# Distinguishing Carboniferous- from Mesozoic-associated Chert Toolstones in the Canadian Maritimes

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Until about two decades ago, brightly coloured, variegated chert toolstones observed in the Maritimes prehistoric archaeological record were generally assumed to have been acquired by Native people from sources associated with the Jurassic-Triassic (Mesozoic) Scots Bay Formation sediments and North Mountain Formation basalts, exposed on the Nova Scotia side of the Bay of Fundy from Minas Basin to Brier Island. More recently, it has become clear that prehistoric Native people acquired some brightly coloured, variegated chert toolstones from sources associated with the Early Carboniferous Mabou Group sediments, exposed around the edges of the New Brunswick Lowlands. Here, we present criteria for distinguishing Carboniferous- from Mesozoicassociated chert toolstones using low-cost, low-technology, handspecimen and microscopic examinations. Raw materials and finished artifacts of both of these chert types circulated in prehistoric lithic procurement and exchange systems during the Late Maritime Woodland period (ca. 1500 to ca. 500 B.P.). Frequently, artifacts made from both chert types are found in the same archaeological assemblages.

Five criteria for distinguishing
Carboniferous- from Mesozoicassociated chert toolstones in
Maritimes archaeological assemblages
are illustrated here, using geological
specimens from Belyeas Cove,
Washademoak Lake, New Brunswick,

and the Parrsboro and Scots Bay areas of Nova Scotia. 1) Carboniferousassociated cherts are dominated by variants that can be classified as carnelian (translucent red or orange-red chert); in contrast, red-coloured variants of Mesozoic-associated cherts mostly can be classified as opaque jaspers or agates (carnelian variants are very rare among Mesozoicassociated cherts). 2) Infilling silica fabrics in Carboniferous-associated cherts are dominated by botryoidal chalcedony lining incompletely filled vugs; in Mesozoic-associated cherts, infilling silica fabrics are dominated by banded chalcedony and megaquartz forming geode-like structures. 3) Carboniferous-associated cherts of all colours are uniformly highly translucent. Mesozoic-associated cherts are mainly opaque, with relatively small patches of translucency. Even Mesozoic-associated banded chalcedonies are less translucent than most Carboniferous-associated cherts. 4) In hand specimens, Carboniferousassociated cherts are vaguely and indistinctly variagated in 'cloudy' patterns; in contrast, Mesozoicassociated cherts are distinctly and minutely variegated in hand specimens in a wide range of bright colours—red, orange, blue, white, yellow and brown. 5) High-quality variants of Carboniferousassociated cherts exhibit extensive and distinctive patterns of strain-fracturing, at both macro- and micro-scales; strain fractures are rarely observed among Mesozoic-associated cherts.

# Carnelian Fabric Translucency Variegation Strain

Fractures

Carboniferous-associated Chert

# Mesozoic-associated Chert



## Bibliography

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marked images are transmitted light; all others are reflected light