1. Introduction

Mathematicians, like so many other intellectuals, made a great effort to find a secure foundation for their subject in the latter part of the nineteenth century and this continued into the early twentieth century. For logicians this endeavour culminated in Hilbert's programme. As we all know, this programme suffered a mortal blow from Gödel's incompleteness, or better incompletabiliy, theorem; but at the same time mathematics, and mathematical logic in particular, gained immeasurably.

Even a very limited consideration of the development of mathematics shows that a conception of a completed body or theory of all mathematics is unhistoric. From the very earliest times, whether because of practical requirements (e.g. for the natural numbers, rational numbers, real numbers, etc.) or for the clarification of concepts and resolution of paradoxes, the conceptual development of mathematics has on the one hand constantly expanded the range and interpretation of such concepts (e.g. by the introduction of negative numbers) and on the other refined and made more precise the concepts then in use (e.g. the development of axiomatic set theory). Because of this, recent attention has shifted to a more anthropological approach perhaps beginning with Brouwer's criticism of Dedekind (Brouwer (1975), p. 73) and more recently developed by Lakatos (1976), Crossley (1980) and Hersh (1979).

This change of orientation has been accompanied by a dramatic development of practical computing devices at the same time as a strong growth of theoretical computing (recursive function theory). Recently the techniques developed for purely abstract recursion-theoretic work have been applied to give a much more thorough analysis of nineteenth century algebra (and to a more limited extent of analysis and topology). At present there are three schools (for want of a better