The author's Introduction is not devoid of traces of an aesthetic standpoint. Discussing Carnap's *Logical Syntax of Language* containing two logical languages, one with, and the other without, the multiplicative axiom and the axiom of infinity, he says "I cannot myself regard such a matter as one to be decided by our arbitrary choice. It seems to me that these axioms either do, or do not, have the characteristic of formal truth. I confess, however, that I am unable to give any clear account of what is meant by saying that a proposition is true in virtue of its form."

A one-to-one correspondence can easily be established between these remarks and the well known couplet,

"I do not like thee, Dr. Fell
The reason why I cannot tell."

Of course, there is nothing surprising about this, as the impulse to many mathematical developments lies in similar obscure semi-aesthetic beginnings.

FREDERICK CREEDY

Integralgeometrie, I. By W. Blaschke. Paris, Hermann, 1935. 22 pp.

Integralgeometrie, V. By L. A. Santalo. Paris, Hermann, 1936. 54 pp.

Vorlesungen über Integralgeometrie. Vol. 1. By W. Blaschke. 2d edition. Leipzig and Berlin, Teubner, 1936. 60 pp.

Vorlesungen über Integralgeometrie. Vol. 2. By W. Blaschke. Leipzig and Berlin, Teubner, 1937. 68 pp.

Über eine geometrische Frage von Euclid bis Heute. By W. Blaschke. Leipzig and Berlin, Teubner, 1938. 20 pp.

The first two of these pamphlets are numbers 252 and 357 of the Actualités Scientifiques et Industrielles, and form the first two volumes of a series entitled *Exposés de Géométrie*, published under the direction of Wilhelm Blaschke. The last three pamphlets are volumes 20, 22, and 23 of the Hamburger Mathematische Einzelschriften.

The subject of integral geometry, devised for application to problems in geometric probability (such as Buffon's "needle problem"), has, under the guidance of Blaschke and his students, become an elegant theory of integral invariants, with applications not only to geometric probability, but also to differential geometry, maximum and minimum problems, and geometrical optics.

The first pamphlet is an exposition of the foundations of the subject. A "density" is defined for linear subspaces E_r of euclidean n-space E_n; this density is a differential form in the coördinates of the space S of r-dimensional linear subspaces of E_n. It has the following invariance properties: (1) invariance (Parameterinvarianz) under a change of coördinates in S; (2) invariance (Bewegungsinvarianz) under motions of E_n into itself. *A* "kinematic density" is also defined; it is essentially a density for rectangular coördinate systems C in E_n. In addition to the previous two invariance properties, it is unchanged (Wahlinvarianz) if each coördinate system C is replaced by one rigidly joined to it. This makes it ideal as a density for the positions of a solid body in E_n. These densities are (except for a constant factor) uniquely determined by their invariance properties. Upon integration of them, one obtains an invariant "measure" for linear subspaces of E_n, and an invariant "kinematic measure." Similar measures can be defined in spherical and non-euclidean n-spaces.

The second pamphlet is an original study of the kinematic measure in E_3 with applications. Probably the most important and typical example of the results is the following. Let K be any convex body in E_3; denote its volume by V, the area of its