In 2014 members of the QRA submitted nominations for key sites and localities that have been fundamental to our understanding of the Quaternary landscape of Britain. These were collated into an excellent booklet, freely available on the QRA website (Silva and Phillips, 2015). To encourage ongoing engagement with both this excellent publication and the important sites contained within it, I propose highlighting one of these sites from time to time in the QN. In this edition, because of the nice link with Herb Wright helping with a coring expedition in 1979, we put the spotlight on Diss Mere. Please suggest future sites to highlight, and if you have a nice photo, send that to the editor too.

Here is summary from the entry for Diss Mere (Silva and Phillip, 2015, p28), a site nominated by John Birks.

- The first lowland lake in Britain that was studied using a multi-proxy approach using sediment structure and composition, geochemistry, pigments, pollen and diatoms.
- Contains laminated mid-Holocene sediments that demonstrate the ‘elm decline’ occurring over 5-8 years owing to a pathogen aided by prehistoric human activity (Peglar and Birks, 1993).
- Contamination from historic land-use observed from the mercury content of the sediments (Yang, 2010).

References


Yang, H. (2010). Historical mercury contamination in sediments and catchment soils of Diss Mere, UK. Environmental Pollution, 158, 2504-2510.

OBITUARY

HERBERT E WRIGHT JR (1917-2015)

Quaternary science has lost a giant, Herbert ("Herb") Wright. He was one of the world’s most distinguished and active Quaternary scientists. He was a great scientific polymath and a huge intellect within the very broad field of Quaternary research. He made major contributions in many different research areas. These include arid-region geomorphology and landscape history, glacial geology and geomorphology, geo-archaeology, palaeoecology, vegetational and environmental history, palaeolimnology, fire history, landscape management and conservation, peatland ecology, global palaeoclimatology, and field-craft and sediment coring. He has left a rich legacy of outstanding publications, monographs, and edited books, and a very large number of former students and colleagues, many of whom are now leading scholars and are making their own outstanding contributions to many different aspects of Quaternary science.

Herb influenced a vast range of Quaternary science during the twentieth century. He started in the 1940s with geomorphology and landscape history, which naturally progressed to glacial geology and climate history. The study of these primary drivers led him to question their effects on vegetation and environmental history, which resulted in him describing the timing and mechanisms of climate-driven vegetational shifts in North America during the last 15,000 years, including the dynamic role of natural fire in northern forests. He was able to apply this knowledge to wilderness conservation and management. His never-ending curiosity expanded to cover many other aspects of palaeoecology, including lake ontogeny and the history and development of the enormous patterned peatlands of the Northern Hemisphere. Much of his work concentrated on the complex glacial landscape, vegetational, and climate history of Minnesota, but his broader vision led him to a synthesis of global palaeoclimatology. Beyond Minnesota, Wright studied a wide range of research questions elsewhere in North America, and in the Near East, Europe, Asia, Latin America, and Antarctica. His multi-disciplinary approach and great powers of synthesis uncovered how Earth’s landscapes and biota have been transformed at a range of scales in the past, due to complex interactions between climate, landform, flora, fauna, and human activity.

Herb Wright, who died peacefully after a long illness on 12 November 2015 in St Paul, Minnesota, was born in Malden, Massachusetts on 13 September 1917. He studied at Harvard University under Kirk Bryan Sr. and completed his PhD on arid-region geomorphology and landscape history in New Mexico whilst training to be a B-17 Flying Fortress pilot during 1942–3. He flew many missions over Europe in 1944 and early 1945. In late 1945 he was appointed a teaching assistant at Brown University, Providence (Rhode Island) but moved in 1947 to the Department of Geology (now Department of Earth Sciences), University of Minnesota. He remained there for over 60 years and was appointed Regents’ Professor of Geology, Ecology, and Botany in 1974. In 1958 he established a pollen laboratory that, in 1963, became part of the Limnological Research Center (LRC) of which he was appointed the director. The LRC quickly became the leading North American centre and a powerhouse for palaeoecological, palaeolimnological, and neolimnological research.

Herb always realised the importance of scientific networking, communication, and international collaboration, so a key policy of the LRC was to attract a large number of overseas visitors who provided knowledge and inspiration, cross-fertilisation of ideas, and multi-disciplinary expertise to the group. Between 1959 and 1990, they came from at least 18 countries. Herb supervised more than 80 graduate students, mentored countless others from USA and around the world, and influenced many people’s careers. Very many are now leading scholars and making important contributions to diverse areas of Quaternary research. Herb published over 250 papers or monographs and edited 15 influential books and six special issues of journals on a wide range of topics within Quaternary science (selected publications are listed below). For over 50 years, Herb, joyously supported by his wife Rhea, held Wednesday-evening seminars on Quaternary glacial geology, palaeoecology, palaeoclimatology, palaeolimnology, or neolimnology in the Wright home in St Anthony Park, St Paul.

The major underlying theme of Herb’s scientific activities was the reconstruction the late-Quaternary landscape history at various spatial and temporal scales to explain the functioning of our present landscapes and ecosystems and how they might respond to climate changes and human impact in the future. Thus he synthesised the climatic and vegetation history of Minnesota and adjacent states using a range of palaeoecological techniques. He made major contributions to the understanding of the complex glacial history of the Great Lakes region. He showed how the landscape controlled the origin of the spectacular surface patterns of the extensive peatlands not only in northern Minnesota, but also in Labrador and central Sweden. With Miron “Bud” Heiniselman and others he unravelled the key role of fire in the dynamics of coniferous forests which allowed them to mount a successful but bitter campaign to save an extensive area of unlogged old-growth forest in northernmost Minnesota. Realising the importance of climate changes in controlling landscape and biotic history, Herb co-directed the multi-institutional Co-operative Holocene Mapping Project (COHMAP) with John Kutzbach, Tom Webb, Pat Bartlein, and others in the late 1970s and early 1980s in which past climates were simulated by a global circulation model at 3000 year intervals for the last 18,000 years. Most importantly, the simulation results were validated against actual palaeoclimatic data. COHMAP resulted in a major paradigm shift in Holocene climate research. Another of his major contributions was the development of the subject of geo-archaeology, starting in Lebanon and proceeding to Iraq, Iran, Kurdistan, and Turkey, and subsequently Greece, Labrador, Peru, and Bolivia, showing how the landscape and environment influenced human development. For example, he demonstrated the fundamental role of environmental determinism in early plant domestication in the Near East.

Herb was one of the first people in America to realise that understanding environmental history required continuous data archives back in time, the most informative being lake sediments. A major but often unrealised contribution was his perfection of techniques for coring lake-sediments which has widely facilitated Quaternary research today, particularly palaeoecology and lake history. He had a
passion for field-work and sediment coring and seemed to enjoy it most under difficult or near-impossible winter conditions in Minnesota and the Dakotas, in wilderness areas such as Labrador, Alaska, and the Yukon, and in physically demanding regions such as the Peruvian and Bolivian Andes and the Siberian Altai. His last coring of lake sediments was in the Pirin Mountains in Bulgaria just before his 90th birthday. Many of his field expeditions turned into adventures or, not infrequently, misadventures. Accounts of some of these can be read at http://www.ecrg.uib.no/SedimentJourneys.htm. As Henry Lamb, Jim Almendinger, Dan Engstrom, and others have noted, Herb had an eccentric and inexplicable disregard for comfort, safety, and functioning equipment, despite his enthusiasm for field-work in remote areas and under difficult conditions.

Besides Herb’s major research activities in the Americas and Near East, he had very strong connections with Europe and its Quaternary scientists. In the early 1950s he travelled widely in Europe to meet many Quaternary scientists such as Carl Troll, Julius Büdel, Johannes Iversen, Knut Fægri, Tage Nilsson, Franz Firbas, and Harry Godwin. As a pilot in the 95th Bombardment Group of the Army Air Corps, he was stationed at RAF Horham near Bury St Edmonds in 1944 and 1945. In his spare time he explored on bicycle classical Quaternary sites in East Anglia including Hoxne. He also visited Diss Mere and pondered about its origin, a lake that he revisited in 1979 to help retrieve over 17 m of sediment cores.

Herb populated the pollen laboratory in Minneapolis in 1958 by importing Magnus Fries from Sweden and a Leitz Labolux microscope from Germany. He attracted a cohort of very talented graduate students including Dick Baker, Bob Bright, Ed Cushing, Jock McAndrews, Lou Maher, Tom Shay, Tom Winter, and others. Herb was forced to buy a second Labolux microscope so that each of his students could count pollen in turn for a few hours in the day or night! These microscopes were in use 24 hours a day and helped to produce many outstanding pollen records! After Magnus Fries, many other leading European palaeoecologists came to work with Herb and his students in the 1960s and 1970s including Saskia (“Kiek”) Jelgersma, Willem van Zeist, Roel Janssen (all from The Netherlands), Bill Watts (Ireland), Maj-Britt Florin (Sweden), Krystyna Wasylikowa and Kazimierz Wasylik (Poland), Johanna and Eberhard Grüger (Germany), Elizabeth Haworth and Hilary and John Birks (all UK). In the early 1980s Rick Battarbee (UK), Svante Björck and Ingemar Renberg (both Sweden), and Jan Janssens (Belgium) worked at the LRC. Short-term European visitors included Kevin Edwards and RG West (both UK), Jan Mangerud (Norway), Dragica Matulova (Czech Republic), and Brigitta Ammann (Switzerland). Ivanka (“Vanja”) Stefanova (Bulgaria) was a long-term visitor to the LRC and looked after Herb in his later years. Flowing in the opposite direction, several of Herb’s students spent a year in European laboratories such as Copenhagen, Cambridge, Lund, Uppsala, Groningen, and Dublin. This strong European flavour was enhanced by graduate students coming to do MScs or PhDs supervised by Herb from Ireland (Alan Craig, Henry Lamb, Joan Lennon, Norman Allott), Sweden (Kerstin Griffin, Liz Almgren, Karin Ahlberg), Finland (Liisa Koivio), and Belgium (Dirk Verschuren). Herb’s European connections also involved much fieldwork and sediment coring in East Anglia (not only Diss Mere but also Hockham Mere and Sea Mere), northern England, Scotland, Ireland, Norway, Sweden, Czech Republic, Switzerland, Bulgaria, and the Azores as well as in the Georgian Caucasus and the Siberian Altai. On the occasion of his 90th birthday, Herb described himself in 2007 as an honorary European!

Herb’s distinguished career was recognised by many awards and honours, including honorary doctorates from Trinity College Dublin and the Universities of Lund and Minnesota, membership of the National Academy of Sciences, a Distinguished Career Award from the American Quaternary Association, and a Lifetime Achievement Award from the International Paleolimnology Association.

We had the good fortune to work with Herb for over 40 years. He had a major influence on our careers, as he did for so many colleagues, by his example and by inspiring loyalty and friendship. He was soft-spoken, economical in words and deeds, and extremely modest. He was always very supportive of our endeavours, deeply caring, and a constant source of encouragement and sound advice. We and many others owe very much to him.

Herb’s extensive scientific writings show a similar style of simplicity, conciseness, and elegance. His prowess at editing and synthesising data and ideas is legendary. His legacy to Quaternary science is immense, not only through his research, publications, past students, and mentoring, but also as the role model he provided for all who worked with him. He accomplished so much by developing in a quiet and modest way the stimulating environment of the LRC, inspiring exciting and novel multi-disciplinary research, and encouraging extensive international collaboration.

Selected Publications (in chronological order)


Quaternary Newsletter Vol. 139 June 2016
NEW RESEARCHERS AWARD SCHEME

REINTERPRETING THE PATTERN AND STYLE OF LAST CORDILLERAN ICE SHEET RETREAT ON THE THOMPSON PLATEAU, BC, CANADA.

Introduction and Rationale
The last Cordilleran Ice Sheet (CIS) over British Columbia (BC) lacks detailed study compared with coeval ice sheets. The prevailing conceptual model for the deglaciation of the southern interior plateau is of stagnation and downwasting (Fulton, 1991). This model has been used to explain the apparent lack of recessional moraines and accounts for the presence of glacial lakes in the Nicola and Thompson valleys as dammed by lobes of dead ice in valley bottoms where ice was thickest (Fulton, 1969). This conceptual model is contrary to contemporary ice sheets, where retreat was generally more active and punctuated by readvances. Recent studies have reconstructed systematic retreat of the CIS on the southern Fraser Plateau on the basis of meltwater landforms (Margold et al., 2013; Perkins and Brennand, 2015) and moraines (Perkins, 2015). This project is a reinvestigation of the deglacial landforms of the Nicola and Thompson basins, and tests competing stagnation and systematic retreat hypotheses at the key site in the development of the former (Fulton, 1967).

Preliminary Results
A key finding of this project is the identification of ice-flow-transverse ridges around the northern and eastern parts of the Nicola Basin, particularly around Chapperon Lake (Figure 1A). Sediment exposures within some of these ridges reveal stacked till, glaciofluvial gravel, and folded and faulted laminated silt and clay, implying glaciotectonism. On this basis, the ridges are interpreted as de Geer moraines, implying active or staged retreat within the lake basin (e.g. Lindén and Möller, 2005). The moraines trend northeast to southwest, recording recession to the northwest. An exposure of interbedded grounding-line diamicton and laminated silt and clay also implies an active ice margin oscillating within the lake basin. Active recession is further implied by two separate grounding line deposits, to the north and west of the Nicola Basin (Figure 1A), identified on the basis of glaciotectonised gravel and diamicton overlying and overlain by lake sediment, which imply limited readvances into the ice-dammed lake.

On the basis of the elevations of deltas and shorelines, and the extent of lake bottom sediment, five lake stages for glacial Lake Nicola (gLN) have been reconstructed in the Nicola Basin (Figure 1), adding one (Chapperon stage; Figure 1B) to...