(if u is a potential then $u = \int \mathcal{G}\, e^u(da)$ where $\mathcal{G}$ is the Newtonian Green function) and $m(da)$ is a fixed speed measure, in complete analogy with the case $d = 1$. This chapter is a "tour de force" with few references to the earlier ones.

The final chapter, 8, returns to the study of a general diffusion, but unlike the other chapters it is rather a statement of problems and principles than an empirically organized collection of facts. The language is that of road maps and speeds, due to W. Feller, but several of the major problems remain unsolved at the present time (it even may be doubted if all of them admit of complete solutions). On the other hand, the continuity of path assumption is used effectively to condense some of the results of probabilistic potential theory, and especially for the proof that the natural capacities of G. A. Hunt are the same for the forward and reversed (adjoint) processes. The chapter terminates with a short introduction to the general boundary theory of diffusions, which has undergone much development since publication,

Sufficient time may by now have elapsed to make it appropriate to give an overview of this extraordinary work. Suppose that one would take a trip on an ideal diffusing particle—where would one go and what would one see? The trip is rough and often confusing. In many cases one cannot see the route because of the superabundance of detail in the landscape. Furthermore, the trip has no clear beginning or final conclusion. Nonetheless, it does describe a significant branch of mathematics with an elegance of taste and a finality unlike any other work on the subject. Whether or not one wishes to make the journey, it is available and the subject is strengthened by its presence. One might, however, express a hope that in a new edition the authors would provide a few more landmarks.

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Celestial Mechanics. I, II by Shlomo Sternberg. Vol. I, 158 pp., Vol. II, 304 pp. W. A. Benjamin, Inc., New York, 1969. \$7.95.

In recent years there has been considerable growth of interest among mathematicians in classical mechanics. The article of S. Smale, *Topology and mechanics*, and S. Mac Lane's survey in the Monthly are indicative of this.

Sternberg's book has one important virtue: The author deals not only with generalities (such as symplectic structures and so on) but also treats details of difficult concrete problems.

The theory of Hamiltonian perturbations of quasiperiodic motions in