that he or an assistant with little training can perform the mechanical work with confidence. Also, the "within classes" sum of squares is computed directly and not as a difference. The sums of squared deviations leading to the sample variances are exhibited in explicit form for inspection, and test of significance if desired. Herein frequently is found an important clue, a warning signal or a hint leading to re-examination of the sampling procedure.

As a final point, it is worthy of notice that the method facilitates use of analysis of variance as a technique of preliminary investigation. If the observed data have been obtained more or less fortuitously, and not as the result of rigid experimental design, rows or columns may be eliminated or combined with a minimum of labor, thus permitting testing of various combinations of data.

THE GEORGE WASHINGTON UNIVERSITY,
WASHINGTON, D. C.

ANNOUNCEMENT CONCERNING COMPUTATION OF MATHEMATICAL TABLES

A Project for the Computation of Mathematical Tables, sponsored by Dr. Lyman J. Briggs, Director of the National Bureau of Standards, is being conducted by the Work Projects Administration for the City of New York. The Project has been in operation since January 1, 1938, under the technical supervision of Dr. Arnold N. Lowan.

An agenda of the Project, listing tables completed, in progress and under consideration is given below:

COMPLETED TABLES

1. A table of exponentials for the following ranges, intervals and number of decimals.

Range	Interval	No. of Decimals
−2.5000 to 1.0000	0.0001	18
1.0000 to 2.5000	0.0001	15
2.500 to 5.000	0.001	15
5.00 to 10.00	0.01	12

2. A table of sines and cosines for the range from 0 to 25 radians at intervals of 10^{-3} to 8 places of decimals.
3. A table of the first 10 powers of the integers from 1 to 1,000.

TABLES IN PROGRESS

(A) Computations completed, manuscripts in process of preparation.

1. A table of the functions—

$$Si(x) = \int_0^x \frac{\sin t}{t}\,dt; \qquad Ci(x) = \int_\infty^x \frac{\cos t}{t}\,dt;$$

$$Ei(x) = \int_{-\infty}^x \frac{e^t}{t}\,dt; \qquad -Ei(-x) = \int_x^\infty \frac{e^{-t}}{t}\,dt,$$

for the range between 0 and 2 at intervals of 10^{-4}, 9 places of decimals.

2. A table of the functions defined under (1) for the range between 0 and 10 at intervals of 10^{-3} to nine significant figures.
3. A table of circular and hyperbolic sines and cosines for the range between 0 and 2 at intervals of 10^{-4}.
4. A table of natural logarithms of integers from 0 to 100,000 to 16 places of decimals.
5. A table of natural logarithms of decimal numbers from 0.0000 to 10.0000 at intervals of 10^{-4} to 16 places of decimals.
6. A series of Physical Tables

(a) $G = \dfrac{1}{\sqrt{1-\beta^2}}$, for β ranging from 0 to 0.9997 at various intervals. This table also includes certain functions depending on G.

(b) Table of $N_\lambda = \dfrac{2\pi c}{\lambda^4} \cdot \dfrac{1}{e^{\frac{c_2}{\lambda T}} - 1}$, for λ ranging between .25 and 10 microns at various intervals, and for T = 1000, 1500, 2000, 2500, 3000, 3500, 6000°K.

(c) Table of $J_\lambda = \dfrac{c_1}{\lambda^5} \cdot \dfrac{1}{e^{\frac{c_2}{\lambda T}} - 1}$, for $T = 1000°K$, λ ranging from .5 to 20 microns at various intervals.

(d) Table of $N_{0-\lambda} = \int_0^\lambda N_\nu\,d\nu$, and $J_{0-\lambda} = \int_0^\lambda J_\nu\,d\nu$ for T = 1000°K. Range of λ, the same as for J_λ.

(e) Table of the ratios

$$\frac{J_{0-\lambda}}{J_{0-\infty}}, \qquad \frac{N_{0-\lambda}}{N_{0-\infty}}, \qquad \frac{J_\lambda}{(J_\lambda)_{\max}}, \quad \text{and} \quad \frac{N_\lambda}{(N_\lambda)_{\max}}.$$

Range for λ, same as under (c).

(B) Computations in progress.

7. Table of the Probability Functions

$$\frac{2}{\sqrt{\pi}}\,e^{-x^2} \quad \text{and} \quad \frac{2}{\sqrt{\pi}}\int_0^x e^{-t^2}\,dt$$

for x ranging from 0 to 1 at intervals of 10^{-4} and from 1 to 6 at intervals of 10^{-3}.

8. Table of the Probability Functions—

$$\sqrt{\frac{2}{\pi}}e^{-\frac{x^2}{2}} \quad \text{and} \quad \sqrt{\frac{2}{\pi}}\int_0^x e^{-\frac{t^2}{2}}\,dt$$

for x ranging between 0 and 1 at intervals of 10^{-4} and from 1 to 8.4 at intervals of 10^{-3}.

9. Table of Bessel Functions $J_0(z)$ and $J_1(z)$ for complex arguments, $z = re^{\theta i}$ where r ranges from 0 to 10 at intervals of 0.01 and θ ranges from 0° to 90° at intervals of 5°.
10. Table of tan x and cot x for x ranging between 0 and 2 at intervals of 10^{-4}.
11. Table of the integrals $\int_0^1 x^k \sin n\pi x\,dx$ and $\int_0^1 x^k \cos n\pi x\,dx$ for $n = 0, 1, 2, 3, \cdots 100$ and $k = 0, 1, 2, 3, 4, 5$.

Tables under Consideration

1. A 12 decimal place table of inverse tangents to radian measure. The table will include the following ranges: From 0 to 3 at intervals of 10^{-3}, from 3 to 10 at intervals of 10^{-2}, from 10 to 40 at intervals of 10^{-1}, from 40 to 100 at intervals of 1, and from 100 to 1000 at intervals of 10.
2. Table of Bessel Functions $J_{\pm 1/3}(z)$, $J_{\pm 2/3}(z)$, $J_{\pm 1/4}(z)$, $Y_0(z)$, $Y_1(z)$ and $K_{\pm 1/3}(z)$, for the range and for intervals similar to those for $J_0(z)$ and $J_1(z)$.
3. Table of $Q_n(x) = \sqrt{\frac{\pi}{2x}} \cdot J_{n+\frac{1}{2}}(x)$ for x ranging between 0 and 10 at intervals of 0.01 and for $n = 1, 2, 3, \cdots 10$.
4. Table of Gamma Functions for complex arguments $a + bi$, where a and b range from 0 to 5 at intervals of 0.05.
5. Table of Elliptic Functions for arguments $z = x + iy$, where x and y range from 0 to $\frac{1}{2}\pi$ at intervals of 0.01.
6. Table of the function $A(x, y) = \frac{1 - x^y}{1 - x}$ where x ranges from 0 to 1 at intervals of 0.01 and y ranges from 0 to 4 at intervals of 0.01.
7. Table of Temperature and Density of Stars, for "Point-Source" models.

The directors of the Project are anxious to hear from scientific colleagues concerning work in progress elsewhere as well as concerning suggestions for new tables. In particular, they would appreciate suggestions concerning new tables which may be of interest in the field of statistics. All suggestions will receive careful consideration.

Communications concerning new tables or work in progress elsewhere should be addressed to Dr. Arnold N. Lowan, Chief Project Supervisor, Project for the Computation of Mathematical Tables, 475 Tenth Avenue, New York.