

1056-01-1877      **Ivor O. Grattan-Guinness\*** (eb7io6gg@waitrose.com), 43 St Leonard's Road, Bengoe, Hertford, SG14 3JW, England. *D company: the rise and fall of differential operator theory in Britain, 1810s-1870s.*

In operator calculus  $D = d/dx$ , positive powers of  $D$  denote orders of differentiation, and negative powers signal integration. This algebra has largely French origins in the late 18th century, growing especially out of work of (the Italian) Lagrange; but the French largely dropped it after criticisms by Cauchy in the 1820s. However, it had already become part of the British attachment to algebras of various kinds. Functional equations were another new algebra of French background and British fascination. After some attention was paid to both algebras from Charles Babbage and John Herschel in the 1810s and 1820s, the British took up operators again in the late 1830s. Duncan Gregory was an important pioneer, George Boole became the leading practitioner, and around a score of others took part up to W. H. L. Russell from the late 1850s onwards, after whom interest fell away markedly. Throughout some focus fell upon solving four differential equations, Riccati's and three due to Laplace. Some of the results went into British textbooks on the calculus and differential equations of this period. In this article I summarise its history, including a discussion of reasons for the near monopoly of study among English and Irish mathematicians, and the causes of the fadeaway. (Received September 22, 2009)