8. A Silurian Trilobite from Thailand

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Recently Silurian trilobite remains were collected in Thailand by the junior author during his geological reconnaissance*¹⁾ with corals, brachiopods and other fossils in calcareous mudstone at Ban Nong near Loei in the northwestern part of the Khorat plateau, Northeast Thailand. The associated tabulate corals (*Heliolites* and *Favosites*) are late Wenlockian to early Ludlovian in age (Sakagami and Nakornsri, 1987). As the result of this study the trilobite is found to be a new species as denominated here *Encrinurus thailandicus*. The collection contains numerous pygidia in addition to an imperfect cranidium and a few free cheeks.

Encrinurus thailandicus Kobayashi and Sakagami, n. sp.

The pygidium of this species looks pentagonal rather than triangular as the anterior margin of the pleural lobe is bent postero-laterally in its lateral part. The axial lobe is as wide as one-fourth to one-fifth of the pygidium. The breadth of the axial and pleural lobes is changed secondarily in different degrees by lateral compression. The axial rings number 23 or more, the third and succeeding rings of which are bisected by a narrow smooth zone carrying a tubercle in every three to five rings. About eight pleural ribs are countable on each side besides three post-axial ribs. The last pair of the ribs are fused behind the axial lobe. The pleural ribs are separated from one another by pleural furrows as wide as the ribs or even wider particularly in the inner mould. These ribs are steeply slant in the lateral part and terminating in form of tubercles. No marginal border is present. The holotype of this species is the pygidium as seen in Fig. 1f.

On an ill-preserved cranidium the frontal lobe is limited behind by a strong transverse furrow. On the free cheek the anterior branch of the facial suture is sigmoidal, cutting the marginal furrow in front of the lateral limit of the prominent eye. The lateral border of the cheek is ornamented with tubercles in one or two rows arranged irregularly. The cephalon is densely granulate except for the furrows.

The genus *Encrinurus* has already been discussed in detail in previous paper (Kobayashi and Hamada, 1974). This species resembles *Encrinurus konghsaensis* Reed, 1906 from the Wenlockian Namhsim sandstone in the northern Shan plateau, East Burma. Its pygidium has lateral lobes with 9–10 pleurae regularly curved and decreasing in length successively; extremities of pleurae slightly swollen and rounded, like in this species. This pygidium is less segmented than in that species.

Encrinurus is well represented in Japan with a great variation of the pygidia among which some ten species are distinguishable, particularly with reference to

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Fig. 1. *Encrinurus thailandicus* Kobayashi and Sakagami, n. sp. (All figures are in $\times 3$.) a-c: Free cheeks (GK.C-101, GK.C-102 and GK.C-103, respectively). d: Cranidium (GK.C-104). e-q, Pygidia. e: External replica of the holotype (GK.C-105c). f: Holotype (external mould, GK.C-105a). g: Internal mould of the holotype (GK.C-105b). h: External replica of the holotype (GK.C-105a). i: Internal mould of the paratype (GK.C-106b). j: External mould (paratype, GK.C-106a). k: External replica of fig. h (GK.C-106c). l, m-q: Paratypes (GK.C-107, GK.C-108, GK.C-109a, GK.C-109b, GK.C-110, GK.C-111 and GK.C-112, respectively).

the segmentation. The pleural ribs are six in paucisegmented ones but eleven or more in the multisegmented ones, —in fact 6 or 7 in *E. nodai*, *E. mamelon* and *E. subtrigonalis*, 8 in *E. yokokurensis*, 8 to 9 in *E. similis* and 10 or more in *E. fimbriatus* and *E. kitakamiensis*. Thus *E. thailandicus* is intimately related to *E. similis* and allied species in segmentation. In *E. tosensis* and *E. stenorhachis*

there is no median tubercle in the median smooth zone of the axial lobe. Incidentally the axial lobe is very slender and narrower than one-fifth of the pygidium in *E. tosensis*. In the outline this species is closer to *E. yokokurensis*. *E. ishii* is founded on too strongly deformed pygidia in close comparison with other species.

The cephalon including a hypostoma is known of *E. yokokurensis* of which, however, the genal spine is absent and the marginal border smooth. Therefore it disagrees with *E. thailandicus*. Nevertheless, it is evident that there are many similar species in Japan. *E. thailandicus* is intimately related to *E. similis* in segmentation and the pentagonal outline of the pygidium. These resemblances support their synchronism between these Burmese and Japanese species and *E. thailandicus* must be late Wenlockian to early Ludlovian, if not Wenlockian as the age reached from corals.

The specimens treated in this paper will be deposited in the Paleontological Repository of the Department of Geology, Faculty of Science, Kyushu University.

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