NEWS IN BRIEF

BAUXITES AND AEOLIAN DUST

■ A novel concept to explain metal enrichment in bauxite comes from a recent study of a weathering profile in Western Australia by G.H. Brimhall and co-workers (University of California at Berkeley and Alcoa Australia). Using a simple mass-balance approach, they show that the increase of Al to ore grade is due to the accumulation of aeolian dust derived elsewhere from chemically mature soils (*Nature*, 30 June 1988). This extends earlier suggestions by Brimhall and others of shallow supergene enrichment of Cu and Ni in laterites and of Al, Fe and Pb in podzols. The new work challenges the standard view of bauxite genesis by in-site residual enrichments and suggests that patterns of regional dust movement may reveal genetic links between laterites, bauxites, heavy mineral beach sands and clay-rich marine sediments.

BIOSTRATIGRAPHY REJECTED FOR PLEISTOCENE SUBDIVISIONS

■ The INQUA Commission on Stratigraphy, which also functions as the IUGS Subcommission on Quaternary Stratigraphy, recently approved the following statement from its Working Group on Major Subdivision of the Pleistocene: "... as evolutionary biostratigraphy is not able to provide boundaries that are as globally applicable and time-parallel as are possible by other means, the lower-middle Pleistocene boundary should be taken provisionally at the Matuyama-Brunhes paleomagnetic reversal, and the middle-upper Pleistocene boundary at the base of deep-sea oxygen isotope stage 5." The lower, middle and upper units so defined are recommended as informal subseries of the Pleistocene. The INQUA Working Group has now been replaced by a Subcommission, chaired by G.M. Richmond (USGS, Denver). Its task is to establish reference sections of the boundaries and their relationship to different biostratigraphic and other criteria that can be used to extend them to other parts of the world.

GRANTS FOR CONGRESS DECIDED

■ Grants to attend the 28th International Geological Congress to be held next year in Washington, D.C. have been awarded to 74 geoscientists from 48 countries classed as developing, or where economic conditions such as currency exchange restrictions make foreign travel virtually impos-

sible. Nearly 400 applications were received from about 50 countries eligible for funding under the Geohost Program, which covers lodging, registration and a field trip or short course, or for travel grants. Of these the largest numbers came, not surprisingly, from the larger geoscience communities: India (95), China (72), Brazil (30), Poland (20), Nigeria (16) and Argentina (15). However, the absence of applications from countries like the Philippines, Cuba, and Syria was puzzling, as was the very small number from Malaysia, Thailand, Indonesia, Egypt, and Venezuela. In all of these countries there are substantial numbers of geologists.

The funds to support these awards are coming primarily from the Congress budget (U.S.A.) and from Unesco through IUGS. The selection was made by a committee chaired by R.T. Helz (USGS, Reston) and G. Helz (University of Maryland) and composed of representatives from AGID, IUGS, the Geological Society of Africa and the 27th and 28th IGCs.

K-T BOUNDARY TSUNAMIS

■ A new perspective on the K-T boundary debate has come from the discovery of a coarse breccia bed in Texas. This is the only such layer in a sequence of uppermost Cretaceous to lowermost Paleocene mudstone that spans about 1 Ma of quiet water shelf deposition, and immediately above it is the Ir anomaly and the paleontological K-T boundary. J. Bourgeois and co-workers (universities of Washington, Western Washington and Colorado) interpret this sandstone bed with large mudstone clasts and re-worked carbonate nodules as deposited by a tsunami, 50 to 110 m high, generated by a bolide hitting the sea (*Science*, 29 July 1988). They suggest further that coarse-grained beds at or close to the K-T boundary elsewhere around the Gulf of Mexico and in the western Atlantic may also represent tsunami deposits generated by impacts perhaps up to several thousand kilometres distant.

... GLOBAL FIRE

■ Their earlier reports of soot at the K-T boundary have now been confirmed and extended by W.S. Wollbach and colleagues from Bern, Chicago and Massey universities and from the Los Alamos Lab. Writing in *Nature* (25 August 1988), they report data from five sites in Europe and New Zealand where 100 to 1000 times enrichment of elemental C have been found in the

boundary clay. This C is isotopically uniform and appears to come from a single global fire that would have helped to extend the darkness and cold that followed an impact. Chemical and isotopic data from a detailed stratigraphic record at the Woodside site in New Zealand indicate a succession of environmental changes to be expected from major fires after an impact.

... AND GLACIATION

■ New evidence of debris from a Late Pliocene asteroid impact spread over 600 km or more in the southeast Pacific has been reported by F.T. Kyte, Lei Zhou and J.T. Wasson (University of California at Los Angeles). Using Ir concentrations in deep-sea sediments, they calculate that the asteroid was at least 0.5 km across, one of the largest in the past few million years. The date of about 2.3 Ma ago is close to a major climatic deterioration that led to the Pleistocene glaciation, as witnessed by oxygen isotope and magnetostratigraphic studies elsewhere (*Science*, 1 July 1988). The authors speculate that the injection of water into the atmosphere may have caused global high altitude clouds that increased the Earth's albedo sufficiently to rapidly lower the global temperature, resulting in the onset of glaciation.

GLOBAL GREENHOUSE SOON

■ New calculations by scientists at the Goddard Space Center and MIT indicate that global warming will be clearly identifiable by the 1990s, due to the build-up of atmospheric trace gases CO₂, CH₄, N₂O, CFCs and volcanic dust. According to J. Hansen and his co-workers (*Journal of Geophysical Research - Atmospheres*, 20 August 1988), warming will be experienced first in low latitude oceans, China and interior parts of Asia, and polar oceans. All their computer models indicate greatest warming over land and sea ice rather than open oceans, and at high latitudes the temperature increase is expected to be greater in winter than summer. Greater than average warming is indicated for the eastern U.S.A. and less for western U.S.A. and much of Europe. The temperature changes will have "major impacts" because of more frequent extreme temperatures, and the authors conclude that "there may not be sufficient time for many biosystems to adapt to the rapid changes forecast for scenarios involving rapid growth of trace gases."