CULTURE OF THE GIANT SPIDER CRAB, MACROCHEIRA KAEMPFERI DE HAAN FROM EGG TO JUVENILE STAGE

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Abstract: The giant spider crab, Macrocheira kaempferi, Takaashigani (Japanese name) is the largest of all living Arthropoda. The leg span of a large adult male is 4 meters. This crab is found along the Pacific coast of Japan, from Kamaishi to Kyusyu districts at depths ranging from 50 to 400 meters.

Studies on both spawning and the early larvae forms of the crab were reported before¹⁸. We have now succeeded in rearing this crab from the megalopa stage to the juvenile stage. This short report is dealt with these result and some other observations.

A berried female takaashigani (carapace 21 cm x 25 cm and body weight 4.2 kg, without the right cheliped and 2nd ambulatory leg) was caught off the coast of Hedomura, Suruga Bay, Shizuoka Prefecture on March 19, 1990. This crab was taken to the Shimoda Marine Station of Nihon University at Shimoda, Shizuoka Prefecture and held there in a running sea water tank until its death on July 27, 1990.

The eggs of the berried female crab were removed on May 27, 1990 and cultured in deep glass culture dishes (90 x 75 mm with lid) with 400 ml of aerated sea water. The culture dishes were placed in large aqua-tanks with the water level maintained at the level of the water in the culture dishes. The temperature of the water was maintained at 15°C with the water density of 3.2-3.4% salt sea water of the culture dishes was changed daily.

Ten zoeae were placed in each culture dish while the megalopes were reared in each dish, the bottoms of dishes with megalopes were lived with 5 mm of small sand or crushed shells. Zoeae and megalopes were fed Altemia nauplii at a density of 3, 6 and 10 nauplii per ml culture medium.
Fig. 1. Megalopa and first juvenile stage of *Macrocheira kaempferi*, reared in the laboratory. 
A: Megalopa (about 20 days after molting, 5 mm in body length). 
B-D: First juvenile stage, B: frontal view, C: ventral view and D: dorsal view.
Culture of the crab, *Macrocheira kaempferi*

The 1st stage zoea hatched between August 15 and 18, 1990. Molting to the 2nd stage zoea took place between August 25 and September 2. The first molt to the megalopa occurred on September 7.

The first molt of a megalopa to a juvenile stage crab occurred on October 5, 28 days after its molt to a megalopa. Nine larvae molts followed until October 22, 1990, resulting in nine juvenile individuals. Three altemia nauplii/ml were provided to two juveniles, six nauplii/ml to two juveniles and 10 nauplii/ml to five juveniles.

Carapace size of the juveniles are 1.9-2.0 x 3.0-3.3 mm. The body is clear with a light brown coloration and red chromatophores. The cheliped is complete. Length of the second ambulatory leg is about five times that of the carapace width. Setae are found on all body surfaces. The abdomen is dark brown and round in shape. The rostral spine in an inverted triangle.

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References

要　約

タカアシガニ Macrocheira kaempferi の卵を培養して、ゾエア 1・2 期、メガロッパを経
過し稚ガニまでの完全飼育に成功した。

1990年3月19日に駿河湾戸田村沖で漁獲したタカアシガニの抱卵雌1個体を静岡県下田市に
ある日本大学農学部下田臨海実験所の水槽で飼育し、1990年5月27日にこのガニの腹部か
ら卵を採取し、横高シャレー（90×72 mm）に400 ml の海水を入れ水温 15℃ で飼育した。
ゾエア1期は8月15日から18日の間に孵化した。ゾエア2期には8月25日から9月2日の間に、
また、最初のメガロッパは9月7日にできた。メガロッパが脱皮をして10月5日に最初の稚ガ
ニができたが、メガロッパの期間は28日であった。

タカアシガニでは、今迄に稚ガニを得ることができなかったので、この稚ガニが最初の記録
となる。その後、8個体の稚ガニができたので合計9匹の稚ガニを得た。

幼生の飼育条件は、アルテミアのノープリウスを飼料として与えた。割合は飼育海水1 ml 中、
3, 6, 10個体とした区からそれぞれ2, 2, 5匹の稚ガニが得られた。また、飼育用シャー
レーの底には砂の他に貝殻を砕いて0.5 mm 程度の厚さに敷いた。海水の塩分量は3.2-3.4％、
水温は常に 15℃ を保ち毎日換水した。

稚ガニは、甲幅 1.9〜2 mm，甲長 3〜3.3 mm でやや丸形をしており，第2歩脚の差消失の
長さは、甲幅の約5倍程度である。体色は薄い茶褐色，脚に赤褐色の小さな斑点がある。体表
全体に剛毛が生えており，脚やアルテミアの死骸などを付けている。顔面は成体のカニと同様
に左右の顔面と下に向く一つの顔面とで三角を呈して，タカアシガニの特徴を表わしている。