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**Solid Waste Disposal—A Long-standing
Public Health Problem Comes of Age**

There was little or no fanfare when PL 94-580 was passed and signed into effect on October 21, 1976, but public health professionals and environmentalists (is there really a difference?) would have been there cheering. This Act is known as the Resource Conservation and Recovery Act of 1976. One of its chief aims is to encourage recycling of our natural resources. Indeed, this is a laudable goal since almost none of these resources are renewable in less than eons of time. Notable exceptions, of course, are forest products, manpower, water supplies, and fertile soil which are renewable in a generation or two.

An additional, and no less laudable, purpose of the Act is to provide for "the safe disposal of discarded materials and to regulate the management of hazardous waste." The Administrator of the Environmental Protection Agency is given authority and responsibility to control the disposal of hazardous wastes. These are defined as wastes which "... may cause or significantly contribute to an increase in mortality ... or pose a substantial present or potential hazard to human health or the environment ... It is surely clear to readers of this Journal that this feature of the Act is important, important enough to be worth highlighting by calling attention to three recent reports.

First, a report by Carl Johnson¹ in this issue of the Journal describing how the strictness of a County Health Department official enabled the recovery and removal of about 70 kilograms of sodium monofluoracetate from a military landfill which drained into a stream bordering on eight private wells and flowing into a reservoir for a large water district.

Second, Stephen James' reports, also in this issue, on an EPA contractor's study of leachates from solid waste land disposal sites at municipalities in five states across the United States. The leachate wastes contained significant amounts of lead, selenium, iron, mercury, and other contaminants presenting potential contamination of water supplies and the food chain depending on the nature of the particular disposal site.

Third, a Panel of the National Research Council² under the chairmanship of John Rust has just issued a report to the Energy Research and Development Administration on "The Shallow Land Burial of Low-Level Radioactively Contaminated Solid Waste." Although the report finds that these materials pose no threat to human health the Panel is "... not convinced that current practices should be continued indefinitely." It goes on to explore some of the facets of the old dilemma of waste disposal facing society throughout the world and makes recommendations which are basic to controlling the problem: waste volume reduction, development of additional burial sites carefully selected for long-term safety, design of components for minimum waste, and continuous monitoring of sites for escape of waste products into the environment. These excellent recommendations are applicable to all forms of waste, not just low-level radioactive materials.

Another recommendation more fundamental to the problem might be to develop an awareness of, and a concern for,

the need to limit and control hazardous wastes by the general public. Most of us discard materials of varying degrees of hazard, such as batteries (flashlight, transistor, automotive), used engine oil, empty pesticide containers, without a second's thought. These seemingly insignificant amounts may become significant when multiplied by the numbers of us residing in large population centers. At present our discarded materials amount to four billion tons per year and the quantity is growing by 8 per cent per year.³ This impact of hazardous waste disposal can be controlled only if the public is, as informed of what wastes are hazardous, and is provided with an effective and convenient method for their disposal.

Manufacturers of consumer goods could assist significantly by designing their products to minimize waste and reduce hazardous materials. In addition, by appropriate labeling they could recommend safe disposal methods for the hazardous components.

Even though the public unknowingly contributes significantly to our problem of hazardous wastes, it must be recognized that by far the greatest source is industry, especially the metallurgical and chemical industries. Actually, these hazardous wastes from the public originate with their manufacturers. The point has been eloquently put by Ian McHarg who is reported to have said that it is high time industry had some "toilet training."⁴ One only needs to look at the pollution problems created by the polychlorinated biphenyls (PCBs) and Kepone® to appreciate that statement.

There is reason to hope that "training" is underway. Some companies are "training" themselves; others are being "trained" by pressures from regulatory agencies. For example:

- Allied Chemical Corporation, in response to regulatory and judicial pressures, plans to spend many millions of dollars attempting to remove Kepone® from the Juniata River.

- When the PCB problem was first recognized, Monsanto, the sole U.S. producer, voluntarily restricted its value to totally enclosed systems and more recently, when this was not effective enough, announced plans to terminate production.

- The Dow Chemical Company reported publicly in 1971 the possible environmental problems created by tarry wastes originating from the production of chlorinated organic compounds. Additional reports were issued in 1972 and 1973. In 1974 and 1976 the company reported that hexachlorobiphenyls, a major component of the tarry waste, produced no ill effects in Japanese quail. In rats there were no effects on reproduction or cytology; however, they did find effects on the kidneys, including cancer. In view of these findings Dow repairs or destroys these wastes in a special incinerator. They have expanded their occupational health program for employees who might be exposed to these materials.

The Administrator of EPA and the Deputy Assistant Administrator for Solid Waste have a difficult task ahead in achiev-

ing both purposes of the Resource Conservation and Recovery Act. However, there is hope for success, and their task can be made easier if the general public and the scientific community are behind them. Industry, too, can contribute significantly, not only through self-enlightenment but also by self-policing of errant members of their segment of society.

Let's get on with the job!

RALPH C. WANDS, MS

Address reprint requests to Mr. Ralph C. Wands, Director, Advisory Center on Toxicology, National Research Council, 2101 Constitution Avenue, Washington, DC 20418.

REFERENCES

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2. Johnson, C. J. Toxic soluble waste disposal in a sanitary landfill site draining to an urban water supply. *Am J. Public Health* 67:468-469, 1977.
3. James, S. C. Metals in municipal landfill leachate and their health effects. *Am. J. Public Health* 67:429-432, 1977.
4. National Research Council. The Shallow Land Burial of Low-Level Radioactively Contaminated Solid Waste. National Academy of Sciences Printing and Publishing Office, Washington, DC, January 1977.
5. Holden, C. Ian McHarg: Champion for design with nature. *Science* 193:379-382, 1977.

Deaths of Three "Oldest" Association Members Noted

The Association is saddened to note in this issue (pp 483-486) the recent deaths of its three "oldest" members—oldest not necessarily in terms of age but in terms of length of membership in APHA. The aggregate membership of these three esteemed members covers nearly two centuries—for Mr. Carl T. Pomerny was elected to membership in 1911, Dr. Claude P. Brown in 1912, and Mr. William H. Marcussen in 1913. Over the years of their affiliation with APHA, each of them contributed much to the affairs of the Association, to its Annual Meetings, various committees and task forces, and published material in the pages of this Journal.

As we looked back through those early Journals published during the years when they first joined the Association, we thought it might be appropriate to excerpt some of the news and health notes which appeared in the Journal pages at that time—1911-1913—so that our readers could also look back in time with us to some of the problems facing health professionals in the early part of the twentieth century.

And so, for this issue of the Journal, instead of the usual announcements of seminars, special courses, and the like which we use as "fillers" at the end of articles, we have inserted excerpts from the first three volumes of the American Journal of Public Health, as they were read by our elder colleagues. We hope you find them interesting.

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