Laudatio — Professor G. Kateman

After a successful scientific career Professor Kateman retired in January 1994. During more than twenty years he guided the Laboratory for Analytical Chemistry at the Catholic University of Nijmegen in the Netherlands. Before his appointment as Professor he was employed in industry. His interest in what nowadays is called chemometrics, originates from these pre-academic years. The Faculty of Sciences of the Catholic University of Nijmegen in the Netherlands appointed to him the new chair of analytical chemistry in 1972. The idea was to initiate research outside the mainstream of existing chairs of analytical chemistry and to put emphasis on the development and application of information theory techniques in the field of analytical chemistry.

As one of the pioneers of chemometrics, Professor Kateman devoted his research activities to the exploration and exploitation of chemical information. Thirteen Ph.D. students and approximately 170 undergraduate students obtained their degree at his department. Currently, there are seven Ph.D. students working at the laboratory. He and his coworkers contributed in a remarkable way to many fields of chemometrics. His laboratory became one of the leading centers of chemometrics in the world and has always been involved in national as well as international collaborations. Prominent examples of international cooperations are the projects financed by the European Community in which his laboratory took part.

The research efforts of his laboratory cover, e.g., multivariate analysis, quality control, expert systems and natural computation. Multivariate

analysis, one of the first successful techniques in chemometrics, still is a major research issue. About ten years ago, expert systems were quickly arising as very promising techniques which enabled the inclusion of (human) experience and expertise into computer programs to assist automated analysis. The laboratory of Professor Kateman was among the first to apply expert systems for chemical analysis. A major part of this research has been carried out in the project ESCA (Expert Systems for Chemical Analysis) sponsored by the European Community.

In the past few years some new techniques, originating from the discipline of computational sciences, are emerging. These techniques are based on one or more principles taken from nature. The idea behind the development of these techniques is that nature has been unrivalled in performing complex tasks, such as, e.g., pattern recognition. The incorporation of some basic natural principles such as evolutionary strategies resulted in a number of powerful and promising techniques. Examples of such natural computational techniques are artificial neural networks and genetic algorithms. Again, the laboratory of Professor Kateman was among the first to investigate the application possibilities of these techniques in analytical chemistry. At this moment, the laboratory is involved in two European Community projects issuing the exploration of these novel techniques, i.e. SIRIUS (artificial neural networks for plastic waste classification) and RENEGADE (conformation analysis of biomacromolecules by genetic algorithms).

Finally, it must be mentioned that education in

chemometrics has always been considered as an important issue by Professor Kateman. This is reflected by the abundance of undergraduate and graduate courses on different fields of chemometrics. From his pre-academic years, he was well aware of the fact that chemometrics was hardly accessible but indispensable for the industry. By educating people in chemometrics by giving specialized courses in industry, he contributed to the

fact that chemometrics now has well found its way into the industrial laboratories.

Looking backward, during his whole career he was inspired by the motto "*the world turns on facts, but is ruled by emotions.*"

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Nijmegen, May 1994