

CONTRIBUTIONS FROM THE MUSEUM OF PALEONTOLOGY

THE UNIVERSITY OF MICHIGAN

Vol. XVII, No. 5, pp. 149-171

DECEMBER 1, 1961

ADDENDA TO THE CHECK LIST OF
FOSSIL INVERTEBRATES DESCRIBED FROM
THE TRAVERSE GROUP OF MICHIGAN

BY
ERWIN C. STUMM



MUSEUM OF PALEONTOLOGY
THE UNIVERSITY OF MICHIGAN
ANN ARBOR

CONTRIBUTIONS FROM THE MUSEUM OF PALEONTOLOGY

Director: LEWIS B. KELLUM

The series of contributions from the Museum of Paleontology is a medium for the publication of papers based chiefly upon the collection in the Museum. When the number of pages issued is sufficient to make a volume, a title page and a table of contents will be sent to libraries on the mailing list, and to individuals upon request. A list of the separate papers may also be obtained. Correspondence should be directed to the Museum of Paleontology, The University of Michigan, Ann Arbor, Michigan.

VOLS. II–XV. Parts of volumes may be obtained if available.

VOLUME XVI

1. Two Late Pleistocene Faunas from Southwestern Kansas, by Claude W. Hibbard and Dwight W. Taylor. Pages 1–223, with 16 plates.
2. North American Genera of the Devonian Rugose Coral Family Digonophyllidae, by Erwin C. Stumm. Pages 225–243, with 6 plates.
3. Notes on *Jaekelocystis hartleyi* and *Pseudocrinites gordonii*, two Rhombiferan Cystoids Described by Charles Schuchert in 1903, by Robert V. Kesling. Pages 245–273, with 8 plates.
4. Corals of the Traverse Group of Michigan. Part VI, *Cladopora*, *Striatopora*, and *Thamnopora*, by Erwin C. Stumm. Pages 275–285, with 2 plates.
5. A Study of the Middle Devonian Widder Formation of Southwestern Ontario, by Jean D. Wright and Edward P. Wright. Pages 287–300, with 1 plate.

VOLUME XVII

1. Evaluation of Prizbram's Law for Ostracods by Use of the Zeuthen Cartesian-diver Weighing Technique, by Robert V. Kesling and Robert S. Takagi. Pages 1–58, with 5 plates.
2. A New *Glyptocystites* from Middle Ordovician Strata of Michigan, by Robert V. Kesling. Pages 59–76, with 3 plates.
3. A New Species of *Billingsites*, an Ascoceratid Cephalopod, from the Upper Ordovician Ogontz Formation of Michigan, by Robert V. Kesling. Pages 77–121, with 2 plates.
4. Notes on *Lepadocystis moorei* (Meek), An Upper Ordovician Callocystitid Cystoid, by Robert V. Kesling and Leigh W. Mintz. Pages 123–148, with 7 plates.
5. Addenda to the Check List of Fossil Invertebrates Described from the Traverse Group of Michigan, by Erwin C. Stumm. Pages 149–171.

ADDENDA TO THE CHECK LIST OF FOSSIL INVERTEBRATES DESCRIBED FROM THE TRAVERSE GROUP OF MICHIGAN

BY
ERWIN C. STUMM

CONTENTS

Introduction	149
Thunder Bay region	150
Bell shale	150
Rockport Quarry limestone	152
Ferron Point shale	152
Genshaw formation	154
Newton Creek limestone	156
Alpena limestone	156
Four Mile Dam formation	158
Norway Point formation	159
Potter Farm formation	162
Thunder Bay limestone	163
Afton-Onaway region	164
Ferron Point shale	164
Genshaw formation	164
Koehler limestone	164
Gravel Point formation	165
Beebe School formation	165
Little Traverse Bay region	165
Gravel Point formation	165
Charlevoix limestone	167
Lower Petoskey limestone	167
Upper Petoskey limestone	168
Literature cited	169

INTRODUCTION

IN 1951 the author prepared a check list of the fossil invertebrates described from the Traverse group. Accompanying the name of each species is one or more numbers which correspond to the articles in the literature cited in which this species was described, illustrated, or listed. During the ten years since the check list appeared almost fifty papers describing several hundred species have been published. This addenda to the original check list brings it up to date through 1960.

The stratigraphic sequence used herein follows that used in the original check list with the exception that the Petoskey limestone is divided into two, instead of three, parts. The lower Petoskey limestone includes the beds occurring in the Kegomic and Curtis quarries in the Petoskey region, and the upper Petoskey limestone comprises the beds exposed along the shore of Lake Michigan in the vicinity of Norwood.

THUNDER BAY REGION

Bell Shale

Anthozoa:

Tetracoralla:

Naos ovatus (Sloss) 35

Tabulata:

Aulocystis crassimurata Watkins 42

Aulocystis multicystosa Watkins 42

Aulopora conferta Winchell 42

Aulopora microbuccinata Watkins 42

Pachyphragma cylindricum Watkins 42

Trachypora sp. A 40

Echinodermata:

Blastoidea:

Pentremiteida bellatula Reimann 29

Crinoidea:

Gilbertsocrinus alpenensis Ehlers 29

Brachiopoda:

Articulata:

Chonetes mediolatus Cooper 7

Helaspis sp. Imbrie 7

Longispina leionanus Imbrie 7

Megastrophia sp. 7

Mucrospirifer alpenensis (Grabau) 39

Mucrospirifer prolificus (Stewart) 39

Pentamerella sp. A 7

Pholidostrophia gracilis Imbrie 5,7

Pholidostrophia gracilis gracilis Imbrie 5,7

- Pholidostrophia gracilis nanus* Imbrie 5,6,7
Schizophoria ferronensis Imbrie 7
Schuchertella crassa Imbrie 7
Spinulicosta mutocosta Imbrie 7
Strophodonta sp. A 7
Strophodonta extenuata bellensis Imbie 5,6,7

Crustacea:

Trilobita:

- Acidaspis* (?) sp. A 34
Ancyropyge romingeri (Hall and Clarke) 34
Dechenella (Dechenella) alpenensis Stumm 34
Phacops rana bellensis Stumm 34
Phacops rana milleri Stewart 34

Ostracoda:

- Aechmina choanobasota* Kesling 14
Aparchites crossotus Kesling 14
Arcyzona apobathrota Kesling 14
Arcyzona bythyclimacota Kesling 14
Arcyzona campylactinota Kesling 14
Arcyzona homalosagenota Kesling 14
Arcyzona rhabdota Kesling 14
Chironiptrum oiostathmicum Kesling 14
Ctenobolbina pinguis Kesling and McMillan 8
Ctenobolbina spicata Kesling and McMillan 8
Ctenoloculina cicatricosa (Warthin) 8
Falsipollex altituberculatus Kesling and McMillan 8,12
Halliella bellipuncta (Van Pelt) 14
Hollinella acutangulata Kesling and McMillan 8
Hollinella auroridadiata Kesling and McMillan 8
Hollinella bullata Kesling and McMillan 8
Hollinella kolmodini (Jones) 8
Hollinella lativelata Kesling and McMillan 8
Hollinella magnilobata Kesling and McMillan 8
Hollinella porrecta Kesling and McMillan 8
Hollinella productilobata Kesling and McMillan 8
Parabolbina pulchella Kesling and McMillan 8
Proplectum platum Kesling and McMillan 8
Punctoprimitia subaequalis Swartz and Oriol 14
Sphenicibysis hypoderota Kesling 14

- Subligaculum recurvisulcatum* Kesling and McMillan 8
Subligaculum scrobiculatum Kesling and McMillan 8,12
Tetrasacculus bilobus Stewart 8
Tetrasacculus magnivelatus Kesling and McMillan 8
Ulrichia acricula Kesling 14
Ulrichia conradi Jones 14
Ulrichia fragilis Warthin 14
Ulrichia spinifera Coryell and Malkin 14

Rockport Quarry Limestone

Anthozoa:

Tetracoralla:

- Billingsastrea rockportensis* Ehlers and Stumm 1,37
Cylindrophyllum delicatulum Ehlers and Stumm 37

Tabulata:

- Aulocystis magnispina* Watkins 42
Trachypora rockportensis Stumm and Hunt 40

Brachiopoda:

Articulata:

- Chonetes mediolatus* Cooper 7
Longispina pelta Imbrie 7
Pentamerella sp. B. 7
Pholidostrophia gracilis gracilis Imbrie 5,7
Schizophoria ferronensis Imbrie 7
Schuchertella crassa Imbrie 7
Spinulicosta mutocosta Imbrie 7
Stropheodonta extenuata rockportensis Imbrie 5,6,7

Crustacea:

Ostracoda:

- Antiparaparchites primaevus* Kesling 28
Phlyctiscapha rockportensis Kesling 19, 25

Ferron Point Shale

Anthozoa:

Tabulata:

- Aulacophyllum hemicrassatum* Sloss 33
Aulocystis jacksoni (Grabau) 42

- Aulocystis magnispina* Watkins 42
Aulopora microbuccinata Watkins 42
Pachyphragma concentricum Watkins 42
Pachyphragma cylindricum Watkins 42

Echinodermata:

Edrioasteroidea:

- Agelacrinites* sp. A 47
Agelacrinites sp. B 47
Hemicystites devonicus Bassler 47
Lepidodiscus alpenensis Bassler 3

Brachiopoda:

Articulata:

- Chonetes mediolatus* Cooper 7
Chonetes nateforma Imbrie 7
Helaspis luma luma Imbrie 7
Longispina lissohybus Imbrie 7
Longispina subclava Imbrie 7
Mucrospirifer alpenensis Stumm 39
Mucrospirifer prolificus (Stewart) 39
Pentamerella lingua Imbrie 7
Pholoidostrophia sp. 44
Pholoidostrophia gracilis gracilis Imbrie 5,6,7
Schizophoria ferronensis Imbrie 7
Schuchertella crassa Imbrie 7
Spinulicosta mutocosta Imbrie 7
Stropheodonta (s.s.) sp. 44
Stropheodonta (*Stropheodonta*) sp. 44
Strophodonta extenuata extenuata Imbrie 5,6,7
Strophodonta extenuata ferronensis Imbrie 5,6,7
Strophodonta fascis Imbrie 7

Crustacea:

Trilobita:

- Dechenella* (*Basidechinella*) *nodosa* Stumm 34
Dechenella (*Dechenella*) *alpenensis* Stumm 34
Phacops rana crassituberculata Stumm 34
Phacops rana milleri Stewart 34
Proteus (*Crassiproetus*) sp. A 34

Ostracoda:

- Ctenoloculina cicatricosa* (Warthin) 10,15
Ctenoloculina eurybathrota Kesling 15
Ctenoloculina myrurilobata Kesling 15
Falsipollex sp. 9
Falsipollex laxivelatus Kesling 15
Falsipollex parvilobatus Kesling 15
Falsipollex valgus Kesling 15
Hollina pyxidata Kesling 15
Hollinella pumila Kesling 15
Phlyctiscapha apleta Kesling 22, 27
Subligaculum tribursatum Kesling 15
Subligaculum lacinosum Kesling 15

Genshaw Formation

Anthozoa:

Tetracoralla:

- Billingsastrea pauciseptata* Ehlers and Stumm 1, 37
Billingsastrea romingeri Ehlers and Stumm 1, 37

Tabulata:

- Aulacophyllum scyphus* (Rominger) 33
Aulocystis alectiformis reptata Watkins 42
Aulocystis fenestrata problematica Watkins 42
Aulopora gregaria Watkins 42
Aulopora microbuccinata Watkins 42
Trachypora sp. B. 40
Trachypora (?) *reticulata* Stumm and Hunt 40

Brachiopoda:

Articulata:

- Gypidula* sp. 7
Helaspis luma crista Imbrie 7
Helaspis luma luma Imbrie 7
Heteralosia sp. A. 7
Leptolosia radicans (Winchell) 7
Longispina subclava Imbrie 7
Mucrospirifer multiplicatus (Grabau) 39
Pentamerella tumida Imbrie 7

- Pholidostrophia gracilis gracilis* Imbrie 5,7
Schizophoria traversensis Grabau 7
Schuchertella cornucopia Imbrie 7
Sieberella romingeri (Hall and Clarke) 7
Stropheodonta (*Stropheodonta*) sp. 44
Strophodonta acris Imbrie 7
Strophodonta extenuata Imbrie 5,7
Strophodonta extenuata genshawensis Imbrie 7
Strophodonta titan Imbrie 7
Strophodonta titan costella Imbrie 7
Truncalosa gibbosa Imbrie 7

Crustacea:

Trilobita:

- Dechenella* (*Basidechenella*) *nodosa* Stumm 34
Dechenella (*Dechenella*) *alpenensis* Stumm 34
Phacops rana milleri Stewart 34
Proteus (*Crassiproteus*) sp. B. 34

Ostracoda:

- Bairdia amplexens* Kesling and Kilgore 13
Bairdia emaciata Kesling and Kilgore 13
Bairdia epicypha Kesling and Kilgore 24
Bairdia gibbera Kesling and Kilgore 13
Barychilina embrithes Kesling and Kilgore 13
Barychilina labyrinthica Kesling and Kilgore 13
Barychilina tryphera Kesling and Kilgore 13
Bollia disjuncta Kesling and Kilgore 13
Bollia sp. cf. *B. disjuncta* Kesling and Kilgore 13
Ctenobolbina megalia Kesling and Tabor 11, 12, 16, 23
Ctenolocolina eurybathrota Kesling 16
Ehlersia hypercala (Kesling and Kilgore) 13, 50
Euglyphella sigmoidalis (Jones) 13
Falsipollex bulbosus Kesling and Tabor 16
Falsipollex minimus Kesling and Tabor 16
Glyptopleura cracens Kesling and Kilgore 13
Hollinella amplilobata Kesling and Tabor 16
Hollinella cuspidulobata Kesling and Tabor 16
Hollinella plauta Kesling and Tabor 16
Hollinella vegrandis Kesling and Tabor 16
Kloedenella chilota Kesling and Kilgore 13

- Kloedenella emphysota* Kesling and Kilgore 13
Kloedenella lophota Kesling and Kilgore 13
Kloedenella opisthorhysa Kesling and Kilgore 13
Octonaria laevilatata Kesling and Kilgore 13, 23
Parabolbina hypercala Kesling and Tabor 16
Parabolbina oxypages Kesling and Tabor 16
Schmidtella fabiformis Kesling and Kilgore 13
Subligaculum proclivisulcatum Kesling and Tabor 16
Tetrasacculus magnivelatus Kesling and McMillan 16
Ulrichia compressa Kesling and Kilgore 13
Winchellatia deliquiata Kesling and Tabor 16
Winchellatia deminuta Kesling and Tabor 16
Winchellatia teleutaea Kesling and Tabor 11, 16

Newton Creek Limestone

Anthozoa:

Tabulata:

- Aulocystis alectiformis dubia* Watkins 42

Brachiopoda:

Articulata:

- Pentamerella tumida* Imbrie 7
Sieberella newtonensis Imbrie 7

Crustacea:

Trilobita:

- Proteus (Crassiproteus) microgranulatus* Stumm 34

Alpena Limestone

Anthozoa:

Tetracoralla:

- Microcylus alpenensis* Stumm 33
Naos ponderosus (Rominger) 35

Tabulata:

- Aulocystis alectiformis* (Winchell) 42
Aulocystis fenestrata (Winchell) 42
Aulopora gregaria Watkins 42

- Pachyphragma concentricum* Watkins 42
Trachypora alpenensis Stumm and Hunt 40
Trachypora alternans Stumm and Hunt 40
Trachypora ornata Stumm and Hunt 40
Trachypora proboscivalis Stumm and Hunt 40
Trachypora (?) *reticulata* Stumm and Hunt 40

Echinodermata:

Cystoidea:

- Pothocrinus cooperi* Kirk 30

Brachiopoda:

Articulata:

- Hercostrophia alpenensis* Williams 7, 43, 44
Leptalosia radicans (Winchell) 7
Longispina emmetensis (Winchell) 7
Megastrophia concava Hall 7
Mucrospirifer latus (Grabau) 39
Pentamerella alpenensis Imbrie 7
Pholidostrophia geniculatta Imbrie 7
Protoloptostrophia lirella Imbrie 7
Rhipidomella sp. 7
Strophodonta discus Imbrie 7
Strophodonta erratica Winchell 7
Strophodonta leptoidema Imbrie 7
Strophodonta micropleura Imbrie 7
Strophodonta nanus Imbrie 7
Strophodonta paula Imbrie 7
Strophodonta proteus Imbrie 7
Strophodonta titan Imbrie 7
Strophodonta titan titan Imbrie 7
Truncalosia gibbosa Imbrie 7

Crustacea:

Trilobita:

- Dechenella* (*Basidechenella*) *pulchra* Stumm 34
Phacops rana (Green) 34
Phacops rana alpenensis Stumm 34
Proteus (*Crassiproteus*) *microgranulatus* Stumm 34

Four Mile Dam Formation

Anthozoa:

Tetracoralla:

- Cylindrophyllum magnum* Ehlers and Stumm 37
Edriophyllum archaici (Billings) 37
Iowaphyllum alpenensis (Rominger) 35

Tabulata:

- Aulocystis cooperi* Watkins 42
Aulocystis jacksoni (Grabau) 42
Aulopora gregaria Watkins 42
Pachyphragma concentricum Watkins 42
Trachypora alternans Stumm and Hunt 40
Trachypora dendroidea Stumm and Hunt 40
Trachypora elegantula Stumm and Hunt 40
Trachypora lineata Stumm and Hunt 40
Trachypora ornata Stumm and Hunt 40
Trachypora proboscidiialis Stumm and Hunt 40
Trachypora (?) *reticulata* Stumm and Hunt 40

Echinodermata:

Edrioasteroidea:

- Timeischytes megapinacotus* Ehlers and Kesling 2, 47

Cystoidea:

- Lipsanocystis magnus* Stumm 38
Lipsanocystis rugosus Stumm 38

Crinoidea:

- Botryocrinus reimanni granilineatus* Goldring 4

Brachiopoda:

Articulata:

- Douvillina distans* Imbrie 7
Leptalosia radicans (Winchell) 7
Longispina emmetensis (Winchell) 7
Megastrophia gibbosa Imbrie 7
Mucrospirifer grabaui Stumm 39
Oligorhachis Oligorhachis Imbrie 7
Pentamerella sp. C 7

Pentamerella alpenensis Imbrie 7
Protoleptostrophia lirella Imbrie 7
Rhipidomella penelope traversensis Imbrie 7
Schuchertella sp. 7
Schuchertella anomala (Winchell) 7
Spinulicosta muticosta Imbrie 7
Strophodonta sp. B. 7
Strophodonta erratica Winchell 7
Strophodonta fissicosta Winchell 7
Strophodonta nanus Imbrie 7
Strophodonta paula Imbrie 7

Crustacea:

Trilobita:

Dechenella (Basidechenella) macrocephala (Hall) 34
Dechenella (Basidechenella) pulchra Stumm 34
Dechenella (Basidechenella) rowi (Green) 34
Greenops aequituberculatus Stumm 34
Greenops traversensis Stumm 34
Mystrocephala rara (Stumm) 34, 49
Phacops rana (Green) 34
Proteus (Crassiproteus) traversensis Stumm 34

Norway Point Formation

Anthozoa:

Tabulata:

Aulocystis commensalis Watkins 42
Aulocystis stummi Watkins 42
Trachypora alternans Stumm and Hunt 40
Trachypora ornata Stumm and Hunt 40

Echinodermata:

Blastoidea:

Pentremitidea cooperi Reimann 29

Crinoidea:

Atractocrinus curtus Kirk 31
Cadiscocrinus sp. 30

Brachiopoda:

Articulata:

- Chonetes pachyactis* Imbrie 7
Leptolosis radicans (Winchell) 7
Mucrospirifer attenuatus (Grabau) 39
Mucrospirifer latus Grabau 39
Mucrospirifer profundus (Grabau) 39
Pentamerella pericosta Imbrie 7
Pholidostrophia ovata Imbrie 7
Protoleptos trophia lirella Imbrie 7
Schuchertella lirella Imbrie 7
Sphenophragmus nanus Imbrie 7
Strophodonta alpenensis Grabau 7
Truncalosis gibbosa Imbrie 7

Crustacea:

Trilobita:

- Dechenella (Basidechenella)* sp. A 34
Dipleura dekayi Green 34
Greenops aequituberculatus Stumm 34
Phacops rana (Green) 34

Ostracoda:

- Aechmina* sp. A 21
Aechmina sp. B 21
Aechmina choanobasota Kesling 21
Arcyzona sp. 21
Arcyzona aperticarinata Kesling and Weiss 21
Arcyzona diademata (Van Pelt) 21
Barychilina sp. 21
Barychilina embrithes Kesling and Kilgore 21
Barychilina labyrinthica Kesling and Kilgore 21
Birdsallella delawarensis Stuart 21
Birdsallella tumida Stewart 21
Bythocypris devonica borealis Warthin 21
Bythocypris parsonia Wilson 21
Bythocypris subquadrata Stewart 21
Coelonella scapha (Stewart) 21
Ctenoloculina cicatricosa (Warthin) 9, 10, 21
Dizygopleura euglyphea Warthin 21
Euglyphella compressa Coryell and Malkin 21

- Euglyphella sigmoidalis* (Jones) 21
Euglyphella simplex Kesling and Weiss 21
Eukloedenella doverensis Turner 21
Falsipollex equipapillatus Kesling and Weiss 21
Glyptopleura bipunctata Kesling and Weiss 21
Halliella bellipuncta (Van Pelt) 21
Healdia sp. 21
Healdia gibba Kesling and Weiss 21
Hollinella sp. 9
Hollinella sp. A 21
Hollinella sp. B 21
Hollinella ampla Kesling and Weiss 21
Hollinella inclinisulcata Kesling and Weiss 21
Hollinella labrosa Kesling and Weiss 21
Hollinella tendilobata Kesling and Weiss 21
Hyphasmaphora textiligera Van Pelt 21
Jenningsina catenulata (Van Pelt) 21
Jenningsina scalpta Kesling and Weiss 21
Lucasella mundula Stewart 21
Monoceratina casei Wartin 21
Octonaria crescentiformis Van Pelt 21
Octonaria quadricostata Van Pelt 21
Parabolbina acinina Kesling and Weiss 21
Ponderodictya sp. 21
Ponderodictya punctulifera (Hall) 21
Punctoprimitia subaequalis Swartz and Oriel 21
Quasillites binodosus Swartz and Oriel 21
Quasillites jubatus Kesling and Kilgore 21
Quasillites lobatus Swartz and Oriel 21
Quasillites obliquus Coryell and Malkin 21
Quasillites cf. *Q. ornatus* Swartz and Oriel 21
Quasillites ornatus Swartz and Oriel 21
Reticestus acclivitatus Kesling and Weiss 21
Ropolonellus papillatus Van Pelt 21
Ropolonellus plenus Kesling and Weiss 21
Ruptivellum bacculatum Kesling and Weiss 21
Subligaculum biorthogonium Kesling and Weiss 21
Subligaculum trullatum Kesling and Weiss 21
Tetrasacculus paeneloculatus Kesling and Weiss 21
Ulrichia fragilis Warthin 21
Ulrichia spinifera Coryell and Malkin 21

Potter Farm Formation

Stromatoporoidea:

- Amphipora* sp. 46
- Stromatoporella mudlakensis* Galloway 46

Anthozoa:

Tetracoralla:

- Cylindrophyllum hindshawi* Ehlers and White 37
- Cylindrophyllum panicum* (Winchell) 37
- Disphyllum compactum* Ehlers and Stumm 37
- Hallia vesiculata* Sloss 33
- Synaptophyllum crassiseptatum* Ehlers and Stumm 37

Tabulata:

- Aulocystis alpenensis* Watkins 42
- Aulocystis cooperi* Watkins 42
- Aulocystis parva* Watkins 42
- Pachyphragma erectum* (Rominger) 42
- Trachypora alternans* Stumm and Hunt 40
- Trachypora lineata* Stumm and Hunt 40
- Trachypora ornata* Stumm and Hunt 40
- Trachypora proboscidualis* Stumm and Hunt 40

Echinodermata:

Cystoidea:

- Lipsanocystis oblatas* Stumm 38

Brachiopoda:

Articulata:

- Chonetes ensicosta* Imbrie 7
- Mucrospirifer grabau* Stumm 39
- Mucrospirifer latus* (Grabau) 39
- Mucrospirifer profundus* (Grabau) 39
- Pentamerella* sp. E 7
- Pentamerella papilla* Imbrie 7
- Pentamerella petoskeyensis* (Imlay) 7
- Spinulicosta mutocosta* Imbrie 7
- Strophodonta* sp. 44
- Strophodonta crassa* Imbrie 7

Strophodonta elongata Imbrie 7
Strophodonta potterensis Imbrie 7
Truncalosia gibbosa Imbrie 7

Crustacea:

Trilobita:

Dechenella (Basidechinella) sp. B 34
Dechinella (Dechinella) sp. A 34
Greenops sp. A 34
Phacops iowensis Delo 34
Proteus (Crassiproteus) alpenensis Stumm 34

Thunder Bay Limestone

Anthozoa:

Tetracoralla:

Cylindrophyllum grabau Ehlers and Stumm 37

Tabulata:

Syringopora ehlersi Watkins 42
Trachypora alternans Stumm and Hunt 40
Trachypora perreticulata Stumm and Hunt 40
Trachypora proboscidualis Stumm and Hunt 40

Echinodermata:

Cystoidea:

Lipsanocystis traversensis Ehlers and Leighly 36, 38

Brachiopoda:

Articulata:

Pentamerella proteus Imbrie 7
Spinulicosta mutocosta Imbrie 7

Crustacea:

Trilobita:

Dechenella (Basidechinella) sp. C 34
Dechenella (Basidechinella) reimanni Stumm 34
Dipleura dekayi Green 34
Greenops alpenensis Stumm 34
Phacops iowensis Delo 34
Proteus (Crassiproteus) alpenensis Stumm 34

AFTON-ONAWAY REGION

Ferron Point Shale

Anthozoa:

Tabulata:

Aulocystis magnispina Watkins 42

Brachiopoda:

Articulata:

Chonetes mediolatus Cooper 7*Pentamerella lingua* Imbrie 7*Schizophoria ferronensis* Imbrie 7*Schuchertella crassa* Imbrie 7*Spinulicosta mutocosta* Imbrie 7*Strophodonta extenuata extenuata* Imbrie 7*Genshaw Formation*

Anthozoa:

Tabulata:

Aulocystis alectiformis reptata Watkins 42

Brachiopoda:

Articulata:

Helaspis luma luma Imbrie 7*Heteralosia caperata* Imbrie 7*Longispina subclava* Imbrie 7*Orthopleura rhipis* Imbrie 7*Pentamerella tumida* Imbrie 7*Pholidostrophia gracilis gracilis* Imbrie 5, 7*Schizophoria traversensis* Grabau 7*Sieberella romingeri* (Hall and Clarke) 7*Koehler Limestone*

Brachiopoda:

Articulata:

Helaspis luma Imbrie 7

Gravel Point Formation

Brachiopoda:

Articulata:

- Pentamerella* sp. D 7
Pentamerella aftonensis Imbrie 7

Crustacea:

Ostracoda:

- Welleria aftonensis* Warthin 26

Beebe School Formation

Anthozoa:

Tetracoralla:

- Cylindrophyllum panicum* (Winchell) 37

Tabulata:

- Trachypora alternans* Stumm and Hunt 40

Brachiopoda:

Articulata:

- Pentamerella pericosta* Imbrie 7
Sphenophragmus nanus Imbrie 7
Spinulocosta mutocosta Imbrie 7

LITTLE TRAVERSE BAY REGION

Gravel Point Formation

Stromatoporoidea:

- Paralleopora winchelli* Galloway and Ehlers 46
Stromatopora monticulifera Winchell 46
Stromatoporella elevata Parks, 46

Anthozoa:

Tetracoralla:

- Aulacophyllum hemicrassatum* Sloss 33
Aulacophyllum mesodilatatum Sloss 33
Hexagonaria cristata (Rominger) 37
Hexagonaria cristata microcarinata (Sloss) 37
Hexagonaria pericarinata (Sloss) 37

- Naos ovatus* (Sloss) Stumm 35
Naos ponderosus (Rominger) 35

Tabulata:

- Aulocystis alectiformis* (Winchell) 42
Aulocystis fenestrata (Winchell) 42
Aulopora socialis Fenton 42
Pachyphragma concentricum Watkins 42
Pachyphragma erectum (Rominger) 42
Tabulophyllum traversensis (Winchell) 41
Trachypora alternans Stumm and Hunt 40
Trachypora lineata Stumm and Hunt 40

Brachiopoda:

Articulata:

- Devonalosia radicans* (Winchell) 48
Douvillina sp. Imbrie 7
Heteralosia sp. B Imbrie 7
Leptalosia radicans (Winchell) 7
Longispina emmetensis (Winchell) 7
Mucrospirifer grabaui Stumm 39
Oligorhachis oligorhachis Imbrie 7
Orthopleura sp. A Imbrie 7
Orthopleura sp. B Imbrie 7
Pentamerella sp. D Imbrie 7
Pentamerella aftonensis Imbrie 7
Pentamerella alpenensis Imbrie 7
Pholidostrophia geniculata Imbrie 7
Schuchertella anomala (Winchell) 7
Stropheodonta sp. Williams 44
Stropheodonta erratica Winchell 7
Stropheodonta fissicosta Winchell 7
Stropheodonta nanus Imbrie 7
Stropheodonta titan Imbrie 7
Stropheodonta titan titan Imbrie 7
Truncalosia gibbosa Imbrie 7

Crustacea:

Trilobita:

- Ancyropyge romingeri* (Hall and Clarke) 34
Dechenella (*Basidechenella*) *pulchra* Stumm 34

- Greenops aeguituberculatus* Stumm 34
Greenops traversensis Stumm 34
Phacops rana alpenensis Stumm 34
Proteus (Crassiproteus) traversensis Stumm 34

Charlevoix Limestone

Anthozoa:

Tabulata:

- Aulopora crassata* (Winchell) 42

Lower Petoskey Limestone

Stromatoporoidea:

- Clavdictyon kegomicense* Galloway 46
Dendrostoma fibrosum Galloway 46
Dendrostoma petoskeyense Galloway and Ehlers 46
Idiostroma caespitosum (Winchell) 46
Idiostroma roemeri Nicholson 46
Stromatopora pustilifera Winchell 46
Stromatoporella mudlakensis Galloway 46
Trupestoma nux (Winchell) Galloway and Ehlers 46

Anthozoa:

Tetracoralla:

- Cylindrophyllum panicum* (Winchell) 37
Hallia vesiculata Sloss 33
Hallia zonata Sloss 33
Hexagonaria pauciseptata (Sloss) 37

Tabulata:

- Aulocystis alpenensis* Watkins 42
Aulocystis parva Watkins 42
Aulopora gregaria Watkins 42
Pachyphragma erectum (Rominger) 42
Trachypora alternans Stumm and Hunt 40
Trachypora proboscidualis Stumm and Hunt 40

Brachiopoda:

Articulata:

- Chonetes ensicosta* Imbrie 7
Mucrospirifer grabau Stumm 39
Mucrospirifer profundus (Grabau) 39
Oligorachis littletonensis (Stainbrook) 7
Pentamerella athyroides (Winchell) 7
Pentamerella petoskeyensis (Imlay) 7
Strophodonta sp. Williams 44
Strophodonta crassa Imbrie 7
Strophodonta pentagonia Imbrie 7
Strophodonta tenuicosta Imbrie 7
Truncalosa gibbosa Imbrie 7

Crustacea:

Trilobita:

- Cordania* sp. A Stumm 34
Phacops iowensis Delo 34

Upper Petoskey Limestone

(Norwood area)

Anthozoa:

Tabulata:

- Aulocystis minuta* Watkins 42
Aulocystis minuta parallela Watkins 42
Trachypora proboscidualis Stumm and Hunt 40

Brachiopoda:

Articulata:

- Chonetes hybus* Imbrie 7
Leptaena sp. Imbrie 7
Pentamerella aulax Imbrie 7
Pholidostrophia sp. A Imbrie 7
Rhipidomella trigona Imbrie 7
Schizophoria mesacarina Imbrie 7
Strophodonta sp. C Imbrie 7
Strophodonta heteromys Imbrie 7
Strophodonta levidensa Imbrie 7

Crustacea:

Trilobita:

- Phacops rana norwoodensis* Stumm 34
Proteus (Crassiproteus) norwoodensis Stumm 34
Scutellum tullium depressum Cooper and Cloud 34

LITERATURE CITED

1. EHLERS, G. M., and STUMM, E. C. 1951. Corals of the Devonian Traverse Group of Michigan. Pt. 4, *Billingsastraea*. Contrib. Mus. Paleontol. Univ. Mich., Vol. 9, No. 3, pp. 83-92.
2. EHLERS, G. M., and KESLING, R. V. 1958a. *Timeischytes*, a New Genus of Hemicystitid Edrioasteroid from the Middle Devonian Four Mile Dam Limestone of Michigan. Journ. Paleontol., Vol. 32, No. 5, pp. 933-36.
3. EHLERS, G. M., and KESLING, R. V. 1958b. Cyclic Pattern of Ambulacral Covering Plates in *Discocystis laudoni* and its Taxonomic Implication. Contrib. Mus. Paleontol. Univ. Mich., Vol. 14, No. 15, pp. 265-76.
4. GOLDRING, WINIFRED. 1950. Devonian Crinoids: New and Old. Bull. Wagner Free Inst. Sci., Vol. 25, No. 4, pp. 29-35.
5. IMBRIE, J. 1955. New Species of Brachiopods from the Traverse Group (Devonian) of Michigan. Amer. Mus. Novitates, No. 1754, pp. 1-7.
6. IMBRIE, J. 1956. Biometrical Methods in the Study of Invertebrate Fossils. Bull. Amer. Mus. Nat. Hist., Vol. 108, Art. 2, pp. 215-52.
7. IMBRIE, J. 1959. Brachiopods of the Traverse Group (Devonian) of Michigan. *Ibid.*, Vol. 116, Art. 4, pp. 349-409.
8. KESLING, R. V., and McMILLAN, G. W. 1951a. Ostracods of the Family Hollinidae from the Bell Shale of Michigan. Contrib. Mus. Paleontol. Univ. Mich., Vol. 9, Pt. 2, pp. 45-81.
9. KESLING, R. V. 1961b. Terminology of Ostracod Carapaces. *Ibid.*, Pt. 3, pp. 93-171.
10. KESLING, R. V. 1952a. A Study of *Ctenoloculina cicatricosa* (Warthin). *Ibid.*, No. 8, pp. 247-90.
11. KESLING, R. V., and TABOR, N. R. 1952b. Two New Species of Ostracods from the Genshaw Formation (Middle Devonian) of Michigan. Journ. Paleontol., Vol. 26, No. 5, pp. 761-63.
12. KESLING, R. V. 1952c. Dimorphism in Devonian Hollinid Ostracods of North America. *Ibid.*, pp. 764-71.
13. KESLING, R. V., and KILGORE, J. E. 1952e. Ostracods of the Families Leperditellidae, Drepanellidae, Glyptopleuridae, Kloedenellidae, Bairdiidae, Barychilinidae, and Thlipsuridae from the Genshaw Formation of Michigan. *Ibid.*, Vol. 10, No. 1, pp. 1-19.
14. KESLING, R. V. 1952f. Ostracods of the Families Leperditellidae, Primitiidae, Drepanellidae, Aechminidae, and Kirkbyidae from the Middle Devonian Bell Shale of Michigan. *Ibid.*, No. 2, pp. 21-44.
15. KESLING, R. V. 1952g. Ostracods of the Family Hollinidae from the Ferron Point Formation of Michigan. *Ibid.*, No. 3, pp. 45-57.

16. KESLING, R. V., and TABOR, N. N. 1953*b*. Ostracods of the Family Hollinidae from the Genshaw Formation of Michigan. *Ibid.*, No. 5, pp. 83-100.
17. KESLING, R. V. 1953*c*. Ostracods of the Family Drepanellidae from the Arkona Shale of Ontario. *Ibid.*, No. 8, pp. 193-202.
18. KESLING, R. V. 1953*d*. Ostracods of the Family Hollinidae from the Arkona Shale of Ontario. *Ibid.*, No. 9, pp. 203-19.
19. KESLING, R. V. 1953*e*. A New Beyrichiid Ostracod from the Middle Devonian Rockport Quarry Limestone of Michigan. *Ibid.*, No. 10, pp. 221-29.
20. KESLING, R. V. 1953*f*. Ostracods of the Family Aechminidae from the Arkona Shale of Southern Ontario. *Ibid.*, Vol. 11, No. 1, pp. 1-10.
21. KESLING, R. V., and WEISS, M. 1953*g*. Ostracods from the Norway Point Formation of Michigan. *Ibid.*, No. 3, pp. 33-76.
22. KESLING, R. V. 1954*c*. A New Species of *Phlyctiscapha* from the Middle Devonian Ferron Point Formation of Michigan. *Ibid.*, No. 9, pp. 187-92.
23. KESLING, R. V. 1954*e*. Ornamentation as a Character in Specific Differentiation of Ostracods. *Ibid.*, Vol. 12, No. 2, pp. 13-21.
24. KESLING, R. V., and KILGORE, J. E. 1955*a*. *Bairdia epicypha*, a New Name for *Bairdia gibbera* Kesling and Kilgore 1952, non Morey, 1935. *Journ. Paleontol.*, Vol. 29, No. 1, p. 189.
25. KESLING, R. V. 1957*e*. Peel Technique for Ostracod Carapaces, and Structures Revealed Therewith in *Hibbardia lacrimosa* (Swartz and Oriol). *Contrib. Mus. Paleontol. Univ. Mich.*, Vol. 14, No. 4, pp. 27-40.
26. KESLING, R. V., and SORONEN, G. C. 1957*f*. Ontogeny and Ecology of *Welleria aftonensis* Warthin, a Middle Devonian Ostracod from the Gravel Point Formation of Michigan. *Ibid.*, No. 5, pp. 41-55.
27. KESLING, R. V. 1957*g*. Origin of Beyrichiid Ostracods. *Ibid.*, No. 6, pp. 57-80.
28. KESLING, R. V. 1958. A Middle Devonian Species of the Ostracod Genus *Antiparaparchites*. *Ibid.*, No. 12, pp. 191-200.
29. KIER, P. M. 1952. Echinoderms of the Middle Devonian Silica Formation of Ohio. *Ibid.*, Vol. 10, No. 4, pp. 59-81.
30. KIRK, E. 1945. Four New Genera of Camerate Crinoids from the Devonian. *Amer. Journ. Sci.*, Vol. 243, No. 6, pp. 341-55.
31. KIRK, E. 1948. Two New Inadunate Crinoid Genera from the Middle Devonian. *Ibid.*, Vol. 246, No. 11, pp. 701-10.
32. SOLLE, GERHARD. 1952. Neue Untergattungen und Arten der Bryozoen-Gattung *Hederella* und eine *Hernodia* in Rheinischen Unterdevon: Germany: Hess. Landesamt, Bodenf. Wiesbaden, *Notizbl. F.* 6, H. 3, pp. 33-55.
33. STUMM, ERWIN C. 1951. Tetracoralla, Part A. *In* Type Invertebrate Fossils of North America (Devonian): Div. 1, Unit 1-F, Tetracoralla Part A: Philadelphia, Wagner Free Inst. Sci. Cards 1-88.
34. STUMM, E. C. 1953*a*. Trilobites of the Devonian Traverse Group of Michigan. *Contrib. Mus. Paleontol., Univ. Mich.* Vol. 10, No. 6, pp. 101-157.
35. STUMM, E. C. 1953*b*. Tetracoralla, Part B. *In* Type Invertebrate Fossils of North America (Devonian): Div. 1, Unit 1-F, Tetracoralla Part B: Philadelphia: Wagner Free Inst. Sci. Cards 89-127.
36. STUMM, E. C. 1954. Three New Cystids from the Devonian Traverse Group of Michigan. *Geol. Soc. Amer. Bull.*, Vol. 65, No. 12, Pt. 2, p. 1311. (Abstract.)

37. STUMM, E. C. 1955a. Tetracoralla, Part C. In Type Invertebrate Fossils of North America (Devonian): Div. 1, Unit 1-F, Tetracoralla, Part C: Philadelphia: Wagner Free Inst. Sci. Cards 128-337.
38. STUMM, E. C. 1955b. Three New Species of the Cystid Genus *Lipsanocystis* from the Middle Devonian Traverse Group of Michigan. Contrib. Mus. Paleontol, Univ. Mich., Vol. 12, No. 6, pp. 97-103.
39. STUMM, E. C. 1956. A Revision of A. W. Grabau's Species of *Mucrospirifer* from the Middle Devonian Traverse Group of Michigan. *Ibid.*, Vol. 13, No. 3, pp. 81-94.
40. STUMM, E. C., and HUNT, A. S. 1958. Corals of the Devonian Traverse Group of Michigan, Part V, *Trachypora*. *Ibid.*, Vol. 14, No. 11, pp. 167-89.
41. WATKINS, J. L. 1959a. On the Identity of the Devonian Rugose Coral Genus *Diversophyllum* with *Tabulophyllum*, and Notes on the Genus *Charactophyllum*. Journ. Paleontol., Vol. 33, No. 1, pp. 81-82.
42. WATKINS, J. L. 1959b. Middle Devonian Auloporid Corals from the Traverse Group of Michigan. *Ibid.*, No. 5, pp. 793-808.
43. WILLIAMS, ALWYN. 1950. New Stropheodontid Brachiopods. Journ. Wash. Acad. Sci., Vol. 40, No. 9, pp. 277-82.
44. WILLIAMS, ALWYN. 1953. North American and European Stropheodontids—Their Morphology and Systematics. Geol. Soc. Amer. Mem., 56, pp. 1-67.
45. EHLERS, GEORGE M., and WRIGHT, EDWARD P. 1960. *Leiopteria rafinesquii* Hall and a New Species of the Genus from the Thedford-Arkona Region of Southwestern Ontario. Contrib. Mus. Paleontol. Univ. Mich., Vol. XV, No. 1, pp. 1-13, 2 pls.
46. GALLOWAY, J. J., and EHLERS, GEORGE M. 1960. Some Middle Devonian Stromatoporoids from Michigan and Southwestern Ontario, including the types described by Alexander Winchell and A. W. Grabau. *Ibid.*, No. 4, pp. 39-120, 13 pls.
47. KESLING, ROBERT V. 1960. Hydropores in Edrioasteroids. *Ibid.*, No. 8, pp. 139-92, 13 pls.
48. MUIR-WOOD, HELEN, and COOPER, G. ARTHUR. 1960. Morphology, Classification, and life habits of the Productoidea (Brachiopoda). Geol. Soc. Amer., Memoir 81, 447 pp., 135 pls.
49. WHITTINGTON, H. B. 1960. Cordania and Other Trilobites from the Lower and Middle Devonian. Journ. Paleontol., Vol. 34, No. 3, pp. 405-20.
50. KESLING, R. V., CRAFTS, F. S., DARBY, D. G., SHUBAK, K. E., and SMITH, R. N. 1960. Middle Ordovician Black River Ostracods from Michigan, Introduction and Part I, The Nature of *Macronotella*. Contrib. Mus. Paleontol. Univ. Mich., Vol. 15, No. 13, pp. 293-314, 3 pls.

Received for publication August 5, 1961

