

# 長期間飼育したクルマエビの尾肢切除標識の判別率の変化

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Change in the identification rate of uropod cut markers on hatchery-produced kuruma prawns, *Marsupenaeus japonicus*, during long-term rearing.

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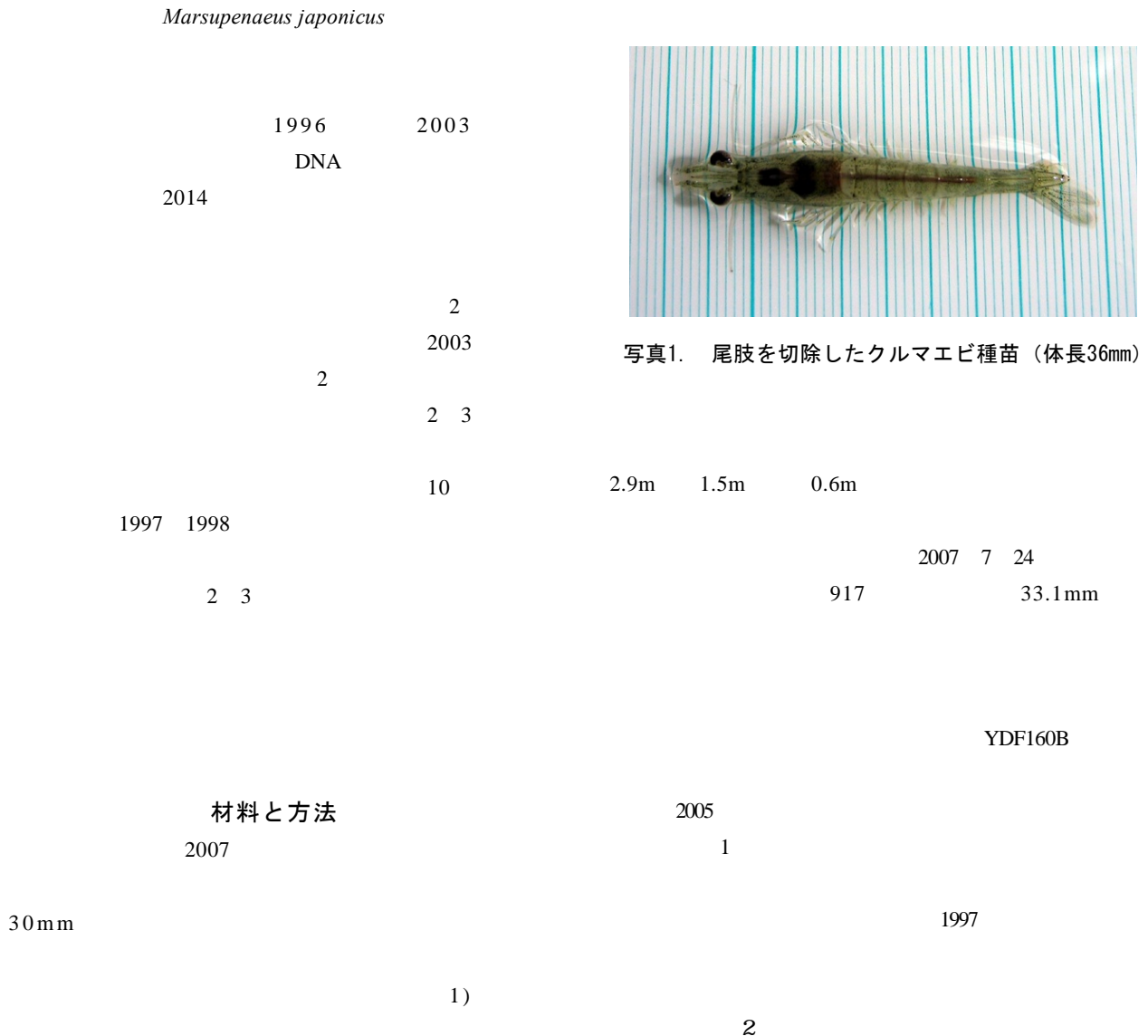
Hatchery-produced kuruma prawns, *Marsupenaeus japonicus*, marked by cutting uropods were released for research on the stocking effectiveness in the eastern Seto Inland Sea. These prawns with cutting-marks on the uropods were recaptured over a two year period. However there is no experimental evidence that uropod marking can be discriminated or not more than one year after cutting. Therefore hatchery-produced kuruma (917 individuals, BL 33.1 mm on average) prawns in which the uropods had been cut were reared for two years in an indoor tank, and we investigated the change in the identification rate of markers on uropods. As a result of this experiment, the identification rate of markers on uropods was more than 90 % two years after cutting the uropods. Furthermore, as previously the lifespan of kuruma prawn was uncertain because of lack of age determination techniques, it was confirmed that kuruma prawn can live for at least two years in this rearing environment.

キーワード：

*Marsupenaeus japonicus*



写真1. 尾肢を切除したクルマエビ種苗 (体長36mm)



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結 果  
10

5 %

1

2

2

2001 2006

156

100mm

20%

17

2009

7 6 713

1

152.5 mm

178 mm

134.2mm 151mm

14,13 27

2.9%

表1. クルマエビの頭胸甲長-体長関係式

性別	個体数	頭胸甲長 X (mm)	体長 Y (mm)	関係式
雌雄	557			$Y = 2.89X + 27.6 \quad r^2 = 0.965$
雌	336			$Y = 2.94X + 23.5 \quad r^2 = 0.957$
雄	221			$Y = 3.42X + 4.97 \quad r^2 = 0.952$

2

156 93.5%

400 507 713 93.0 94.5

91.3% 90%

178mm

153mm

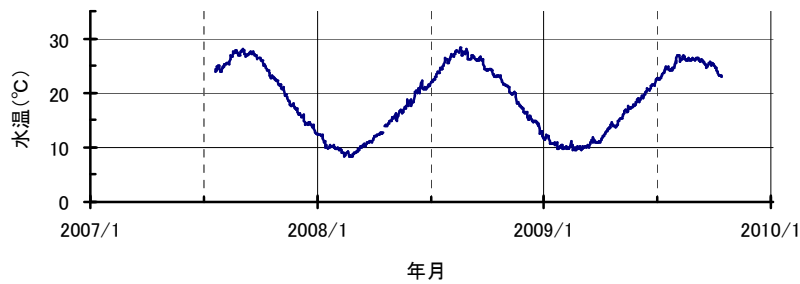


図1. 飼育期間中の鳴門庁舎汲み上げ海水の水温変化

表2. 飼育試験結果（飼育エビの生残率，体長，尾肢切除標識の判別率）

年月日	2007/7/24	2007/12/27	2008/8/27	2008/12/12	2009/7/6
飼育日数		156	400	507	713
尾数(雌雄合計)	917	165	92	55	27
雌	—	77	44	25	14
雄	—	88	48	30	13
生残率(%)	—	18.0	10.0	6.0	2.9
平均体長(性別不明)mm	33				
平均体長(雌)mm		103	128	151	153
最大体長(雌)mm		135	149	166	178
平均体長(雄)mm		100	121	135	134
最大体長(雄)mm		118	142	153	151
尾肢切除標識の判別(尾数)					
可		144	80	52	21
不可		10	6	3	2
色素未発現のため不明		11	2		
尾肢欠損のため不明			4		4
判別率(%)		93.5	93.0	94.5	91.3

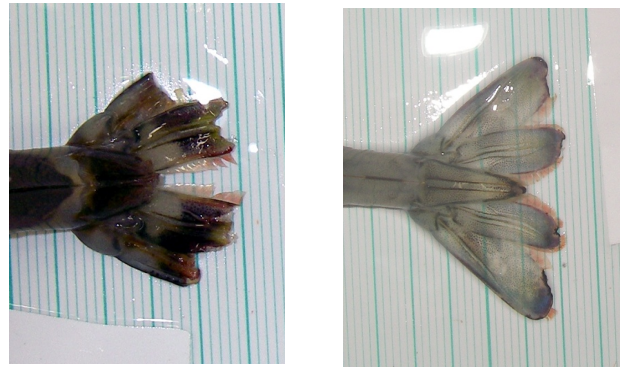
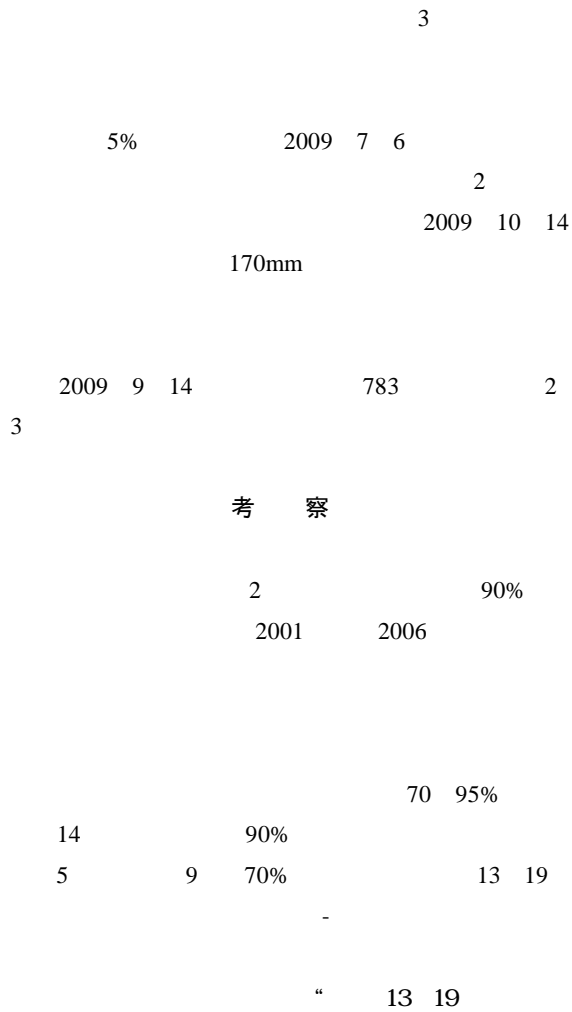


写真2. 尾肢欠損個体(左: 2008年8月27日, 体長139mm, 雄)と褐色色素帯が不明瞭な個体(右: 2007年12月27日, 体長107mm, 雌)。

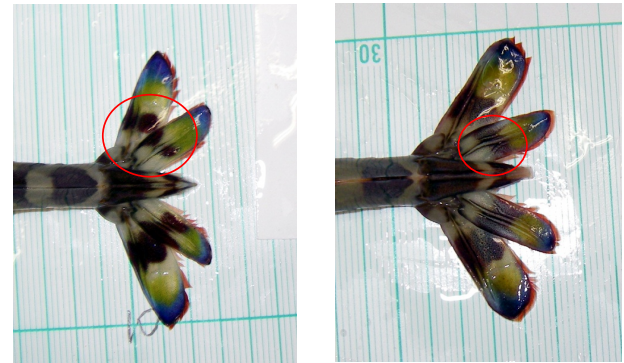


写真3. 尾肢切除標識痕が明瞭な個体(左: 2008年8月27日, 体長113mm, 雄)と不明瞭な個体(右: 2008年8月27日, 体長123mm, 雄)。

左の写真の個体は、右尾肢2枚とも左尾肢に比べて褐色色素帯がせまく、右の写真の個体は、右尾肢の内肢の褐色帯が左側に比べてわずかに狭い(色素帯が狭くなっている部分を赤丸で示した)。

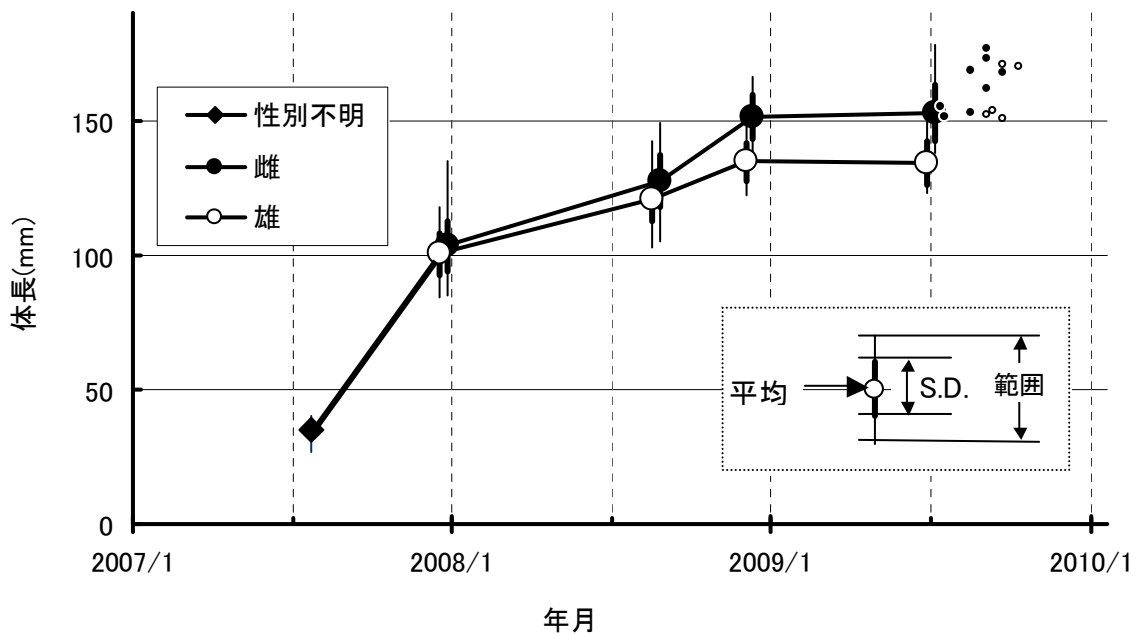


図2. 飼育クルマエビの体長の推移。2009年7月4日以降の小さな白抜き丸および黒丸は、実験終了後の継続飼育で斃死したエビ(雄および雌)の推定体長を示す。

