

## MIDDLE CAMBRIAN TRILOBITES FROM TOPSAIL HEAD, AVALON PENINSULA

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### ABSTRACT

Most regional geology maps incorporating Topsail Head have not separated the Cambrian strata from the Harbour Main Group. Along the Topsail Fault, north of Topsail Beach, green, grey and black shales and siltstones of the Cambrian Adeyton and Harcourt groups are juxtaposed against mafic volcanic rocks of the Precambrian Harbour Main Group. Middle Cambrian trilobites and inarticulate brachiopods were obtained from two horizons within the Chamberlain's Brook Formation (Adeyton Group). One horizon, within the Manuels River Formation (Harcourt Group), yielded unidentifiable trilobite and inarticulate brachiopod remains.

### INTRODUCTION

Along the Topsail Fault, north of Topsail Beach, green, grey and black shales and siltstones of the Cambrian Adeyton and Harcourt groups are juxtaposed against mafic volcanic rocks of the Precambrian Harbour Main Group (Figures 1 and 2). Most regional geology maps have combined the Cambrian strata with the Harbour Main Group and placed the fault along the beach (i.e., Rose, 1952). In reality, the trace of the fault is marked by a break in slope, inland, and the Cambrian strata are well exposed along the beach parallel to the fault (Dawson, 1963; Hayes and O'Driscoll, 1989).

### BIOSTRATIGRAPHY

Middle Cambrian trilobites and inarticulate brachiopods were obtained from two horizons within the Chamberlain's Brook Formation (Adeyton Group). Near the Topsail Beach parking area (Figure 2, Locality 'A'), blue-grey and blue-green shale and siltstone yielded *Eccaparadoxides lamellatus* (Hartt in Dawson, 1868). Farther north, a distinctive massive, brown weathering, dark blue-grey trilobite coquina bed was found (Figure 2, Locality 'B'); it is probably analogous to the 'rottenstone' marker bed of the Kelligrews' Quarries (Boyce, 1988, page 49). Although the fossils are structurally deformed, the following have been identified:

Brachiopoda-Inarticulata  
Gen. et sp. undet.

#### Trilobita

*Bailliaspis elegans* (Hartt in Dawson, 1868)  
*Ctenocephalus terranovicus* Resser, 1937  
*Eccaparadoxides lamellatus* (Hartt in Dawson, 1868)

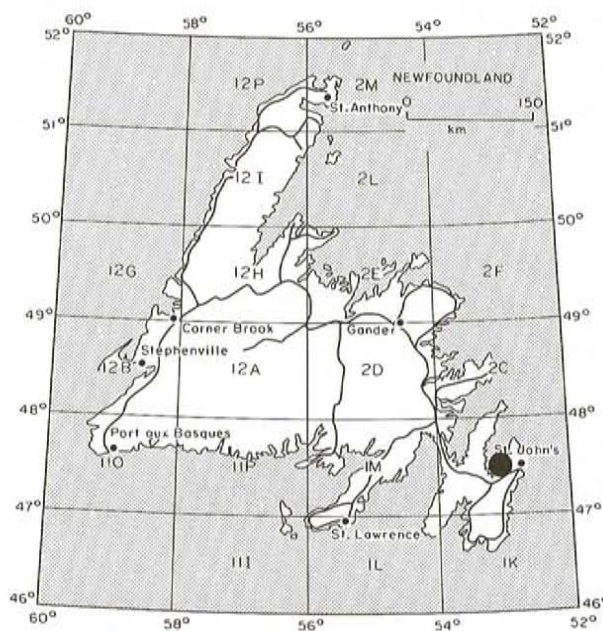
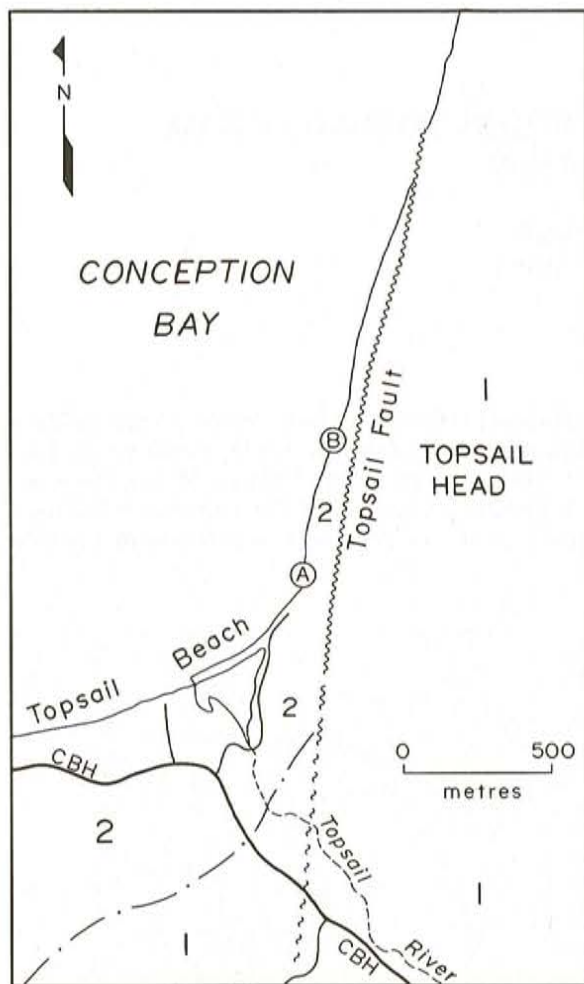


Figure 1. Location of Topsail Head area.

The fossils from both localities are indicative of an early Middle Cambrian *Eccaparadoxides bennetti* Zone age (see Boyce, 1988, Figure 5).

Dark-grey to black shale and slate of the Manuels River Formation (Harcourt Group) yielded unidentifiable trilobite and inarticulate brachiopod remains.

Rose (1952, page 32) reported that the Late Cambrian Elliott Cove Formation is exposed along Topsail Head, but listed no fossils.



—Geology from Hayes and O'Driscoll, 1989;  
Dawson, 1963.

#### SYMBOLS

Fault (defined, approximate, assumed).	
Unconformity	
Fossil Locality	(A) , (B)
Roads	
Conception Bay Highway	CBH

#### CAMBRIAN

- [2]** Adeyton and Harcourt Groups  
—red, green, and black shale,  
minor limestone and coquina.

#### PRECAMBRIAN

- [1]** Harbour Main Group  
—dominantly mafic and volcanic-  
clastic rocks. Minor dacite  
dykes.

**Figure 2.** *Geology map of Topsail Head area showing location of fossil collections.*

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*NOTE: Geological Survey Branch file numbers are included in square brackets.*