BATHONIAN AND VALANGINIAN FOSSILS FROM HONDURAS

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ABSTRACT

The Agua Fria Formation of Honduras, Chortis Block, consists approximately of 200 or more meters of beds of gray, quartzose sandstone alternating with beds of gray and/or black shale. From this formation Mark Gordon has collected *Choffatia* s.l. sp. juv. (or a leptosphinctine) and *Iniskinites* (?) cf. *andinus* (BURCKHARDT, 1903). Their age is most likely Late Bathonian. The Cantarranas Formation consists of tens of meters of thin-bedded (1 cm to 6 cm thick), platy beds of limestone separated by even thinner partings of shale. The known fossils from the Cantarranas Formation are flattened specimens of filose species of *Olcostephanus*, which are most likely Valanginian.

KEY-WORDS : AMMONITINA, BATHONIAN, VALANGINIAN, HONDURAS.

RÉSUMÉ

La formation d'Agua Fria du Honduras (Bloc Choris) comprend au-moins 200 m de grés quartzeux qui alternent avec des schistes argileux gris et/ou noirs. M. Gordon a récolté dans cette formation : *Choffatia* s.l. sp. juv. (ou un Leptosphinctiné) et *Iniskinites* (?) cf. *andinus* (BURCKHARDT, 1903). Leur âge est probablement Bathonien supérieur .La formation de Cantarras comprend des dizaines de mètres de calcaire en bancs minces (1 à 6 cm d'épaisseur) et en plaquettes séparés par des schistes argileux. Les fossiles reconnus sont des spécimens aplatis d'*Olcostephanus* très probablement valanginiens.

MOTS-CLÉS : AMMONITINA, BATHONIEN, VALANGINIEN, HONDURAS.

INTRODUCTION

The Agua Fria formation of Honduras, Chortis Block, consists approximately of 200 or more meters of beds of gray, quartzose sandstone alternating with beds of gray and/or black shale. For a more complete discussion of these strata, see Gordon (in press). From this formation Mark Gordon has collected *Choffatia* (?) *s.l.* sp. juv. (or a leptosphinctine) and *Iniskinites* (?) cf. *andinus* (BUCKHARDT). *Iniskinites* is indicative of the youngest Bathonian (Frebold 1978 ; Riccardi *et al.* 1989). If the two species represent the same level, this age is most likely. If the fossiles are not from the same horizon, and one is a leptosphinctine, the age of that fossil would most likely be Bajocian, and the age of the *Iniskinites* (?) still Bathonian. The Cantarranas Formation consists of tens of meters of thin-bedded (1 cm to 6 cm thick), platy beds of limestone separated by even thinner partings of shale. It is similar in appearance to the Aptian Otates Formation of southern Mexico. However, the Otates Formation is Aptian, whereas the known fossils from the Cantarranas Formation are flattened specimens of filose species of *Olcostephanus* presented by W.R. Muehlberger. They are most likely Valanginian and appear similar to the Valanginian, filose *Olcostephanus bakeri* IMLAY, (1937). A Hauterivian age is not eliminated for filose olcostephanine.

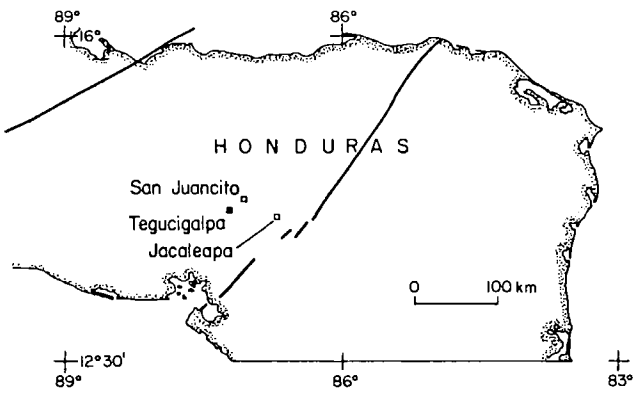


Figure 1 - Location of San Juancito and Jacaleapa in relation to Tegucigalpa, Honduras.

PALEONTOLOGY

AMMONITINA

Superfamily STEPHANOCERATACEA Neumayr, 1875
Family SPHAEROCERATIDAE Buckman, 1920
Genus *Iniskinites* IMLAY, 1975

Type species - *Kheraiceras magniformus* IMLAY, 1953, by the original designation of Imlay (1975).

INISKINITES (?) cf. *ANDICUS* BURCKHARDT, 1903 : pl. 1, fig. 1-7, 13, 14.

Dimensions - Figures in parentheses are percentages, exept for H/W. Other figures are in mm.

Specimen	D	U	H	W	H/W
UT-51705	9.9(100)	2.4(24.2)	4.3(43.4)	4.9(49.5)	(87.8)
	5.7(100)	--------	2.1(36.8)	3.1(54.4)	(67.7)
UT-51618	32.8(100	4.1(12.5)	17.2(52.4)	18.7(57.0)	(92.0)
	23.5(100)	3.1(13.2)	12.5(53.2)	14.0(59.6)	(85.7)

Remarks - UT-51618, UT-51705, and UT-51706 are assumed to be of the same species. Most of our comments concern UT-51618 (pl. 1, fig. 1-4), which is approximately one-half of a relatively involute steinkern. The venter is rounded off, and the ventral half of the flank is arched. The ribbing is bipartite, although the smallest specimen, UT-51705, has a tripartite rib and a single rib. The ribs are rounded, low but distinct, and do not seem to be effacing at the gratest diameter. The point of bifurcation is usually just dorsad of midflank. The genera *Eurycephalites* and *Pleurocephalites* can be eliminated because these genera are globose and tumid at all diameters. Two of our reviewers suggested the genus *Lilloettia* CRICKMAY, (1930), and one of them also suggested the genus *Iniskinites* IMLAY, (1975). Nearly all of the species assigned to *Lilloettia* (Sandoval *et al.* 1990 ; Imlay 1950 ; Frebold 1978 ; Riccardi *et al.* 1989) are much more globose and tumid than the honduran species ; exceptions are, perhaps, *L. lilloetense* CRICKMAY, *L. mertonyarwoodi* CRICKMAY, and *L. stantoni* IMLAY. *L. mertonyarwoodi* CRICKMAY and *L. lilloetense* CRICKMAY have the ribs effacing on the dorsal flank at diameters at which the ribs are still strong on the Honduran species, and in addition on both species the ribs are more densicostate than on the Hondurian species. *L. stantoni* IMLAY appears to have sharper ribs at the same diameters as the Honduras species, but on *L. stantoni* the ribs do efface at more advanced diameters. The conformation of *L. stantoni* is similar to that of the Honduran species.

Unlike *Lilloettia* CRICKMAY, *Iniskinites* IMLAY has many species assigned to it that are less globose and tumid and more like the species from Honduras in shape, although there are also some globose forms (Imlay 1975 ; Frebold 1978 ; Riccardi *et al.* 1989) Forms like *I. subtransiens* (TORNQUIST), *I. andinus* (BURCKHARDT perhaps *I. tenasensis* FREBOLD, and *Lilloettia stantoni* IMLAY all have whorl shapes and general conformation of the conchs that would fit the Honduran species. However, *I. subtransiens* is much too densicostate, and probably also is *I. tenasensis*, at comparable diameters. *I. andinus* (BURCKHARDT, 1903), if indeed it is an *Iniskinites,* appears to most closely conform in ribbing and the shape of the conch to the Honduran material, but even the ribbing of *I. andinus* is not as consistenly bifurcating as is

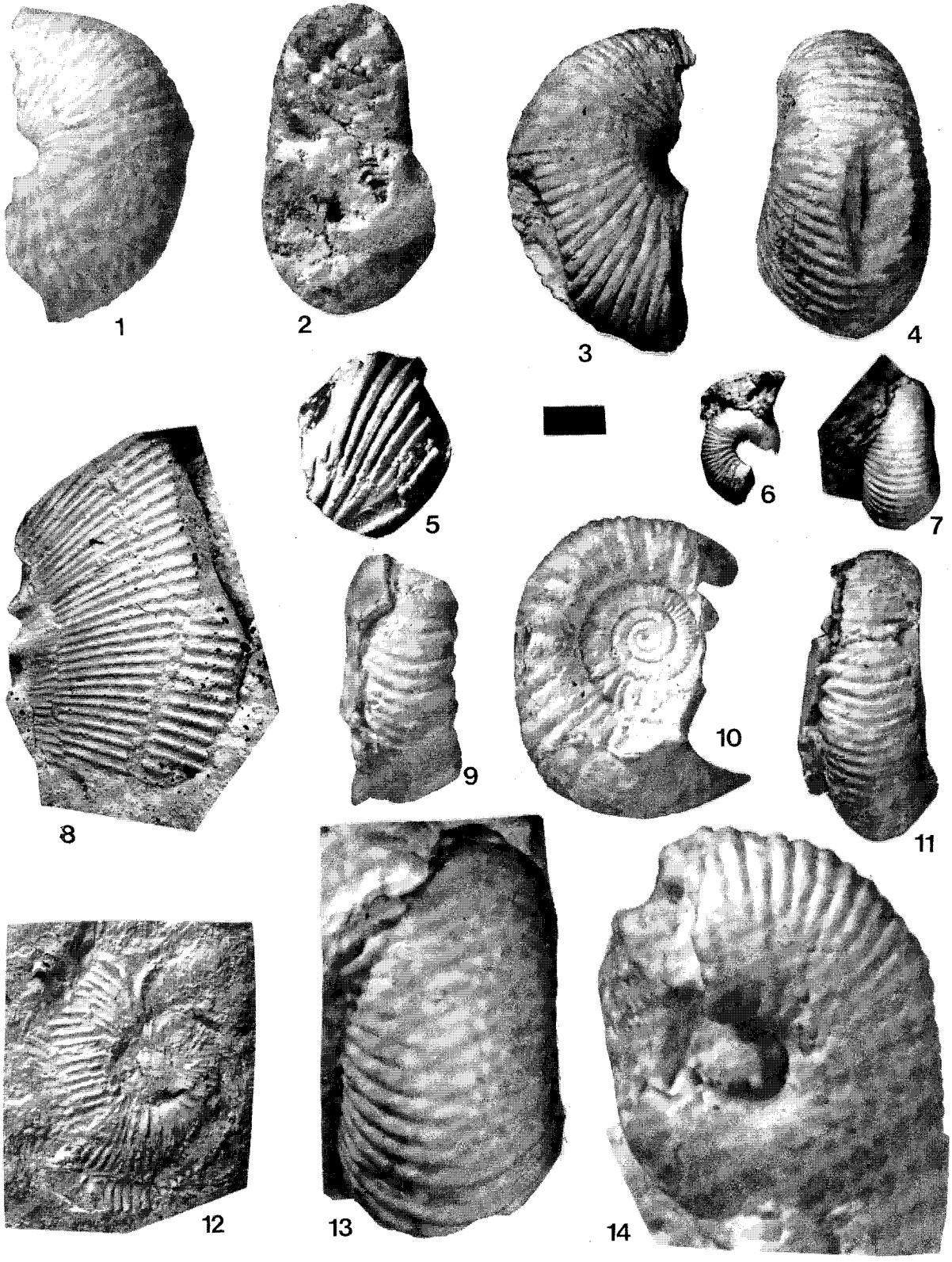
PLATE 1

Figs. 1-7, 13-14 - *Iniskinites* (?) *andinus* (BURCKHARDT, 1903). **1-4**, UT-51618 ; 5 UT-51706 ; **6,7,13,14,** UT-51705 ; all from Agua Fria Formation, Chortis Block, Honduras.

Figs. 8, 12 - *Olcostephanus,* filose spp. **8** WSA-16314 ; **12** WSA-16313 ; both probably upper Valanginian, from the Cantarranas Formation, collected by W.R. Muehlberger.

Figs. 9-11 - *Choffatia* s.l., juv. indet. or a leptosphinctine, UT-51617, from the Agua Fria Formation, Chortis Block, Honduras.

All specimens are whitened with magnesium oxide. The bar-scale represents 1 cm for figs. 1-6, 8-11, and 12 ; 0.5 cm for fig.7 ; and 0.25 cm for figs. 13 and 14.


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that of the Honduran species. A suture has not been recovered from these specimens.

Horizon and locality - Imlay (1975) considered his *Iniskinites* beds to be basal Callovian, but admitted that they could be older. Frebold (1978) placed the *Iniskinites* beds at the top of the Bathonian, as do Riccardi *et al.* (1989). If the Honduran species does belong to the genus *Iniskinites,* a latest Bathonian age would be indicated. The fossils are from the Agua Fria Formation, from near the town of Jacaleapa, east of Tegucigalpa, Honduras, UTM 34.6/50.5, Danli quadrangle, hoja 2858-H.

Superfamily PERISPHINCTACEAE Steinmann, 1890
Family PERISPHINCTIDAE Steinman, 1890
Subfamily PSEUDOPERISPHINCTINAE Schindewolff, 1925 or LEPTOSPHINCTINAE Arkell, 1950
Genus *Choffatia* SIEMIRADZKI, 1898

CHOFFATIA s.l.(?) sp. juv. indet. or Leptosphinctine : pl. 1, fig. 9-11.

Remarks - UT-51517 is latex squeeze from an external mold whithin a concretion. It consists of a small individual of maximum diameter of about 33 mm. The degree of distortion cannot be determined, unless the peculiar apertural end is that of a small microconch. The whorl-section does seem to be slightly depressed. Ribs are almost all bifurcate, and the ribs are strongest at point of bifurcation. In the 3/5 of whorl visible there are two intercalations. Ribs at this growth stage cross the venter without loss of strength and with a weak orad arching; ribs crossing the venter without weakening indicate that the specimen does not belong to *Choffatia* s.s., although many specimens have been illustrated as *Choffatia* with this lack of ventral weakening of the ribs in the young whorls, for exemple *Choffatia constricta* (BURCKHARDT) in Sandoval *et al.* (1990). Perhaps *Homoeplanulites* will prove a satisfactory genus for this form, but that genus has yet to be reported from the western hemisphere. If the fossil is the same age as the one with which it was found, then it is too young to be a leptosphincticine, but if the two fossils represent separate levels within the Middle Jurassic, then Leptosphinctinae is a possible assignment for this specimen.

Horizon and locality - Late Bathonian, Agua Fria Formation, from near the town of Jacaleapa, east of Tegucigalpa, Honduras, UTM coordinates 36.4/50.5, Danli quadrangle, hoja 2858-H.

Family OLCOSTEPHANIDAE Haug, 1910
Subfamily OLCOSTEPHANINAE Haug, 1910
Genus *Olcostephanus* NEUMAYR, 1875

Type Species - *Ammonites astierianus* d'ORBIGNY, 1840, subsequently designated by Lemoine (1906).

OLCOSTEPHANUS spp. : pl. 1, fig. 8-12.

Remarks - Two fragments of *Olcostephanus,* which probably do not represent the same species, are WSA-16314 and WSA-16313. There are more ribs per tubercle than in *Olcostephanus atherstoni* (SHARPE) (COOPER, 1981). WSA-16314 (pl. 1, fig. 8) can be compared to *Olcostephanus bakeri* (IMLAY, 1937), which Cooper (1981, p. 216) compares to but considers different from *O. densicostus* (WEGNER). WSA-16314 and WSA-16313 are too incomplete and crushed to consider further identification.

Horizon and locality - Cantarranas Formation, probably Late Valanginian, but Early Hauterivian cannot be completely ruled out. The fossilss are from near the village of San Juancito, northeast of Tegucigalpa, Honduras.

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