*A New Species of Posidonia from the Inai Series (?) in the Southern Kitakami Mountainland, Japan**

By

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The pelecypod described here was found by Yosiyuki IWAYA in a boulder of a dark gray hard sandy slate at the shore east of the beak of Biwa (琵琶崎), Shizukawa-machi, Motoyoshi-gun, Miyagi Prefecture, and added to the collection of the Geological Institute, Imperial University of Tokyo. Judging from the facts that the rock-aspect is typical of the Inai member and that the locality stands in the terrain of the upper Inai series, it is most probable that the boulder was derived somewhere from the upper part of the series. While the Anisic ammonites have been known to occur in the upper Inai series at Inai and other places in the southern Kitakami mountainland, no pelecypod is so far known and this is really the first announcement.

Posidonia japonica, new species

Description:—Shell longer than high and semi-elliptical broadest at a distance one-third from the hinge margin, and more broadly rounded in the anterior than in the posterior; hinge margin straight, corresponding to about three-fourths the length of the shell; beak located at a point a little anterior to the center of the margin, slightly projected beyond the margin and a little bent forward; shell most convex at a point one-fourth from the beak. Concentric ribs and furrows fine and faint in a distance of some 4 mm. from the beak, distinct but not very

Text-figures of *Posidonia japonica* KOBAYASHI and HUKASAWA. A specimen, an internal mould; B, C and D specimens clay-casts taken from their external moulds. $\times 2$.

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strong in the next 7 mm. and weakening in the peripheral zone; the ribs in the middle zone numbering seven to ten and A-shaped; fine radial lines crossing the ribs and furrows in the outer half.

Remark :—Four specimens illustrated are the cotypes. Seeing that the concentric ribs are broadly spaced in the middle part, narrowly spaced in the umbonal and peripheral parts, it may be judged that the specimens in figs. A and B are full-grown shells. Dimensions of the valve in the mature stage are about 22 mm. in length, 15 mm. in height and 2 mm. in thickness. Irregular wrinkles as frequently seen in *Estheria* cannot be observed in the specimens even under a high magnifying lens. In the external mould, however, there are very fine and numerous radial lines which are faintly impressed in the peripheral zone as seen in the specimens in figs. B and D, but they are not strong enough to be impressed in the internal mould. The absence of the radial ribs and the anterior triangular area precludes this form from *Daonella* as well as *Halobia*, and *Posidonia* remains for its generic reference.

With the assistance of DIENER and KUTASSY's catalogues¹⁾ comparison was made with many Triassic species of the genus, as far as their literatures are accessible. Most of them are semi-elliptical or obliquely semi-ovate in outline, but subcircular in *P. wengensis* var. *cycloidalis* KIRTL²⁾ and high oblique and elongated in *P. bosniaca*³⁾ and low oblique in *P. obliqua*⁴⁾. *P. madisonensis* and *P. jacksoni*⁵⁾ are quite distinct from most others of *Posidonia*. The relative length of the hinge margin with the shell also varies among the species. The hinge line is long in *P. pannonica*, *P. böckhi*, *P. bittneri*⁶⁾, and several other species. In *P. bittneri*, *P. ovalis*, and *P. becheri* the radial marking is absent, but it may be present in *P. pannonica* and *P. wengensis*.

While this form agrees with *P. bittneri* and *P. pannonica*⁷⁾ in outline, the presence of weak radial lines shows its alliance to *P. pannonica* and *P. wengensis*. Therefore it is certain that this form belongs to the group of *P. pannonica*. Close comparison, however, reveals some differences between this and *P. pannonica*. Namely, the position of its umbo is more central and its outline is broader. KIRTL who restudied MOJSISOVICS' types noted that *P. alta* is an immature form of *P.*

1) C. DIENER: (1923), Lamellibranchiata Triadica. Fossilium Catalogus, Pars. 19.

C. DIENER & A. KUTASSY: (1931), Lamellibranchiata Triadica. Fossilium Catalogus, Pars. 51.

2) E. KIRTL: (1912), Materialien zu Einer Monographie der Halobiidae und Monotidae der Trias. Result. der Wiss. Erforsch. des Balatonsees, 1 Bd., Teil Pal., Bd. 2.

3) A. BITTNER: (1903), Brachiopoden und Lamellibranchiaten aus der Trias von Bosnien, Dalmatien und Venetien. Jahrb. kaiserl.-königl. G. ol. Reichsanst., 52 Bd.

4) H. PHILIPP: (1904), Paläontologisch-geologische Untersuchungen aus dem Gebiet von Predazzo. Zeitsch. deutsch. geol. Gesell., 56 Bd.

5) J.P. SMITH: (1927), Upper Triassic Marine Invertebrate Faunas of North America. U.S. Geol. Surv., Prof. Pap., 141.

6) G. de LORENZO: (1896), Fossili del Trias Medio di Lagonegro. Pal. Italica, Vol. 2.

7) E. v. MOJSISOVICS: (1873), Über einige Trias-Versteinerungen aus Süd-Alpen. Jahrb. kaiserl.-königl. Geol. Reichsanst., 23 Bd.

pannonica and "*Daonella*" *obsoleta* is if not identical, extremely close to the species. If KIRTL's reference is correct, the difference of outline in the young stage is certainly considerable between *P. pannonica* and *P. japonica*. The *pannonica* bearing limestone at Vászoly was referred to the Noric by MOJSISOVICS, but later to the Muschelkalk by KIRTL. If its age is Aniso-Ladinic as cited in DIENER's catalogue, *P. pannonica* and *P. japonica* may be approximate in age, because the locality where the boulder was found lies near the top of the Inai series.

DIENER's *Posidonomya* aff. *pannonica*¹⁾ from the Muschelkalk has a low oblique outline remarkably produced postero-ventrally through which it can easily be distinguished from *P. pannonica* as well as *P. japonica*. REED's *Posidonomya* cfr. *wengensis*²⁾ from the Middle Triassic Formation of Yunnan is a small specimen which resembles *P. japonica* in outline, but the comparison of the two in the same stage of growth shows the differences in that the concentric ribs are distinct, strong and widely spaced and fine lines radiate from the umbo in the former whereas in the latter the concentric ribs are weak, the furrows narrow and the radial lines absent. Furthermore the hinge line is relatively shorter in the former than in the latter. Compared to YIN's *P.* aff. *wengensis*³⁾ from the Ladinic formation of Omeishan which is evidently different from *P. wengensis*, this has more densely populated concentrics and less distinct radial lines, but both forms agree with each other in the subcentral position of the umbo.

北上山地南部井内統 (?) 産の *Posidonia* 1 新種 (摘要)

小林 貞一・深澤 恒雄

宮城縣本吉郡志津川町琵琶崎東方海岸の轉石中の *Posidonia* を研究結果, Aniso-Ladinic より記載されたる *Posidonia pannonica* に類似せる 1 新種なる事判明し *Posidonia japonica* と命名す。本化石を含む轉石は其の岩質と産地より井内統上部より將來せるものと推察す。

1) C. DIENER: (1907), Fauna Himal. Muschelkalk. Pal. Indica, Ser. XV, Himal. Foss., Vol. 5, No.2.

2) F. R. Cowper REED: (1927), Palaeozoic and Mesozoic Fossils from Yunnan. Pal. Indica, N.S. 0, No. 1.

3) T. H. YIN: (1931), Sur une Petite Faune de Mollusques Provenant de la Marne Triasique Id'Omeishan, Szechuan. Bull. Geol. Soc. China, Vol. 11.