NATURAL EMERALD WITH HOUND'S TOOTH LIKE GROWTH PATTERN

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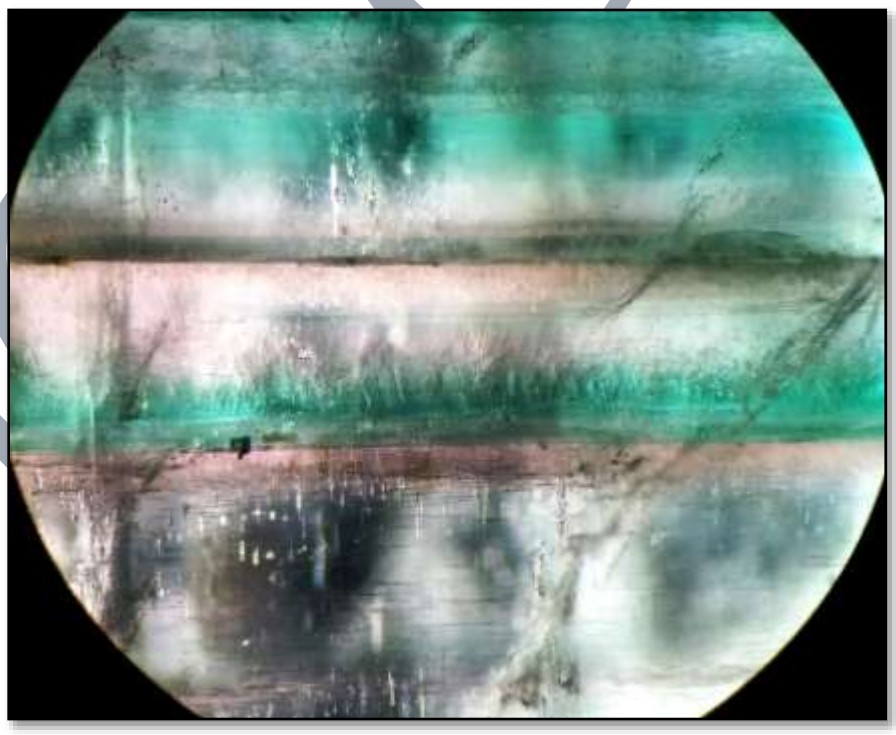
Inclusion analysis is the vital organ of gemmology. Inclusions are characteristic for concluding the origin of gemstones, if the stone is mined from the earth crust or synthesized in laboratory. Inclusions also helps in source identification of the natural gemstones and in detecting treatments.

Hound's tooth growth pattern / Chevron pattern is one of the characteristic inclusions for Hydrothermal Synthetic Emeralds. Hound's tooth like /chevron growth pattern is an internal growth feature with conical growth pattern.

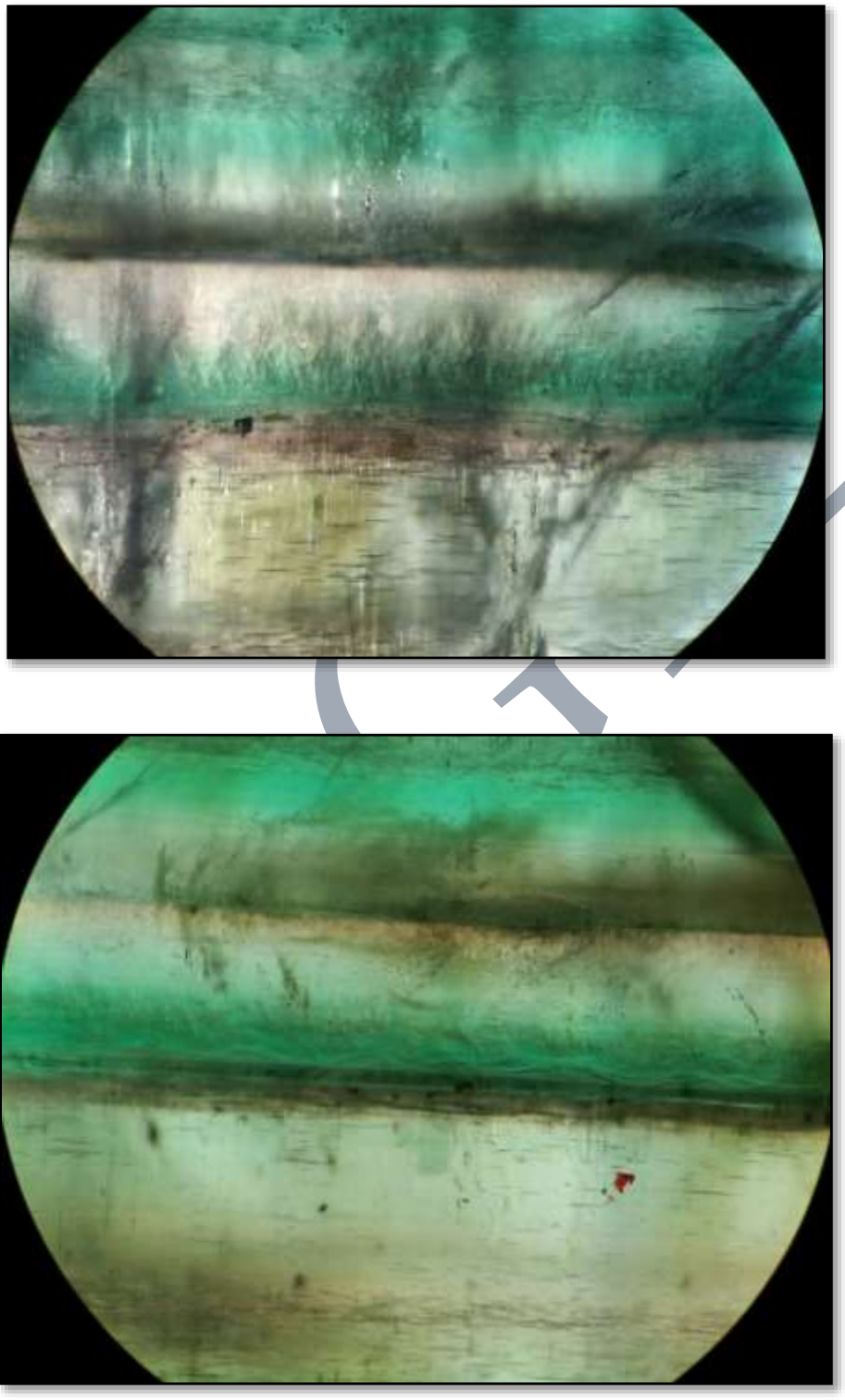
Hound's tooth like / chevron pattern is not confined to a single plane or layer, rather are observed covering the whole stone which is directionally visible i.e. are not visible from every direction.

Hound's tooth like / chevron pattern in Synthetic Emerald (Hydrothermal)

Indian Gemological Institute – Gem Testing Laboratory, Delhi examined 7.47 cts Natural Emerald, measuring 13.49 x 10.53 x 7.05 mm. Stone was showing Basal colorless and green color zones perpendicular to the table with c-axis parallel to its table, intersecting color zones. Growth tubes and phase inclusions were observed in the direction of c axis in the microscopic examination.



Conical growth pattern was observed on the edge of basal color zone of Natural Emerald. (FOV 3.37 mm)



Hound's tooth like/ Chevron growth pattern was observed on the edge of basal color zone of Natural Emerald. (FOV 4.04 mm)

Between the basal color zones, conical growth pattern was observed in the c-axis direction, resembling hound's tooth like / chevron growth pattern. Such pattern was observed on the edge of every color band but was restricted to one fold. Probably this pattern has been formed due to fast crystallization of emerald.

Basic gemological testing and presence of phase inclusions, growth tubes, fingerprints etc. concluded the stone to be Natural Emerald (variety of Beryl). And presence of hound's tooth like and conical growth pattern do demand careful analysis.

This stone proves up to an extent that human has succeeded in developing a synthetization process similar to the nature or we may say that here nature is trying to show his ability to confuse.
