a bundle's local product structure from being a global product structure. Spivak devotes sixty pages to developing the relationship between characteristic classes and curvature in such a way that the Weil homomorphism is seen to appear naturally. His computations of the de Rham cohomology of $G(n, N)$ are carried out by purely differential geometric methods, using the identification of $G(n, N)$ with a quotient of Lie groups and making no appeal to the advanced machinery of algebraic topology. Several of the book's outstanding virtues are represented in this treatment: it is self-contained; it gives more than cursory attention to classical invariant theory; and it prizes and imparts geometric insight.

After such a detailed discussion of the good things in the *Comprehensive introduction*, perhaps we should also look briefly for flaws. They are of the sort that would be expected in a work of such magnitude written over a relatively short period of time. As Spivak says, "what I have written is a second or third draft of a preliminary version". Indeed, there is evidence that he originally expected to write only two volumes, and that the book simply took over. Thus one can find occasional instances of loose organization, sketchy referencing, and oversight. (The first two volumes have been carefully corrected in the separate Errata given in Volumes 2, 3 and 5; especially out of consideration for graduate students, it might be good to publish the corrections to the later volumes also.) However, these things are minor, and do not detract from the pleasure of the book. Perhaps more importantly, some readers may be disappointed by a certain lack of synthesis, and wish that Spivak had revealed, for the sake of argument at least, what conclusions he has drawn about differential geometry, its history, and its future.

But it would be ungrateful to ask for more than Spivak has already given us. The *Comprehensive introduction* will be widely read and enjoyed, and will surely become a standard reference for graduate courses in differential geometry. Spivak is greatly to be thanked for this spontaneous, exuberant and beautifully geometrical book.

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Modular representations of finite groups, by B. M. Puttaswamaiah and John D. Dixon, Academic Press, New York, San Francisco, London, 1977, vii + 242 pp. $23.50.

The classical theory of the complex representations of a finite group G can be studied in a number of different but closely related ways. First, one can work with the actual representations, the homomorphisms of G into complex general linear groups. This leads to complex valued functions on G, in particular, the characters, and a very function oriented approach. Another way is the study of the ring theoretic structure of the complex group algebra which leads to idempotents, ideals, left ideals and so on. Finally there is the module approach and the study of homomorphisms, endomorphisms, tensor products. These three different methods exist side by side. For example, there