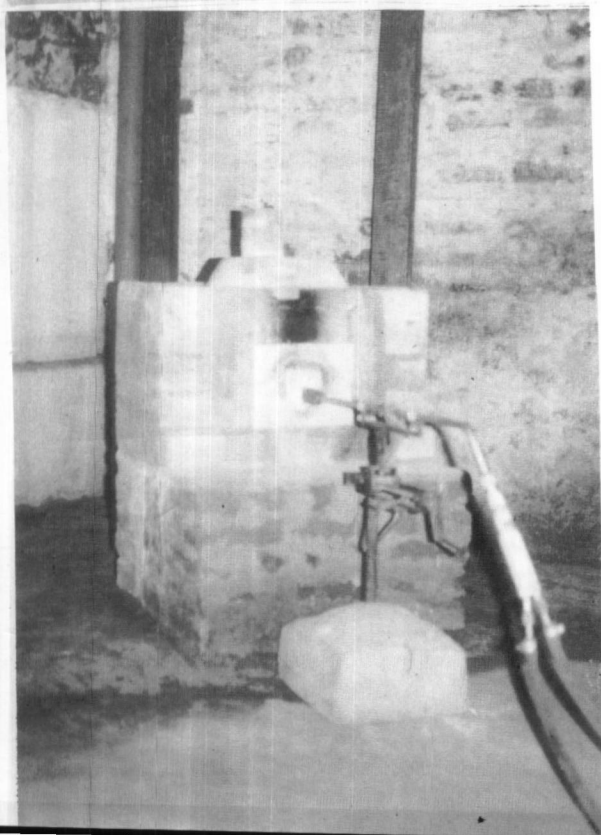
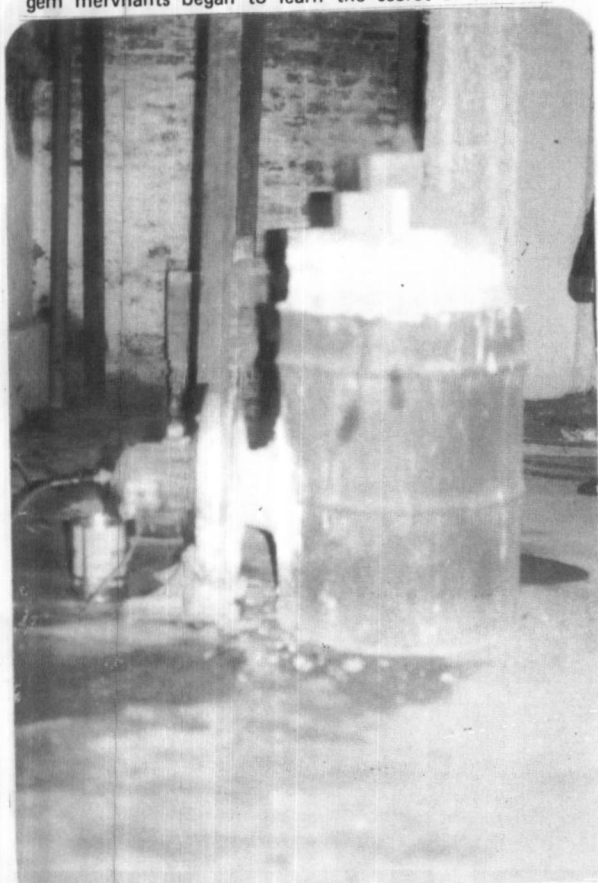


TREATING GEUDAS LOCALLY

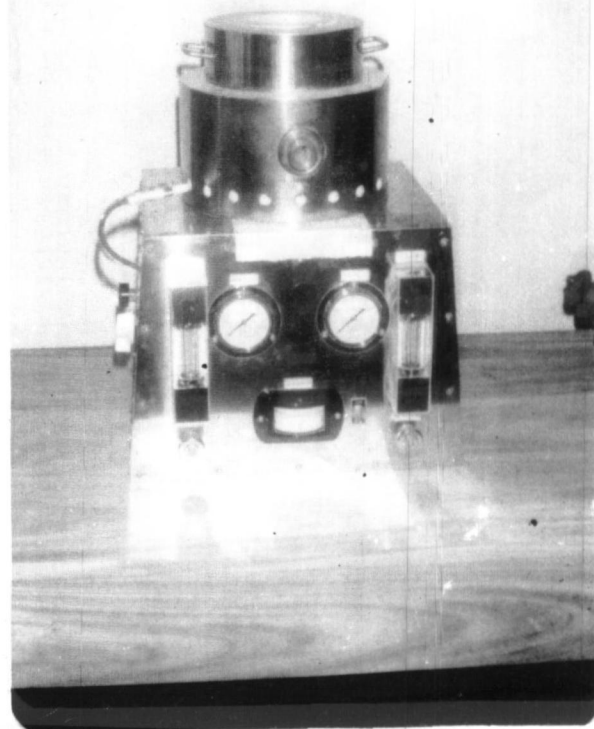
The milky cabochon sapphire or Geuda as it is now more popularly known belongs to the Blue Sapphire or Corundum family and is in fact an undeveloped or immature sapphire. Till the late 1970's this stone, found in abundance in Sri Lanka's gem bearing areas, was regarded as worthless although Thai traders in connivance with a few Sri Lankans were carrying away these stones in their thousands for treatment and sale in Bangkok. In the latter part of 1970 enterprising local gem merchants began to learn the secret of the

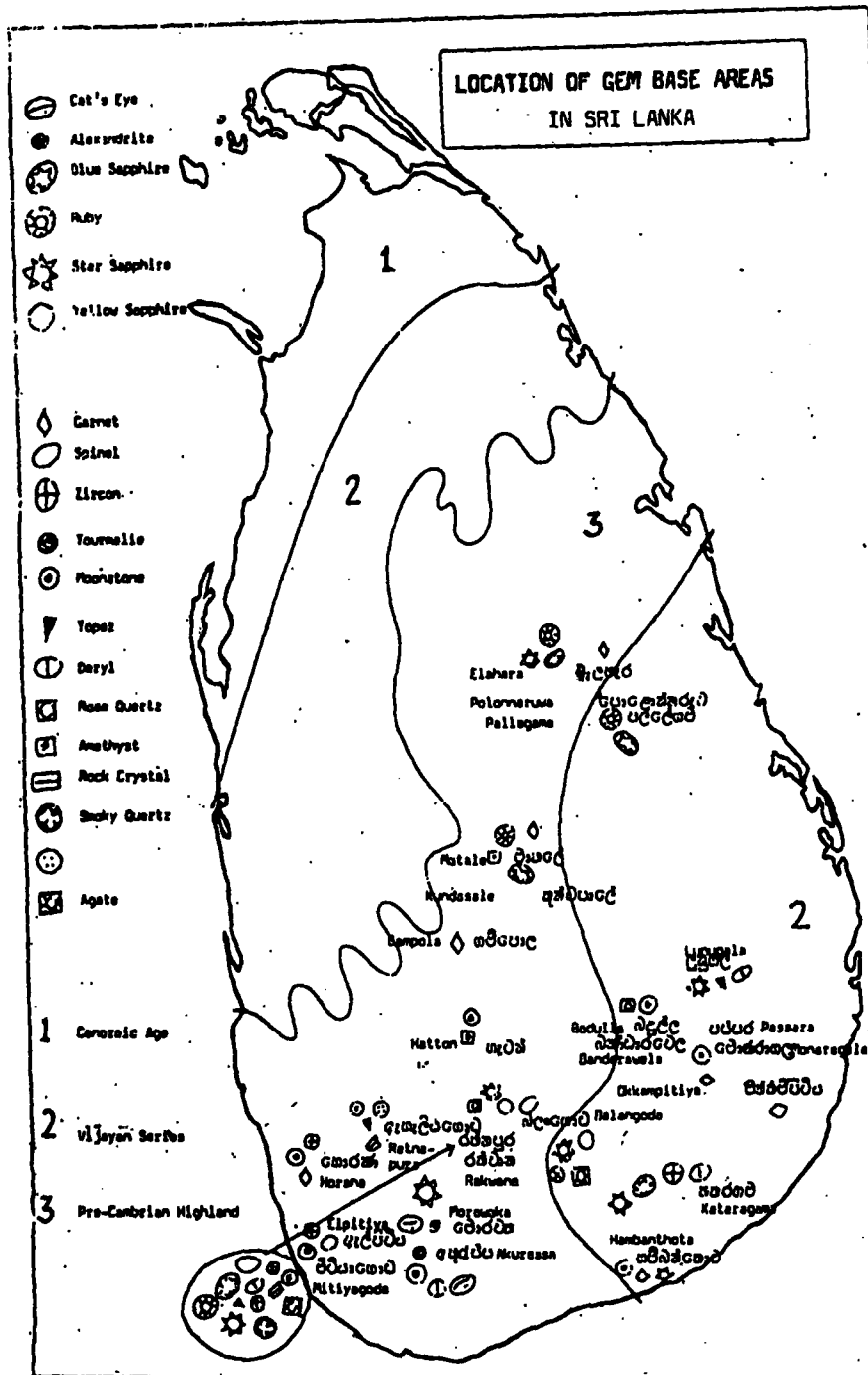


process of heat treatment which helped to convert comparatively valueless Geuda stones into extremely valuable blue sapphires. The secret was picked up from the Thais who had mastered the process and built a highly lucrative industry in Thailand with Sri Lankan raw materials. The local breakthrough not only disproved the myth that only Thais could burn geudas, it also enhanced the value of these stones after treatment to Rs.25,000 a carat and in a few instances to as much as Rs 60,000 a carat.

What the process of treatment does is that it enhances or reduces the colour of the stone and gets rid of unnecessary colour or shade and improves the lustre and clarity of the geuda to the desired level by applying heat and pressure to the stone. It is generally treated at a temperature starting at around 1,650 centigrade and rising to 1,800 C in a furnace specially built for the purpose, as these pictures illustrate.

These pictures depict 3 different furnaces used for the treatment in the process of converting geudas to blue sapphires. These furnaces are specially built with a capacity to bear very high temperatures which is necessary for heat treatment of geudas. At top left is a furnace that holds the barrel and the blower connected together and is powered by diesel. At bottom left, is a furnace built with bricks and powered with LP gas and oxygen. These two are the traditional types of furnaces used by Thais and some local merchants. The picture at bottom shows a more sophisticated type of furnace which is called the Toda furnace and operated with LP gas and oxygen. This has been built in Japan at a cost of over Rs.2 lakhs and unlike the traditional furnace which takes nearly 10 hours for heat treating, this one takes only 2 hours. It is the size of a small electric cooker and can be carried about easily. There are at present 10 Toda Mini furnaces being used in Sri Lanka.





GEUDA SAPPHIRES

The term Geuda has been used exclusively to describe milky sapphires from Australia that are being heat treated to improve their colour. In fact 'Geuda' refers to any milky-white opaline character seen within the even outside of a Gem stone which is caused by a net work of inclusions. In corundum Geuda results from excessive titanium which may exist as rutile inclusions in the stone. The most suitable Geuda stone for heat treatment is called the Diesel Geuda. It has a faint blue tint, a milky-white sheen, and looks like honey in direct light, thus resembling a film of diesel oil. It is essential that the stone be free of 'flaws and fissures', and that it has only a small number of inclusions other than geuda.

The syngenetic rutile (that which forms at or about the same time as the host) is characteristic of those corundums that react most favourably to heat treatment. There is a theory that the growing crystal of corundum incorporates liquid rich in titanium and as temperature drops this liquid crystallizes into microscopic rutile inclusions. During subsequent heating the titanium irons realign and function as coloring agents, imparting colour to the corundum.

Three techniques are commonly used in Sri Lanka to heat treat geuda stones. Basically, these involve prolonged heating of stones that have been coated with a thick paste in a gas, dieselene, or electric-furnace.

"STAR OF SRI LANKA SAPPHIRE"

There are a number of valuable Sri Lanka origin Gem Stones in the "Museum of Natural History" in the United States. Those stones are valued at many million dollars and one of them called, "Star of India" is a celebrated star sapphire weighing 563 carats.

The Minister of Finance and Planning Mr. Ronnie de Mel made an appeal, when he was addressing the 2nd International Colour Gem Stones Seminar, held in Sri Lanka in October 1984, when referring to the number of outstanding gem stones from Sri Lanka in collections around the world. He made a special request to the "Museum of Natural History" in United States to correct the name of the "Star of India Sapphire" to "Star of Sri Lanka Sapphire".