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History of manifolds.

We trace the evolution of “manifold” to illustrate ways mathematical objects are discovered and named. Stages include 1850–1900: “useful language” and vague unifying concept; 1900–1930: natural objects indicated by reference to examples, intuitions without precise proof; 1930–1955: precise definitions of main versions (smooth, PL, topological and homology), and enough technique to see definitions are right and make progress; 1955–1970: basic theory done and relations among versions established; 1970–present: “expert” view based on commonality of behavior beyond differences in technique for different versions: “high” and “low” dimensional rather than smooth, topological, etc. (Received August 22, 2004)