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ENVIRONEWS #2

THE TOXIC LEGACY OF BATTLE: After the troops go home and the medals are handed out it is always the civilian population on the erstwhile battleground that is left to deal with the mess. It was probably that way when Caesar conquered Gaul and when the Mongol hordes of Genghis Khan swept out of the east. But a new dimension has been added to war's aftermath. Alaaani et al. have conducted a study of children with congenital anomalies born in and around Fallujah, Iraq (1, 2). Hair samples from both parents of such children were analysed by Inductively-Coupled Plasma Mass Spectrometry (ICPMS, a state of the art analytical technique) for uranium and 51 other elements. In some cases long hair samples were analysed along the length to date the contamination. Following the several times war has been waged in Iraq there has been concern about uranium contamination. Depleted uranium is used to harden armor-piercing artillery rounds. The authors found that both mercury and uranium levels in mothers were significantly higher than reported values for unexposed populations in other parts of the world. Uranium is known to cause both congenital defects and cancer and while the authors caution against assumptions in the absence of hard evidence there is cause for concern regarding the use of radioactive materials in modern ordnance.

In another study in the city of Basra, the incidence of congenital anomalies in a maternity hospital in 2003 (the year before the second Gulf War) was 1.37 per 1,000 live births. In less than 10 years it increased an astonishing 17-fold to about 23 per 1,000 live births (3). The enamel of deciduous teeth develops in the fetus and is thus an indicator of exposure to toxic metals in utero. Analysis of shed "baby teeth" from children in Basra and Fallujah born with birth defects had three-fold lead levels compared to the teeth of children from unexposed areas. The parents of such children also had elevated lead levels. Since the first Gulf War (1991) in which 800 tons of bombs and one million rounds of ammunition were launched at the city, radioactive residue has been showing up in deformed babies born in the area. Basra was attacked several times in the subsequent decade; during the no-fly zone in 1993 and the 2003 invasion of the second Gulf War. These studies support previous findings by the University of Michigan and the University of Ulster.

After the tumult and the shouting dies and the captains and the kings depart, war leaves a hellish mess.

MICROBES IN THE SEA: FRIENDS OF MANKIND: One ml of seawater may contain up to one million micro-organisms. Bacteria play an essential role in the fixation of carbon dioxide. In fact, the oceans account for at least half of the carbon fixation world-wide. They recycle most elements in the sea, affect the ocean's productivity and constitute the bulk of phytoplankton that provides the foundation for the food web. They thus influence the Earth's environmental dynamics in fundamental ways (4, 5). While our concern for the large marine mammals and for declining fish stocks is valid (see Environews #1) we should realize that if chemical pollution

should disrupt the ocean's microbe population, the entire marine ecosystem would be threatened and atmospheric greenhouse gas (CO_2) would dramatically increase.

CANADIAN FEDERAL GOVERNMENT CONTINUES TO GUT ENVIRONMENTAL PROTECTION: The government of Steven Harper is putting in place measures to weaken the environmental assessment process with a view to facilitating the approval of the Northern Gateway pipeline. Bill C-38 hands off environmental oversight of massive oil, gas, wind farm and dam projects to the provinces. It reduces the number of federal review organizations from 40 to 3 (6). While Enbridge's Northern Gateway project has dominated media coverage, another company, Kinder Morgan, is proposing to more than double the capacity of its pipeline from the tar sands to a shipping port in Burnaby, B.C. Capacity would increase from 300,000 to 750,000 barrels per day. Citizen resistance is gathering momentum (7).

On another front Environment Canada's biodiversity goals and targets, to come in to effect in 2020, have been criticized for being a rather modest effort to achieve a declared lofty goal. It fails to address the main underlying cause of biodiversity decline which is habitat loss. An ecosystem approach to land management, including economic activity, has been abandoned. The criticisms go on and on (8). In a related matter the federal government is under fire for failing to implement its own Species at Risk Act (SARA), allowing endangered species to fall through the cracks. The provinces are not doing any better (9).

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