BIOSTRATIGRAPHY OF A MIDDLE MIOCENE - PLIOCENE SEQUENCE FROM THE CUMAREBO AREA, FALCON STATE, NORTH WESTERN VENEZUELA.

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ABSTRACT

- A fairly complete sedimentary sequence mainly represented by shales, silts, and carbonate rocks from the **Cumarebo region, Falcon State, Northwest Venezuela** was chosen to study the biostratigraphy of the Late Neogene using Foraminifera.
More than one hundred surface samples were analyzed.

- The study of Foraminiferal fossil assemblages and other microfossils were also used to define paleoenvironments of deposition.

- Four formations are involved in this work, being from bae to top: **Socorro, Caujarao, El Veral and Tucupido.**

- From the study of Planktonic Foraminifera, six biostratigraphic zones were recognized: Globorotalia mayeri Zone, Globorotalia menardii Zone, Globorotalia acostaensis Zone, Globorotalia humerosa Zone, and Globorotalia miocenica Zone. They correspond to zones: N14 to N19 of Blow (1969). These zones indicate that the age of the sequence ranges from late Middle Miocene to Middle Pliocene.

- The paleoenvionments of the sequence show variations from **outer neritic to middle bathyal.** The deepest facies correspond to the Late Miocene. Then, a shallowing trend to outer neritic is observed.

- These results intend to be an important contribution to clarify the stratigraphy and geologic history of the Cumarebo area which is related to the Agua Salada Basin and may help to understand the paleogeography and paleotectonic evolution of this region for petroleum exploration.

NOTES

- About two hundred and fifty species of Foraminifera were identified in the Cumarebo region. Of this total, seventy are planktonics and one hundred and eighty are benthic Foraminifera.

- The three main groups: Rotaliina, Milioliina and Textulariina are present in the sequence. Eighty percent of the fauna belongs to the Rotaliina and around thirty to forty percent are planktonic Foraminifera in most assemblages. The Milioliina amounts four percent or less of the total.

- The ages of the sequence were established using planktonic Foraminifera.

- The paleoenvironments of the sequence were defined using benthic and planktonic Foraminifera, as well as other microfossils.

CONCLUSIONS

- The age of the sequence was established as **late Middle Miocene to Middle/Late Pliocene** using planktonic Foraminifera.

- The faunal assemblages seem to indicate that the sequence was deposited in an **upper slope during the Middle Miocene (Zone N14).**

- Samples corresponding to earliest **Late Miocene (Zone N15)** contain scarce planktonic and benthic fauna which makes difficult to define paleoenvironments. This fauna is indicative of **outer shelf to upper slope.**

- The deepest environment found in the sequence corresponds to **Late Miocene (Zones N16 and N17)** and seems to be **upper Middle bathyal.**

Then, **from Late Miocene to Middle-Late Pliocene (Zones N17 to N19/N21)** the sequence shows **a shallowing trend from upper Middle Bathyal to Outer neritic.**

- The **Miocene/Pliocene boundary** was established in the basal middle part of the **Caujarao Formation** and the sequence was deposited in **an upper slope environment** during this time.

- The studied sequence is younger than previously reported (Lexico Estratigráfico de Venezuela, 1970).