日本古生物學會報告

(Transactions of the Palaeontological Society of Japan)

105. *An Occurrence of Praestriaptychus? in the Upper Jurassic of Japan*

By

Takumi NAGAO

(Read February 18th, 1939; received April 5th, 1940)

Aptychi seem to be extremely rare in the Japanese Jurassic, *Cornaptychus nagatoensis* NAGAO¹⁾ from the Lias of the province of Nagato being the unique example hitherto recorded. Recently Prof. H. YABE of the Institute of Geology and Palaeontology, Tôhoku Imperial University, kindly submitted for determination to the writer an aptychus obtained from the Upper Jurassic rocks in the southern part of the Kitakami Mountainland in Northern Honsyû. The specimen is, as described below, represented by a cast of a two-valved operculum with the ornamentation of either outer or inner surface impressed on the matrix. The parent ammonite is unknown at present. In the district where this operculum has been obtained, the Upper Jurassic rocks²⁾ composed mainly of dark coloured hard slaty shale alternated with sandstone are developed. On the label sent to the writer together with the specimen is recorded that it had been found at a locality with, separately, a specimen of *Perisphinctes* (*Aulacosphinctes?*) sp. No ammonite of other genera is yet reported to occur in this complex, it will be very natural to suppose that this operculum belongs to some form of this genus.

Praestriaptychus? sp.

Type specimen: A cast impressed on dark coloured slaty shale.

Locality and horizon: Tomari, Ôhara-mura, Ozika-gun, Miyagi Prefecture,³⁾ Ozumi bed.⁴⁾

Aptychus composed of two valves joined along the straight harmonic margin, height smaller than twice the maximum breadth; valve semi-oval in outline with

1) T. NAGAO: *Cornaptychus* from the Jurassic of Japan, Proc. Imp. Acad., VII, no. 10, 1932, p. 511, text-figs. 1-3. This form has been considered by Prof. TRAUTH as a variety of *C. stenohythisensis* TRAUTH. (F. TRAUTH: Die zweivalrigen Aptychen des Lias, Part I, 1935, Pl. VI, fig. 17; Pt. II, 1936, p. 14, Pl. II, fig. 1.)

2) T. TAKAHASHI: On the Mesozoic Plant-bearing Deposits of Ozika Peninsula, Miyagi Prefecture, Jubilee Publ. Comm. Prof. H. YABE, Sixtieth Birthd. Vol. II (in Preparation).

3) 宮城縣牡鹿郡大原村泊

4) 小積層

the maximum breadth near the apex, and thence gradually narrowing toward the external end. Lateral margin arcuate, passing gradually into the external one and

abruptly, over the narrowly rounded umbonal angle, into the nearly straight and rather long internal margin which forms an obtuse angle with the symphyseal margin; outer margin incomplete but apparently very short and convex.

Outer surface of the specimen very weakly convex both from the inner margin to the outer and from the lateral margin to the symphyseal, ornamented with crowded, round-topped, rather broad, more or less elevated concentric ribs (or folds) parallel with the margins, and concave interspaces in alternation; the ribs more elevated and narrower on the earlier stage, becoming broader, lower and more crowded toward the margins where the interspaces are narrower than the ribs themselves. Close-set, very fine concentric striations (growth-lines) cover the ribs and interspaces. Adsymphyseal area not well defined, keel not well developed.

Measurements of left valve, as preserved.

Maximum height ca. 34 mm.

Length of harmonic line ca. 27 mm.

Maximum breadth ca. 19 mm.

In the present specimen the impression of both valves is represented, but the

outline of one of the valves is much obliterated owing to secondary deformation. The opposite valve itself has been subjected to some torsion, so as to be lengthened a little along the line connecting the umbilical angle with the terminal one. The original contour of the left valve may have been slightly more broadly semi-oval with the lateral margin more broadly convex.

In the present state of preservation, especially since the outer mould on which the external ornamentation may have been clearly impressed was not collected, it is very difficult to determine whether the concentric ornamentation shown on the convex surface of the specimen belongs to the internal or concave surface of the valves or the external or convex one. Until this is settled the features of the operculum under consideration can not be reconstructed with certainty to place this specimen safely under any of the determined types or forms.

The calcareous layer does not remain in the specimen, but the valves are presumably very thin; from this feature together with the characteristic concentric ornamentation, although it is not determined whether the latter is the external or internal, the present operculum most probably belongs to *Striaptychus* in the broad sense¹⁾ as defined by Prof. F. TRAUTH, which includes *Praestriaptychus*,²⁾ *Granulaptychus*³⁾ and *Striaptychus* (s. str.).⁴⁾ These three "subtypes" have many features in common, especially a thin calcareous layer and concentric ribs or folds.

Some *Perisphinctes* have been determined with some certainty to bear *Granulaptychus*. This type of opercula, with its range from Dogger to Malm, is characterised in having the inner concave surface concentrically sculptured and the outer convex surface ornamented rather irregularly with granules or stocks.

In the present specimen no trace of granular ornamentation is preserved. If the preserved ornamentation is derived from the convex surface of the original aptychus, then this operculum can not be a *Granulaptychus*, while if the ornamentation is attributable to the concave surface of the valve, that is to say the specimen at hand is the inner mould, this operculum may belong to any of the three "subtypes" cited above. Thus operculum may be *Granulaptychus* which has been known to belong to some forms of *Perisphinctes* as above mentioned.

On the other hand, from the presumable thin test of the valves, it seems advisable to consider the present specimen as representing the external ornamentation that is the external "cast" impressed on the internal "mould," a very common case of many thin-texted specimens of *Perisphinctes* met with in this district and other parts of Japan. Hence, it is not deniable that we are treating an operculum of *Praestriaptychus*. This type of operculum remained long unknown from the Upper Jurassic and it was thought that in the history of *Striaptychus* (s. lat.) a great gap had intervened between the Dogger from which imperfectly known *Praestriaptychus* are met with and the Upper Cretaceous dominated by

1) F. TRAUTH: Aptychenstudien V, 1930, Die Aptychen des Dogger, p. 379.

2) F. TRAUTH: Ibid., p. 378.

3) F. TRAUTH: Ibid., p. 387.

4) F. TRAUTH: Aptychenstudien II, 1928, Die Aptychen der Oberkreide, p. 134.

Striaptychus (s. str.).

Lately TRAUTH¹⁾ demonstrated that *Praestriptychi* occurred in the Upper Jurassic. From the Upper Jurassic of Wünnenburg is known a *Praestriptychus* which was found in a shell of *Perisphinctes* and TRAUTH named it *Praestriptychus fraasi* TRAUTH. The operculum from Japan seems to be akin to this form of *Praestriptychus*, especially to the specimen illustrated by TRAUTH in pl. X, fig. 5,²⁾ although a more precise comparison is prevented owing to the very imperfect state of the Japanese fossil.

At the end the writer wishes to express his thanks to Prof. YABE for the loan of the present specimen.

本邦上部ジュラ層産 *Praestriptychus* (摘要)

長 尾 巧

本邦ジュラ紀層には *aptychus* は極めて少く只 *Cornaptychus nagatoensis* NAGAO (長門ライアス層産) が知られてゐるに過ぎない。今回東北帝大矢部教授の御好意により 北上南部上部ジュラ小積層産の *aptychus* を検し得た。これを産した地では *Perisphinctes* (*Aulacosphinctes*?) sp. が採集されたのみで、従てこの *aptychus* もこの類のアンモナイトのものと考へる。本標本を検すると TRAUTH の *Striaptychus* (s. l.) であつて、不完全である爲夫れ以上のことは不明であるが、*Granulaptychus* といふよりも寧ろ *Praestriptychus* でないかと思ふ。*Praestriptychus* は中部ジュラより上部白堊紀に至る長期間からは從來確に知れてゐなかつた。

しかし最近 TRAUTH は上部ジュラより産出する数例を報じ、特に Wünnenburg 上部ジュラ層よりは *Perisphinctes* の殻中に入つてゐる例をあげてゐる。これは *Praestriptychus fraasi* TRAUTH と命名されたが、本邦産のものは之に類似してゐる。

1) F. TRAUTH: Aptychenstudien V, 1930, Die Aptychen des Dogger, p. 379.

2) F. TRAUTH: Die Praestriptychi und Granulaptychi des Oberjura und der Unterkreide. Palaeont. Zeitschr., vol. XIX, 1937, p. 138, pl. X, figs. 1-7; pl. XI, fig. 1.