straight-line trajectories are intrinsically distinguishable from all other particle trajectories. However, one cannot distinguish between different straight-line trajectories, hence the special relativity of straight-line motion. In the general theory there are ab initio no such distinguishable trajectories; all trajectories are equivalent, hence the general relativity of all motion.

Because of the small amount of new material contained therein, it is difficult to recommend the purchase of the second edition of Fock's book to anyone who already owns the first edition. However, for those who do not now own a copy of this book and are seriously interested in the field of relativity, it is strongly recommended that they obtain one of its editions.

**Isobaric Nuclei with the Mass Number A = 73.** By Ye. P. Grigor'ev. Translated from Russian by Prasenjit Basu. 48 pp. $3.50.
**Isobaric Nuclei with the Mass Number A = 74.** By B. S. Dzhelepov. Translated from Russian by Prasenjit Basu. 58 pp. $3.50.
**Isobaric Nuclei with the Mass Number A = 110.** By B. S. Dzhelepov and N. N. Zhukovskii. Translated from Russian by R. F. Kelleher. 90 pp. $5.00.
**Isobaric Nuclei with the Mass Number A = 140.** By B. S. Dzhelepov, V. P. Prikhodtseva, and Yu. V. Khol'nov. Translated from Russian by Prasenjit Basu. 128 pp. $5.00.
The translations were edited by Reginald W. Clarke and published by (Pergamon, Oxford) Macmillan, New York, 1963.
*Reviewed by Katharine Way, Oak Ridge National Laboratory.*

Anyone who is starting out to make nuclear level schemes should read at least one of these four little books. Even old hands can learn something about the range of points to be considered and about useful tools of the trade.

Each booklet sets forth in detail the reasoning necessary in order to synthesize the experimental data on the production and decay of all known nuclei with a common $A$-value into a set of interconnected level schemes. Almost all of the types of data which one is likely to meet are considered somewhere in the series: data on gamma energies, intensities, coincidences, angular correlation, conversion coefficients, $\beta$-spectra, shapes, $\epsilon/\beta^+$ ratios, L/K capture ratios, etc. In each category the existing, usually discrepant, results are confronted, discussed, and analyzed to find their net contribution to the final picture.

The treatment of gamma-gamma angular correlation for $^{110}$Ag seems particularly thorough. The kind of intensity balance sheet which is necessary in the construction of any complicated level scheme is set forth in detail for $^{140}$Ce and $^{74}$As. Assignment of gamma-ray multipolarities from K-conversion coefficients for high-energy gammas is compared with assignments from pair-production coefficients for $^{140}$La.

In addition, there are a number of comparisons of particular values with systematic trends, checks often neglected by the experimenter whose attention becomes focused on a single nucleus. The booklet for $A = 74$ also contains "notes on possible experiments" showing how the data collection can be used to plan fruitful new investigations.

Those of us who are used to more condensed presentations will find that the arrangement of the material is not convenient. It is difficult to find the level schemes themselves and extremely difficult to look back and find the supporting arguments for some conclusions which are basic to later arguments; for example, the parity of the 2.925-MeV level in $^{110}$Cd. (This reviewer never did locate it.) But one cannot have everything. A clear, concise format would preclude the unique feature of these booklets, namely the detailed discussions of the many steps which must be gone through before an informative level scheme can be constructed. Nowhere else have these been set forth in a systematic way.

The actual data of the booklets are out of date, as is the case with almost every publication in nuclear physics. The Pergamon Press date is 1963; the fine-print Moscow-Leningrad date, 1960. In the booklets for $A = 73$ and $A = 74$, there are no references to journals appearing later than 1959. The other two have a few 1960 citations. None, therefore, can be used as a summary of our present knowledge of a given $A$-chain. Even some 1959 European work is omitted, which shows that there is a difficulty in communication in both directions between East and West. The price is high—5¢ to 7¢ per page. But the scientific quality is also high, resulting from a knowledgeable, sophisticated approach to the analysis of data by this group of scientists around B. S. Dzhelepov.

**An Introduction to the Theory of Seismology** (3rd ed.). By K. E. Bullen. 381 pp. Cambridge University Press, New York, 1963. $9.50.
*Reviewed by R. B. Lindsay, Brown University.*

Earthquakes have long had a grim fascination for the human race, both because of the mystery of their origin and their often highly destructive character. Serious scientific study of them dates from the middle of the 18th Century, though the establishment of seismological stations did not begin until about a hundred years later. The mathematical study of seismology developed, of course, out of the analysis of mechanical wave propagation in the late 18th and early 19th Centuries. In this respect, seismology is a branch of acoustics, though a somewhat specialized one since elastic waves in solid media are in general more complicated than elastic waves in fluids.

The present volume is the third and considerably expanded edition of a highly successful general treatise on seismology, of which the first edition appeared in 1947. It contains in the first six chapters a good review of the general mathematical theory of elastic solids as well as vibrations and elastic waves, more or less equivalent to what one would find in a substantial book on mechanical radiation. The specific application to elastic waves in the earth begins in Chapter 7 with the study of propagation in a stratified sphere. The use of ray analysis as an approximation to the strict wave treatment is introduced early and used extensively.

Practical details are not overlooked, and there is an interesting chapter on the various kinds of seismographs and their modes of action. The nature and organization of seismological observatories are also discussed, as well as the employment of the observations obtained there to increase our knowl-