

exhibited the slovenliness of a man who talks at the same time in more than one language, because he is too negligent to arrange his thoughts clearly. Then there come in the demands of the teacher who has to introduce abstract and difficult subjects in a clear, consistent, and simple manner, taking heed that with the elements he does not introduce the sources of future error. The same interest that led in ancient times to the composition of the Elements of Euclid has led, in the higher education of the nineteenth century, beginning with the *École Polytechnique* and ending with Weierstrass's famous courses of lectures at Berlin, to a revision and recasting of the whole elementary framework of mathematics. In the mean time the resourcefulness in applied mathematical thought which ever since the age of Newton has characterised the individual research of this country, has opened out new vistas and afforded much material for critical siftings and strict definitions. Both qualities were united in the great mind of Gauss with a regrettable absence of the love of teaching and the communicative faculty. Like Newton's 'Principia,' his greatest works will always remain great storehouses of thought; while his unpublished remains might be compared to the Queries appended to the 'Opticks' and to the 'Portsmouth Papers.'

Several eminent mathematicians in France, Germany, and Italy have been for many years¹ working at the

¹ The literature of this subject has been rapidly increasing since the year 1872, — the approximate date of the following publications, which created an epoch: R. Dedekind, 'Stetigkeit und irrationale Zahlen' (Braunschweig, 1872); E. Heine, "Die