where $\epsilon = e^{2\pi i/n}$. It is shown that on the unit circle $|z| = 1$ we have

$$(1) \qquad |F(z)| < \frac{1}{n}\sum_{\nu=0}^{n-1} \frac{1}{\sin \frac{2\nu + 1}{2n}\pi}$$

except when $F(z)$ has the form $e^{\alpha i}f(\epsilon^{-k}z)$, where α is real, k an integer and

$$(2) \qquad f(z) = \sum_{\nu=0}^{n-1} \frac{(\epsilon^{-\frac{1}{2}}z)^{\nu}}{n \sin \frac{2\nu + 1}{2n}\pi},$$

in which case the upper bound of $|F(z)|$ is reached at $z = \epsilon^{\frac{1}{2}+k}$. The polynomial $f(z)$ has all its zeros on the unit circle, one in each of the intervals from ϵ to ϵ^2, ϵ^2 to ϵ^3, $\cdots$, ϵ^{n-1} to 1. The asymptotic value of the upper bound in (1) is

$$\frac{2}{\pi}\left(\log n + C + \log \frac{2}{\pi}\right) + \sigma(1)$$

where C is Euler's constant, and $\sigma(1)$ tends to zero as n increases indefinitely.

34. Dr. Gronwall shows that when $w = z + a_2z^2 + \cdots a_nz^n + \cdots$ maps the circle $|z| < 1$ conformally on a simply connected and nowhere overlapping region in the w-plane, then $|a_n| \leqq n$ for $n = 2, 3, \cdots$. When $|a_n| = n$ for any particular n, then also $|a_n| = n$ for every n, and the function w reduces to the one which gives extreme values to the distortion.

ARNOLD DRESDEN,
Acting Secretary.

THE CHICAGO COLLOQUIUM.

THE ninth colloquium of the American Mathematical Society was held in connection with its twenty-seventh summer meeting at the University of Chicago, September 8–11, 1920. At the annual meeting of 1917, the Council, on the invitation of the Department of Mathematics of the University of Chicago, appointed a committee, consisting of Professors E. H. Moore, E. W. Brown, Max Mason, H. S. White, and the Secretary, to arrange for a summer meeting and