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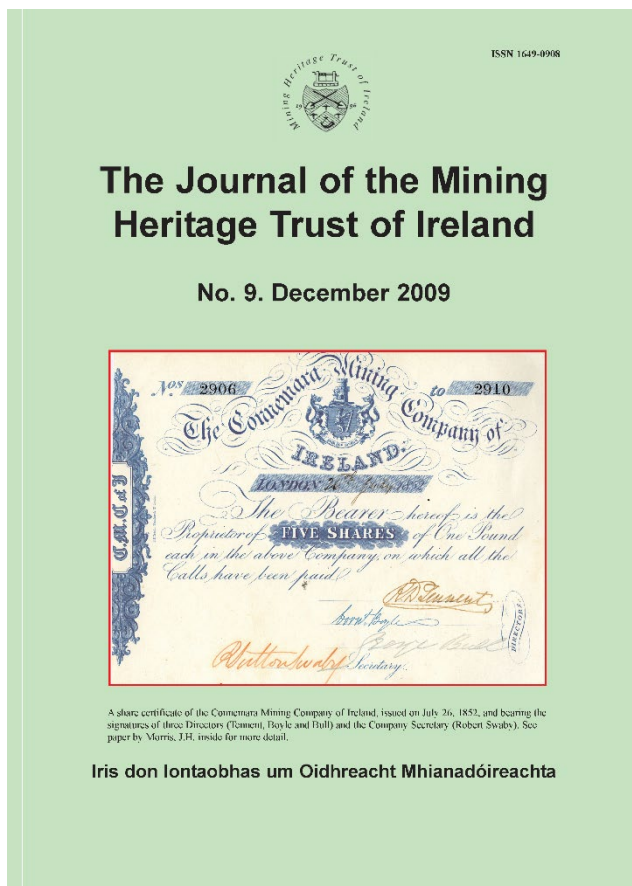
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MESOLITHIC CHERT EXTRACTION AT LOUGH DERRAVARAGH, COUNTY WESTMEATH

by Matthew Parkes and Aimée Little

Abstract: There are a number of well known sites in Northern Ireland where stone was extracted by prehistoric communities for tool making, but a chert extraction site at Knockeyon Hill, at the south east end of Lough Derravaragh in County Westmeath has only recently been recognised. This paper focuses on the physical evidence to date of prehistoric quarrying, and the geological setting of the site. *Journal of the Mining Heritage Trust of Ireland*, 9, 2009, 27-30.

INTRODUCTION

This paper is intended to highlight a prehistoric quarrying operation for a mining heritage audience, who might not otherwise encounter a record of it, solely within the mostly very specialist archaeological literature.

CHERT AS A RESOURCE

Chert is a non crystalline form of silica, closely related to flint, and of the same composition as quartz (silicon dioxide - SiO_2). Whilst quartz is the commonest rock forming mineral on the Earth's crust, chert is less common, but can be locally very abundant in some geological formations. Ordovician volcanic rocks in parts of Ireland sometimes include chert beds. The Ulster White Limestone (=Chalk) of County Antrim has significant flint beds and nodules within it. In situations where volcanic intrusions have locally baked the rocks they were injected into, chert-like porcellanite provided a source of tools for prehistoric people at Tievebullagh in Northern Ireland. The Carboniferous Limestone which covers around half of Ireland's land surface can have abundant chert locally. In the north west of Ireland, in counties Leitrim and Sligo for example there are many limestone formations with thick chert units. These cherts are commonly black or dark grey, sometimes glassy.

In the Midlands, around Lough Derravaragh, are found some distinctive cherts unlike any others known in Ireland. These are informally known as Festoon cherts. As can be seen in Figure 1, they are characterised by thin bands of dark chert in irregular, sometimes concentric loops within a lighter grey brown chert, that appears sometimes more like limestone.

PHYSICAL EVIDENCE ON SITE

As chert is insoluble and the limestone with which it is interbedded is soluble, it is normal to find chert nodules and beds often raised or sticking out of a rock face or surface. The limestone surrounding may have been dissolved

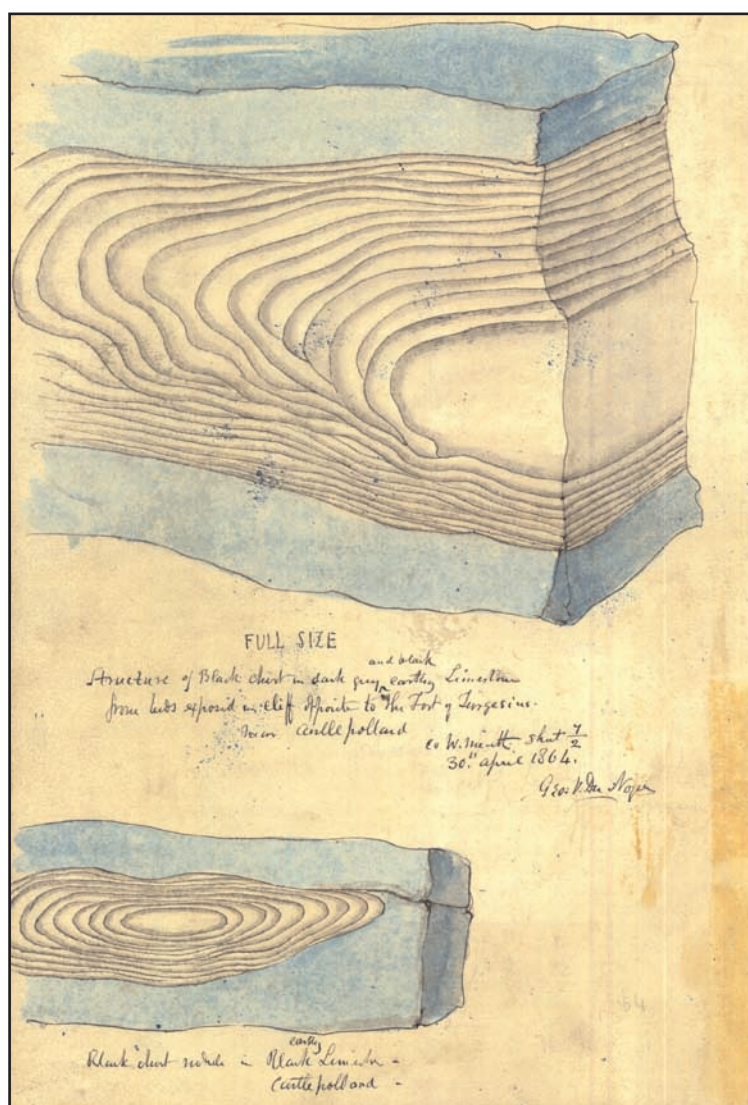


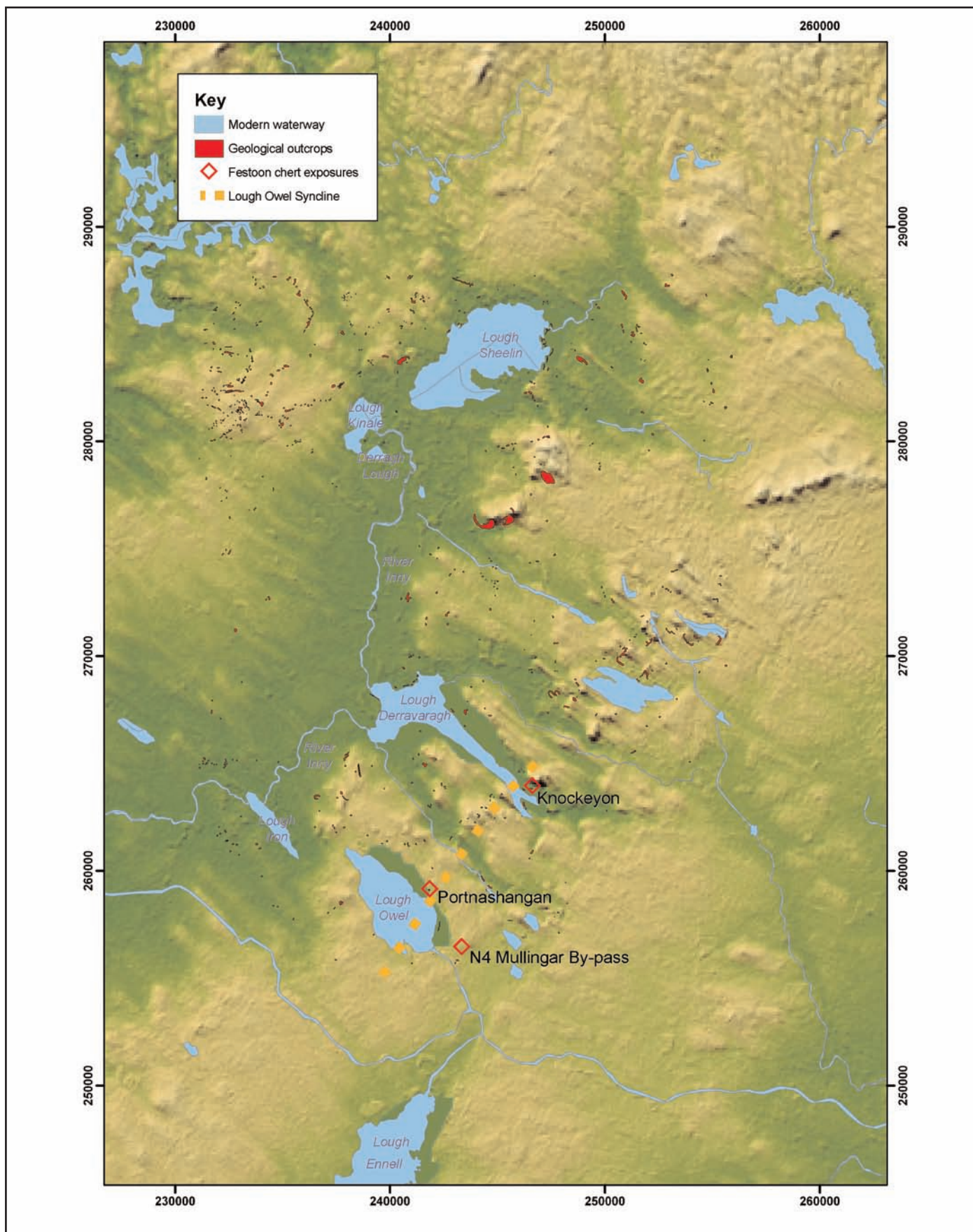
Figure 1. A watercolour illustration of festoon chert by George Vistor Du Noyer, from the reverse of a six inches to the mile geological fieldsheet from the archives of the Geological Survey of Ireland. This is from the second quarter of Sheet 7 of County Westmeath. It was painted on the 30th April 1864.



Figure 2. Above. The most apparent chert bed where extraction has left a trench in the rock face.

Figure 3. Below. The undercut chert beds at the base of the cliff face.





by surface weathering and have recessed by comparison with the insoluble chert. In fact, in some areas such as Leitrim, the chert beds have acted as hydrogeological barriers and they greatly control the gross morphology of cave and karst development.

Figure 4. Map showing the location of festoon chert localities and other geological exposures in the region of Lough Derravaragh, Lough Owel and Lough Sheelin.



Figure 5. Aimée Little examines loose scree material below a face with deep recessed chert beds, including that shown in Figure 2.

On the local rock face scale, at Knockeyon, there are chert beds in the order of 20cm thick that are recessed into the face and are best explained by their having been extracted by hand (Figure 2). The thicker chert beds are the most recessed and would have provided bigger pieces to work with. In addition, the undercut section of 'cliff' (Figure 3) appears to have been recessed entirely by working and removal of chert beds. Its overall morphology, fracture surfaces, weathering features and differential removal of chert beds strongly indicate a worked nature to the face here.

Without an archaeological excavation to fully confirm the nature of deposits at the base of the cliff sections, the finding of a few worked pieces of chert by Aimée Little indicated a late Mesolithic style of working, from surface scree material.

RELATIONSHIP TO ARCHAEOLOGICAL COLLECTIONS

Extensive collections of festoon chert lithic assemblages are held in the National Museum and these have been analysed by Aimée Little as part of a wider PhD project on late Mesolithic assemblages from the Midlands. Those at Lough Derravaragh, are all from a period when drainage works in the 1960s left extensive unvegetated lake bed and foreshore areas for investigation. Frank Mitchell (1970, 1972) and Joseph Raftery collected material from Lough Derravaragh which has lain in the Museum until this recent analysis. The greatest concentration of artefacts were recorded in the Townland of Clonava, at the opposite, north end of the lough, and are associated with what was an island in late Mesolithic times. In this area, no festoon or other chert is found amongst the bedrock exposures around the lake.

CONCLUSIONS

Whilst wider archaeological context and meanings interpreted from this discovery have been published elsewhere (Little, 2009a; O'Sullivan *et al.* 2007; see also Little 2005, 2009b), the

discovery of a rare Mesolithic stone extraction site must rate as one of the earliest examples of quarrying known in Ireland, underlining the importance of economic, extractive geology to the development of society from prehistoric times to the present day.

REFERENCES

- Little, A., 2005. 'Reconstructing the social topography of an Irish Mesolithic lakescape', in Cobb, H.L., Coward, F., Grimshaw, L., and Price, S. (eds), *Investigating prehistoric identities: Case studies from Palaeolithic and Mesolithic Europe*. Oxford: British Archaeological Reports, International Series 1411, 79-94.
- Little, A., 2009a. 'The Island the Hill. Extracting scales of sociability from a Mesolithic chert quarry', in Finlay, N., McCartan, S., Milner, N. and Wickham Jones, C. (eds), *From bann flakes to bushmills; papers in honour of Professor Peter Woodman*. Prehistoric Society Research Paper 1. Oxford: Oxbow Books, 133-142.
- Little, A., 2009b. 'Fishy settlement patterns and their social significance: a case study from the northern Midlands of Ireland', in McCartan, S., Schulting, R., Warren, G., and Woodman, P. (eds), *Mesolithic horizons: papers presented at the Seventh International Conference on the Mesolithic in Europe, Belfast 2005*. Oxford: Oxbow Books, 698-705.
- Mitchell, G.F., 1970. 'Some chronological implications of the Irish Mesolithic', *Ulster Journal of Archaeology* 33, 3-14.
- Mitchell, G.F., 1972. 'Some ultimate Larnian sites at Lake Derravaragh, Co. Westmeath', *Journal of the Royal Society of Antiquaries of Ireland* 102, 160-173.
- O'Sullivan, A, Little, A. and Parkes, M. 2007. The power of stone. *Archaeology Ireland* 21(3), 36-39.