

PREFACE

This special publication contains the contributions to the Workshop on "Mafic Dyke Swarms of Brazil", held August 21-23, 1989, at the Instituto de Geociências of the Universidade de São Paulo (IG-USP), São Paulo, Brazil. The aims of this meeting were the evaluation of the scientific progress of the Brazilian Working Group (BWG) in relation to the activities of IGCP Project 257 "Precambrian Mafic Dyke Swarms" (UNESCO-IUGS) as well as the establishment of guidelines for future cooperation. Participation of the BWG within this project has increased progressively, as demonstrated by the collaboration of individuals and institutions (including laboratory facilities for research) as well as by the attendance of Brazilian scientists at previous annual, IGCP Project 257 conferences (Canada, Sweden, and USA). Moreover, cooperation with foreign institutions during recent years has contributed to the attainment of high-quality data for the Project.

The workshop was hosted by the IG-USP and attended by more than 30 participants. During the 2-day session, 16 talks were presented and discussed, 15 of which are published here as extended abstracts and one in its entirety. A general evaluation of the BWG activity was made during the administrative session on the final day of the Workshop. As a result, three subgroups have been established to study:

- a) Precambrian mafic dykes (Amazonian, São Francisco and Rio de La Plata cratons);
- b) Phanerozoic mafic dykes in Brazilian territory and their correlation with Africa;
- c) elaboration of the dyke swarm map for the Brazilian shield.

During the administrative session, the city of Lavras (Minas Gerais, Brazil) was chosen as the site of the next annual workshop of the BWG (August, 1990). The meeting will focus on Precambrian mafic dykes within the southern part of the São Francisco craton. In addition, the BWG has proposed holding the 1991 Mafic Dyke Conference in Brazil, which will be the final formal activity of IGCP Project 257.

The contributions presented in this volume summarize present knowledge on mafic dyke swarms (igneous and metamorphosed) in the fields of petrology, geochemistry, geochronology, paleomagnetism, geophysics, structural geology and tectonics. Emphasis is on Brazilian examples, but information is also included on dyke swarms in Uruguay (Precambrian) and Suriname (Mesozoic). All contributions were carefully reviewed for content and English usage by the volume editors, W.Teixeira and T.R.Fairchild of the IG-USP. Minor changes and corrections have been introduced for the sake of clarity without substantially changing the original intent of the authors.

It is apparent that the geologic knowledge on this subject is heterogeneous and far from adequate for most of the studied areas in Brazil. However, especially for the eastern part of the continent (São Francisco craton), a relatively detailed scenario may be outlined

for the Precambrian mafic dykes in terms of paleomagnetism, geochronology and geochemistry. In this regard, cooperative studies will be most important to further our understanding not only of the origin and tectonics of such magmatism but also of the geochemical signature of mantle processes through geologic time.

Finally, we would like to thank the Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP), the IG-USP, and the Instituto Astronômico e Geofísico of the Universidade de São Paulo, IAG-USP, for the financial support and sponsorship which made for such a successful Workshop and enabled the publication of the contributions to this meeting. Also, we wish to thank V.M.Ribeiro (IG-USP), M.M.Hirai (IAG-USP) and the Seção de Publicações e Eventos of IG-USP for the preparation of the manuscripts as well as M.A.Bezerra (IG-USP) for standardizing the references.

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Workshop Coordinator