É. Barbier, Généralisation du problème résolu par M. J. Bertrand, *Comptes Rendus de l'Académie des Sciences*, Paris 105 (1887) p. 407.

THEORY OF PROBABILITY. — Generalization of the problem solved by Mr. J. Bertrand. Note by Mr. Émile Barbier.

Mr. Bertrand found that, if two candidates A and B obtained m and n votes in an election, $\frac{m-n}{m+n}$ is the probability that, during the counting of the votes, the number of votes for A will always exceed those for his competitor.

If the number of the voters is 60 divided into 45 + 15, then $\frac{45-15}{60} = \frac{1}{2}$ is the probability that the favored candidate with 45 votes will preserve the majority throughout the poll.

 $\frac{45-15p}{60}$ expresses the probability that the candidate who has 45 votes will always have more than p times the votes of his competitor throughout the poll.

More generally, if a and b are the votes for A and B respectively, the proportion of α to β for the numbers of votes, known one after the other, will meet fairly; or, at least, the proportion will pass from $> \frac{\alpha}{\beta}$ to $< \frac{\alpha}{\beta}$ fairly in $(\beta a - \alpha b)$ ballots on $\beta(a + b)$ tests.