

beginning of this century, as it is summed up in their works and in the Memoirs of the Institute. What reception did it find in Germany? How has it thriven under the German university system? These are the questions which interest us at present.

12.  
Reception  
of Exact  
Science in  
Germany.

The general recognition of the purely scientific studies conducted on a large scale by the French Academy of Science, as an integral portion of the German university syllabus, belongs to the beginning of the present century. During the first forty years of the century complaints were continually heard that some of the most important sciences were not worthily represented.<sup>1</sup> The eighteenth

<sup>1</sup> One of the latest instances of such complaint is to be found in J. Liebig's paper "On the state of Chemistry in Austria" (*Annalen der Pharmacie*, 1838, vol. xxv. p. 339). This was followed by the highly interesting pamphlet 'On the state of Chemistry in Prussia' (Braunschweig, 1840). According to the eminent author, chemistry was the science which was the latest to attain a worthy domicile and an independent footing in the great universities of Germany. Mathematical physics had a centre at Königsberg, physiology had been established as an independent science at Berlin through the appointment of Johannes Müller in 1833, chemistry was still only taught in Prussia in connection with other branches of science, with medicine, with technology, with mineralogy. There were no chemical laboratories to be found in Prussia. Men like Rose, Rammelsberg, Mitscherlich, received none or only the scantiest support in their practical courses of chemistry. It is interesting to note how Liebig, whilst pointing to the enormous importance which chemistry possesses from an economic

and political point of view by reason of its working great changes and revolutions, industrial and other, insists on the necessity of teaching chemistry scientifically, and not with an immediate practical bias. In this respect he is as much a representative of the scientific spirit in the wider sense as the great men mentioned in the note to p. 171. The following passage (p. 39) may still be read with interest and profit: "I have found among all who frequent this laboratory [Giessen] for technical purposes a prominent inclination to occupy themselves with applied chemistry. They usually follow hesitatingly and with some suspicion my advice to leave alone all this time-absorbing drudgery, and simply to become acquainted with the necessary ways and means of solving purely scientific questions. By following this advice their minds learn easily and quickly how to find the best means; they themselves adapt them to circumstances and modify them; all operations, all analyses, which serve to ascertain a certain state, which must be made in order to find the conditions