

Two principal models have been proposed to account for the present faunal distribution in the West Indies. The vicariance model proposes that the distribution of present-day biota in the Antilles is the result of a 'Proto-Antillean archipelago' located between North and South America which was colonized by ancestors of the recent fauna in the Late Cretaceous or Early Tertiary<sup>8</sup>. The more traditional dispersal model proposes that the islands were colonized recently from the mainland<sup>9</sup>.

If the Caribbean Islands had reached their modern position and configuration by the Miocene<sup>10</sup> and Dominican amber from the Cordillera Septentrional dates from the lower Miocene to the upper Eocene, then the present find suggests that some mammals were already established on the islands before the latter reached their recent position, lending support to the vicariance model of West Indian biogeography.

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## Scientists declaration organised by Friends of the Earth (UK) and presented to the meeting of The International Commission on Radiological Protection held in Como (Italy), September 8–17th 1987

We the undersigned, are concerned by the current International Commission on Radiology Protection's evaluation of the risks to "man" from exposure to ionising radiation. We call upon the members of the International Commission on Radiological Protection (ICRP) to consider the following areas of concern:

1) Recent data, from studies of the Atomic Bomb Survivors and of occupationally exposed radiation workers, indicate that the current International Commission on Radiological Protection risk estimates for fatal cancer underestimate the true risk from exposure to ionising radiation by between 2 and 5 times.

2) The current system of radiological protection recommended by the International Commission on Radiological Protection pays insufficient attention to the risks of inducing a non-fatal cancer in an exposed person. These risks may be up to ten times greater than the current International Commission on Radiological Protection's fatal cancer risk estimate (The International Commission on Radiological Protection does not give a risk estimate for non-fatal cancer in their 'Publication 26').

3) We therefore believe that the International Commission on Radiological Protection's recommended dose limits for radiation workers are too high. An immediate five-fold reduction would seem imperative, with a target of ten-fold reduction within a reasonable period of time.

4) The introduction of "Organ Weighting Factors" in the 'International Commission on Radiological Protection Pub-

lication 26' allowed substantial increases in individual organ exposure. Organ specific dose limits should be introduced which reflect the five-fold reduction in the whole body dose limit and which pay proper attention to the risk of non-fatal cancer.

5) The risk of inducing a cancer in the gonads should be included in the effective dose-equivalent concept, but genetic risks should be considered separately. Data within reports by the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) and the United States National Academy of Sciences Committee on the Biological Effects of Ionising Radiation (BEIR III) suggests that the genetic risk to all generations may be 5 to 10 times greater than the risk estimate given in the 'International Commission on Radiological Protection Publication 26'. The weighting factor currently used for the gonads ignores the cancer risk and underestimates the genetic risk.

6) There are particular reasons to be concerned by the risk to the fetus from exposure to ionising radiation. In particular it is now known that exposure to ionising radiation during pregnancy, particularly from weeks 8–15, is associated with mental retardation in the offspring, and that this effect may be without threshold. In addition, some studies of exposure to diagnostic radiation during pregnancy indicate that the doubling dose for childhood cancer may be less than 10 mSv (1 rem). Although the epidemiological data shows inconsistencies, it is clear that recommendations should err on the side of caution. We believe that the recommendations relating to women workers who may be of "child-bearing age" or who have diagnosed pregnancies are insufficient.

7) The uncertainty about fetal sensitivity to ionising radiation justifies an immediate reduction in the recommended public dose limit to 200  $\mu\text{Sv}$  per year (20 mRem).

8) Excess cases of childhood leukaemia have been reported around the only two reprocessing facilities within the United Kingdom, Sellafield and Dounreay. Both discharge significant quantities of long-lived alpha emitters, such as Plutonium and Americium. It is quite possible that the current risk models underestimate the biological effect of these actinides in leukaemogenesis, particularly during fetal life, as the target tissue for leukaemia induction in the fetus is not known. Consequently particular attention should be paid to protecting the public from such actinides. Radioactive discharges and hence public doses, should be limited by the principle of ALATA (As Low As Technically Achievable), rather than by ALARA (As Low As Reasonably Achievable).

9) ALARA has not been effective in reducing the exposures of some higher exposed radiation workers. ALARA should

be replaced by a system which gives higher priority to radiological protection, and protecting those most at risk.

10) The international Commission on Radiological Protection have frequently been criticised as being unrepresentative of the public and workers it claims to be protecting. If value judgements are to be made by the International Commission on Radiological Protection, then at the very least there should be worker and public representatives on the Commission.

Signed on behalf of Friends of the Earth (UK) Ltd.

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## Announcements

### Ruzicka-Prize 1987

Every year, a prize from the Ruzicka-Prize-Fund is awarded to a young research worker for an outstanding work in the field of general chemistry that has already been published and achieved in Switzerland or by a Swiss national abroad.

Proposals for candidates may be submitted before March 31st, 1988 at the latest to the President of the Board of the Swiss Federal Institutes of Technology, ETH-Zentrum, CH-8092 Zürich.