

Occurrence of Juvenile Orbicular Batfish, *Platax orbicularis* (Ephippidae), from Jeju Island, Korea

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Three juvenile specimens (40.7~58.4 mm SL) of orbicular batfish, *Platax orbicularis* were collected from the coastal waters of Jeju Island, and described as the first record from Korea. These specimens were characterized by having a diamond body shape with triangular dorsal and anal fins with V, 35~37 and III, 26~27 rays, respectively. The new Korean name of 'nam-bang-je-bi-hwal-chi' is proposed for the species.

Key words : Juvenile fish, *Platax orbicularis*, Jeju Island, new Korean record

During a survey of ichthyofauna of Jeju Island and its adjacent waters, Korea, we collected three juvenile specimens of *Platax orbicularis* (Forsskal, 1775) from the coastal waters of the island. Until now three batfishes (family Ephippidae) have been recorded from Korea, *i.e.*, *P. boersii* Bleeker, 1852, *P. pinnatus* (Linnaeus, 1758), and *P. teira* (Forsskal, 1775) (Mori, 1952; Kim *et al.*, 2001; Youn, 2002; Kim *et al.*, 2005). However, not only any information of juvenile batfishes but also occurrence of *P. orbicularis* from the Korean waters has not been known. In the present study, we describe the juvenile of *P. orbicularis* as the first record from Korea, although it is necessary to add morphological characters of adult specimens in the future.

Counts and Measurements follow Kishimoto *et al.* (1988), and median fin rays and vertebrae were counted by radiographs. The present specimens were deposited in the Marine and Environmental Research Institute, Cheju National University (MRIC), Korea.

***Platax orbicularis* (Forsskal, 1775)**

(New Korean name: Nam-bang-je-bi-hwal-chi)
(Fig. 1; Table 1)

Chaetodon orbicularis Forsskal, 1775: 59 (type

locality: Jidda, Saudi Arabia, Red Sea);
Klausewitz and Nielsen, 1965: 23, pl. 30.

Platax orbicularis : Weber and de Beaufort, 1936: 189, figs. 49b, 50 (Singapore to Muna); Dor, 1984: 168 (Red Sea) Hayashi in Masuda *et al.*, 1984: 181 (Japan); Kishimoto *et al.*, 1988: 26 (Japan); Randall *et al.*, 1990: 218 (Great Barrier Reef); Hayashi in Nakabo, 2002: 1312 (Japan); Senou and Yoshino, 2002: 106 (Japan); Adrim *et al.*, 2004: 126 (South China Sea); Aramata *et al.*, 2004: 172 (Japan).

Material examined. MRIC 1663, 58.4 mm in standard length (SL), river mouth of Yeonoecheon (Str.), Seogwipo-si, Jeju-do, Korea, 1 August, 2004, collected by S. Y. Kim and B. J. Kim with a hand net, about 1.2 m depth; MRIC 2801, 40.7 mm SL, Seongsan, Namjeju-gun, Jeju-do, Korea, 16 July, 2005, collected by B. J. Kim with a hand net, surface; MRIC 2802, 54.4 mm SL, Ganjeong, Seogwipo-si, Jeju-do, Korea, 4 August, 2005, collected by B. J. Kim with a hand net, surface.

Description. Dorsal fin rays VI, 35~37; anal fin rays III, 26~27 pectoral fin rays 17; pelvic fin rays I, 5; principal caudal fin rays 16~17; lateral line scales 48~49; gill rakers 11+10; vertebrae 24. Proportions as % SL: head length 35.8~37.6 (mean 36.8); snout length 10.1~11.7 (10.9); upper jaw length 8.3~9.1 (8.9); eye diameter 9.0~10.0

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Fig. 1. *Platax orbicularis*, A: MRIC 1663, 58.4 mm SL (when fresh); B: MRIC 2801, 40.7 mm SL (when alive); C: MRIC 2802, 54.5 mm SL (when fresh), from coastal waters of Jeju Island, Korea.

(9.4); interorbital width 11.2~12.7 (12.1); body depth 74.6~78.0 (76.8); body width 13.4~16.2 (15.2); snout to origin of dorsal fin 56.4~58.4 (57.5); snout to origin of pectoral fin 24.9~30.6 (28.4); snout to origin of pelvic fin 26.8~29.9 (28.5); snout to origin of anal fin 47.9~49.4 (48.7); caudal peduncle length 6.4~7.8 (7.3); caudal peduncle depth 11.7~12.1 (11.9); pectoral fin length 17.8~20.7 (19.7); pelvic fin length 51.6~54.5 (52.7).

Body a diamond shape, deep and very compressed. Head short and dorsal profile oblique, mouth small and its posterior tip not reaching a

vertical of anterior margin of eye; eye moderate and interorbital region relatively broad and convex. No spines on posterior margin of preopercle, except for one specimen (MRIC 2801) with two short spines. Dorsal, pelvic and anal fins roughly triangular. Pectoral fin relatively short. Caudal fin round.

Color when fresh. Head and body nearly uniformly dark brown (Fig. 1A) or dull reddish orange (Fig. 1C) with several white spots on lateral body (body color brighter when alive, Fig. 1B). Dorsal and anal fins brown, and distal region of each fin rather darkish. Pelvic fin brownish.

Table 1. Comparison of meristic characters of *Platax orbicularis*

| | Present study | Klausewitz and Nielsen (1965)* | Kishimoto <i>et al.</i> (1988) |
|----------------------|----------------------------|--------------------------------|--------------------------------|
| Standard length (mm) | 40.7 ~ 58.4 (<i>n</i> =3) | 184.0 (<i>n</i> =1) | 18.5 ~ 356.0 (<i>n</i> =59) |
| Dorsal fin rays | V, 35 ~ 37 | V, 34 | V, 34 ~ 39 (mainly 35 ~ 37) |
| Anal fin rays | III, 26 ~ 27 | III, 25 | III, 25 ~ 29 (26 ~ 27) |
| Lateral line scales | 48 ~ 49 | - | 44 ~ 52 (46 ~ 50) |
| Procurent rays | 4/4 | - | 4 ~ 5/4 |

*data from holotype.

Pectoral and caudal fins, except for each base, transparent. Two incomplete darkish vertical bands on head and anterior portion of body, former one prominent, and two small black spots on anterior portion of caudal peduncle.

Color after preservation. Head and body pale brownish with irregular darkish spots.

Distribution. Known from Indo-Pacific: Red Sea and East Africa to the Tuamotu Island, north to southern Japan (Kishimoto, 1997) and Korea (present study), south to northern Australia and New Caledonia (Randall *et al.*, 1990; Allen and Adrim, 2003).

Ecological notes. The present specimens were observed and collected from near surface of fishery harbor or from about 1.2 m depth adjacent to the river mouth of Yeonoecheon (Str.) locating in southern coast of Jeju Island, Korea. It agrees well with Kishimoto (1997) reporting the juveniles of *P. orbicularis* entering into brackish waters. It was also observed that the juveniles were swimming at a slant showing mimicry like a fallen leaf.

Remarks. The present specimens collected from Jeju Island agree well with photographs and description of *Platax orbicularis* of Kishimoto (1997) as well as that of Kinoshita (1988) reporting the morphology of juvenile of the species. In addition, counts of the present specimen enter into the ranges of those by Kishimoto *et al.* (1988) (Table 1). Therefore, we identified the specimen as a juvenile of *P. orbicularis*. Unlike the smaller sized specimen (19.4 mm SL) having four incomplete vertical bands from eye to base of caudal fin (by Kinoshita, 1988), our specimen showed that the second band was very faint and the third one was disappeared, and no spine on lower corner of preopercle in larger specimens was observed. It may be due to the ontogenetic change relating to growth.

According to Kishimoto (1997), the distribution of the adult fish of *P. orbicularis* is restricted to Ryukyu Islands in Japan, but, the juveniles of

the species is common in southern Japan. Therefore, occurrence of juvenile of *P. orbicularis* in Korea seems to be an example of abortive migration resulted from the dispersal of eggs or juveniles of *P. orbicularis* from the East China Sea. We proposed the new Korean name, 'nam-bang-je-bi-hwal-chi', for the species.

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제주 연안에서 출현한 남방제비활치 (국명신칭, 활치과) *Platax orbicularis*의 유어 김 병 직* · 이 영 돈 · 김 삼 연

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제주도 동부 및 남부연안의 하구역 또는 포구에서 농어목 활치과에 속하는 *Platax orbicularis*의 유어 3개체 (표준체장 40.7~58.4 mm)를 채집하였다. 본종은 아직 국내에서는 보고되지 않는 한국미기록종으로 체형이 다이아몬드형이며, 등지느러미와 뒷지느러미가 길게 신장되어 각각 5극 35~37연조와 3극 26~27연조로 되어 있다. 본종의 신한국명은 '남방제비활치'라 명명하였다.