statistics) the authors take the number, s, of occupied cells as a statistic to test the hypothesis of uniform probability over the cells. Let $P(s \mid n, k)$ be the probability density for s. The correspondence is noted between this distribution and the results of a series of n drawings from a discrete distribution in which the random variable assumes only the values 0, 1, 2, $\cdots$, and in which the sample sum is k and the number of non-zero values is s. In developing a recursion formula for $P(s \mid n, k)$ it is shown that the uniform distribution over cells arises from the Poisson distribution, and the binomial and negative binomial distribution give particular non-uniformities. The function tabulated is $Z_{k;\alpha}$, which is defined under the hypothesis of uniformity by $\sum_{s=1}^{Z_{k,\alpha}} P(s \mid n, k) \leqq \alpha$ and $\sum_{s=1}^{Z_{k,\alpha}+1} P(s \mid n, k) > \alpha$, for $\alpha = .05, .01, .001$; $n = 3(1)20$, and ranges of k varying from (3, 15) for $n = 3$ to (2, 100) for $n = 20$.

C. C. CRAIG

University of Michigan
Ann Arbor, Michigan

79[K].—A. HUITSON, "Further critical values for the sum of two variances," *Biometrika*, v. 45, 1958, p. 279–282.

Let s_i^2, $i = 1, 2$, be an estimate of the variance σ_i^2 with f_i degrees of freedom so that $f_i s_i^2/\sigma_i^2$ is distributed as χ^2 with f_i dif. To assign confidence limits to the form $\lambda_1\sigma_1^2 + \lambda_2\sigma_2^2$, where λ_1 and λ_2 are arbitrary positive constants, the author has previously [1] tabulated upper and lower 5% and 1% critical values of

$$(\lambda_1 s_1^2 + \lambda_2 s_2^2)/(\lambda_1\sigma_1^2 + \lambda_2\sigma_2^2).$$

The present tables are an extension, giving upper and lower $2\frac{1}{2}$% and $\frac{1}{2}$% critical values for the same function to 2D for $\lambda_1 s_1^2/(\lambda_1 s_1^2 + \lambda_2 s_2^2) = 0(.1)1$ and $f_1, f_2 = 16, 36, 144, \infty$.

C. C. CRAIG

University of Michigan
Ann Arbor, Michigan

1. A. HUITSON, "A method of assigning confidence limits to linear combinations of variances," *Biometrika*, v. 42, 1955, p. 471–479. [*MTAC*, Rev. 19, v. 12, 1958, p. 71.]

80[K].—SOLOMON KULLBACK, *Information Theory and Statistics*, John Wiley & Sons, New York, 1959, xvii + 395 p., 24 cm. Price $12.50.

This interesting book, which discusses logarithmic measures of information and their applications to the testing of statistical hypotheses, contains three extended tables in addition to a number of shorter or more specialized ones. Table I gives $\log_e n$ and $n \log_e n$ to 10D for $n = 1(1)1000$. Table II lists values of

$$p_1 \log_e \frac{p_1}{p_2} + (1 - p_1) \log_e \frac{1 - p_1}{1 - p_2} \quad \text{to 7D for} \quad p_1, p_2 = .01(.01).05(.05).95$$

(.01).99. Table III gives 5% points for noncentral χ^2 to 4D with $2n$ degrees of freedom for $n = 1(1)7$ and noncentrality parameter β^2 for $\beta = 0(.2)5$. As it is stated, this is taken directly from an equivalent table of R. A. Fisher [1].

C. C. CRAIG

University of Michigan
Ann Arbor, Michigan