

1056-M5-1918 **Ruggero Ferro*** (ruggero.ferro@univr.it), via gabelli 57, 35121 padova, Italy. *An analysis of the notion of natural numer.*

I would like to address the theme of this meeting selecting the notion of natural number. I will try to point out the human problems and needs that motivate the elaboration of the notion of natural numbers, and to illustrate the steps and the choices made to arrive to a solution of the problems. The main problem is to compare quantities of elements. A procedure that could solve the problem in some difficult cases is that of counting. By counting we associate to each finite collection an ordered collection of iterations of the mental acts of considering a further element. These ordered collections could be viewed as the natural numbers. At this point we have two possible line of development. One, we can examine the structure of the collection of the entities that were introduced and the problem of infinity that it is raised. Two, one can consider the steps taken along the way of constructing the proposed notion of natural number, and analyze what it is needed to perform them. Most of the steps require introspections. This is due to the fact that we have to use internal perceptions. This notion of natural numbers somehow answers the question about their nature; and their existence is similar to the existence of plans, projects, organization, and mental activity. (Received September 22, 2009)