$$f(\theta) = \int_0^\infty \alpha d\alpha P_{\alpha-\frac{1}{2}}(\cos\theta) \int_0^\pi f(\gamma) S_{\alpha-\frac{1}{2}}(\cos\gamma) \sin\gamma d\gamma,$$

established in his Munich dissertation,* "Ueber die Ausbreitung der Wellen der drahtlosen Telegraphie auf der Erdkugel," for the case where $f(\theta)$ is continuous in the interval $(0, \pi)$ and is subject to certain other restrictions, is also capable of representing a function which has a finite number of finite discontinuities in this interval, and that at such a point of discontinuity the integral represents the mean of the two limiting values of the function.

In the second part of the paper use is made of the method employed in establishing the integral representation to obtain the well-known development of an arbitrary function in a series of spherical harmonics. The method has the advantage of not requiring a proof of the possibility of the development, as this is made to depend upon the possibility of the development of an arbitrary function in a Fourier series of special form.

H. E. SLAUGHT,
Acting Secretary.

INTUITIONISM AND FORMALISM.†

BY DR. L. E. J. BROUWER.

(Inaugural address at the University of Amsterdam, read October 14, 1912.)

THE subject for which I am asking your attention deals with the foundations of mathematics. To understand the development of the opposing theories existing in this field one must first gain a clear understanding of the concept "science"; for it is as a part of science that mathematics originally took its place in human thought.

By science we mean the systematic cataloguing by means of laws of nature of causal sequences of phenomena, i. e., sequences of phenomena which for individual or social pur-

* See note in *Jahresbericht der Deutschen Mathematiker-Vereinigung*, vol. 20 (1911), pp. 353–363.

† Translated for the BULLETIN by Professor ARNOLD DRESDEN.