Daverman's book is the first devoted exclusively to the theory of decompositions. It is much needed, and provides an excellent treatment of a subject of growing importance.

REFERENCES

1. R. H. Bing, *A homeomorphism between the 3-sphere and the sum of two solid horned spheres*, Ann. of Math. (2) **56** (1952), 354–362.

2. ——, *Inequivalent families of periodic homeomorphisms of E^3*, Ann. of Math. (2) **80** (1964), 78–93.

3. ——, *The Cartesian product of a certain nonmanifold and a line is E^4*, Ann. of Math. (2) **70** (1959), 399–412.

4. M. Brown, *A proof of the generalized Schönflies theorem*, Bull. Amer. Math. Soc. **66** (1960), 74–76.

5. J. W. Cannon, $\Sigma^2 H^3 = S^5/G$, Rocky Mountain J. Math. **8** (1978), 527-532.

6. R. D. Edwards, *Suspensions of homology spheres* (unpublished manuscript).

7. M. H. Freedman, *The topology of four-dimensional manifolds*, J. Differential Geom. **17** (1982), 357–453.

8. C. H. Giffen, *Disciplining dunce hats in 4-manifolds* (unpublished manuscript).

9. R. L. Moore, *Concerning upper semi-continuous collections of continua which do not separate a given continuum*, Proc. Nat. Acad. Sci. **10** (1924), 356–360.

10. ——, *Concerning upper semi-continuous collections of continua*, Trans. Amer. Math. Soc. **27** (1925), 416–428.

11. F. Quinn, *Resolutions of homology manifolds, and the topological characterization of manifolds*, Invent. Math. **72** (1983), 267–284; Corrigendum, Invent. Math. **85** (1986), 653.

12. G. T. Whyburn, *On the structure of continua*, Bull. Amer. Math. Soc. **42** (1936), 49–73.

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Hamiltonian methods in the theory of solitons, by L. D. Faddeev and L. A. Takhtajan. Translated by A. G. Reyman. Springer-Verlag, Berlin, Heidelberg and New York, 1987, ix+592 pp., $110.00. ISBN 3-540-15579-1

The modern theory of integrable or solvable systems was initiated by the discoveries of Gardner, Greene, Kruskal, Miura and Zabusky in their investigations of the Korteweg-de Vries equation during the sixties. There then followed a period of intensive activity, which lasted until the late seventies, during which the characteristic features of these systems were explored and a vast class of such equations discovered. It is fair to say that many of the major advances in this field are associated with groups of researchers at a particular institute, such as the Leningrad group to which the authors of this book belong.

Most of the solvable equations possess a family of special solutions, which can be obtained in closed form. In the simplest cases, such as the Korteweg-de Vries equation, they can be given a physical interpretation as a collection of interacting particles. Each particle has only nearest neighbour interaction