faces of the second order is made according to the form taken by their cones. It is interesting to compare this with the classifications of quadrics in elliptic space given by J. L. Coolidge (Non-Euclidean Geometry, page 156) and T. J. I'a. Bromwich ("The classification of quadric loci," *Transactions*, volume 6, 1905). In these articles the principles of classification are entirely different from that employed here.

In the section dealing with linear complexes, right and left complexes are distinguished, the existence of "diameter parallel nets" is proved, and the appearance of parallels in the linear complex and in the corresponding null space are investigated. Of special interest is the parallel complex, which possesses a whole net of axes and admits ∞^4 motions carrying it into itself, while the ordinary complex has only ∞^2. The article is concluded by a discussion of the properties of the general linear congruence and some of its special forms.

E. B. COWLEY.

Das Gruppenschema für züfallige Ereignisse. Von HEINRICH BRUNS. Des XXIX Bandes der *Abhandlungen der Mathematisch-Physikalischen Klasse der Königl. Sächischen Gesellschaft der Wissenschaften,* No. VIII. Leipzig, B. G. Teubner, 1906. Pp. 579–628.

THIS monograph is an extension of the brief development of the subject in the eighteenth lecture contained in the treatise by Bruns on Wahrscheinlichkeitsrechnung und Kollektivmasslehre. It is assumed in setting the simplest problem of the work that n balls are drawn, one at a time, from a bag containing balls of various colors, and that each time the ball drawn is returned to the bag before another drawing is made. The n consecutive drawings are called a draw series (Zugreihe) indicated by $Z(n)$. The draw series is written in the form

$$(1) \qquad Z(n) = z_1 z_2 \cdots z_n,$$

where z_h denotes the hth drawing.

If the draw series are collected into sets of s with subscripts 1 to s, 2 to $s+1$, 3 to $s+2$, etc., the sets of s are called s-membered draw groups and the symbol $G(s)$ is used to designate such a group. In the formation of such groups, the author distinguishes between what he calls linear and cyclical groups. If, from (1), we take merely z_1 to z_s, z_2 to z_{s+1}, $\cdots$, z_{n-s+1} to z_n,