

Laboratory of Fishery Research, Slovak Agricultural Academy,  
and Department of Systematic and Ecological Zoology, Comenius University, Bratislava

NOTES ON SMALL COLLECTION OF FISHES FROM AFGHANISTAN  
WITH A DESCRIPTION OF GLYPTOTHORAX JALALENSIS, SP. N. :  
(PISCES, SISORIDAE)

EUGEN K. BALON and KAROL HENSEL

Received August 18, 1969

**Abstract:** The work presents a description and diagnosis of four species of fish from the Afghanistan territory — *Salmo trutta oxianus* Kessler, 1874, *Schizothorax intermedius fedtschenkoi* Kessler, 1872, *Glyptothorax jalalensis* sp. n., and *Ophiocephalus gachua* Hamilton, 1822. The *Glyptothorax jalalensis* sp. n. is simultaneously the first proof of the occurrence of this genus in Afghanistan.

Through the courtesy of Prof. D. Povolný and Dr. J. Gaisler we have received a few specimens of fish collected in Afghanistan during an expedition of the Zoological Institute of the College of Agriculture, Brno, in 1967.

As the available studies on fish from Afghanistan (Day, 1880; Günther, 1889; McClelland, 1842; Annandale and Hora, 1920; Hora, 1934, 1935; Vijayalakshmanan, 1949) and from adjacent territories (Berg, 1949a, b; Turdakov, 1952; Sufi, 1957, 1963; Ahmad and Mirza, 1963, 1964) deal, for the most part, with individual specimens, and since more detailed diagnoses are often lacking, it is considered useful to present here a description of these fishes.

Two specimens of trout were caught on May 20, 1967 in the rapids of a mountain stream (2700 m above sea level) which joins the river Kunduz (a tributary of Amu-Daria) in the Bamian pass. Larger specimens are currently caught here, but only the smallest of them ended in formalin. The remaining fishes described here were caught in the lowland tributaries the Kabul river in the environs of Jalal-Abad (in the Indus watershed), in March and April of 1967.

The specimens are deposited in the collections of the Slovak National Museum in Bratislava.

*Salmo trutta oxianus* Kessler, 1874

Two specimens, 158 and 143 mm of standard length. The larger one is a female, the smaller one a male. Radii D III 10 and III 9, radii A III 8 in both, radii C VIII 17 VIII and IX 17 VIII, radii P I 11 and I 12, radii V I 8 in both. Lateral line scales 104 in both. Branchial spines 21/21 and 21/22 (external spines on the first branchial arch on left and right side of body) are thin, long and spiniform.

In % of standard length:  
head length 29.1 and 29.4; preorbital length 7.6 and 7.7; internasal distance 5.4 and 4.9; diameter of eye 6.0 and 6.3; interorbital distance 8.9 and 8.4; postorbital distance 17.1 and 16.8; praedorsal distance 46.2 and 49.6; praeventral distance 57.6 and 55.2; praeanal distance 76.6 and 75.6; length of caudal peduncle 17.1 and 16.8; distance P-V 32.3 and 30.1; distance V-A 20.2 and 21.0; length of D 14.6 and 12.6; length of A 9.5 and 9.1; length of P 20.9 and 21.7; length of V 15.2 and 16.1.

Both specimens still show well defined juvenile dark spots on either side of their bodies. Both have an equally well developed annulus of the year 1966 on the scales, and a new annulus closely on their margin. Hence, they belong to the 2nd age class. Evidently there is question here of autochthonous trout found in and originally described from the Bamian river (McClelland, 1842), which were later found here and in the upper Amu-Daria river-basin by several authors (Kessler, 1874; Berg, 1905; Hora, 1933, 1935; Nikolskij, 1938). The characters in our specimens agree with those already described. According to Balon's evolutionary hypothesis (1968) these trout are derived from the extinct Mediterranean species, whose "neotenic" populations penetrated through the continental river system thus far to the East and produced the *ezenami* and *oxianus* forms.

*Schizothorax intermedius fedtschenkoi* Kessler, 1872

The material from the tributary of the Kabul river contains two females of 178 and 121 mm standard length. Their counts and measurements are as follows: Radii D III 8 in both, radii A III 5 in both, lateral line scales 93 and 87 on the left, and 96 and 84 on the right, transversal rows of scales 19 and 18 on the left, and 16 and 14 on the right, number of branchial spines 14 and 12 on the left, and 17 and 17 on the right, lower pharyngeals 2.3.5 and 2.3.5, on the third hard dorsal ray the larger has 13 and the smaller one 15 little denticles.

In % of standard length:

head length 27.0 and 25.6; preorbital distance 11.2 and 9.1; 1-st barbel length 7.9 and 6.6; 2-nd barbel length 6.7 and 8.3; internasal distance 6.2 and 5.8; diameter of eye 3.9 and 4.5; interorbital distance 9.5 and 8.3; postorbital distance 12.9 and 12.4; depth of head 18.0 and 15.7; head length 17.4 and 14.9; praedorsal distance 53.9 and 53.7; praeventral distance 50.0 and 52.1; praeanal distance 74.7 and 76.8; depth of body 23.6 and 24.0; width of body 15.2 and 14.9; length of caudal peduncle 20.2 and 18.2; depth of caudal peduncle 12.9 and 12.4; width of caudal peduncle 8.4 and 7.4; last height of body 10.7 and 10.7; P-V distance 27.5 and 28.9; V-A distance 24.7 and 24.8; length of D 13.5 and 11.6; length of A 6.7 and 4.9; length of P 20.8 and 19.8; length of V 17.4 and 18.2; height of D 20.2 and 20.7; height of A 19.1 and 19.8.

The larger specimen belongs to the 4th age class (annuli 3+) the smaller one to the 3rd (annuli 2+). The smaller one shows dark irregular spots on its body, while the larger one is free of them, but the upper half of its body is darker (after imbedding in formalin). The larger specimen has strong fleshy lips, divided in the centre of the mandible and lobed at the sides. Fleshy lips in the smaller one is only weakly indicated, without lobes.

*Glyptothorax jalalensis* sp. n. (fig. 1)\*

Holotype: Female 73.2 mm long (Fig. 1), caught in a tributary of the Kabul river near the town of Jalal-Abad, in March 1967. It is deposited in the Slovak National Museum under No. RY 2176.

Description: Radii D II 6, radii A III 10, radii P I 8, radii V I 5, radii C XII 17 XII.

In % of standard length:

head length 27.3; preorbital distance 15; diameter of eye 2.2; postorbital distance 12; depth of head 12.3; width of head 19.1; interorbital distance 6.3; internasal distance 4.0; length of nasal barbel 12.8; length of maxillary barbel 23.2; length of external mandibular barbel 16.5; length of internal mandibular barbel 10.4; praedorsal distance 39.6; praeventral distance 47.6; praeanal distance 65.6; depth of body 19.1; width of body 17.8; length of caudal peduncle 21.9; height of caudal peduncle 10.9; width of caudal peduncle 7.5; last height of body 9.3; P-V distance 27.3; V-A distance 16.4; length of D 11.6; length of A 12.0; length of P 20.5; length of V 16.4; height of D 15.3; length of D spine 11.5; height of A 20.0; length of adipose fin 19.1.

Derivation of the name: According to the town Jalal-Abad.

The head and body are covered with little soft tubercles. The head is longer than wide, but wider than high. The eyes are small and placed dorsally. The upper jaw is longer than the lower one. The mouth is inferior, and narrower than the length of the snout. The teeth are small and sharp, and on the praemaxillaries they spread out in a narrow continuous crescent-like strip. On the dental, the strips of teeth are separated in the middle by a narrow gap. The lips are smooth, and the nostrils are situated near the tip of the snout. Nasal barbels reach beyond the eyes, the maxillary ones moderately overreach the

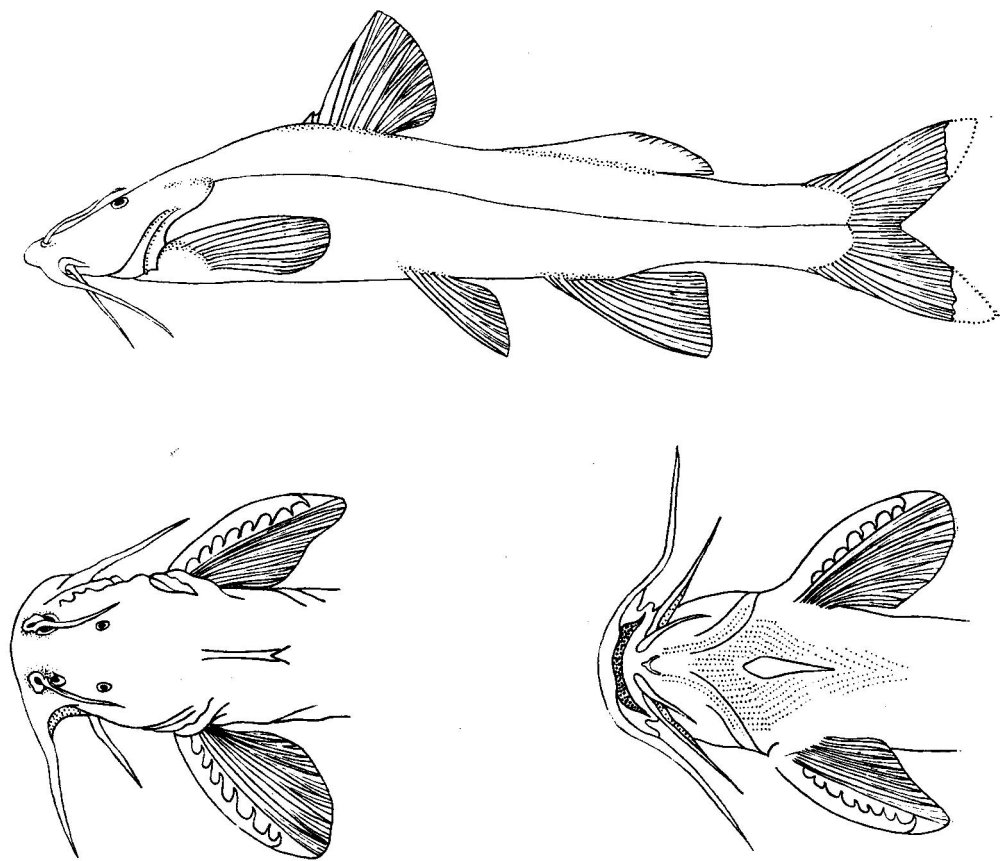


Fig. 1. The holotype of *Glyptothorax jalalensis* sp. n. SNM No. RY 2176. Standard length 73.2 mm. Drawn by Mrs. Miriam Baradlai.

base of pectorals; the external mandibular barbels go as far as base of pectorals, while the internal ones are the shortest of all. The body is pressed in from the sides. The adhesive apparatus is developed only on the chest. It is longer than wide, with a slight depression in the middle. The insertion of the dorsal fin is more proximate to the adipose fin than to the end of the snout, and is lower than the height of the body. The dorsal spine is not serrated. The adipose fin is approx. 5 times longer than high, its base twice as long as its height. The gap between the posterior edge of dorsal base and the anterior edge of the

base of adipose fin is approximately equal to the length of the adipose fin. Five osseous platelets are hidden under the skin behind D, and three are behind the adipose fin. The pectoral spine is serrated and carries large teeth bent backwards, 7 on the left and 8 on the right. It is without any adhesive apparatus. The ventral fins reach beyond the anal orificium, but do not attain the anterior edge of anal basis. The anal orificium stands closer to anal base, and has a papilla. The anal fin lies under the adipose one.

The colouring of our specimen embedded in formalin is indistinct. It is darker on the upper part with hardly perceptible darker stains in the region of dorsal and adipose fin.

**Discussion:** Of the approximately 36 species of the genus *Glyptothorax* known so far, five occur in the Indus river-basis: *G. telchitta* (Hamilton, 1822), *G. cavia* (Hamilton, 1822), *G. platypogonoides* (Bleeker, 1855), *G. kashmiriensis* Hora, 1923 and *G. pectinopterus* (McClelland, 1842). *Glyptothorax stolickae* (Steindachner, 1867) from Simla probably originates from the Jamna river, in the Ganges watershed (Hora, 1923; Sufi, 1957, 1963; Ahmad and Mirza, 1963, 1964). Of these, only two specimens were found in the Kabul river basin, from which comes also our specimen: *G. platypogonoides* and *G. cavia*, both of them in the Swat river in West Pakistan (Sufi, 1957, 1963; Ahmad and Mirza, 1963, 1964). Our specimen is therefore the first proof of the occurrence of this genus on Afghanistan territory.

In our view, the systematics of the genus *Glyptothorax* does not seem to be clear enough. Hardly anything is known about the variability of individual taxonomic features. Likewise, very little is known about sexual dimorphism which is strikingly manifest e.g. in *G. kashmiriensis*. Since our specimen differs by its features from the forms mentioned above, we consider it as new, hitherto undescribed species.

### *Ophiocephalus gachua* Hamilton, 1822

Belongs among the smallest species of the genus and is widely spread — from Afghanistan to Jawa. The features of our specimens agree with those reported by Smith (1945). They are given in the table.

No. of coll.	1	2	3	4	5	6	7	8
standard length in mm	83	73	96	91	90	88	99	87
sex	♂	♂	♀	♀	♀	♀	?	?
rays in D	36	34	36	35	35	34	35	35
rays in A	23	21	23	23	22	22	22	22
lateral line scales	44	44	44	44	43	44	45	44
transversal line scales	4/1/8	4/1/7	4/1/8	4/1/8	4/1/8	4/1/8	4/1/8	4/1/8
dropping row at l. l. scale	13	13	14	13	13	13	13	14
rows of scales on opercle	3	3	3	3	3	3	3	3
rows of scales between eye and angle of preopercle	5	5	5	5	5	5	5	5
in % of standard length:								
head length	31.3	32.3	32.3	31.9	33.3	31.1	31.1	33.3
praeorbital distance	6.9	6.3	6.2	6.6	7.3	6.8	7.1	7.3
internasal distance	4.8	3.6	4.6	4.4	4.7	4.8	4.5	4.5
diameter of eye	4.8	5.2	5.1	4.8	4.9	4.5	4.5	5.0
interorbital distance	9.5	9.6	9.8	9.2	9.7	9.5	9.7	10.3
postorbital distance	20.2	20.5	21.2	20.9	21.3	20.7	20.8	21.3
head depth	15.6	16.4	17.4	16.5	17.8	16.8	17.3	16.5

head length	21.4	21.9	21.9	22.0	21.7	21.0	21.2	22.3
praedorsal distance	37.3	34.2	36.4	37.4	38.2	36.0	35.3	36.8
praeventral distance	38.5	39.7	39.6	39.6	38.9	38.9	37.4	41.4
praeanal distance	57.5	54.8	57.9	58.2	57.4	55.7	56.6	58.6
body depth	21.0	20.5	20.8	20.9	21.5	19.6	19.2	19.5
body width	19.3	17.8	18.7	18.5	19.8	18.2	18.2	18.4
caudal peduncle length	7.9	10.9	11.4	9.9	10.0	11.9	10.5	9.2
caudal peduncle depth	12.4	11.5	12.2	12.1	12.8	12.7	11.1	11.5
caudal peduncle width	5.8	5.5	6.1	4.7	5.5	5.4	4.8	5.7
last height of body	11.8	10.4	11.8	11.0	11.1	11.4	10.8	11.9
P-V distance	15.1	13.4	14.8	13.2	13.8	13.3	13.1	14.7
V-A distance	18.5	17.5	17.4	19.6	18.1	17.1	18.2	20.2
length of D	57.8	57.5	58.1	52.7	56.2	55.2	54.5	56.3
length of A	36.1	35.6	37.5	39.6	36.7	36.4	36.4	33.3
length of C	18.8	—	17.7	19.8	20.0	20.4	19.2	20.7
length of P	17.5	19.2	16.7	18.5	17.8	18.2	15.6	18.4
length of V	6.0	8.2	6.8	7.5	6.7	6.8	7.1	8.0

## REFERENCES

- Ahmad, N. D., M. R. Mirza, 1963: Hill stream fishes of Kaghan and Swat. *Scientist*, (Karachi) 6 : 153—161.
- Ahmad, N. D., M. R. Mirza, 1964: Hill streams fishes of Kaghan and Swat. *Pakistan J. Sci.*, 16 (2) : 63—68.
- \*Annandale, N., S. L. Hora, 1920: (Title not available.) *Rec. Ind. Mus.* 18 : 151—191.
- Balon, E. K., 1968: Notes to the origin and evolution of trouts and salmon, with special reference to the danubian trouts. *Věstník Čes. spol. zool.* 32 : 1—21.
- \*Berg, L. S., 1905: Ryby Turkestana. St. Petersburg.
- Berg, L. S., 1949a: Ryby presnykh vod SSSR i sopredelnykh stran. Čast 2. Izd. AN SSSR, Moskva—Leningrad.
- Berg, L. S., 1949b: Presnovodnyje ryby Irana i sopredelnykh stran. *Trudy zool. inst. AN SSSR*, 8 : 783—858.
- Day, F., 1880: On the fishes of Afghanistan. *Proc. Zool. Soc. London* : 224—232.
- Günther, A., 1889: The zoology of the Afghan delimitation commission. Fishes. *Trans. Linn. Soc., Zool.* 2 (5) : 106—109.
- Hora, S. L., 1923: Notes on fishes in the Indian Museum. V. On the composite genus Glyptosternon McClelland. *Rec. Ind. Mus.* 25 : 1—44.
- Hora, S. L., 1934: Fish of Afghanistan. *J. Bombay Nat. Hist. Soc.* 34 (3) : 688—706.
- Hora, S. L., 1935: On a collection of fish from Afghanistan. *J. Bombay Nat. Hist. Soc.* 37 (1—2) : 784—802.
- \*Kessler, K., 1947: Ryby. In: Putešestvije A. P. Fedčenko v Turkestan. *Izv. obšč. ljub. jest., antr. etn.*, 11 (3) : 1—63.
- \*McClelland, J., 1842: On the fresh-water fishes collected by William Griffin in his travels, from 1835 to 1842. *J. Nat. Hist. Calcutta*, 2 : 560—589.
- \*Nikolskij, G. V., 1938: Ryby Tadžikistana. Izd. AN SSSR, Leningrad.
- Smith, H. M., 1945: The freshwater fishes of Siam, or Thailand. *Bull. U. S. Nat. Mus.* 188 : XI + 622 p.
- Sufi, S. M. K., 1957: Occurrence of fishes of the genus Glyptothorax in Peshawar and Hyderabad divisions of West Pakistan. *Pakistan J. Sci.* 9 (4) : 170—172.
- Sufi, S. M. K., 1963: Check list of the fishes of the genus Glyptothorax Blyth of West Pakistan with record of Glyptothorax platypogonoides (Blkr) from Peshawar division (West Pakistan). *Biologia* (Lahore) 91 (1) : 23—27.
- Vijayalakshmanan, M. A., 1949: A note on the fishes from the Helmund river in Afghanistan, with description of a new loach. *Rec. Ind. Mus.* 47 (2) : 217—224.

*Author's addresses:* Dr. Eugen K. Balon, CSc., Železná studnička, Cesta mládeže, Bratislava.  
Dr. Karol Hensel, Moskovská 2, Bratislava.

\* not seen in original