We assume that the x_i' are independently distributed and each x_i' is dis-distributed according to the same law of distribution, whence we find that the characteristic function for the law of distribution of harmonic means of samples of n is

$$\phi(t) = \left\{\int_0^\alpha \frac{k}{\sigma} e^{it|x|-\frac{|x|}{\sigma}} x^2\, dx\right\}^n, \tag{42}$$

from which, after simplification, we find that

$$\phi(t) = \frac{k^n 2^n \sigma^{2n}}{(1-\sigma it)^{3n}}. \tag{43}$$

We now find that the law of distribution for u is

$$P(u) = \frac{2^n k^n \sigma^{2n}}{2\pi}\int_{-\alpha}^{\alpha} \frac{e^{-itu}}{(1-\sigma it)^{3n}}\, dt,$$

which, after evaluation and simplification, becomes

$$P(u) = \frac{2^n k^n}{\sigma^n \Gamma(3n)} u^{3n-1} e^{-\frac{u}{\sigma}}. \tag{44}$$

Recalling that in this case, $u = 1/|x_1| + 1/|x_2| + \cdots + 1/|x_n|$, we make the transformation $u = n/H$, where H is the harmonic mean; whence, from (44), we find that the desired law of distribution of harmonic means of samples of n is given by

$$P(H) = \frac{2^n k^n n^{3n-1}}{\sigma^n \Gamma(3n)} \cdot H^{1-3n} e^{-\frac{n}{\sigma H}}. \tag{45}$$

7. **Conclusions.** We have shown that the same analysis is applicable to find the explicit expression for all the distribution laws we have discussed in this paper.

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ERRATA

In my paper* there appear two blunders which were called to my attention by A. T. Craig.

In section 4, pages 107–108, headed "The distribution of variances and standard deviations," I have obtained the distribution function of the sum of the squares of $n - 1$ independent values of x and not the distribution function of the sum of the squares of the deviations from the sample mean of the n independent values of x.

In section 2, pages 104–105, headed "The distribution of differences," I have obtained the distribution function of the differences of *absolute values* and not the distribution function of the actual differences.

* Weida, F. M., "On Certain Distribution Functions when the Law of the Universe is Poisson's First Law of Error," Annals of Mathematical Statistics, Vol. VI, No. 2, June, 1935, pp. 102-110.