

# New Record of the Opah, *Lampris guttatus* (Lampriformes: Lampridae) from East Sea, Korea

By Moon Kyung Jeong, Donghoon Shin, Maeng Jin Kim<sup>1</sup>, Hyun-Su Jo<sup>2</sup> and Kangseok Hwang\*

Division of Fisheries Resource Management, National Fisheries Research and Development Institute, Busan 619-705, Korea

<sup>1</sup>Division of Fisheries Resources and Environment, West Sea Fisheries Research Institute, NFRDI, Incheon 400-420, Korea

<sup>2</sup>Department of Marine Science and Production, Kunsan National University, Gunsan 573-701, Korea

**ABSTRACT** A single specimen (705 mm in standard length) of *Lampris guttatus* (Brünnich, 1788), belonging to the family Lampridae, was firstly collected from the coast of Samcheok, East Sea, Korea in November 2014. This species was characterized by having oval shaped body, vivid scarlet fins and jaw and pale white spots on body irregularly. We propose a new Korean name, “Buk-pyeong-chi-gwa”, “Buk-pyeong-chi-sok” and “Buk-pyeong-chi” for the family, genus and species, respectively.

**Key words :** Lampridae, *Lampris*, *Lampris guttatus*, new record

## INTRODUCTION

The family Lampridae, belonging to the order Lampriformes, which comprises about two species in one genus, *Lampris* worldwide (Parin and Kukuyev, 1983; Collette, 2003; Nelson, 2006), are large sized species inhabiting epi- and mesopelagic in general. These fishes are characterized by following characteristics: body deep and compressed; dorsal and anal fins long (dorsal with 48-56 rays and anal with 33-42 rays); the dorsal, pectoral, pelvic, anal and caudal fins are bright red; minute cycloid scales (Collette, 2003; Nelson, 2006).

Within the family Lampridae, *Lampris guttatus* (Brünnich, 1788) in the tropical and temperate waters of the world is characterized by having many white spotted on body and dorsal and anal fins with scattered white spots (Collette, 2003; Nelson, 2006; Hawn and Collette, 2012). This species can grow up to 1.8 m in maximum total length, weight up to 89 kg in maximum and it is often bycaught by long-line fishery targeting bigeye tuna off the coast of Hawaii. It is one of the most important commercial species in the market of Japan, Hawaii and California (Collette, 2003; Polovina and Hwan, 2008).

In this study, we firstly collected a single specimen of *Lampris guttatus* by using a set net in the coast of Samcheok, East Sea, Korea. The Korean name and a brief

description of *L. guttatus* were previously reported by Yamada *et al.* (2009) without real sample. This species, however, has not found in the coast of Korea yet. Therefore, we describe the morphological characteristics of *L. guttatus* in order to register on the Korean fish fauna.

Counts and measurements are followed by Hubbs and Lagler (1964). The present specimen was deposited at the National Fisheries Research and Development Institute (NFRDI) of Korea.

### Family Lampridae

(New Korean family name: Buk-pyeong-chi-gwa)

Body oval-shaped and compressed and covered with minute cycloid scales; pectoral fins elongate, placed high on side and horizontally; dorsal and anal fins long (dorsal with 48 ~ 56 rays and anal with 33 ~ 42 rays). It comprises two species, *Lampris guttatus* (worldwide) and *L. immaculatus* (cold and temperate waters of Southern Hemispheres) (Collette, 2003; Nelson, 2006).

### Genus *Lampris* Retzius, 1799

(New Korean genus name: Buk-pyeong-chi-sok)

*Lampris* Retzius, 1799: 98 (type species: *Lampris guttatus* (Brünnich, 1788))

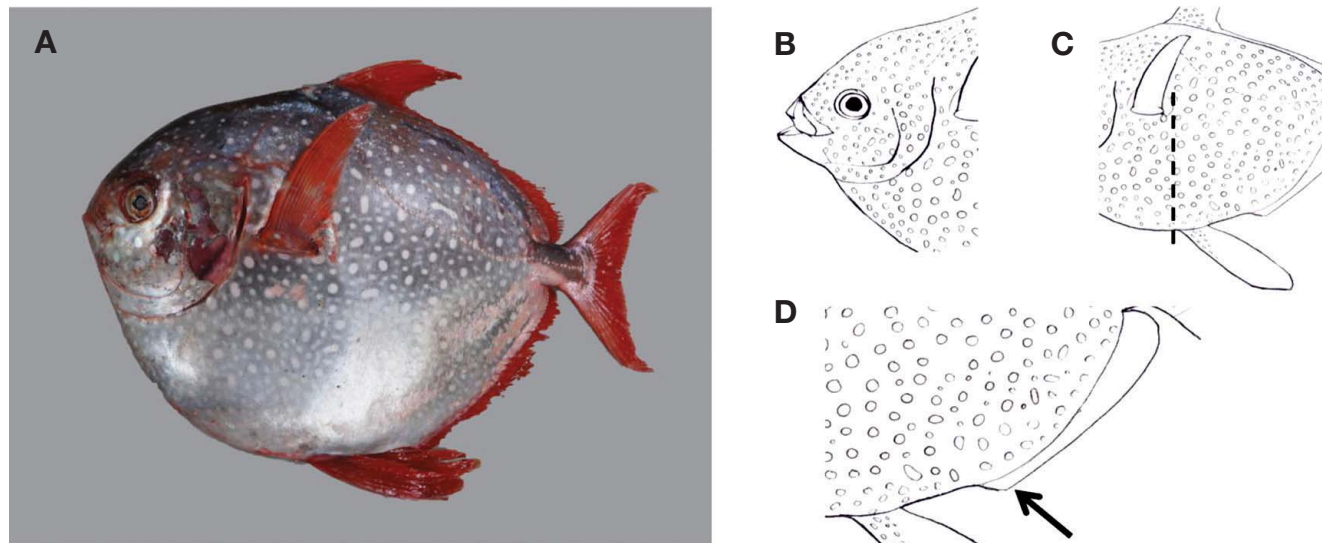
Toothless mouth; six branchiostegal rays; long gill opening; the existence of sternum; pectoral fins just behind gill opening (Retzius, 1799).

\*Corresponding author: Kangseok Hwang Tel: 82-51-720-2281  
Fax: 82-51-720-2277, E-mail: kshwang@korea.kr

***Lampris guttatus* (Brünnich, 1788)**  
 (New Korean name: Buk-pyeong-chi)  
 (Fig. 1; Table 1)

*Zeus guttatus* Brünnich, 1788: 398 (type locality: Elsi-

nore [Helsingør], Denmark, western Baltic Sea).  
*Lampris guttatus*: Retzius, 1799: 98 (western Baltic Sea);  
 Pru'ko, 1977: 140 (Indian Ocean); Ruiz and Figueroa,  
 2006: 252 (Gulf of Arauco); Yamada *et al.*, 2009: 216



**Fig. 1.** A, *Lampris guttatus*, NFRDI-121114. 705 mm SL, Samcheok, East Sea, Korea; lateral view of head; C, the position of the pectoral and anal fin; D, the anterior elevation of the anal fin.

**Table 1.** Comparison of meristic and morphometrics characters of *Lampris guttatus*

Measurements	Present study	Brünnich (1778)	Dulčić <i>et al.</i> (2005)	Ruiz and Figueroa (2010)	Šprem <i>et al.</i> (2014)	<i>Lampris immaculatus</i> Gilchrist (1904)
Number of specimens	1	1	1	2	1	1
Standard length (mm)	705.0	–	851.0	1090.0~1150.0	880.0	805.0
<b>In % of standard length</b>						
Fork length	110.6	–	107.3	–	–	–
Head length	33.9	–	29.4	35.0~35.3	32.9	30.4
Snout length	11.5	–	7.5	–	–	–
Body depth	74.3	–	57.6	59.6~64.3	65.4	47.2
Caudal peduncle depth	7.6	–	4.2	7.3~7.4	7.0	–
Predorsal fin length	52.2	–	48.6	–	–	–
Preanal fin length	65.7	–	69.9	–	61.5	–
Preanal length	61.8	–	64.9	–	–	–
Prepectoral fin length	35.2	–	33.0	–	–	–
Prepelvic fin length	47.9	–	54.6	–	–	–
Length of dorsal fin	54.2	–	56.8	–	52.8	–
Height of dorsal fin	34.2	–	27.8	–	–	17.8
Length of anal fin	39.7	–	32.0	–	34.4	–
Length of pectoral fin	27.9	–	33.4	25.2~26.6	31.0	24.8
Length of pelvic fin	35.5	–	31.9	21.3~22.9	–	21.1
Length of caudal fin	40.6	–	27.4	–	–	–
Eye diameter	6.4	–	7.6	6.4~7.0	6.0	5.7
Interorbital width	16.2	–	12.3	–	–	–
Postorbital length	15.0	–	14.3	–	–	–
Premaxilla length	10.2	–	8.9	–	–	–
<b>Counts</b>						
Dorsal fin rays	48	46	51	50~53	53	54
Anal fin rays	37	40	39	39~42	39	36
Pectoral fin rays	24	20	22	23	25	–
Pelvic fin rays	16	–	14	14	16	14
Gill rakers	14 (3+11)	–	16 (3+13)	14	–	6

(East China Sea); Francour *et al.*, 2010: 91 (western Mediterranean Sea); Aizawa and R. Doiuchi, 2013: 475 (Japan); Šprem *et al.*, 2014: 371 (Croatian coast).

**Material examined.** NFRDI-121114, one specimen, 705.0 mm in standard length (SL), 21.3 kg, set net, Samcheok, East Sea, 12 November, 2014.

**Description.** Counts and measurements are shown in Table 1.

Body deep, oval shaped and compressed, covered with cycloid scales; caudal peduncle really narrow; snout short, mouth small and pointed, similar bill; teeth absent; upper jaw end not reached anterior eye; posterior margin of opercle reached up to pectoral fin base; lateral line soared high over pectoral fin; no spines all of fins; dorsal and anal fin base long, both posterior end retractable into deep grooves; anterior part of dorsal fin elongate; pectoral fins elongate, scythe shaped and positioned; pectoral fin bases horizontal; pelvic fins analogous to pectoral fins shape, a little longer; origin of pelvic fins a bit behind end of pectoral fin base; caudal fin widely lunate, euphemistically forked.

**Coloration.** Body sparkling silver in general; head and dorsal side metallic dark gray blue reflected purple and shaded downward; body with irregular white oval spots; ventral side sheenful silver; light pinkish silver scales; all of fins vivid vermilion; edge of mouth vivid red; white spots on dorsal, pelvic and anal fin and caudal fin base.

**Distribution.** This species is widely found in tropical to temperate waters of Pacific, Indian and Atlantic Ocean: Korea (present study), Gulf of Alaska to southern California, Japan westward to Taiwan Island, Australian, Norway, Greenland, Angola, Mediterranean, Florida of USA and Gulf of Mexico (Yamada *et al.*, 2009) (Collette, 2003; Yamada *et al.*, 2009; Aizawa and Doiuchi, 2013).

**Remarks.** The present specimen belongs to the genus *Lampris* on the basis of toothless mouth, six branchiostegal rays, the existence of sterum, long gill opening and pectoral fins behind gill opening. Also, the meristic and morphometric characters of the present specimen were compared with those of *L. guttatus* previously reported by other researcher (Table 1). It was identified as *L. guttatus* by body deep and oval shaped, bright scarlet jaw and fins, coated with white spots irregularly, horizontal pectoral fin base (Collette, 2003; Yamada *et al.*, 2009; Aizawa and Doiuchi, 2013) (Fig. 1), counts and measurements (Table 1). However, there are some differences in the gill rakers (14 in the present vs. 16 in Dulčić *et al.*, 2005) and body depth (74.3% in SL vs. 57.6~65.4%). These differences seem to be intraspecific variation, but it needs to study on geographic variation of the species after collecting more specimens.

*L. guttatus* was first reported to name as *Zeus guttatus*

by Brünnich in 1788. This species was designated as *Zeus regulis* by Bonnaterre in the same year. Next year, it was named as *Zeus luna* by Gemlin. Retzius (1799) was reclassified genus *Lampris* in accordance with following features: toothless mouth, six branchiostegal rays, existence of sterum, long gill opening and pectoral fins behind gill opening.

In this study, color of the present specimens, which is similar to Hawn and Collete (2012), is dark metallic blue or green reflected purple and gold with various size white or silver spots on the body.

On the other hand, *L. guttatus* is similar to *L. immaculatus* Gilchrist 1904 in external morphology, it is distinguishable from the latter in distribution ranges (tropical and temperate waters of worldwide vs. high and middle latitudes of the Southern Hemisphere for *L. immaculatus*), white spots on the body (many vs. few), marked lines of mucous pores over the head (absence vs. presence), the position of the pelvic fins origin (below the pectoral fins vs. behind that), the anterior elevation of the anal fin (low vs. high) and body size (large vs. small) (Gilchrist, 1904; Parin and Kukuyev, 1983; Duhamel, 2005) (Fig. 1). We herein propose a new Korean name, “Buk-pyeong-chi-gwa”, “Buk-pyeong-chi-sok” and “Buk-pyeong-chi” for the family, genus and species, respectively.

## ACKNOWLEDGMENTS

This study was founded by a grant from the National Fisheries Research and Development Institute (RP-2015-FR-002).

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# 한국산 붉평치과 (Lampridae) 어류 1 미기록종, *Lampris guttatus*

정문경 · 신동훈 · 김맹진<sup>1</sup> · 조현수<sup>2</sup> · 황강석

국립수산과학원 자원관리과, <sup>1</sup>서해수산연구소 자원환경과, <sup>2</sup>군산대학교 해양생산학과

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**요 약 :** 이악어목, 붉평치과에 속하는 *Lampris guttatus* 1개체 (표준체장 705 mm)가 2014년 11월 12일 삼척 연안의 정치망에서 처음으로 채집되었다. 이 종은 체고가 높고 난형인 점, 지느러미와 턱이 선명한 진홍색인 점 그리고 몸 전체에 흰 반점이 불규칙하게 흩어져 있는 점이 특징이다. 이 미기록종의 과명과 속명 그리고 종명은 “붉평치과”, “붉평치속” 그리고 “붉평치”로 각각 제안하였다.

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**찾아보기 낱말 :** 붉평치과, 붉평치속, 붉평치, 미기록종