$$\iint_{\mathfrak{D}} H(t(w))\,|\,\mathfrak{J}_e(w)\,| = \iint H(z)\kappa(z, \mathfrak{D})$$

holds whenever either integral exists. Also, if $\nu(z)$ is the sum of $i_e(w)$ for all inverse images w of z, then

$$\iint_{\mathfrak{D}} H(t(w))\mathfrak{J}_e(w) = \iint H(z)\nu(z)$$

if the left member exists.

The family of eAC transformations is not merely larger than the corresponding families in earlier theories of plane transformations; it also has closure properties which simplify the task of establishing that various special types of transformations are actually eAC.

The theory culminates in Part V, devoted to areas of surfaces. The strength of the results attained can be shown by quoting two theorems. The functions $x(u, v)$, $y(u, v)$, $z(u, v)$ $(0 \leqq u \leqq 1,\ 0 \leqq v \leqq 1)$ defining S furnish three plane transformations, by projection. The square root of the sum of the squares of the three essential generalized Jacobians will be denoted by $W_e(u, v)$; if the ordinary Jacobians exist, the square root of the sum of their squares is $W(u, v)$. Then:

(A) If $A(S) < \infty$, the three plane transformations are eBV, and W_e is defined almost everywhere in the unit square and is summable; and its integral is at most $A(S)$, being equal to $A(S)$ if and only if the three plane transformations are eAC.

(B) If $A(S) < \infty$ and $W(u, v)$ is defined almost everywhere in the unit square, it is summable, and its integral is at most $A(S)$, being equal to $A(S)$ if and only if the three plane transformations are eAC.

By his choice of methods of proof and by clarity of exposition, the author has provided a well-engineered road into a difficult territory. However, in the multitude of theorems a reader might well be puzzled about the interrelations, motivations and origins of the mathematical objects he encounters. The author has therefore provided a final chapter to each part except the first, in which he casts a backward look over the preceding chapters, coordinates their contents, and indicates directions in which further research is needed.

E. J. McShane

The advanced theory of statistics. Vol. 2. By M. G. Kendall. London, Griffin, and Philadelphia, Lippincott. 1st ed., 1946, 2d ed., 1948. 8+521 pp. 50s.

The great treatise, of which the first volume was reviewed in Bull. Amer. Math. Soc. vol. 51 (1945) p. 214, is now complete. For the