



IQUA NEWSLETTER

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Edited by Peter Wilson

INTRODUCTION

As my four year term of office as IQUA Newsletter Editor ends at the AGM in March 1996, this is my final fling. I'd like to take this opportunity of thanking all those who have assisted me with my editorial duties during the last four years - especially those who submitted material. This has undoubtedly helped the Newsletter to prosper and flourish.

In this issue are details of the forthcoming Annual Symposium, entitled **The Quaternary and Industrial Development**. This promises to continue the tradition, established over several years now, of demonstrating the practical or applied side of Quaternary research. The Committee look forward to seeing you there. Also contained within these pages IQUA Chairperson, Fraser Mitchell, presents details of access points to Quaternary information and data via the Internet. This is something that is bound to impact more and more on many of us, so Fraser has provided a valuable introduction to sources and sites.

Peter Wilson (University of Ulster).

REPORTS OF RECENT MEETINGS

IQUA One Day Field Trip - Fluvial Geomorphology of the upper River Liffey catchment, 17th June 1995

Rain was threatening as we assembled in Blessington but this was dispelled by the arrival of Peter Glanville fresh off a flight from Greece still wearing his thongs and sporting a dark tan. We proceeded directly to Ballysmuttan Bridge where we examined a number of river terrace and floodplain sections. Their interpretation was greatly facilitated by the detailed handout supplied by Peter. Issues of river responses to changes in catchment characteristics, such as vegetation, hydrology, sediment yield

and climate were discussed in detail. Three distinct periods of terrace and floodplain development were examined in the context of changes in the catchment characteristics, with particular attention being given to the origin and age of banded peat layers of the modern floodplain in relation to course change, flood events, climatic change and possible peat erosion. Evidence for the extent of Lateglacial Lake Blessington was also examined.

The second stop was further up stream at the Coronation Plantation. A great deal of detail for the terrace sequences was available following extensive mechanical excavations at the site (now in-filled). The development of Lateglacial fluvial outwash deposits were traced over several sites. More recent channel changes and the development of gravel bars were identified on the ground with reference to the early six inch OS maps.

Those participants who were returning to Dublin then adjourned to Johnny Fox's to continue the discussion and contemplate the evolution of the river that is synonymous with the liquid refreshment that they imbibed.

Peter is to be congratulated on organising such a stimulating trip. We wish him well with the arduous task of writing up his thesis.

This was the first one day field trip organised by IQUA following a proposal made at the last AGM. The success of this trip should encourage other members to follow Peter's lead. Any suggestions of locations or leaders would be welcomed by the Committee.

Fraser Mitchell (School of Botany, TCD).

IQUA Annual Field Trip - North-west Donegal, 29th September-1st October 1995

This year's trip, led by Peter Wilson of the University of Ulster, was based in Dunfanaghy. From this location an intrepid band of 20 souls, composed of geographers, geologists, archaeologists, and assorted Quaternary enthusiasts braved the elements to view a number of interesting sites both in the bleak upland interior and along the windswept coast. As is customary on IQUA trips the weather posed its usual challenge to those not amphibious and/or less than 15 stones in weight and the leader's opening remark that "it will only rain once today" proved remarkably prophetic!

From a Quaternary perspective, north Donegal is characterised by its Holocene sand dune systems which rank amongst the most spectacular in Ireland. It was appropriate therefore that the trip began by looking closely at two of these systems in the vicinity of Horn Head. At Pollaguill, a quite

detailed palaeoenvironmental reconstruction was possible as a result of carbon dating of buried peats and podzolic soils. This suggested that major phases of sand deposition appeared to have occurred before 2.8 ka BP and again after 715 BP, though some problems reconciling dates from nearby sand source locations were evident. On the larger Tramore-Anloge Hill system there was evidence of sand deposition in the Early Medieval period and within the last century land management practices have played an important role in destabilising these dunes.

After lunch the massive rampart-like accumulation of quartzite debris at the foot of Muckish was examined. Charlesworth's origin for this feature as a lateral moraine was rejected due to the absence of pelite clasts from upvalley of the feature, and Peter Wilson's preferred interpretation was that of a fossil rock glacier. As with all good IQUA trips there was no shortage of applicants willing to play the role of 'devil's advocate' and a good discussion occurred. Those in need of further convincing were required to climb both this and an equally spectacular and similar feature on the slopes of Errigal later in the afternoon. Clearly the terminology used is in need of standardisation - at least two models for rock glacier processes seem to be in circulation, one of which approximates the processes involved in the formation of a protalus-like feature.

Donegal is particularly rich in Neolithic monuments, containing 10% of Ireland's megalithic tombs. A perspective on this archaeological heritage was provided by Eamon Cody who described the portal tomb so prominently positioned on the western side of Horn Head, and also the "ceide-like" pre-bog fields and promontory fort at Bloody Foreland. At Tramore-Anloge Hill a striking souterrain within the dunes was explored by the more daring members of the party. The position of this structure hinted at the relatively recent expansion of dune sands in this area.

Day two began as day one had - wet! But in addition to the rain a force 9 storm made the walking a bit tricky for the aerodynamically unsound. An examination of some head deposits close to Gortahork started the day as the group headed west for Bloody Foreland. Along the way, a description of Ireland's largest dune at Ballyness was vividly brought to life as sand could be seen airborne in conditions of driving rain over 3 km away. The meaning of "high-energy wave environment" was fairly well understood as the group passed over the storm beach near Altnapeaste to view the coastal sections seemingly ignored by Charlesworth in his travels. Convincing evidence that the Donegal ice pushed north and west beyond the present coast appeared to exist in the diamicts that extend for 3 km along the northern margin of the Bloody Foreland ridge. Some future light may be thrown on the deposits though from the finding of some organic material incorporated into the sediments by Peter Glanville. On the way through the straggling dispersed settlements of Gweedore, the boulder accumulation

The Quaternary and Risk Assessment for Petrochemical Sites.

Gravel Aquifer Investigations and Development in the Glen Swilly Alluvial Plain.

The Work of the Geological Survey of Ireland in Quaternary Mapping and Databases.

There will be an open forum at the end of the symposium in which the needs of industry in relation to the availability of data on the Quaternary will be addressed.

NEW POSTGRADUATE STUDENTS IN QUATERNARY RESEARCH

Trinity College, Dublin

Mark Wills - Impact of past and future changes in ambient CO₂ concentration on the ecophysiology of *Salix cinerea*.

Edwina Cole - The palaeoecology of Co. Wicklow with special reference to the past millennium.

University College, Dublin

Colm Jordan - Quaternary geomorphology of Co. Mayo.

RECENT PUBLICATIONS ON QUATERNARY RESEARCH IN IRELAND

COXON, P. & WALDREN, S. 1995. The floristic record of Ireland's Pleistocene temperate stages. In: Preece, R.C. (Ed.), *Island Britain: a Quaternary perspective*. Geological Society Special Publication No. 96, 243-267.

CROKE, J.C. 1995. Floodplain changes in the Glenmalure valley, south-east Leinster. *Irish Geography* 27, 122-134.

DELANEY, C. & DEVOY, R. 1995. Evidence from sites in western Ireland of late Holocene changes in coastal environments. *Marine Geology* 124, 273-287.

DEVOY, R.J. 1995. Deglaciation, earth crustal behaviour and sea-level changes in the determination of insularity: a perspective from Ireland. In: Preece, R.C. (Ed.), *Island Britain: a Quaternary perspective*. Geological Society Special Publication No. 96, 181-208.

FARRELL, E.R., COXON, P., DOFF, D.H. & PRIED'HOMME, L. 1995. The genesis of the brown boulder clay of Dublin. *Quarterly Journal of Engineering Geology* 28, 143-152.

HALL, V.A., McVICKER, S.J. & PILCHER, J. R. 1994. Tephra-linked landscape history around 2310 BC of some sites in counties Antrim and Down. *Biology and Environment: Proceedings of the Royal Irish Academy* 94B, 245-253.

McCABE, A.M. & O'COFAIGH, C. 1995. Late Pleistocene morainal bank facies at Greystones, eastern Ireland: an example of sedimentation during ice marginal re-equilibration in an isostatically depressed basin. *Sedimentology* 42, 647-663.

McELWAIN, J., MITCHELL, F.J.G. & JONES, M.B. 1995. Relationship of stomatal density and index of *Salix cinerea* to atmospheric carbon dioxide concentrations in the Holocene. *The Holocene* 5, 216-219.

MITCHELL, F.J.G. 1995. The role of climate and man in the development of the Irish landscape. In: McMillan, D.D.G., O'Rourke, C., Fry, D.J. & McMillan, N.D. (Eds.), *Science, green issues and the environment: Ireland and the global crisis*. Tyndall Books, Kilkenny.

PILCHER, J.R., BAILLIE, M.G.L., BROWN, D.M., McCORMAC, F.G., MacSWEENEY, P.B. & McLAWRENCE, A.S. 1995. Dendrochronology of subfossil pine in the north of Ireland. *Journal of Ecology* 83, 665-671.

PILCHER, J.R., HALL, V.A. & McCORMAC, F.G. 1995. Dates of Holocene Icelandic tephra eruptions from tephra layers in Irish peats. *The Holocene* 5, 103-110.

SELLIER, D. & WILSON, P. 1994. Presence d'un etage periglaciaire a sols structures actifs au sommet des montagnes quartzitiques du Donegal (Irlande). L'exemple du Muckish. *Environnements Periglaciaires* 1, 71-86.

WILSON, P. (Ed.). 1995. *North-west Donegal*. Field Guide No. 19, Irish Association for Quaternary Studies.

WILSON, P. & SELLIER, D. 1995. Active patterned ground and cryoturbation on Muckish Mountain, Co. Donegal, Ireland. *Permafrost and Periglacial Processes* 6, 15-25.

SURFING THE NET

With all the recent media hype on the Internet and Cyperspace, I thought it appropriate to provide some access points that may be of interest to IQUA members. The Committee is currently trying to establish an e-mail bulletin board for the use of members but the associated bureaucracy is slowing progress considerably. I realise that a large proportion of IQUA members do not have access to computer networks and you can be assured that the traditional newsletter will still be maintained.

I have no intention of explaining how to access the Internet as this varies from site to site. Below I list a variety of locations where you may wish to browse, accumulate information or contribute. This is just the tip of the iceberg, you are invited to make similar contributions of relevant sites in future newsletters.

BULLETIN BOARDS

These consist of automated mailing lists. Any posted message will automatically be sent to everyone on the list. To get on the list you have to SUBSCRIBE. You will then be sent information on how to post messages and end your subscription. Bulletin Boards are generally used for making announcements of conferences, job vacancies, seeking information about field sites or published material. There are an enormous number of Bulletin Boards around but I find these two quite useful:

POLPAL-L

This is basically a palynology (palaeoflower arrangers) bulletin board. To subscribe send the following one line e-mail message to LISTSERV@UOGUELPH.CA

SUBSCRIBE POLPAL-L Firstname Lastname

You should substitute your name for "Firstname Lastname".

QUATERNARY

As the name suggests, this has a wider remit than POLPAL-L.

To subscribe send the following one line e-mail message to LISTSERV@MORGAN.UCS.MUN.CA

SUBSCRIBE QUATERNARY Firstname Lastname

You should substitute your name for "Firstname Lastname".

WORLD WIDE WEB

The World Wide Web (WWW) gives you access to countless computer systems across the globe. Many fruitless hours can be whiled away snooping around remote and irrelevant hosts. Access to a host is made

through a Home Page which gives you information on what is available and how to access it. I list some useful addresses (URLs) below:

Past Global Changes (PAGES)

<http://www.ngdc.noaa.gov/paleo/pages.html>

European Network for Research in Global Change (ENRICH)

<http://www.enrich.hi.is/>

North west European tephra database

<http://www.geo.ed.ac.uk/tephra/tbasehom.html>

National Geophysical Data Centre, Boulder Colorado

<http://www.ngdc.noaa.gov/ngdc.html>

This one has got data on everything from ice cores to tree rings to pollen sites and supporting software such as TILIA.

Cambridge University Plant Sciences Department

<http://www-palecol.plantsci.cam.ac.uk/>

Palaeoecological data here maintained by Keith Bennett includes a definitive check list of pollen taxa names, some of which are supported by photographic images which you can down load onto your own system. You may also find the lists of recent publications useful.

FILE TRANSFER PROTOCOL

You can also import data files and programs to your system using File Transfer Protocol (FTP). You may find this quicker and easier than using WWW. Three useful locations are:

1. National Geophysical Data Centre, Boulder Colorado (see www URL above)

<ftp.ngdc.noaa.gov>

Path: /palaeo or /paleo/pollen

2. The INQUA file boutique maintained by Lou Maher at Wisconsin

<ftp.geology.wisc.edu>

Path: /pub/inqua

3. The CALIB ¹⁴C Calibration Programs at the University of Washington

<ftp.u.washington.edu>

Path: /public/calib

To access the host site use the command **ftp** followed by the address. Use the logon name **anonymous** and your e-mail address as the password when prompted. When into the system use the **CD** command to get into the

relevant sub-directory using the appropriate path. A full list of commands appears under HELP. You must execute the command **BINARY** before downloading files.

Happy hunting!

Fraser Mitchell (School of Botany, TCD).
