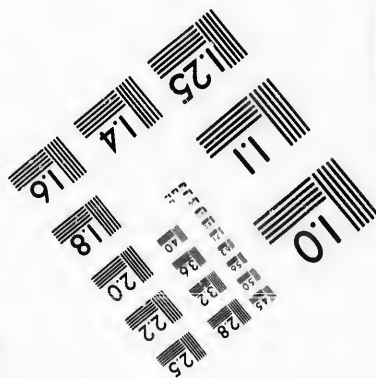
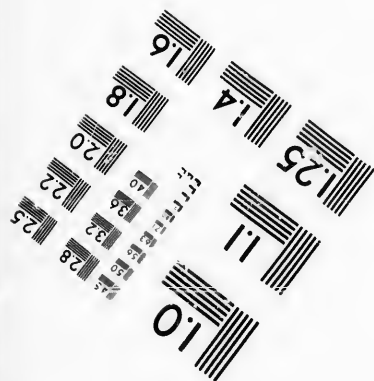
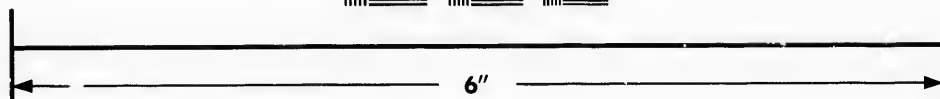
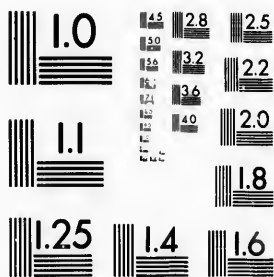


**IMAGE EVALUATION
TEST TARGET (MT-3)**



**Photographic
Sciences
Corporation**

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

15 28
32 25
39 22
20
8

**CIHM/ICMH
Microfiche
Series.**

**CIHM/ICMH
Collection de
microfiches.**



Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

10

© 1987

Technical and Bibliographic Notes/Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured covers/
Couverture de couleur
- Covers damaged/
Couverture endommagée
- Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée
- Cover title missing/
Le titre de couverture manque
- Coloured maps/
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur
- Bound with other material/
Relié avec d'autres documents
- Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure
- Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

- Coloured pages/
Pages de couleur
- Pages damaged/
Pages endommagées
- Pages restored and/or laminated/
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
- Pages detached/
Pages détachées
- Showthrough/
Transparence
- Quality of print varies/
Qualité inégale de l'impression
- Includes supplementary material/
Comprend du matériel supplémentaire
- Only edition available/
Seule édition disponible
- Pages wholly or partially obscured by errata slips, tissues, etc., have been refilmed to ensure the best possible image/
Les pages totalement ou partiellement obscurcies par un feuillet d'errata, une pelure, etc., ont été filmées à nouveau de façon à obtenir la meilleure image possible.

- Additional comments:/
Commentaires supplémentaires: Pagination is as follows : [435] - 446 p.

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

The c
to the

The in
possib
of the
filmin

Origin
begin
the la
sion,
other
first p
sion,
or illu

The la
shall
TINUS
which

Maps
differ
entire
begin
right
requir
metho

The copy filmed here has been reproduced thanks to the generosity of:

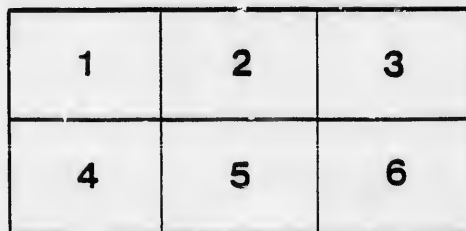
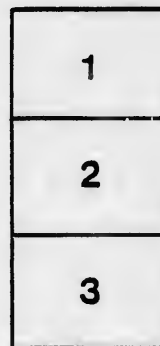
Library,
Geological Survey of Canada

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol \rightarrow (meaning "CONTINUED"), or the symbol ∇ (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:



L'exemplaire filmé fut reproduit grâce à la générosité de:

Bibliothèque,
Commission Géologique du Canada

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole \rightarrow signifie "A SUIVRE", le symbole ∇ signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.

MEFL

W58d

pam

MEFL

W58d

PAM

Descriptions of two new species of Ammonites from the Cretaceous rocks of the Queen Charlotte Islands.

By J. F. WHITEAVES.

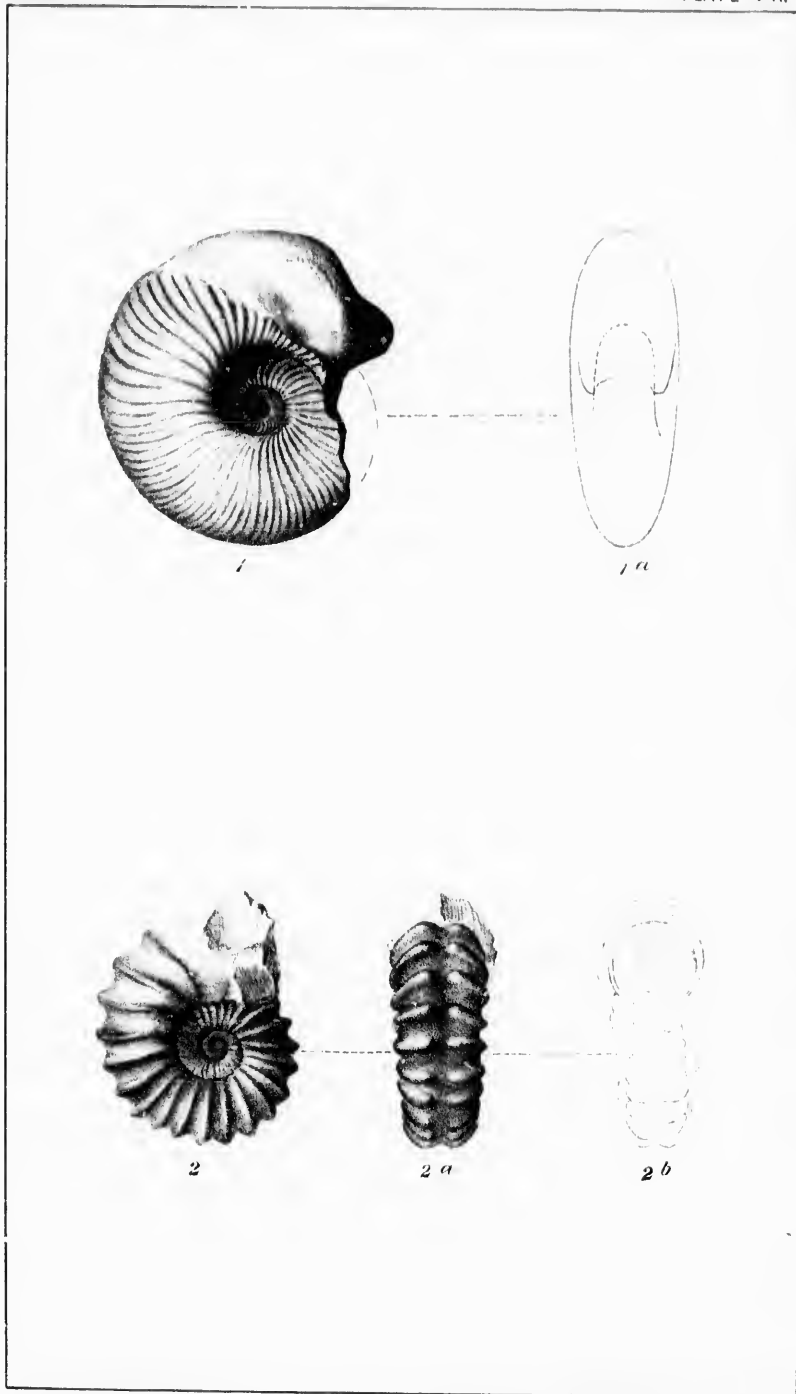


Descriptions of two new species of Ammonites from the Cretaceous rocks of the Queen Charlotte Islands.

By J. F. WHITEAVES.







L. M. Lambe, del.

O. E. Prud'Homme, Lith.

AMMONITES FROM Q.C. ISLANDS.

Descriptions of two new species of Ammonites from the Cretaceous rocks of the Queen Charlotte Islands.*

By J. F. WHITEAVES.

Through the courtesy of Dr. C. F. Newcombe, of Victoria, V. I., and by kind permission of the Council and members of the Natural History Society of the University of Columbia, the whole of their collection of the Cretaceous rocks of that province has recently been placed at the writer for examination and study. Among the fossils there are two small Ammonites which appear to be undescribed, both of which are labelled as having been collected at Skidegate Inlet, Q. C. I., and presented to the society by Mr. James Deans. Both are clearly referable to the family of Stephanoceratidae of Neumayr, as amended or re-defined by Zittel. One is an imperfect specimen of a small species of *Olcostephanus*, nearly related to *O. Jeannotti* (the *Ammonites Jeannotti* of d'Orbigny¹) of the Neocomian of France and Switzerland. The other is a more perfect but apparently not quite full-grown specimen of a species of *Hoplites*, of the type of *H. sinuosus* (the *Ammonites sinuosus* of d'Orbigny²)

¹ Paléont. Franc., Terr. Cret., vol. i, p. 188, pl. 56, figs. 3-5.

² *Ib.*, p. 204, pl. 60, figs. 1-3.

* Communicated by permission of the Director of the Geological Survey Department.

of the French Neocomian. The exact characters of the sutural line are unfortunately not well shown in either of these specimens. The two species represented may be provisionally described as follows, with the proviso that the diagnoses of each are, of course, subject to such modifications or amplifications as may be made necessary by the discovery of more perfect specimens.

OLCOSTEPHANUS (ASTIERIA) DEANSII. (Sp. nov.)

Plate VII, figs. 1 and 1 a.

Shell small, compressed at the sides and narrowly rounded at the periphery: umbilicus occupying rather less than one-third of the entire diameter. Volutions three or four, increasing rapidly in size, especially in the dorso-lateral direction, and rather closely embracing, about two-thirds of the sides of the inner ones being covered, the outer one a little higher than broad: aperture elliptical in outline but deeply emarginate by the encroachment of the preceding volution.

Surface marked by numerous, closely arranged, small but distinct, though not very prominent, flexuous, transverse ribs, which bifurcate about the middle of the sides and then pass uninterruptedly over the periphery.

The sutural lines are so crowded together and confused that, although fairly well preserved in places, it is scarcely possible to follow the details of any single one. The siphonal saddle, however, is small, a little higher than broad, with a minutely trifurcate apex, and an appressed spur on each side below. The first lateral saddle is large, ramose and unequally bipartite or obscurely tripartite at its summit. The siphonal lobe is large and symmetrical, with three branchlets on each side, two of which are lateral and one terminal, but the lowest of the two pairs of lateral branchlets is much the smallest of the three pairs.

The only specimen collected is considerably eroded near the aperture, as represented in fig. 1, but in the uneroded portion the maximum diameter is about forty millimetres, and the greatest breadth fourteen.

The writer has much pleasure in associating with this species the name of its discoverer, Mr. James Deans of Victoria, V. I., who accompanied Mr. James Richardson in his exploration of the Queen Charlotte Islands, in 1872, and who has since presented some unusually perfect specimens of the fossils of the Cretaceous rocks of those islands to the museum of the Geological Survey Department at Ottawa.

O. Deansii appears to belong to the small group of Ammonites of which *Olcostephanus Astieri* is the type, and for which M. Pavlow has recently (1891) proposed the generic or subgeneric name *Astieria*.¹ According to M. Pavlow, the *Olcostephani* of the group of *O. Astieri* form a natural group, a genus (*Astieria*) if one prefers to consider the *Olcostephani* as a family, or a subgenus if one would rather regard *Olcostephanus* as a genus.

The shape and surface ornamentation of *O. Deansii* are very similar to those of *O. Jeannotti*. But in *O. Jeannotti* the ribs bifurcate at the umbilical margin, and are represented as so prominent as to everywhere break the general contour if the shell is viewed laterally. The siphonal saddles of *O. Jeannotti*, too, are described as broad, and the figures show that they are much broader than high. In *O. Deansii*, on the other hand, the ribs bifurcate half way across the sides, at a considerable distance from the umbilical margin, and are not sufficiently prominent to interrupt the continuity of the outline of the shell in a full side view. The siphonal saddles of *O. Deansii*, also, are narrow and, as already stated, a little higher than broad.

The genus *Olcostephanus*, which was founded by Neumayr in 1875, is abundantly represented in the Upper Jurassic and Lower and Middle Cretaceous rocks of Europe. The only other species that has been definitely recorded from the Canadian Cretaceous is *O. Loganianus* (nobis), from Skidegate Inlet, whose characters are still very imperfectly known. As stated elsewhere,² however, it is most probable that the so-called *Haploceras Cumshewaense* (nobis), from

¹ Bull. Soc. Imp. Naturalistes de Moscou, Année 1891, N. Ser., vol. v, p. 491.

² Trans. Royal Soc. Canada, vol. x, sect. iv, p. 114.

Cumshewa Inlet, belongs to that section of the genus *Olcostephanus*, for which M. Pavlow has since proposed the subgenus *Virgatites*.¹

HOPLITES HAIDAUQUENSIS. (Sp. nov.)

Plate VII, figs. 2, 2 a & 2 b.

Shell small, strongly costate and widely umbilicated, the umbilicus, as measured from suture to suture, occupying about one-third of the entire diameter. Volutions about three, though the nucleus is not preserved in the only specimen collected, increasing rather rapidly in size and slightly embracing: the outer one moderately convex, a little broader than high, the outline of a transverse section being subpentagonal if made through one of the ribs, or not far from circular if in the centre of one of the grooves between them: aperture nearly circular but shallowly emarginate by the encroachment of the preceding volution.

Surface marked by large and prominent, simple and nearly straight, transverse ribs, which are separated by rather broad concave grooves. The ribs, which are equal in length, are most elevated on the outer or peripheral portion of the last volution, and in the median line of the periphery there is a single angular notch on each rib which scarcely interrupts the continuity of the rib.

Sutural line not clearly defined, but apparently not very complicated nor much branched. The first and second lateral saddles appear to be much broader than high, and doubly incised rather than ramose at the summits. The first lateral lobe seems to be trifurcate above and unusually small, though apparently much larger than any of the others except the siphonal lobe.

Maximum diameter of the only specimen collected, twenty nine millimetres: greatest breadth of the same, twelve mm.

The specific name suggested for this little Ammonite is a modification of the word Hai-da-kwe-a, which Dr. G. M.

Op. cit., p. 474

Daw
Isla
Rep
1878
grou
cati
and
the
acte
have
diffe
spec
oute
exac
sutu
of *A*
first
than
are r
TI
1875
Cret
(nob
stone
teris
(nob
pear
the g
ceras
Van
genu
also

¹ P.
² Pr
³ Ha
⁴ Pa
⁵ Tr
⁶ Ib
⁷ Bu

Dawson quotes as the Indian name for the Queen Charlotte Islands, in his report on these islands, published in the Report of Progress of the Geological Survey of Canada for 1878-79.¹ The shell itself appears to belong to the sub-group Dentati-regulares of the Dentati, of Pictet's classification of the Ammonites in the "Paléontologie Suisse,"² and to that section of the genus *Hoplites* which Zittel calls the group of *Ammonites interruptus*.³ In many of its characters it is very similar to *Hoplites sinuosus*, but it seems to have fewer and more distant ribs than that species and a different sutural line. Thus the type and only known specimen of *H. Haidaquensis* has twenty-two ribs on the outer volution, while that of *H. sinuosis*, which is almost exactly the same size, is said to have thirty-four. The sutural line of *H. Haidaquensis* seems to be more like that of *H. crassicosatus*, as figured by d'Orbigny,⁴ in which the first and second lateral saddles are represented as broader than high, whereas the corresponding saddles of *H. sinuosus* are represented as higher than broad.

The genus *Hoplites* also was proposed by Neumayr in 1875, and is regarded as eminently characteristic of the Cretaceous epoch. *H. Haidaquensis* and *H. Canadensis* (nobis),⁵ from the Clearwater shales and Peace River sandstones of the district of Athabasca, are typical and characteristic Canadian species of this genus. *H. McConnelli*⁶ (nobis), from the Clearwater shales of the Athabasca, appears to be rather an aberrant member of that section of the genus which Zittel calls the "group of *Ammonites cryptoceras*." It is also most probable that the fossil from Comox, Vancouver Island, which Meek doubtfully referred to his genus *Placenticerias*, under the name *P. Vancouverense*,⁷ is also referable to *Hoplites*.

¹ P. 104 B.

² Prem. partie, p. 328.

³ Handb. der Paleont., vol. ii, p. 476.

⁴ Paléont. Franc., Ter. Cret., vol. i, atlas, pl. 59, fig. 3.

⁵ Trans. Royal Soc. Canada, vol. x, sect. iv, p. 118, pl. xi, figs. 3-5.

⁶ *Ib.*, p. 117, pl. xi, figs. 2, 2 a & b.

⁷ Bull. Geol. and Geog. Surv. Terr., vol. i, No. 4, p. 370, pl. vi figs. 1, 1 a-c

With the permission of Mr. Deans, the types of the two species described in this paper have been presented to the museum of the Geological Survey by the members of the Natural History Society of British Columbia.

EXPLANATION OF PLATE VII.

OLCOSTEPHANUS (ASTIERIA) DEANSI.

Fig. 1.—Side view of the only specimen collected.

1a.—Outline of the same, from another point of view, to show the proportionate breadth of the shell and probable shape of its aperture.

HOPLITES HAIDAQUENSIS.

Fig. 2.—Side view of the only specimen collected.

2a.—Another view of the same, to show the characters of the peripheral region, near the aperture.

2b.—Front view of the same, in outline, to show the shape of the aperture, etc. All the figures of natural size.



