THE RESPONSIBILITIES OF THE CHEMIST

Many who read this will become chemists, and it is for them, especially, that the discussion is intended. But these considerations are also of importance to those readers who will choose other vocations; for today, more than ever before, science affects everyone. These others should know that chemists have an obligation toward them, and should know just what this obligation is.

A detailed statement of the ethics of the chemical profession, formally accepted by most chemists, does not exist. But through the years an informal understanding of the responsibilities of the chemist has evolved. What follows is the author's interpretation of that informal code, with special emphasis on those parts applying to the inexperienced chemist. Much that pertains to the mature professional chemist has been omitted.

We can begin by asking the question: What does it mean to be a good chemist? The answer is twofold. A good chemist is one who knows his chemistry, who can express himself with proficiency in writing and speaking, and who seeks to increase his knowledge of chemistry by continued study. A conscientious chemist cannot stop learning upon graduation. He must follow a planned curriculum of continued study throughout his life. (Once begun, this is not so arduous a task as it may appear to be.)

The second part of the answer is a little more difficult to measure up to: A good chemist is one who fulfills his responsibilities—and he has many.

We need not discuss here the responsibilities imposed by God upon every member of the human race: To try to live in accord with the ten commandments and the eight beatitudes. Nor is our concern with the duty of every professional man to carefully form his own opinion on the current problems of society, to properly influence the opinions of others, to fulfill civic duties, to improve his knowledge of matters not directly related to his own field by a planned program of self-study, and so on. These duties are obviously required of all.

Our concern is with those responsibilities which are directly connected with the work of a chemist as a chemist. They can be considered under three aspects: responsibility to society; responsibility to an employer; responsibility to one’s fellow workers.

In acquiring an education, everyone is indebted to his predecessors for their contributions toward an understanding of nature and to his contemporaries for their inspiration and encouragement. From Aristotle through Albertus Magnus and Lavoisier, to Planck and Einstein, to mention only a few, from the immediate family, from teachers and friends and many others, have come contributions making it possible for you to become an educated man. To these benefactors an obligation is clearly owed.

Chemists can pay this debt in many ways. Some will set out purposely to contribute new knowledge. These research workers are obligated to be objective in the pursuit and interpretation of their findings, and not to distort the results of these experiments to suit their own ends and prejudices.

Some will use the knowledge they have gained by transmitting it to others. This
group, which includes teachers and others who come before the public with information, is obliged to seek and transmit new knowledge that is developed by the researcher, and to avoid teaching false information. Chemists must welcome opportunities to speak publicly about their profession, to help others understand what chemistry is and what chemists do.

Other chemists will go into industry. This group has a moral responsibility to see that their work is used for the benefit, and not the detriment, of mankind. They must support and encourage the legal and ethical use of chemistry, and oppose its improper use.

All chemists, of course, are committed to expose fraud and error which may not be apparent to the general public, but which their training enables them to recognize. In such cases, experienced chemists should be consulted before public action is taken.

The chemist has a clearly defined responsibility to his employer. He must contribute, and he must be loyal. Obviously, the chemist-employee will be industrious, seeking to do more than the minimum work he is assigned. He is also obligated to learn about his employer's processes, his plans for the future, his problems, administrative procedures, and particular way of doing business, in order to contribute effectively and efficiently to the welfare of his employer.

Further, he will hold the information concerning his employer's private plans and technical work in confidence. Since he has learned these things as an agent of his employer, he has no right, except by proper legal processes, to divulge this information to others who would use it to the disadvantage of his employer. This obligation holds even after his employment has been terminated, although it is certainly proper to use all such private information, legitimately acquired, as part of his personal professional experience. In addition, it is unethical to withhold, for future personal benefit, an idea of one's own that the employer may rightfully expect to be used to his advantage. Of course, the chemist has the right to use, for his personal gain, any information or idea he has legitimately acquired but which lies outside the terms of the employment contract. It is prudent, however, to be conservative in these matters.

When, during the daily work, differences of opinion arise between the chemist and his employer, the chemist will try to resolve them patiently and tactfully. He will, in effect, seek the welfare of his employer as though it were his own.

The responsibility of a good chemist toward his fellow workers can be summed up in these words: respect, loyalty, and contribution. Every man is an individual and is entitled to the respect of others. The inexperienced chemist, in particular, will listen to the suggestions of his fellow workers, whether they be on chemical problems or related to other subjects, whether they be voiced by a chemist or by a non-chemist.

The chemist is solicitous of the physical welfare of his fellow workers and follows safe practices in the laboratory. He expresses his consideration for others by keeping his work space neat, by encouraging his subordinates to improve themselves, and by refraining from belittling gossip concerning his subordinates, supervisors, and fellow workers. He does not take unfair advantage of others in seeking his own advancement. In short, he recognizes his responsibility to promote physical and social harmony in the organization of which he is a part.
The chemist supports his professional society by membership, by participation at meetings, and by activity in committees and other functioning bodies. He recognizes his obligation, when commitments to his employer will allow, to publish the results of his scientific work in the technical journals or at meetings of his society, and not elsewhere. In such publications, he is always careful to give credits to others who have contributed to the success of his work.

Above all else, he never assumes credit for a discovery that properly belongs to another scientist. To accept undue credit is despicable, for it means that he has stolen, not for monetary gain (which is bad enough), but for the approbation of others (which is far worse).

The practice of chemistry, then, is a profession. And the distinctive characteristic of a profession is its obligation to serve. Chemists, therefore, are stewards; they are custodians and seekers of knowledge; they are servants of humanity. Because they are professional men, they will find a certain joy in doing more than the minimum required in their relationships with society, with their employer, and with their fellow scientists.