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A NEW SPECIES OF *ELLOPOSTOMA* (TELEOSTEI: CYPRINIFORMES: BALITORIDAE) FROM PENINSULAR THAILAND

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ABSTRACT. – *Ellopostoma mystax* is described from the Tapi basin of peninsular Thailand. It is distinguished from *E. megalomycter*, its only congener from the Kapuas basin of Borneo, in having smaller and more scales (72-80 vs. 53-56 lateral body scales, 25-27 vs. 14-19 predorsal scales, 11-12/1/10-11 vs. 6-7/1/6-7 transverse body scales, 5-6/1/5-6 vs. 4/1/4 scales on the caudal peduncle), and a black bar (vs. absence of such a bar) across the dorso-anterior edge of the snout.

KEY WORDS. – Taxonomy, Sunda shelf, *Ellopostoma*, freshwater fish.

INTRODUCTION

In 1902, an unusual fish was described by M. L. Vaillant that was to have a number of fish systematists baffled. It was given the name *Aperioptus megalomycter*, but Vaillant (1902: 145) had at the same time also proposed the genus *Ellopostoma* to accommodate this species in case it is not an *Aperioptus*. Vaillant placed it in the family Cobitidae. Weber & de Beaufort (1916: 237) were the first to refer to the fish as *Ellopostoma megalomycter*, and regard it as a cyprinid with reservations. Roberts (1972) examined and redescribed the types of *Aperioptus megalomycter* with osteological details. He could not classify *Ellopostoma* then because of the poor condition of the type series, and there was no freshly collected material. Of the three syntypes, he designated the 39.5 mm specimen (RMNH 7777) as the lectotype. Subsequently, with fresh specimens collected from the Kapuas basin, Roberts (1989: 103) was able to ascertain the phylogenetic position of *Ellopostoma* in the Cobitidae. The following are characters it shares with that family: single row of ceratobranchial teeth, three branchiostegal rays, a Weberian apparatus with large lateral capsules of spongy bone, protrusible jaws similar in basic structure to cyprinoids and cobitoids, and a Y-shaped basihyal bone. However, he added that the relationships of *Ellopostoma* to the other cobitids are not clear, and that it cannot be readily assigned to any of the other known subfamilies.

Ellopstoma can be distinguished from other cobitids by the following characters: snout square and oblique, mouth highly protrusible with a single pair of maxillary barbels, five ceratobranchials with about 30 conical teeth in one row, sub-orbital spine absent, dorsal fin elongate with 18 to 19 rays with its origin anterior to a vertical through pelvic fin origin, 32 to 34 vertebrae, and pectoral fins not sexually dimorphic (Roberts, 1989: 103).

Based on the absence of the suborbital spine, *Ellopostoma* has since been placed in the family Balitoridae by Kottelat (1989: 12) and Kottelat et al. (1993: 70). It is distinguished from other balitorids by its minute but highly protrusible mouth, its width 7 to 8 times in head width; single pair of barbels and dorsal fin with 15 to 16.5 branched rays. Eschmeyer (1990: 135) in his catalog of recent fish genera cites the genus in the balitorid subfamily Nemacheilinae but comments about its uncertain placement. Later, Banarescu & Nalbant (1995: 458) in their review of the Nemacheilinae (as Cobitidae) also voice their uncertainty of the position of *Ellopostoma* in that subfamily.

The genus *Ellopostoma* was first reported from mainland Southeast Asia by Kottelat (1989: 12) and Roberts (1989: 103). When the specimens from Thailand are compared directly with those from Borneo, there are meristic and colour pattern differences to suggest that both populations are not conspecific. Hereunder, the Thai population is described as a new species.

MATERIAL AND METHODS

Acronyms for the various institutions from which specimens were examined are: CAS – California Academy of Sciences, San Francisco, USA; CMK – collection of Maurice Kottelat, Cornol, Switzerland; MZB - The Indonesian Institute of Sciences (LIPI), Cibinong, Indonesia; RMNH - Nationaal Natuurhistorisch Museum, Leiden, The Netherlands; ZRC – The Zoological Reference Collection of the Raffles Museum of Biodiversity Research, The National University of Singapore, Singapore.

Morphometric measurements were taken point to point as illustrated on Fig. 1. Scale counts were made on left side of the fish only.

Ellopostoma mystax, new species
(Figs. 3, 5 (right))

Ellopostoma sp. – Kottelat, 1989: 12.
Ellopostoma megalomycter – Kottelat et al., 1993: 70 (in part).

Material examined. – All specimens from the Tapi basin, in the Surat Thani province of peninsular Thailand (see Fig. 2).

Holotype – CAS 96698, 55.3 mm SL, Khlong Sok on highway 410, 5 km west of Phanom, coll. T. R. Roberts, 27 Feb.1989.

Paratypes – CAS 96698, 44 ex., ZRC 47340, 5 ex., 33.9-54.3 mm SL, same data as holotype; CAS 60816, 6 ex., 42.9-50.1 mm SL, CMK 5166, 10 ex., 43.3-49.4 mm SL, Khlong Phum Phom Duang, about 20 km upstream of Phumphin, coll. L. Sonkphan, M. Kottelat & T. R. Roberts, 4 Apr.1985; CAS 68203, 14 ex., 37.2-52.9 mm SL, Khlong Won at highway 4009, about 3 km west of junction with highway 41, coll. T. R. Roberts, 4 Mar.1989; CAS 93382, 7 ex., 35.3-43.2 mm SL, Khlong Ipan on highway 4037, 2 km south of junction with highway 4035, coll. T. R. Roberts, 4 Mar.1989; ZRC 37580, 2 ex., 45.7-50.7 mm SL, Tapi River near Phrasaeng, coll. L. Sonkphan, M. Kottelat & T. R. Roberts, 3 Apr.1985.

Diagnosis. – *Ellopostoma mystax* is distinguished from its only congener, *E. megalomycter* from Borneo in having smaller and more numerous scales (72-80 vs. 53-56 lateral body scales, 25-27 vs. 14-19 predorsal scales, 11-12/1/10-11 vs. 6-7/1/6-7 transverse body scales, 5-6/1/5-6 vs. 4/1/4 caudal peduncular scales), and a black bar (vs. absence of such a bar) across the dorso-anterior edge of the snout.

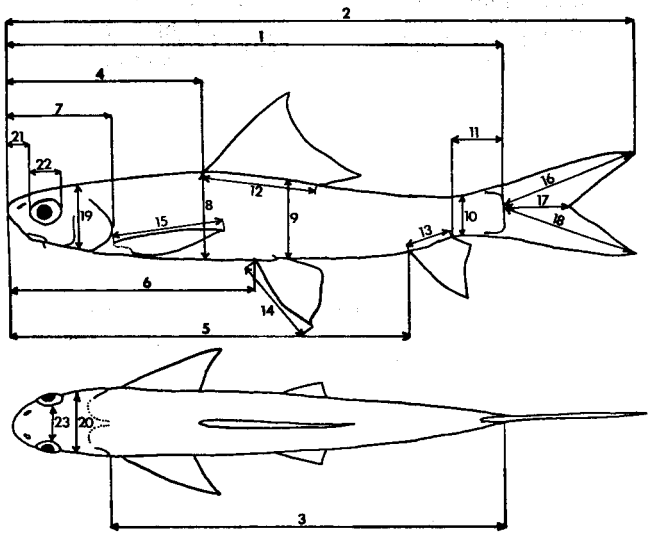

Fig. 1. Schematic sketch of *Ellopostoma* with sources of morphometric data used in the text. 1 - standard length, 2 - total length, 3 - trunk length, 4 - predorsal length, 5 - preanal length, 6 - prepelvic length, 7 - head length, 8 - body depth below dorsal fin origin, 9 - body depth above anus, 10 - caudal peduncle depth, 11 - caudal peduncle length, 12 - dorsal fin base length, 13 - anal fin base length, 14 - pelvic fin length, 15 - pectoral fin length, 16 - length of upper caudal fin lobe, 17 - length of median caudal fin ray, 18 - length of lower caudal fin lobe, 19 - head depth, 20 - head width, 21 - snout length, 22 - eye diameter, 23 - interorbital width.

Description. – General appearance as shown in Fig. 3. Proportional measurements and selected meristic data presented on Table 1. Body elongate, compressed at both ends. Head depressed and dorsally flattened. Snout oblique and prominently truncate in lateral aspect, round when viewed dorsally. Mouth inferior, very small and protractile with a pair of maxillary barbels. No teeth present on jaws or on roof of mouth. A fleshy mentum on lower lip posterior to the symphysis of the mandibles. Dorsal fin long, its margin slightly falcate, its origin far in advance of pelvic fin origin, slightly posterior to a vertical. Anal fin short, its margin rather straight, its origin slightly anterior to a vertical midway between base of last dorsal fin ray and caudal base. Pectoral fins and pelvic fins placed horizontally. Pectoral fins with no modified rays, the longest ray almost reaching pelvic origin. Caudal fin deeply emarginate with about 7 procurrent rays in upper lobe and 4 in the lower lobe. Vent between pelvic fins. Head scaleless, body scaled except for an area anterior to the pectoral base, fin bases scaleless. Scales small, cycloid, multi-radiate. Lateral line present, piercing 72-80 scales. Nasal organs occupy a cavity which diameter is about 1/3 that of the eye. Nostrils separated by a strip of membrane with a small, posteriorly-directed flap. Eye large, oblong-shaped with free orbital margin. Latero-sensory canals present on head around eyes, on temporals and the preopercle. Gill opening wide, gill membranes broadly united to isthmus at a point below the middle of the sub-opercle. Branchial openings ending below pectoral base. Branchiostegal rays 3.

Live examples are silver with a greenish to yellowish tinge, with faint blackish blotches and hyaline fins (M. Kottelat, *pers. comm.*). Ethanol-preserved specimens are yellow with brown blotches. There are up to 11 (range 9-11) saddle

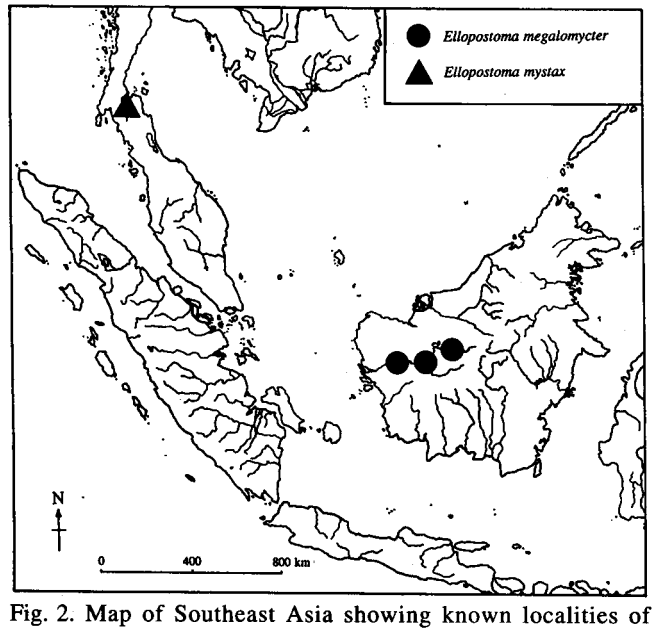

Fig. 2. Map of Southeast Asia showing known localities of *Ellopostoma megalomycter* (solid circle) and *E. mystax* (solid triangle).

blotches along the mid-dorsum and four round blotches on the sides below the dorsal fin base. A small black spot present on the base of the lower caudal fin lobe, on the ventral half of the caudal peduncle. Dorso-anterior edge of snout with a distinct crescent-shaped black margin (Fig. 5, right). Caudal fin base faintly pigmented. Very thin and faint black stripe along mid-ventrum between vent and anal fin origin. Some preserved specimens have silvery opercles.

Distribution. – The species is presently known only from the Tapi basin of peninsular Thailand which drains the isthmus of Kra eastwards into the South China Sea (Fig. 2).

Etymology. – *Mystax* is Latin for mustache. The present species is named after the unique dark margin over the dorsal-anterior edge of the snout (Fig. 5, right) that resembles a mustache.

Remarks. – Other characters that may distinguish *Ellopostoma mystax* (from *E. megalomycter*) include the following: 9-11 (vs. 6-7) saddle blotches along mid-dorsum; 4 round blotches (vs. 3 irregularly-shaped blotches) on side below dorsal fin base; faint (vs. distinct) black spot on lower caudal fin base; caudal fin base pigmented (vs. median rays pigmented); black stripe on mid-ventrum between vent and anal fin insertion faint (vs. distinct). It must be noted that the intensity of the black pigmentation could be subject to the turbidity of the water. Fishes living in clearer waters tend to have darker, more intense pigments.

Ellopostoma mystax inhabits lowland drainages. It has been collected from a slow-flowing large river with a sand-mud substrate and muddy water. The fishes were obtained with a 30 metre seine at a depth of about 1 to 1.3 metre (M. Kottelat, pers. comm.). Radiographs show that this fish has

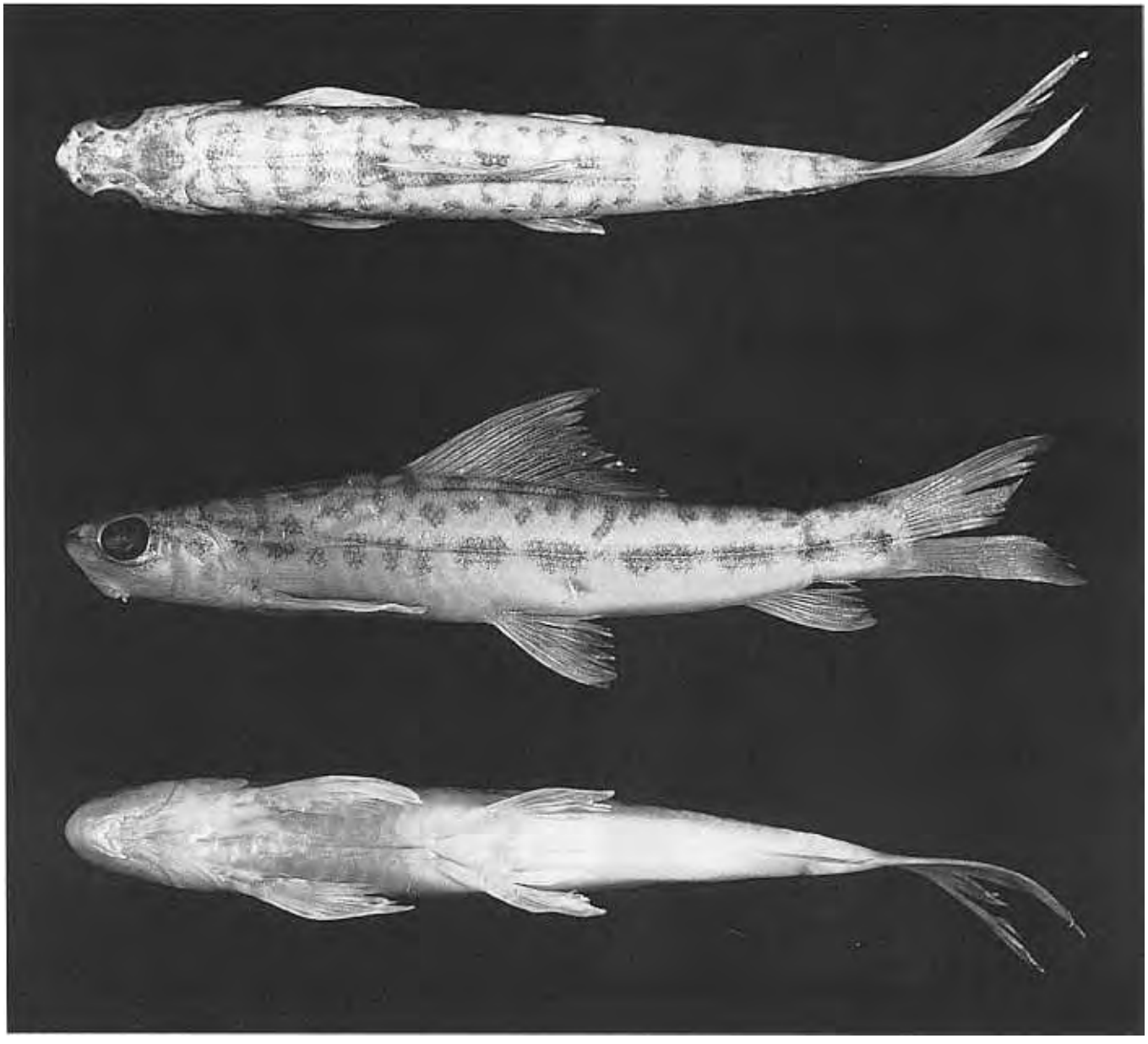

Fig. 3. Dorsal, lateral and ventral views of *Ellopostoma mystax* (holotype: CAS 96698, 55.3 mm SL).

an extremely long and convoluted digestive tract. This indicates that *Ellopostoma* is most likely herbivorous, possibly subsisting on detritus and algae.

It is of great interest to note that the genus *Ellopostoma* has so far been recorded from only two drainages on the Sunda Shelf distantly separated by the South China Sea for over 1,400 km. It could, therefore, be expected from other interconnecting Sunda drainages.

COMPARATIVE MATERIAL

Ellopostoma megalomycter (Vaillant)
Figs. 4, 5 (left).
All comparative material is from the Kapuas basin of West Kalimantan, Indonesian Borneo, the type locality of the species (see Fig. 2).

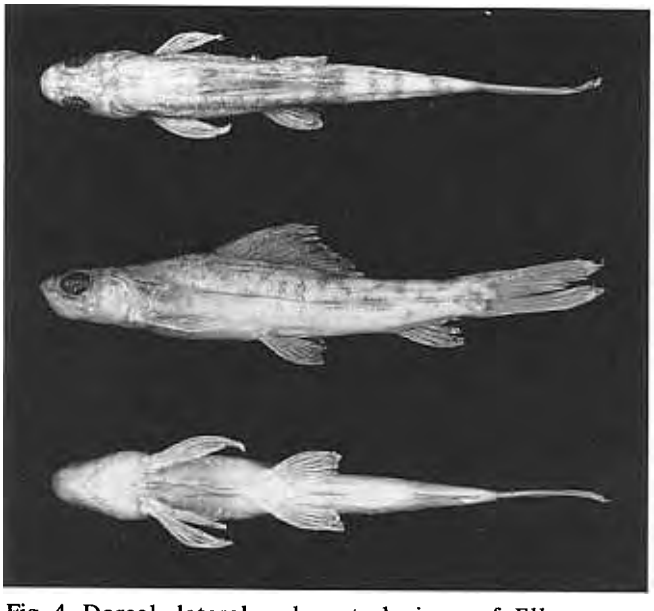

Fig. 4. Dorsal, lateral and ventral views of *Ellopostoma megalomycter* (CAS 49350, 46.9 mm SL).

Fig. 5. Dorso-anterior edge of snout of *Ellopostoma mystax* (right) showing diagnostic black bar as indicated by white arrow, and the absence of that marking on *E. megalomycter* (left).

CAS 49350, 3 ex., 40.9-47.7 mm SL, 1976-14, Kapuas River and mouth of Sungai Sekayam at Sanggau, 0°7'N 110°35'E, current moderate, Sekayam stream mouth, pH 7.5, 25°C, cast net, floating gill nets, seine, coll. T. R. Roberts & S. Wirjoatmodjo, 17 Jul.1976; MZB 3524, 1 ex., 39.8 mm SL, 1976-15, Sungai Engkayas where it flows into right side of Kapuas mainstream, about 2 km upstream from Sanggau, 0°7.5'N 110°36'E, clear water brown-tinted, 27°C, pH 7.5, bottom with leaf litter and logs, coll. T. R. Roberts & S. Wirjoatmodjo, 16 Jul.1976; CAS 49351, 3 ex., 39.0-44.8 mm SL, MZB 3526, 4 ex., 36.6-40.0 mm SL, 1976-37, small forested stream, 3-5 m wide, 1 m deep, where it flows into Sungai Mandai, 2-3 m upstream to its confluence with the Kapuas mainstream, 17 km WSW of Putussibau, 0°47'N 112°48'E, current weak, water dark brown, turbid, 30°C, pH 6, bottom with logs and leaf litter, rotenone, coll. T. R. Roberts & S. Wirjoatmodjo, 10 Aug. 1976; CMK 6949, 2 ex., 21.5-23.1 mm SL, Danau Temuan, a shallow lake near Nanga Embaluh, 0°53'N 112°37'E, coll. M. Kottelat et al., 28 Apr.1990; CMK 10439, 1 ex., 37.8 mm SL, Sungai Kapuas at Nanga Piasa, castnet from floating house, 0°39'18"N 112°13'46"E, coll. M. Kottelat et al., 12 Sep.1993.

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Table 1. Meristic and morphometric data of *Ellopostoma megalomycter* and *E. mystax*.

	E. megalomycter	*E. mystax*
Sample size	6	6
Catalogue numbers	CAS 49350 CAS 49351	CAS 96698 (including holotype)
Standard length (in mm)	39.0-47.7	42.6-55.3
Meristics (mode)		
Dorsal fin rays	iv.15-16 (15)	iv.15
Anal fin rays	iii.5	iii.5-6 (5)
Caudal fin rays	9+9 =18	9+9=18
Pelvic fin rays	i.10-11 (10)	i.10
Pectoral fin rays	i.7-8 (7)	i.7-8 (7)
Lateral scales (pierced by lateral line)	53-56	72-80
Predorsal scales	14-19	25-27
Transverse scales	6-7/1/6-7	11-12/1/10-11
Scales on caudal fin base	4/1/4	5-6/1/5-6
Scales above lateral line	8-9 (9)	11-13 (11)
Vertebrae	32-33 (15-16+16-18)	33 (16-17+16-17)
Morphometrics (see Fig. 1)		
In percentage standard length:		
Total length	126.9-130.2	127.8-131.5
Trunk length	76.8-80.4	77.4-80.4
Predorsal length	38.3-40.8	38.6-40.4
Preanal length	80.0-82.4	79.9-81.8
Prepelvic length	48.2-50.8	48.0-50.5
Head length	21.6-23.4	21.4-22.9
Body depth below dorsal fin origin	15.7-18.6	14.7-16.0
Body depth above anus	13.4-15.3	13.6-14.8
Caudal peduncle depth	8.1-9.0	8.6-9.6
Caudal peduncle length	10.8-12.2	11.7-13.5
Length of dorsal fin base	21.7-28.1	23.1-25.7
Length of anal fin base	7.8-9.4	6.9-9.1
Pelvic fin length	16.0-17.6	16.7-19.7
Pectoral fin length	17.4-22.3	18.9-21.8
Upper caudal fin lobe	27.5-32.1	28.6-32.3
Median caudal fin ray	14.5-17.7	15.9-18.6
Lower caudal fin lobe	27.4-30.4	27.3-30.7
In percentage head length:		
Head depth	44.1-50.0	46.0-49.0
Head width	54.3-61.7	54.1-57.7
Snout length	21.7-27.7	23.7-25.0
Eye diameter	25.5-30.0	26.0-28.4
Interorbital width	20.0-24.1	22.7-24.0