

# Papéis Avulsos de Zoologia

## A NEW SPECIES OF *PARATRACHICHTHYS* FROM THE COAST OF BRAZIL (PISCES, TRACHICHTHYIDAE)

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### ABSTRACT

*Paratrachichthys atlanticus*, sp. n., from the coast of Rio Grande do Sul and São Paulo, is related to *P. argyrophanus* Woods, but differs from it in having fewer spines in the anal fin, fewer scales below the lateral line and more scutes on the abdominal region.

During the identification of the fishes collected by the oceanographic vessel "Prof. W. Besnard", as part of the GEDIP-IOUSP program (see Menezes & Figueiredo, 1971), we found 18 specimens referable to the genus *Paratrachichthys* Waite, which represent a new species. Six additional specimens were further collected by the same vessel during Cruise II from Cabo de Santa Marta, (state of Santa Catarina) to Cabo de São Tomé (state of Rio de Janeiro).

### METHODS AND MATERIALS

In the study of meristic characters and body proportions we followed the methods used by Menezes & Figueiredo (1971), except for the number of scales in the lateral line, which, in this case includes the scales both with and without pores. Regressions were computed for all measurements involved; however, only those showing sex differences are presented.

### *Paratrachichthys atlanticus*, sp. n.

(Fig. 1)

Holotype: MZUSP 8898, female. "Prof. W. Besnard" Cruise VI, Station n.º 547, Rio Grande do Sul; 31º 14'S., 49º 38'W.; March 8, 1969; 152-159 m.

Paratypes: MZUSP 8887. "Prof. W. Besnard" Cruise V, Station n.º 438, Rio Grande do Sul, 30º 40'S., 49º 09'W., Dec. 4, 1968; 168 m. MZUSP 8888-93. "Prof. W. Besnard" Cruise VI, Station n.º 546, Rio Grande do Sul; 30º 48'S., 49º 18'W.; March 7, 1969; 153-155 m. MZUSP 8894-97, 8899-8904. "Prof. W. Besnard" Cruise VI, Station n.º 547, Rio

Grande do Sul; 31° 14'S., 49° 38'W.; March 8, 1969; 152-159 m. MZUSP 89-05-09. "Prof. W. Besnard" Cruise II, Station n.º 1158, São Paulo; 24° 30'S., 44° 30'W.; August 10-11, 1970; 144-149 m. MZUSP 8910. "Prof. W. Besnard" Cruise II, Station n.º 1159, São Paulo; 24° 16'S., 44° 36'W.; August 11, 1970; 133-135 m. .

### Diagnosis

D. V+13; A. III+8-9; P. ii+8+ii; V. I+6; principal caudal rays 18-20; 50-60 scales in the lateral line; 10-12 scales above the lateral line, 11-13 below; 5-7+13-14 gill rakers on first gill arch; 9-10 abdominal scutes.

### Description

Body elongate, compressed, dorsal and ventral profiles almost evenly curved.

Head conical, slightly obtuse at the snout region, narrow anteriorly and much wider posteriorly at the opercular region; head bones with many roughened ridges which are specially salient on the upper part of the head, and on the sub-orbital, opercular, and preopercular regions. Mouth oblique, terminal, lower jaw protruding when the mouth is fully open. Nostrils close together, the first situated midway between the tip of the premaxillary and the orbit, and the second very close and above the anterior edge of the orbit. Eyes large, about twice as large as the snout. Interorbital space slightly convex, its least width just a little shorter than the orbital diameter. Pre-maxillary concave, slightly protractile, wider anteriorly and becoming narrower posteriorly, with a band of villiform teeth; middle of pre-maxillary region with a notch to receive a little knob formed by the anterior elevation of both arms of the mandible. A band of villiform teeth on the dentaries and palatines, and a small patch of conical teeth on the vomer.

Opercle with a prominent horizontal ridge on its upper part ending in a pointed spine meeting anteriorly another vertical ridge which runs downward on the inner edge of the bone. The point where both ridges meet is an almost straight angle from which radiate a series of opercular striae. Preopercle with a strong spine on its lower posterior angle. A vertical prominent ridge on the preopercle near its free edge and an horizontal one on its lower posterior edge; they meet at the lower posterior corner of the bone and project backward horizontally for a short distance over strong preopercular spine. Subopercle and interopercle striated. Gill rakers lanceolate, long, 5-7+13-14 on first gill arch.

Abdominal region with a series of 9-10 overlapping scutes.

Scales ctenoid, rough, present on body, cheeks, and bases of caudal, soft dorsal and anal fins; those on the anterior part of the body below the lateral with fewer cteni than the rest, being almost cycloid. Lateral line complete, its origin behind the upper part of the opercle, running through the upper third of the body following the dorsal profile, and extending to the caudal base. There are 50-60 scales along lateral line, 28-32 of which are perforated; 10-12 from the origin of the dorsal fin to the lateral line and 11-13 from the lateral line to the origin of the anal fin.

Origin of dorsal fin much closer to the tip of the snout than to the base of the caudal. Dorsal fin anteriorly with 6 spines gradually increasing backward. Soft dorsal with 13 rays, the first or first two simple, the remainder branched; first rays much longer than the preceding spines and a little longer than the last rays. Anal fin with 3 spines and 8-9 branched rays, the spines graduating in size backward; first rays longer than the last. Pectorals inserted below the tip of the opercular membranous edge, their longest rays not reaching the origin of the anal fin; 12 pectoral fin rays, the first two and last two simple, the remainder branched. Ventrals inserted below the base of the pectoral fin, with 1 spine and 6 branched rays. Caudal fin furcate, with 20-22 rays, of which 16-20 branched and the uppermost and lowermost two simple; principal caudal rays 18-20; 6-7 procurrent rays above, 5-6 below.

Color immediately after capture: silvery blue with the upper and lower parts of the body dark brown. Upper part of the head at the interorbital region dark. Snout and tip of mandible pink. Base of pectoral fin dark. All fins pink.

Ground color in alcohol dark brown, considerably darker on the lower part of the body. A black area behind the tip of the mandible. Branchiostegal rays black. All fins pale.

The specimens from Rio Grande do Sul were collected over a calcareous bottom in association with gurnards (*Prionotus* sp.), boarfishes (*Antigonia* sp.), surmulletts (*Mullus* sp.), wrasses (*Bodianus* sp.), and flounders (*Paralichthys* sp.).

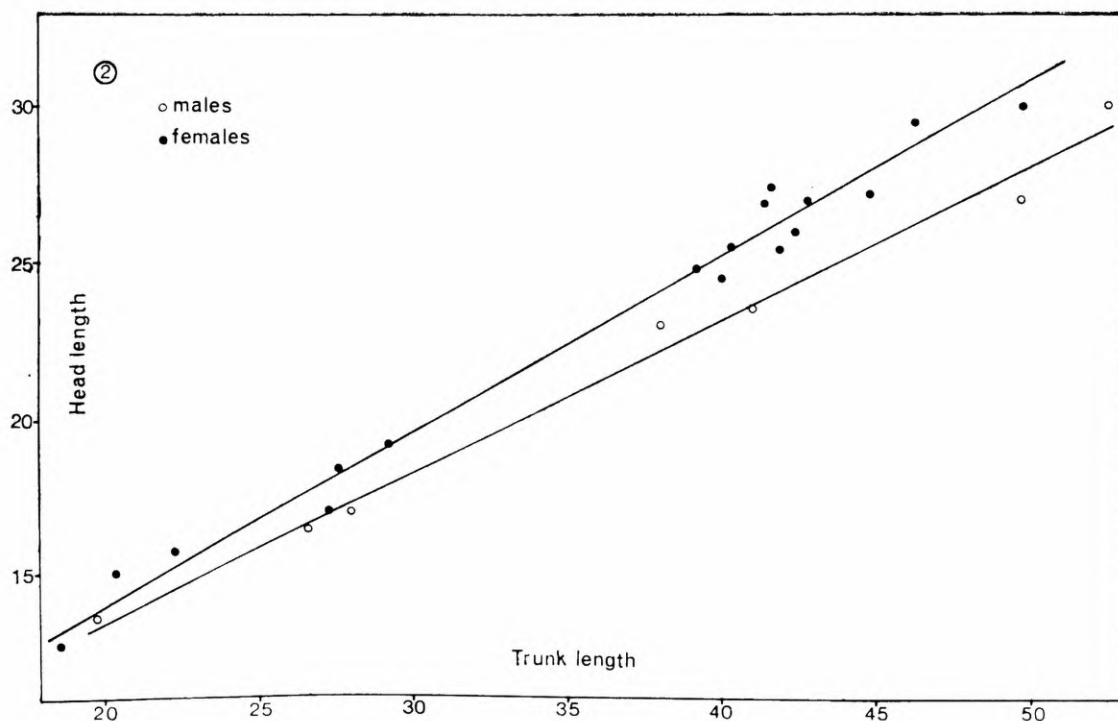


Fig. 2. Linear regression of head length on trunk length.

Table 1. Measurements (mm)

	A	B	C	D	E	F	G	H	I	J	K
8887	69.4	27.0	42.4	27.2	4.0	9.3	6.6	8.4	30.0	27.7	48.0
8888	31.3	12.7	18.6	13.6	2.5	4.8	3.9	4.3	14.3	13.8	22.3
8889	33.4	13.6	19.8	14.0	2.3	4.5	3.9	4.6	15.5	13.8	23.4
8890	35.4	15.0	20.4	15.3	2.4	5.0	4.4	4.8	16.8	15.7	25.4
8891	38.0	15.7	22.3	16.0	2.8	5.0	4.5	5.1	17.9	16.2	25.3
8892	43.0	16.4	26.6	17.5	3.0	5.2	4.7	5.8	20.0	17.8	30.0
8893	45.0	17.0	28.0	18.3	3.0	5.5	4.8	6.2	19.9	17.5	30.0
8894	82.6	30.5	52.1	32.0	5.0	10.0	7.7	10.1	34.8	32.7	56.0
8895	79.3	30.0	49.3	30.0	4.9	10.0	7.9	9.4	33.5	32.6	56.3
8896	71.0	27.0	49.7	25.8	4.5	9.0	7.0	8.2	31.0	28.0	50.0
8897	75.8	29.5	46.3	29.0	4.5	9.6	7.5	9.0	31.9	30.4	52.0
8898	69.8	27.0	42.8	27.2	4.2	9.0	7.0	8.3	29.0	28.0	48.5
8899	69.0	27.4	41.6	26.4	4.5	9.3	6.9	8.6	30.0	28.5	48.0
8900	68.3	26.9	41.4	27.8	4.3	9.2	7.2	8.9	29.2	28.4	50.0
8901	67.3	25.4	41.9	26.6	4.5	8.7	6.7	8.4	29.0	26.3	46.2
8902	65.8	25.5	40.3	26.0	4.0	8.7	6.5	7.8	28.8	26.0	44.8
8903	64.0	24.8	39.2	24.0	4.0	8.4	6.7	7.9	27.0	26.3	48.9
8904	64.5	23.5	41.0	23.0	3.8	8.4	6.4	7.0	26.8	26.5	44.0
8905	72.0	27.2	44.8	28.3	4.5	9.3	7.0	9.0	30.0	28.5	51.0
8906	64.5	24.5	40.0	25.6	4.3	8.5	6.4	8.4	29.0	26.0	47.4
8907	44.3	17.0	27.3	17.0	2.8	6.0	5.0	5.3	19.5	18.6	31.4
8908	61.0	23.0	38.0	23.0	4.0	7.8	6.4	7.6	26.0	25.8	44.7
8909	48.4	19.2	29.2	19.2	3.4	6.4	5.0	5.9	21.3	20.3	33.7
8910	46.0	18.4	27.6	18.0	3.0	6.0	5.0	5.8	20.0	19.2	33.8

A - Standard length

B - Head length

C - Trunk length

D - Depth

E - Snout length

F - Orbital diameter

G - Interorbital width

H - Caudal peduncle depth

I - Predorsal distance

J - Preventral distance

K - Preanal distance

Table 2. Counts

	A	B	C	D	E	F	G	H	I	J
8887	V+13	III+8	12	I+6	18	9	5+13	55	11	12
8888	V+13	III+8	12	I+6	19	9	6+14	51	11	12
8889	V+13	III+8	12	I+6	19	9	6+14	53	10	11
8890	V+13	III+8	12	I+6	19	9	5+14	53	10	11
8891	V+13	III+8	12	I+6	19	9	5+14	50	10	11
8892	V+13	III+8	12	I+6	20	9	5+13	52	11	12
8893	V+13	III+8	12	I+6	20	9	5+13	52	11	12
8894	V+13	III+9	12	I+6	19	9	6+14	58	12	12
8895	V+13	III+8	12	I+6	19	9	7+14	58	12	12
8896	V+13	III+8	12	I+6	19	9	6+13	52	11	13
8897	V+13	III+8	12	I+6	19	10	5+14	60	11	13
8898	V+13	III+8	12	I+6	19	9	5+14	50	11	12
8899	V+13	III+8	12	I+6	19	10	5+13	53	11	12
8900	V+13	III+8	12	I+6	19	9	5+14	52	11	13
8901	V+13	III+8	12	I+6	19	9	6+14	52	11	12
8902	V+13	-	12	I+6	19	9	6+14	-	10	11
8903	V+13	III+8	12	I+6	19	9	5+14	54	12	11
8904	V+13	III+8	12	I+6	19	9	6+14	54	10	11
8905	V+13	III+8	12	I+6	19	9	5+14	56	11	12
8906	V+13	III+8	12	I+6	19	9	6+14	54	11	12
8907	V+13	III+8	12	I+6	19	9	6+14	53	11	12
8908	V+13	III+8	12	I+6	19	9	6+13	53	11	13
8909	V+13	III+8	12	I+6	19	9	6+14	51	10	12
8910	V+13	III+8	12	I+6	19	9	5+14	52	11	12

A - Dorsal fin

D - Ventral fin

G - Gill rakers

B - Anal fin

E - Principal caudal rays

H - Lateral line scales

C - Pectoral fin

F - Abdominal scutes

I - Scales above lateral line

J - Scales below lateral line

The measurements of the specimens are recorded in table 1 and the counts in table 2; the regression data in table 3 and figure 2.

The regression of head length on trunk length (Fig. 2) revealed a considerable difference between males and females, the males having a shorter head.

## Discussion

*Paratrachichthys atlanticus*, sp. n., is closely related to *P. argyrophanus* described by Woods (1961) from the area northeast of the mouth of the Amazon. The two species differ at once in number of anal spines (3 in *atlanticus* and 2 in *argyrophanus*); *P. atlanticus* also has more ventral scutes (9-10) than *argyrophanus* (7-9) and fewer scales below the lateral line (11-13 rows, against 17 of *argyrophanus*).

I would like to thank Dr. P. E. Vanzolini for reading and criticizing the manuscript.

Table 3. Regression data

Regression	N	b	a	r <sup>2</sup>	F
Head length x trunk length (females)	17	0.35 ± 0.10	2.19 ± 0.63	0.98	887.84
Head length x trunk length (males)	7	0.48 ± 0.022	3.68 ± 0.84	0.99	487.34
Body depth x standard length	24	0.35 ± 0.010	2.19 ± 0.63	0.98	1129.11
Snout length x head length	24	0.14 ± 0.007	0.46 ± 0.16	0.95	423.41
Orbital diameter x head length	24	0.34 ± 0.009	-0.003 ± 0.22	0.98	1243.03
Interorbital width x head length	24	0.22 ± 0.006	1.01 ± 0.14	0.98	1338.39
Caudal peduncle depth x body depth	24	0.30 ± 0.008	0.36 ± 0.20	0.98	1254.97
Predorsal distance x standard length	24	0.39 ± 0.007	2.55 ± 0.45	0.99	2656.60
Preventral distance x standard length	24	0.38 ± 0.008	1.63 ± 0.48	0.99	2308.08
Preanal distance x standard length	24	0.70 ± 0.019	0.22 ± 1.17	0.98	1307.78

N - Number of specimens

b - Regression coefficient ± its standard deviation

a - Regression constant ± its standard deviation

r<sup>2</sup> - The square of correlation coefficient

F - Variance ratio

## REFERENCES

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1961. A new Berycoid fish from Brazil (Family Trachichthyidae). *Fieldiana Zool.*, 39 (45): 525-531, 2 figs.



Fig. 1. *Paratrachichthys atlanticus*, sp. n., holotype MZUSP 8898, ♀, 69.8 mm S. L.

