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Gerdes, Paulus; Bulafo, Gildo**Sipatsi. Technology, art and geometry in Inhambane. Transl. from the Portug. by Arthur B. Powell and Paulus Gerdes. (English)**

Maputo: Inst. Superior Pedagógico. Ethnomathematics Research Project, 103 p. (1994).

The first author of the book under review (Gerdes) works since long on geometrical patterns, mostly from Africa, in an ethnomathematical perspective – ethnomathematics understood as “the analysis of mathematics and mathematics education in their cultural context” (p. 4, the book under review) – largely with the objective of “looking for possibilities to improve the teaching of mathematics by embedding it into the cultural context of pupils and teachers” (ibid.). The second author (Bulafo), a student of Gerdes and a native of the Inhambane province in Mozambique, conducted field work in this province on the production of sipatsi: handbags woven from white and coloured straw exhibiting geometrical strip patterns. In chapter 1, Bulafo describes the technique with which the sipatsi are produced, as well as the social setting of the production (until recently, a women’s secondary activity, now also taken up by men for whom it is then a professional occupation). The baskets weavers turn out to be very conscious of the numerical principles underlying the patterns and very critical of irregular patterns arising from sloppy counting or insufficient mental calculation. Mathematical regularity is thus anything but a mere result of the constraint inherent in the technique. Chapter 2, by Gerdes, introduces principles according to which the strip patterns of the sipatsi can be classified, and catalogues 96 single and 20 combined patterns, all found on actual baskets belonging to the author’s collection. It is observed (p. 5) that “famous books on decorative patterns of the whole world and, in particular, of Africa do not include patterns of the type that appear on sipatsi”. Chapter 3, equally by Gerdes, contains “examples of educational and mathematical explorations of sipatsi”. It introduces, for the use of educators who have never themselves been taught about it, the fundamental symmetry principles for strip patterns, and shows that all seven possible symmetries occur. The chapter can be recommended for its pedagogical clarity, obviously built on the author’s vast experience as a mathematics teaching educator in Mozambique.

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