are not necessarily satisfied on the basis of the conditions stated in the theorem. The error arose from an incorrect and unstated assumption which was used in the derivations. This incorrect assumption was that

$$x(n) - \theta, \cdots, x(n + 1 - r) - \theta, x(n - r) - \varphi, \cdots, x(1) - \varphi$$

represent a set of statistically independent observations.

Test 3 of this paper can be interpreted as a method of deciding whether the largest observations are too small or as a test of whether the smallest observations are too small. An unpublished analysis shows that only the latter interpretation is of practical interest. Similarly, the appropriate interpretation for Test 1 is as a method of deciding whether the largest observations are too large. With these interpretations, both tests are of the "outlying observation" type. The unpublished analysis shows that Tests 1 and 3 are consistent under conditions much more general than those considered in Theorem 4 if these interpretations are adopted. Copies of this analysis can be obtained by writing the author at the U. S. Naval Ordnance Test Station, China Lake, California. One place where Tests 1 and 3 may have practical value is where differences of paired observations are being considered. Then the symmetry assumption often can be accepted.

CORRECTION TO "ON THE STRUCTURE OF BALANCED INCOMPLETE BLOCK DESIGNS"*

By W. S. Connor

National Bureau of Standards

In the paper under the above title (*Annals of Math. Stat.*, Vol. 23 (1952), pp. 57–71) the number of blocks of type 1 given in Lemma 4.2 should be $(k - \gamma)(k - \gamma + 1) + k\gamma - \frac{1}{2}k(k + 3) + 1$. I am indebted to Dr. W. H. Clatworthy for bringing this error to my attention.

CORRECTION TO "ON A TEST FOR HOMOGENEITY AND EXTREME VALUES"

By D. A. Darling

University of Michigan and Columbia University

In reference to the above paper (*Annals of Math. Stat.*, Vol. 23 (1952) pp. 450–456) Professor Herbert Solomon has kindly pointed out an ambiguity in the last paragraph of Section 2. It is stated there that the table of reference [9] "appears

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to be subject to certain indeterminate errors." This remark was intended simply to call attention to the discussion of the accuracy of the table made by the authors of [9] and should not discourage the use of the table since the present writer was merely referring to the evaluation of accuracy made by the authors themselves.

Meanwhile Dr. Churchill Eisenhart has pointed out that an exact table for the case of two degrees of freedom ($r = 0$) has been added to reference [1] as printed in *Contributions to Mathematical Statistics* by R. A. Fisher (John Wiley and Sons, 1950).

ABSTRACTS OF PAPERS

(Abstracts of papers presented at the Chicago meeting of the Institute, December 27-30, 1952)

1. A Two-Sample Multiple Decision Procedure for Ranking Means of Normal Populations with Unknown Variances. (Preliminary Report.)

ROBERT E. BECHHOFER, CHARLES W. DUNNETT AND MILTON SOBEL, Cornell University.

The multiple decision problem of ranking k normal populations according to their population means when both the means and the variances are unknown is considered. Useful confidence statements, which are independent of the unknown variances, can be made concerning the rankings if a generalized Stein two-sample procedure is used. The rankings are of the general type formulated by Bechhofer (*Ann. Math. Stat.*, Vol. 23 (1952), p. 139), which includes selecting the population with the largest population mean and ranking completely all k populations. Two cases are considered: A) population variances unknown and equal, and B) population variances unknown and not necessarily equal. To determine the size (which may be zero) of the second sample, tables for a $(k - 1)$-variate analogue of Student's t-distribution are required for case A, and tables for a $(k - 1)$-variate analogue of the distribution of the difference between two independent Student t-statistics are required for case B. For $k = 2$, tables due to Fisher and Sukhatme are available for cases A and B, respectively. For case A, $k = 3$, tables are being computed. For case A, $k > 3$ and for case B, $k \geqq 3$, computation of the necessary tables is contemplated. (This research was sponsored by Air Research and Development Command.)

2. A Sequential Multiple Decision Procedure for Ranking Means of Normal Populations with Known Variances. (Preliminary Report.)

ROBERT E. BECHHOFER AND MILTON SOBEL, Cornell University.

Let X_{ij} be normally and independently distributed $N(X_{ij} \mid \mu_i, \sigma^2)$ from population π_i ($i = 1, \cdots, k; j = 1, 2, \cdots$). The μ_i are unknown; σ^2 is known. Denote the ranked μ_i by $\mu_{[1]} < \cdots < \mu_{[k]}$. It is desired to choose the population with mean $\mu_{[k]}$. Denote the sample sum based on m observations from π_i by $Q_{im} = \sum_{j=1}^{m} x_{ij}$; denote the ranked Q_{im} by $R_{1m} < \cdots < R_{km}$. Define $y_m = R_{km} - R_{k-1,m}$ ($m = 1, 2, \cdots$) and $\delta_{k,i} = \mu_{[k]} - \mu_{[i]}$ ($i = 1, \cdots, k - 1$). Let $\delta^* > 0$ be the smallest value of $\delta_{k,k-1}$ that it is desired to detect, and let $1 - \beta(1/k < 1 - \beta < 1)$ be the desired probability of a correct choice (p.c.c.)