

REVIEWS

Statistical Analysis in Biology. By K. MATHER.

[Pp. 247. Methuen and Co. Ltd., 1943. 16s.]

SINCE the first edition of Fisher's *Statistical Methods for Research Workers* in 1925 there have been a number of books whose unexpressed objects have been to 'explain' Fisher. From America there have been authors like Snedecor, Love, Rider, Goulden, Paterson; in England there have been Tippett, Mainland, and the biennial new edition of Fisher's own book. With a few exceptions these authors have been workers in the particular spheres of agriculture, medicine, psychology, and so on, and it is unusual for them to have made any novel contribution to the Fisherian theory themselves.

Unlike previous authors of semi-mathematical texts, Mather has made a number of original contributions to the theories of estimation and testing of hypotheses in the *Annals of Eugenics* and elsewhere. Most of these were summarized by him in 1938 for a somewhat specialist group of geneticists in a valuable little book, *The Measurement of Linkage in Heredity*. Mather's characteristic interpretation and development of Fisher's methods is now presented in a broader way for a wider circle of readers.

The actuary, in his work of analysing mortality rates, should find some of Mather's chapters very suggestive, for the technique of the analysis of supposedly Mendelian segregations has many analogies with the statistical tests needed in a mortality investigation. Unfamiliarity with biological terminology can be met by a study of Grüneberg's little *Elementary Genetics* in the Catechism Series.

But the more fundamental concepts of probability and statistics are not so interesting to Mather, and his treatment of them is accordingly less pleasing. Thus, whilst Chapters VI-XII are excellent, the earlier chapters are not particularly novel or logically satisfying. However, these defects are only noticeable because the greater part of the book is so simply explained and technically sound.

Mather expects the mathematics to be a stumbling block to the biologists for whom the book is intended. To the actuary who can assimilate a new phraseology the mathematics will be simple and the book of value for study and reference.

H. L. S.

Industrial Life Insurance in the United States. By MALVIN E. DAVIS.

[Pp. 399+xii. McGraw-Hill Book Co. Inc., New York and London, 1944. \$2.75]

THE author states that this book has been written to give a non-technical explanation of industrial life insurance as it is conducted today by the leading companies in the United States. It is lucidly written and its object has been achieved. The author is Associate Actuary of the Metropolitan Life Insurance Company of New York, and is thus thoroughly familiar with his subject.

The contents of the book can be readily assimilated by persons who have no connexion with the insurance business. It should also prove of considerable interest to those engaged in the business, whether on the technical side or otherwise, for its exposition of the trend of industrial assurance in America and of the improvements which have been effected, notably in recent years.

Expenses are lower than in this country, at least as regards the bulk of the business. The underwriting department of the author's company not only considers the state of health and family history of proposers, but also the family's income and its total premium outlay for life assurance of all types. If the family's proposed total premium outlay seems unduly large in relation to income,

approval of the new application is normally withheld. Attention is also focused on the distribution of life assurance within the family, in order to see that it is appropriately spread with particular reference to the breadwinner. Furthermore, it is pointed out that the company has so designed the agent's selling commission that there is no conflict between the agent's interests and those of the prospective policyholder as to whether the policy shall be effected in the ordinary or industrial branch or, in the latter event, whether premiums shall be paid weekly or monthly.

Certain offices, which together issue more than one-half of the business, give some benefit on the lapse of any policy after premiums have been paid for as little as 26 weeks (less in the case of two companies). This benefit takes the form of a paid-up term assurance. The normal type of free policy for a reduced sum assured is usually granted after 3 years' premiums have been paid and is an optional alternative to a paid-up term assurance in many cases.

Cash surrender values are given after 3 years' premiums have been paid as regards nearly one-half of the business, and after longer terms of payment in most other cases.

C. G. M.

Valuation Tables on the Oriental Mortality Experience O (25-35). By C. D. SHARP, F.I.A.

[Pp. 98 + iv. Bombay: Thacker and Co. Ltd., 1944. Rs. 20]

IN November 1938 L. S. Vaidyanathan, M.A., F.I.A., submitted a paper to the Institute (*J.I.A.* Vol. LXX, p. 15) on the *Mortality of Indian assured lives*, an interesting feature of the paper being a table of graduated rates of mortality, from ages 19 to 102 inclusive, based on the experience during the years 1925-35 of male Hindus accepted at ordinary rates by the Oriental Government Security Life Assurance Company, Ltd. The experience related only to whole-life and endowment assurances and covered about 900,000 years of life exposed to risk. After a study of the experience of a number of the leading companies operating in India, it was felt that this table provided a suitable basis for the preparation of monetary tables, referred to as the O (25-35) tables, and the work has been carried through by C. D. Sharp, F.I.A.

In his introduction Sharp says: 'In some respects these rates of mortality represent a theoretical curve rather than the results actually observed and it is desirable that reference should be made [to Vaidyanathan's paper] before the present tables are used in practice. The comparative weakness of the medical selection and the possibility of negative selection at the early duration should be borne in mind, particularly at the earlier durations in respect of the smaller companies.' It will be remembered that selection was traced for one year only and that the rates of mortality observed at ages over 60 were felt to be unreliable owing to failure to notify deaths, particularly in the case of paid-up policies.

The following functions are tabulated for rates of interest rising by $\frac{1}{4}\%$ from 3% to 4%.

Select functions	Ultimate functions
$D_{[x]}$	$D_x, N_x, S_x, 10^5 D_x^{-1}$
$C_{[x]}$	C_x, M_x, R_x
$a_{[x]}, A_{[x]}, P_{[x]}$	a_x, A_x, P_x
$a_{[x]; \overline{n-1} }, A_{[x]; \overline{n} }, P_{[x]; \overline{n} }, \text{ for } [x] + n = 50, 55, 60$	$a_{x; \overline{n-1} }, A_{x; \overline{n} }, P_{x; \overline{n} }, \text{ for } x + n = 50, 55, 55$
$\frac{l_x}{l_{[x]}}$	$a_{x; \overline{n} } (x + n \leq 90)$
	D_{xx}, N_{xx}

Net premium reserves (ultimate) are also given for endowment assurances maturing at age 55. Select functions are given for ages up to and including age 60; the usual number of select functions is greatly reduced because selection is traced for one year only. If they are required, the select values $N_{[x]}$ and $S_{[x]}$ can readily be found by the formulae $N_{[x]} = D_{[x]} + N_{x+1}$ and $S_{[x]} = N_{[x]} + S_{x+1}$, and similar remarks apply to $M_{[x]}$ and $R_{[x]}$. Finally $a_{[x]:\overline{n}} = \frac{l_x}{l_{[x]}} \times a_{x:\overline{n}}$, both the factors on the right-hand side being tabulated.

The chief interest of the tables for actuaries not concerned professionally with Indian mortality lies in the ingenious use of machines in preparing and checking the monetary functions. Perhaps the most important of the machines was the multiplying punch which was used

(a) to multiply two factors on the same card, to punch the product on the card and at the same time to keep a running total of the products punched;

(b) to multiply a factor from a 'master' card A (retained in the machine as long as needed) by factors punched on a succession of cards B; here again the machine kept a running total of the products which were, of course, punched on the cards B.

The values of D_x were obtained by the following method. For each value of x a card was punched with the value of l_x and the five values of v^x (one for each rate of interest). After the multiplying punch had been set for a particular rate of interest the cards were fed through and the products D_x were punched, the running total after all the cards had been dealt with being N_{20} (20 was the youngest age involved). As a check the machine was set so that no punching was performed, and the cards could then be passed through rapidly a second time so as to produce a value of N_{20} which was checked with that previously obtained. The cards were then passed through the tabulator which printed the recorded values of D_x and the running totals N_x . For this purpose the cards were arranged with that for the oldest age first. The final value N_{20} was checked with the value previously recorded. It was not thought worth while to punch the values of N_x on the cards and hence to obtain S_x by purely mechanical means. Instead, the S_x column was constructed by the addition of the printed column of N_x by hand machines, the work being performed in duplicate.

An interesting point arose in constructing the columns of D_{xx} and N_{xx} . Owing to lack of space it was not possible to punch the product $D_{xx} (D_x \times l_x)$ on the cards on which D_x and l_x were already recorded. By means of a special machine the values of l_x and D_x (for each rate of interest) were automatically transferred to new cards which were then fed through the multiplying punch in the usual way to produce values of D_{xx} . As before, the tabulator was used to print the results and to find N_{xx} by continuous addition.

The production of the temporary annuity values revealed to a marked degree both the advantages and disadvantages of the punched card method. On the one hand the work was carried out with great accuracy and could readily be checked by the independent calculation of a few values, but on the other hand the mechanical labour involved was considerable. The D_x cards were fed through the tabulator with the youngest age first and the machine printed D_{21} , $D_{21} + D_{22}$, $D_{21} + D_{22} + D_{23}$, etc., being the numerators of $a_{20:\overline{1}|}$, $a_{20:\overline{2}|}$, $a_{20:\overline{3}|}$, etc. (the card for D_{20} was not used). The first card was then 'dropped' and the cards fed through a second time so as to tabulate D_{22} , $D_{22} + D_{23}$, $D_{22} + D_{23} + D_{24}$, etc., the numerators of $a_{21:\overline{1}|}$, $a_{21:\overline{2}|}$, $a_{21:\overline{3}|}$, etc. The process was continued; the front card being 'dropped' after each tabulation until all the numerators had been recorded. Each value had then to be punched on a new card by a hand machine, a most

laborious process; further cards had to be prepared giving the values of D_x^{-1} for every age. Using D_x^{-1} as a 'master' card, the cards showing D_{x+1} , $D_{x+1} + D_{x+2}$, $D_{x+1} + D_{x+2} + D_{x+3}$, etc. were fed through the multiplying punch so that the products $a_x:1$, $a_x:2$, $a_x:3$, etc. could be punched on them. About 2350 cards appear to have been needed for tabulating the temporary annuities, but it should be remembered that the functions for all five rates of interest were punched on the same cards.

The only net premium reserves tabulated were those for endowment assurances maturing at age 55. The formula $1 - \frac{a_{x+n:55-x-n}}{a_x:55-x}$ was used and machines were employed to find the quotients of the annuities. The subtractions from 1 were done by hand and checked by comparing the sum of the reserves for each term with $(n - \Sigma a'/a)$, the totals $\Sigma a'/a$ having been recorded by the machines. It would appear at first sight that the only cards needed would be (i) one for each value of $a_{x+n:55-x-n}$, and (ii) one for each value of $a_x^{-1:55-x}$, since these are the only functions involved. Unfortunately, although each numerator is associated with several denominators, each 'numerator' card can be used in conjunction with only one denominator, since a 'product' a'/a is then punched on it and it cannot be used further until the next rate of interest is dealt with. Actually only one complete set from $a_{20:35}$ to $a_{54:1}$ was punched manually, and the other sets were automatically reproduced by a special machine, the first card being dropped on each occasion. A second set of cards giving values of $a_x^{-1:55-x}$ was used as 'master' cards.

The ultimate functions a_x , A_x , and P_x were calculated on hand machines from the values of D_x , M_x , and N_x , but a different process had to be used for the select values because $M_{[x]}$ and $N_{[x]}$ were not tabulated. $a_{[x]}$ was derived from a_x by multiplying by $l_x/l_{[x]}$ and conversion tables were used to find $A_{[x]}$ and $P_{[x]}$. The same procedure was used for the endowment assurance functions for maturity ages 50, 55, and 60.

Sharp's work is not only interesting but is likely to be historic as the first occasion on which monetary functions for a standard table were produced very largely by punched cards and machines. In the opinion of the reviewer, however, some of the work could be avoided if the machines could be modified to suit the special requirements. For instance, it should be possible in the future to have the product of two factors which have been recorded on a card A, or on two cards A and B, punched on a different card C. It would then be unnecessary to transfer factors from 'full' cards, as was done with l_x and D_x in Sharp's work before D_{xx} could be found. Moreover, in calculating policy values one complete set of cards from $a_{20:35}$ to $a_{54:1}$ would be sufficient as the same cards could be used over and over again if the products were punched each time on blank cards. Any such modification would still leave what must be the heaviest labour and the major source of error in the work, namely, the tabulation and punching by hand machines of all the values of ΣD_{x+t} needed for the temporary annuities. In this connexion it should be borne in mind that 13 rates of interest were used for the A 1924-29 table, and that annuities are usually needed for about 80 values of x and for values of t from 0 to the end of the life table. One way of overcoming the difficulty would be to modify the tabulator so that it not only printed the running totals such as ΣD_{x+t} but punched them on the cards as well.

The fact that selection was traced only for one year in the Oriental Experience simplified the calculations enormously, but in the more usual type of table the calculation of select functions would be a much more serious problem.

H. T.

Mathematical Statistics. By S. S. WILKS.

[Pp. 284+xi. Princeton University Press. Lithoprinted. 1943. \$3.75]

THE subject of 'mathematical statistics' did not attain to the dignity of text-book treatment until 1906, when a work by Blaschke, the Viennese actuary, was published. Two years later Laurent, a member of the Institut des Actuairees Français, produced the second text-book. At about the same time, in England, Elderton was writing his well-known treatise, although he did not choose to entitle it 'mathematical statistics'. It was ten years before a further book appeared, though to-day there are a dozen in existence—Blaschke (1906), Laurent (1908), West (1918), Charlier (1920), Rietz *et al.* (1924), Rietz (1927), Jordan (1927), Darmon (1928), Risser and Traynard (1933), Anderson (1935), Aitken (1939), Wolfenden (1942). Of the later authors, only the last is an actuary; the rest are University teachers.

In all these books the frequency distribution, whether uni- or multi-variate, assumes a central role, and consideration is given to the derivation of measures characterizing it (e.g. mean, mode, coefficient of correlation): sampling and the Lexis theory appear (though often not too clearly) as applications of the ideas thus developed. The mathematics employed is usually of a standard roughly equivalent to that of the Institute's Preliminary Examination.

Prior to Wilks's book under review, no text-book on mathematical statistics had given prominence to the theories of estimation and tests of statistical hypotheses which are so fundamental to the important present-day applications of mathematical probability. These theories date from Fisher's classical papers in the early 1920's and the Neyman-Pearson work published about 1930, and require for their understanding many of the previously developed concepts relating to distribution functions. However, the basic mathematics is now of degree standard and it has yet to be seen whether these theories can be satisfactorily understood by a student without considerable mathematical knowledge. Wilks's book, in fact, is based on a series of lectures delivered at Princeton to graduate and advanced undergraduate students of mathematics. These lectures seem to have been the lineal descendants of those on which his previous monograph, *Statistical Inference* (1937), was founded, though there are some interesting differences of outlook noticeable in the two treatments where they overlap. There are no numerical illustrations: the work is a mathematical treatment of statistical problems.

In the Introduction there is as good a résumé of the fundamental ideas underlying probability theory and their links with experience as the reviewer has ever seen: 'The test of the applicability of the mathematics in this field as in any other branch of applied mathematics, consists in comparing the predictions as calculated from the mathematical model with what actually happens experimentally.' There follow two chapters on cumulative distribution (ogive) functions defined with due mathematical rigour: the Riemann-Stieltjes integral is used after definition and proof of some of its properties, but more complex types of integrals and the related measure theory are considered beyond the level of the student. Characteristic functions are not used, presumably because they require a knowledge of a specialized mathematical technique: instead the conceptually similar, but mathematically less powerful, generating function is employed. Although contour integration is assumed familiar, beta- and gamma-functions are given explanatory space. A noteworthy change in the author's views is his desertion of the von Mises definition of probability, which was a feature of his earlier book.

Chapters iv and v develop the mathematics of sampling from the definition: a random sample of size n of values of x from a population with cumulative distribution function $F(x)$ is a set of n random variables x_1, x_2, \dots, x_n with cumulative distribution function $\prod_{j=1}^n F(x_j)$. These first five chapters and Chapter x on combinatorial statistical theory (the theory of runs, etc.) apply the mathematics of probability theory to the discovery of various types of distribution laws.

In the remaining five chapters there is a valuable exposition of the theories of estimation and testing statistical hypotheses—modern statistical method. Although Fisher's arguments against fiducial limits calculated in respect of discrete distributions are not mentioned—perhaps because Wilks cannot agree with them—there is a clear and thorough explanation of the Fisherian theory of estimation. The Neyman-Pearson likelihood method of testing hypotheses is also treated very fully and applications of it to regression, analysis of variance, and multi-variate hypotheses are detailed. The more fundamental approach through the properties of the power function is, however, only touched on, and Pitman's highly significant contributions are not mentioned.

To anyone who wishes to know what problems the statistician of to-day is successfully tackling, Wilks's excellent book will be indispensable. It provides the only comprehensive, step-by-step, mathematical treatment of modern statistical technique.

H. L. S.

The Future Population of Europe and the Soviet Union. By FRANK W. NOTESTEIN and others of Princeton University.

[Pp. 315. *Series of League of Nations Publications*, 1944. British agents—George Allen & Unwin, Ltd. 12s. 6d.]

How will fertility and old-age mortality change in this country during the next thirty years? The plain answer is—nobody knows. Can we obtain any guidance from the changes during the past twenty-five years? The plain answer is—very little. Yet these are two of the most critical factors in the population problem. It is true that the number of persons who in thirty years' time will be aged between 30 and 65 can, apart from the effects of war, migration and the possibility of catastrophic epidemic, be closely estimated, since they are already born and since widely different mortality assumptions over the relevant age-range produce only small proportionate differences in the survival factors.

But the population aged under 30 in thirty years' time depends on future fertility and the population aged over 65 depends on future old-age mortality. Will fertility fall substantially from the 1938-39 level, or be stabilized at about that level, or reach, and remain at, a higher level? What causes underlie the substantial rise in fertility in the years 1942-44 and the recession in the second quarter of 1945? Can the war-time rise properly and wholly be explained by the higher number of marriages in the early years of the war? Is it right to assume that the 'marginal' fertility of the 'extra' marriages is similar to the 'average' fertility? Will old-age mortality fall slightly or, as implied in the generation theory, fall substantially, or remain stationary or even increase over the next thirty years? These are some of the largely unanswerable questions which spring to the actuarial mind on reading the book.

This colossal work contains computations of the future population for each country of Europe (pre-war frontiers), and for the U.S.S.R. as a whole, at quinquennial intervals up to 1970, subdivided according to sex and in quinquennial age groups, the effects of the war and of future migration being inevitably ignored. Certain technical processes, which appear to be of little importance in themselves, have been devised to produce, on a uniform system, sets of future fertility and mortality rates for the different countries. Broadly, they produce fertility rates falling to about two-thirds of pre-war fertility by 1970 and mortality rates falling from the pre-war level by about 20 % per decennium at the young ages and at progressively lower rates as the age advances, reaching about $2\frac{1}{2}$ % per decennium at the oldest ages. Obviously, the results stand or fall by the credibility of the assumptions made and of this the authors are clearly aware. Indeed, there are many references to this limitation in the book, but there are also many indications—not the least of which is the widely ranging discussion, on the basis of the computations, of the problems of the changing burden of dependency, the changing man-power and military man-power of the various countries—that the authors have come to regard their assumptions as having ‘predictive significance’.

The difficulties involved in regarding the figures as ‘realistic forecasts’ are sufficiently illustrated by the fact that it is easy to frame alternative assumptions which are not outside the range of reasonable possibility, leading to old-age populations for various countries in 1970 differing by ± 20 % from those given in the book and to a population for Great Britain at ages 0–4 in 1970 greater by 50–100 % than that given in the book. Is a net reproduction rate for north-western Europe in 1970 of less than 0.6 credible? That is what the fertility assumptions mean. Even the populations between ages 30 and 65 in 1970 need to be taken with reserve because this is the age-range likely to be affected most by the war and by migration.

The whole basis of the process by which the assumed future fertility and mortality rates are reached is the concept of ‘an orderly development of the vital rates’ and a ‘continuance of pre-war trends’. Leaving aside the fact that there are innumerable ways in which extrapolation can be performed, leading to widely differing ‘orderly developments’, is not this concept as applied to the future fallacious in itself? Because it is possible to express, nearly enough for particular purposes, a set of rates applicable to the past by a mathematical formula, there is no reason to suppose that the mathematical formula has validity for the future. Any set of figures can be expressed mathematically in this sense, if we choose an appropriate form and use enough parameters. Is not ‘orderly development of vital rates’ an idea that can have validity only in retrospect? Changes in vital rates over short periods are usually, although not always, small, and an appearance of orderliness is inevitable, particularly if we agree to regard part of the variation as ‘fluctuation’ and remove it by a graduating process; but the assumption of the continuance of a change in a particular direction requires for its support complex considerations which fall outside the arithmetical and mathematical fields.

Despite the limitations of the actual computations and of the assumptions upon which they are based, the book is a mine of valuable information, including an historical survey of population estimates and an extensive bibliography, and should be studied by every actuary interested in the population problem—that is to say, by every actuary.

Legal Effects of War. By SIR ARNOLD D. MCNAIR.

[Pp. 416. Cambridge University Press, 1944. 25s.]

IN the preface to this book the author describes it as an attempt to study the impact of war on the principles of English law and in no sense a *vade mecum* through the tangled undergrowth of war-time legislation. It contains in Chapter 13 an original full-length study of the legal effect of war on insurance. The section is in three parts: (1) Insurance of Property, (2) Life Insurance, (3) Foreign Proceedings against British Insurance Companies.

This treatise will be welcomed for its scholarly review of the basic principles of a branch of the law which has received little enlightenment from the judicial bench. Apart from the chapter on Insurance, the book contains authoritative studies of other subjects of importance in insurance, such as Trading with the Enemy, Agency, etc. The author's admirably precise and clear style, quite apart from his professional eminence in this field, makes the book an interesting one to read and a most valuable addition to the actuary's reference library.

Starting with marine insurance, the author traces the evolution of the law to its present position that marine contracts are abrogated on the outbreak of war because all commercial intercourse with the enemy is illegal. As to whether fire and other non-marine insurances on property are governed by the same principles as marine policies, his opinion is that, once the marine insurance cases had freed themselves from the early notion that illegality consisted in indemnifying an enemy against the consequences of British capture, they formed a particular application of the general principle of the abrogation of executory contracts, and that all annual insurances of property, marine or non-marine, are governed by this principle. He recognizes that in this he differs from the views expressed by high text-book authority. Macgillivray in his *Insurance Law* considers that there is no reliable authority for the proposition which the author here seeks to establish.

Coming to the question whether life assurance contracts are likewise abrogated by the outbreak of war, the author, stressing the differences between the life contract and those he has previously been considering, finds himself 'upon an uncharted sea' and admits that he is in considerable doubt as to how far the same principles apply. The three possible effects which the mere outbreak of war might have upon a pre-war contract of life assurance, (1) automatic abrogation, (2) suspension, and (3) no effect whatever, are considered from first principles, and in the light of the slender judicial authority available (including American cases). The author, supported by arguments which cannot fairly be summarized, concludes tentatively and with reserve that the mere outbreak of war does not abrogate a life assurance contract, whatever may be its later fate at the next critical date, the premium renewal date. Although in view of the Trading with the Enemy Act, 1939, a company cannot lawfully receive payment of a premium from an enemy after the outbreak of war without authorization from the appropriate Government Department, the question of the legality of such premium payments does not arise, because British life offices hold an authorization from the Trading with the Enemy Department to accept premiums paid by or on behalf of enemies. Referring to the authority from the Trading with the Enemy Department for the application by companies of surrender values towards the maintenance of policies, whether or not they have been under obligation apart from the war to do so, the author comments that 'it is open to grave doubt whether, in the absence of any provision in the policy giving the company a charge for the unpaid premiums, the company would have a right

after the war to recover premiums so paid from the assured or his representatives or to set them off against a claim for the policy moneys or the surrender value as at the date of lapse, and it is to be hoped that the matter will be one of those which are regulated by treaty.'

The author seeks to establish an exception in one case. As between an assurance 'for a limited period such as twelve months' and a whole-life or long-term endowment assurance, 'the former is merely a contract while the latter is something more than a contract, i.e. a "concomitant of the rights of property"', and the author concludes that in the former case the principle applicable to a fire or marine policy should apply, with the consequence that the outbreak of war abrogates the contract. It is not easy to avoid feeling that there is something arbitrary here and that there will be great difficulty in defining the critical duration. If a term assurance for 12 months should be abrogated, why should one for 13 months survive? The author points out that the distinction he seeks to make has not yet been judicially considered.

That Sir Arnold McNair respects the aims of British insurance companies in the very complex questions now arising in practice may be judged by his appended Note which deserves quotation in full:

'This chapter does not deal with the special code created by the Peace Treaties of 1919-1920 for the settlement of the questions arising under contracts of insurance between former enemies. In the case of the Treaty of Versailles the provisions will be found in the Annex which follows Article 303, particularly clauses 8 to 24. Shortly stated, the Treaty provided (a) that contracts of fire and life insurance between a British insurer and an assured who subsequently became an enemy were not deemed to have been dissolved by the outbreak of war or by the mere fact of the assured becoming an enemy, and (b) that contracts of marine insurance were deemed to have been dissolved unless the risk had already attached before the assured became an enemy, and in that event effect was nevertheless to be given to the contract after the coming into force of the Treaty. It is reasonable to suppose that these provisions embody a recognition of wider national interest than is reflected by the results of the common law, with which this chapter is primarily concerned. The pre-eminent international reputation of British insurance is of manifest economic advantage to this country, and one factor which has built up that reputation is the practice of British insurance to afford their overseas policyholders the protection of their local law. In time of war, however, national public policy may prevent British insurers from following this practice. On the other hand, when peace is restored public policy may work the other way. Accordingly, it is not surprising that the Peace Treaties enabled British insurers (subject to the Clearing Office procedure) to give effect to their honourable intentions to fulfil their pre-war obligations under their world-wide contracts as soon as the legal prohibition upon giving effect to those transactions had been removed.'

R. W. S.

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THIS number contains the following articles on life assurance:

Life assurance—some medical aspects. By R. HALE-WHITE, M.C., M.A., M.D., M.R.C.P.

The examination for life assurance. By D. R. CRABB, M.B., B.S.

Life assurance—some underwriting aspects. By R. C. SIMMONDS, F.I.A.