These refine and strengthen the now classical versions of PL immersion theory, equivariant immersion theory and smoothing theory. This extra information enables one to exploit local geometric properties such as D. Stone's notion of curvature of PL immersions. The construction of the PL Grassmannian and associated universal PL bundle is more complicated than in the smooth category, but it is quite natural. It abstracts the notion of link in a combinatorial manifold and has one j-cell for each j-dimensional abstract link. The book is written for experts and assumes a thorough knowledge of PL topology, bundles and smoothing theory.

Levitt has successfully reintroduced local geometry into the PL category. It remains to see if sufficiently simple local formulas for characteristic classes or sufficiently interesting global results involving curvature etc., can be obtained to justify the conceptual complications introduced by using the PL category.

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Predicative arithmetic, by Edward Nelson. Mathematical Notes, vol. 32, Princeton University Press, Princeton, 1986, vii+189 pp., $21.00 (paperback). ISBN 0-691-08455-6

This book presents a formalist account of the foundations of arithmetic and "to one who takes a formalist view of mathematics", Nelson reminds us in his penultimate chapter, "the subject matter of mathematics is the expressions themselves together with the rules for manipulating them—nothing more." This view is expressed even more forcefully in the final sentence of the book: "I hope that mathematics shorn of semantical content will prove useful as we expore new terrain." Now these views are not, of course, new or even particularly extreme but the reader who has reached this point in the book will have realised just how much of conventional mathematical reasoning, and even reasoning usually accepted as totally finitary, Nelson regards as containing unjustifiable semantic elements. Let me, therefore, now turn to the beginning of the book and present some examples of arguments that Nelson finds problematic.