

神奈川県立博物館自然部門資料目録（6）

Gerard Ramon Case 軟骨魚類化石標本目録

第1集 古生代軟骨魚類化石

CATALOGUE OF THE CHONDRICHTHYAN SPECIMENS IN GERARD RAMON CASE
COLLECTION OF THE KANAGAWA PREFECTURAL MUSEUM
PART 1 PALEOZOIC CHONDRICHTHYES

神奈川県立博物館

平成4年2月

KANAGAWA PREFECTURAL MUSEUM

Naka-ku, Yokohama, Japan

Feb., 1992

EXPLANATION OF THE PLATES 1 — 4

図版 1 — 4

Plate 1 (×1.0)

1,4.

No. 7114

Petalodus allegheniensis Leidy

Formation: unknown

Locality: Graham, near South Bend, Young County, Texas, USA

Age: Carboniferous (Pennsylvanian)

2,5.

No. 7117

Petalodus allegheniensis Leidy

Formation: unknown

Locality: New Folsom Quarry, near Pacific Junction, Mills County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

3,6.

No. 7113

Petalodus allegheniensis Leidy

Formation: Virgil Series, Doniphan Shale, Lecompton Formation

Locality: Ace Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Late Pennsylvanian)

7.

No. 7128

Petalodus allegheniensis Leidy

Formation: Ames Limestone, Brush Creek Member, Conemaugh Series

Locality: Carroll County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

8.

No. 9260

Janassa bituminosa (Schlotheim)

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

9.

No. 7109

Agassizodus variabilis (Newberry and Worthen)

Formation: Severy Shale, Waubesa Fm.

Locality: George Evans Coal Mines, underground at Clarinda, Page County,
Iowa, USA

Age: Carboniferous (Pennsylvanian)

Plate 1

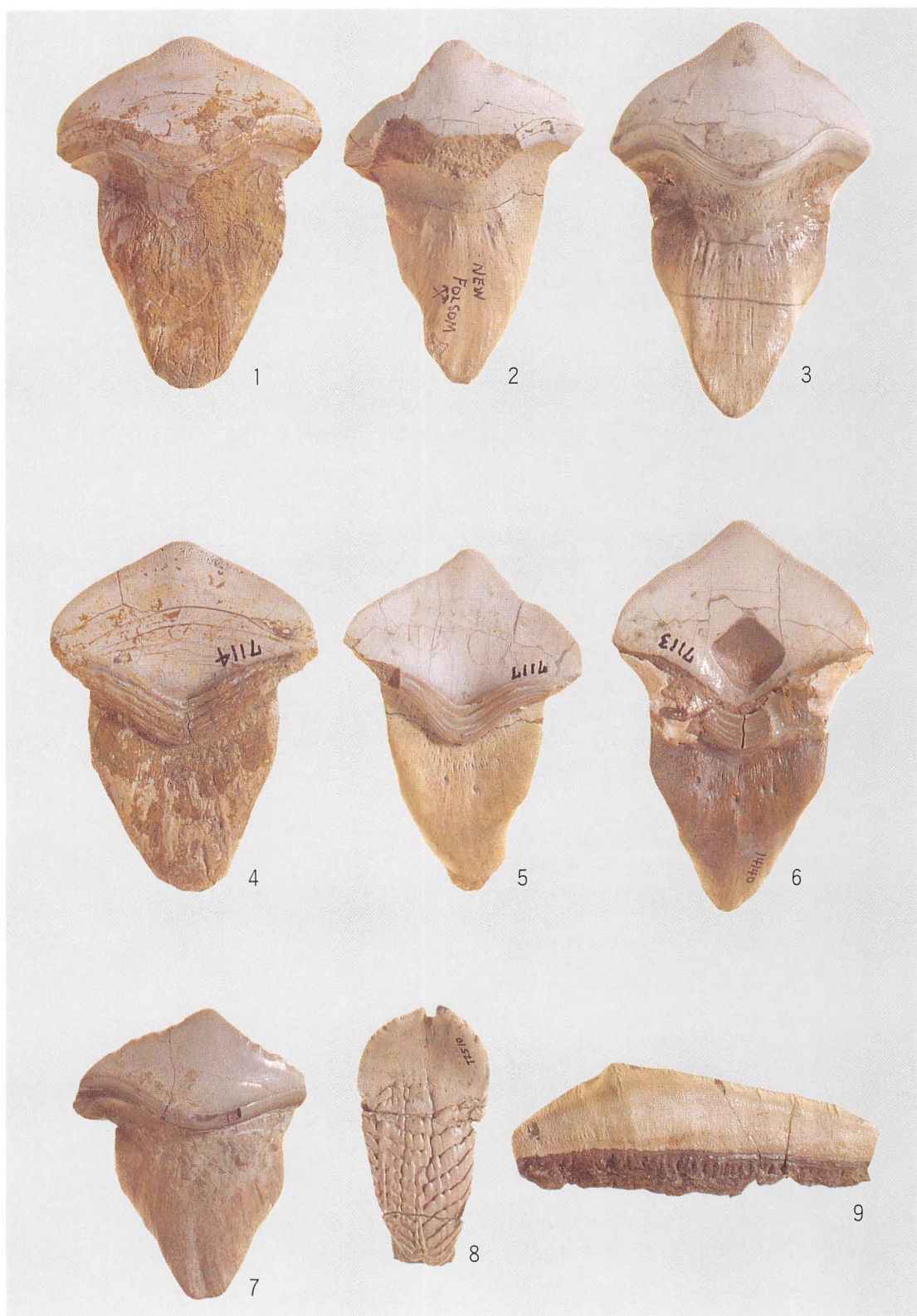


Plate 2 (×1.0)

1.

No. 7214

Peripristis semicircularis (Newberry and Worthen)

Formation: Keiwitz Shale, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

2.

No. 7171

Peripristis semicircularis (Newberry and Worthen)

Formation: T—Formation

Locality: Bartlett, Fremont County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

3,7.

No. 7176

Peripristis semicircularis (Newberry and Worthen)

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

4,8.

No. 7138

Peripristis semicircularis (Newberry and Worthen)

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

5.

No. 9260

Janassa bituminosa (Schlotheim)

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

6.

No. 7109

Agassizodus variabilis (Newberry and Worthen)

Formation: Severy Shale, Waubunse Fm.

Locality: George Evans Coal Mines, underground at Clarinda, Page County,
Iowa, USA

Age: Carboniferous (Pennsylvanian)

9.

No. 7022

Deltodus sp.

Formation: Burlington Limestone Fm.

Locality: Oakland Mills, Henry County, Iowa USA

Age: Carboniferous (Mississippian)

10.

No. 7021

Sandalodus occidentalis (Newberry and Worthen)

Formation: Keokuk Fm.

Locality: South English Quarry, at South English, Keokuk County, Iowa, USA

Age: Carboniferous (Mississippian)



Plate 3 (×1.0)

1,4,7,10.

No. 7157

Cladodus sp.

Formation: Labette Black Shale, Marmaton Group, Des Moines Series
(Westphalian D)

Locality: Shale exposure in a tributary of the Des Moines River,
at Madrid, Boone County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

2,5,8,11.

No. 7162

Cladodus sp.

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

3,6,9,12.

No. 7163

Cladodus sp.

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, near Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)



Plate 4 ($\times 1.8$)

1.

No. 7041

Asterolepis ornata Eichwald

Formation: unknown

Locality: Hintzenberg, Livland, Europe

Age: Late Devonian

2.

No. 7039

Orthacanthus (Xenacanthus) sp.

Formation: Hamilton Shale Fm.

Locality: Czechoslovakia

Age: Middle Devonian

3.

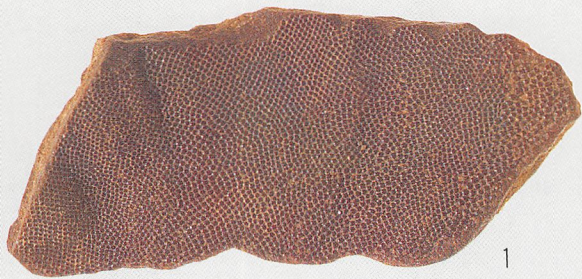
No. 7103

Cladodus sp.

Formation: Virgilian Series, Heebner Shale

Locality: Ace Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)



1



2



3

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あ い さ つ

本館では特徴のあるコレクションの収集に心掛けている中で、平成元年度には幸にして Gerard Ramon Case氏の有名な軟骨魚類化石のコレクションを入手することができました。この軟骨魚類化石コレクションは、アメリカ ニュージャージー在住のGerard Ramon Case氏が20年以上かけて、アメリカ、ヨーロッパ、アフリカなど世界各地へ出かけ調査収集したもので、古生代から新生代にいたる地質時代のサメ類やエイ類など、軟骨魚類の歯化石が中心となっています。特にGerard Ramon Case氏の著書「Fossil Sharks : a pictorial review」(1973)と「A Pictorial Guide to Fossils」(1982)に図示された標本が数多く含まれております。

収蔵以来これらの標本の分類整理に着手し、これまでに古生代の軟骨魚類化石についての整理作業がほぼ終わりましたので、ここにGerard Ramon Case 軟骨魚類化石標本目録 第1集 古生代軟骨魚類化石を刊行することにいたしました。しかし、中生代と新生代の軟骨魚類化石は膨大な量にのぼり、まだ相当の日時を要するものであって、現在も分類整理を進めております。このような事情から完全な目録とはいえませんが、できる限り図版などを多く挿入し努力をつくしたつもりでございます。この目録が皆様の調査研究に広く利用され、いくらかでも参考になれば幸と存じます。

最後に、この目録を刊行するにあたり、コレクションを快くお譲り下さり、しかもメッセージを頂いたGerard Ramon Case氏、コレクションの収集にご尽力を頂き、さらに目録の刊行に終始惜しまないご指導、ご援助と玉稿を賜った横浜国立大学長谷川善和先生ならびに国立科学博物館上野輝弥先生に対し、ここに厚く感謝の意を表する次第です。

平成4年2月

神奈川県立博物館長
岩 野 好 秀

Foreword

Primitive sharks and related cartilaginous fish forms in the Late or Upper Devonian may have evolved out of the placodermi, earlier fish forms with exoskeletons.

The Paleozoic "shark-like" fishes eventually evolved into the *true* selachians, i.e; sharks, skates, rays, sawfishes and chimaeras.

The separation of Paleozoic cartilaginous shark-like fish forms took place somewhere around the Late Permian / Early Triassic period by way of the ctenacanthoid / hybodontid levels, evolving into the "true" sharks and related cartilaginous fish forms of the Mesozoic and Cenozoic, and of course, our modern selachians of the present oceans and seas.

Species such as : *Cladoselache*, the earliest shark-like fish, through *Ctenacanthus*, and others, gave rise to a multitude of aggressive, "spike-toothed" forms; while "crushing tooth-plate" types such as : *Orodus*, *Agassizodus*, *Caseodus* etc., and even the overlapping tooth plates of *Petalodus*, *Janassa*, *Peripristis* and *Chomatodus* eventually gave rise to skates and rays; and forms such as : *Deltodus* and *Sandalodus* probably evolved into the ghost sharks (chimaeras).

This work, produced by the scientists of the Kanagawa Prefectural Museum, Yokohama, Japan, presents a comprehensive display of the remains (teeth, jaw sections, dermal denticles, and dorsal fin spines etc.) of early cartilaginous fish forms, incorporating most of the specific types found in the Devonian and Carboniferous (Mississippian / Pennsylvanian) periods of earth's geological history.



Gerard Ramon Case
(Jersey City, N.J. USA)

は じ め に

原始サメ類は、デボン紀に繁栄した骨質の甲をもつ板皮魚類から進化したと考えられます。そしてこの古生代のサメ型魚類がゆくゆくは現存のサメ類、エイ類、ギンザメ類へと進化してきました。

軟骨性のサメとその近縁の魚類への分化は、古生代のペルム紀後期から中生代の三畳紀初期にかけて起こりました。古生代型のクラドーダス類段階から中生代のヒボードス類段階を経て現在の板鰐類へと進化しました。真性板鰐類が出現するのは中生代ジュラ紀以降です。

サメに似た最も原始的なクラドセラケ類から、鋭く尖った歯をもつ多数の攻撃的なタイプが進化し、一方、*Orodus*, *Agassizodus*, *Caseodus* のような粉碎型の歯をもつタイプと、*Petalodus*, *Janassa*, *Peripristis*, *Chomatodus* のような重なった歯板をもつタイプからエイ類が進化しました。そしておそらくは、*Deltodus*や*Sandalodus* のようなタイプからギンザメ類が進化したであろうと思われます。

このコレクションは、歯、顎、皮膚の小歯状突起、背鰭棘など、初期の板鰐類の化石資料を包括したものであり、古生代のデボン紀および石炭紀に見出されるほとんどのタイプが含まれています。この目録は神奈川県立博物館の学芸員らによって整理され作成されたものです。

ジェラード・ラモン・ケース

(訳：中村一恵)

Gerard Ramon Case 軟骨魚類化石標本目録

第1集 古生代軟骨魚類化石

松島義章・平田大二・星野憲三

(神奈川県立博物館)

Catalogue of the Chondrichthyan Specimens in Gerard Ramon Case Collection of the Kanagawa Prefectural Museum Part 1 Paleozoic Chondrichthyes

Yoshiaki Matsushima, Daiji Hirata and Kenzou Hoshino

(Kanagawa Prefectural Museum)

はじめに

本館では平成元年度(1989)にサメ類化石の研究者で知られるGerard Ramon Case氏の軟骨魚類化石コレクションを入手することができた。このコレクションは、Gerard Ramon Case氏が20年以上の永年にわたりアメリカ、ヨーロッパ、アフリカなど広く世界各地へ出かけ調査収集した古生代から新生代にいたる地質時代のサメ類、エイ類やギンザメ類など軟骨魚類の歯、顎、皮膚の小歯状突起や背鰭棘化石が中心となっている。軟骨魚類化石以外の標本では中生代三畳紀の*Diplurus newarki*(シーラカンズ類)、白亜紀の*Dastilbe elongatus*、新生代第三紀の*Diplomystus humilis*、第四紀の*Mallotus vilosus*(カラフトシシャモ)などの硬骨魚類化石が含まれる。

収蔵以来 これらの標本の分類整理に着手し、これまでに古生代の軟骨魚類化石についての整理作業がほぼ終了した。ここに多数の図版を伴うGerard Ramon Case軟骨魚類化石コレクションの第1集 古生代軟骨魚類化石標本目録を刊行することにした。しかし、中生代と新生代の軟骨魚類化石は膨大な量の標本のため、まだ相当の日時を要するものであって、現在も分類整理を進めている。このような事情からまだ完全な目録とはいえないが、広く調査研究活動に活用され、いくらかでも役立てば幸である。

Gerard Ramon Caseの古生代軟骨魚類化石コレクションの特徴

この目録で収録できた標本は、古生代軟骨魚類化石の334件である。標本は歯化石を主体に顎、皮膚の小歯状突起や背鰭棘化石よりなり、かなりの標本が1件1点である。しかし、No.

7121やNo.7126のように1件100個以上を含むものまであり、標本点数は変化に富む。保存のよい形態のはっきりした標本を中心に、ほぼ原寸大でカラー図版4枚、白黒図版32枚に図示した。

標本の産出した時代は、表1のように古生代中期のシルル紀から末期のペルム紀までである。その内容を具体的にみるとシルル紀が1件（全体の割合で0.3%）、デボン紀が20件（5.9%）、石炭紀が298件（89%）、ペルム紀が13件（3.8%）であり、圧倒的に石炭紀の標本が多い。なおその石炭紀の内訳は下部のミシシッピ紀が102件（30.5%）、上部のペンシルバニア紀が196件（58.5%）となっている。

標本を産出地別に整理すると表2のように、アメリカ合衆国が圧倒的に多く312件（93.4%）、カナダが3件（0.8%）、ソビエトが2件（0.6%）、チェコスロバキアが3件（0.8%）、ドイツが2件（0.6%）、フランスが1件（0.3%）、イングランドが8件（2.4%）、北アイルランドが1件（0.3%）、ヨーロッパが2件（0.6%）となっている。アメリカ合衆国についてその詳しい産出地をみると、アイオワ、ネブラスカ、オハイオ、イリノイ、ミズーリ、インディアナ、テキサス、アラバマ、オクラホマ、ペンシルバニアそしてカンサスの11州に及んでいる（図1）。その中でアイオワの116件（35%）、ネブラスカの78件（23%）、ミズーリの44件（13%）などが多数の標本を産出した州である。

このような特徴をもった資料をZangerl（1981）の古生代軟骨魚類化石分類で検討してみると、p.66～74で明らかなように29科41属56種となる。ちなみに日本でこれまでに知られている古生代軟骨魚類化石は、後藤・大倉（1990）によると6科14属19種である。今後さらに多くの種の追加されることが予想されるが、日本の古生代軟骨魚類化石はほとんどが石灰岩中に含まれているため、その発見採集には困難を強いられている。そのため当コレクションは、量質ともに際立って優れており、これからの調査研究や博物館展示普及など多方面にわたっての利用が期待される。

本目録について

1. 本目録はGerard Ramon Case氏が調査収集した古生代軟骨魚類化石を収録したものである。
2. 目録の項目は標本登録番号、学名、産出層、産出地点、地質年代、図示された図版番号の6項目で、この順序で配列してある。
3. 図示された図版番号は、本目録、Case（1973）、Case（1982）の順序で配列してある。
4. 産出地点のうちアメリカ合衆国については、州名と標本件数を図1に示した。
5. 産出した地質年代については、表1にまとめた。

表1. Gerard Ramon Cace 軟骨魚類化石コレクションにみられる古生代軟骨魚類化石標本の時代別リスト

地質時代		標本番号 (KPMG No.)		標本件数
ペルム紀 (Permian)	上部	—	9295, 9296, 9297, 9300, 9302, 9303, 9304, 9305, 9308	(9) 13
	下部	9298, 9299, 9306, 9307		(4)
石炭紀 (Carboniferous)	ペンシルバニア紀 (Pennsylvanian)	7101, 7102, 7103, 7104, 7105, 7106, 7108, 7109, 7110, 7111, 7112, 7113, 7114, 7115, 7116, 7117, 7118, 7119, 7121, 7122, 7123, 7124, 7125, 7126, 7127, 7128, 7129, 7130, 7131, 7132, 7133, 7134, 7135, 7136, 7137, 7138, 7139, 7140, 7141, 7142, 7143, 7144, 7145, 7146, 7147, 7148, 7149, 7150, 7151, 7152, 7153, 7154, 7155, 7156, 7157, 7158, 7159, 7161, 7162, 7163, 7164, 7165, 7166, 7167, 7168, 7169, 7170, 7171, 7172, 7173, 7174, 7175, 7176, 7177, 7178, 7179, 7180, 7181, 7182, 7183, 7184, 7185, 7186, 7187, 7188, 7189, 7190, 7191, 7192, 7193, 7194-1, 7194-2, 7195, 7196, 7197, 7200, 7201, 7202-1, 7202-2, 7203, 7204, 7205, 7206-1, 7206-2, 7206-3, 7206-4, 7206-5, 7207, 7208, 7209, 7211, 7212, 7213, 7214, 7215, 7216, 7217, 7218, 7219, 7220, 7223, 7224, 7225, 7226, 7227, 7229, 7230, 7231, 7232, 7233, 7234, 7235, 7236, 7237, 7238, 7239, 7242, 7243, 7244, 7245, 7248, 7251, 7302, 9243, 9244, 9245, 9246, 9247, 9248, 9249, 9250, 9251, 9252, 9253, 9254, 9255, 9256, 9257, 9258, 9259, 9260, 9261, 9262, 9263, 9264, 9265, 9266, 9267, 9268, 9269, 9270, 9271, 9272, 9273, 9274, 9275, 9276, 9277, 9278, 9279, 9280, 9281, 9282, 9283, 9284, 9285, 9286, 9287, 9288, 9289, 9290, 9291, 9292, 9293, 9294, 9301(?)		(196)
	ミシシッピ紀 (Mississippian)	7017-1, 7017-2, 7021, 7022, 7023, 7024, 7025, 7026, 7027, 7028, 7029, 7042, 7043, 7044, 7045, 7046-1, 7046-2, 7046-3, 7047, 7048, 7049, 7050, 7051, 7052, 7056, 7058, 7060, 7061, 7062, 7063, 7064, 7065-1, 7065-2, 7066, 7067, 7069, 7070, 7071, 7072, 7074, 7075, 7076, 7077, 7078, 7079, 7080, 7081, 7082, 7083, 7084, 7085-1, 7085-2, 7086, 7087, 7088, 7089, 7090, 7091, 7094, 7098, 7099, 7107, 9200, 9201, 9202, 9203, 9204, 9205, 9206, 9207, 9208, 9209, 9210, 9211, 9212, 9213, 9214, 9215, 9218, 9219, 9220, 9221, 9222, 9223, 9224, 9225, 9226, 9227, 9228, 9229, 9230, 9231, 9232, 9233, 9234, 9235, 9240, 9241, 9242, 7073, 7120, 7302(?)		298 (102)
デボン紀 (Devonian)	上部	—	7018, 7019, 7020, 7030, 7031, 7032, 7033, 7034, 7035, 7036, 7037, 7040, 7057, 7095, 7096, 9236, 9237, 9238.	20 (1)
	中部	7036		
	下部	7041		(1)
シルル紀 (Silurian)		7059?		1
オルドビス紀 (Ordovician)		—		—
カンブリア紀 (Cambrian)		—		—
時代不詳		9216, 9217		2

表2. Gerard Ramon Cace 軟骨魚類化石コレクションにみられる古生代軟骨魚類化石標本の
産出地別リスト

国 名 (州名)		標 本 番 号 (KPMG No.)
ア メ リ カ 合 衆 国 U ・ S ・ A	アイオワ州 (IOWA)	7017-1, 7017-2, 7018, 7019, 7020, 7021, 7022, 7023, 7024, 7025, 7026, 7027, 7029, 7037, 7085-2, 7086, 7094, 7096, 7108, 7109, 7116, 7117, 7119, 7121, 7122, 7123, 7124, 7125, 7190, 7191, 7194-1, 7194-2, 7195, 7196, 7200, 7201, 7217, 7218, 7219, 7248, 9200, 9203, 9235, 9236, 9237, 9238, 9243, 9244, 9270, 9273, 9274, 9275, 9276, 9279, 9280, 9288, 9289
	ネブラスカ州 (NEBRASKA)	7102, 7103, 7104, 7105, 7106, 7110, 7111, 7112, 7113, 7115, 7118, 7134, 7137, 7139, 7140, 7216, 7225, 7226, 7227, 7230, 7231, 7232, 7233, 7235, 7236, 7238, 7242, 7251, 9247, 9248, 9282, 9283, 9284, 9285, 9286, 9294, 9300, 9301
	オハイオ州 (OHIO)	7030, 7031, 7032, 7033, 7034, 7035, 7036, 7095, 7128, 7129, 7186, 7187, 7188, 7189, 7203,
	イリノイ州 (ILLINOIS)	7045, 7056, 7067, 7072, 7090, 7091, 7154, 7166, 7167, 7168, 7197, 7212, 7239, 7245, 9201,
	ミズーリ州 (MISSOURI)	7055, 7058, 7060, 7062, 7063, 7064, 7066, 7069, 7071, 7074, 7075, 7076, 7077, 7078, 7079, 9231, 9240, 9241, 9242, 9245, 9246, 9257, 9258, 9259
	インディアナ州 (INDIANA)	7061, 7065-1, 7065-2, 7205, 9218, 9220
	テキサス州 (TEXAS)	7101, 7114, 7150, 9269, 9299, 9305, 9308
	アラバマ州 (ALABAMA)	7028, 7070
	オクラホマ州 (OKLAHOMA)	7164, 7165, 9295, 9296, 9297, 9302, 9303, 9306
	ペンシルベニア州 (PENNSYLVANIA)	7192, 9278
	カンザス州 (KANSAS)	7224, 7234, 9277, 9290
カナダ (CANADA)		7193, 7237, 9291
旧ソビエト (ex-U. S. S. R.)		7107, 7170
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ドイツ (GERMANY)		9298, 9304
フランス (FRANCE)		7073
イングランド (ENGLAND)		7120, 7126, 7127, 7149, 7169, 7229, 7243, 7244
北アイルランド (NORTHERN IRELAND)		7048
ヨーロッパ (EUROPE)		7041, 7059(?)

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	6
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	8
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	2

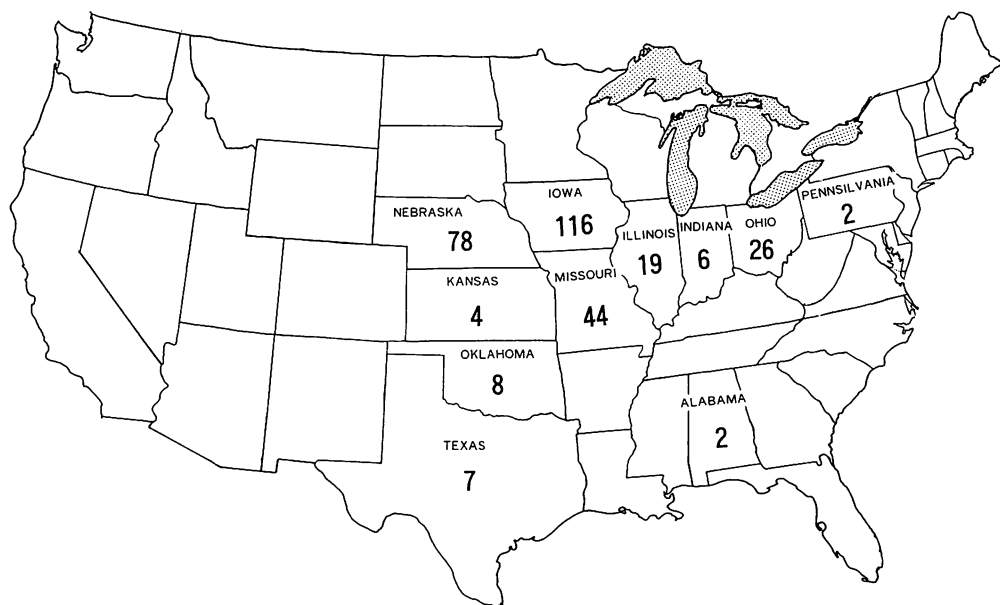


図1. Gerard Ramon Case軟骨魚類化石コレクションにみられる古生代軟骨魚類化石標本のアメリカ合衆国内の産出地（数字は標本件数）

謝 辞

この目録を発行するにあたり、コレクションを快くお譲り下さり、しかもメッセージを頂いたGerard Ramon Case氏に感謝申し上げます。ご多用の中をしばしばご来館いただきコレクションの収集にご尽力下さり、さらに目録の作成にあたり原稿のご校閲、ご指導と玉稿を賜った横浜国立大学長谷川善和教授ならびに国立科学博物館上野輝弥博士に対し、ここに厚く感謝の意を表する次第である。なお標本の整理にご協力を頂いた中馬洪治氏、小貫由美氏、原稿作成にあたって学名等をパソコンにインプットして下さった東京大学の大路樹生博士、Gerard Ramon Case氏のメッセージを和訳して下さった中村一恵専門学芸員、多数の標本の写真撮影と焼付をお願いした井上久美子主任技師、の諸氏に対し厚くお礼申し上げます。

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古生代軟骨魚類化石標本目錄

Catalogue of Paleozoic Chondrichthyes

No. 7017—1

Orodus sp.

Formation: Keokuk Fm.

Locality: Quarry #2, Augusta, near Burlington, Des Moines County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 6 (7017—1L); Case (1982), p. 224, fig. 24—4

No. 7017—2

Psammodus sp.

Formation: Keokuk Fm.

Locality: Quarry #2, Augusta, near Burlington, Des Moines County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 6 (7017—2U); Case (1982), p. 224, fig. 24—4

No. 7018

Ptyctodus compressus Eastman

Formation: Cedar Valley Limestone Fm.

Locality: 'Pints Quarry' at Waterloo, Black Hawk County, Iowa, USA

Age: Devonian

Illustrate: Plate 34; Case (1982), p. 219, fig. 23—8

No. 7019

Rhynchodus major Eastman

Formation: Cedar Valley Limestone Fm.

Locality: 'Pints Quarry' at Waterloo, Black Hawk County, Iowa, USA

Age: Devonian

Illustrate: Plate 34; Case (1982), p. 219, fig. 23—7

No. 7020

Macropetalichthys (Acanthaspis) sp.

Formation: Cedar Valley Limestone Fm.

Locality: 'Pints Quarry' at Waterloo, Black Hawk County, Iowa, USA

Age: Devonian

Illustrate: Plate 34; Case (1982), p. 217, fig. 23—1

No. 7021

Sandalodus occidentalis Newberry and Worthen

Formation: Keokuk Fm.

Locality: South English Quarry, at South English, Keokuk County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 2 (10); Case (1982), p. 224, fig. 24—5

No. 7022

Deltodus sp.

Formation: Burlington Limestone Fm.

Locality: Oakland Mills, Henry County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plates 2 (9), 7; Case (1982), p. 224, fig. 24—6

No. 7023

Orodus sp.

Formation: Burlington Limestone Fm.

Locality: Augusta, Des Moines County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7024

Deltodus sp.

Formation: Burlington Limestone Fm.

Locality: Quarry near Augusta, Des Moines County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 7

No. 7025

Deltodus stellatus

Formation: Keokuk Limestone Fm.

Locality: Keokuk, Lee county, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7026

Deltodus stellatus

Formation: Keokuk Limestone Fm.

Locality: Keokuk, Lee county, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7027

Peripristis sp.

Formation: Keokuk Limestone Fm.

Locality: Keokuk, Lee county, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 26; Case (1982), p. 226, fig. 24—9

No. 7028

Petalodus allegheniensis Leidy

Formation: unknown

Locality: Road—cut on Rt. 24 between Moulton and Decatur,
in Lawrence County, Alabama, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 25

No. 7029

Petalodus allegheniensis Leidy

Formation: Keokuk Limestone Fm.

Locality: Keokuk, Lee county, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 24; Case (1973), p. 8, fig. 12

No. 7030

Cladoselache fylleri Newberry

Formation: Cleveland Shale Fm.

Locality: Brooklyn Heights, near Cleveland, Cuyahoga County, Ohio, USA

Age: Devonian

Illustrate: Plates 16, 36; Case (1973), p. 6, fig. 3; Case (1982),
p. 224, fig. 24—3

No. 7031

Cladoselache fylleri Newberry

Formation: Cleveland Shale Fm.

Locality: Brooklyn Heights section, off Interstate 71, Cleveland,
Cuyahoga County, Ohio, USA

Age: Devonian

Illustrate: Plate 16 (7031a—f)

No. 7032

Cladoselache fylleri Newberry

Formation: Cleveland Shale Fm.

Locality: I—71 project, near Cleveland, Cuyahoga County, Ohio, USA

Age: Devonian

Illustrate: Plate 15

No. 7033

Cladoselache fylleri Newberry

Formation: Cleveland Shale Fm.

Locality: Ohio, USA

Age: Devonian

Illustrate:

No. 7034

Cladoselache fylleri Newberry

Formation: Cleveland Shale Fm.

Locality: Ohio, USA

Age: Devonian

Illustrate: Plate 16 (7034a—e)

No. 7035

Cladoselache fylleri Newberry

Formation: Cleveland Shale Fm.

Locality: West 130th Street, suburb Northwest of Cleveland,
Cuyahoga County, Ohio, USA

Age: Devonian

Illustrate: Plate 15

No. 7036

Orodus sp.

Formation: Cleveland Shale Fm.

Locality: Cleveland, Ohio, USA

Age: Devonian

Illustrate: Plate 18; Case (1973), p. 6, fig. 1

No. 7037

Conchodus variabilis

Formation: Cedar Valley Limestone Fm.

Locality: Littleton, Buchanan County, Iowa, USA

Age: Devonian

Illustrate: Plate 5

No. 7039

Orthacanthus (Xenacanthus) sp.

Formation: Hamilton Shale Fm.

Locality: Czechoslovakia

Age: Middle Devonian

Illustrate: Plates 4 (2), 12

No. 7040

Ptyctodus compressus Eastman

Formation: Cedar Valley Limestone Fm.

Locality: 'Pints Quarry' near Waterloo, Black Hawk County, Iowa, USA

Age: Devonian

Illustrate:

No. 7041

Asterolepis ornata Eichwald

Formation: unknown

Locality: Hintzenberg, Livland, Europe

Age: Late Devonian

Illustrate: Plate 4 (1)

No. 7042

Deltodus sp.

Formation: Burlington Limestone Fm.

Locality: Augusta, Des Moines County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 7

No. 7043

Deltodus sp.

Formation: Burlington Limestone Fm.

Locality: Morning Sun, Louisa County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 7

No. 7044

Orodus sp.

Formation: Keokuk Limestone Fm.

Locality: Keokuk, Lee County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 18

No. 7045

Deltodus sp.

Formation: Burlington Limestone Fm.

Locality: Henderson City, Dallas County, Illinois, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 7

No. 7046—1

Deltodus sp.

Formation: unknown

Locality: Pella, Marion County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7046—2

Psammodus sp.

Formation: unknown

Locality: Pella, Marion County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7046—3

Edestus (Protopirata) sp.

Formation: unknown

Locality: Pella, Marion County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7047

Deltodus sp.

Formation: Keokuk Limestone Fm.

Locality: South English, Keokuk County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 7

No. 7048

Poecilodus jonesi McCoy

Formation: Mount Limestone Fm.

Locality: Armagh, northern Ireland

Age: Carboniferous (Mississippian)

Illustrate: Plate 10

No. 7049

Cladodus sp.

Formation: Pella Limestone Fm.

Locality: Pella, Marion County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7050

Deltodus sp.

Formation: Keokuk Limestone Fm.

Locality: North English, Iowa County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 7

No. 7051

Chomatodus sp.

Formation: Burlington Limestone Fm.

Locality: Augusta, Des Moines County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7052

Deltodus sp.

Formation: Keokuk Limestone Fm.

Locality: Keswick Quarry, near Keswick, Keokuk County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7055

Sandalodus sp.

Formation: unknown

Locality: Road—cut near the town of Columbia, Boone County, Missouri, USA

Age: unknown

Illustrate: Plate 6 (7055a—c)

No. 7056

Deltodus sp.

Formation: Beech Creek Limestone Member, Golconda Fm.

Locality: Near Hecker, Illinois, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 7

No. 7057

Orthacanthus sp.

Formation: Maple Mill Fm.

Locality: Kalona, Washington County, Iowa, USA

Age: Devonian

Illustrate: Case (1973), p. 15, fig. 47

No. 7058

Cladodus sp.

Formation: Keokuk Limestone Formation

Locality: Springfield, Greene County, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 9

No. 7059

Shark teeth (species indeterminate)

Formation: unknown

Locality: unknown (Europe?)

Age: Silurian?

Illustrate:

No. 7060

Chomatodus sp.

Formation: Warsaw Fm.

Locality: Junction of Interstates I-44 and I-244, 1 mile east of St. Louis,
Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 20

No. 7061

Sandalodus sp.

Formation: Salem Fm.

Locality: West of Clifty Falls, Indiana, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7062

Poecilodus sp.?

Formation: Warsaw Fm.

Locality: St. Louis, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 9

No. 7063

Sandalodus sp.

Formation: Keokuk Fm.

Locality: Troy, Lincoln County, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 6

No. 7064

Chomatodus sp.

Formation: Upper Meramecian Series of the Saint Genevieve Fm.

Locality: Perry County, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 21 (7064a,b)

No. 7065—1

Sandalodus sp.

Formation: Salem Fm.

Locality: West of Clifty Falls, Indiana, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7065—2

Orodus sp.

Formation: Salem Fm.

Locality: West of Clifty Falls, Indiana, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7066

Petalodus allegheniensis Leidy

Formation: Upper Chesterian Series of the Glen Dean Fm.

Locality: Star landing, near Wittenberg, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 20

No. 7067

Petalodus allegheniensis Leidy

Formation: Frailey's Shale Member, Golconda Fm., Chesterian Series

Locality: Anna, Union County, Illinois, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 25

No. 7069

Bradyodus sp.

Formation: St. Genevieve Fm.

Locality: Perry County, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7070

Deltodus sp.

Formation: unknown

Locality: Conularid site, road—cut on Route 79, north of Scottsboro,
Jackson County, Alabama, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7071

Sandalodus sp.

Formation: Upper Meramecian Series, Warsaw Fm.

Locality: St. Louis, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7072

Shark cartilage (tesserae), spec. indet.

Formation: Paint Creek Fm.

Locality: Millstadt, St. Clair County, Illinois, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7073

Psammodus sp.

Formation: unknown

Locality: Soignes, France

Age: Dinantien, Carboniferous

Illustrate:

No. 7074

Sandalodus sp.

Formation: Upper Meramecian Series, St. Genevieve Fm.

Locality: Perry County, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7075

Deltodus sp.

Formation: Lower Meramecian Series, Warsaw Fm.

Locality: 1 mile East of St. Louis, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7076

Orodus sp.(Primitive hybodont shark)

Formation: Warsaw Fm.

Locality: Wentzville, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7077

Orodus sp.(Primitive hybodont shark)

Formation: St. Genevieve Fm.

Locality: Perry County, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7078

Cladodus sp.= *Ctenacanthus* sp.

Formation: Lower Meramecian Series, Warsaw Fm.

Locality: 1 mile east of St. Louis, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7079

Psammodus sp.

Formation: Warsaw Fm.

Locality: near St. Louis, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 6

No. 7080

Sandalodus sp.

Formation: Pella Limestone

Locality: Pella, Marion County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7081

Deltodus sp.

Formation: Pella Limestone

Locality: Pella, Marion County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 7 (7081a,b)

No. 7082

Fish plates

Formation: Keokuk Limestone Fm.

Locality: South English Quarry, S. English, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7083

Chomatodus sp.

Formation: Keokuk Limestone Fm.

Locality: S. English, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 20

No. 7084

Cladodus elegans Newberry

Formation: Keokuk Limestone Fm.

Locality: South English, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 12

No. 7085—1

Cladodus sp.

Formation: Burlington Limestone Fm.

Locality: Augusta, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 6 (7085—1L)

No. 7085—2

Sandalodus sp.

Formation: Burlington Limestone Fm.

Locality: Augusta, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 6 (7085—2R)

No. 7086

Cladodus sp.

Formation: unknown

Locality: Kellogg, Jasper County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 10

No. 7087

Cladodus sp.

Formation: Warsaw Fm.

Locality: near St. Louis, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 10

No. 7088

Psammodus sp.

Formation: St. Genevieve Fm.

Locality: Perry County, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 6

No. 7089

Cladodus sp.

Formation: Glen Dean Fm.

Locality: Star Landing, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 9

No. 7090

Sandalodus sp.?

Formation: St. Genevieve Fm.

Locality: Chester, Randolph County, Illinois, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7091

Petalodus allegheniensis Leidy

Formation: Frailey's Shale Member, Golconda Fm.

Locality: Junction of Interstate Highways 57 and U.S. 146, Anna,
Union County, Illinois, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 7094

Deltodus sp.

Formation: Burlington Limestone Fm.

Locality: Augusta, Des Moines County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 7

No. 7095

Orodus sp.

Formation: Cleveland Shale Fm.

Locality: I-71 project, Cleveland, Cuyahoga County, Ohio, USA

Age: Devonian

Illustrate: Plate 18 (7095a,b); Case (1973), p. 6, fig. 2

No. 7096

Cladodus sp.

Formation: Maple Mill Fm.

Locality: Kalona, Washington County, Iowa, USA

Age: Devonian

Illustrate:

No. 7098

Psammodus sp.

Formation: Upper Chesterian Series, Glen Dean Fm.

Locality: Star Landing, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 6; Case (1973) p.8 fig.8

No. 7099

Cladodus sp.

Formation: Chester series, Glen Dean Fm.

Locality: Star Landing, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 10 (7099a,b)

No. 7101

Stamobatis sp.

Formation: unknown

Locality: Graham (South Bend), Young County, Texas, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 20, 36; Case (1973), p. 15, fig. 50; Case (1982),
p. 241, fig. 24-49

No. 7102

Cladodus sp.

Formation: Virgil Series, Heebner Shale

Locality: Ace Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 10

No. 7103

Cladodus sp.

Formation: Virgilian Series, Heebner Shale

Locality: Ace Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 4 (3), 10; Case (1973), p. 9, fig. 18

No. 7104

Caseodus basalis (Cope)

Formation: Virgil Series, Heebner Shale

Locality: Ace Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Late Carboniferous (Pennsylvanian)

Illustrate: Plate 17; Case (1973), p. 10, fig. 25

No. 7105

Caseodus basalis (Cope)

Formation: Virgil Series, Heebner Shale

Locality: Ace Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Late Carboniferous (Pennsylvanian)

Illustrate: Plate 17; Case (1973), p. 10, fig. 26

No. 7106

Cladodus sp.

Formation: Virgilian Series, Stull Shale

Locality: Ace Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Late Carboniferous (Pennsylvanian)

Illustrate: Plate 10

No. 7107

Cladodus sp.

Formation: unknown

Locality: unknown, somewhere in the USSR

Age: Carboniferous (Mississippian)

Illustrate: Plate 10

No. 7108

Edestus sp.

Formation: Des Moines Series, Possibly Hertha Limestone

Locality: Clay pits, Des Moines Clay Products Company, Des Moines,
Polk County, Iowa USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 18

No. 7109

Agassizodus variabilis (Newberry and Worthen)

Formation: Severy Shale, Waubunsee Fm.

Locality: George Evans Coal Mines, underground at Clarinda, Page County,
Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 1 (9), 2 (6), 18; Case (1973), p. 10, fig. 27; Case (1982),
p. 235, fig. 24–33

No. 7110

Cladodus elegans Newberry

Formation: Doniphan Shale, Lecompton Formation

Locality: Snyderville (Nehawka), Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 12; Case (1973), p. 9, fig. 15

No. 7111

Listracanthus hystrix Newberry and Worthen

Formation: Stanton Formation

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 32; Case (1973), p. 49, fig. 205; Case (1982),
p. 243, fig. 24–58

No. 7112

Petalodus allegheniensis Leidy

Formation: Virgil Series, Heumader Shale, Oread Formation

Locality: Ace Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate: Plates 22, 23

No. 7113

Petalodus allegheniensis Leidy

Formation: Virgil Series, Doniphan Shale, Lecompton Formation

Locality: Ace Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate: Plates 1 (3, 6), 22, 23; Case (1973), p. 14, fig. 43

No. 7114

Petalodus allegheniensis Leidy

Formation: unknown

Locality: Graham, near South Bend, Young County, Texas, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 1 (1, 4), 22, 23; Case (1973), p. 14, fig. 42; Case (1982),
p. 239, fig. 24–44

No. 7115

Petalodus allegheniensis Leidy

Formation: Virgil Series, Doniphan Shale, Lecompton Formation

Locality: Ace Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate: Plates 22, 23

No. 7116

Petalodus allegheniensis Leidy

Formation: unknown

Locality: Missouri Valley Quarry, Crescent, Pottawattamie County, Iowa USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 22, 23

No. 7117

Petalodus allegheniensis Leidy

Formation: unknown

Locality: New Folsom Quarry, near Pacific Junction, Mills County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 1 (2, 5), 22, 23

No. 7118

Petalodus allegheniensis Leidy

Formation: unknown

Locality: Nehawka, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 24

No. 7119

Peripristis semicircularis (Newberry and Worthen)

Formation: Island Creek Limestone?

Locality: Quarry at Stanzel, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 26

No. 7120

Pleuroodus rankini Agassiz

Formation: Carboniferous Coal Measures

Locality: Halifax, England

Age: Carboniferous

Illustrate: Plate 9 (7120a—e)

No. 7121

Petrodus patelliformis McCoy

Formation: Hertha Limestone

Locality: St. Charles, Madison County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 29; Case (1982), p. 244, fig. 24–59

No. 7122

Petrodus patelliformis McCoy

Formation: Hertha Limestone

Locality: St. Charles, Madison County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 29; Case (1982), p. 244, fig. 24–59

No. 7123

Petrodus patelliformis McCoy

Formation: Hertha Limestone

Locality: St. Charles, Madison County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 29; Case (1982), p. 244, fig. 24–59

No. 7124

Petrodus patelliformis McCoy

Formation: Hertha Limestone

Locality: St. Charles, Madison County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 29; Case (1973), p. 50, fig. 210

No. 7125

Petrodus patelliformis McCoy

Formation: Hertha Limestone

Locality: Stuart, Guthrie County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 31; Case (1982), p. 244, fig. 24–59

No. 7126

Petrodus patelliformis McCoy

Formation: Cawdaw Limestone

Locality: Steeplechase Quarry, Wirksworth, Derbyshire, England

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 30; Case (1982), p. 244, fig. 24–59

No. 7127

Petrodus patelliformis McCoy

Formation: Cawdaw Limestone

Locality: Steeplechase Quarry, Wirksworth, Derbyshire, England

Age: Carboniferous (Pennsylvanian)

Illustrate: Case (1982), p. 244, fig. 24–59

No. 7128

Petalodus allegheniensis Leidy

Formation: Ames Limestone, Brush Creek Member, Conemaugh Series

Locality: Carroll County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 1 (7), 22, 23

No. 7129

Petalodus allegheniensis Leidy

Formation: Brush Creek Member, Conemaugh Formation

Locality: Diamond Shamrock Quarry #2, Albany, Athens County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 24

No. 7130

Petalodus allegheniensis Leidy

Formation: Oread Formation, Virgil Series

Locality: Grant, Iowa, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate: Plate 24

No. 7131

Petalodus allegheniensis Leidy

Formation: Doniphan Shale, Virgil Series

Locality: Stennet, Iowa, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate: Plate 24

No. 7132

Deltodus sp.

Formation: Island Creek Shale

Locality: Stanzel, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 7

No. 7133

Deltodus sp.

Formation: Lane Shale

Locality: Drive—in theatre locality (bluffs and limestone ledges),
Kansas City, Missouri, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 7 (7133a,b)

No. 7134

Petalodus allegheniensis Leidy

Formation: Topeka Formation?

Locality: Jones Point Quarry, along the Missouri River, at Union,
Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 24

No. 7135

Petalodus allegheniensis Leidy

Formation: Westerville Limestone Member, Cherryvale Formation,
Kansas City Group, Missouri Series

Locality: PWA Quarry, Richfield, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

Illustrate: Plate 24

No. 7136

Petalodus allegheniensis Leidy

Formation: Westerville Limestone Member, Cherryvale Formation,
Kansas City Group, Missouri Series

Locality: PWA Quarry, Richfield, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

Illustrate: Plates 22, 23

No. 7137

Deltodus sp.

Formation: Doniphan Shale, Lecompton Formation, Virgil Series

Locality: Hopper Brothers Quarry, 1 mile west of Weeping Water,
Cass County, Nebraska, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate: Plate 7

No. 7138

Peripristis semicircularis (Newberry and Worthen)

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

Illustrate: Plates 2 (4, 8), 27 (7138a—o), 28 (7138a—l); Case (1973), p. 13, fig. 38

No. 7139

Deltodus sp.

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

Illustrate: Plate 7

No. 7140

Deltodus sp.

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

Illustrate: Plate 7

No. 7141

Petalodus allegheniensis Leidy

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

Illustrate: Plate 25 (7141a,b)

No. 7142

Petalodus allegheniensis Leidy

Formation: Stark Shale Member, Winterset Formation?, Bronson Group?,
Missouri Series

Locality: City Wide Rock Quarry, LaPlatte, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

Illustrate: Plate 25 (7142a,b)

No. 7143

Petalodus allegheniensis Leidy

Formation: unknown

Locality: City Wide Rock Quarry, LaPlatte, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 24

No. 7144

Cladodus sp.

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

Illustrate: Plate 10

No. 7145

Petalodus allegheniensis Leidy

Formation: unknown

Locality: Road—cut N. side of the Platte River, on Highway between Platts
and Omaha, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 22, 23

No. 7146

Caseodus sp.

Formation: Doniphan Shale, Lecompton Formation, Virgil Series

Locality: Ace Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate: Plate 17

No. 7147

Caseodus sp.

Formation: Heumader Shale Member, Oread Formation, Virgil Series

Locality: Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate: Plate 17

No. 7148

Xenacanthus (Orthacanthus) compressus (Newberry)

Formation: Allegheny Series?

Locality: Property of Max Gard, cliffs near Lisbon, Columbiana County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 15 (7148a,b)

No. 7149

Petrodus patelliformis McCoy

Formation: unknown

Locality: Steeplechase Quarry, Wirksworth, Derbyshire, England

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 31 (7149a—l)

No. 7150

Cladodus sp.

Formation: unknown

Locality: Graham, near South Bend, Young County, Texas, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 14 (7150a,b), 35 (7150a,b)

No. 7151

Cladodus sp.

Formation: Oread Formation, Virgil Series

Locality: Grant, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 10; Case (1982), p. 227, fig. 24–14

No. 7152

Listracanthus hystrix Newberry and Worthen

Formation: Hertha Limestone Formation

Locality: St. Charles, Madison County, Iowa, USA

Age: Carboniferous (Lower Pennsylvanian)

Illustrate: Plate 32; Case (1982), p. 243, fig. 24–55, 56, 57 and 58

No. 7153

Cladodus sp.

Formation: Hertha Limestone

Locality: St. Charles, Madison County, Iowa, USA

Age: Carboniferous (Lower Pennsylvanian)

Illustrate: Plate 32

No. 7154

Edestus (Protopirata) sp.

Formation: unknown

Locality: Baldwin Coal Mine, Spavna, Illinois.

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 34, 36

No. 7155

Edestus (Protopirata) sp.

Formation: Hertha Limestone

Locality: St. Charles, Madison County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 18 (7155a,b); Case (1973), p. 12, fig. 34

No. 7156

Petrodus patelliformis McCoy

Formation: Labette Black Shale, Marmaton Group, Des Moines Series
(Westphalian D)

Locality: Shale exposure in a tributary of the Des Moines River,
at Madrid, Boone County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 31; Case (1973), p. 49, fig. 206

No. 7157

Cladodus sp.

Formation: Labette Black Shale, Marmaton Group, Des Moines Series
(Westphalian D)

Locality: Shale exposure in a tributary of the Des Moines River,
at Madrid, Boone County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 3 (1, 4, 7, 10), 14, 35; Case (1973), p. 9, fig. 16; Case (1982), p. 227,
fig. 24–15

No. 7158

Gilliodus orvillei Zangerl

Formation: Westerville Formation, Kansas City Group,
Missouri Series (Westphalian D)

Locality: Hansen Quarry near Papillion, Sarpy County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 17

No. 7159

Chomatodus sp.

Formation: Meadow Limestone, Missouri Series

Locality: Atwood Quarry, 2 miles east of Louisville, Cass County,
Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 20

No. 7161

Cladodus sp.

Formation: Queen Hill Shale, Lecompton Formation, Shawnee Group,
Virgil Series

Locality: Queen Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 14, 35

No. 7162

Cladodus sp.

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 3 (2, 5, 8, 11), 14, 35

No. 7163

Cladodus sp.

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash grove Quarry, near Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 3 (3, 6, 9, 12), 14, 35

No. 7164

Cladodus sp.

Formation: Gene Autry Shale

Locality: Springer, Oklahoma, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 14, 35

No. 7165

Listracanthus hystrix Newberry and Worthen

Formation: Wewoka Shale, Des Moines Series

Locality: Holdenville, Hughes County, Oklahoma, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 32

No. 7166

Petrodus patelliformis McCoy

Formation: unknown

Locality: St. David cycl., Farmington, Fulton County, Illinois, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 31 (7166a,b)

No. 7167

Petrodus patelliformis McCoy

Formation: Francis Creek Shale

Locality: Peabody Coal Mines, Essex, Kankakee County, Illinois, USA

Age: Carboniferous (Pennsylvanian)

Illustrate:

No. 7168

Petrodus patelliformis McCoy

Formation: Coal Shales

Locality: Jelliff Locality, Knox County, Illinois, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 31

No. 7169

Strophodus magnus Agassiz

Formation: Coal measures

Locality: Halifax, England

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 9

No. 7170

Lagarodus (Psammodus) angustus (Trautschold)

Formation: unknown

Locality: Mjatschkowa, USSR (Russia)

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 5, 36

No. 7171

Peripristis semicircularis (Newberry and Worthen)

Formation: T—Formation

Locality: Bartlett, Fremont County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 2 (2), 26; Case (1973), p. 13, fig. 38

No. 7172

Chomatodus sp.

Formation: unknown

Locality: Quarry at Snyderville, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 21; Case (1973), p. 14, fig. 41

No. 7173

Cladodus sp.

Formation: Westerville Limestone, Cherryvale Formation, Kansas City Group,
Missouri Series

Locality: Ft. Calhoun, Washington County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 9

No. 7174

Cladodus sp.

Formation: Queen Hill Shale, Lecompton Formation, Shawnee Group,
Virgil Series (Stephanian A)

Locality: Ace Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 9

No. 7175

Ornithoprion hertwigi Zangerl

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 17

No. 7176

Peripristis semicircularis (Newberry and Worthen)

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 2 (3, 7), 27, 28; Case (1973), p. 13, fig. 38

No. 7177

Petrodus patelliformis McCoy

Formation: Hertha Limestone, Des Moines Series

Locality: St. Charles, Madison County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 31 (7177a–f); Case (1973), p. 49, fig. 206 for comparison

No. 7178

Petrodus patelliformis McCoy

Formation: Hertha Limestone, Des Moines Series

Locality: Stuart, Guthrie County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 31 (7178a,b)

No. 7179

Listracanthus hystrix Newberry and Worthen

Formation: Hertha Limestone, Des Moines Series

Locality: Stuart, Guthrie County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 32

No. 7180

Caseodus basalis Zangerl

Formation: Hertha Limestone, Des Moines Series

Locality: Stuart, Guthrie County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 17 (7180a,b), 36 (7180a,b); Case (1982), p. 235, fig. 24–34

No. 7181

Edestus (Protopirata) crenulatus Hay

Formation: Hertha Limestone, Des Moines Series

Locality: Stuart, Guthrie County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 18, 36; Case (1973), p. 12, fig. 33; Case (1982), p. 235,
fig. 24–32

No. 7182

Edestus (Protopirata) crenulatus Hay

Formation: Hertha Limestone, Des Moines Series

Locality: St. Charles, Madison County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 18

No. 7183

Edestus (Protopirata) crenulatus Hay

Formation: Hertha Limestone, Des Moines Series

Locality: St. Charles, Madison County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 18

No. 7184

Petrodus patelliformis McCoy

Formation: Labette Black Shale, Labette Formation, Marmaton Group,
Des Moines Series (Westphalian D)

Locality: Along the tributary bank of the Des Moines River at Madrid,
Boone County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 31

No. 7185

Cladodus sp.

Formation: Labette Black Shale, Labette Formation, Marmaton Group,
Des Moines Series (Westphalian D)

Locality: Along the tributary bank of the Des Moines River at Madrid,
Boone County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 9

No. 7186

Orthacodus sp.

Formation: Brush Creek Limestone, Conemaugh Formation

Locality: Diamond—Shamrock Limerock Quarry, Albany, Athens County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 9

No. 7187

Petalodus allegheniensis Leidy

Formation: Brush Creek Limestone, Conemaugh Formation

Locality: Diamond (formerly the Shamrock) Limestone Quarry, near Albany,
Athens County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 25 (7187a,b), 36 (7187a,b)

No. 7188

Petalodus allegheniensis Leidy

Formation: Brush Creek Limestone, Conemaugh Formation

Locality: Diamond—Shamrock Limestone Quarry, Albany, Athens County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 25

No. 7189

Xenacanthus compressus (Newberry)

Formation: Cannel Coal Shales, below Upper Freeport Coal, Allegheny Series

Locality: Linton Mine dump, near Yellow Creek, Jefferson County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 16 (7189a—e); Case (1982), p. 241, fig. 24—52

No. 7190

Listracanthus hystrix Newberry and Worthen

Formation: Labette Formation, Marmaton Group, Des Moines Series

Locality: Madrid, Boone County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 32

No. 7191

Listracanthus hystrix Newberry and Worthen

Formation: Labette Formation, Marmaton Group, Des Moines Series

Locality: Madrid, Boone County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 33 (7191a,b)

No. 7192

Agassizodus variabilis (Newberry and Worthen)

Formation: Ames Limestone

Locality: Brilliant Cut—off, Pittsburgh, Allegheny County, Pennsylvania, USA

Age: Carboniferous (Pennsylvanian)

Illustrate:

No. 7193

Xenacanthus sp.

Formation: Bituminous shale layer above Backpit Coal, Morien Group

Locality: Indian Bay, Southwest of Brian Point, Dominion, Cape Breton,
Nova Scotia, Canada

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 15 (7193a—c)

No. 7194—1

Listracanthus hystrix Newberry and Worthen

Formation: Labette Shale Formation, Marmaton Group, Des Moines Series

Locality: Madrid, Boone County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 31 (7194—1L)

No. 7194—2

Petrodus patelliformis McCoy

Formation: Labette Shale Formation, Marmaton Group, Des Moines Series

Locality: Madrid, Boone County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 31 (7194—2U)

No. 7195

Edestus (Protopirata) crenulatus Hay

Formation: Hertha Limestone

Locality: Stuart, Guthrie County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 18, 36; Case (1973), p. 12, fig. 34

No. 7196

Deltodus sp.

Formation: Hertha Limestone

Locality: Stuart, Guthrie County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 7

No. 7197

Sandalodus sp.

Formation: Carbondale Formation, Des Moines Series

Locality: Marion, Illinois, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 6

No. 7200

Cladodus sp.

Formation: Oread Formation, Virgil Series

Locality: Grant, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 14, 35

No. 7201

Edestus (Protopirata) crenulatus Hay

Formation: Labette Formation, Marmaton Group, Des Moines Series

Locality: Madrid, Boone County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 18; Case (1973), P. 13, Fig. 35

No. 7202—1

Petrodus patelliformis McCoy

Formation: Probably from the Labette Formation, Marmaton Group,
Des Moines Series

Locality: Road—cut at Junction of Page Avenue and Interstate 244, St. Louis,
Missouri, USA

Age: Carboniferous (Pennsylvanian)

Illustrate:

No. 7202—2

Paleoniscus sp.

Formation: Probably from the Labette Formation, Marmaton Group,
Des Moines Series

Locality: Road—cut at Junction of Page Avenue and Interstate 244,
St. Louis, Missouri, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 31

No. 7203

Petalodus allegheniensis Leidy

Formation: Brush Creek Member, Conemaugh Series

Locality: Diamond Limestone Quarry, Albany, Athens County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 24 (7203a—c)

No. 7204

Janassa bituminosa (Schlotheim)

Formation: Brush Creek Member, Conemaugh Formation

Locality: Diamond Limerock Quarry, Albany, Athens County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 26

No. 7205

Petrodus patelliformis McCoy

Formation: unknown

Locality: Ayshire Collieries, Boonville, Indiana, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 31

No. 7206—1

Deltodus sp.

Formation: Brush Creek Limestone, Conemaugh Formation

Locality: Albany, Athens County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 7

No. 7206—2

Petalodus sp.

Formation: Brush Creek Limestone, Conemaugh Formation

Locality: Albany, Athens County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 7

No. 7206—3

Janassa sp.

Formation: Brush Creek Limestone, Conemaugh Formation

Locality: Albany, Athens County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 7

No. 7206—4

Cladodus sp.

Formation: Brush Creek Limestone, Conemaugh Formation

Locality: Albany, Athens County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 7

No. 7206—5

Pleuracanthus (*Xenacanthus*) sp.

Formation: Brush Creek Limestone, Conemaugh Formation

Locality: Albany, Athens County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 7

No. 7207

Caseodus basalis (Cope)

Formation: Brush Creek Member, Conemaugh Formation

Locality: Diamond—Shamrock Limerock Quarry, Albany, Athens County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 17; Case (1973), p. 10, fig. 23

No. 7208

Agassizodus (Campodus) variabilis (Newberry and Worthen)

Formation: Brush Creek Member, Conemaugh Formation

Locality: Diamond—Shamrock Limerock Quarry, Albany, Athens County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 19; Case (1973), p. 10, fig. 28abc

No. 7209

Petalodus allegheniensis Leidy

Formation: Brush Creek Member, Conemaugh Formation

Locality: Diamond—Shamrock Limerock Quarry, near Albany, Athens County,
Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 20 (7209a,b)

No. 7211

Petalodus allegheniensis Leidy

Formation: Keiwitz Shale, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 24

No. 7212

Sandalodus sp.

Formation: "Pennsylvanian Limestone"

Locality: Goreville, Johnson County, Illinois, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 6

No. 7213

Janassa bituminosa (Schlotheim)

Formation: Keiwitz Shale, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 25

No. 7214

Peripristis semicircularis (Newberry and Worthen)

Formation: Keiwitz Shale, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 2 (1), 26; Case (1973), p. 13, fig. 39

No. 7215

Deltodus? sp.

Formation: Keiwitz Shale, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 7

No. 7216

Poecilodus sp. or *Deltodus* sp.?

Formation: Keiwitz Shale, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 9; Case (1973), p. 15, fig. 51

No. 7217

Cladodus sp.

Formation: Stark Shale, Dennis Limestone Formation, Bronson Group,
Missouri Series

Locality: Penn—Dixie Limerock Quarry, Winterset, Madison County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate:

No. 7218

Caseodus eatoni Zangerl

Formation: Stark Shale, Dennis Limestone Formation, Bronson Group,
Missouri Series

Locality: Quarry at Logan, Harrison County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 17

No. 7219

Cobelodus aculeatus (Cope)

Formation: Stark Shale, Dennis Limestone Formation, Bronson Group,
Missouri Series

Locality: Penn—Dixie Limerock Quarry, Winterset, Madison County, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 16

No. 7220

Cladodus sp.

Formation: Brush Creek Member, Conemaugh Formation

Locality: Diamond—Shamrock Limerock Quarry, Albany, Athens County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 34

No. 7223

Xenacanthus compressus (Newberry)

Formation: Cannel below Upper Freeport Coal seam, Allegheny Series

Locality: Linton, Jefferson County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 15 (7223a,b), 16 (7223c)

No. 7224

Fissodus sp.

Formation: Virgil Series

Locality: 4 miles south of Topeka, Kansas, USA

Age: Carboniferous (Upper Pennsylvanian)

Illustrate: Plates 27, 28; Case (1973), p. 14, fig. 44

No. 7225

Iniopteryx rushloui Zangerl and Case

Formation: Stark Shale, Dennis Formation, Bronson Group, Missouri Series,
Westphalian D

Locality: Hansen Quarry, Papillion, Sarpy County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 5 (7225a,b); Case (1982), p. 268. fig. 24–143

No. 7226

Iniopteryx rushloui Zangerl and Case

Formation: WEA Shale, Westerville Formation, Kansas City Group,
Missouri Series, Westphalian D

Locality: Hansen Quarry, Papillion, Sarpy County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 5 (7226a,b); Case (1982), p. 268. fig. 24–143

No. 7227

Caseodus basalis (Cope)

Formation: Queen Hill Shale, Lecompton Formation, Shawnee Group,
Virgil Series, Stephanian A

Locality: Ace Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 17

No. 7229

Psephodus magnus (Agassiz)

Formation: unknown

Locality: Stepplechase Quarry, Wirksworth, Derbyshire, England

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 9 (7229a–c)

No. 7230

Petalodus allegheniensis Leidy

Formation: unknown

Locality: Nehawka, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 20

No. 7231

Iniopteryx rushloui Zangerl and Case

Formation: WEA Shale, Westerville Formation, Kansas City Group,
Missouri Series, Westphalian D

Locality: Hansen Quarry, Papillion, Sarpy County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 5 (7231a,b); Case (1982), p. 268. fig. 24–143

No. 7232

Fissodus sp.

Formation: Beil Limestone? Lecompton Formation, Virgil Series

Locality: King Hill Quarry, Rock Bluff, Murray, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 26, 28; Case (1973), p. 14, fig. 44

No. 7233

Chomatodus sp.

Formation: Deer Creek Limestone, Virgil Series

Locality: Weeping Water, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 21; Case (1973), p. 14, fig. 40

No. 7234

Chomatodus sp.

Formation: Virgil Series

Locality: Road—cut, 4 miles south of Topeka, Kansas, USA

Age: Carboniferous (Pennsylvanian)

Illustrate:

No. 7235

Cladodus sp.

Formation: WEA Shale, Westerville Formation, Kansas City Group,
Missouri Series, Westphalian D

Locality: Hansen Quarry, Papillion, Sarpy County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 34

No. 7236

Inioxyle whitei Zangerl and Case

Formation: Queen Hill Shale, Lecompton Formation, Shawnee Group,
Virgil Series

Locality: Ace Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate: Plate 5

No. 7237

Dittodus (Pleuracantus) sp. or *Xenacanthus* sp.

Formation: Coal shale

Locality: Joggins Coal Mines, Nova Scotia, Canada

Age: Carboniferous (Pennsylvanian)

Illustrate:

No. 7238

Listracanthus hystrix Newberry and Worthen

Formation: Stark Shale, Dennis Formation, Bronson Group, Missouri Series

Locality: Hansen Quarry, Papillion, Sarpy County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 33; Case (1982), p. 243, fig. 24–56 for comparison

No. 7239

Listracanthus hystrix Newberry and Worthen

Formation: unknown

Locality: Peabody Coal Mines, near Elgin, Illinois, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 32

No. 7242

Cladodus sp.

Formation: Stark Shale, Dennis Formation, Bronson Group, Missouri Series,
Westphalian D

Locality: Hansen Quarry, Papillion, Sarpy County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 34

No. 7243

Petrodus patelliformis McCoy

Formation: unknown

Locality: Steeplechase Quarry, Wirksworth, Derbyshire, England

Age: Carboniferous (Pennsylvanian)

Illustrate: Case (1973), p. 49, fig. 206

No. 7244

Petrodus patelliformis McCoy

Formation: Cawdaw Limestone

Locality: Steeplechase Quarry, Wirksworth, Derbyshire, England

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 30; Case (1973), p. 49, fig. 206

No. 7245

Edestus (Protopirata) crenulatus Hay

Formation: unknown

Locality: St. David Cycl., Farmington, Fulton County, Illinois, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 18

No. 7248

Peripristis sp.

Formation: unknown

Locality: Stanzel, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 26

No. 7251

Inioxyle whitei Zangerl and Case

Formation: Queen Hill Shale, Lecompton Formation, Shawnee Group, Virgil Series

Locality: Ace Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 5

No. 7302

Orthacanthus sp.

Formation: unknown

Locality: Bohemia, Czechoslovakia

Age: Carboniferous — Permian

Illustrate:

No. 9200

Orodus sp.

Formation: Burlington Limestone Fm.

Locality: Morning Sun, Louisa County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 19

No. 9201

Orodus sp.

Formation: Burlington Limestone Fm.

Locality: Henderson City, Dallas County, Illinois, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 19

No. 9202

Cladodus sp.

Formation: Burlington Limestone Fm.

Locality: Henderson City, Dallas County, Illinois, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 11 (9202a,b)

No. 9203

Orodus sp.

Formation: Keokuk Limestone Fm.

Locality: South English, Keokuk County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 19 (9203a,b)

No. 9204

Chomatodus sp.

Formation: Keokuk Limestone Fm.

Locality: South English, Keokuk County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 9205

Sandalodus sp.

Formation: Keokuk Limestone Fm.

Locality: North English, Iowa County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 6

No. 9206

Cladodus sp.

Formation: Keokuk Limestone Fm.

Locality: North English, Iowa County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 19 (9206a—c)

No. 9207

Chomatodus sp.

Formation: Keokuk Limestone Fm.

Locality: North English, Iowa County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 21 (9207a—c)

No. 9208

Petalodus sp.

Formation: Keokuk Limestone Fm.

Locality: North English, Iowa County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 21

No. 9209

Cladodus sp. = *Ctenacanthus* sp.

Formation: Keokuk Limestone Fm.

Locality: North English, Iowa County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 11 (9209a—d)

No. 9210

Orodus sp.

Formation: Burlington Limestone Fm.

Locality: Augusta, Des Moines County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 19 (9210a—d)

No. 9211

Cladodus sp. = *Ctenacanthus* sp.

Formation: Burlington Limestone Fm.

Locality: Augusta, Des Moines County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 11 (9211a—d)

No. 9212

Deltodus sp.

Formation: Burlington Limestone Fm.

Locality: Augusta, Des Moines County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 8

No. 9213

Orodus sp.

Formation: Keokuk Limestone Fm.

Locality: Keswick Quarry, near Keswick, Keokuk County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 19 (9213a–d)

No. 9214

Chomatodus sp.

Formation: Keokuk Limestone Fm.

Locality: Keswick Quarry, near Keswick, Keokuk County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 21 (9214a–c)

No. 9215

Cladodus sp.= *Ctenacanthus* sp.

Formation: Keokuk Limestone Fm.

Locality: Keswick Quarry, near Keswick, Keokuk County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 15 (9215a–d)

No. 9216

Chomatodus sp.

Formation: unknown

Locality: Road–cut near the town of Columbia, Boone County, Missouri, USA

Age: unknown

Illustrate: Plate 21 (9216a,b)

No. 9217

Cladodus sp.= *Ctenacanthus* sp.

Formation: unknown

Locality: Road–cut near the town of Columbia, Boone County, Missouri, USA

Age: unknown

Illustrate: Plates 14 (9217a–e), 35 (9217a–e)

No. 9218

Orodus sp.

Formation: Salem Fm.

Locality: West of Clifty Falls, Indiana, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 19

No. 9219

Deltodus sp.

Formation: Keokuk Fm.

Locality: Troy, Lincoln County, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 8

No. 9220

Cladodus sp.

Formation: Salem Fm.

Locality: West of Clifty Falls, Indiana, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 9221

Chomatodus sp.

Formation: Upper Meramecian Series, Warsaw Fm.

Locality: St. Louis, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 21

No. 9222

Deltodus sp.

Formation: Upper Meramecian Series, Warsaw Fm.

Locality: St. Louis, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 8 (9222a,b)

No. 9223

Orodus sp.

Formation: Upper Meramecian Series, Warsaw Fm.

Locality: St. Louis, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 19

No. 9224

Fish scales and spines (sp. Indet.)

Formation: Upper Meramecian Series, Warsaw Fm.

Locality: St. Louis, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 9225

Psammodus sp.

Formation: Upper Meramecian Series, Warsaw Fm.

Locality: St. Louis, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 5

No. 9226

Ctenacanthus (*Cladodus*) sp.

Formation: Keokuk Limestone Fm.

Locality: S. English, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 14

No. 9227

Deltodus sp.

Formation: Keokuk Limestone Fm.

Locality: S. English, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 8

No. 9228

Sandalodus sp.

Formation: Keokuk Limestone Fm.

Locality: S. English, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 9229

Psammodus sp.

Formation: Keokuk Limestone Fm.

Locality: S. English, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 5 (9229a,b)

No. 9230

Sandalodus sp.

Formation: unknown

Locality: Kellogg, Jasper County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 9231

Chomatodus sp.

Formation: Glen Dean Fm.

Locality: Star Landing, Missouri, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 21

No. 9232

Orodus sp.

Formation: Burlington Limestone Fm.

Locality: Augusta, Des Moines County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 5 (9232a—c)

No. 9233

Chomatodus sp.

Formation: Burlington Limestone Fm.

Locality: Augusta, Des Moines County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 21

No. 9234

Psammodus sp.

Formation: Burlington Limestone Fm.

Locality: Augusta, Des Moines County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate: Plate 21

No. 9235

Petrodus sp.

Formation: Burlington Limestone Fm.

Locality: Augusta, Des Moines County, Iowa, USA

Age: Carboniferous (Mississippian)

Illustrate:

No. 9236

Orthacanthus sp.

Formation: Maple Mill Fm.

Locality: Kalona, Washington County, Iowa, USA

Age: Devonian

Illustrate:

No. 9237
Helodus sp.
Formation: Maple Mill Fm.
Locality: Kalona, Washington County, Iowa, USA
Age: Devonian
Illustrate: Plate 5 (9237a,b)

No. 9238
Orodus sp.
Formation: Maple Mill Fm.
Locality: Kalona, Washington County, Iowa, USA
Age: Devonian
Illustrate:

No. 9240
Deltodus sp.
Formation: Upper Chesterian Series, Glen Dean Fm.
Locality: Star Landing, Missouri, USA
Age: Carboniferous (Mississippian)
Illustrate: Plate 8

No. 9241
Petalodus allegheniensis Leidy
Formation: Chester Series, Glen Dean Fm.
Locality: Star Landing, Missouri, USA
Age: Carboniferous (Mississippian)
Illustrate: Plate 25

No. 9242
Sandalodus sp.
Formation: Chester Series, Glen Dean Fm.
Locality: Star Landing, Missouri, USA
Age: Carboniferous (Mississippian)
Illustrate: Plate 6 (9242a,b)

No. 9243
Cladodus sp.
Formation: Island Creek Shale
Locality: Stanzel, Iowa, USA
Age: Carboniferous (Pennsylvanian)
Illustrate:

No. 9244

Ctenoptychius sp.

Formation: Island Creek Shale

Locality: Stanzel, Iowa, USA

Age: Carboniferous (Pennsylvanian)

Illustrate:

No. 9245

Sandalodus sp.

Formation: Lane Shale

Locality: Drive—in theatre locality (bluffs and limestone ledges),
Kansas City, Missouri, USA

Age: Carboniferous (Pennsylvanian)

Illustrate:

No. 9246

Orodus sp.

Formation: Lane Shale

Locality: Drive—in theatre locality (bluffs and limestone ledges),
Kansas City, Missouri, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 19

No. 9247

Cladodus sp.

Formation: Doniphan Shale, Lecompton Formation, Virgil Series

Locality: Hopper Brothers Quarry, 1 mile west of Weeping Water,
Cass County, Nebraska, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate: Plates 14 (9247a,b), 35 (9247a,b)

No. 9248

Caseodus sp.

Formation: Doniphan Shale, Lecompton Formation, Virgil Series

Locality: Hopper Brothers Quarry, 1 mile west of Weeping Water,
Cass County, Nebraska, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate: Plate 17

No. 9249

Petalodus sp.

Formation: Doniphan Shale, Lecompton Formation, Virgil Series

Locality: Hopper Brothers Quarry, 1 mile west of Weeping Water,
Cass County, Nebraska, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate: Plate 21

No. 9250

Ctenoptychius sp.

Formation: Doniphan Shale, Lecompton Formation, Virgil Series

Locality: Hopper Brothers Quarry, 1 mile west of Weeping Water,
Cass County, Nebraska, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate:

No. 9251

Janassa sp.

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

Illustrate:

No. 9252

Cladodus sp.

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

Illustrate: Plate 13 (9252a,b)

No. 9253

Peripristis semicircularis (Newberry and Worthen)

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

Illustrate: Plates 27 (9253a—e), 28 (9253a—d)

No. 9254

Cladodus sp.

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

Illustrate: Plate 13

No. 9255

Deltodus sp.

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

Illustrate:

No. 9256

Peripristis semicircularis (Newberry and Worthen)

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

Illustrate: Plates 27 (9256a,b), 28 (9256a,b)

No. 9257

Cladodus sp.

Formation: Stark Shale Member, Winterset Formation?, Bronson Group?,
Missouri Series

Locality: City Wide Rock Quarry, LaPlatte, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

Illustrate: Plate 13

No. 9258

Orodus sp.

Formation: Stark Shale Member, Winterset Formation?, Bronson Group?,
Missouri Series

Locality: City Wide Rock Quarry, LaPlatte, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

Illustrate: Plate 19

No. 9259

Deltodus sp.

Formation: Stark Shale Member, Winterset Formation?, Bronson Group?,
Missouri Series

Locality: City Wide Rock Quarry, LaPlatte, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

Illustrate: Plate 8 (9259a–c)

No. 9260

Janassa bituminosa (Schlotheim)

Formation: Keiwitz Shale Member, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Middle Pennsylvanian)

Illustrate: Plates 1 (8), 2 (5), 26, 28; Case (1973), p. 14, fig. 45; Case (1982),
p. 240, fig. 24–46

No. 9261

Deltodus sp.

Formation: Doniphan Shale, Lecompton Formation, Virgil Series

Locality: Ace Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate: Plate 8

No. 9262

Cladodus sp.

Formation: Doniphan Shale, Lecompton Formation, Virgil Series

Locality: Ace Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate: Plate 13

No. 9263

Janassa bituminosa (Schlotheim)

Formation: Doniphan Shale, Lecompton Formation, Virgil Series

Locality: Ace Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate: Plate 25

No. 9264

Petalodus allegheniensis Leidy

Formation: Doniphan Shale, Lecompton Formation, Virgil Series

Locality: Ace Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate: Plate 25 (9264a,b)

No. 9265

Peripristis semicircularis (Newberry and Worthen)

Formation: Doniphan Shale, Lecompton Formation, Virgil Series

Locality: Ace Hill Quarry, Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate: Plate 27

No. 9266

Cladodus sp.

Formation: Heumader Shale Member, Oread Formation, Virgil Series

Locality: Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate: Plates 14, 35

No. 9267

Chomatodus sp.

Formation: Heumader Shale Member, Oread Formation, Virgil Series

Locality: Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate: Plate 21

No. 9268

Petalodus allegheniensis Leidy

Formation: Heumader Shale Member, Oread Formation, Virgil Series

Locality: Plattsmouth, Cass County, Nebraska, USA

Age: Carboniferous (Late Pennsylvanian)

Illustrate: Plate 24 (9268a,b)

No. 9269

Deltodus sp.

Formation: unknown

Locality: Graham, near South Bend, Young County, Texas, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 8

No. 9270

Listracanthus hystrix Newberry and Worthen

Formation: Herhta Limestone

Locality: St. Charles, Madison County, Iowa, USA

Age: Carboniferous (Lower Pennsylvanian)

Illustrate:

No. 9271

Deltodus sp.

Formation: Meadow Limestone, Missouri Series

Locality: Atwood Quarry, 2 miles east of Louisville, Cass County,
Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 8

No. 9272

Deltodus sp.

Formation: Westerville Limestone, Cherryvale Formation,
Kansas City Group, Missouri Series

Locality: Ft. Calhoun, Washington County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 8

No. 9273

Deltodus sp.

Formation: Brush Creek Limestone, Conemaugh Formation

Locality: Diamond—Shamrock Limerock Quarry, Albany, Athens County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 8 (9273a,b)

No. 9274

Sandalodus sp.

Formation: Brush Creek Limestone, Conemaugh Formation

Locality: Diamond—Shamrock Limerock Quarry, Albany, Athens County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate:

No. 9275

Ctenoptychius sp.

Formation: Brush Creek Limestone, Conemaugh Formation

Locality: Diamond—Shamrock Limerock Quarry, Albany, Athens County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate:

No. 9276

Sandalodus sp.

Formation: Brush Creek Limestone, Conemaugh Formation

Locality: Diamond—Shamrock Limerock Quarry, Albany, Athens County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 5 (9276b), 6 (9276a)

No. 9277

Petrodus patelliformis McCoy

Formation: unknown

Locality: road—cut along Interstate 70, near Topeka, Kansas, USA

Age: Carboniferous (Pennsylvanian)

Illustration: Plate 32 (9277a—c); Case (1982), p. 243, fig. 24—55

No. 9278

Cladodus sp.

Formation: Ames Limestone

Locality: Brilliant Cut—off, Pittsburgh, Allegheny County, Pennsylvania, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 11 (9278a,b)

No. 9279

Deltodus sp.

Formation: Brush Creek Member, Conemaugh Formation

Locality: Diamond—Shamrock Limerock Quarry, near Albany, Athens County,
Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 8 (9279a,b)

No. 9280

Janassa bituminosa (Schlotheim)

Formation: Brush Creek Member, Conemaugh Formation

Locality: Diamond—Shamrock Limerock Quarry, near Albany, Athens County,
Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 26

No. 9281

Peripristis semicircularis (Newberry and Worthen)

Formation: Keiwitz Shale, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plates 27 (9281a—e), 28 (9281a—d)

No. 9282

Chomatodus sp.

Formation: Keiwitz Shale, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 21 (9282a—h)

No. 9283

Cladodus sp.

Formation: Keiwitz Shale, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate:

No. 9284

Deltodus sp.

Formation: Keiwitz Shale, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 8 (9284a—d)

No. 9285

Sandalodus sp.

Formation: Keiwitz Shale, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate:

No. 9286

Janassa bituminosa (Schlotheim)

Formation: Keiwitz Shale, Stanton Formation, Missouri Series

Locality: Ash Grove Quarry, Louisville, Cass County, Nebraska, USA

Age: Carboniferous (Pennsylvanian)

Illustrate:

No. 9287

Deltodus sp.

Formation: "Pennsylvanian Limestone"

Locality: Goreville, Johnson County, Illinois, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 8 (9287a–c)

No. 9288

Deltodus sp.

Formation: Brush Creek Member, Conemaugh Formation

Locality: Diamond–Shamrock Limerock Quarry, Albany, Athens County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate:

No. 9289

Petalodus allegheniensis Leidy

Formation: Brush Creek Member, Conemaugh Formation

Locality: Diamond–Shamrock Limerock Quarry, Albany, Athens County, Ohio, USA

Age: Carboniferous (Pennsylvanian)

Illustrate: Plate 25

No. 9290

Fissodus sp.

Formation: Virgil Series

Locality: Road–cut, 4 miles south of Topeka, Kansas, USA

Age: Carboniferous (Pennsylvanian)

Illustrate:

No. 9291

Lepracanthus colei Owen

Formation: unknown

Locality: Halifax, Canada

Age: Carboniferous (Mississippian)

Illustrate: Plate 32

No. 9292

Inioxyle whitei Zangerl and Case

Formation: unknown

Locality: Pit#14(Mazon Creek),Braidwood,Illinois, USA

Age: Carbonifolous (Pennsylvanian)

Illustrate: Plate 5

No. 9293

Listracanthus hystrix Newberry and Worthen

Formation: unknown

Locality: Pit#14(Mazon Creek),Braidwood,Illinois, USA

Age: Carbonifolous (Pennsylvanian)

Illustrate: Plate 33 (9232a,b)

No. 9294

Romerodus orodontus Zangerl

Formation: unknown

Locality: Nebraska, USA

Age: Carbonifolous (Pennsylvanian)

Illustrate: Plate 17 (9294a,b)

No. 9295

New Genus and species of Petalodont

Formation: unknown

Locality: Oklahoma, USA

Age: Permian

Illustrate:

No. 9296

Pleuracanthus texensis (Cope)

Formation: Lower Admiral Formation, Wichita Group

Locality: Waurika, Jefferson County, Oklahoma, USA

Age: Permian

Illustrate: Plate 13 (9296a—j)

No. 9297

Pleuracanthus texensis (Cope)

Formation: Lower Admiral Formation, Wichita Group

Locality: Waurika, Jefferson County, Oklahoma, USA

Age: Permian

Illustrate: Plate 13 (9297a,b)

No. 9298
Orthacanthus sp.
Formation: unknown
Locality: Breitenheim, Germany
Age: Lower Permian
Illustrate: Plate 12 (9298a—c)

No. 9299
Pleuracanthus texensis (Cope)
Formation: unknown
Locality: Ringold, Texas, USA
Age: Lower Permian
Illustrate: Plate 13 (9299a—h)

No. 9300
Cladodus sp.
Formation: unknown
Locality: Nebraska, USA
Age: Permian
Illustrate: Plate 11

No. 9301
Cladodus sp.
Formation: unknown
Locality: Nebraska, USA
Age: Carboniferous~Permian
Illustrate:

No. 9302
Pleuracanthus texensis (Cope)
Formation: Lower Admiral, Wichita Group
Locality: Oklahoma, USA
Age: Permian
Illustrate: Plate 11 (9302a—o)

No. 9303
Pleuracanthus texensis (Cope)
Formation: Lower Admiral, Wichita Group
Locality: Oklahoma, USA
Age: Permian
Illustrate: Plate 11 (9303a—k)

No. 9304

Pleuracanthus sp. (coprolite)

Formation: unknown

Locality: Germany

Age: Permian

Illustrate:

No. 9305

Hybodus sp. "Cast"

Formation: unknown

Locality: Texas, USA

Age: Permian

Illustrate:

No. 9306

Cladodus sp.

Formation: Crinoidal Limestone

Locality: Cuohing, Oklahoma, USA

Age: Lower Permian

Illustrate: Plate 12

No. 9307

Xenacanthus sp.

Formation: unknown

Locality: Czechoslovakia

Age: Lower Permian

Illustrate: Plate 15

No. 9308

Pleuracanthus? sp. (Shark Cartilage)

Formation: unknown

Locality: Texas, USA

Age: Permian

Illustrate:

古生代軟骨魚類の分類

Paleozoic Chondrichthyes

(From Zangerl, 3A-1981)

Class Chondrichthyes Huxley 1880

軟骨魚綱

Subclass Subterbranchialia Zangerl 1979

サブターブランキアリア亜綱

Superorder (unnamed)

Order Iniopterygia Zangerl and Case 1973

イニオプテリギア目

Family Iniopterygidae Zangerl and Case 1973

イニオプテリクス科

Genus *Iniopteryx* Zangerl and Case 1973

Iniopteryx rushlani Zangerl and Case 1973
7225, 7226, 7231

Iniopteryx tedwhitei Zangerl and Case 1973

Genus *Promexyele* Zangerl and Case 1973

Promexyele peyeri Zangerl and Case 1973

Family Sibyrhynchidae Zangerl and Case 1973

シイビリンクス科

Genus *Sibyrhynchus* Zangerl and Case 1973

Sibyrhynchus denisoni Zangerl and Case 1973

Genus *Iniopera* Zangerl and Case 1973

Iniopera richardsoni Zangerl and Case 1973

Genus *Inioxele* Zangerl and Case 1973

Inioxele whitei Zangerl and Case 1973
7236, 7251, 9292

Order (unnamed)

Family Chondrenchelyidae Patterson 1965

コンドレンケリス科

Order (unnamed)

Family Polysentoridae Zangerl 1979

ポリセントル科

Genus *Polysentor* Zangerl 1979

Polysentor gorbairdi Zangerl 1979

Superorder Holocephali Bonaparte 1832-41

Order (unnamed)

Family Helodontidae Patterson 1965

ヘロダス科

Genus *Helodus*
9237

Order Bradyodontida Woodward 1921

ブラディオドンティダ目

Unnamed suborder

Family Psammodontidae Koninck 1878

プサモダス科

Psammodus sp.

7017-2, 7046-2, 7073, 7079, 7088, 7098, 9225, 9229, 9234

Lagarodus (*Psammodus*) *angustus*
7170

Conchodus variabilis (*Psammodus*?)
7037

Family Psephodontidae Zangerl 1981

プセフォドンタス科

Family Copodontidae Davis

コポドンタス科

Incertae sedis

Genus *Jimpohlia* Zangerl 1979

Jimpohlia erinacea Zangerl 1979

Suborder Chimaerina Zangerl

ギンザメ亜目

Family Deltodontidae

デルトダス科

Bradyodus sp.

7069

Sandalodus occidentalis Newberry and Worthen

7021

Sandalodus sp.

7055, 7061, 7063, 7065—1, 7071, 7074, 7080, 7085—2, 7090,
7197, 7212, 9205, 9228, 9230, 9242, 9245, 9274, 9276, 9285,

Deltodus sp.

7022, 7024, 7042, 7043, 7045, 7046—1, 7047, 7050, 7052, 7056,
7070, 7075, 7081, 7094, 7132, 7133, 7137, 7139, 7140, 7196,
7206—1, 7215, 9212, 9219, 9222, 9227, 9240, 9255, 9259, 9261,
9269, 9271, 9272, 9273, 9279, 9284, 9287, 9288,

Deltodus stellatus

7025, 7026

Poecilodus jonesi McCoy

7048

Poecilodus sp.

7062, 7216(or *Deltodus*)

Pleuroodus rankini Agassiz

7120

Psephodus(=*Deltodus* or *Sandalodus*) *magnus* (Agassiz)

7229

Family Menaspidae Woodward 1891

メナスピス科

[*Menaspididae* Obruchev 1964]

Genus *Menaspis* Ewald 1848

[*Chalcodus* Zittel 1890]

[*Dichelodus* Giebel 1857]

Menaspis armata Ewald 1848

Family Deltoptychiidae Patterson 1965

デルトプティキウス科

Genus *Deltoptychius* Morris and Roberts 1862

[*Platacanthus* McCoy 1848]

[*Cochliodus acutus* McCoy 1855]

Deltoptychius armigerus (Traquair) 1888

Family Cochliodontidae Owen 1867

コクリオドンタス科

Strophodus magnus Agassiz

7169

- Family Chimaeridae Rafinesque 1815
 Genus *Similihariotta* Zangerl 1979
Similihariotta dabasinskasi Zangerl 1979
- Subclass Elasmobranchii Bonaparte 1838
 Order Euselachii Hay 1902
 Superfamily Ctenacanthoidea Zangerl 1981
 Family Ctenacanthidae Dean 1909
Orthacodus sp.
 7186
Ctenacanthus=*Cladodus* sp.
 7049, 7058, 7078, 7085-1, 7086, 7087, 7089, 7096, 7099, 7102,
 7103, 7106, 7107, 7144, 7150, 7151, 7153, 7157, 7161, 7162,
 7163, 7164, 7173, 7174, 7185, 7200, 7206-4, 7217, 7220, 7235,
 7242, 9202, 9206, 9209, 9211, 9215, 9217, 9220, 9226, 9243,
 9247, 9252, 9254, 9257, 9262, 9266, 9278, 9283, 9300, 9301,
 9306
Cladodus elegans Newberry
 7084, 7110
 Genus *Ctenacanthus* Agassiz 1835
 [*Eunemacanthus* St. John and Worthen 1883]
Ctenacanthus major Agassiz 1835 Type species
 Genus *Goodrichthys* Moy-Thomas 1951
 [*Moythomasina* Fowler 1959]
Goodrichia (preocc.) *eskdalensis* Moy-Thomas 1936
 Genus *Cratoselache* Woodward 1924
Cratoselache pruvosti Woodward 1924
- Family Bandringidae Zangerl 1969
Bandringa rayi Zangerl 1969
- Family Phoeodontidae Williams 1979
 Genus *Phoeodus* St. John and Worthen 1875
Phoeodus sophiae St. John and Worthen 1875
 [*Bathycheilodus* St. John and Worthen 1875]
 [*Pristicladodus sprigeri* St. John and Worthen 1875]
Phoeodontid n.gen. & n.sp. Williams 1979
 Ctenacanthoidae incertae sedis
 Genus *Carinacanthus* Bryant 1934 [Hybodontid?]
Carinacanthus jepseni Bryant 1934
Sphenacanthus serrulatus Agassiz 1837 ?
Acondylacanthus St. John and Worthen 1875
Acondylacanthus gracilis (see above)
Anaclitacanthus St. John and Worthen 1875
Anaclitacanthus semicostatus (see above)
 Genus *Asteroptychius* McCoy 1848
Asteroptychius semiornatus McCoy 1848
- Superfamily Hybodontoidea Zangerl 1981
Moyacanthus thomasi n.gen. & n.sp. Zangerl 1981
 [*Petrodus patelliformis* McCoy 1848 (in part)]

- 7121, 7122, 7123, 7124, 7125, 7149, 7156, 7166, 7168, 7177,
7178, 7184, 7194, 7205, 7244, 9277
- Genus *Tristychius* Agassiz 1837
Tristychius arcuatus Agassiz 1837
- Genus *Onychoselache* Dick 1978
Onychoselache traquairi Dick 1978
- Genus *Dabascanthus* Zangerl 1979
Dabascanthus inskasi Zangerl 1979
- Genus *Trichorhipis* Zangerl 1973
Trichorhipis praecursor Zangerl 1973
- Genus *Wodnika* Münster 1843
Wodnika striatula Münster 1843
[Radamas macrocephalus Münster 1843]
- Genus *Arctacanthus* Nielsen
Arctacanthus uncinatus Nielsen 1932
- Superfamily Protacrodontidae Zangerl 1981
[Tamiobatidae Glikman 1964]
- Genus *Protacrodus* Jaekel 1921
Protacrodus vetustus Jaekel 1921
- Genus *Holmesella* Gunnell 1931
Holmesella quadrata Gunnell 1931
- Order Desmidontida Zangerl 1981 デスミオダス目
- Genus *Desmiodus* St. John and Worthen 1875
Desmiodus tumidus St. John and Worthen 1875
- Genus *Heteropetalus* Lund 1977
Heteropetalus elegantulus Lund 1977
- Order Xenacanthida Glikman 1964 クセナカンタス目
- Family Diplodoselachidae Dick (in Mss.) ディプロドセラケ科
- Family Xenacanthidae Fritsch 1889 クセナカンタス科
- Genus *Orthacanthus* Agassiz 1843
Orthacanthus sp.
7039, 7057, 7302, 9236, 9298
[Diplodus Agassiz 1843]
[Compsacanthus Newberry 1856]
[Dittodus Owen 1867]=*Pleuracanthus* or *Xenacanthus*
Dittodus sp.
7237
Orthacanthus cylindricus Agassiz 1843
- Genus *Pleuracanthus* (preocc.) Agassiz 1837
Pleuracanthus texensis
9296, 9297, 9299, 9302, 9303
Pleuracanthus sp.
7206—5, 9304
Pleuracanthus laevis Agassiz 1837 may be *Pleuracanthus*
9308
- Genus *Xenacanthus* Beyrich 1848

Orthacanthus decheni Goldfuss 1847
Xenacanthidae incertae sedis
Xenacanthus compressus (Newberry)
7148, 7189, 7223

Xenacanthus sp.
7193, 9307

Genus *Triodus* Jordan 1849
Triodus sessilis Jordan 1849
Genus *Diacranodus* Garman 1885
Didymodus texensis Cope Type species
Genus *Bransonella* Harlton 1933
Bransonella tridentata Harlton 1933
Genus *Anodontacanthus* Davis 1881 (fin spine)
Anodontacanthus acutus Davis 1881 (see above)
Genus *Platyacanthus* Fritsch 1889 (fin spine)
Platyacanthus ventricosus Fritsch 1889
Genus *Phricanthus* Davis 1879 (fin spine)
Phricanthus biserialis Davis 1879

Order Cladoselachida Dean 1909

クラドセラケ目

Family Cladoselachidae Dean 1894

クラドセラケ科

Genus *Cladoselache* Dean 1894
[*Cladodus* Agassiz 1843, in part]
Cladoselache fylleri Newberry 1889
7030, 7031, 7032, 7033, 7034, 7035
Genus *Monocladodus* Claypole 1893
Monocladodus clarki Claypole 1893

Order Coronodontida Zangerl 1981

コロノダス目

Genus *Coronodus* Bryant 1923
Coronodus reimanni Bryant 1923
Genus *Diademodus* Harris 1951
[*Tiarodontus* Whitley 1953]
Diademodus hydei Harris 1951

Order Symmoriida Zangerl 1981

シンモリウム目

[Aphetohyoidea Zangerl and Case 1976]

Family Symmoriidae Dean 1909

シンモリウム科

Genus *Cobelodus* Zangerl 1973
[*Styptobasis* Cope 1894]
Styptobasis aculeata Cope 1894 Type Species
7219 (*Cobelodus aculeatus* になっている) 1 属に数えた
Redescribed as *Cobelodus aculeatus* (Cope) in 1976 by
Zangerl and Case
Genus *Symmorium* Cope 1893
[*Cladodus* Agassiz 1843, in part]
Symmorium reniforme Cope 1893
Genus *Denaea* Pruvost 1922
Denaeaournieri Pruvost 1922

- Family Stethacanthidae Lund 1974 ステタカンタス科
Genus *Stethacanthus* Newberry 1889
[*Physonemus* McCoy 1848, in part]
Stethacanthus tumidus Newberry 1889
Physonemus altonensis St. John and Worthen Type sp.
Order Eugeneodontida Zangerl 1981 ユウゲネオダス目
[includes orders Edestida and Helicoprionida]
Superfamily Caseodontoidea Zangerl 1981
Family Caseodontidae Zangerl 1981 カセオドンタス科

Family Hybodontiformes ヒボードス科
Hybodius sp.
9305
Genus *Caseodus* Zangerl 1981
[*Orodus* Cope 1894, in part]
Caseodus basalis (Cope) 1894
7104, 7105, 7180, 7207, 7227
Caseodus sp.
7146, 7147, 9248
Caseodus eatoni Zangerl 1981
7218
Genus *Romerodus* Zangerl 1981
Romerodus orodontus Zangerl 1981
9294
Genus *Ornithoprion* Zangerl 1966
Ornithoprion hertwigi Zangerl 1966
7175
Genus *Fadenia* Nielsen 1932
Fadenia crenulata Nielsen 1932
Genus *Erikodus* Nielsen 1952
[*Agassizodus* in part]
Erikodus groenlandicus (Nielsen) 1932
Agassizodus groenlandicus Nielsen 1932

Family Eugeneodontidae Zangerl 1981 ユウゲネオダス科
Genus *Bobbodus* Zangerl 1981
Bobbodus schaefferi Zangerl 1981
Genus *Gilliodus* Zangerl 1981
Gilliodus orvillei Zangerl 1981
7158
Gilliodus peyeri Zangerl 1981
Genus *Eugeneodus* Zangerl 1981
Eugeneodus richardsoni Zangerl 1981
Family Caseodontoidea incertae sedis カセオドンタス亜目 科不明
Genus *Campodus* DeKoninck 1844
Campodus agassizianus DeKoninck 1844
Genus *Chiastodus* Trautschold 1879
Chiastodus obvallatus Trautschold 1879

Superfamily Edestoidea Hay 1930

エデスタス亜科

Family Agassizodontidae Zangerl 1981

アガッシゾダス科

Genus *Agassizodus* St. John and Worthen 1875

[*Lophodus* Newberry and Worthen 1870, in part]

Agassizodus variabilis (Newberry and Worthen)

7109, 7192, 7208

Genus *Toxoprion* Hay 1909

Type Species : *Edestus lecontei* Dean 1897

Genus *Sarcoprion* Nielsen 1952

Sarcoprion edax Nielsen 1932

Genus *Campyloprion* Eastman 1902

Campyloprion annectans Eastman 1902

Genus *Parahelicoprion* Karpinsky 1924

Type Species : *Helicoprion clerci* Karpinsky 1916

Genus *Helicoprion* Karpinsky 1899

Type Species : *Helicoprion bessonowi* Karpinsky 1899

Genus *Arpagodus* Trautschold 1879

Arpagodus rectangulus Trautschold 1879

Family Edestidae Jaekel 1899

エデスタス科

Genus *Syntomodus* Obruchev 1964

Syntomodus abbreviatus Obruchev 1964

Genus *Helicampodus* Branson 1935

Helicampodus kokeni Branson 1935

Genus *Parahelicampodus* Nielson 1952

Parahelicampodus spaercki Nielson 1952

Genus *Lestroodus* Obruchev 1953

Type Species : *Edestus newtoni* Woodward 1917

Genus *Edestus* Leidy 1855

Edestus vorax Leidy 1855

Edestus (Protopirata) crenulatus Hay

7181, 7182, 7183, 7195, 7201, 7245

Edestus sp.

7046-3, 7108, 7154, 7155

Order Orodontida Zangerl 1981

オローダス目

Family Orodontidae DeKoninck 1878

オローダス科

Genus *Orodus* Agassiz 1838

Orodus sp.

7017-1, 7023, 7036, 7044, 7065-2, 7076, 7077, 7095, 9200,
9201, 9203, 9210, 9213, 9218, 9223, 9232, 9238, 9246, 9258

Orodus cinctus Agassiz 1838

Orodus micropterygius Zangerl 1981

Orodus greggi Zangerl 1981

Genus *Lophodus* Romanovsky 1864 (preocc.)

Genus *Stamiobatis* sp.

7101

Genus *Mesodmodus* St. John and Worthen 1875

Mesodmodus exsculptus St. John and Worthen 1875

Genus *Leiodus* St. John and Worthen 1875
Leiodus calcaratus St. John and Worthen 1875

Order Petalodontida Zangerl 1981

ペタロダス目

Genus *Antliodus* Newberry and Worthen 1866
[*Chomatodus* Agassiz, in part]

Chomatodus sp.

7051, 7060, 7064, 7083, 7159, 7172, 7233, 7234, 9204, 9207,
9214, 9216, 9221, 9231, 9233, 9267, 9282

Antliodus mucronatus Newberry and Worthen 1866

Genus *Chomatodus* Agassiz 1838

[*Paleobatis* Leidy 1857]

[*Petalodus* Woodward 1889, in part]

Petalodus allegheniensis Leidy

7028, 7029, 7066, 7067, 7091, 7112, 7113, 7114, 7115, 7116,
7117, 7118, 7128, 7129, 7130, 7131, 7134, 7135, 7136, 7141,
7142, 7143, 7145, 7187, 7188, 7203, 7209, 7211, 7230, 9241,
9264, 9268, 9289

Petalodus sp.

7206—2, 9208, 9249

Chomatodus linearis Agassiz 1838

Genus *Ctenoptychius* Agassiz 1838

Ctenoptychius sp.

7027, 7248, 9244, 9250, 9275

Ctenoptychius semicircularis

7171, 7176, 7214, 9281

Ctenoptychius apicalis Agassiz 1838

7119, 7138, 9253, 9256, 9265

Genus *Fissodus* St. John and Worthen 1875

Fissodus sp.

7224, 7232, 9290

Fissodus bifidus St. John and Worthen 1875

Genus *Glyphanodus* Davis 1883

Glyphanodus tenuis Davis 1883

Genus *Harpacodus* Davis 1881

Type Species: *Petalodus dentatus* Owen 1845

Genus *Janassa* Münster 1839

Janassa sp.

7206—3, 9251

Type Species: *Trilobites bituminosus* Schlotheim 1820

[*Trilobites* Schlotheim 1820]

Janassa bituminosa (Schlotheim)

7204, 7213, 9260, 9263, 9280, 9286

Genus *Lisgodus* St. John and Worthen 1875

Lisgodus curtus St. John and Worthen 1875

Genus *Paracymatodus* Bogoliubov 1914

[*Cymatodus* Trautschold 1879]

Cymatodus plicatulus Trautschold 1879

?Family Petalodontidae

ペタロダス科

Newberry and Worthen 1866

undescribed gen. and sp.

9295

Genus *Petalodus* Owen 1845

[*Ctenopetalus* Davis 1881]

Type Species:*Chomatodus acuminatus* Agassiz 1838

Genus *Petalorhynchus* Newberry and Worthen 1866

Type Species:*Petalodus psittacinus* McCoy 1855

Genus *Polyrhizodus* McCoy 1848

Polyrhizodus magnus McCoy 1848

Genus *Serratodus* DeKoninck 1878

Serratodus elegans DeKoninck 1878

Genus *Tanaodus* St. John and Worthen 1875

Tanaodus bellicinctus St. John and Worthen 1875

Family Pristodontidae Woodward 1889

プリストダス科

Genus *Pristodus* Davis 1883

Pristodus falcatus Davis 1883

Genus *Megactenopetalus* David 1944

Megactenopetalus kaibabanus David 1944

Genus *Peripristis* St. John 1970

7027, 7119, 7138, 7171, 7176, 7214, 7248, 9253, 9256, 9265,
9281

[*Ctenoptychius* Newberry and Worthen 1866, in part]

Type Species:*Ctenoptychius semicircularis* Newberry and Worthen

The following may not be a member of Pristodontidae:

Petalodopsis tripartitis Davis 1883

Order Squatinactida Zangerl 1981

スクアティナクティス目

Genus *Squatinactis* Lund and Zangerl 1974

Squatinactis caudispinatus Lund and Zangerl 1974

The following is as isolated neurocranium:

Tamiobatis vetustus Eastman 1897

Order, Family Incertae sedis

Petrodus patelliformis McCoy

7121, 7122, 7123, 7124, 7125, 7126, 7127, 7149, 7156, 7166,
7167, 7168, 7177, 7178, 7184, 7194-2, 7202-1, 7205, 7243,
7244, 9277

Petrodus sp.

9235

Listracanthus hystrix Newberry and Worthen

7111, 7152, 7165, 7179, 7190, 7191, 7194-1, 7238, 7239, 9270,
9293

Subclass Elasmobranchii Incertae ordinis

板鰐魚亜綱 (目不詳)

Lepracanthus colei Owen

9291

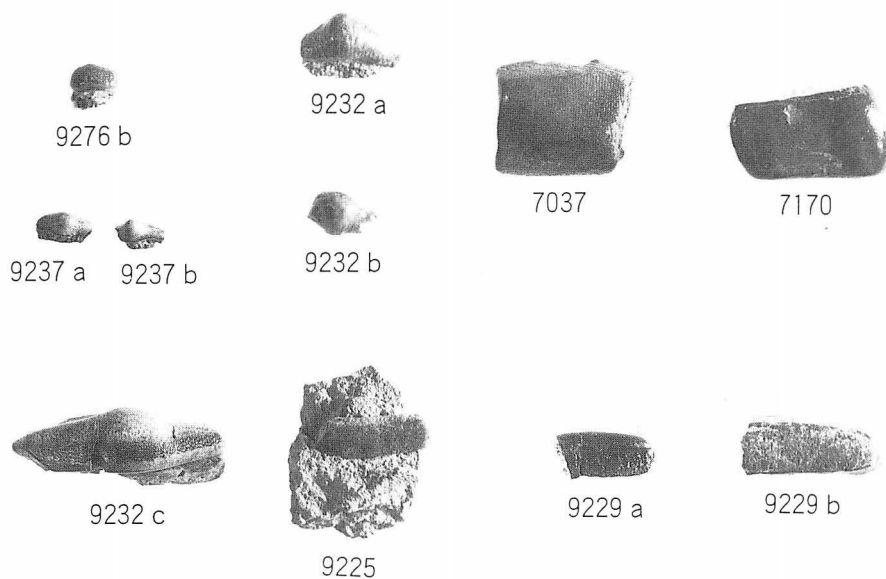
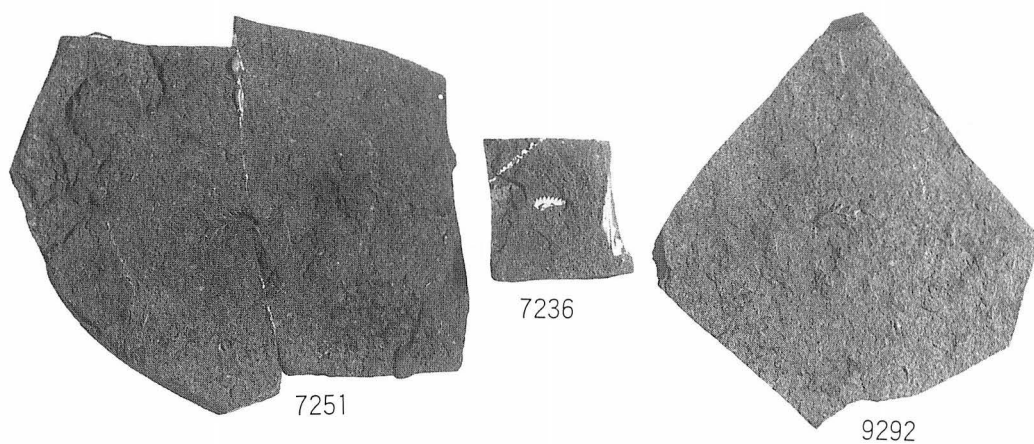
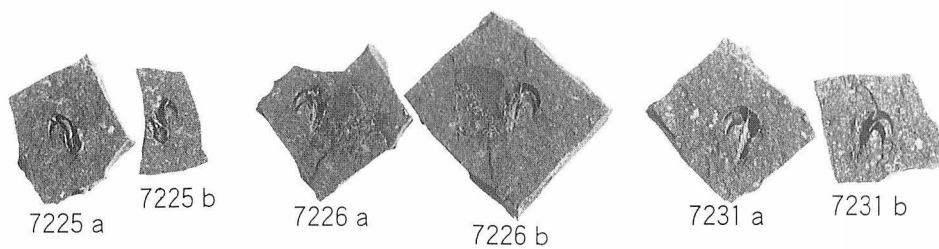


Plate 6 ($\times 0.6$)



7085—1 L
—2 R



7079



7088



7212



7197



9205



9242 a



9242 b



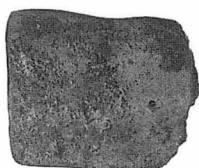
7055 a



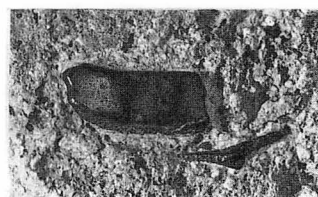
7055 b



7055 c



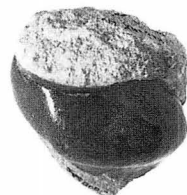
7098



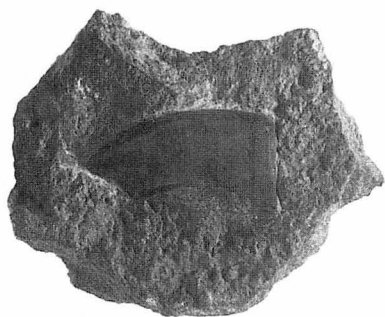
7017—1 L
—2 U



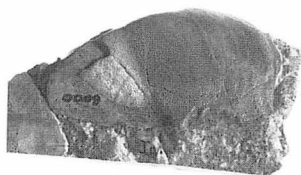
7063



9276 a



7022



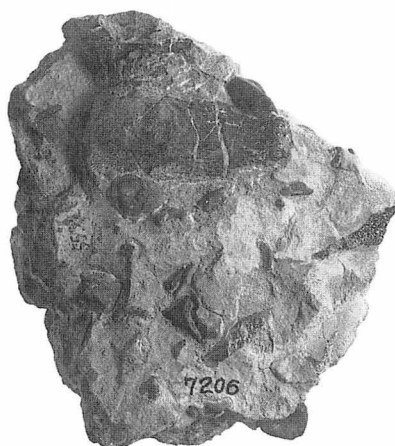
7024



7042



7215



7206- 1 ~ - 5



7043



7139



7045



7081 a



7132



7137



7081 b



7133 a



7140



7056



7133 b



7196



7094



7050



7047

Plate 8 ($\times 1.0$)



9222 a



9222 b



9219



9212



9227



9240



9259 a



9259 b



9259 c



9261



9269



9271



9272



9273 a



9273 b



9279 a



9279 b



9284 a



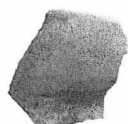
9284 b



9284 c



9287 a



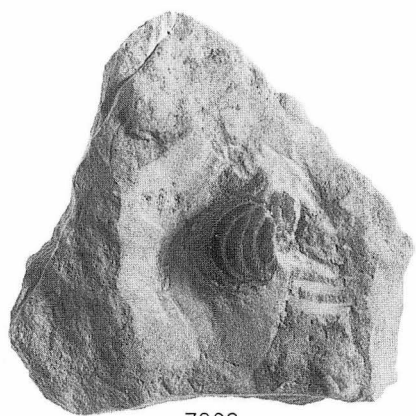
9287 b



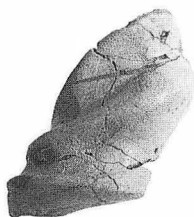
9287 c



9284 d



7062



7216



7120 a



7120 b



7120 c



7120 d



7120 e



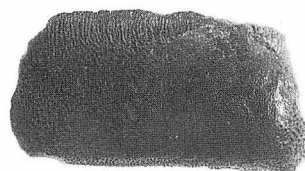
7229 a



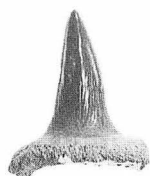
7229 b



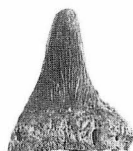
7229 c



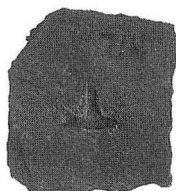
7169



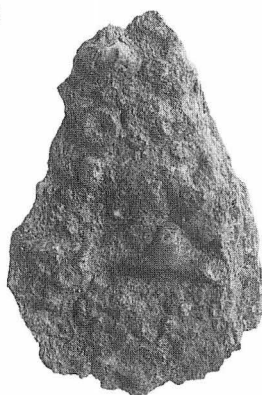
7186



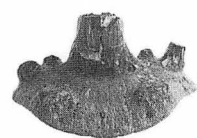
7058



7185



7089



7173

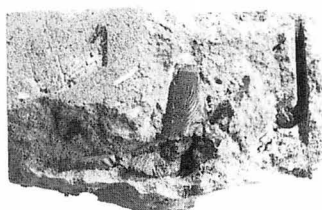


7174

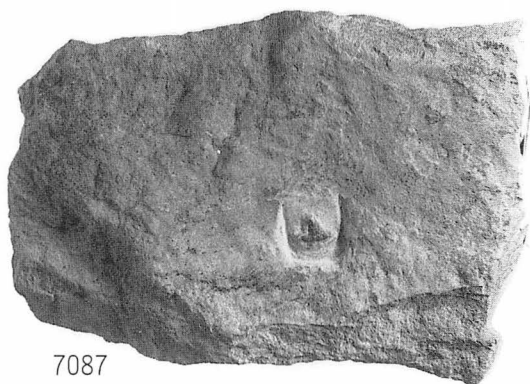
Plate 10 ($\times 0.8$)



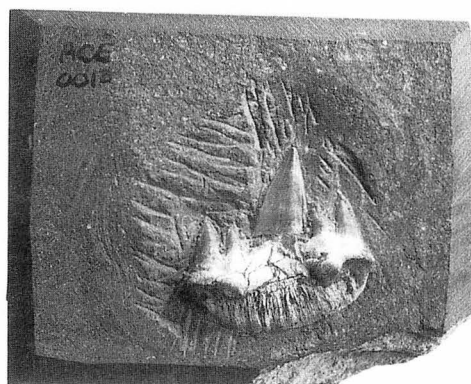
7048



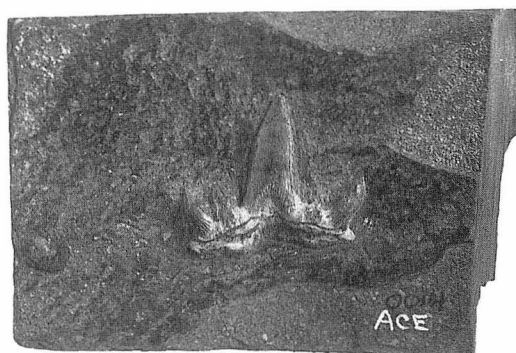
7086



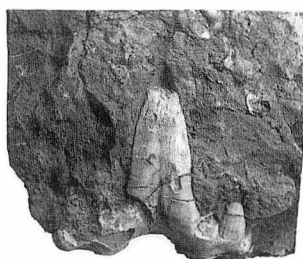
7087



7102



7103



7106



7151



7099 a



7099 b



7144



7107



9300



9278 a



9278 b



9202 a



9202 b



9211 a



9211 b



9211 c



9211 d



9209 a



9209 b



9209 c



9209 d



9302 a



9302 b



9302 c



9302 d



9302 e



9302 f



9302 g



9302 h



9302 i



9302 j



9302 k



9302 l



9302 m



9302 n



9302 o



9303 a



9303 b



9303 c



9303 d



9303 e



9303 f



9303 g



9303 h



9303 i



9303 j



9303 k

Plate 12 (×0.8)

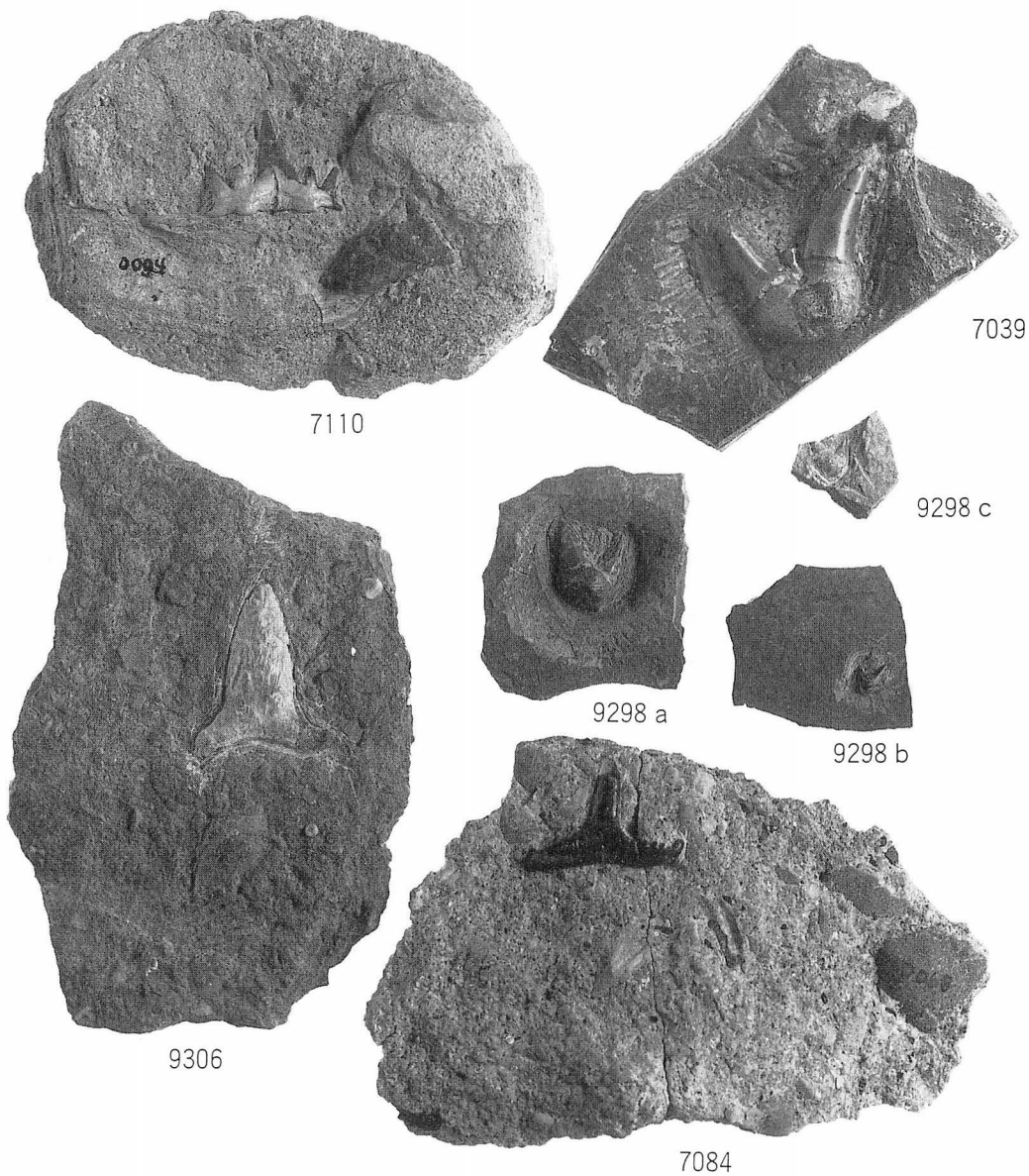


Plate 13 ($\times 1.1$)



9252 a



9257



9262



9254



9252 b



9296 a



9296 b



9296 c



9296 d



9296 e



9296 f



9296 g



9296 h



9296 i



9296 j



9297 a



9297 b



9299 a



9299 b



9299 c



9299 d



9299 e



9299 f



9299 g



9299 h

Plate 14 ($\times 0.9$)



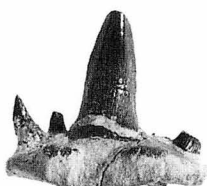
7163



7200



7150 a



7162



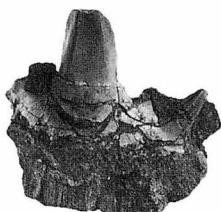
7157



7150 b



7164



7161



9247 a



9247 b



9217 a



9217 b



9217 c



9226



9266



9217 d



9217 e



9215 a



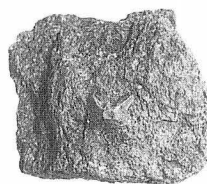
9215 b



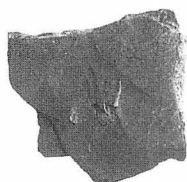
9215 c



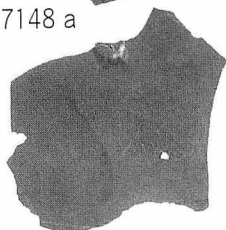
9215 d



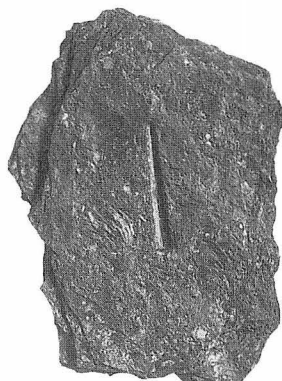
7193 c



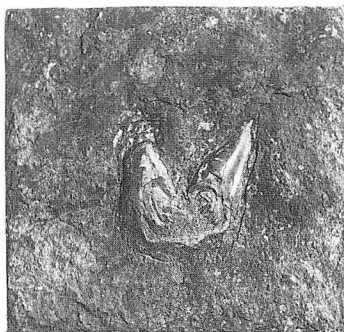
7148 a



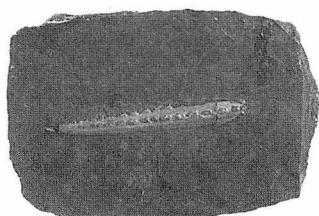
7148 b



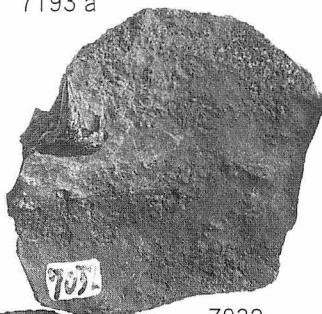
7193 a



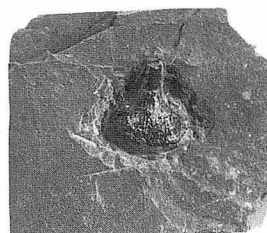
7193 b



9307



7032



7035



7223 a



7223 b

Plate 16 ($\times 0.9$)



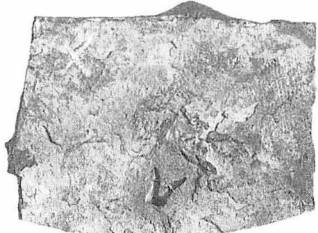
7223 c



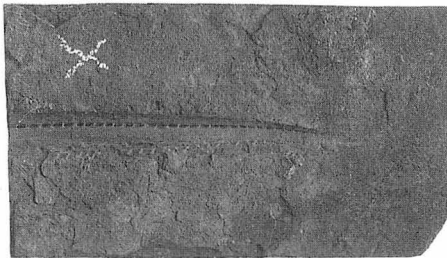
7189 d



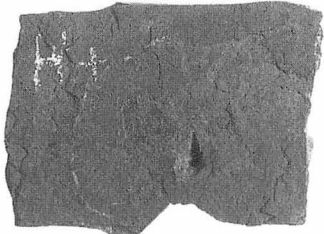
7189 e



7189 c



7189 a



7189 b



7031 a



7031 b



7031 c



7031 d



7034 a



7031 e



7031 f



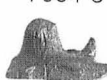
7034 b



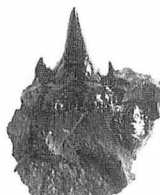
7034 c



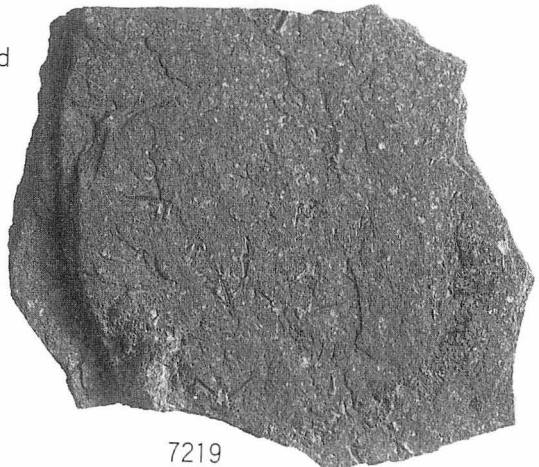
7034 d



7034 e

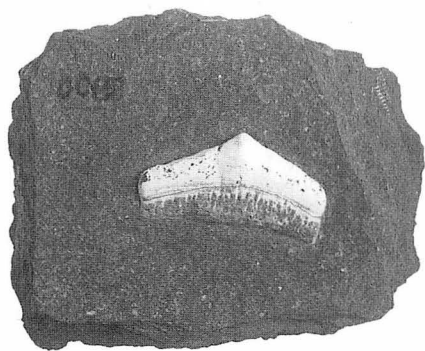


7030

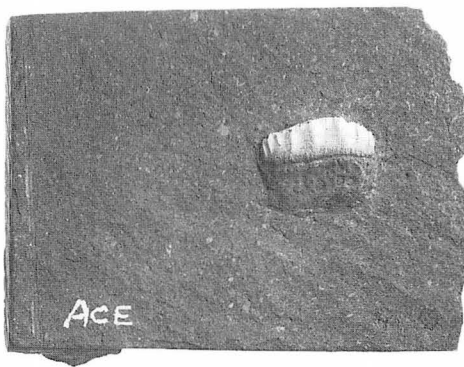


7219

Plate 17 ($\times 0.9$)



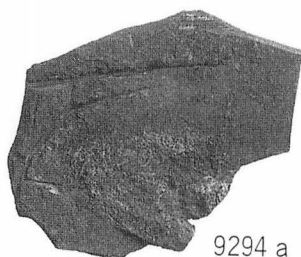
7104



7105



7207



9294 a



7227



9248



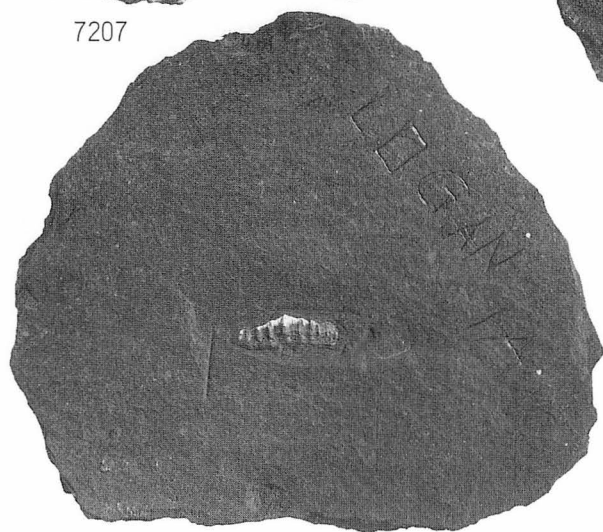
9294 b



7175



7146



7218



7158



7147



7180 a



7180 b

Plate 18 (×1.0)

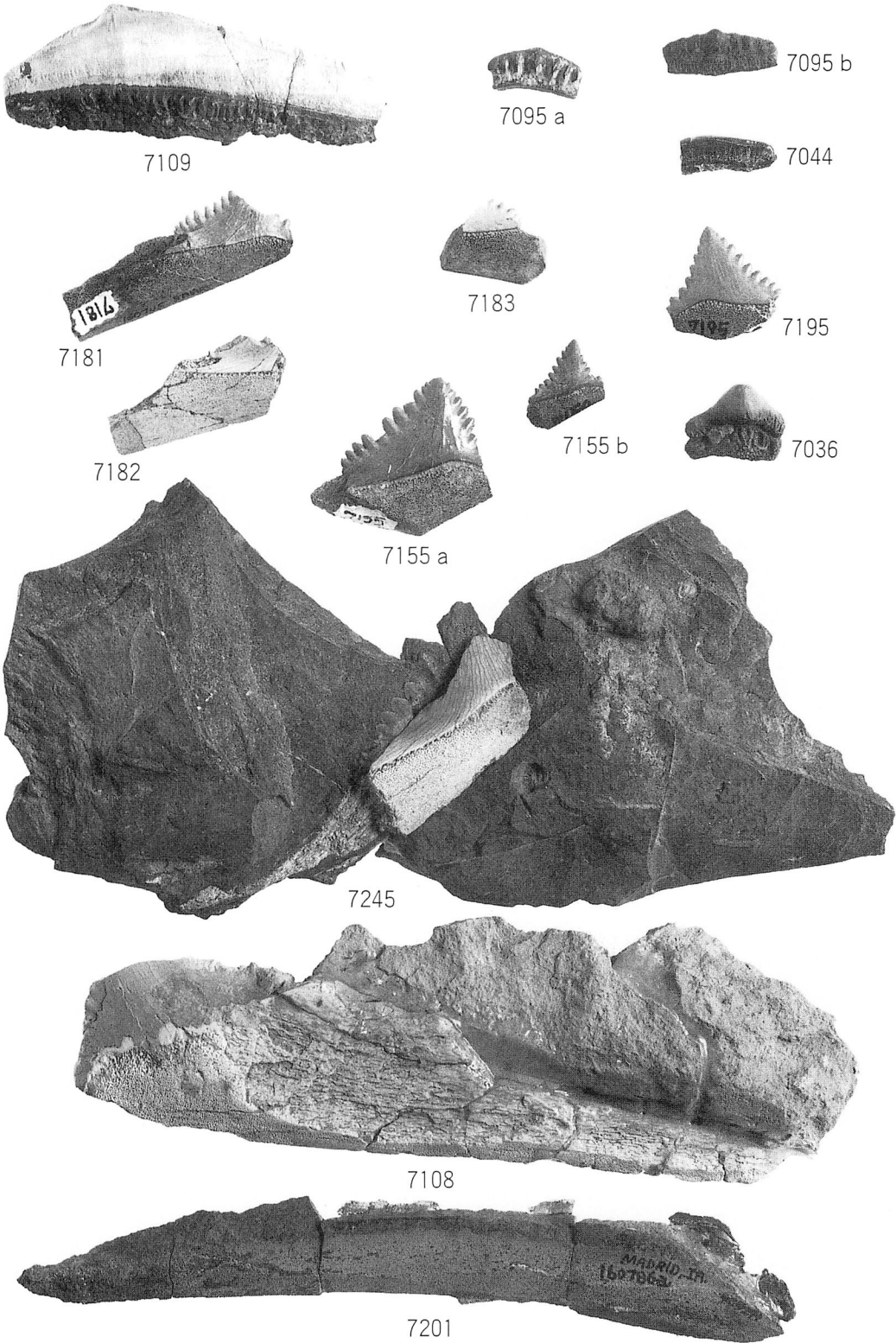


Plate 19 ($\times 1.8$)



9200



9206 a



9206 b



9206 c



9210 a



9210 b



9210 c



9210 d



9218



9213 a



9213 b



9213 c



9213 d



9201



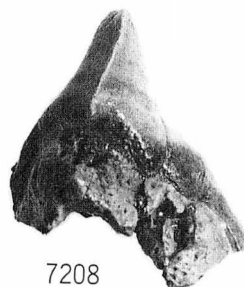
9246



9258



9203 a



7208



9223



9203 b

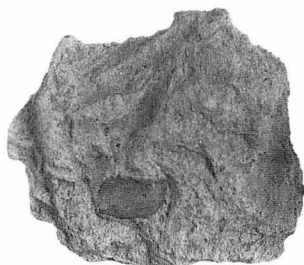
Plate 20 ($\times 0.9$)



7101



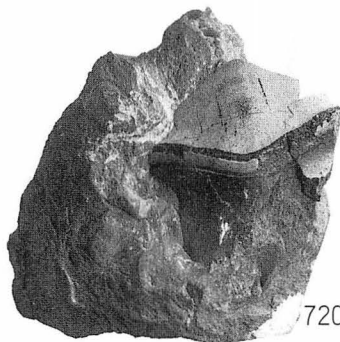
7060



7159



7083



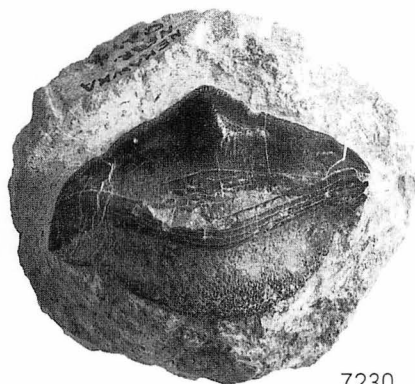
7209 a



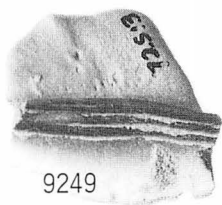
7066



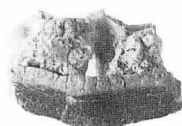
7209 b



7230



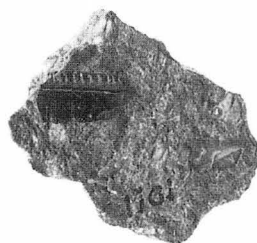
9249



9214 c



9221



9231



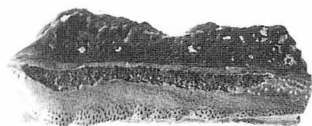
9208



7172



9233



9234



9216 a



9216 b



9267



9214 a



9214 b



9207 a



9207 b



9207 c



9282 a



9282 b



9282 c



9282 d



9282 e



9282 f



9282 g



9282 h



7233



7064 a



7064 b

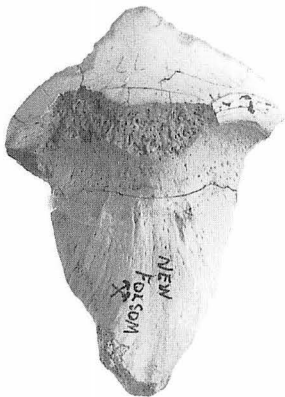
Plate 22 (×1.0)



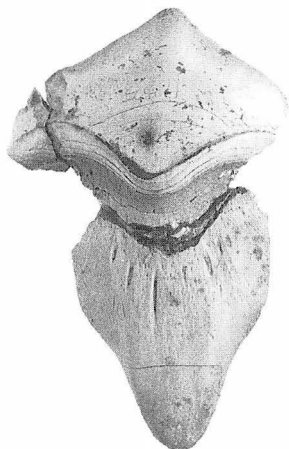
7113



7114



7117



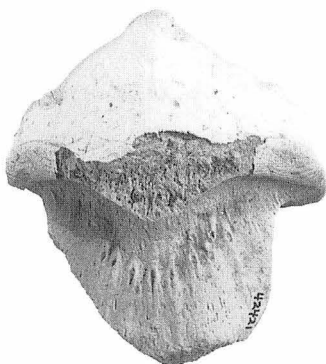
7115



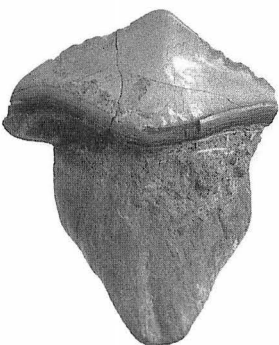
7112



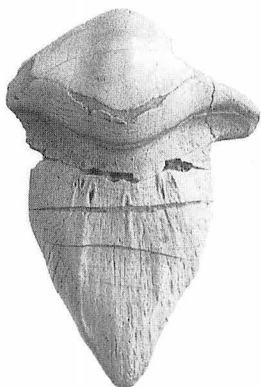
7136



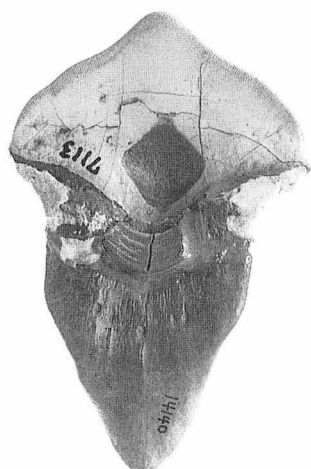
7145



7128



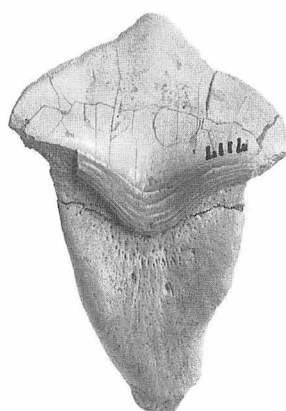
7116



7113



7114



7117



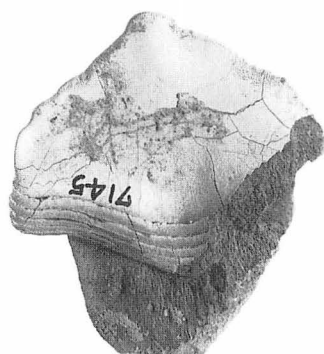
7115



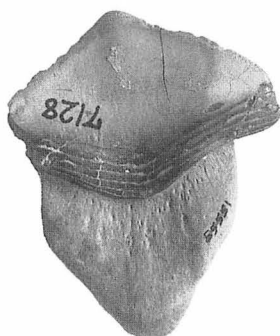
7112



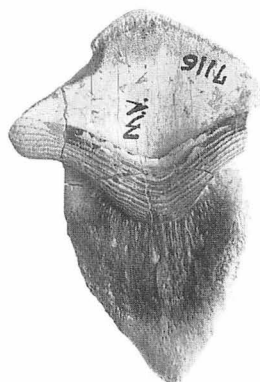
7136



7145

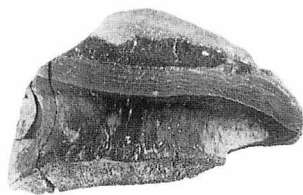


7128

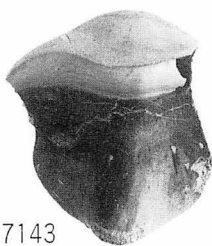


7116

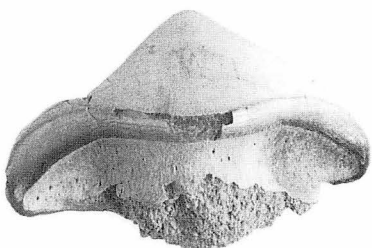
Plate 24 (×1.1)



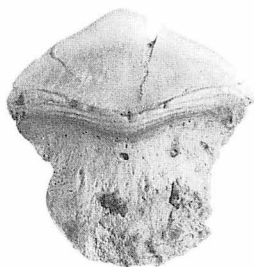
7135



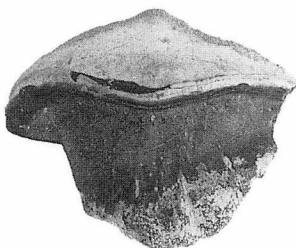
7143



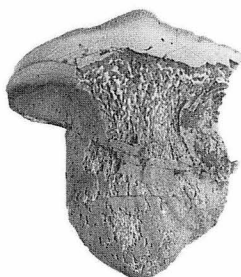
7118



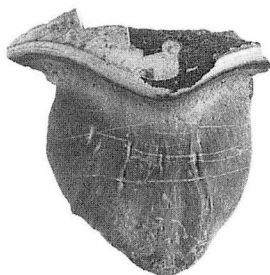
7129



7211



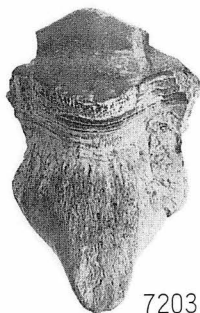
7130



7131



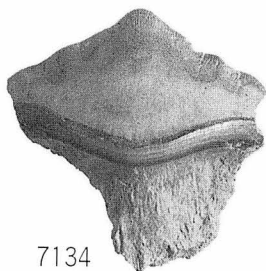
7203 a



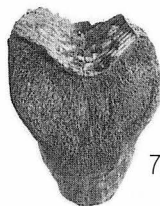
7203 b



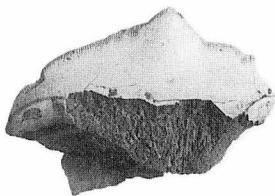
7029



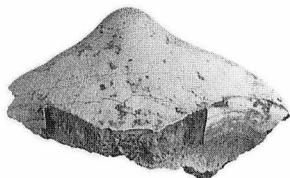
7134



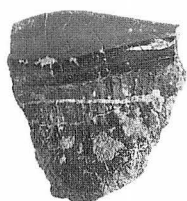
7203 c



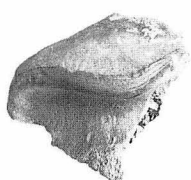
9268 a



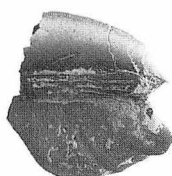
9268 b



7028



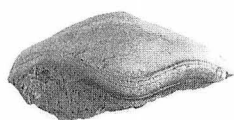
7141 a



7141 b



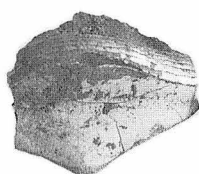
7067



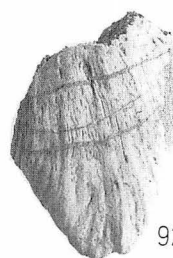
7142 a



7142 b



9264 a



9264 b



7187 a



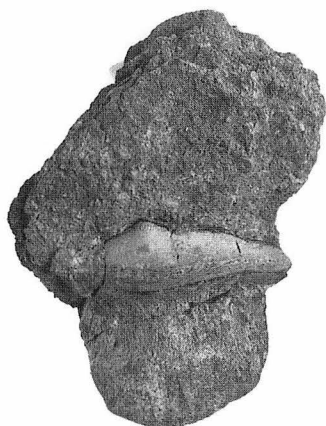
7187 b



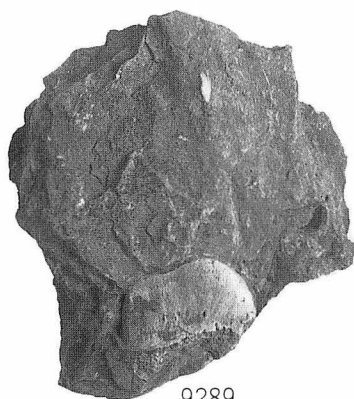
7188



9263



9241

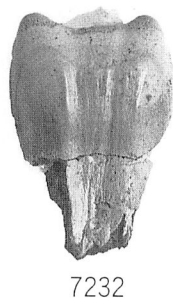
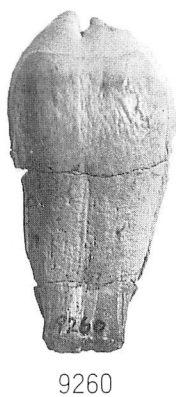
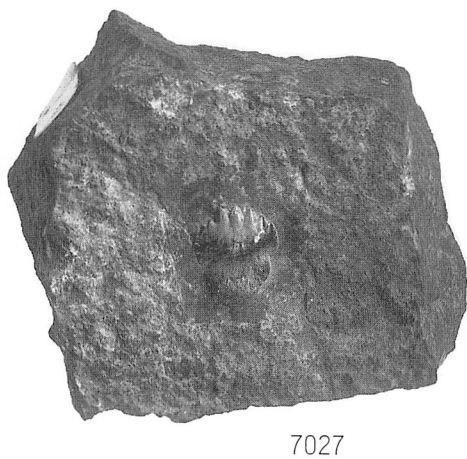
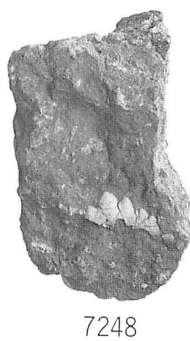
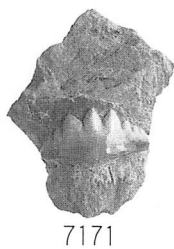
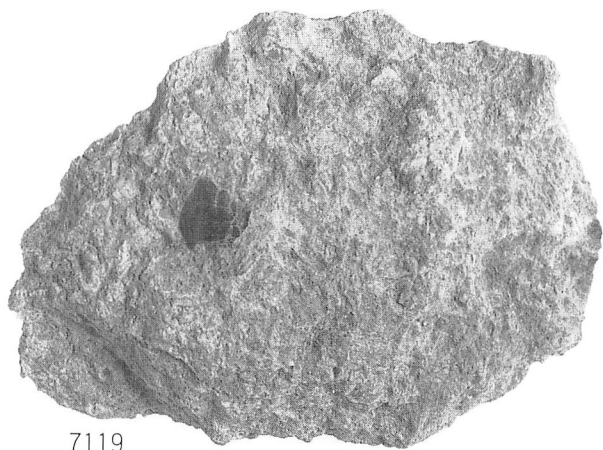


9289



7213

Plate 26 (×1.1)





9256 a



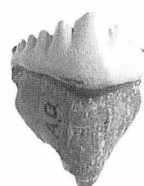
9256 b



9265



7224



7176



7138 a



7138 b



7138 c



7138 d



7138 e



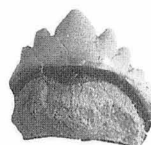
7138 f



7138 g



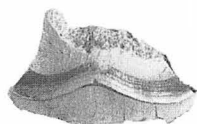
7138 h



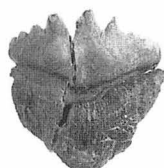
7138 i



7138 j



7138 k



7138 l



7138 m



7138 n



7138 o



9253 e



9253 d



9253 a



9253 b



9253 c



9281 c



9281 e



9281 b



9281 a



9281 d

Plate 28 ($\times 1.1$)



9256 a



9256 b



7224



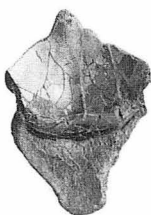
7176



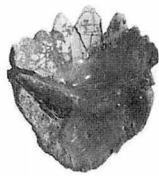
7138 a



7138 b



7138 c



7138 d



7138 e



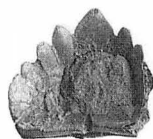
7138 f



7138 g



7138 h



7138 i



7138 j



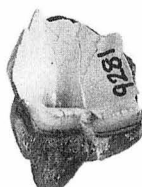
7138 k



7138 l



9281 a



9281 b



9281 c



9281 d



9253 a



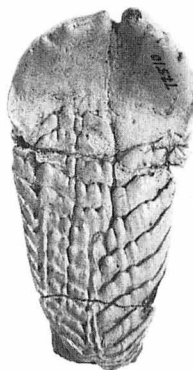
9253 b



9253 c



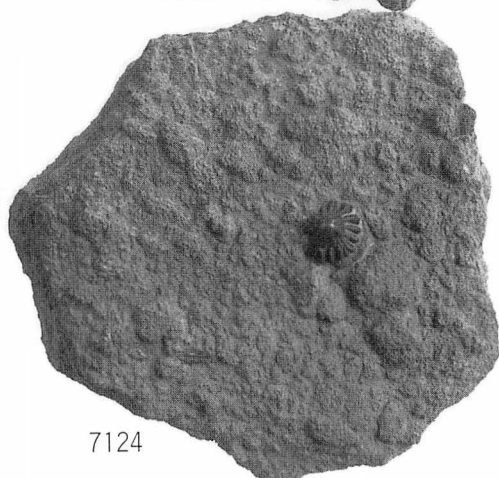
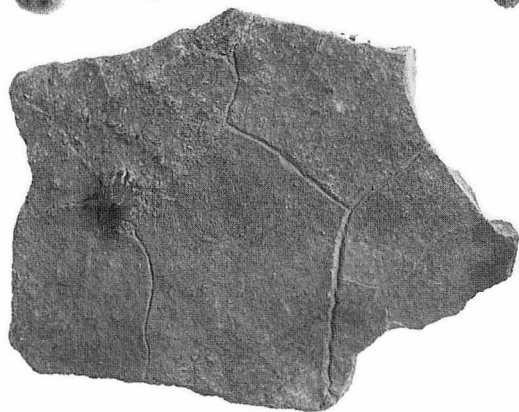
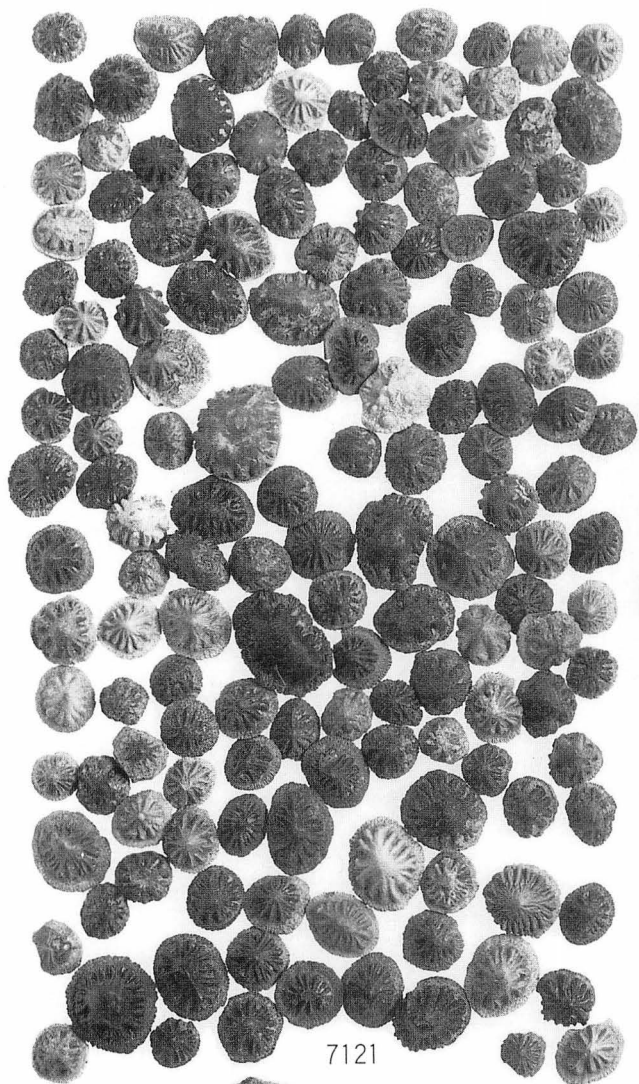
9253 d

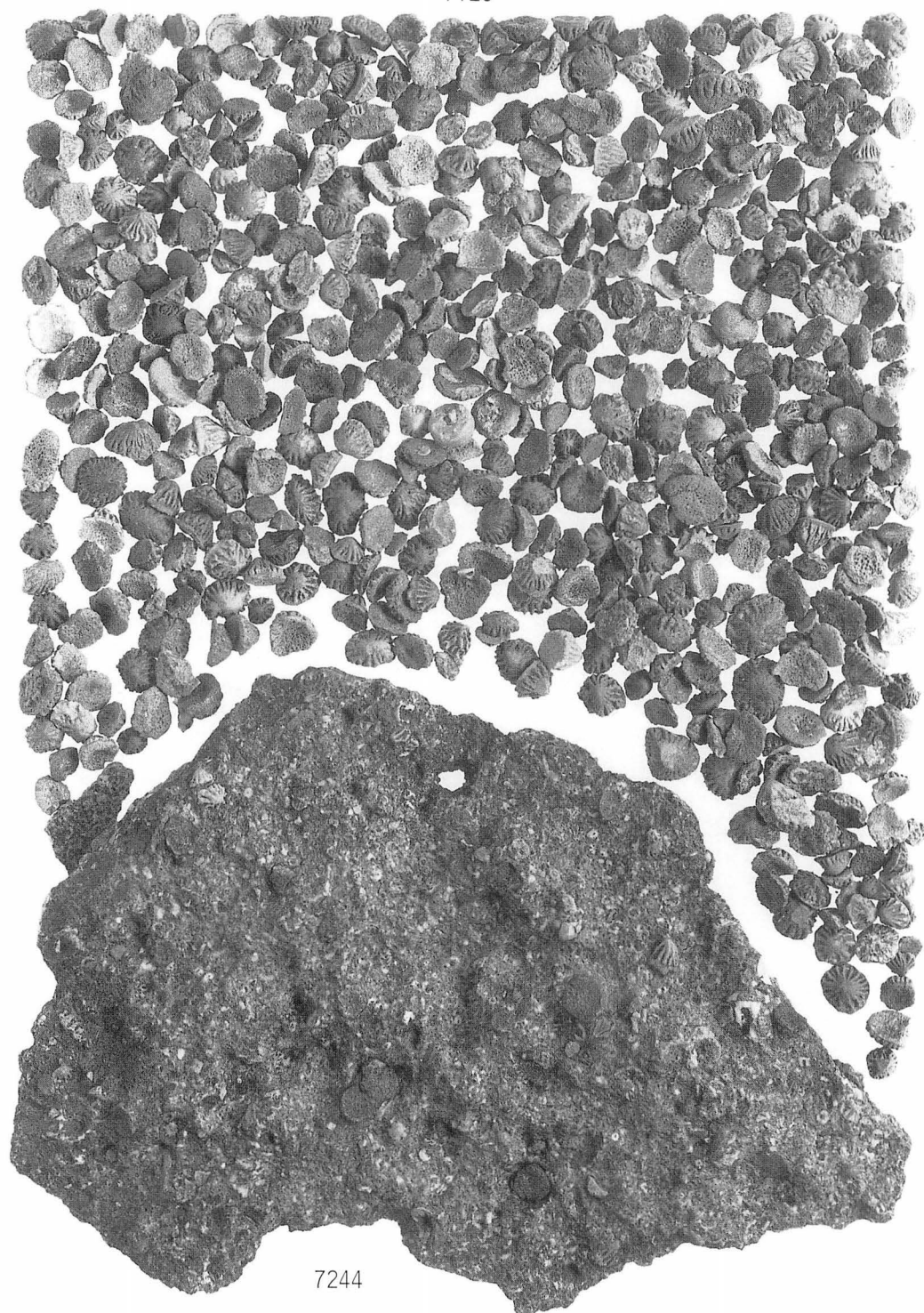


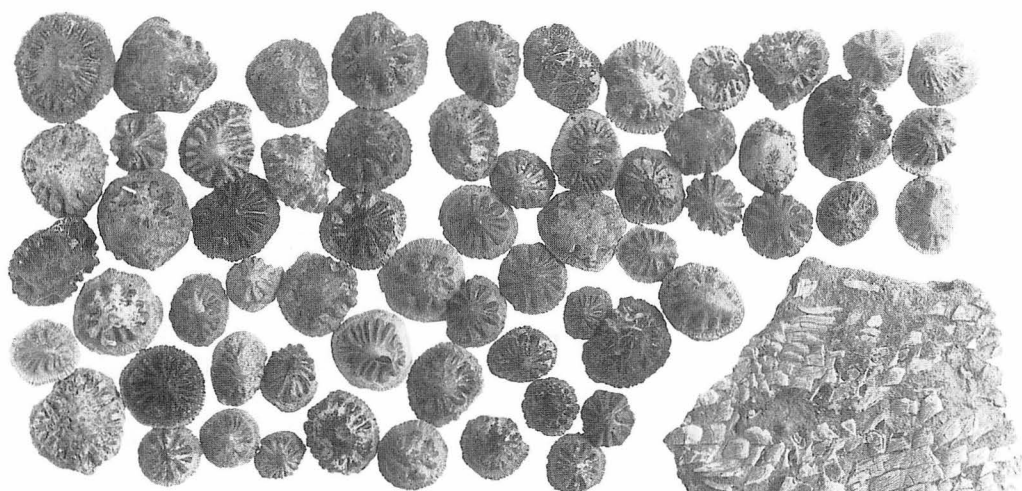
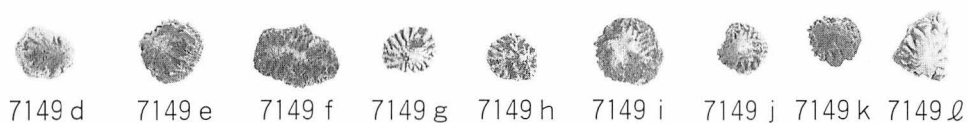
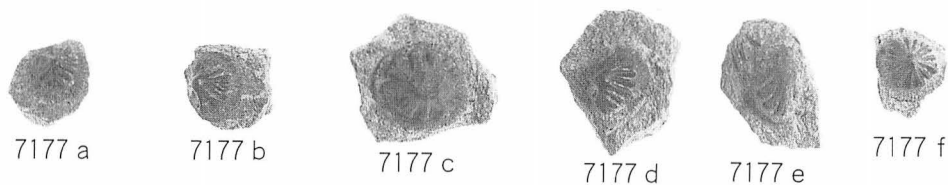
9260



7232

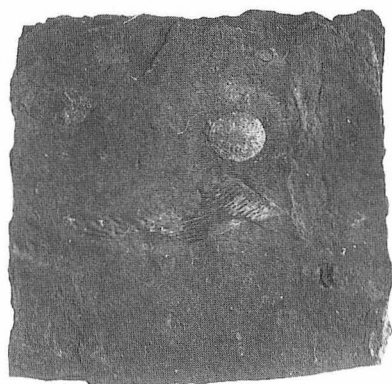




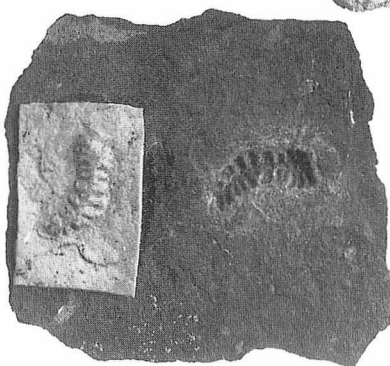


7125

7202



7194-1 L
- 2 U



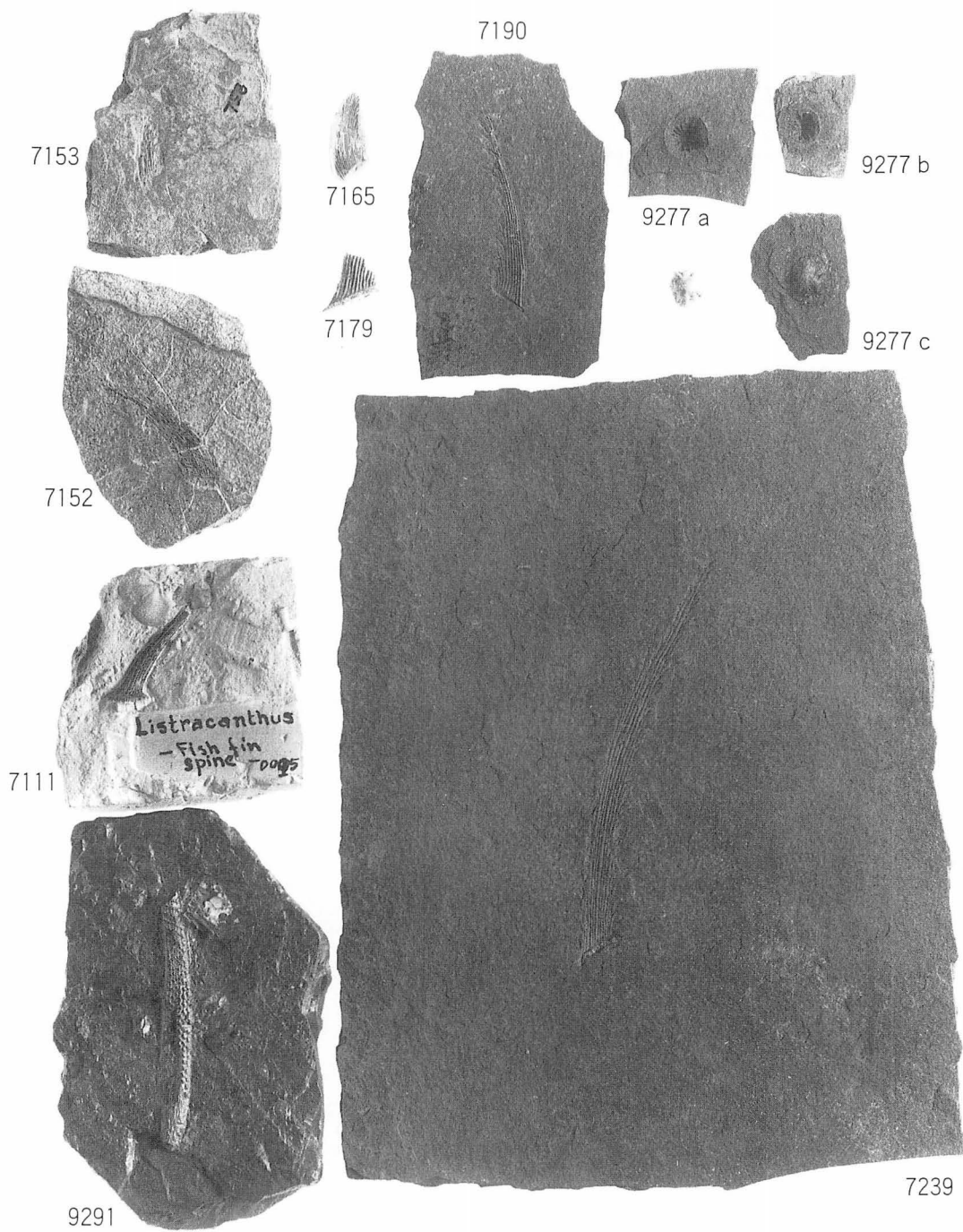
7156



7184

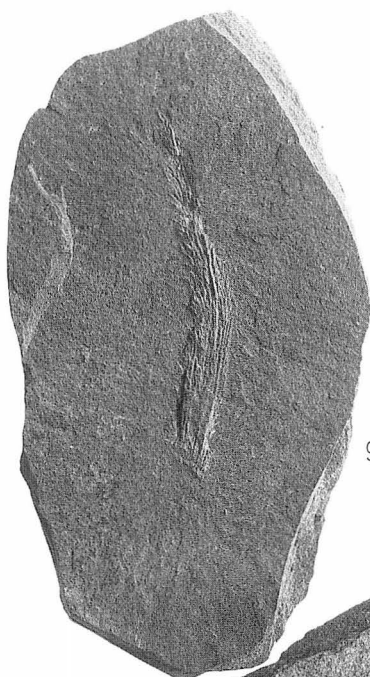
7205

Plate 32 ($\times 0.9$)

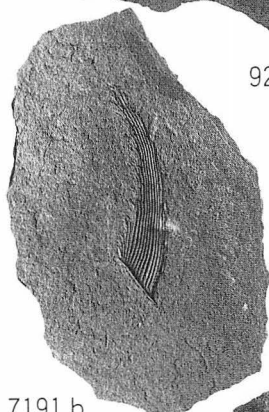




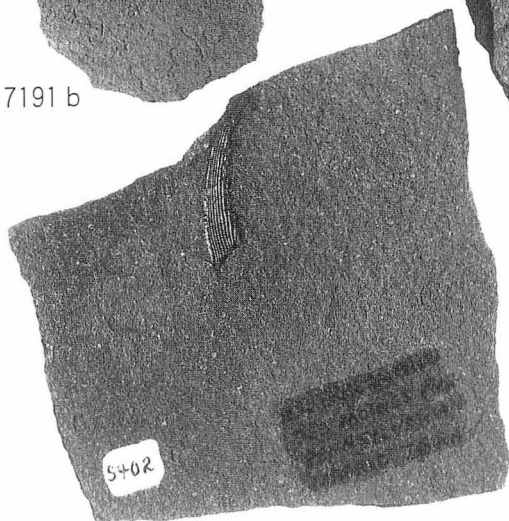
9293 a



9293 b



7191 b

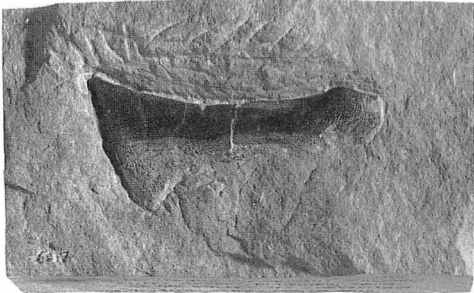


7191 a

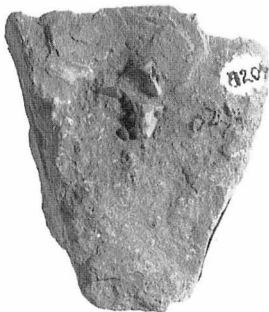


7238

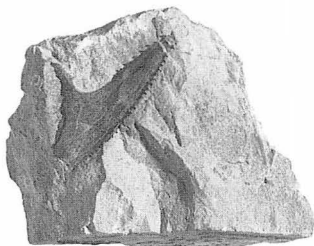
Plate 34 (×0.7)



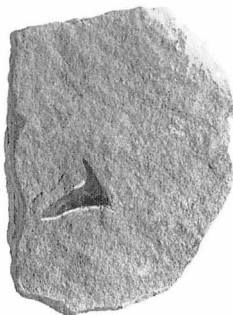
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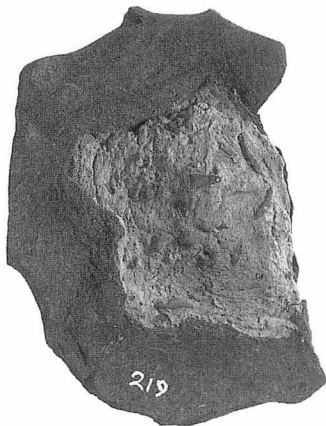
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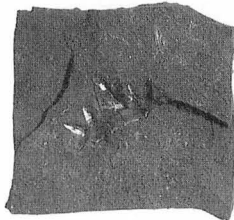
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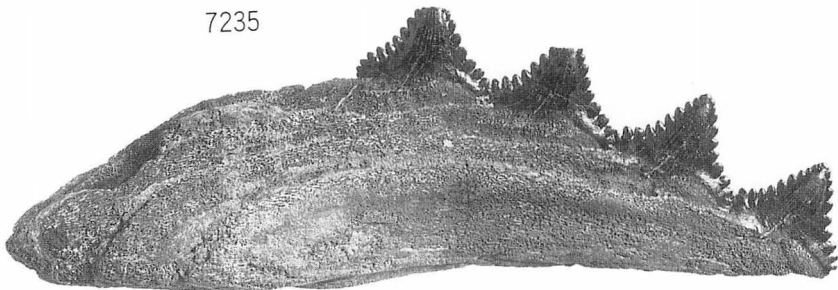
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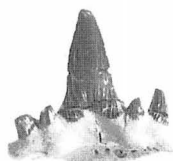
7235



7242



7154



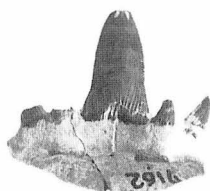
7163



7200



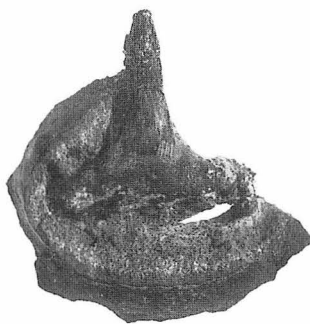
7150 a



7162



7150 b



7157



7161



7164



9247 a



9247 b



9217 a



9217 b



9217 c



9217 d

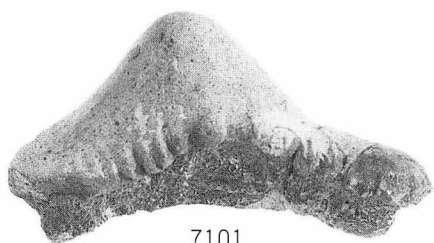


9217 e



9266

Plate 36 ($\times 0.8$)



7101



7180 a



7180 b



7170



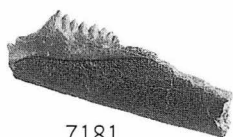
7187 a



7187 b



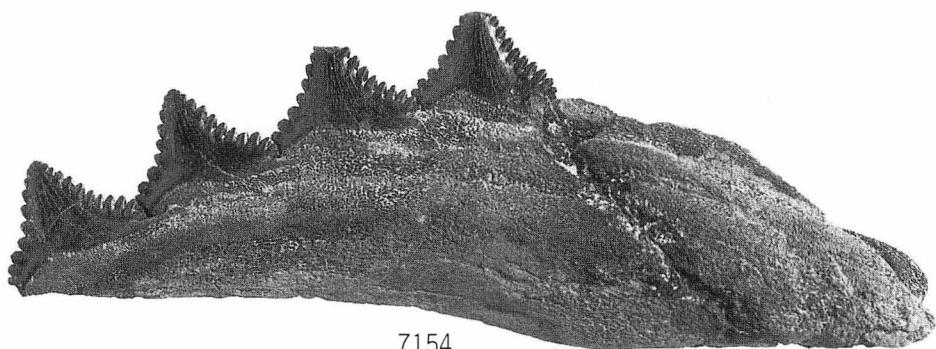
7195



7181



7030



7154

〈解 説〉

古生代軟骨魚類の Gerard R. Case コレクション

上野輝弥

(国立科学博物館)

Gerard R. Case氏が長い間に自分で収集し、蓄積してきた古生代の軟骨魚類のコレクションは、我が国随一の貴重な資料である。Case氏は軟骨魚類化石の専門家であるから、標本の産地、地層、時代などに関するデータも正確であると思われる。このようなコレクションを神奈川県立博物館が収蔵管理することになったのは、真に喜ばしく、意義深いことであり、今後の日本ならびにアジアにおける古生代軟骨魚類の研究に大いに貢献することになるであろう。

したがって、このCaseコレクションに、今後も機会あるごとに標本を収集、追加し、コレクションの成長に努力し、より充実したものへと育ててゆく必要がある。そうしないとコレクションの相対的な重要性が年とともに低下してしまう。その意味で博物館の責任は重いと言っ
てよいと思う。

古生代の軟骨魚類の分類学的研究は未だ完成の域に達しておらず、研究者達のコンセンサスの得られるような体系は未だ出現していない。

最も最近(1981)になってまとめられたのは、アメリカ合衆国のZangerl博士による古魚類学ハンドブック第3巻A、軟骨魚類1、古生代板鰐類(Gustav Fisher Verlag刊)である。CaseコレクションはこのZangerlの体系に従ってリストされている。

Zangerlの分類体系で問題として残されていることの一つにOrder(目)の名称がある。現生魚類の研究者達はこの30年ほどの間にいくつもの試行を経て、魚類の目の語尾をある属名+___iformesとすることに統一してきた。例えばコイ目はCypriniformes、ニシン目はClupeiformesといった形になる。これはソ連のBerg博士の提唱によるシステムで、Bergは化石魚類の目の語尾についても同じように取り扱ったのだが、古生代の化石の研究者にはこの間の事情が伝わらず、一時的に採用された___daの語尾を用いて現在に至っている。しかし将来は現生魚類と同様___iformesに統一されてゆくと思われる。

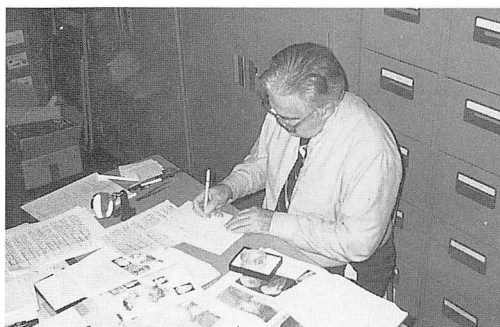


図1 神奈川県立博物館地学資料室で古生代軟骨魚類化石を整理中のCase氏

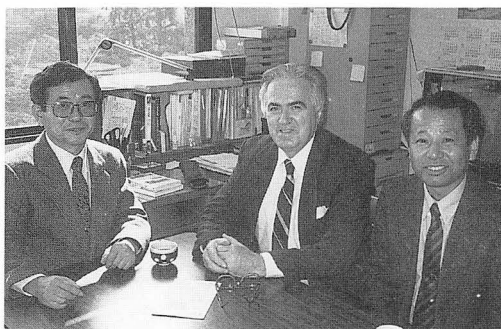


図2 筑波大学学校教育部真野研究室を訪ねたCase氏(中央)

Case氏はZangerl氏と共同論文を書いており、Zangerl氏の分類体系を用いているのはうなずけるが、Zangerlの体系では高次分類群にも多くの新しい名称が提唱されているので、これまでの体系になれている研究者はとまどわざるをえない場合があり、了承しておく必要がある。

軟骨魚類は古生代のデボン紀の中頃、約3億8千年前の地層から現れ始め、石炭紀、ペルム紀にかけて多種多様な形に進化する。多くの種類はペルム紀の終わりまでに絶滅してしまい、中生代になると新しい形のものと置きかわってしまう。

軟骨魚類はその名の如く骨格系が軟骨でできているので歯などの硬組織以外は化石になりにくい。古生代のクラドセラケやクセナカンタス類のように全身骨格が残っているものはきわめて稀である。したがってCaseコレクションの資料も大部分は歯や棘である。最近になって歯や棘だけでなく、魚の全体像がわかってきたものもあり、それらの復元図はZangerl (1981)に掲載されていて参考になる。しかし未だ全体像が不明のものも多い。ヘリコプリオン類やペタロダス類なども歯は多く出ているが魚体の全体像はわかっていない。今後の研究の進展が待たれる次第だが、それまでは歯や棘を見ながら科学的想像力を逞しくするほかはない。

いずれにせよ、Caseコレクションに含まれる標本はいろいろ工夫して、展示にも大いに利用していただきたいものである。

参考文献

Case, R. G. (1973). Fossil sharks: a pictorial review. Pp. 1—64, Publ. by R. G. Case, 129 Carlton Ave., Jersey City, New Jersey

Case, R. G. (1982). A Pictorial Guide to Fossils. Pp. 1—514, Publ. by Van Nostrand Reinhold Company. 135 West 50th Street, New York, N. Y.

Zangerl, R. (1981). Handbook of Paleoichthyology. vol. 3A
Chondrichthyes I, Pp. 1—115, Publ. by Gustav Fischer Verlag,
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Gerard Ramon Case さんと私

長谷川善和

(横浜国立大学)

Gerard Ramon Case さんの人柄とか学問的業績について申し述べるには、私はあまりにも Case さんの事を知らないので、極めて個人的な経験だけを記すことになってしまったことをはじめにおことわりしなくてはならない。

長野県南部にみられる中新世の富草層群はサメ類化石がたくさん出ることでは知られている。地元の中学校の帽章はサメの歯をモデルにしたものである。しかし、当地のサメ類の種類についてはそれほど明確ではなかった。1966年にこの地域の化石類をまとめるという話が出来た時、私も脊椎動物について手伝うことになった。この頃は比較標本も文献もほとんど日本になかったので、種の同定に悩まされたが、その頃 Case さんのことを知ったのである。二、三十種類かのサメ類標本を売っていただいたので、安心して仕事をする事ができたことを思い出す。同時に、クビナガリュウやモササウルス、鯨類の歯や脊椎骨も手に入れることができた。これらは後に、福島県いわき市や北海道産の化石を研究するのに随分役に立った。

10年ほど前に、本を出す計画があるので日本のパレオパラドキシアの写真を使いたい、という申し入れがあったので送ったところ、それは“A Pictorial Guide to Fossils”(1982)という分厚い本の中に使われたのである。中を開いて驚いたのは、以前に私の所に送られてきた標本の写真がいくつも載っていたことである。自分のところにあった標本を必要だという私に頒けてしまい、自分は写真をとっておくだけにしていたことになる。Case さんの物に対する考え方の一端を伺えると思う。

ワシントンのスミソニアン研究所の一つ、自然史博物館の古脊椎動物部門には彼の収集した相当数のサメ類、鯨類等の化石が寄贈されている。これは Case コレクションと呼ばれている。Case さんは収集家ではあるが、博物館などに寄贈したりする事も多いのである。今回、神奈川県立博物館に譲渡された標本は彼の最後の標本類であると思う。文献類のほとんどは私の所に寄贈していただいた。

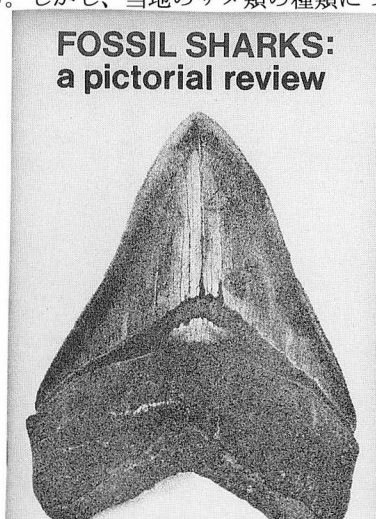


図1 Case氏の編集したサメ類化石の案内書(1973)

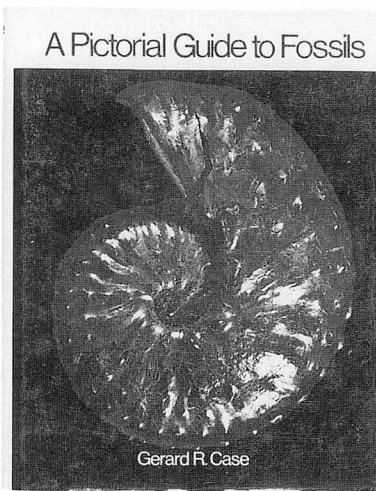


図2 Case氏の分厚い図鑑式化石の著書の表紙(1982)

Caseさんは時には論文を書いたり、本を作ったりとたいへん熱心な人ではあるが、今、何々の論文を書いているという話があったかと思うと、標本を譲ってもよいというので、研究に困らないかと思っていたら、実は本職は全く化石と縁の無い建築デザインをやっているというので、びっくりしたことである。役に立つということになると喜んで譲って下さるという人柄である。

この度県立博物館に譲渡されたCaseコレクションは、いろいろな意味で重要である。とくに、古生代の比較標本は日本国内ではほとんど無いに等しい状況であるから、今後の研究を進める上では大変に役に立つことになる。

こうしたプロに近い専門家が長い時間を掛けて収集したコレクションが博物館に保管され、整理されたものがこのような形で館の出版物として公開され、所蔵品の内容が世に出ることは大変喜ばしいことであり、部外者として関係各位に敬意を表す次第である。



図3 New JerseyのCase氏宅に収められていたサメ類化石（1987年）

標本目録索引

INDEX

(No. は神奈川県立博物館地学標本番号)

(NAME)	(No.)	(NAME)	(No.)
<i>Agassizodus</i>		<i>Conchodus</i>	
<i>variabilis</i>	7109	<i>variabilis</i> (<i>Psammodus</i> ?)	7037
	7192	<i>Ctenachanthus</i> = <i>Cladodus</i>	
	7208	sp.	7049
<i>Bradiodus</i>			7058
sp.	7069		7078
<i>Caseodus</i>			7085-1
<i>basalis</i>	7104		7086
	7105		7087
	7180		7089
	7207		7096
	7227		7099
<i>Caseodus</i>			7102
<i>eatoni</i>	7218		7103
<i>Caseodus</i>			7106
sp.	7146		7107
	7147		7144
	9248		7150
<i>Chomatodus</i>			7151
sp.	7051		7153
	7060		7157
	7064		7161
	7083		7162
	7159		7163
	7172		7164
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	9221		7220
	9231		7235
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<i>Cladodus</i>			9209
<i>elegans</i>	7084		9211
	7110		9215
<i>Cladoselache</i>			9217
<i>fyleri</i>	7030		9220
	7031		9226
	7032		9243
	7033		9247
	7034		9252
	7035		9254

(NAME)	(No.)	(NAME)	(No.)
	9257		9261
	9262		9269
	9266		9271
	9278		9272
	9283		9273
	9300		9279
	9301		9284
	9306		9287
<i>Ctenoptychius</i>			9288
sp.	9244	<i>Deltodus</i>	
	9250	<i>stellatus</i>	7025
	9275		7026
<i>Ctenoptychius</i> = <i>Peripristis</i>		<i>Dittodus</i>	
<i>semicircularis</i>	7119	sp.	7237
	7138	<i>Edestus</i> (<i>Protopirata</i>)	
	7171	<i>crenulatus</i>	7181
	7176		7182
	7214		7183
	9253		7195
	9256		7201
	9265		7245
	9281	<i>Edestus</i>	
<i>Ctenoptychius</i> = <i>Peripristis</i>		sp.	7046—3
sp.	7027		7108
	7248		7154
<i>Deltodus</i>			7155
sp.	7022	<i>Fissodus</i>	
	7024	sp.	7224
	7042		7232
	7043		9290
	7045	<i>Gilliodus</i>	
	7046—1	<i>orvillei</i>	7158
	7047	<i>Helodus</i>	
	7050	sp.	9237
	7052	<i>Hybodus</i>	
	7056	sp.	9305
	7070	<i>Iniopteryx</i>	
	7075	<i>rushlauri</i>	7225
	7081		7226
	7094		7231
	7132	<i>Inioxyle</i>	
	7133	<i>whitei</i>	7236
	7137		7251
	7139		9292
	7140	<i>Janassa</i>	
	7196	<i>bituminosa</i>	7204
	7206—1		7213
	7215		9260
	9212		9263
	9219		9280
	9222		9286
	9227	<i>Janassa</i>	
	9240	sp.	7206—3
	9255		9251
	9259		

(NAME)	(No.)	(NAME)	(No.)
<i>Lagarodus (Psammodus)</i>			9281
<i>angustus</i>	7170	<i>Peripristis</i>	
<i>Lepacanthus</i>		sp.	7027
<i>colei</i>	9291		7248
<i>Listracanthus</i>		<i>Petalodontide</i>	
<i>hystrix</i>	7111	sp.	9295
	7152	<i>Petalodus</i>	
	7165	<i>alleghehiensis</i>	7028
	7179		7029
	7190		7066
	7191		7067
	7194—1		7091
	7238		7112
	7239		7113
	9270		7114
	9293		7115
<i>Ornithoprion</i>			7116
<i>hertwigi</i>	7175		7117
<i>Orodus</i>			7118
sp.	7017—1		7128
	7023		7129
	7036		7130
	7044		7131
	7065—2		7134
	7076		7135
	7077		7136
	7095		7141
	9200		7142
	9201		7143
	9203		7145
	9210		7187
	9213		7188
	9218		7203
	9223		7209
	9232		7211
	9238		7230
	9246		9241
	9258		9264
<i>Orthacanthus</i>			9268
sp.	7039		9289
	7057	<i>Petalodus</i>	
	7302	sp.	7206—2
	9236		9208
	9298		9249
<i>Orthacodus</i>		<i>Petrodus</i>	
sp.	7186	<i>patelliformis</i>	7121
<i>Peripristis</i>			7122
<i>semicircularis</i>	7119		7123
	7138		7124
	7171		7125
	7176		7126
	7214		7127
	9253		7149
	9256		7156
	9265		7166

(NAME)	(No.)	(NAME)	(No.)
	7167		9234
	7168	<i>Psephodus</i>	
	7177	<i>magnus</i>	7229
	7178	<i>Romerodus</i>	
	7184	<i>orodontus</i>	9294
	7194-2	<i>Sandalodus</i>	
	7202-1	<i>occidentalis</i>	7021
	7205	<i>Sandalodus</i>	
	7243	sp.	7055
	7244		7061
	9277		7063
<i>Petrodus</i>			7065-1
sp.	9235		7071
<i>Pleuracanthus</i>			7074
<i>laevisissimus</i>	9308		7080
<i>Pleuracanthus</i>			7085-2
<i>texensis</i>	9296		7090
	9297		7197
	9299		7212
	9302		9205
	9303		9228
<i>Pleuracanthus</i>			9230
sp.	7206-5		9242
	9304		9245
<i>Pleurodus</i>			9274
<i>rankini</i>	7120		9276
<i>Poecilodus</i>			9285
<i>jonesi</i>	7048	<i>Stamiobatis</i>	
<i>Poecilodus</i>		sp.	7101
sp.	7062	<i>Strophodus</i>	
<i>Poecilodus</i> (or <i>Deltodus</i>)		<i>magnus</i>	7169
sp.	7216	<i>Styptobasis</i>	
<i>Psammodus</i>		<i>aculeata</i>	7219
sp.	7017-2	<i>Xenacanthus</i>	
	7046-2	<i>compressus</i>	7148
	7073		7189
	7079		7223
	7088	<i>Xenacanthus</i>	
	7098	sp.	7193
	9225		9307
	9229		

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