achievement for harmony



One of the most important activities of the Committee is to provide the legislative bodies with an objective evaluation of potential dangers to the environment. To this end, a series of monographs have been written by subcommittees of experts in relevant fields. As an example, concern may be expressed that a particular chemical element is present in industrial effluent. It is therefore important, if realistic and enforceable safeguards are to be realized, that a full understanding of the impact of this element on the ecology be established.

In the simplest case, a direct cause and effect relationship between damage and concentration of the element in the effluent can be verified. However, most of the problems investigated by the Committee are more complex. To start, it must be determined how the element is ingested by the endangered organism. Uptake may be direct, from the water, or through consumption of food which consists of other organisms in which the element's concentration has already built up. In addition, retention and excretion rates must be established for various organisms. In certain cases, organic damage is not immediately apparent but manifested only after long exposure to low doses of contaminant, as is the case with lead or asbestos. In other cases, undesirable change is not directly observed in the organism during its lifetime but appears several generations later in offspring. Finally, causal chains may be subtly affected by other natural processes so that a level of contamination which is safe in one environment may be dangerous in another. Contaminants may also aggravate each others effects; for example, a safe level of cadmium proves to be hazardous when ingested along with low levels of mercury.

Preparation of a monograph therefore involves the gathering and analysis of all work published in the area. In order to facilitate the searching of myriads of scientific journals for relevant publications and to provide an environmental information service, a data base has been established at NRC's Canada Institute for Scientific and Technical Information. By means of computer storage and retrieval, it is now possible to make a rapid search for a specific item of information.

During the process of preparing scientific criteria, gaps in scientific knowledge may be exposed. Such gaps indicate areas in which adequate research has not been performed and part of the Associate Committee's mandate is to direct attention to such areas. Funds have been made available to stimulate research by issuing a contract to a scientist in the particular area. In certain cases, an absence of research may indicate a lack of interest on the part of researchers or, alternatively, a lack of adequate funding, and the Committee's publications can be influential in rectifying this discrepancy.

The goal of the subcommittees' work lies in the preparation of criteria documents. To date, about 13 reports have been published whose titles include Detection and Inactivation of Enteroviruses in Water, the Effects of Pulp and Paper Wastes on Aquatic Life with Particular Attention to Fish and Bioassay Procedures for Assessment of Harmful Effects, Lead in the Canadian Environment, A Criteria Digest on Radioactivity in the Environment, Chlordane: Its Effects on the Canadian Ecosystem and its Chemistry, Photochemical Air Pollution: Formation, Transport and Effects. The reports are available within Canada to interested individuals, organizations and governments at all levels; there is also considerable international demand for these publications. At a recent international meeting of the Committee on the Challenges of Modern Society, the Associate Committee's monograph on Photochemical Air Pollution was circulated to all delegates.

In addition to exercising the responsibility for publication and distribution of monographs, Dr. Hoffman and his staff at the Secretariat receive several enquiries about the environment daily from within Canada and from international agencies. Through the service of the Committees' data bank, the relevant information is rapidly located and relayed to the enquirer. Dr. Hoffman makes every effort to establish contact between the enquiring organization and a Canadian scientist who is an expert in that particular field of knowledge.

Through the activities of the Associate Committee on Scientific Criteria for Environmental Quality, it becomes possible for experts in diverse fields to work together on an overview of nature and its response to humankind. It is by cooperation in this fashion, which must ultimately extend to the international level, that humankind may demonstrate another of its multiplicity of facets — the desire for harmonious involvement within nature and society.