NICOLAS ROUCHE, *Synthesis of the meeting Mathematical Learning from Childhood to Adulthood,* p. 3 – 16.

NICOLAS ROUCHE   *From common thought to mathematics: the need for genetic theories,* **p. 17–50.**

Abstract. Part 1 of this paper shows that mathematical learning, rarely considered in its full extension from early childhood to adulthood, is in need of clear guidelines. Guidelines, the way we understand them here, are outlines of what might be called genetic theories. One shows what such genetic theories could look like. Part 2 develops a possible guideline, one whose title might be : from proportionality to linearity, or the evolution of the concept of ratio. In the conclusion, we revisit the notion of genetic theory to discuss further its nature and relevance.

GROUPE D'ENSEIGNEMENT MATHÉMATIQUE (G.E.M.) *Plane representations as a guideline for the teaching of geometry,* **p. 51–71.**

Abstract. Learning space geometry rests on plane representations of solids, whereas realizing such representations relies on some notions of geometry. That is why these representations have a substantial and constant relation to geometry. They range from children's drawings to orthogonal and parallel projections, and to linear perspective, that is from naive perceptions to more and more advanced and complex representations. For such reasons, they constitute an interesting guideline for geometry learning. The workshop will illustrate this point of view by a sequence of questions appropriate to geometry learning from early childhood to adulthood.

MICHEL BALLIEU, MARIE-FRANCE GUISSARD *Mathematical Enculturation,* **p. 73–89.**

Abstract. Resorting to cultural activities can prove to be invaluable to introduce and install abstract notions. This workshop emphasizes two means for restoring the pleasure of learning to demotivated pupils: history and artistic realizations. The historical approach of mathematics allows to enter the concepts showing in which context and why they were born, how they have evolved. A round through the systems of numeration and the solution of equations gives a good example of these words. As to geometrical decorations whose examples are founded into all civilizations they can be used as aid for geometry learning; so geometry shows its whole visual attraction. Repetitive patterns as friezes or tilings lend themselves to activities which combine intuition, creativity and analysis of mathematical structures.