A possible tectonic thrust contact between the Wanni Complex and Highland-Southwestern Complex in Sri Lanka

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A distinct, closely related group of reddish pink or buff-coloured gneisses and granites of intrusive appearance in the low country in the north and north-west Sri Lanka was recognised as the Wanni Gneiss Group by Coates (1935). It was subdivided into (1) the Tonigala, (2) the Ritigala, near Anuradhapura (3) the Nilaveli - Kalkudah, and (4) the Ambanpitiya gneiss, west of Kegalle. According to Coates, these Wanni rocks are characterised by (a) paucity of ferromagnesian minerals, (b) abundance of monazite, (c) occurrence of calcite as an original mineral, and (e) microcline.

For these rocks, North-West of the Highland-Southwestern Complex HSWC, earlier classified as Wanni Gneiss Group (Coates 1935), Vijayan Series (Fernando 1949) and loosely described as West Vijayan, the term Wanni Complex (WC) has been reinstated (Gordani and Cooray 1990; Kröner *et al.* this volume).

Coates (1935) considered that the principal member of the WC is the Tonigala gneiss, which extends over 1600 miles^2 (2060 km^2) in the Chilaw-Kurunegala-Anuradhapura-Puttalam quadrangle and in the south, towards Colombo. Recent mapping shows that the WC rocks extend as far south as the Panadura-Kalutara area, south of Colombo. The boundary between the NW trending HSWC and the WC rocks is not clearly defined, but it is significant that the younger amphibolite facies rocks (Nd model ages 1-2 Ga) exposed both in Gampaha district (Geological Survey one-inch geological map, unpublished, 1969) and in Horana-Panadura and Kalutara areas, show a complex interfingering with the older HSWC gneisses and granulites (2.2 Ga) (Coates' Geological Map 1935; Geological Survey one-inch map unpublished; Crawford and Oliver 1969).

In the Horana-Panadura-Kalutara area (one-inch geological map, Vitanage 1959, unpublished), hornblende-pink feldspar gneisses and mig-

matites (amphibolite facies) are interlayered with the HSWC granulite rocks, forming well-developed local antiforms plunging 10-15° NW underneath the steeply dipping WC migmatitic gneisses.

Study of the Kandy area shows the unique occurrence of the younger migmatites, pink granites and granitic gneisses along the central cores of the doubly-plunging synforms or arenas around Kandy (Vitanage 1970, 1972) with typical granulite metasediments such as quartzite, garnet-silimanite-graphite gneiss ("Type Khondalite") and charnockite forming the walls and rim of the arenas. The pink granite bands running around the oval shaped synforms mark the boundary between the WC and HSWC rocks (Vitanage 1970, 1972; Perera 1983).

The satellite imagery and air-photos of the upright arena synforms around Kandy show that the arena rocks, composed of biotite-hornblende gneiss, biotite gneiss, amphibolite and calc-gneiss along the central core of the upright synforms marked by pink feldspar granite rim (Kadugannawa complex) extend over 26 miles(43 km) from SW to NE and over 26 miles from NW to SE (total area 656 miles^2 or 1849 km^2). These rocks lie above the HSWC rocks outside the cluster of the seven 'arena' synforms near Kandy, preserved in downfolded synforms. The satellite imagery indicates that there is a south-easterly extension of the Dumbara arena rocks along a well-marked shear zone (old deep lineament) for a distance of 20 miles(33 km.)

The boundary relation of the KDC-that is, of the lens of hornblende gneisses and migmatites extending northwards from Kadugannawa to Matale, Dambulla, and Habarana and the WC rocks extending from Nilaveli to Kalkudah on the NE, over the NE-veering main HSWC rock belt,as reported by Coates (1935), suggest a possible SE directed thrust of WC over the central HSWG before the later metamorphism and folding (F^4). The other factors in support of the south-easterly thrust are the occurrence of commercial graphite deposits within the WC terrain, and the interlaying of the younger WC (1100 Ma and 771±17-14 Ma, Baur *et al.* 1991; 1-2 Ga, Millisenda *et al.* 1988) with the HSWC, e.g., in the Anauradhapura area. Probably the older basement of HSWC is exposed below the WC rocks as a result of rapid erosion during the upwarping of the central and north-central highlands during Miocene and earlier times (Vitanage 1972). Another factor to be considered is the presence of gravity anomalies (high and low) within the WC terrain (Hatherton *et al.* 1975).

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