COMMEMORATION

of the graduation day of Prof. Dr. *L. E. J. Brouwer,*
February 19, 1907.

Address delivered by Prof. Dr. *G. Mannoury* on February 19th 1947.

Aristotle, Ladies and Gentlemen, lived, twenty-three centuries ago, in a period that strikes me, from a cultural point of view, as strongly analogous to the period we live in since *Kant, Hegel* and the French revolution dealt the first staggering blow to the monocracy of absolutism of ideas, undisturbed for more than two millennia. For the period of the peripatetics, of *Aristotle, Euclid, Apollonius* and *Hippocrates,* meant, like ours, a crisis of the very foundation of human thought. The history of philosophy and of science does not date from the Greeks. Those mental disciplines had developed for centuries and centuries even long before the days of *Lao-Tse* and *Kong-Fu-Tse* and even mathematics had reached a high degree of practical efficiency. But pre-Grecian philosophy was mainly poetical and metaforical and pre-Grecian science lacked unity of conception and firmness of starting-point. And it was that firmness and fundamental solidity that the axioms of *Euclid* and the logical principles of *Aristotle* imparted to it enabling thereby its slow but uninterrupted progress up to the dizzling heights of the modern technical and scientific level.

But no human certainty and human insight can last for ever and the pulsation of time brought about a new crisis: the crisis of critical philosophy and psychological intuitionism. It were *Bolyai, Riemann* and *Peirce* who broke the unassailability of the Euclidean and Archimedean axioms, and *Einstein* c.s. who widened the visual field of physical sciences. But still one stronghold of classic absolutism stood fast: the unassailed system of Aristotelian logic, and Brouwer was the first who, forty years ago, emancipated human thought from the authority of the logical principles and so ran down that stronghold itself. But at the same time he laid bare a deeper foundation of all intellectual activity; the mathematical intuition, defined by him in that ironclad formulation that since then has become so well-known all over the scientific world as: "the devoid-of-quality-substratum of all perception of change, a unity of continuous and discrete, a possibility of mental combination of several units, linked together by a "between", that by insertion of new units is never exhausted. Where in that fundamental intuiton the conceptions of continuity and discreteness act as unseparable complements, equally ranked and equally clear, one cannot possibly dismiss either as primary entity afterwards to

construct it out of the other one conceived in itself, the conception of that other one in itself being impossible" [1]).

You all remember the vehement reaction, one could say the dismay, caused by Brouwer's revelation among the mathematicians and philosophers. *Hermann Weyl* spoke of a revolution [2]) and *Hugo Dingler* of a chaos [3]), but they failed to see that the true meaning of Brouwer's theory, developed by him in the course of these years, is not destructive, but constructive, because it furnishes a new basis for a science that reaches farther than the realm of non-vital phenomena, a science that includes the phenomena of life, of emotional and volitional life.

In 1941, on occasion of Brouwer's 60-th anniversary, I tried to elucidate the significance of the consequences of the intuitionistic point of view for cultural life in an article entitled *La question vitale: "A ou B"* [4]), and I think best to read to you the last part of it, running as follows:

"Brouwer a bien compris ces conséquences et les a accentuées dans tous ses ouvrages. Surtout et partout il a mis en lumière la primauté de l'élément volitif de la pensée sur l'élément discriminatif, la primauté de la fonction conative sur la fonction cognitive de l'esprit. La conception des "suites mathématiques de phénomènes" *(wiskundige volgreeksen; zeitliche Erscheinungsfolgen)* qui est le point de départ de ses théories doit sa signification fondamentale à ce principe.

Et c'est aussi dans ce principe, que se révèle la vraie différence entre les manières de voir d'Aristote et de Brouwer, différence bien plus profonde que celle entre deux formules. Aristote pense en termes finis et statiques, en propositions et en thèses bien définies. La volonté consciente et sub-consciente et son expression: le langage impératif et émotif n'existent pas pour lui en tant que logicien. Et c'est pour cela qu'il marque une époque qui a donné naissance à la science des objets et des phénomènes physiques, cette science qui a atteint de nos jours un degré de développement que les penseurs de l'ancienne Grèce n'ont pu entrevoir, mais dont la lumière éblouissante menace d'aveugler l'humanité.

Brouwer à son tour marque une autre époque, une époque qui ne vient que de s'annoncer. C'est l'époque de la naissance d'une autre science, qui jusqu'ici n'a que faiblement signalé son existence: la science de l'homme et de la vie. La tâche de cette science ne sera pas

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[1]) *L. E. J. Brouwer, Over de grondslagen der wiskunde* (Amsterdam, Maas & Van Suchtelen, 1907), p. 8.
[2]) *H. Weyl, Über die neue Grundlagenkrise der Mathematik* (Zürich 1920).
[3]) *H. Dingler, Der Zusammenbruch der Wissenschaft und der Primat der Philosophie* (München, 1926).
[4]) Nieuw Archief voor wiskunde, 2de reeks, XXI, 1943.

de supplanter et de réduire à néant la science des objets, mais de donner à cette dernière, tout en lui enlevant son hégémonie et ses fausses prétentions, une fondation plus solide que les distinctions absolues et définitives dans lesquelles les hommes ont mis une confiance trop naïve pendant si longtemps et qui se sont avérées comme *des fictions.*"

I thank you.