POLYASTERISM IN GEMSTONES WITH EMPHASIS ON STAR SAPPHIRE

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W.L.D.R.A. KUMARATILAKE

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W.L.D.R.A. Kumaratilake

Department of Geology

University of Peradeniya

Peradeniya

Sri Lanka

Some star sapphires are uncommon and display multiple stars, and this is defined as polyasterism in the text. This thesis presents a study of underlying mechanism of the phenomenon, valuing and grading methods of the fashioned stones, and an assessment of the supply and demand of the stones with an objective of creating a market demand for the new stone and to bring in foreign exchange and create more employment.

Visual methods were used in observing any morphological disturbances in the host crystal that may cause polyasterism and in the process resource-saving benchmarks were used.

It proved corundum crystal's – basal, prismatic and rhombohedral – glides and compound crystals arising from a single crystal, several crystals and many crystals bonded/fused/cemented together by geological reasons, converts a star sapphire into a polyasteric stone. A brief grading and valuing technique for the new stone was established.

Estimated 2% of fashioned stones produced in major star stone producing countries such as Sri Lanka, India, Thailand, Australia and Kampuchea along with new entrants such as Madagascar, Tanzania, Kenya, Malawi, etc are polyasteric stones. This supply would be adequate to meet a potential demand for many centuries. Trading in

polyasteric stones could earn as much as 34.88% of income from star sapphires, despite its low volume produced. Properly managed, polyasteric stone trade could generate a considerable revenue to the country.

There may be other mechanisms for polyasterism too, but their prevalence is insignificant.