

Geochronology of the Sri Lanka Basement: II — Rb-Sr and Sm-Nd dating on mineral and whole-rock samples

H. KÖHLER, V.V. DRACH, S.T. HÖLZL and I.H. FEHR

Mineralogisch-Petrographisches Institut, Universität München, Germany

The aim of this investigation is to corroborate and complete the geochronological results concerning the geological evolution of the three main units of Sri Lanka (Highland Series, HS; Vijayan Complex, VC; Wannai Complex, WC) given in part I. Furthermore it is intended to mark dates on the p, T-path of the HS (Schumacher *et al.* 1990).

Approximately 90 analyses of whole-rocks (WR), thin slabs (TS) and minerals were carried out. From the results (see table) we postulate:

Unit	Sm-Nd T _{DM} (Ga) ^a	Rb-Sr WR(Ma) ^b	Sm-Nd Gt(Ma) ^c	Rb-Sr TS(Ma) ^d	Rb-Sr Bi(Ma) ^c
HL	2.5-2.9	2380±50	480-560	470-490	466±7
n	12	8	11	9	8
VC	1.5-1.7	580±15	490-520		447±7
n	3	8	3		4
WC	1.5-1.6		470-480		451±9
n	2		2		2

a - model age; b - whole rock; c - garnet, biotite; d - thin slab.

The Nd-model ages from the three units agree well with those given by Millisenda *et al.* (1988). The WR age of metapelites from the HS, point at a Sr-redistribution, probably during sedimentation, whereas the WR age of the WC paragneisses is interpreted as time of migmatitisation. Garnet ages are regarded as reflecting time of crystallisation and confine the period of isobaric cooling (Schumacher *et al.* 1990). This event occurred simultaneously in all the units. It is proved in the Sr-system of TS from metapelites by the smoothness of Sr-isotope ratios described in a profile diagram. Biotitic ages are uniform in the central part of the HS and are lowered towards the Vijayan units.

REFERENCE

- Schumacher *et al.*, 1990. Unwin Hyman, London, 265-271.
Millisenda *et al.*, 1988. *Journal of Geology* 96, 608-615.