

Supplementary material to:

***Gymnocranius obesus*, a new large-eye seabream from the Coral Triangle**

Wei-Jen Chen ^a, Ryohei Miki ^b, Philippe Borsa ^c

^a wjchen.actinops@gmail.com

^b ad13007@student.miyazaki-u.ac.jp

^c philippe.borsa@ird.fr

Supplementary Table S1. *Gymnocranius obesus* sp. nov. Measurements (following [1]) on voucher specimens other than type material, including NMMBP-21546 from Hengchun town, 19 August 2011; NTUM 10741 comprising two specimens from Hengchun town, 10 March 2015; NTUM 10827 from Hengchun town, 10 March 2015. Initial sample number assigned to an individual is given in brackets. *NMMB* National Museum of Marine Biology and Aquarium, Pingtung; *NTUM* National Taiwan University Museums, Taipei; *AF* anal fin; *BD* largest body depth; *CF* caudal fin; *DF* dorsal fin; *SL* standard length

Measurement	Specimen no.				
	NMMBP-21546 (Let426)	NTUM 10741 (Let891)	NTUM 10741 (Let892)	NTUM 10827 (Let1192)	- (Let890)
SL (mm)	183	208	190	232	173
Body depth (BD) (mm)	82	96	85	98	78
BD at origin of DF (BDd) (mm)	-	95	84	96	77
BD at origin of AF (mm)	-	88	78	90	72
Head length (HL) (mm)	58.0	66.4	63.5	78.0	57.3
Snout length (mm)	23.6	23	22.2	29.5	20
Eye diameter (ED) (mm)	21.6	23.3	25.2	29.2	21.7
Inter-orbital width (IOW) (mm)	22.0	22.0	22.7	27.0	19.2
Predorsal length (mm)	-	77	75	94	65
Prepelvic length (mm)	-	72	68	83	56
Preanal length (mm)	-	127	119	140	104
Median ray of caudal fin(MRC) length (mm)	-	22.6	22.7	26.5	19.9
DF spines, rays	X, 10	X, 10	X, 10	X, 10	X, 10
AF spines, rays	III, 10	III, 10	III, 10	III, 10	III, 10
Pored scales on lateral line	47	47	47	48	48
Ratio of SL to BD	2.23	2.16	2.25	2.38	2.23
Ratio of SL to BDd	-	2.20	2.28	2.42	2.25
Ratio of SL to HL	3.16	3.13	2.99	2.97	3.02
Ratio of ED to SL	0.12	0.11	0.13	0.13	0.13
Ratio of ED to HL	0.37	0.35	0.40	0.37	0.38
Ratio of ED to IOW	0.98	1.06	1.11	1.08	1.13
Ratio of ED to MRC	NA	1.03	1.11	1.10	1.09

Supplementary Table S2. Measurements on voucher specimens of *G. griseus*. NTUM National Taiwan University Museums, Taipei; *AF* anal fin; *BD* largest body depth; *CF* caudal fin; *DF* dorsal fin; *SL* standard length; *AF* anal fin; *DF* dorsal fin

Measurement	Voucher no.							
	NTUM 10768						NTUM 10722	NTUM 10808
	(Let1000)	(Let1001)	(Let1007)	(Let1008)	(Let1009)	(Let1010)	(Let734)	(Let1168)
SL (mm)	208	197	245	260	290	325	298	325
Body depth (BD) (mm)	96	95	111	115	126	143	126	138
BD at origin of DF (BDd) (mm)	95	93	108	112	125	141	123	137
BD at origin of AF (mm)	85	85	102.2	104.3	123.6	132	121	128
Head length (HL) (mm)	65.5	60.0	74.5	80.0	86.7	95.0	87.3	94.0
Snout length (mm)	20.8	21.3	28.4	29.4	29.2	35.6	34.7	36.3
Eye diameter (ED) (mm)	23	22.5	27	27	27.5	28.2	28.2	30
Inter-orbital width (IOW) (mm)	25	22.5	29.3	31.5	33	35.2	33	36
Predorsal length (mm)	70	70	86	86	100	113	101	108
Prepelvic length (mm)	67	67	77	85	94	103	95	105
Preanal length (mm)	131	124	150	160	180	200	175	195
Median ray of caudal fin (MRC) length (mm)	na	24.8	28.0	29.7	33.0	36.3	33.3	26.2
DF spines, rays	X, 10	X, 10	X, 10	X, 10	X, 10	X, 10	X, 11	X, 10
AF spines, rays	III, 10	III, 10	III, 10	III, 10	III, 10	III, 10	III, 11	III, 10
Pored scales on lateral line	47	47	47	48	47	46	48	48
Ratio of SL to BD	2.17	2.07	2.21	2.26	2.30	2.28	2.37	2.36
Ratio of SL to BDd	2.18	2.12	2.27	2.32	2.32	2.31	2.42	2.37
Ratio of SL to HL	3.18	3.28	3.29	3.25	3.34	3.42	3.41	3.46
Ratio of ED to SL	0.11	0.11	0.11	0.10	0.09	0.09	0.09	0.09
Ratio of ED to HL	0.35	0.38	0.36	0.34	0.32	0.30	0.32	0.32
Ratio of ED to IOW	0.92	1.00	0.92	0.86	0.83	0.80	0.85	0.83
Ratio of ED to MRC	NA	0.91	0.96	0.91	0.83	0.78	0.85	1.15

Supplementary Table S3. Measurements on voucher specimens of *Gymnocranius* sp.D. NTUM National Taiwan University Museums, Taipei; *AF* anal fin; *BD* largest body depth; *CF* caudal fin; *DF* dorsal fin; *SL* standard length; *AF* anal fin; *DF* dorsal fin

Measurement	Specimen no.				
	NTUM 10818 (Let1211)	NTUM 10826 (Let1191)	NTUM 10831 (Let1341)	NTUM 10835 (Let1362) (Let1363)	
SL (mm)	191	176	205	224	149
Body depth (BD) (mm)	87	73	81	97	65
BD at origin of DF (BDd) (mm)	86	71	80	95	63
BD at origin of AF (mm)	80	68	73	92	60
Head length (HL) (mm)	57.8	57.0	67.0	71.0	47.8
Snout length (mm)	18	16.6	21.4	23.6	15.6
Eye diameter (ED) (mm)	21.5	20.5	27.0	23.8	17.4
Inter-orbital width (IOW) (mm)	24.8	20.3	28	28.5	19.4
Predorsal length (mm)	67	59	80	83	53
Prepelvic length (mm)	63	59	74	76	50
Preanal length (mm)	118	118	126	135	86
Median ray of caudal fin (MRC) length (mm)	23.0	18.3	26.0	24.5	18.0
DF spines, rays	X, 10	X, 10	X, 10	X, 10	X, 10
AF spines, rays	III, 10	III, 10	III, 10	III, 10	III, 10
Pored scales on lateral line	49	50	49	49	48
Ratio of SL to BD	2.21	2.42	2.53	2.31	2.29
Ratio of SL to BDd	2.22	2.49	2.56	2.36	2.37
Ratio of SL to HL	3.30	3.09	3.06	3.15	3.12
Ratio of ED to SL	0.11	0.12	0.13	0.11	0.12
Ratio of ED to HL	0.37	0.36	0.40	0.34	0.36
Ratio of ED to IOW	0.87	1.01	0.96	0.84	0.90
Ratio of ED to MRC	0.93	1.12	1.04	0.97	0.97



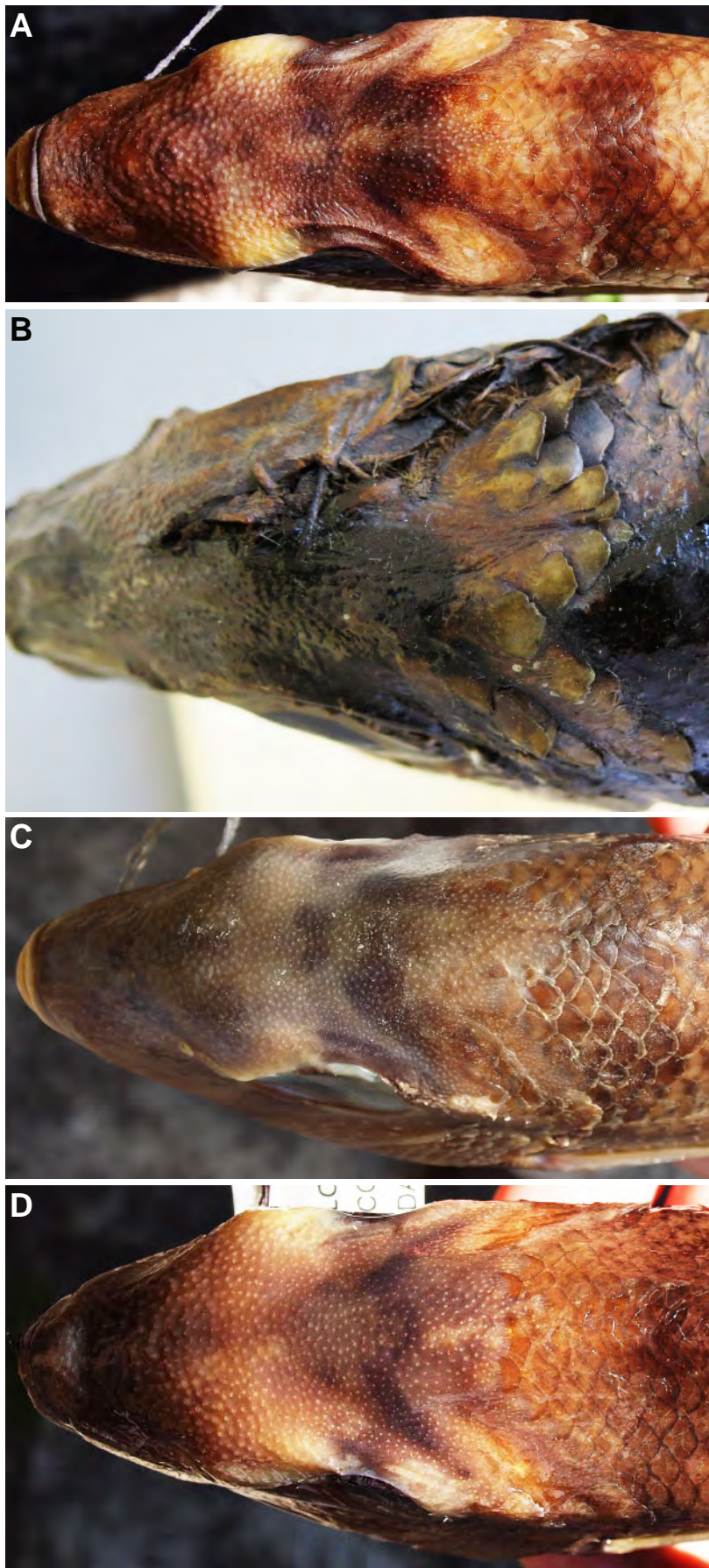
Supplementary Fig. S1. *Gymnocranius obesus* sp. nov. specimens from Indonesia. **A.** Specimen no. 20070222-G2, Kedonganan fish market, Bali, 22 Feb. 2007 (photographed by F. Giancarlo). **B.** Specimen no. 20070223-G5, Kedonganan fish market, Bali, 23 Feb. 2007 (photographed by F. Giancarlo). **C.** Specimen no. 20150503-5, Labuan Bajo fish market, Flores Sea, 03 May 2015 (photographed by S. Bari).



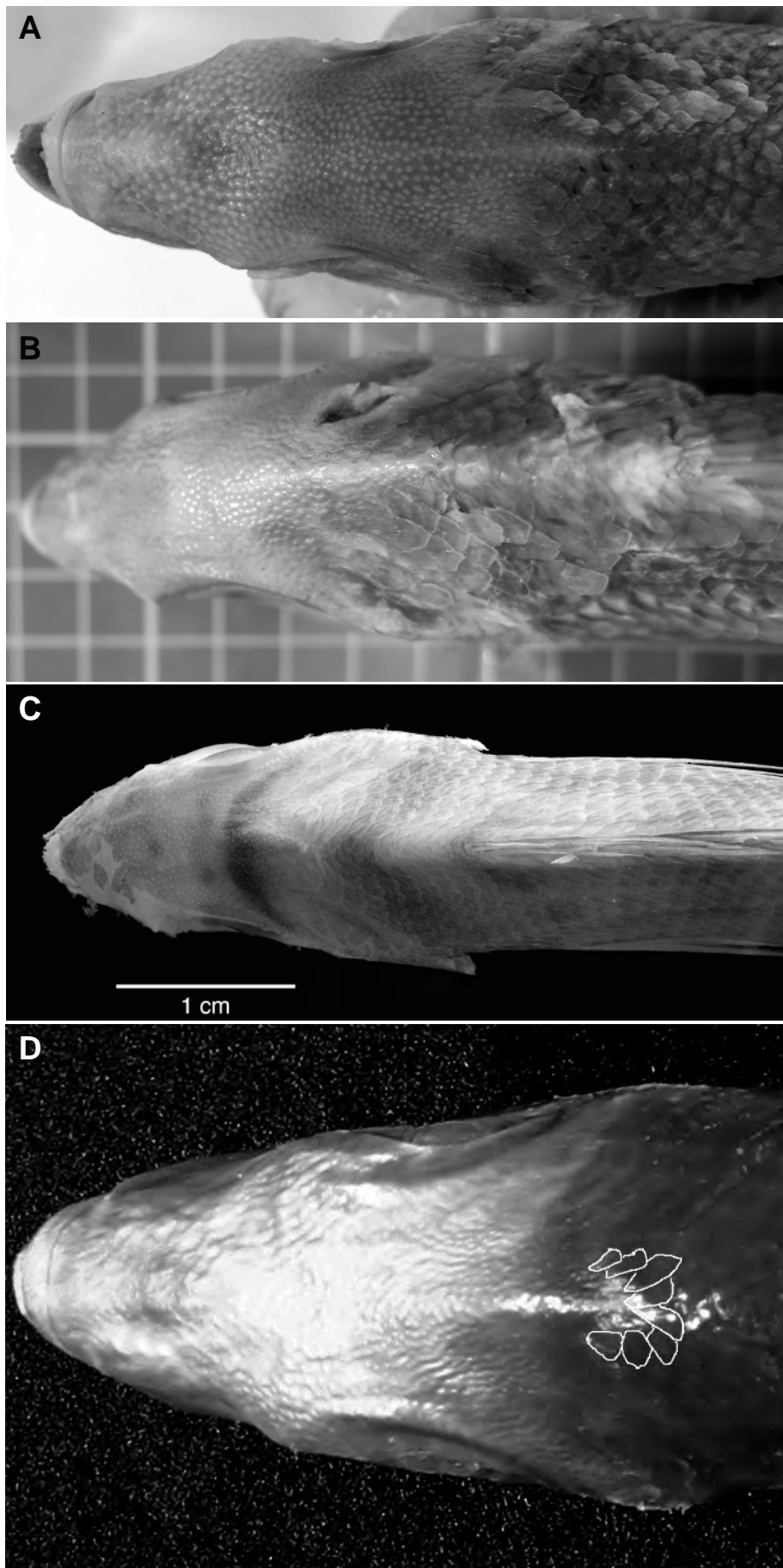
Supplementary Fig. S2. *Gymnocranius griseus* (Temminck and Schlegel 1843). **A.** Specimen no. RMNH.PISC.D.2248, lectotype of the species, SL 343 mm, collected by H. Burger in the Nagasaki region, Japan, ca. 1830 (photographed by Naturalis, Leiden). **B.** Specimen NTUM10722 (= Let734), SL 298 mm, from Chenggong fishing port, Taiwan, 10 September 2012 (photographed by WJC). **C-G.** Respectively, specimens NTUM10768-Let1000 (SL 208 mm), NTUM10768-Let1001 (SL 197 mm), NTUM 10768-Let1007 (SL 245 mm), NTUM 10768-Let1009 (SL 290 mm), and NTUM10768-Let1010 (SL 325 mm) from Fugang fishing port, Taiwan, 03 October 2013 (photographed by WJC). **H.** Specimen NTUM10808 (= Let1168), SL 325 mm, from Fugang fishing port, Taiwan, 09 January 2015 (photographed by WJC).



Supplementary Fig. S3. *Gymnocranius* sp. D. **A.** Specimen no. 20070222-G1, SL 248 mm, Kedonganan fish market, Bali, 22 Feb. 2007 (photographed by F. Giancarlo). **B.** Specimen no. Let427, SL 148 mm, from Hengchun, Taiwan, 19 August 2008 (photographed by H.-C. Ho). **C.** Specimen no. NTUM 10826 (= Let1191), SL 176 mm, from Hengchun, Taiwan, 10 March 2015 (photographed by WJC). **D.** Specimen no. NTUM 10818 (= Let1211), SL 191 mm, from Penghu, Taiwan, 04 May 2015 (photographed by WJC).



Supplementary Fig. S4. Zoom-in on the dorsal side of head, to enable the count of front scales. **A.** *Gymnocranius obesus* sp. nov., specimen no. NTUM 10741-Let892 from Hengchun Town, Taiwan, 10 March 2015 (photographed by WJC). **B.** *Gymnocranius griseus*, lectotype, no. RMNH.N.PISC.D.2248 (photographed by RM). **C.** *Gymnocranius griseus*, specimen no. NTUM 10768-Let1007 from Fugang fishing port, Taiwan, 03 October 2013 (photographed by WJC). **D.** *Gymnocranius* sp. D, specimen no. NTUM 10818 (Let1211) from Penghu, Taiwan, 04 May 2015 (photographed by WJC).



Supplementary Fig. S5. Dorsal side of head in type specimens of several species under *Gymnocranius*. **A.** *Pentapus curtus* Guichenot 1863, specimen no. MNHN 0000-1317 (holotype, photographed by RM). **B.** *Dentex lethrinoides* Bleeker 1850, specimen no. RMNH 5680 (holotype, photographed by RM). **C.** *Gymnocranius orbis* Fowler 1938, specimen no. ANSP 68291 (holotype, photographed by M.S. Perez). **D.** *Dentex robinsoni*, specimen no. SAM 10037 (holotype, photograph provided by M. Bougaardt and A. Bosman).