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ON THE CURRENT STATE OF PROGRESS OF THE STUDIES ON OXFORDIAN AMMONITES FROM WESTERN CUBA

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Abstract

Recent data on the current research state about Oxfordian ammonites from Cuba are exposed, outlining briefly the next expected progress on that field. Oxfordian ammonites from Cuba are usually found within three successive horizons: The lowest, in the San Cayetano Formation, of Middle Oxfordian age; the middle, corresponding to the *Vinalesphinctes roigi* Biozone, sensu Furrázola-Bermúdez and others, 1964. The youngest would correspond to Middle-Upper Oxfordian, *Cubaspidoceras carribeanum* biozone (Taxon-range Zone).

The possibility of the real existence of a true biogeographic province, extending through México, Cuba and Southern United States, is suggested. Current ideas on the biogeographic connections between Cuban Oxfordian ammonites and those of near biogeographic provinces are also briefly outlined.

INTRODUCTION

Oxfordian ammonite-bearing sediments from Cuba crop out at the Pinar del Río Province (Western Cuba). They are mainly developed throughout two well defined regions: the Sierra del Rosario, and Sierra de los Organos. They were monographed by some authors in this century, such as O'Connel, 1920; Jaworski, 1940, Sánchez- Roig, 1920, 1951. More recently, the work of Judoley and Furrázola-Bermúdez 1968, was an important further step in the knowledge of this ammonite associations. A later, important step was also that of Wierzbowski (1976), including the taxonomic revision of some Middle Oxfordian forms.

Also important was the description of ammonites from previously unknown ammonite horizons from Cuba, i.e. Middle Oxfordian elements from the upper part of San Cayetano Formation (Myczynski & Pszczolkowski 1976), and a Middle to Upper Oxfordian assemblage, from the Pimienta Member sediments of Jagua Formation, and Francisco Formation (upper part),

as well as from the lower part of Artemisa Formation (Kutek et al. 1976; Myczynski 1976). Euaspidoceratids collected at that level were studied separately and compared mainly with similar forms and taxa known from Europe (Submediterranean-Subboreal Provinces) and Andean Province (Myczynski & Brochwicz-Lewinski 1981).

MAIN ASSEMBLAGES OF OXFORDIAN AMMONITES FROM CUBA

1. The oldest assemblage

It is formed by the ammonites collected in the terrigenous sediments of the upper part of San Cayetano Formation. It is mainly composed by representatives of genera Perisphinctes (?Dichotomosphinctes) and "Discosphinctes". It should be noted here that ammonites belonging to the genus "Discosphinctes" JAWORSKI would need a taxonomic revision, being most probably put apart from the genus Discosphinctes DACQUE (Wierzbowski 1976; Meléndez & Myczynski 1987).

These ammonites were found within the series formed by an interbedding of shales and sandstones with clay nodules, some 150 m. below the upper boundary of San Cayetano Formation, at the Sierra del Rosario region (Myczynski & Pszczolkowski 1976). The age of these sediments was determined as, roughly, Middle Oxfordian.

2. Ammonite assemblage of the Middle horizon

This second assemblage is represented by the ammonites found in Zacarías and Jagua Vieja members of the Jagua Formation (Sierra de los Organos), as well as those from lower part of Francisco Formation in Sierra del Rosario). It is mainly formed by representatives of genera and subgenera: Glochiceras, Ochetoceras, Cubaochetoceras, Euaspidoceras, Vinalesphinctes (Vinalesphinctes), Vin. (Subvinalesphinctes), Vin. (Roigites), Perisphinctes (Cubasphinctes), Perisph. (Antilloceras), and "Discosphinctes" (cfr. Wierzbowski 1976). The age of these sediments has traditionally been considered as, roughly, upper Middle Oxfordian. They show a remarkable thickness (50-60 m). These are the corresponding levels of the Vinalesphinctes roigi Zone, sensu Furrázola-Bermúdez et al. 1964. The sense of this Roigi Biozone has recently been changed towards that of an assemblage zone (Myczynski in press). Some genera, which had been previously quoted by the former authors in this assemblage were subsequently questioned by other authors. According to Wierzbowski (1976) such taxa as Decipia, Amphillia,

Perisphinctes (Prososphinctes), Per.(Orthosphinctes) and Per.(Arisphinctes) are not, actually found within this assemblage. This re-interpretation was, no doubt, of great importance in order to clarify the biogeographic status of Cuban ammonite assemblages.

3. The Upper Horizon

Ammonites from this level represent the youngest assemblage of Oxfordian from Cuba. They come from materials belonging to the so-called Pimienta Member, of Jagua Formation (Sierra de los Organos), and from materials of Francisco and Artemisa Formations at Sierra del Rosario area. (Kutek et al. 1976; Myczynski 1976). The following taxa are represented in this assemblage: Glochiceras, Euaspidoceras, Cubaspidoceras and Mirosphinctes, allowing the characterisation of the recently proposed Cubaspidoceras caribbeanum Taxon-range Zone (Myczynski 1988, in press). Ammonites from the materials of this horizon appear remarkably abundant at the lower levels and show a gradual decrease towards the top. At the upper part only some scarce representatives of Cubaspidoceras and Mirosphinctes are found. The total thickness of this lithologic interval is c. 40 m.

Cuban Oxfordian ammonites would range, therefore, from Middle to lower Upper Oxfordian. They may, up to subfamily level, be compared with Transversarium to lower Bimammatum elements of South-European Oxfordian (Wierzbowski 1976, Myczynski 1976, Sequeiros 1977, Meléndez & Myczynski 1987). Connections with subboreal, Northwestern Europe Middle and Upper Oxfordian Perisphinctids appear still doubtful and have been rejected, as unproven, by different authors (Wierzbowski loc.cit. Myczynski 1976), Meléndez & Myczynski 1987). On the other hand, morphological relationships appear more evident in the case of some taxa, such as Oppeliidae, Euaspidoceratinae and Epipeltoceratinae than in the case of Perisphinctidae (Meléndez et al. 1988). No ammonites younger than lower Upper Oxfordian in age have, up to the present, been found in Oxfordian sediments from Cuba. Besides the Pinar del Río Province, Oxfordian ammonites have only been found at the Escambray region (Millán & Myczynski 1978).

BIOGEOGRAPHIC CONNECTIONS OF OXFORDIAN AMMONITES FROM CUBA

Current ideas on paleobiogeographic relationships between Cuban Oxfordian ammonites and those from other areas may be summarized as follows:

- a) Cuban assemblages are biogeographically linked to those of Tethyan

Realm, Submediterranean Province, Southern Europe. (Cariou et al. 1985).

b) Cuban assemblages are strictly related to Pacific Oxfordian ammonite faunas (Wierzbowski 1976).

c) They represent a proper assemblage of an independent zoogeographic province (Cuban Province, sensu Cariou 1973) or Caribbean Province.

According to the present authors, Cuban Oxfordian ammonite assemblages could represent a typical fauna for the caribbean area, and would characterise a particular Caribbean Province which, at least during Middle Oxfordian, could range from Mexico to Cuba and, possibly, Southern United States. This last point still requires further analysis. (Meléndez & Myczynski 1987; Myczynski 1988, in press). Connections with Western Tethys (Southwestern Europe) could have taken place across the by a hypothetical migration periafrican way (an Upper Jurassic extension of the so-called "Hispanic corridor", Westermann & Riccardi 1985). However, this problem, as well as the question of the taxonomic relationships between caribbean ammonite assemblages and those of other near biogeographic provinces is still the matter of long research by the authors.

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