Chapter 13

AN INSTRUMENT OF CORPORATE STRATEGY:
THE CENTRAL RESEARCH LABORATORY AT BASF 1868 - 1890

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At the end of the nineteenth century two modern industries, those connected with
dyestuffs and the electrical equipment, developed strategies and structures for the
ongoing creation of novel products and technologies. One of the most successful
strategies connected with this was the establishment of organizational units within
the companies, in particular the industrial research laboratories.¹

The history of industrial research has attracted much scholarly work in the last
two decades. Nevertheless, in the case of the German chemical industry attention
has only recently been paid to the development of industrial research. Following the
pathbreaking study of John J. Beer, there have been three articles dealing
specifically with the history of the industrial research laboratory in the German
chemical industry: Georg Meyer-Thurow's study dealing mainly with one chemical
company, Bayer, which was a latecomer in industrial research; Ernst Homburg's
tackling of the emergence of the industrial research laboratory at the seven most
important dye-making firms; and Ulrich Marsch's recent extension of the story up
to 1936, and concerning I.G. Farbenindustrie AG.²

¹ There are other possibilities for the supply and transfer of new technology, for example the
collaboration with university teachers or independent inventors, the purchase of licenses or
patents, and even of entire firms with an expertise in advanced technology. The advantages
of doing in-house research are discussed in R. Nelson, 'The roles of firms in technical
advance: A perspective from evolutionary theory' in G. Dosi, R. Giannetti and P.A.
164-184, on pp. 171-174. An overview of the relevant literature on the history of industrial
research is given in M.A. Dennis, 'Accounting for research: new histories of corporate
laboratories and the social history of American science', Social Studies of Science, 17
(1987), 479-518; and J.K. Smith Jr., 'The scientific tradition in American industrial
research', Technology and Culture, 31 (1990), 121-131.

² J.J. Beer, 'Coal tar dye manufacture and the origins of the modern industrial research
laboratory', Isis, 49 (1958), 123-131; G. Meyer-Thurow, 'The industrialization of invention:
A case study from the German chemical industry', Isis, 73 (1982), 363-381; E. Homburg,
239
Homburg’s study makes it clear that the modern industrial research laboratory emerged in the German dye industry during the period between 1877 and 1882. He thereby supports the argument based on the overriding influence of the German patent law, established in 1877, and the new technological paradigm of azo dyestuffs, affording scientific ‘mass work’. According to this argument, the need for the establishment of the industrial research laboratory as an organizational unit is to be found in the interplay between patent law and the acceleration of discoveries and inventions in the field of organic dye chemistry, both at universities and within companies. This was a result of the growing number of academic chemists and the oligopolistic competition between the companies.

Here a detailed study of the emergence of the central research laboratory at one of the largest German dyestuff companies will be delineated. It will be argued that at the Badische Anilin- & Soda-Fabrik of Ludwigshafen (hereafter BASF) the industrial research laboratory took shape in the period around 1874, that is several years before the introduction of the German patent law and the invention of most of the azo dyes. Furthermore I shall describe and analyse the early history of this research laboratory in order to present a picture of the functions and modes of organization of a typical central research laboratory in the setting of a German chemical enterprise at the end of the nineteenth century.

The second important theme of this article is the cooperation between academic and industrial chemistry. It is demonstrated by the cooperation between Adolf Baeyer, at the University of Munich, and BASF in the field of the synthesis of artificial indigo.

The thesis defended here is that the industrial research laboratory in the German

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5 As Ernst Homburg has indicated, but not fully established. Homburg, op. cit. (2), pp. 98-100.

6 This paper was written in December 1994 during my stay at the Edelstein Center for the History and Philosophy of Science, Technology and Medicine in Jerusalem. I thank Dr Anthony S. Travis and Dr Ernst Homburg for their help and criticism. I would also like to thank Prof. Raymond Stokes for his comments on an earlier draft of this paper. For access to the sources held at the company archives of BASF, Ludwigshafen, I am grateful to Dr Lothar Meinzer and Mrs Ruth Fromm. For more detailed information see the author’s dissertation project ‘Research in the Chemical Industry. The Development of Artificial Dyestuffs at BASF and Hoechst, 1860 - 1914’.

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