

Table 2.1 The Faunal Record of Biodiversity at Joggins*

KINGDOM ANIMALIA

PHYLUM PROTISTA (single-celled organisms)

Class SARCODINA

Order FORAMINIFERA

- Trochammina sp.*
- Ammobaculites sp.*
- Ammotium sp.*

PHYLUM ANNELIDA (segmented worms)

Class POLYCHAETA

- Spirorbis carbonarius*

PHYLUM ARTHROPODA (jointed-leg invertebrates)

Subphylum CRUSTACEA

Class OSTRACODA



- Carbonita altilis*
- C. elongata*
- C. fabulina*
- C. humilis*
- C. pungens*
- C. rankiniana*
- C. secans*
- Hilboldtina rugulosa*
- Candona bairdiodes*
- C. salteriana*
- Velatomorpha sp.*

Class MALACOSTRACA (soft-shelled: cray-fish *et al.*)

Superorder EOCARIDA

Order PYGOCEPHALOMORPHA



- Pygocephalus (Anthrapalaemon) dubius*

Subphylum CHELICERATA (pincer-bearing)

Class MEROSTOMATA

Order XIPHOSURIDA

(sword-tailed: horseshoe crabs *et al.*)



- Belinurus sp.*

Subclass EURYPTERIDA (wing-like legs)

indet. cuticle, *cf. Hibbertopterus/Mycterops*

Class ARACHNIDA (spiders, scorpions)

Order ANTHRACOMARTIDA

- Coryphomartus triangularis*

Order PHRYNICHIDA (whip spiders)

- Graeophonus carbonarius*



Order SCORPIONIDA

indet. cuticle

Subphylum MYRIAPODA

Class DIPLOPODA (millipedes)

Order EURYSTERNA

Xyloiulus (Xylobius) sigillariae

Archiulus xylobioides

Incertae sedis

ARTHROPLEURIDA

Arthropleura sp.

Subphylum INSECTA

Class PTERYGOTA (winged insects)

Order MEGASECOPTERA

incertae familiae

PHYLUM MOLLUSCA

Class BIVALVIA (Pelecypoda: clams)

Order UNIONOIDA

Archonodon (Asthenodonta) westonis

Order PTERIOIDA [Dysodonta]

Naiadites carbonarius

N. longus

Curvirimula sp.



Class GASTROPODA (snails)

Subclass PULMONATA (Stylommatophora) (land snails)

Order ORTHURETHRA

Dendropupa vetusta

Pupa bigsbii



Incertae sedis

Zonites priscus

PHYLUM CHORDATA

Subphylum VERTEBRATA

Superclass PISCES

Class ACANTHODII

incertae sedis

GYRACANTHIDAE

Gyracanthus duplicatus

Class CHONDRICHTYES (cartilaginous fishes)

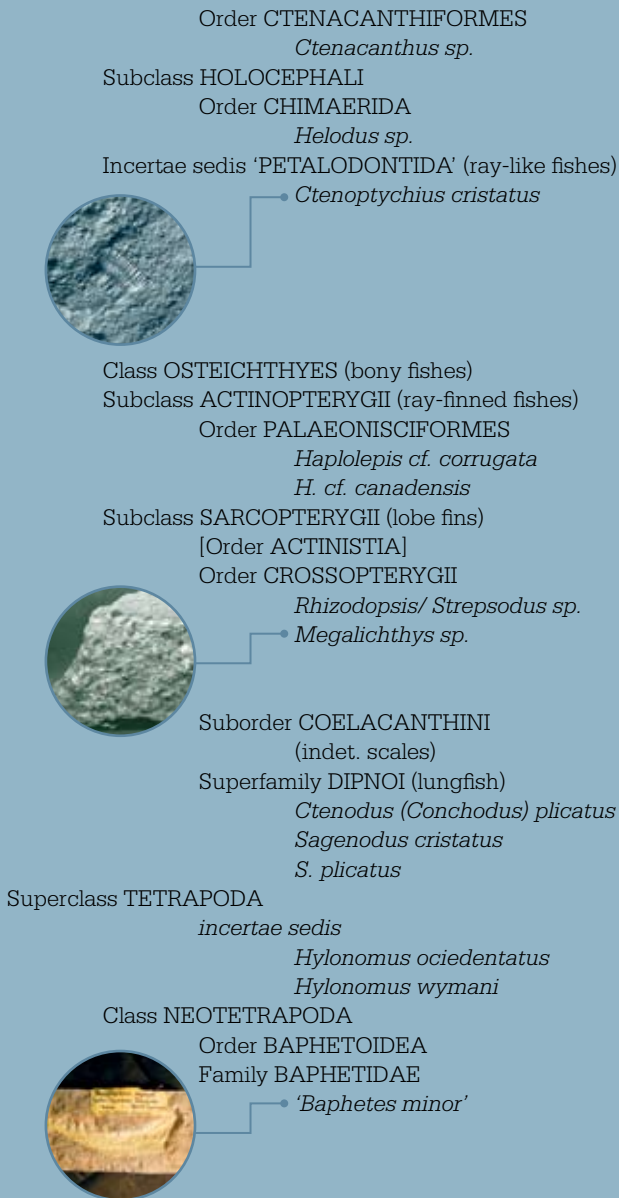
incertae sedis

Ageleodus (Callopristodus) pectinatus

Subclass ELASMOBRANCHII (sharks)

Order XENACANTHIDA

Xenacanthus sp.



* Note that systematic taxonomy for many of these groups in the fossil record is problematic, and many variations exist, particularly for the vertebrates.

Table 2.2 The Record of Vertebrate Trace Fossils of The Joggins Fossil Cliffs

KINGDOM ANIMALIA

PHYLUM Chordata

Subphylum VERTEBRATA

Superclass TETRAPODA Goodrich, 1930

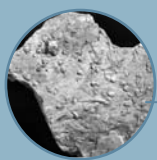
Class AMPHIBIA

Order MICROSAURIA



- *Barillopus arctus* Matthew, 1905
- *B. confusus* Matthew, 1905
- *B. (Baropus) unguifer* Matthew, 1903
- *Salichnium (Ornithoides) adamsii* (Matthew, 1905) Haubold, 1970
- *Ornithoides (Hylopus) trifidus* (Dawson, 1895) Matthew, 1903
- *Dromillopus quadrifidus* Matthew, 1905
- *D. (Dromopus) celer* (Matthew, 1903) Matthew, 1905

Order TEMNOSPONDYLLI (Edopoidea, Eryopoidea)



- *Anthichnium (Nanopus) obtusum* (Matthew, 1905) Haubold, 1970
- *A. (Nanopus) quadratum* (Matthew, 1905) Haubold, 1970
- *Baropezia (Sauropus) sydnensis* (Dawson 1863)
- *Cursipes dawsoni* Matthew, 1903b
- *Hylopus minor* Matthew, 1905
- *Limnopus (Theranopus?) mcnaughtoni* (Matthew, 1903c) Haubold, 1970

Amphibia indet.



- *Matthewichnus (Dromopus) velox* (Matthew, 1905) Haubold, 1970
- *Quadropedia (Cursipes) levis* (Matthew, 1905) Haubold, 1970

Class REPTILIA

Order CAPTORHINOMORPHA



- *Asperipes avipes* (Matthew, 1903c)
- *A. flexilis* Matthew, 1905
- *Pseudobradypus (Sauropus) caudifer* (Dawson, 1882) Haubold, 1971

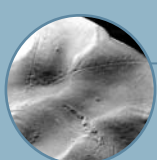
Familiae incertae

- **Pseudobradypus (Sauropus) unguifer* (Dawson, 1872) Matthew 1903

Table 2.3 The Fossil Record of Invertebrate Traces of the Joggins Fossil Cliffs

KINGDOM ANIMALIA

PHYLUM Annelida



- *Arenicolites* Salter, 1857
- *Haplotichnus* Miller, 1889
- *Cochlichnus* Hitchcock, 1858
- *Laevicyclus* sp.
- *Planolites montanus*
- *Planolites beverlexensis*
- *Skolithos linearis*
- *Treptichnus pollardi* Miller, 1880
- *Taenidium barretti* Heer, 1877
- *Taenidium annulata*

PHYLUM Arthropoda

Protichnites Owen, 1852

Subphylum CHELICERATA

Class MEROSTOMATA

Order XIPHOSURIDA

- *Kouphichnium* Nopsca, 1923
- cf. *Limulocubichnus*

Subphylum MYRIAPODA

Order ARTHROPLEURIDA

Diplichnites Dawson, 1873

Indeterminate

- *Fuershichnus* sp.
- *Palaeophycus hebrati*
- *Palaeophycus tekularis*
- *Rhizocorallium jense*

Table 2.4 The Fossil Macrofloral Record of Joggins, Incorporating Revised Taxonomy of R.H. Wagner, Jardín Botánico de Córdoba

KINGDOM PLANTAE

PHYLUM Tracheophyta

Class PROGYMNOSPERMOPSIDA

Order CORDAITALES

- Artisia transversa*
- Cordaites principalis* (Germar) Geinitz
- Cordaites palmaeformis* (Göppert) Weiss
- Cordaianthus* sp.

wood

- Cordiaxylon* cf. *C. dumusum* Rothwell & Warner
- Dadoxylon* sp.
- Mesoxylon* cf. *sutcliffi*

seeds



- *Cordaicarpus dawsoni*
- Samaropsis* sp. Goeppert

Order NOEGGERATHIALES?



- *Adiantites adiantoides* (Lindley and Hutton) Kidston
- Pseudadiantites rhomboideus* (Ettingshausen) Wagner

Class CYCADOPSIDA Barnard & Long

Order TRIGONOCARPALES Seward

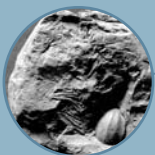
Family POTONIEACEAE

- Paripteris pseudogigantea* (Potonié) Gothan

Family TRIGONOCARPACEAE



- *Alethopteris discrepans* Dawson
- Alethopteris urophylla* Brongniart
- Alethopteris decurrens* (Artis) Zeiller
- Karinopteris (Mariopteris) grandepinnata* (Huth) Boersma
- Karinopteris tennesseana* (White) Gastaldo and Boersma
- Mariopteris abnormis* Gothan
- Mariopteris comata* Bell
- Mariopteris disjuncta* Bell
- Neuropteris* cf. *blissi* Lesquereux
- Neuropteris* cf. *hollandica* Stockmans
- Neuropteris obliqua* (Brongniart) Zeiller
- Neuropteris (Laveineopteris) tenuifolia* (Schlotheim) Brongniart



- *Neuralethopteris schlehanii* (Stur) Cremer
- Sphenopteris valida* (Dawson) Stopes
- Holcospermum* sp. Nathorst
- *Trigonocarpus parkinsoni* Brongniart

Family LAGENOSTOMACEAE

- Eusphenopteris obtusiloba* (Brongniart) Novik
- Eusphenopteris trigonophylla* (Behrend) Van Amerom
- Palmatopteris furcata* (Brongniart) Potonié
- Palmatopteris alata* (Brongniart) Potonié

Class FILICOPSIDA

Order BOTRYOPTERIDALES

Family TEDELACEAE

- Senftenbergia plumosa* (Artis) Stur

Family URNATOPTERIDACEAE

- Zeilleria delicatula* (Sternberg) Kidston
- Zeilleria frenzlii* (Stur) Kidston
- Zeilleria hymenophylloides* Kidston
- Zeilleria pilosa* (Dawson) Wagner
- Zeilleria schauburg-lippeana* (Stur) Zeiller
- Renaultia crepinii* (Stur) Zeiller
- Renaultia gracilis* (Brongniart) Zeiller
- Renaultia footneri* (Marrat) Kidston
- Renaultia rotundifolia* (Andrae) Zeiller
- Renaultia schatzlarensis* (Stur) Zeiller
- Sphenopteris (Renaultia) schwerinii* (Stur) Zeiller
- cf. *Boweria schatzlarensis* Kidston
- Oligocarpia brongniartii* Stur
- Sphenopteris deltiformis* Kidston
- Sphenopteris dixonii* Kidston
- Sphenopteris effusa* Kidston
- Sphenopteris fletcheri* Bell
- Sphenopteris moyseyi* Kidston
- Sphenopteris* sp. indet
- *Sphenopteris* sp.
- Sturia amoena**



Order COENOPTERIDALES

Family CORYNEPTERIDACEAE

- Corynepteris angustissima* (Sternberg) Nemejc

Class SPHENOPSIDA (Equisetopsida)

Order EQUISETALES

Family CALAMOSTACHYACEAE



- Calamites carinatus* Sternberg
- Calamites suckowi* Brongniart
- Calamites* cf. *goeppertii* Ettingshausen
- *Calamites (Calamitina)* sp.

rhizome

C. group *varians* of Bell

roots



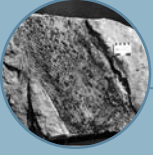
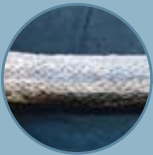

Pinnularia sp.

foliage

Annularia aculeata Bell

Table 2.4

The Fossil Macrofloral Record of Joggins, Incorporating Revised Taxonomy of R.H. Wagner, Jardin Botánico de Córdoba (continued)

	<i>Annularia asteris</i> Bell		<i>Sigillaria scutellata</i> Brongniart
	<i>Annularia latifolia</i> (Dawson) Kidston		<i>Sigillaria cf. scutellata</i> Brongniart
	<i>Annularia acicularis</i> (Dawson) Matthew		sp. indet.
	<i>Annularia cf. stellata</i>	branch scar	
	(Schlotheim) Wood		<i>Ulodendron</i> Lindley and Hutton
	<i>Asterophyllites charaeformis</i>	decorticated stem	<i>Syringodendron</i> sp.
	(Sternberg) Göppert		<i>Cyperites</i> sp. Lindley and Hutton
	<i>Asterophyllites grandis</i>		
	(Sternberg) Göppert		
	<i>Asterophyllites equisetiformis</i>		
	(Schlotheim) Brongniart		
cones	<i>Palaeostachya</i> sp. Weiss	cones and bracts	
Order BOWMANITALES			<i>Lepidostrobus ornatus</i> Brongniart
Family BOWMANITACEAE			<i>Lepidostrobus olryi</i> Zeiller
	<i>Sphenophyllum cf. kidstonii</i>		<i>Lepidostrobophyllum lanceolatum</i>
	Hemingway		(Lindley & Hutton) Bell
Class LYCOPSIDA			<i>Lepidostrobophyllum majus</i>
Order LEPIDOCARPALES			(Brongniart) Hirmer
	<i>cf. Bothrodendron punctatum</i>		<i>Lepidostrobophyllum morrisianum</i>
	Lindley and Hutton		(Lesquereux) Tenchov
	<i>Diaphorodendron</i> sp. DiMichele	rootstock	<i>Sigillariostrobus</i> sp. Schimper
	<i>Lepidodendron aculeatum</i> Sternberg		<i>Stigmaria ficoides</i> Sternberg
	" <i>Lepidodendron</i> " <i>bretonense</i> Bell		
	<i>Lepidodendron cf. fusiforme</i> Corda		
	<i>Lepidodendron lycopodioides</i>		
	Sternberg		
	<i>Lepidodendron cf. obovatum</i> Sternberg		
	<i>Lepidodendron worthenii</i> Lesquereux		
	<i>Lepidophloios laricinus</i> Sternberg		
	<i>Sigillaria cf. laevigata</i> Brongniart	Order ISOETALES	<i>Omphalophloios</i> sp.?
	<i>Sigillaria mamillaris</i> Brongniart		
	<i>Sigillaria cf. rayosa</i>		