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A NEW SPECIES OF CALLIANASSA FROM THE NEOGENE TERTIARY OF HOKKAIÐÔ

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With 1 Plate

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A species of *Callianassa*, *C. muratai* NAGAO⁽¹⁾, has already been described from the Tertiary Poronai series of the Isikari Coal-field, in Hokkaidô. This fossil is the sole species of the genus ever described from the Tertiary rocks of Japan. It is now known to occur in the Poronai and its equivalent deposits at various places in Hokkaidô, being found in the Obirasibe district in the province of Tesio, the Asibetu, Ikusyunbetu, and Yûbari districts in the province of Isikari, the Urahoro Coal-field in the province of Tokati, and the Akan Coal-field in the province of Kusiro. Thus it will be seen that this form has a wide geographical distribution.

In the summer of 1936, the junior author of this note collected a number of specimens of *Callianassa* from the lower part of the Kawabata series in the Momiziyama district, south of the Yûbari Coal-mines in the province of Isikari. A few other specimens were added by T. SIMOGAWARA from the Tertiary rocks developed at Hobetu in the province of Ihuri. These specimens are distinguished into two forms, of which one is referable to *C. muratai* while the other is new to science.

In the province of Isikari there are well developed Tertiary rocks subdivided as follows:

(1) T. NAGAO: Two Tertiary and One Cretaceous Crustacea from Hokkaidô, Japan. This Journal, Ser. IV, Vol. II, 1932, p. 17, Pl. IV, figs. 9-13.

Oiwake series
 Kawabata series
 Poronai series
 Isikari series

Among these series, the Poronai is considered to be Upper Oligocene or Early Miocene in age, since it is unconformably underlain by the coal-bearing Isikari which is Palaeogene and ranges from Eocene to Oligocene. This complex yields *C. muratai* at various horizons. The Kawabata series which may be Miocene in age is apparently conformable to the Poronai in the Isikari Coal-field and frequently separated from the latter by a distinct clino-unconformity at some places in other parts of Hokkaidô. In the Momiziyama district it comprises a thick complex of sandstone, shale, and conglomerate in alternation in its main portion. The lower part is composed of shale mainly with repeated intercalations of layers of sandstone and conglomerate and it contains the form referred to *C. muratai*, besides abundant molluscan fossils. The basal part of the Lower Kawabata is characterized by thick layers of conglomerate. It also is fossiliferous, containing numerous molluscs and some plant remains. *C. inornata* nov. derives from this basal conglomerate.

The specimens referred to *C. muratai* some of which are figured in the accompanying plate (figs. 6-10) seem to have slight differences in some features of the fingers, but they are certainly very similar to or quite identical with the Poronai species in many important points. Consequently it seems proper to include them in this same species for the time being. It is no means impossible that they may be proved to represent a varietal form of *C. muratai*.

***Callianassa inornata* nov.**

Pl. IV (I), Figs. 1-5.

Holotype: A right cheliped, specimen no. 1 (Reg. no. 7807 d),

Paratypes: A right manus, specimen no. 2 (Reg. no. 7807 a),
 a right cheliped, specimen no. 3 (Reg. no. 7807 b),
 a right carpus, specimen no. 4 (Reg. no. 7807 e),
 a right cheliped, specimen no. 5 (Reg. no. 7807 c).

Locality: Momiziyama, Yûbari-gun, province of Isikari.

Geological horizon: Basal conglomerate of the Lower Kawabata.
 Right cheliped.

Manus: Palm; rectangular in lateral view, moderately higher than long; proximal margin undulating, its upper half length convex

and produced proximally, and the lower half length shallowly concave; upper margin somewhat convex, gradually inclining towards the dactylus finger; lower margin horizontal and straight; distal margin also sinuous with a prominent lobe at the base of the dactylus finger and excavated between this lobe and the propodal finger, the upper portion of the margin injured but apparently convex, obliquely ascending upwards and backwards. Outer surface moderately convex vertically and slightly so longitudinally; inner surface flatter. Both upper and lower borders acute, the latter finely serrated, the former also showing a tendency to coarse crenulation.

Ornamentation: Usually smooth without prominent granules, except a row of small granules near the lower margin.

Propodal finger: Of nearly equal size to the dactylus, approximately as long as or a little longer than the palm, triangular in cross section, considerably curved upwards, terminating in an acutely pointed end. Outer surface convex with a longitudinal row of three granules, continuing with that of the palm; prehensile edge evenly concave with an indication of fine crenulation at least in its proximal portion.

Dactylus finger: Also triangular in cross section, longer than the propodal one, abruptly bent downwards near the distal end. Outer surface convex, sloped inwards and downwards, with a row of three distant granules at the median longitudinal, of which one is at the base, the second at the middle length, and the third near the distal end. Inner surface weathered, not showing any ornamentation. Upper border convex both transversely and longitudinally, and provided with a longitudinal series of five distant granules. Prehensile edge with numerous fine serrations on its greater length.

Carpus: Much longer than the palm, about equal in length and height; upper margin markedly convex and rather steeply inclined distally, the lower one horizontal and straight, very finely serrated in its anterior half; proximal margin sinuous, the lower two-thirds length convex, the remaining excavated. A few granules or pustules arranged lengthwise near the lower margin and also a longitudinal ridge bearing many fine tubercles situated close to the same margin. Another longitudinal row of pustules along and near the upper margin.

Five specimens of this species have come under examination, three of which are represented by the manus associated with the carpus. One of the paratypes (fig. 2) which is a right chela, has been

deformed so that the convexity of the palm in a vertical direction is greater than it originally may have been, and in another one which is considered as a right chela (fig. 1) the outer surface is crushed causing it to become very flat.

The present species is easily distinguished from *C. ezoensis* NAGAO⁽¹⁾ of the Hakobuti Sandstone and *C. muratai*⁽²⁾ by its long carpus, longer than the manus itself. The new form is characterized by its smooth palm except for a few small granules along the lower margin. In the two other forms above cited, the palm is ornamented variously with more numerous granules. The prehensile edge of the propodal finger is provided in the present form with only small crenulations, but it has a prominent tooth in *C. ezoensis* and *C. muratai*. The produced lobe of the distal margin of the palm is prominent and large in the new species, but it is small and trigonal in *C. muratai*, and broad but shallow in *C. ezoensis*. Moreover, the dactylus finger of *C. muratai* is characterized by longitudinal ridges and a somewhat quadrate cross section.

C. dijki MARTIN⁽³⁾ from the Miocene of Java is somewhat similar to the present species in some points, such as the feature of the distal margin and the serrated lower margin of the palm and the form of the propodal finger with a smooth prehensile edge, but it is distinct in having a slightly shorter palm with granulated lobes on the distal margin. Moreover, that Java species is ornamented with much more numerous granules scattered all over both outer and inner surfaces. *C. birmanica* NOETLING⁽⁴⁾ from the Miocene of Burma is also somewhat akin to the present species, but its palm is larger, thicker and has more numerous granules.

Among the *Callianassa* species described by RATHBUN from the Tertiary of the west coast of North America, *C. oregonensis* DANA⁽⁵⁾ has a relatively long carpus similar to ours, but this form is quite

(1) T. NAGAO: Two Tertiary and One Cretaceous Crustacea from Hokkaidô, Japan. Op. cit., p. 20, Pl. IV, figs. 1, 2, 4, 8, 15.

(2) T. NAGAO: Ibid., p. 17, Pl. IV, figs. 9-13.

(3) K. MARTIN: Palaeontologische Ergebnisse von Tiefborungen auf Java. Leiden Samml., 1st Ser., Vol. III, 1883-1887, p. 36, Pl. III, Figs. 31, 32, 33?

(4) F. NOETLING: Fauna of the Miocene Beds of Burma. Palaeontologia Indica, N. S., Vol. I, 1901, p. 368, Pl. XXIV, figs. 3, a-b, 4, a-e, 5, a-d.

(5) M. J. RATHBUN: The Fossil Stalk-Eyed Crustacea of the Pacific Slope of North America. Smithsonian Institution, U. S. Nat. Mus., Bull. 138, 1926, p. 121, Pl. XXVIII, figs. 6-9.

different in other features. *C. porterensis* RATHBUN⁽¹⁾ seems akin to the Japanese form in the smooth palm with a lobed anterior margin and serrated lower one, but it is distinguished by its longer and thicker palm. RATHBUN⁽²⁾ reported a number of species belonging to this genus from the Tertiary of the Panama region, but the present form under consideration coincides with none of these Central American species.

(1) M. J. RATHBUN: *Ibid.*, p. 119, Pl. XXVIII, figs. 1-5.

(2) M. J. RATHBUN: Decapod Crustaceans from the Panama region, in Vaughan: *Contr. Geol. and Palaeont. Canal Zone Panama*. Smithsonian Institute, U. S. Nat. Mus., Bull. 103, 1919, pp. 136-153.

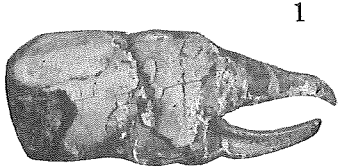
Plate VI (I)

PLATE VI (I)

The figures are of natural size.

Figs. 1-5. *Callianassa inornata* NAGAO and HUZIOKA. 4, holotype.

Figs. 6-10. *Callianassa muratai* NAGAO.



1



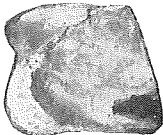
2



3



4



5



4a



6



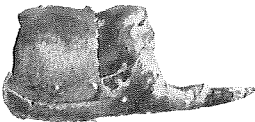
7



8



9



10



10a



(Takeda photo.)

T. Nagao and K. Huzioka: A New Callianassa.