

And on my far right, Dr. John A. Zapp, director, Haskell Laboratory for Toxicology & Industrial Medicine, E. I. du Pont de Nemours & Co., who is past chairman of the MCA Environment Health Advisory Committee.

Before addressing the subject of the hearing directly, I would like to develop some perspective on "chemicals" in relation to the environment. All too often we are prone to overlook the fact that the natural environment itself is made up of a wonderful array of chemicals to which life as we now know it has become adapted. This chemical environment, entirely apart from manmade contributions, is far from being uniform and constant from time to time and from place to place. Our need is to maintain the variations in the environment so that by either type or degree they are not injurious to our various purposes and normal desirable life patterns will be sustained.

Many manmade chemicals simply duplicate those found in nature, while others are the product of human invention. Many are comparatively simple combinations of the elements, while others are highly complex, rivaling in complexity some of the chemical components of the human body.

Relative simplicity or complexity of chemical structure has no correlation with the potential impact of a chemical substance on the environment. None is toxic per se, and yet none is wholly without potential for adverse effect. Chemicals numbering in the thousands have been cleared for use as food additives after exhaustive testing, some with limitations carefully prescribed, yet an excessive portion of common table salt can be lethal to anyone.

In dealing with the problems of environmental controls, our greatest lack is an adequate understanding of acceptable quality levels. The average person might think it strange, but specialists in air and water chemistry would be the first to admit an inability to define "clean air" and "clean water" in precise terms.

Thus it is vitally important to bear in mind that the mere presence of any particular chemical substance in the environment should not automatically be regarded as undesirable. Water containing fluoride from natural sources led to the discovery of dental caries prevention and ensuing fluoridation of water supplies. There have been recent observations that water hardness; that is, water containing calcium and magnesium salts, may lessen the likelihood of cardiovascular deterioration. Of course, there must be a definition of how much is beneficial, or where benefit may be lacking, how much may be tolerated without adverse effect.

This leads to a simplified concept of pollution as being a condition where "too much" is present. It is greatly to be hoped that in our extensive programs of pollution abatement and control, the objective will always be to prevent or eliminate that increment which results in there being "too much," as contrasted with working toward the irreducible minimum. Although it may not be currently a wholly popular concept, the capacity of our environment to accept waste releases—below the too-much level—is itself an exceedingly valuable natural resource. It would be technically unsound and economically wasteful not to make proper—and I want to emphasize "proper"—use of it. It is my firm conviction, and that of the industry I represent, that society cannot afford the cost of control for control's sake.