Mathematics. — *Demonstration that the concept of spreads of higher order does not come into consideration as a fundemental notion in intuitionistic mathematics.* By Prof. L. E. J. Brouwer*

(Communicated at the meeting of September 26, 1942.)

In my note, *"Concerning the free development of spreads and functions"*,[1] the process M_σ was considered, through which the fundamental sequence F', which is enumerated in an arbitrary, predetermined way, is associated one-to-one with finite choice sequences of numbers and likewise an arbitrary element σ of the spread[2] M. We want to call this process M_σ a spread *of second order*, and the successions of figure-sequences thus associated to the unrestricted choice sequences of numbers [we shall call] *the elements of the second-order spread* M_σ.

The assertion stated in my quoted note, that M_σ acts as a subspecies of a spread M_1 which is derivable from M, and that the union of all M_σ generated from M is identical with this M_1, shall be demonstrated as follows. First, we will deal with the construction of the spread M_1.

Let $\alpha_1\,\alpha_2\,\ldots\,\alpha_m$ be a finite choice sequences of numbers. We will indicate the rank thereof in the fundamental sequence F' with $\varrho\,(\alpha_1\,\alpha_2\,\ldots\,\alpha_m)$ and the maximum of the numbers $\varrho\,(\alpha_1)\,,\ \varrho\,(\alpha_1\,\alpha_2)\,,\ \ldots\ \varrho\,(\alpha_1\,\alpha_2\,\ldots\,\alpha_m)$ with $\zeta\,(\alpha_1\,\alpha_2\,\ldots\,\alpha_m)$.

We will call the combination of an arbitrary number α_1 with $\varrho\,(\alpha_1)$ arbitrary numbers $\beta_1\,\beta_2\,\ldots\,\beta_{\varrho(\alpha_1)}$ a K-combination. We enumerate the K-combinations through a fundamental sequence F. We indicate any K-combination which receives the rank ν_1 in F with K_{ν_1}.

* Translated from the original German by Jon Sterling.

[1] Proc. Ned. Akad. v. Wetensch. Amsterdam, **45**, 322 (1942).

[2] For the sake of simplicity, we restrict ourselves in this note to such spreads, in the process of whose creation neither inhibition nor termination occurs. This restriction is inessential.