

REVIEWS

The Death Duties. By G. M. GREEN, LL.B. (Lond.), Solicitor, of the Estate Duty Office.

[2nd edition, pp. 971 + supplement, pp. 36. Butterworth and Co. (Publishers) Ltd., London, 1947. 55s. with supplement.]

THE appearance of the second edition of this well-known text-book is indeed welcome to all whose work touches the complicated subject of which it treats. The author is a solicitor and a Chief Examiner of the Estate Duty Office, but while in his preface he states that the book is 'non-official' he does not hesitate to give the official view or to refer to concessions that are made in practice.

The text of the main volume covers 971 pages and is divided into four parts. Part 1 deals with estate duty and extends to ten chapters of which it is worthy of notice that one treats of valuation and assessment and another of incidence and adjustment of duty. Part 2 deals with legacy and succession duties and comprises six chapters. Part 3 deals with miscellaneous matters among which the author considers double taxation relief, and Part 4 is an appendix containing extracts from 66 statutes material to the subject and a number of Statutory Rules and Orders.

The book has an excellent index extending to 72 pages, which, with the usual tables of statutes and cases, should enable the reader readily to find the treatment of any particular matter and the authority on which the author relies.

The main volume is a statement of the law on 1 September 1946, and it is indeed satisfactory that so comprehensive a work should embody the important changes made by the Finance Act, 1946. It was perhaps unfortunate both for author and reader that publication took place shortly before rather than after the Finance Act, 1947, for the author found it necessary, as early as September 1947, to publish a supplement extending to 36 pages covering in the main the important changes in legacy and succession duty made by the Finance Act, 1947.

'How far', asks the author in his preface, 'should a treatise on death duties diverge into general law? There are pegs on which one might hang a rich variety of essays. Even criminal law might be represented by perjury and forgery.' He answers the question in part by accepting a suggestion made by a reviewer of the first edition that the second edition might be extended to cover the order of application of assets in England.

It is likely that actuaries will most frequently turn to the book in connexion with (1) the valuation for estate duty purposes of interests in expectancy, life interests and annuities, and (2) the liability to estate duty of policies of life assurance, annuities purchased from life offices, and kindred matters.

On the subject of valuation for estate duty of an interest in expectancy, the author points out that there is no statutory rule other than the general basis of market price. He describes the method whereby the value under the Succession Duty Act tables of a notional income of 4% is deducted from the capital value of the fund and the difference is reduced by the percentage of death duties and costs anticipated to be payable at the death of the tenant for life. He adds that

the Council of the Law Society favours a professional valuation in all cases but in a footnote suggests (though without stating on what ground) that the statements made in the *Law Society's Gazette* for April 1946, p. 76, are open to criticism. The article in the *Gazette* is reproduced in the *Institute of Actuaries Year Book*, 1947-48, p. 46.

On the valuation of annuities, the author mentions that, where a life annuity or annuity-certain is taxable as a separate item or asset or where its value has to be deducted, a valuation under the Succession Duty Act tables is accepted by the Estate Duty Office, but points out that the use of the tables is not obligatory for estate duty purposes. It is thought that where the valuation is required for payment (not for deduction) the author might perhaps have stated far more strongly the case for a market valuation. What is to be that value? It may be that a reversionary interest society, liable to income tax not on income but on profits, might purchase at a price which would yield a given interest return after providing from the gross annuity the life premium required on a policy to replace the purchase price. No private individual would, however, purchase at such a price. Were he to do so, he would have to find the premium out of the net annuity remaining after payment of income tax and sur-tax, and if that net annuity remaining is, as well it might be, smaller than the premium on the necessary policy, the so-called asset would become a liability in his hands as regards income. A reversionary annuitant liable to pay estate duty at a high rate on such a value is in a position even more difficult. His only way of escape appears to be to sell in whole or in part. If he takes under restriction (e.g. under protective trusts) his position is indeed impossible, for he cannot convey his interest.

Valuation on a market basis is not available for assessment to legacy or succession duty. If as at present the gross annuity (and not the annuity net of income tax) is valued, a person liable to 20% legacy duty may well find the annuity a liability rather than an asset even though the deduction for estate duty be taken before assessment to legacy duty is made.

It seems that in view of the sharp increases in death duties imposed by the Finance Acts, 1946 and 1947, the subject is one which might well engage the attention of the legislature.

On the taxation of life policies and kindred interests, the author gives clear explanations of the incidence to estate duty under the Finance Act, 1894, s. 2(i)(c), which affects a policy kept up by the deceased for the benefit of a nominee or assignee, and under the Finance Act, 1894, s. 2(i)(d), which imposes the duty on an annuity or other interest (including a life policy) purchased or provided by the deceased to the extent of the beneficial interest accruing or arising by survivorship. Worthy of notice perhaps is the point that the subject of taxation under s. 2(i)(d) is the interest *provided*, and not the interest *arising*, the latter being only the measure of the extent to which the former is taxed (*Westminster Bank Ltd. v. Attorney General* [1939] Ch. 610). The author brings out clearly the extension by the Finance Act, 1939, of the operation of s. 2(i)(d) to interests purchased or provided wholly or in part by a person who at any time derived resources from the deceased, and in particular the fact that such a subject of taxation is aggregable to determine the rate of estate duty, since the deceased is to be deemed to have had an interest in it notwithstanding that he may in fact never have had any interest at all.

Readers to whom the taxation of life policies is a matter of special concern will note many points made by the author on the subject including:

- (1) That it is not the official practice to claim estate duty in the case of a fully-paid policy given by the deceased more than five years before his death to a donee absolutely (p. 100).
- (2) That property in which the deceased never had an interest includes money payable under a policy of assurance on the life of the deceased where the beneficial interest was from the inception of the policy vested absolutely and irrevocably in another person (p. 230).
- (3) That where there are two or more parcels of property in none of which the deceased had an interest, the practice is to treat the subject matter of each distinct disposition as an 'estate by itself' (p. 233).
- (4) That where two persons of approximately equal age pay in equal shares the premiums for a policy on their joint lives, the survivor is considered to take the policy money by way of purchase, and no duty is claimed (p. 106).

The author suggests on p. 231 that a policy under the Married Women's Property Act, 1882, for the benefit of an unnamed wife will give an absolute interest to a wife existing at the date of the policy. In such circumstances, however, it was held in *In re Collier* [1930] 2 Ch. 37 (where the policy was under the 1870 Act) that 'the wife' meant her who by surviving the assured should become his widow, so that a second or subsequent wife would take.

The reviewer feels like a schoolboy following with attention a black-board demonstration and almost hoping he may find the master making a slip. The author is indeed an acknowledged master of his subject. His book is a masterpiece and a delight to any reader who turns to it for instruction and guidance. Mr Green has rendered a great service to those concerned to study a most complicated subject.

D. H.

Statistical Methods in Research and Production. Edited by OWEN L. DAVIES, M.Sc., Ph.D.

[Pp. 304. Oliver and Boyd (for Imperial Chemical Industries, Ltd.), London and Edinburgh, 1947. 28s.]

THIS book is the joint production of seven authors who are, or have been, concerned with the application of statistical methods in the undertakings of Imperial Chemical Industries, Ltd. The purpose of the book is to provide research workers and technicians with a clear account of what statistical methods can do and of the nature of statistical analysis and the computations involved therein, with special reference to problems arising in the chemical industry. The accomplishment of a task such as this cannot be easy, for both time-consuming theoretical discussion and degeneration into a series of 'recipes' must be avoided. It must be said that the authors have surmounted most of their difficulties with considerable skill, and that the result of their work should prove of much value to those whom it is intended to aid.

In the earlier part of the book the method of presentation is to devote the main text to a straightforward account of statistical techniques accompanied by a short explanation of the principles involved, together with examples of applications. To many of the chapters are added appendices giving details of computational procedure and very condensed formal proofs of certain theoretical results. These appendices are numerous—there are nine in chapter 3 (Averages and Measures

of Dispersion), five in chapter 4 (Tests of Significance), ten in chapter 5 (Analysis of Variance), and nine in chapter 6 (Regression and Correlation). There is an abrupt change of policy after chapter 6. The last four chapters—on Frequency Data and Contingency Tables, Sampling, Control Charts, and Prediction and Specification—contain but one appendix among them. In this part of the book formal proof is abandoned and computational details are scattered in the text and the examples.

Preciseness of statement is not to be expected, nor indeed is it always desirable, in a book such as this. There are, however, occasions where lack of precision in wording can be misleading, and a few such cases do occur in the work under review. We may instance the statement on p. 28 that $V = \Sigma (x - \bar{x})^2 / (N - 1)$ gives the best estimate of the universe variance from the data available. It is unfortunate, also, that the old confusion in the definition of the F-ratio should appear once again. On p. 60, F is defined as the ratio of the *greater to the smaller* variance (authors' italics): on p. 179 it is stated that, if the degrees of freedom in F are ϕ_1 and ∞ , then F is χ^2 (with ϕ_1 degrees of freedom) divided by ϕ_1 . According to the definition on p. 60, F cannot be less than unity, yet χ^2/ϕ_1 clearly can take values less than unity. The paradox is resolved when it is realized that the F-distribution on which the tables are based applies to the ratio of two variances, without condition as to which is the greater. Some alteration of either the definition of F or the description of its use should lead to a clearer appreciation of the position.

Certain praiseworthy features of the book must be mentioned. The first is the care with which the effect of departures from normality is described, a distinction being made between cases where such departure is critical and where it has but a minor importance. Closely allied to this is the authors' advocacy of the use of the Camp-Meidell and similar inequalities to draw conclusions which would apply over a wide variety of shapes of distribution. It is not clearly brought out, however, that these inequalities do not apply to one-sided deviations from the mean so effectively as they do to deviations without regard to sign.

The chapter on sampling is an admirable treatment of the subject. It is, of course, strongly biased towards sampling problems arising in the chemical industry.

Finally, the authors have made a most interesting, and, in the opinion of the reviewer, largely successful, attempt to construct a systematic notation for statistical theory. Actuaries have long been aware of the value of a rational, universally accepted notation, and in their international notation they have an instrument to be envied. It is to be hoped that the present book may be a first step to a similar happy state of affairs in statistical theory. It is especially pleasing that the notation, summarized at the end of the book, is in general harmony with statistical tradition. Only the use of ϕ for degrees of freedom and gothic type for the binomial ' p ' and ' q ' can be regarded as innovations.

N. L. J.

Principles of Medical Statistics. By A. BRADFORD HILL, D.Sc., Ph.D.

[Fourth edition. Pp. xii + 252. The Lancet, Ltd., 1948. 10s. 6d.]

IN its fourth edition this excellent introduction to statistics has been substantially expanded and is now one-and-a-half times the size of the first edition, published in 1937 and reviewed in *J.I.A.* Vol. LXIX, p. 99. Originally intended for the

worker in the field of clinical medicine it is now addressed as well to workers in preventive medicine, and part of the enlargement is in specific references to public health. The style of the treatment of the subject remains the same; in the happy phrase referred to in the prefaces to the second and fourth editions the book is still confined to 'arithmetic guided by logic'.

Among the new matter may be mentioned a new chapter on averages; reference in simple terms to the normal distribution; and extension of the discussion of the χ^2 test. The chapter on life tables is considerably expanded and there are two new chapters, on the calculation of standardized death-rates (added in the second edition) and of standardized mortality indices.

These additions lend further weight to the recommendation in the review of the first edition that this book may be read with profit by students of the Institute examinations. This recommendation need not be confined to 'those students who come absolutely fresh to the study of statistics'; in spite of the elementary treatment, the emphasis throughout on the proper limits of interpretation will help any student to keep his feet firmly on the ground whilst engaged in attaining the more advanced theoretical standard required by the examinations.

R. G. B.