

# COUNTING TUBES

THEORY AND APPLICATIONS

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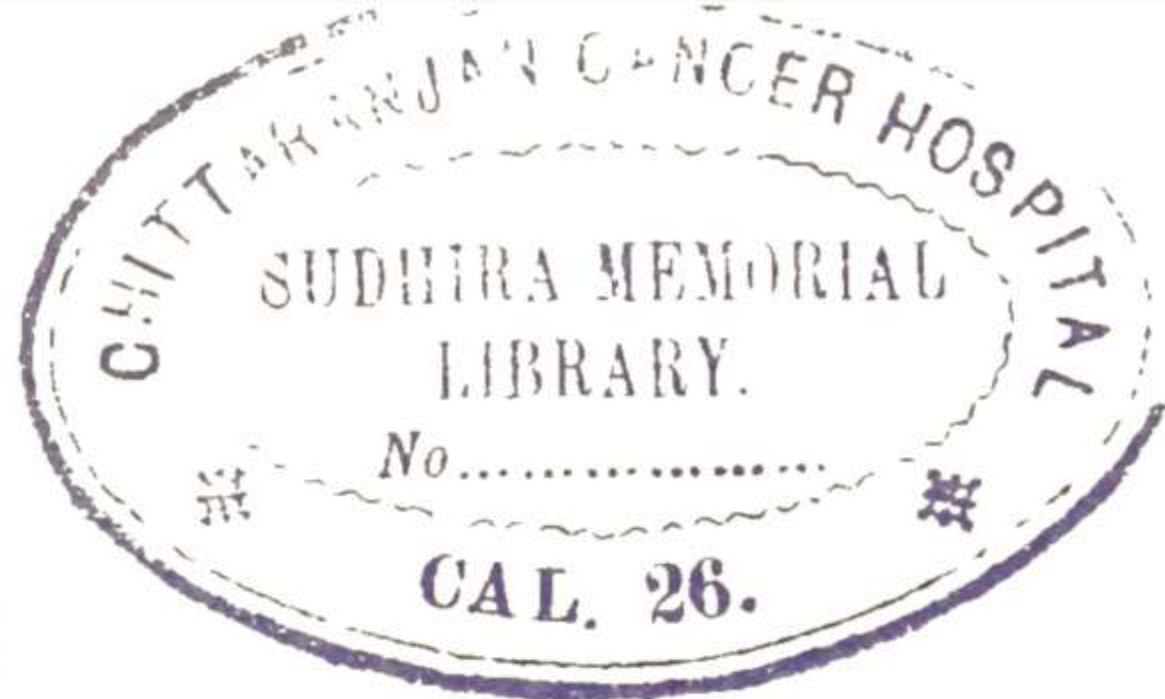
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## P R E F A C E

THE greatly increased interest in nuclear physics, and particularly in its applied aspects, has necessitated a considerable expansion in the use of almost all the relevant established techniques and in the development of new methods. Among the former the employment of Geiger counters is particularly prominent and recently applications of proportional tubes have proved very successful. For this reason it was considered worth while to compile another book (Korff's well known monograph appeared in 1946) dealing with these devices. It is hoped that this book will appeal both to graduates about to commence experimental work and to undergraduate students who find it necessary to use Geiger counters as instruments. In other fields such as medicine and chemistry an increasing number of workers are finding it necessary to use counters in their researches and we hope that this book will be of assistance to them, if only as a source book.

We have tried to make a representative selection of applications but certain notable omissions will be obvious. For example we have not discussed, separately, monitoring devices for health purposes, although they are obviously of great importance. It was thought that insufficient space was available for an adequate treatment to be given and also that the question of health protection against radiation hazard forms a large subject in itself.

At present investigations of methods of using scintillation counters involving multiplier tubes are advancing quickly, while a greatly increased use of proportional counters is to be expected. We have tried to stress the fundamental features of both these types of instrument in some detail and hope that the relevant chapters give a useful introduction. On the other hand, recent work on meson decay has already rendered the chapter on cosmic rays, necessarily written an appreciable time ago, somewhat obsolete. It is inevitable that the present rate of progress will necessitate considerable modifications in treatment in a few years' time, and a second edition should enable us to keep in step. We have aimed primarily, in these circumstances, at drawing attention to various representative counter methods in the hope that they will age less quickly than the interpretation of the results.

It is a privilege to acknowledge the benefits derived from discussions with many of the workers responsible, in the last few years, for welcome advances in the theory and practice of particle counting.

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S.C.C.  
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