**Hisonotus hungy** sp. n. (Siluriformes, Loricariidae) a new species from arroyo Tirica, Misiones, Argentina

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**Hisonotus hungy** sp. n. (Siluriformes, Loricariidae) a new species from arroyo Tirica, Misiones, Argentina. - *Hisonotus hungy* sp. n. is described from the arroyo Tirica, río Paraná basin in Misiones province, Argentina. *Hisonotus hungy* sp. n. is diagnosed by the following combination of characters: 20-22 lateral plates, 5 branched anal-fin rays, absence of pad on snout tip, blunt and deep snout, snout 45.5-50.9 (% in HL), eye 13.4-17.1 (% in HL), predorsal unpaired plates absent; vent completely covered by two rows of large lateral platelets and one median series with irregular plates.

**Keywords:** Freshwaters fish - loricariids - Hypoptopomatinae - *Hisonotus* - South America - río Paraná basin.

**INTRODUCTION**

The arroyo Urugua-i together with the río Iguazu are the main tributaries of the río Paraná in the province of Misiones, Argentina. Eight kilometers from the confluence with the río Paraná, a hydroelectric dam was built at the end of the eighties. Before the construction of the dam, several collecting trips had been done which resulted in the description of new species such as *Oligosarcus menezesi* Miquelarena & Protogino, 1996; *Bryconamericus sylvicola* Braga, 1988; *Australoheros tembe* (Casciotta, Gómez & Toresani, 1995); *Gymnogeophagus che* Casciotta, Gómez & Toresani, 2000, and *Astyanax leonidas* Azpelicueta, Casciotta & Almirón, 2002.

The lake formed by the dam receives several streams; the arroyo Tirica is one of the smaller ones flowing into the lake from the south.

The aim of this paper is to describe a new species of *Hisonotus* recently collected from the arroyo Tirica, arroyo Urugua-i basin.

**MATERIAL AND METHODS**

Specimens were cleared and counterstained following Taylor & Van Dyke (1985). Measurements were taken as straight line distances using digital calliper to the nearest 0.1 mm. Values of the holotype are indicated by an asterisk. Institutional Manuscript accepted 01.05.2007
abbreviations are as listed in Leviton et al. (1985) with the addition of Asociación Ictiológica, La Plata, Argentina (AI) and Zoología Vertebrados, Facultad de Ciencias, Universidad de la República, Montevideo, Uruguay (ZVC-P).


RESULTS

Hisonotus hungy sp. n.  


PARATYPES: same collecting data as holotype: AI 189, 5 ex., (1 C&S) 31.5-37.6 mm SL; ZFKM 39472-75, 4 ex., 30.4-42.0 mm SL; MHNG 2664.79, 2 ex., 31.9-37.0 mm SL; ZSM 33313, 2 ex., 33.3-36.7 mm SL.

DIAGNOSIS: Hisonotus hungy sp. n. is diagnosed by the following combination of characters: 20-22 lateral plates, 5 branched anal-fin rays, absence of pad on snout tip, blunt and deep snout, snout 45.5-50.9 (%) in HL, eye 13.4-17.1 (%) in HL, predorsal unpaired plates absent; vent completely covered by two rows of large lateral platelets and one median series with irregular plates.

DESCRIPTION: Morphometrics of holotype and 13 paratypes are presented in Table 1. Body elongated, head deep and short (Fig. 1). Greatest body depth at dorsal-fin origin. Head as wide as trunk. Dorsal profile of head convex from snout tip to dorsal-fin origin. Snout tip rounded in dorsal view, without enlarged odontodes. One pair of rostral median plates without notch. Several plates placed in anterior area of nares, leaving a narrow naked surface. Eyes placed dorsolaterally, horizontal eye diameter shorter than nare diameter. Iris diverticulum present, about half of pupil diameter. Three infraorbitals surrounding orbit, fourth infraorbital expanded ventrally. Margins and surface of lips covered with papillae. Maxillary barbels short. Jaw teeth bifid, tooth slender with major cusp expanded distally and a very minor one pointed.

Body covered by dermal plates except for a naked area around base of pelvic fins, lateral opening of swimbladder capsule, and area between pectoral girdle and lower lip. Posrostral and anterior rostral plates slightly reflected ventrally. Five lateral series of plates on trunk. Plates of dorsal series continuous; mid-dorsal series
TABLE 1. Morphometric data of the holotype and 13 paratypes of *Hisonotus hungy* sp. n. SD: standard deviation.

<table>
<thead>
<tr>
<th>Percent of SL</th>
<th>Holotype</th>
<th>Range</th>
<th>Mean SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predorsal distance</td>
<td>42.9</td>
<td>42.2-46.8</td>
<td>44.6 1.69</td>
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<tr>
<td>Head length</td>
<td>32.8</td>
<td>31.1-35.8</td>
<td>33.8 1.62</td>
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<td>Cleithral width</td>
<td>23.5</td>
<td>22.5-26.9</td>
<td>24.9 1.32</td>
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<tr>
<td>Dorsal-fin spine length</td>
<td>22.4</td>
<td>21.1-25.0</td>
<td>23.0 1.29</td>
</tr>
<tr>
<td>Trunk length</td>
<td>17.6</td>
<td>15.1-18.4</td>
<td>17.2 0.85</td>
</tr>
<tr>
<td>Pectoral-fin spine length</td>
<td>24.6</td>
<td>22.2-27.8</td>
<td>25.2 1.66</td>
</tr>
<tr>
<td>First pelvic-fin ray length</td>
<td>20.2</td>
<td>15.4-20.5</td>
<td>18.5 1.63</td>
</tr>
<tr>
<td>Abdominal length</td>
<td>19.6</td>
<td>19.6-22.2</td>
<td>20.9 0.92</td>
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<tr>
<td>Caudal peduncle length</td>
<td>34.7</td>
<td>32.0-39.2</td>
<td>35.5 2.34</td>
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<tr>
<td>Caudal peduncle depth</td>
<td>12.0</td>
<td>10.6-13.3</td>
<td>12.1 0.71</td>
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<tr>
<td>Head depth</td>
<td>18.5</td>
<td>16.3-19.4</td>
<td>18.2 0.91</td>
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<td>Snout length</td>
<td>15.1</td>
<td>15.0-17.8</td>
<td>16.5 0.95</td>
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<td>Horizontal eye diameter</td>
<td>5.3</td>
<td>4.7-5.7</td>
<td>5.2 0.29</td>
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<tr>
<td>Interorbital width</td>
<td>13.4</td>
<td>13.0-14.9</td>
<td>14.0 0.55</td>
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</table>

<table>
<thead>
<tr>
<th>Percent of HL</th>
<th></th>
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<tbody>
<tr>
<td>Head depth</td>
<td>56.4</td>
<td>50.5-56.9</td>
<td>54.0 2.13</td>
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<tr>
<td>Snout length</td>
<td>46.2</td>
<td>45.5-50.9</td>
<td>48.8 1.90</td>
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<tr>
<td>Horizontal eye diameter</td>
<td>16.2</td>
<td>13.4-17.1</td>
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<td>Interorbital width</td>
<td>41.0</td>
<td>38.4-45.5</td>
<td>41.4 2.21</td>
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<tr>
<td>Cleithral width</td>
<td>71.8</td>
<td>70.9-77.6</td>
<td>73.7 2.22</td>
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</table>

incomplete, and continuous. Median series 20 (5), 21 (4), 22 (5*). Mid-ventral series incomplete and continuous; plates of ventral series continuous. Plates bearing lateralline canal incomplete and discontinuous, anterior portion of median series with 4 (5), 5 (7*), 6 (2) perforated plates; posterior portion with 7 (7*), 8 (3), 9 (1), 11 (1), 12 (1), and 13 (1) perforated plates. First two lateral line plates small, second one placed on rib of sixth vertebra. Abdomen almost completely covered by plates, arranged in two lateral rows of two or three plates each and a median row with several plates irregularly arranged (Fig. 1). Three pairs of post anal plates, first one meeting at midline and last three separated by small external portion of first anal-fin proximal radial. Coracoid and cleithrum exposed ventrally, excluded very small *arrector fossae* area. Absence of unpaired predorsal plates.

Odontodes covering head, trunk, and fin rays. Head and trunk odontodes uniformly distributed. Odontodes usually small on body, except for somewhat enlarged odontodes on ventral margin of snout. on pectoral and pelvic spines, and a tuft formed by a few odontodes in some specimens. Odontodes along anterior margin of snout bi-serrally arranged, dorsad and ventrally not separated by a naked area.

Dorsal fin with one spine and 7 branched rays, its origin posterior to vertical through pelvic-fin origin. Dorsal fin moved posteriorly behind seventh vertebra. First dorsal-fin proximal radial articulated with eighth vertebra. Adipose fin absent. Pectoral fin with one spine and 6 branched rays, reaching nearly half of pelvic-fin length. Very large pectoral-fin axillary slit present Pelvic fin with one unbranched and 5 branched
rays, reaching anal-fin origin in females and surpassing it only in males. Fleshy flaps on pelvic fins of males. Caudal fin with fourteen branched rays.

Neural spine of seventh vertebra contacting nuchal plate partially. Neural arch of seventh vertebra without expansion.

**COLOR IN LIFE:** Background brown-chocolate, with clear lines between snout and eyes, extending backward to posttemporo-supracleithrum. Ventral margin of snout, area around pectoral and pelvic fin insertions yellowish. Two light dots on caudal fin, upper most and lower most caudal-fin rays light. Dorsal, pectoral, pelvic, and anal fins with dots forming bands.

**COLOR IN ALCOHOL:** Ground color of dorsolateral body surface brownish, ventral surface of head and body pale brown. In some specimens a narrow light stripe from snout tip to anterior nare, continuing posteriorly, very faint until supraoccipital level. Ventrolateral margin of snout and head light brown. Pectoral, pelvic, dorsal, and anal fins pale brown with dots forming series of darker bands. Caudal fin dark brown.
excluded two light triangular dots near half way. Both light dots placed on first three or five dorsal and ventral branched rays. Tip of lower and upper caudal lobes usually light.

SEXUAL DIMORPHISM: Pelvic-fin spines of males longer than that of females (17.7-20.5 vs. 15.4-17.1% SL; 4 females and 10 males). Distal tip of pelvic fins surpassing anal-fin origin in males. Males have fleshy flap on pelvic fins and triangular genital papilla. Females bear rounded and broad genital papilla.

ETYMOLOGY: The specific epithet hungy is a guaraní word that means brown. A noun in apposition.

DISTRIBUTION AND HABITAT: This species is only known from the arroyo Tirica, a tributary of the arroyo Uruguaí. The arroyo Tirica, at bridge of provincial road 237-km 29, is a stream with two different environments; one of them had the natural vegetation of the region, whereas in the other one coniferous trees were introduced. Hisonotus hungy was collected in the portion of the stream where a plantation of small coniferous let the brook to be exposed completely to sunlight. Photographs of live specimens, the environment, and a map with the geographical distribution are provided by Koerber (in prep.) and Evers & Seidel (2005, sub H. cf. ringueleti).

The following species were caught together with H. hungy from the arroyo Tirica: Astyanax eigenmanniorum, A. cf. fasciatus, A. cf. troya, Australoheros tembe, Bryconamericanus iheringii, Characidium sp., Corydoras carlæ, Gymnogeophagus che, Heptapterus mustelinus, Oligosarcus jenynsii, O. paranensis, and Schizodon nasutus.

DISCUSSION

The genus Hisonotus includes 16 nominal species (Aquino et al., 2001 and Britski & Garavello, 2003) from different basins in Brasil, Argentina, and Uruguay. Recently, two new species, H. charrua and H. candombe, have been described from río Uruguay basin (Almirón et al., 2006; Casciotta et al., 2006).

The species described from the upper río Paraná basin are H. insperatus Britski & Garavello, 2003, H. depressicauda (Miranda Ribeiro, 1918), H. depressinotus (Miranda Ribeiro, 1918), H. paulinus (Regan, 1908), and H. francirochai (Ihering, 1928). Hisonotus maculipinnis was recorded in the lower Paraná basin, from “La Plata” without precise locality.

Among the species of Hisonotus distributed in the Río de la Plata basin, and Lagoa dos Patos system, H. hungy sp. n. differs from all of them – except H. paulinus – by the number of lateral plates (20-22 vs. 23-31).

Hisonotus hungy also differs from H. ringueleti, H. charrua, and H. candombe by the absence of soft pad in the snout tip. The other species living in the basin is H. maculipinnis which has a large free area in the anterior margin of the snout that is not present in H. hungy and the profile of the snout strongly depressed whereas H. hungy has a blunt and deep snout.

In spite of papers by Schaefer (1991, 1998) and Aquino et al. (2001), the genus Hisonotus has not been clearly defined phylogenetically. In addition, the tribe Otothyrini diagnosed by Schaefer (1991, 1998) is considered a paraphyletic group at
present (Gauger & Buckup, 2005). Gauger & Buckup (2005) included some new osteological characters to define the genera of Hypoptopomatinae. Considering those characters, *H. hungy* has the mesethmoid covered by prenasal plates, rostral plates wider than long, lateral ethmoid not exposed on dorsal surface of head, infraorbital canal entering in the neurocranium via sphenotic, supraoccipital without crest, pectoral girdle completely exposed, *arrector fossae* reduced to a small area close to midline, mid-dorsal series with about 16 plates, dermal plates of thorax and abdomen large, regularly distributed, thorax and abdomen completely covered by dermal plates, first post anal plate meeting at midline, and neither traces of modifications nor unpaired platelets located in adipose-fin region.

Eschmeyer (2006) indicated Argentina with doubts in the distribution of *Hisonotus paulinus* (Regan, 1908) described from rio Piracicaba, São Paulo, Brasil (Fig. 2). This citation is taken from Lopez et al. (2003) that recorded *H. cf. paulinus* from arroyo Tirica, Misiones. The specimens mentioned by those authors were collected by one of the present paper authors (SK) together with the specimens examined in this study. The holotype of *H. paulinus* has the same number of lateral plates, nonetheless it differs from *Hisonotus hungy* in having 4 branched anal-fin rays vs. 5 (we do not know if it is an anomalous specimen); the snout is long and depressed, 38.2% vs. 30.0-32.3% of predorsal length (compare dorsal and lateral views of both species in the figures).
ACKNOWLEDGEMENTS

The authors thank H. Britski (Museu de Zoologia, São Paulo, Brasil) and G. García (Facultad de Ciencias, Montevideo, Uruguay) for gift of material, S. Fisch-Müller (Muséum d’histoire naturelle de Genève, Switzerland) and K. Busse (Zoologisches Forschungsmuseum Alexander Koenig, Bonn, Germany) for loan of material under their care, J. Maclaine (Natural History Museum, London, United Kingdom) for photographs of and valuable information on H. paulinus, an anonymous reviewer for critical revision of the paper and comments, M. Rinas (Ministerio de Ecología de Misiones) for collecting permission, the board and members of GfI (Ichthyological Society, German language area) for partial support in the collection in arroyo Tirica, J. O. Fernández Santos and R. Filiberto for help in the field, and I. Seidel for providing the photo of the specimen in aquarium.

REFERENCES


