

## ENVIRONMENTAL PROBLEMS

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Air

Water

Soil

Noise

Chemicals

Population

Radiation

Food

Food Supply

Engineering Society of Detroit  
Luncheon Series

Address

Land Use

Solid Waste

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## ENVIRONMENTAL PROBLEMS

With these components in mind, we should consider five levels or areas of concern. We should strive to provide an environment in which people may be assured of the availability of all of these areas of concern to all segments of society.

What is the reason for the current concern for the quality of our environment? In this presentation, I will maintain that our primary concern must be for the health of the people of the world. Thus, we must give primary consideration to those environmental problems which affect the health of the world population.

### Creativity

What do we mean by health and in particular, environmental health? We need to concern ourselves with those aspects of the environment which in any way may affect the health of people.

Thus, we should clearly understand what we mean by "health".

W.H.O. definition - not as visionary as it may seem at the first reading.

There are three major components of our environmental problems; the physical, biological and social.

Survival - save man and CO<sub>2</sub>

Disease - chlorination of city water supply

- break route of transmission through the environment

Physical - Chemical, heat, light, air, ventilation, water

Biological - Disease sources

Food Supply

Aquatic life

Social - Housing, mental health, recreation, life style, population

There is a need for a positive preventive approach to environmental problems.

vs the curative, crisis to crisis activity of the present. An excellent comparison can be cited in the field of preventive medicine - smallpox, diphtheria, polio.

In the past, we have treated our environmental ills after they became problems rather than devoting our research and scientific capabilities to the prevention of environmental hazards.

The Nation, and to a large extent, the World, seems to have recently discovered ecology. The World seems to be filled with instant ecologists who constantly propose naive solutions to complex engineering and other scientific problems.

We need to focus our attention on the effect of



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Ecology is the study of the mutual relationship between organisms and their environment. An over-emphasis has been placed on the non-human organisms and their environmental problems. Human ecology needs increased scientific attention.

#### Creativity

#### Enjoyment

#### Performance

#### Disease Prevention

#### Survival

Many ecologists draw attention to the demands for life support resources and are receiving increased attention from legislative and executive segments of our society. The result of their dismal philosophy has also found its way into portions of our judicial system. They have presented the following curves with considerable conviction.

Survival - cave man and  $CO_2$

Disease - chlorination of city water supply

- break route of transmission through the environment

There is a need for a positive preventive approach to environmental problems vs the curative, crisis to crisis activity of the past and present. An excellent comparison can be cited in the field of preventive medicine - smallpox  
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We need to focus our attention on the effect of environment on man rather than on the oft-emphasized effects of man on the environment. Many of our ecology friends, the so-called environmentalists, seem to take great delight



in their role as purveyors of gloom, doom, despair, and disaster. They, like some of the fanatic religious sects, are predicting the end of life on this planet due to all sorts of pollution and other environmental impacts.

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Many ecologists draw attention to the demands for life support resources and are receiving increased attention from legislative and executive segments of our society. Their continual pursuit of their dismal philosophy has also found its way into some portions of our judicial system. They have presented the following curves with considerable conviction. Knowledge of the field involved, have been too busy, or otherwise hasty ill-conceived standard setting are well known to the engineering profession. Environmental Impact Statement requirements without knowledge or a basis for a definition of the impact effect, importance, or character - air pollution standards without known health effects, water quality standards to protect against unknown hazards.

A trend in this direction was noted about 15 years ago when, just before Thanksgiving, a large portion of the cranberry crop was banned from the market due to the use of a defoliating agent prior to the picking of the berries. In fact, the material used was toxic to humans and if a person consumed a bushel of cranberries, he might have ingested sufficient toxicant to cause illness.

A number of years later, the Delang Amendment was passed to the Federal Food and Drug Act which prevents the use of any additive to food which is found to cause tumors in test animals. Thus, a few years ago it was discovered The solution to the concern indicated by these curves requires a number of important approaches.

1. We must first make certain that the curves are accurate and correct based on sound research, technology, and observation.
2. We may then proceed to utilize our best scientific and technological resources to alter the trends.

There are numerous other examples of the crisis and panic of control and standard setting in the management of our environment. It is not enough



- a. New sources of life support resources.
- b. Changes in life support demands.
- c. Changes in population trends.

The tendency has been to look with dismay on curves of this type and move rapidly to establish standards and tolerance limits based on little or no scientific basis. We have been willing to allow politicians and bureaucrats establish standards for our environment while too many engineers and scientists, with great knowledge of the field involved, have been too busy, or otherwise uninclined to play strong roles in the decision making process. There is a vital need for greater input by the scientific community of the nation into the development of the standards that are adopted for the environments in which we live, work, and play.

Examples of the haste to do something about the environmental problems by hasty ill-conceived standard setting are well known to the engineering profession. Environmental Impact Statement requirements without knowledge or a basis for a definition of the impact effect, importance, or character - air pollution standards without known health effects, water quality standards to protect against unknown hazards.

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A number of years later, the Delang Amendment was passed to the Federal Food and Drug Act which prevents the use of any additive to food which is found to cause tumors in test animals. Thus, a few years ago it was discovered that if a 100 gram rat were given 10 grams of cyclamates (the artificial sweetener) that tumors developed in the rat. Thus, we banned cyclamates from use in bottled beverages since any person who drank 160 pints of coke a day might also develop tumors. In the meantime, naturally occurring carcinogens in our food supply are of little, if any, official regulatory concern.

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## Environmental Problems

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for us to recognize these problems and to bewail the lack of research and science in our nation-wide approach to environmental problems. "Stopping on third base will add nothing to the score!" Our attendance at meetings, talking to ourselves and agreeing that a need exists for a scientific approach to the development of standards will not complete the task that affects all of us.

What is needed is nation-wide, concerted action on the part of engineers and scientists to see that the necessary scientific approach to the solution of our environmental concerns is adopted through research concerning the health effects in the broadest sense, the development of technology to meet the problems and a determination of the cost/benefit aspects of the proposed solutions.

Waving flags, carrying banners and giving speeches will not solve our environmental problems.