chapter, a large bibliography, a table of contents and an index, give flexible coverage of all items without being cumbersome. It should enjoy a long life and constant use by all who find interest in this type of work.

G. E. SCHWEIGERT

Poisson's exponential binomial limit; *Table* I—*Individual Terms*; *Table* II—*Cumulated Terms*. By E. C. Molina. New York, Van Nostrand, 1942. viii+46+ii+47 pp. $2.75.

If p is the probability of a "success" in a single trial, it is well known that the probability of x "successes" in n independent trials is given by

$$C_x^n p^x(1 - p)^{n-x} \tag{1}$$

which is the $(x+1)$st term in the expansion of the binomial $[p+(1-p)]^n$. If the limit of (1) is taken as $p\to 0$ and $n\to\infty$ in such a way that $np=a$, one obtains

$$a^x e^{-a}/x! \tag{2}$$

which is the $(x+1)$st term of a distribution originally published by Poisson in 1837. This function not only arises as an approximation to the binomial term (1) for large n and small p, but also arises in other problems, as for example in the integration of the chi-square distribution.

Table I of the present book is a tabulation of values of (2) to six places of decimals for $a=0.001(0.001)0.01(0.01)0.3(0.1)15(1)100$ and $x=0(1)150$; x, of course, being carried far enough for each given value of a to cover values of (2) to six places of decimals, not all zero. Table II gives the values of $P(c, a)=\sum_{x=c}^{\infty} a^x e^{-a}/x!$ to six places of decimals for the same range of values of a and for $c=0(1)153$.

The book has been lithoprinted by Edwards Brothers and is bound with a flexible paper cover.

Various parts of the tables have appeared in earlier publications. For example, L. v. Bortkiewicz (*Das Gesetz der kleinen Zahlen*, Leipzig, 1898) published tables of (2) to four places of decimals for $a=0.1(0.1)10.0$ and $x=0(1)24$. H. E. Soper (Biometrika, vol. 10 (1914)) published a table of (2) to six places of decimals for $a=0.1(0.1)15.0$ and $x=0(1)37$, which was reprinted in Karl Pearson's *Tables for statisticians and biometricians*, Cambridge, 1914. E. C. Molina (Amer. Math. Monthly, 1913) published tables of c for $P(c, a)=0.0001$, 0.001 and 0.01; for $a=0.0001$ to 928, and similar, but more extensive, tables were published by G. A. Campbell in the Bell System Technical Journal for January, 1923. The present tables are much more extensive than any of these earlier tables.

These tables have great value in probability and statistical problems. They have been used very extensively, for example, by mass production quality engineers in the development of sampling inspection plans. The sampling inspection tables published by Dodge and Romig in the January, 1941, issue of Bell System Technical Journal were calculated primarily from Molina's tables. Because of the frequent occurrence of the term $a^x e^{-a}/x!$ in various functions, the tables will probably also be found very useful in the tabulation of such functions.

S. S. WILKS

Non-euclidean geometry. By H. S. M. Coxeter. (Mathematical Expositions, no. 2.) University of Toronto Press, 1942. 15+281 pp. $3.25.

There seems to be a well established pattern for books on the noneuclidean geometries, according to which a more or less elaborate historical sketch is followed by a development of the foundations of the geometries. There is usually little space left available for developing the geometries much beyond the foundations. Thus it not infrequently happens that many interesting results not intimately connected with the beginnings of the subject are declared "beyond the scope of this book."

Though the plan of the book under review presents no radical departure from such a pattern it does offer somewhat more of the subject proper than is usual, while the manner in which it accomplishes its aims sets a new high standard for such texts.

The historical survey is confined to a short first chapter (which the author observes "can be omitted without impairing the main development"). The emphasis being on the projective approach, there follow three chapters concerning the foundations of real projective geometry. Chapters V, VI, and VII are devoted to elliptic geometry of one, two, and three dimensions. Introducing congruence axiomatically (IX) in a "descriptive" geometry (VIII), the author obtains an absolute geometry from which the euclidean and hyperbolic geometries follow upon adjoining the appropriate parallel axiom. Two-dimensional hyperbolic geometry is treated in Chapter X. The next three chapters, entitled Circles and Triangles, The Use of a General Triangle of Reference, and Area, deal, for the most part, with matters apart from the foundations, while the concluding chap-