

## Editorial

Interaction between IGBP-PAGES and WCRP-CLIVAR is driven by the overlapping interests of the past climate reconstruction and future climate prediction research communities. Paleoscientists rely on modern instrumental records in order to calibrate and validate their proxy climate reconstructions while climate prediction relies on the information about decadal and century scale variability which long, high resolution, multi-proxy paleorecords provide.

Following on from the initial success of the first PAGES/CLIVAR Intersection meeting (PAGES Report, 1996), and riding the momentum from the CLIVAR international meeting (WCRP Report 108), a series of PAGES/CLIVAR workshops, open meetings and short courses, with equal representation from the paleoclimate and climate dynamics communities, is underway. The most recent workshop, held in Venice, Italy from Nov. 8–12, 1999 concentrated on the theme “Climate of the Last Millennium.” Many of the results and recommendations which grew out of this meeting are collected here in a special newsletter, produced as a joint effort and sent to the entire PAGES and CLIVAR communities.

In the first piece in this newsletter “Climate Paradigms for the Last Millennium” Ray Bradley provides a scientific editorial along the theme of the Venice workshop itself. This is followed by several scientific highlights authored primarily by participants in the Venice workshops on the topics of:

- ENSO Variability in the Pacific (Cane *et al.*)
- Abrupt Climate Change (Alverson and Oldfield)
- Regional Hydrological Change (Cook and Evans, Trenberth)

## Climate Paradigms for the Last Millennium

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Conventional wisdom has it that the climate of the last millennium followed a simple sequence – a “Medieval Warm Epoch” (MWE), a “Little Ice Age” (LIA) and then globally extensive warming. This view has its roots in the early work of H.H. Lamb (1963, 1965) but more recent research has reassessed this paradigm. Lamb defined the MWE as a period of unusual warmth in the 11<sup>th</sup>–13<sup>th</sup> centuries A.D., based almost exclusively on evidence from western Europe and the North Atlantic region. His studies pre-dated modern quantitative paleoclimatology so the values of temperature change that he attributed to this period are essentially anecdotal, and based largely on his own estimates and personal perspective. In revisiting the concept of a MWE, Hughes and Diaz (1996) reviewed a wide range of paleoclimatic data, much of it reported since Lamb’s classic work (Lamb 1965). They concluded that “*it is impossible at present to conclude from the evidence gathered here that there is anything more significant than the fact that in some areas of the globe, for some part of the*

- North Atlantic Variability (Jansen and Koç, Sarachik and Alverson)

These same four themes are encapsulated in an series of PAGES/CLIVAR meetings and short courses, planned over the coming years, which will build on the recommendations agreed on at the Venice workshop, and highlighted in this newsletter. The entire series will provide continuity and momentum to this interdisciplinary effort, and culminate in an open synthesis meeting and publication.

- *Early 2001, TBA : ENSO and Monsoon Variability in the Pacific*
- *\*Nov. 10–15, 2001, “Il Ciocco”, Italy: Abrupt Climate Change Dynamics*
- *2002, USA, TBA: Regional Hydrological Variability*
- *\*Oct. 11–16, 2003, Granada, Spain: North Atlantic Variability*
- *2004, Switzerland, TBA: PAGES/CLIVAR Synthesis Meeting*

\* co-sponsored by EURESCO

The second and third part of this newsletter cover items related to PAGES and CLIVAR individually in order to provide the respective communities with information of their own programs. This newsletter concludes with a (joint) conference calendar covering the most important meetings in the near future. More comprehensive meeting information can be obtained through our websites.

Please note that the references in this issue are only available in an abbreviated form to save space.

**K. Alverson and A. Villwock**

*year, relatively warm conditions may have prevailed.” Thus, they found no clear support for there having been a globally extensive warm epoch in the MWE or indeed within a longer interval stretching from the 9<sup>th</sup> to the early 15<sup>th</sup> century. Certainly, there is no evidence that global or hemispheric mean temperatures were higher during the MWE than in the 20<sup>th</sup> century (Crowley and Lowery, 2000) yet this notion has somehow become entrenched as common lore. This is unfortunate as it does not help our understanding of natural climate variability and its causes. Perhaps of greater significance is that there were significant precipitation anomalies during the period of the “MWE”; in particular, many areas experienced protracted drought episodes and these were far beyond the range of anything recorded within the period of instrumental records. For example, Stine (1994) describes compelling evidence that prolonged drought affected many parts of the western United States (especially eastern California and the western Great Basin) from (at least) A.D.910 to ~A.D.1110, and from (at least) A.D.1210 to ~A.D.1350. There is also strong evidence that prolonged drought affected Patagonia during the earlier of these episodes. This led Stine to argue that a better term for the overall period was the “Medieval Climatic Anomaly” (MCA) which removes the emphasis on temperature as its defining characteristic (Stine, 1998). The widespread nature of hydrological anomalies*