87. An Aberrant Ammonite Genus from the Cretaceous of Hokkaido

By Tatsuro Matsumoto

(Communicated by Teiichi Kobayashi, M. J. A., Nov. 12, 1984)

A peculiar heteromorph ammonite with minutely dentate tubercles was reported by Matsumoto and Obata (1981) on the basis of Yoshitaro Kawashita’s Collection. He has recently shown me another aberrant ammonite which has similar but not quite identical characters. To accommodate these two species with peculiar characters I propose a new genus as follows.

Family Turrilitidae
Subfamily Nostoceratinae
Genus Kawashitaceras nov.

Type species:—Neocrioceras dentatum Matsumoto et Obata, 1981 (Fig. 1).

Diagnosis:—Loosely uncoiled ammonite provided with numerous ribs without tubercle and periodic, somewhat stronger, looped ribs with four rows of ventral, clavate tubercles, which form adorally ascending ridge with minor crenulations on top. Phragmocone presumed to show an open subelliptical to U-shaped form, followed by a long, arcuate body-chamber.

Remarks:—Because of the incomplete preservation of the specimens the shell-form is not fully known, but presumed to be intermediate between the typical crioceratoid form of Neocrioceras Spath, 1921 and the U-curved open subrectangular form of typical Schlüterella, Wiedmann 1962 (emend Matsumoto and Miyauchi, 1984).

With respect to the periodic occurrence of quadrituberculate major ribs, with non-tuberculate ribs on interspaces, Kawashitaceras is similar to the above two genera, but distinguished from them in that its tubercles are distributed restrictedly in the ventral part and have an asymmetric shape with minor crenulations on their clavate ridge.

The type species was at first described provisionally under Neocrioceras in a broader sense (Matsumoto and Obata, 1981), but is now transferred to the new genus. In addition to it, there is another species of Kawashitaceras as described below.

Distribution:—Turonian and possibly also Coniacian of Japan, so far as is known at present.

Studies of the Cretaceous Ammonites from Hokkaido-LII.
Kawashitaceras obiraense sp. nov.

Material:—Holotype is Kw 5 (Figs. 2, 3A and 4A, B), body-chamber, in Y. Kawashita’s Collection (see Occurrence). Another specimen Kw 6 (Fig. 3B) in the same nodule as the holotype may represent a part of the phragmocone of the same species.

Diagnosis:—Whorl somewhat higher than broad, with elliptical section. Ribs narrow and numerous, nearly rectiradiate on body-chamber and more or less prorsiradiate on phragmocone, mostly simple but occasionally bifurcated and/or intercalated outward, becoming denser on the ventral part. Somewhat more elevated ribs
occur periodically, with four rows of ventral tubercles. Suture florid, deeply and finely incised with bipartite lateral lobes and saddles of a dove-tail shape.

**Measurements (in mm):**

<table>
<thead>
<tr>
<th>Holotype</th>
<th>Length</th>
<th>Height (H)</th>
<th>Breadth (B)</th>
<th>B/H</th>
</tr>
</thead>
<tbody>
<tr>
<td>anterior</td>
<td>230.0</td>
<td>32.6</td>
<td>25.7</td>
<td>0.79</td>
</tr>
<tr>
<td>posterior</td>
<td>29.4</td>
<td>23.4</td>
<td>18.5</td>
<td>0.81</td>
</tr>
<tr>
<td>Kw 6</td>
<td><em>ca.</em> 183.0</td>
<td><em>18.5</em></td>
<td><em>13.0</em></td>
<td><em>0.70</em></td>
</tr>
</tbody>
</table>

**Remarks:**—The tubercles of the smaller specimen are incompletely preserved and whether they are minutely crenulated or not is not clear. Mr. S. Uchida has shown me another smaller specimen collected by him from the Turonian of the Ikushumbets area. Its small tubercles on the venter are subdivided into two minute spines of unequal height.

**Comparison:**—The whorl of *K. obiraense* is higher than broad, whereas that of *K. dentatum* is broader than high. The former has finer and more numerous ribs than the latter and the tubercles are coarser in the latter.

The described phragmocone resembles "Neocrioceras" *manderi* Immel et al., 1982, from the Lower Santonian of the Gosau (Austria), but whether the ventral tubercles are subdivided or not is not clear even in the body-chamber of that species.

**Occurrence:**—The holotype and associated specimens are in a floated nodule obtained by Y. Kawashita in a small branch stream of the River Obirashibetsu, about a point 500 m southeast from the bridge called "Tengu-bashi", Obira area, Rumoi-gun, northwestern Hokkaido. The locality and the associated fossils suggest either the Upper Turonian or Coniacian (see Tanabe et al., 1977).

**Further discussion:**—In the two species of *Kawashitaceras* the clavate tubercles have an asymmetric shape, with the highest point and steep slope adorally and a posteriorly gentle inclination, and several minor crenulations are disposed on their top. They are distributed restrictedly on the venter. These characters would be favourable for the ammonite to repose himself (or herself) on the bottom sediments and also for him to start for occasional locomotion back upward in the sea water. This is an adaption of bottom dwellers, especially for this kind of aberrant ammonites, with a widely opened uncoiling, who must have been unstable for resting. The radially elongated spinose tubercles of *Neocrioceras* and *Schluterella* are certainly useful for the protection against enemies. This difference in the functional morphology of tubercles, as well as
that in the form of uncoiling, is one of the reasons why I propose *Kawashitaceras* as an independent genus rather than to affiliate it as a subgenus of *Neocrioceras* or *Schlueterella*.

Acknowledgements. I appreciate highly the keen finding of interesting ammonites by Mr. Yoshitaro Kawashita, to whom the new genus is dedicated. I wish to thank Professor Emeritus Teiichi Kobayashi, M. J. A., for his continuous encouragement and also Dr. Masayuki Noda and Mr. Shigehiro Uchida for their kind help to my study.

References