

Toward a More Beautiful America

The recent emergence on the national scene of a genuine interest in beautifying America, in minimizing water pollution problems, and in purifying our air must be welcomed by all of us. It should be welcomed particularly by chemical engineers, who can play a great part in this enterprise. Indeed, a great deal of interest has always been expressed by chemical engineers in these subjects, and we have played as big a part in this field as there has been to play.

Some very interesting reading on these subjects appeared in the *Transactions of the American Institute of Chemical Engineers* in the "thirties." A random sampling of just one year shows the following papers:

"On the Quantitative Determination of Industrial Gas Dispersoids," E. Anderson, 34, 589 (1938).

"Absorption of Gases in Wet Cyclone Scrubbers," H. F. Johnstone and R. V. Kleinschmidt, 54, 181 (1938).

"Mitigation of Trade Waste Pollution," L. K. Herndon and T. R. Withrow, 34, 327 (1938).

In these articles one will find the various aspects of a well-conceived program for the alleviation of these problems. First must come a survey conducted with a breadth of view so characteristic of the better practitioners of our profession. It is imperative to establish the origin and nature of the wastes, their concentrations in various streams, and their variations. Often this requires the development of new analytical methods or the adaptation of existing ones. Thus, the paper concerned with the quantitative determination of gas dispersoids is typical of exactly what should be done at such a stage of the development. It is only when such a survey is made that one can understand the dimensions of the problem and formulate a plan of attack. Clearly, one should attack first the most serious pollution.

Second, one must conceive of possible treatment methods and get the basic data to permit evaluation of those methods. An excellent example is the absorption of sulfur dioxide from combustion gases, a problem with which Professor Johnstone and several of his students were concerned in the "thirties." This method remains a promising one and may well become very important as these pollutants become more and more troublesome. As is so often the case, these studies of sulfur dioxide absorption yielded much fundamental knowledge about the general field of gas absorption.

The third stage is, of course, the design of a suitable treatment plant with proper regard to the basic data found and the economics of the problem. Due to its length and complexity, this is not so often described in the periodical literature, but the article on the mitigation of pollution does touch on this. Some of the finest engineering is exercised at this stage, because nearly all treatment processes are expensive and they can be made practical only if the engineering is well done. It is probably hopeless, in most cases, to expect that a profit can be realized from recovered constituents, but accomplishing a reduction of pollution at minimum cost is an essential aim. It may also be noted, in these days and in certain congested locations, that minimum space requirements may become as important as minimum cost. Certainly, here is a field in which those chemical engineers interested in optimization should be able to play a fine part.

It is probably never admirable to say "I told you so," but it is sometimes irresistible. In this instance we chemical engineers can certainly say that a long time ago we were pointing the way to solving these soon to be critical problems.

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