


## Gastropod operculum – An unique trade

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Operculum of certain gastropods has long served as an incense material in ancient Jewish tradition as well as in Christian and Arabian Muslim faiths. The operculum of conch species *Strombus tricornis* and *Lambis truncata sebae* are most commonly used in the Middle East. Operculum powder is also an important ingredient to Chinese and Japanese incense makers. The other shells

whose operculum used world over are Moon shell, *Rapana venosa*, *S. gigas* etc. There is a huge international market for operculum trade with the price ranging from US \$ 7-9 to US \$ 44-44.5/kg.

Operculum is traditionally treated with vinegar, alcohol and water to remove any fishy smell. The cleaned opercula are then ground to a powder and used as a scent fixative which is similar to the

technique used in perfumes with certain plant resins. In some countries the operculum is rubbed with an alkali solution prepared from the plant bitter vetch to remove impurities and it is then soaked in fermented berry juice of the Caper shrub or strong white wine, in order to enhance its fragrance.

India is one of the major exporter countries of dried high quality operculum. Some of the gastropod operculum exported from Mumbai (arranged according to their increasing price) are *Babylonia spirata* (Linne) (Plate 1) (shell size ranges from 45-51 mm), *Rapana bulbosa* (Dillwyn) (Plate 2) (65-70 mm), *Murex virgineus* var. *ponderosa* (Sow) (Plate 3) (80-90 mm), *Hemifusus cochlidium* (Linne) (Plate 4) (70-80 mm), *Lambis lambis* (Linne) (Plate 5) (90-110 mm) and *Chicorius ramosus* Linne (Plate 6 and Plate 7) (90-100 mm). Except for *B. spirata*, which is easily available in Maharashtra, all the other species are procured from Rameswaram or Mandapam to Mumbai in dried form, from where it is exported to different countries the world over especially the eastern countries. The price depends on the species, quality and availability.



Plate 1



Plate 2



Plate 3



Plate 4



Plate 5



Plate 6

Due to heavy exploitation of gastropods for its opercula, resource depletion of specific species is not far away. Hence research, management and preventive measures on



Plate 7

endangered species of gastropods need to be carried out. The need of the hour is no develop a key for gastropods based on operculum for easy identification.