Poisson variable." Price: Two Shillings and Sixpence. Order *New Statistical Tables*, No. 28.

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1. E. S. PEARSON & H. O. HARTLEY, *Biometrika Tables for Statisticians*, Cambridge Univ. Press, 1954, p. 204–205. [*MTAC*, v. 9, 1955, p. 205–211].
2. T. E. STERNE, "Some remarks on confidence or fiducial limits," *Biometrika*, v. 41, 1954, p. 275–278. [*MTAC*, v. 9, 1955, p. 216].
3. ANDERS HALD, *Statistical Theory with Engineering Applications*, John Wiley & Sons, Inc., New York, 1952, p. 718.
4. W. L. STEVENS, "Fiducial limits of the parameter of a discontinuous distribution," *Biometrika*, v. 37, 1950, p. 117–139.

—F. G. FOSTER & D. H. REES, *Tables of the Upper Percentage Points of the Generalized Beta Distribution*, New Statistical Tables Series No. 26. Reprinted from *Biometrika*, vols. 44 & 45. Obtainable from the Biometrika Office, University College, London, W.C. 1, 30 p., 27 cm. Price five shillings.

In sampling from a k-variate normal population, let A and B be independent estimates, based on ν_1 and ν_2 degrees of freedom, respectively, of the population variance-covariance matrix. Let $\theta_1 \leqq \cdots \leqq \theta_k$ be the roots of the determinantal equation $| \theta\nu_1 A + (\theta - 1)\nu_2 B | = 0$. Then the distribution of θ_k is given by

$$I_x(k; p, q) = K \int_0^x d\theta_k \int_0^{\theta_k} d\theta_{k-1} \cdots \int_0^{\theta_2} d\theta_1 \prod_{i=1}^{k} \theta_i^{p-1}(1 - \theta_1)^{q-1} \prod_{i>j} (\theta_r - \theta_j)$$

where $p = \frac{1}{2}(| \nu_2 - k | + 1)$, $q = \frac{1}{2}(\nu_1 - k + 1)$. $I_x(1; p, q)$ is simply the incomplete-beta-function ratio $I_x(p, q)$. Foster & Rees argue that the 'generalized beta distribution' is *a* (not *the*) natural generalization of the Beta distribution from univariate to multivariate analysis of variance; for other generalizations see [1], [2], [3], [4].

The tables under review constitute a compilation of tables previously published in three papers by Foster and Rees [5], [6], [7]. Tabulated therein to 4D are values of the root of the equation

$$I_x(k; p, q) = P$$

for $P = .8(.05)\ .95,\ .99$;

$$k = 2,\ p = \tfrac{1}{2},\ 1(1)\ 10,\ q = 2\ (1)\ (20)\ (5)\ 50,\ 60,\ 80;$$
$$k = 3,\ 4,\ p = \tfrac{1}{2}(\tfrac{1}{2})\ 4,\ q = 1\ (1)\ 96.$$

Two- to four-point Lagrangian interpolation in p and q is recommended; no specific accuracy is guaranteed.

The computations for $k = 2$ were carried out on the N.R.D.C. Elliott 401 computer at Rothamsted; for $k = 3, 4$, on the DEUCE computer of the English Electric Company. Tables for $P = .95, .99$ and $k = 2(1)6$ have been given by Pillai [8], [9].

Two examples are given of the application of the tables to the analysis of dis-

persion of means, and one example is given of such application to the analysis of dispersion of regressions.

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1. S. S. WILKS, "Certain generalizations in the analysis of variance," *Biometrika*, v. 24, 1932, p. 471-494.
2. E. S. PEARSON & S. S. WILKS, "Methods of statistical analysis appropriate for k samples of two variables," *Biometrika*, v. 25, 1933, p. 353-378.
3. STATISTICAL RESEARCH GROUP, COLUMBIA UNIVERSITY, *Selected Techniques of Statistical Analysis*, McGraw-Hill Book Co., New York, 1947, chap. 3, p. 111-184.
4. J. NEYMAN, Editor, *Proceedings of the Second Berkeley Symposium on Mathematical Statistics and Probability*, Univ. California Press, Berkeley & Los Angeles, 1951, p. 23-41.
5. F. G. FOSTER & D. H. REES, "Upper percentage points of the generalized beta distribution, I," *Biometrika*, v. 44, 1957, p. 237-247. [*MTAC*, Rev. 165, v. 12, 1958, p. 302]
6. F. G. FOSTER, "Upper percentage points of the generalized beta distribution. II," *Biometrika*, v. 44, 1957, p. 441-453 [[*MTAC*, Rev. 167, v. 12, 1958, p. 302]
7. F. G. FOSTER, "Upper percentage points of the generalized beta distribution, III," *Biometrika*, v. 45, 1958, p. 492-503. [*Math. Comp.*, Rev. 77, v. 14, 1960, p. 386]
8. K. C. S. PILLAI, *Concise Tables for Statisticians*, Statistical Center, Univ. of the Philippines, Manila, 1957.
9. K. C. S. PILLAI & C. G. BANTEGUI, "On the distribution of the largest of six roots of a matrix in multivariate analysis," *Biometrika*, v. 46, 1959, p. 237-240.

43[K].—TOSIO KITAGAWA & MICHIWO MITOME, *Tables for the Design of Factorial Experiments*, Dover Publications, Inc., New York, 1955 (printed in Japan; originally published by the Baifukan Company of Japan as part 3 of the work with the same title), vii + 253 p., 26 cm. Price $8.00.

These tables consist of the actual tables that appeared in the original 1953 publication in Japanese An introduction to design principles and an explanation of the mathematical principles, parts 1 and 2 of the first publication, have been omitted. Readers are now referred to Kitagawa's *Lectures on the Design of Experiments* for this information and presumably for some help in the use of these tables.

The American publisher's jacket states that "this book contains tables for the design of factorial experiments and covers Latin squares and cubes, factorial design, fractional replication in factorial design, factorial designs with split-plot confounding, factorial designs confounded in quasi-Latin squares, lattice designs, balanced incomplete block designs, and Youden's squares." The table of contents gives more detail under each of the eight main headings just listed, except for the last two. For example, orthogonal squares and cubes are listed, the 2^n series of factorial arrangements goes up through 2^9, mixtures of factorials such as $a^n b^m$ mostly for $m = 1$ are listed, and the factorial replicates cover the 2^n for $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, and $\frac{1}{16}$ replicates plus the $\frac{1}{3}$ replicate for 3^n. Perhaps it should be noted that tables such as these are not really "for the design of experiments"; the function of the tables is to help select a layout or make easy the randomization of the layout after the design has been selected.

An examination of these tables shows that four Japanese pages have been cut out with scissors, and four English pages pasted in their place. The jacket further describes these tables as a "New revised edition. Explanatory notes." The author's preface does not describe what this reviewer would call a 'revised edition' and the explanatory notes consist of only one page. Since Kitagawa's *Lectures on Design of Experiments* may not be readily available to some users of these tables, other