



Text-fig. 6. Fossil remains of *Cancer minotoserratus* NAGAO. a-d, Right chelae. e, Left chela. IPMM 40070 $\times 2$.

STIMPSON from the northwestern Atlantic are somewhat similar in the general formation of the anterolateral teeth, but they are the representatives of the subgenus *Cancer* with the coarsely granulated carapace and chelipeds.

In Japan the genus *Cancer* comprises 6 recent and 3 extinct species, viz., *C. gibbosulus* (DE HAAN, 1835), *C. japonicus* ORTMANN, 1893, *C. amphioetus* RATHBUN, 1898, *C. tumifrons* YOKOYA, 1933, †*C. minotoserratus* NAGAO, 1940, †*C. sanbonsugii* IMAIZUMI, 1962, †*C. odosensis* IMAIZUMI, 1962, *C. nadaensis* SAKAI, 1969, and *C. sakaii* TAKEDA et MIYAKE, 1972. Recently, ABE (1981) recorded a living crab referable to *C. magister* DANA, 1852, which was trawled from a depth of 15 m, off Kushiro, the

Pacific coast of Hokkaido. This northeastern Pacific species known as the dungeness crab or common edible crab is important as fishery resources in Canada and U.S.A. The occurrence in the northwestern Pacific is biogeographically interesting, but it is not sure whether the adult crab was migrated by the influence of northern current, or the young crab or juvenile was transported with the ballast water of a ship.

Third fossil species described by IMAIZUMI (1962), *C. ? imamurae*, was eliminated by NATIONS (1975), who referred the above recent species to *Romaleon* (*gibbosulus* and *nadaensis*), *Platepistoma* (as *Glebocarcinus*) (*amphioetus*, *tumifrons* and *sakaii*), and *Cancer* (*japonicus*). Judging from the original descriptions, two

Japanese Miocene species may belong to *Romaleon*, and thus a total of 8 species from Japan except for *C. minutoserratus* are referred to three subgenera. The fact that *C. minutoserratus* belongs to *Metacarcinus* leads to the partial amendment of the suggested dispersal pattern of the subgenera of *Cancer* discussed and figured by NATIONS (*op. cit.*). Considering the number of fossil and recent species with four subgenera as the results of greater diversity, it is sure that, as first mentioned by EKMAN (1953), the genus *Cancer* has its origin in the northeastern Pacific. On the fact that the Japanese Pliocene species belongs to *Metacarcinus*, however, the dispersal route of *Metacarcinus* is suggested to be branched out into three directions at the originated place, the westward branch extending to northern Japan along the Aleutian Islands, the eastward branch to the Atlantic coast of North America and to Europa, and the southward branch to New Zealand through the Pacific coast of South America.

Distribution. The present species is now known from the Pliocene formations of Northeast Japan; Tatsunokuchi Formation in Sendai, Kogota Formation in Kogota, and Yushima Formation in Ichinoseki and Maesawa, Miyagi and Iwate Prefectures (text-fig. 1).

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岩手県前沢町，鮮新統油島層産の イチョウガニ *Cancer minutoserratus* NAGAO の記録 および日本産イチョウガニ類の亜属分化について

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要 旨

岩手県前沢町の鮮新統油島層からクジラとともに得られたカニ化石74片はイチョウガニ科の *Cancer minutoserratus* NAGAO と同定された。甲やはさみの一般的な形態はイチョウガニ属として典型的であるが、前側縁の前8歯がほぼ切断された形状で、それぞれ不規則な小歯に刻まれている点特徴的である。大型個体では小さな切れ込みによって各歯が2、3部に分けられていることが多く、小歯も顆粒のために縁が不規則である。はさみ脚の腕節は小顆粒が集合した稜で縁取られ、同様な稜が掌部との関節部分から内縁に向かって、また、後縁から上面中央に向かって走る。腕節内角の突起は鋭く、その下方にやや小さな突起を伴う。掌部の上縁は板状で、鋭い小歯に刻まれている。外面には顆粒からなる5本の強い稜が縦走し、下方の2本は不動指上にのびている。

イチョウガニ属は4亜属に分けられるが、日本

産の現生6種は *Cancer*, *Romaleon*, *Platepistoma* に分類されている。IMAIZUMI (1962) により記載された中新統産の3種のうち疑問符付きの1種はイチョウガニ科でないことは明らかであるが、他の2種はいずれも *Romaleon* に属する。NATIONS (1975) はイチョウガニ属発祥の地と考えられる北東太平洋から分散の方向を検討して図示したが、たまたま *C. minutoserratus* が考察から落ちていたため日本では3亜属のみが分化した形になっている。この鮮新統の種が第4の亜属 *Metacarcinus* に属することから若干の訂正が必要になった。4亜属の中では *Metacarcinus* が種分化において最も著しく、分散も一方で北西大西洋から北東大西洋、また一方で南東太平洋からニュージーランドに至るだけでなく、北西太平洋にも向いていたことが明らかになった。*C. minutoserratus* は宮城県と岩手県からのみ知られている。