$$\frac{\varepsilon}{2} \sum a_{ij}(x) \frac{\partial^2 u}{\partial x_i \partial x_j} + \sum b_j(x) \frac{\partial u}{\partial x_j} = 0 \quad \text{in } G,$$

$$u(x) = f(x) \quad \text{on } \delta G$$

as $\varepsilon \to 0$. Of course the main interest is when the drift term is pointing inward at the boundary of G. These methods are also used to study the asymptotic behaviour of the first eigenvalue of the operator in the above equation in the region G as $\varepsilon \to 0$.

Chapters 16 and 17 again deal with the inhomogeneous case. They are concerned with some optimization and minimax problems. In Chapter 16 a suitable functional of stopping times is to be optimized over all stopping times. A description of the optimal stopping time is given in terms of solutions of certain variational inequalities. When it is a minimax type problem involving two stopping times, existence of a saddle point is proved and a description of it is given. In Chapter 17 the drift coefficients $\{b_j(t, x)\}$ depend on parameters which can be controlled by different players. The question of existence of a saddle point is studied for the resulting stochastic differential game.

The methods use the theory of quasilinear parabolic differential equations.

The volumes cover a wide variety of results proved under varying assumptions. It may sometimes be hard for a nonexpert to get a feeling for the conditions in terms of their role in establishing the results. There are some misprints, on occasion even in the statement of the theorems.

These volumes contain a considerable amount of detailed information that is quite important in the study of diffusion processes. The methods should prove useful in studying other problems as well. There are a lot of exercises to make the reader familiar with the ideas developed in the text. Complete references are given to other related works, where some of the material can be found. Most of the results have been obtained by the author himself in recent years.

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Sieve methods, by H. H. Halberstam and H.-E. Richert, Academic Press, London, 1974, xiii + 364 pp., $26.00.

The modern theory of sieve method has developed gradually, with fits and starts, over the past sixty years. From the outset the literature was hard to read because of the complicated nature of the arguments, while in recent times many of the most important results have remained unpublished, making it almost impossible to be well informed. Moreover, the literature has become tangled, and fragmented by a lack of unifying perspective. Expository accounts of the subject have usually been restricted to specific aspects, and in many cases even these have made difficult reading. An exception to this is found in Halberstam and Roth [**6**, Chapter 4], where the general nature and