategies to meet the new challenges of international trade, and to deal with rapid price fluctuations associated with the fourteenth century "crisis". The proposed paleoethnobotanical study will address questions about what these strategies were and how they may have stressed the available environmental resources of an island ecosystem.