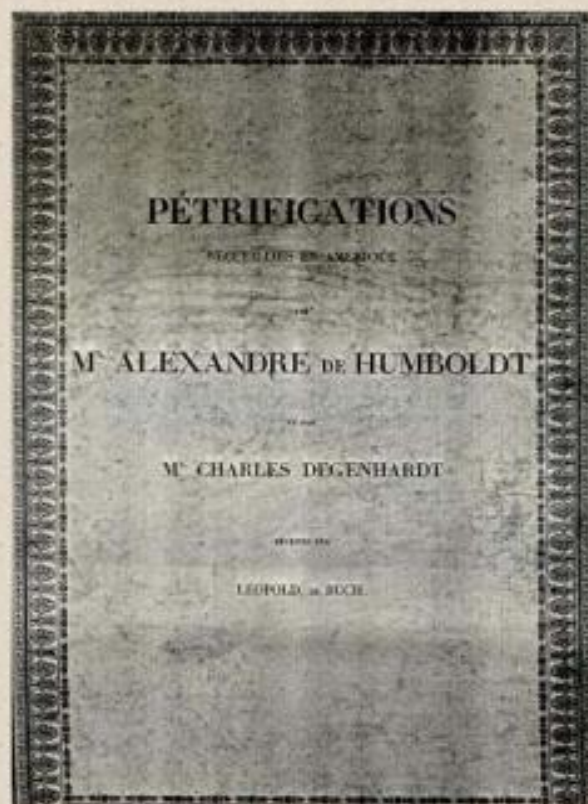


**Revisión histórica y  
compilación  
de la fauna de  
Ammonites del  
Cretácico tardío en  
Venezuela Occidental**



Ingeniero Geólogo  
Tulio Peraza

JFI 2000  
IV SIMPOSIO VENEZOLANO DE HISTORIA DE LAS GEOCIENCIAS  
30 de noviembre al 2 de diciembre de 2000



1839



*Ammonites Rhotomagensis* (sic)  
Cenomaniense medio

Este trabajo fue presentado en las IV Simposio Venezolanas de Historia de las Geociencias, Noviembre 2000, y el resumen publicado en el No. 71, diciembre 2000, de este Boletín.

1849



*Anapuzosia tucuyensis* (von Buch)

Albiense inferior - Cenomaniense superior



Hermann Karsten  
(1817-1908)

1850



*Ammonites Tucuyensis*



Leopold von Buch

**Holotipo del Primer Ammonites descrito en Venezuela  
por VON BUCH (1850)**



1884 - 1885



1886



*Benueites mosquerae* (Karsten) =  
*Ammonites Mosquerae* Karsten  
Turonienne inferior



*Paralenticerias leonhardianum* (Karsten) =  
*Ammonites Leonhardianus* Karsten  
Coniacienne superior - Santonienne inferior



Hermann Karsten  
(1817-1908)

1888

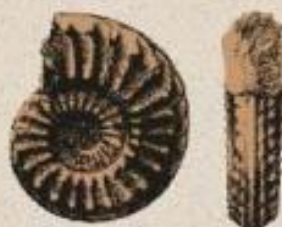


*Schloenbachia* sp.

Albiense superior - Cenomaniense superior

**Determinación de G. Steimann sobre la fauna  
recolectada por W. Sievers en El Tocuyo,  
estado Lara**

1897



*Mortonicerases cañaense* =  
*Peronicerases canaense*

Coniaciense inferior

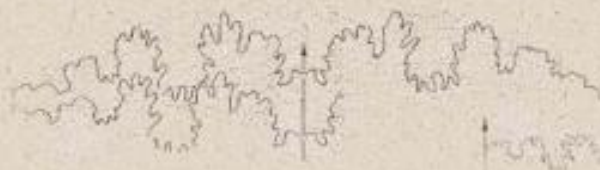


*Gauthiericerases lenti* =  
*Gauthiericerases lenti*

Coniaciense superior



1924



*Barroisiceras haberfellneri* (Hauer)

Turonense superior - Coniaciense inferior

**Determinación de W. O. Diedrich sobre la fauna  
recolectada por H. Karsten en Perijá**

1928

THE GEOLOGY OF  
VENEZUELA AND TRINIDAD

BY  
RALPH ALEXANDER LIDDLE



J. P. MacGOWAN, Publisher  
FORT WORTH, TEXAS

1937

*Schloenbachia* sp.

Albiense superior - Cenomaniense superior

*Sphenodiscus* sp.

Maastrichtiense

## Algunas Observaciones en Capas Cretáceas y Precretáceas de las Partes Suroeste y Central de Venezuela <sup>(1)</sup>

por

L. Kehrer

### INTRODUCCION

Durante su trabajo como geólogo de la Caribbean Petroleum Company, el autor ha tenido a menudo la oportunidad desde 1921, de hacer observaciones en rocas Cretáceas y Precretáceas en las regiones Suroeste y central de Venezuela, de estudiar los informes de la Compañía hechos por sus colegas, y de hacer uso de sus observaciones.

En el presente trabajo serán discutidas algunas de estas observaciones y el autor tratará de coordinarlas con los datos que existen en las obras publicadas sobre la materia. Naturalmente que no es la intención del autor la de presentar un trabajo exhaustivo sobre la materia; pues para ese objeto las observaciones parecen demasiado esporádicas y algunas veces los

(1) Presentado ante el Primer Congreso Geológico Venezolano, 16 de febrero de 1937.

1937

## Sinopsis de las Formaciones Geológicas de la Parte Occidental de la Cuenca de Maracaibo, Venezuela <sup>(1)</sup>

por

H. D. Hedberg y L. C. Snav.

### INTRODUCCION

Durante los últimos 20 años las compañías de petróleo han llevado a cabo considerables trabajos de investigación geológica en la región incluida en los Distritos de Perijá, Urdaneta, Maracaibo y Mara en el Estado Zulia, Venezuela. En consecuencia, han sido propuestos muchos nombres de formaciones y algunos de estos han aparecido publicados (Garner (3), Liddle (7), etc.) Sin embargo, la terminología estratigráfica usada hoy por las distintas compañías petroleras que tienen interés en la región está muy lejos de ser uniforme, y hay un desacuerdo con respecto al alcance estratigráfico de algunos de esos nombres de formaciones que están en uso general. El objeto de este trabajo es sugerir unidades formacionales definidas y nom-

(1) Trabajo presentado ante el Primer Congreso Geológico Venezolano, 16 de febrero, 1937.

1941



*Psilotissotia leonhardiana* (Karsten) =  
*Paralenticeras leonhardianum* (Karsten) =  
*Ammonites Leonhardianus* Karsten

Coniaciense superior - Santoniense inferior

Revisión de la fauna  
 recolectada por H. Karsten en *Geology of South America*

1946

Volume 30

Number 10

BULLETIN  
 of the  
 AMERICAN ASSOCIATION OF  
 PETROLEUM GEOLOGISTS

OCTOBER, 1946

GEOLOGY OF MARACAIBO BASIN, VENEZUELA<sup>1</sup>F. A. SUTTON<sup>2</sup>  
 Caracas, Venezuela

ABSTRACT



The Maracaibo basin lies totally on northwestern Venezuela and occupies the Venezuelan depression between the diverging Andes de Mérida and Sierra de Perijá, two offshoots of the main Cordillera Occidental of South America. On the northwest the basin extends slightly into eastern Colombia.

The area of the basin is approximately 10,000 square miles (26,000 square miles), of which about 1,000 square miles (2,600 square miles) are covered by Lake Maracaibo, a large body of brackish water whose outlet is into the Caribbean Sea by way of the Gulf of Venezuela. Large areas surrounding the lake are covered by swamps and heavily wooded fern and mangrove swamps. The basin proper is the elevation more than 100 feet (300 feet).

The presence of oil in the Maracaibo basin has been known for centuries, but it was not until the present century that the area was developed. In 1914 the Standard Oil Company discovered the first oil field in the area. The Shell Company led the way and in 1924 discovered the Maracaibo field, east of Lake Maracaibo. During the next 10 years the same company discovered the Rio de Oro and Las Cañas (Terra) fields, southwest of the lake, and in 1937 drilled the discovery well of the Bolívar Coastal field. This company's success aroused the interest of others and it was not long until most of the major petroleum companies and a number of independently owned active oil companies in Venezuela, at the present time only the United Fruit Company, a Standard Oil Company (New Jersey), the Shell Group, the Maracaibo Oil Company (Shell Oil Corporation), the United Oil Company (Chevron Oil Company), and the Richmond Exploration Company (Standard Oil of California) are active in the Venezuelan part of the basin, while the Esso-Land Petroleum Company (Chevron-Venezuela) is active in the Colombian part.

Most of the oil in the basin lies in the region of the Andes de Mérida and Sierra de Perijá, but the heaviest hydrocarbon is a 50-60 degree centigrade oil from the pre-Cambrian to Recent. The Ordovician, Devonian, Upper Carboniferous, and Triassic were periods of volcanic activity and deposition, but each was followed by a long period of uplift and erosion so that only remnants of the original deposits are now present in the uplifted areas.

The pre-Cambrian is represented by the igneous and metamorphic rocks of the Perijá and Bolívar series, which form the core of the basin. The Cambrian to Recent is represented by the largely unmetamorphosed Silurian to Devonian series of Upper Carboniferous to Upper Permian age. The Devonian is well developed in the Sierra de Perijá, where more than 1,000 feet (3,000 feet) of the lower Devonian of the Carifol group are exposed along the Rio Carifol. The Permian series of the Perijá and Bolívar series are exposed along the Sierra de Perijá and along the eastern slopes of the Sierra de Perijá. The Permian is also in the area of the Maracaibo basin, where a few series (1,000 feet) have been exposed. The middle of the Upper Triassic is represented by the generally limited to the immediate region and are best developed in Tachira and Mérida, where thickness up to 2,000 feet (6,000 feet) have been noted.

<sup>1</sup> Read before the Association at Chicago, April 2, 1946. Published by permission of the United States Geological Survey.

<sup>2</sup> Geologist, United Fruit Company.



*Protacanthoceras* sp.

Cenomaniense



*Prionotropis* sp.

Turonense superior - Coniaciense inferior



# BULLETIN of the AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

FEBRUARY, 1954

## REVISION OF LOWER CRETACEOUS STRATIGRAPHY OF VENEZUELA<sup>1</sup>

EMILE BOU and WOLF MAYNOR  
Caracas, Venezuela

### ABSTRACT

The understanding of the Cretaceous stratigraphy in Venezuela is hampered by some vaguely defined or available type localities. A revision of the Capatze formation of Venezuela is proposed as first exposure at the type locality on the Rio Capatze revealed that the contact with the La Luna is a fault zone, and that a large part of the section is composed of a thrust.

The name "Capatze" is retained for a unit group between the underlying Rio Negro formation and the overlying La Luna formation, as defined by Hedberg and Sain (1951). These distinct rock units, namely, from top to bottom, the Maracaibo, lower, and Apia formations, are recognized at the Capatze group. The Apia formation was introduced by Sain in 1941 for the lower part of the Capatze group.

At a very conspicuous and widespread interval of thick laminated limestones containing fusulines maritima (La Luna lithotype), the Apia formation is again subdivided into three units: the lower, middle, and upper Apia members. The lithologic character, combined with a rich ammonite fauna, makes the middle Apia an outstanding key formation.

The Apia formation of Sain is unchanged but its underlying Aguasviejas is just a small part of the new lower formation. The upper part of Sain's Capatze is an equivalent of the Maracaibo formation.

For a long time it was felt that the El Cerril formation (Lidke, 1947) of northeastern Venezuela needed a revision. It comprises the interval between the Maracaibo formation below and the Guayana group above. At type locality at a unit of such magnitude the section of El Cerril on the El Pinaron is so poor that it should be described. Hedberg and Pyle (1954) made the first step to correct the erroneous conception of the El Cerril when they recognized the Chiriqui formation.

It is proposed to subdivide the interval between the Maracaibo and Guayana group into three formations: the Beracha, Chiriqui, and Boqueron formations which, in turn, are subdivided into members: lower Beracha, middle Beracha or Guayana, upper Beracha members; lower Chiriqui (Pinaron), middle Chiriqui (Gudilow), and upper Chiriqui (Grand Vaca) members.

The lowermost limestone layer of the thick Boqueron formation is called the Malpais formation.

All the microstratigraphic Cretaceous subunits observed in Western Venezuela, the Andes at Mérida, and northeastern Venezuela are well described. Each constituent toward a geographic base (geosynclinal and here in the restricted sense of Kogutskii and Sain) are exposed only in the Maracaibo area or near first part of the outcrop in the Caribbean Coast Range.

<sup>1</sup> Manuscript received, July 17, 1953. Published by permission of the Venezuelan Atlantic Refining Company.

<sup>2</sup> Venezuelan Atlantic Refining Company.

1954



*Mariella bergeri* Brongniart

Albiense superior - Cenomaniense

1956

## CRETACEOUS IN WESTERN VENEZUELA AND THE GUAJIRA (COLOMBIA)

O. Benz

A regional outline for the stratigraphy of the Cretaceous in Western Venezuela and the Guajira peninsula is given.

During Upper Jurassic and lower Neocomian time three troughs developed: the Guajira trough in the north, the Machiques trough in the west, and the Uribante trough in the south; these bound a block known as the Maracaibo platform. The eastern delimitation of this platform is still uncertain.

In the Guajira trough a thick sequence of Upper Jurassic, Valanginian, Hauterivian and Barremian sediments with rich ammonite faunas was laid down. The Machiques and Uribante troughs were filled with elastic deposits known as the Rio Negro formation.

The Maracaibo platform subsided below sea level at the beginning of Aptian time when limestones on the north half of the platform (Cogollo formation) were deposited grading into sandstones towards the south (Tomón formation).

The uppermost part of the Cogollo/Tomón formation coincides with a pronounced subsidence of the southern part of the Maracaibo platform at the end of Albian time. The northern part of the platform up to the Paz fault subsided only at the end of Cenomanian time, while the northernmost part in the Guajira subsided at the end of Turonian time.

During Cenomanian, Turonian and Coniacian time bituminous limestones with a pelagic fauna were deposited on the northern part of the Maracaibo platform. They represent one of the important oil mother rocks of Venezuela and are known as the La Luna formation. Southward these limestones grade into shales with intercalations of biostromal limestones, and finally into clastics exposed along the southwest foothills of the Andes.

The Senonian is represented on the Maracaibo platform by a thick body of shales: the Colón formation. These shales grade into limestones towards the north (Guajira), into clastics towards the south (southern Tachira and Barinas) and into a thick sequence of pelagic limestones, cherts and silt towards the east.



1959

ESTRATIGRAFIA DEL CRETACEO EN VENEZUELA  
OCCIDENTAL

por G. RIVER (\*)

## RESUMEN

Se presenta una revisión de las unidades litológicas del Cretáceo en Venezuela Occidental, especialmente en la región de los Andes, con inclusión de aquellos tipos y etapas que muestran las transiciones tipo de las faunas foraminíferas y microfósiles propicias, se discute el estratismo y la correlación estratigráfica de las unidades litológicas.

Las unidades litológicas, desde el exterior de la Formación Apure, en la región de Perijá, son designadas sucesivamente: Titiá, Macajá y Falcó.

En la región andina, una muestra completa del Cretáceo consiste, en orden ascendente, en las siguientes Formaciones: El Negro, Titiá, latitas de Guatimar, Falcó, Aliso, La Paja, Capacho y La Loma, Cúla y Mito Juan. La Formación Capacho se divide en las miembros La Grúa, latitas de Bolívar y Guayacán, a través transición hacia la Formación La Loma de las latitas Yajalá y Loma. Así, la Formación La Loma se relaciona por los miembros La Aguada, Chajón y Tichana. Un intervalo estratigráfico de sucesión en la Formación Cúla, en Lora, se relaciona al miembro Cúla.

Al pie de los estratos al sur de los Andes a medida que se transiciona la litología hacia el Estado de Guayana, se introducen nuevas unidades. La Formación Capacho pasa transicionalmente a la Formación Guatimar, entonces, la Formación La Loma se torna latitas, por lo que se divide latitas de La Morita, la litología de Tichana pasa transicionalmente a la Formación Querada, aliso, de granito fino, y la Formación Cúla se transiciona por la Formación Burján, sucesiva.

Las latitas del Cretáceo Superior, al sur de Cúla, son consideradas ahora como una zona albitosa clasificada en el rango deposicional ("Young") de Bergeles, como lo es la Formación Guatimar.

(\*) Geólogo: Compañía Shell de Venezuela.



V CONGRESO GEOLOGICO VENEZOLANO

CIUDAD DE LA GUAYANA, 1977



1977

THE LITHOLOGIC UNITS OF THE CRETACEOUS  
IN WESTERN VENEZUELA

G. RIVER (\*)

## INTRODUCTION

A readily comprehensible compilation is attempted on the relations between lithologic units composing the deposits of the Cretaceous within different depositional areas in western Venezuela.

The columnar sections in 1:10000 are based on detailed field work in 1:10000. The investigations have been carried out with unified surveying methods, resulting in a well balanced regional picture.

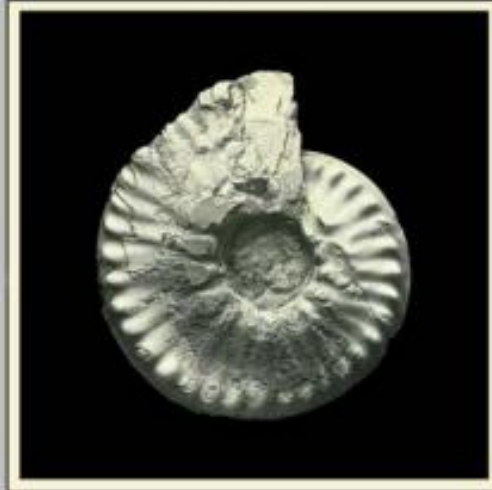
Preliminary results were presented at the Twentieth Session of the International Geological Congress in Mexico City, September 1956. This paper has been distributed, but it has never been published. Later in 1959 some newly introduced formation names were defined, without integrating them sufficiently in their regional setting. Since then the problems have been thought over, and revised according to the Lexicon Estratigráfico de Venezuela (1970).

Representative surface and some well sections, located in and around the Maracaibo Lake basin (Fig. 1), are arranged in four cross-sections (Fig. 2-5). These sections provide a three-dimensional outline of some of the lithologic units facilitating paleogeographic reconstructions. As an example the Capacho Formation occurring in the Perijá as well as in the Andes might be quoted.

Chronostratigraphic correlations are based as far as possible on ammonites, which however, occur rather sporadically. Zones rich in foraminifera are still unsatisfactory. They mostly depend on thin sections, as isolated faunas, especially of pelagic assemblages are not commonly available from the Cretaceous.

# THE CRETACEOUS AMMONITES OF VENEZUELA

OTTO RENZ



1982

UNIVERSIDAD CENTRAL DE VENEZUELA  
FACULTAD DE INGENIERIA  
ESCUELA DE GEOLOGIA, MINAS Y GEOTECNICA  
DEPARTAMENTO DE GEOLOGIA



BIOFACIES DE AMONITIDOS DEL CRETACEO TARDIO DEL  
OCCIDENTE DE VENEZUELA

TRABAJO ESPECIAL DE GRADO  
PRESENTADO ANTE LA ILUSTRE UNIVERSIDAD CENTRAL DE VENEZUELA POR  
TULIO ENRIQUE PERAZA LISI PARA OPTAR AL TITULO DE INGENIERO GEOLOGO

CARACAS, ABRIL DE 1999

1999

Cenomaniense:  
4 localidades, 13 especies

Turonense temprano:  
13 localidades, 89 especies

Turonense tardío:  
5 localidades, 13 especies

Coniaciense:  
12 localidades, 64 especies

Santonense:  
1 localidad, 1 especie

Campaniense:  
3 localidades, 4 especies

Maastrichtiense:  
1 localidad, 1 especie