

THE CHEMIST AND THE COMMUNITY.

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Some twenty-five years ago there was to be found in a certain college town a spring to whose waters had been ascribed for many years very pronounced medicinal qualities. People came from quite a distance to experience the efficacy of the healing fountain. The water possessed an odor suggestive of hydrogen sulphide and it became known as a sulphur water. It was taken on faith, no analysis of the water ever having been made. During long, dry summers the spring had a habit of withholding its healing fluid.

In course of time the benevolent old gentleman who taught chemistry at the college passed away and was succeeded by a much younger man whose interest in practical chemistry had kept pace with his studies of atoms and molecules. The famous spring attracted his attention. An analysis of the water showed evidence of marked sewage contamination and further investigation revealed the fact that the main sewer of the town, whose location had apparently been forgotten, passed within twenty feet of the spot from which the curative waters flowed.

The writer had a similar experience several years ago with several springs of Greencastle. Waters that were believed to be not merely potable but even particularly beneficial on account of the supposed presence of special salts were found to be merely well charged with bicarbonate of lime and the products of sewage decomposition.

But it is not merely in the examination of public waters that the teacher of chemistry may be of service to his community. To illustrate further, the town of Greencastle has not felt able to supply itself with paved streets but, like many other towns of the state, must still be content with Indiana lime stone. To keep down the dust during the summer liberal applications of road oil have been used for several years. The effectiveness of the oil has been by no means uniform and in some cases it has served its purpose for only a few weeks. Last spring various samples were submitted to the city council, each guaranteed to contain fifty per cent asphalt, prices practically the same. It was suggested that the chemist at the University in the town test them out and to such a request he readily responded. The oils were found to contain anywhere from thirty-two to fifty-six per cent of asphalt. The one with maximum content was chosen and as a result, although the summer was an unusually dry one, the residents were not troubled with dust during the entire summer.

One other instance may be cited. Last year the quality of coal gas supplied Greencastle varied considerably in quality and at times was practically of no use at all. Complaints had been made for some time but all break-downs and poor service generally, like every other evil, were attributed to the war. Near the close of the year the gas company asked the State Commission for an increase in rates and was granted it provided the company would maintain a gas output of standard quality. The plant being a small one, the company did not feel able to install a standard gas

calorimeter and the town was not willing to bear the cost alone. At this point the instructor of chemistry at the college proposed that if the city and the company would together pay the cost of an inexpensive calorimeter, he would install it in his laboratory and make regular tests without charge. This proposition was accepted. An inexpensive instrument was secured and tested and standardized by an official calorimeter from the Bureau of Standards of Washington. Gas tests have been made quite regularly for many months and the quality of the gas has been maintained of a quality satisfactory to all parties concerned.

These illustrations indicate some of the various ways in which a chemist, even a teacher of chemistry, may be of practical service to his community. This brings us to the main point of this brief paper. Chemistry has come to be recognized as a distinct profession. The American Chemical Society is the largest organization of men of a single science in the world, its membership now running beyond the fourteen thousand mark. The large majority of these men is employed as research men or for routine work in chemical industries all over the country. Many others are professional consulting chemists who maintain professional laboratories where all kinds of chemical analyses are made and where various industrial problems are taken in for investigation and solution. Still others are teachers of chemistry and directors of research in our colleges and universities.

The value of chemistry to the nation, the state, and to every community is recognized. A professional chemist in any community would be of great service to the people at large in that community but the actual amount of work to be done in the town of average size would not warrant his employment for this purpose alone. Why not combine two functions? Why may we not have in every high school that is in a position to maintain a chemical laboratory a man of sufficient training and provided with an equipment of sufficient size and variety, not only to meet the requirements of a high school teacher but also to meet the more urgent chemical needs of the community? A little work of the latter kind would not only be valuable service to the public but would also stimulate interest in the subject of chemistry on the part of the students and very likely would lead to the discovery of many an embryonic scientist.

Where the city is of sufficient size to support a professional chemist, this work can be left to him. There is no thought of any competition on the part of the teacher of chemistry, whose chief business is to teach, with the professional chemist who has chosen this occupation as a source of livelihood. It is felt, however, that herein lies the possibility of a cooperation between our state laboratory and the chemical laboratories of our high schools and colleges to which some consideration might be given with resulting benefit to both schools and state. The competent high school teacher of chemistry might function as a kind of outpost of the state laboratory, the community providing the necessary material and equipment and the state laboratory such assistance as might be needed. Such cooperation would undoubtedly prove stimulating to the high school teacher, an assistance to the state laboratory, and of real benefit to the local community.