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**NOTE ON THE PRESENCE OF THE BLUNT TOOTHED AFRICAN
CATFISH, *CLARIAS NGAMENSIS* CASTELNAU, 1861
(PISCES: CLARIIDAE) IN ROMANIA**

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Abstract. On 24th of November 2004 the authors collected a dead specimen of Blunt Toothed African Catfish in the lake of Titan Park (Bucharest). The specimen was measured and weighed. As a result of the analysis of the qualitative and quantitative features (morphometrical and meristic) it was identified as belonging to the species *Clarias ngamensis* Castelnau, 1861. As far as we know, this is the first record of the species in Europe.

Résumé. Le 24 novembre 2004, les auteurs ont collecté dans le lac du Parc Titan (Bucarest) un spécimen mort de silure africain. Le spécimen a été mesuré et pesé. L'analyse des caractères qualitatifs et quantitatifs (morphométrique et meristic) ont conduit à la conclusion qu'il appartient à l'espèce *Clarias ngamensis* Castelnau, 1861. À notre connaissance, c'est la première mention de cette espèce en Europe.

Key words: Blunt Toothed African Catfish; *Clarias ngamensis*; alien species; freshwater fish.

From the vertebrates, the freshwater fish species have the largest share within the introductions (intentioned or not) of alien species. Most of the alien fish species have a direct or an indirect negative impact on the native species (Holčík, 1991). Often, an introduced exotic species will not limit to the hydrographical area it has already reached. In most of the cases the species will spread gradually and uncontrollably within a wider and wider territory.

Also, in the Romanian ichthyofauna there are several alien fish species, naturally developed or deliberately or accidentally introduced by human, which are originating in North America and Asia. The species found by the authors in Bucharest originates in the African continent and belongs to the order Siluriformes, family Clariidae.

The genus *Clarias* characterizes by an anguilliform body; dorsal and anal fins are extremely long, almost reaching the caudal one. Both dorsal fin and the anal one contain only soft rays. The outer ray of the pectoral fin is a spine. Usually, pelvic fins have six soft rays. The head is dorso-ventrally flattened, the skull bone forming a helmet; it is covered with a smooth skin. It also has four pairs of barbels. The nostrils are well-separated. The eyes have a free border. Both on the jaws and on the vomer there are toothplates. Generally, also there is a respiratory superbranchial organ. The species of the genus *Clarias* reach a length of about 1 m at the most; they are spread in calm waters. In correlation with their body shape, they generally live on the bottom. They are omnivorous and necrophagous species (Teugels, 1982).

Among the clariid species, only two of them (*Clarias ngamensis* and *Clarias lamottei*) have also an adipose fin (Teugels, op. cit.).

Clarias ngamensis characterizes by a relatively short adipose fin (5.9-12.5 % from the standard length). From an upside view, the head is oval towards rectangular. Frontal fontanel is long and narrow („knife-shaped”); occipital fontanel is oval. Pectoral spine is robust and slightly curved. Superbranchial organ has a well-developed tree-like structure.

In Africa, the species is not very abundant in a certain place, but it is rather common in some areas full of vegetation, permanent swamps and quieter waters. It was recorded in Quanza, Cunene, Okavango, Chobe, Ngami Lake, upper flow of Zambezi (upstream Victoria Waterfall), Malawi Lake, upper flow of Lualaba, Luapula, the lakes Moero and Bangweulu, Pungwe, Buzi, Save, Limpopo, Incomati, lower flows of Pongolo and Sabi, Lundi system. It was also occurred in Kafue, Zambian Congo and in the lowe flow of Shire (Teugels, 1986) (Fig. 1).

MATERIAL AND METHOD

On 24th of November 2004, the authors found a specimen of a Blunt Toothed African Catfish (recently dead) in the lake of the Titan Park, from Bucharest (Fig. 2). This lake is maintained by human in the Colentinei Field and has a surface of 26 ha (Posea & Ştefănescu, 1984).

The found specimen was weighed and measured (Fig. 3).

We made the following measurements: total length, in mm; standard length – from the tip of the premaxilla to the centre of the caudal fin, in mm; head length – from the premaxilla tip to the tip of the occipital process, in percentages of the standard length; head width – measured between the most lateral points of the head, but without taking into consideration the lateral projection of the banchiostegal membranes, in percentages from the standard length; head depth – maximum depth, in percentages from the standard length; snout length – measured from the tip of the premaxilla to the middle of the vertical line drawn along the anterior borders of the eyes, in percentages from the head length; interorbital distance – the minimum distance between the orbits, in percentages from the head length; eye diameter, in percentages from the head length; predorsal length, in percentages from the standard length; preanal length, in percentages from the standard length; prepelvic length, in percentages from the standard length; prepectoral length, in percentages from the standard length; dorsal fin length, in percentages from the standard length; anal fin length, in percentages from the standard length; pelvic fin length, in percentages from the standard length; pectoral fin length, in percentages from the standard length; pectoral spine length, in percentages from the standard length; adipose fin length, in percentages from the standard length; caudal fin length, in percentages from the standard length; distance between the occipital process and the dorsal fin origin, in percentages from the standard length; body depth at anus, in percentages from the standard length; caudal peduncle depth, in percentages from the standard length. Also, we calculated some ratios with taxonomical value (Tab. 1).

The following meristic features were analysed: the number of the rays of the dorsal fin, the number of the rays of the anal fin, the number of the rays of the pelvic fins, the number of the rays of the pectoral fins (Tab. 2).

The weight was of 3.02 kg.

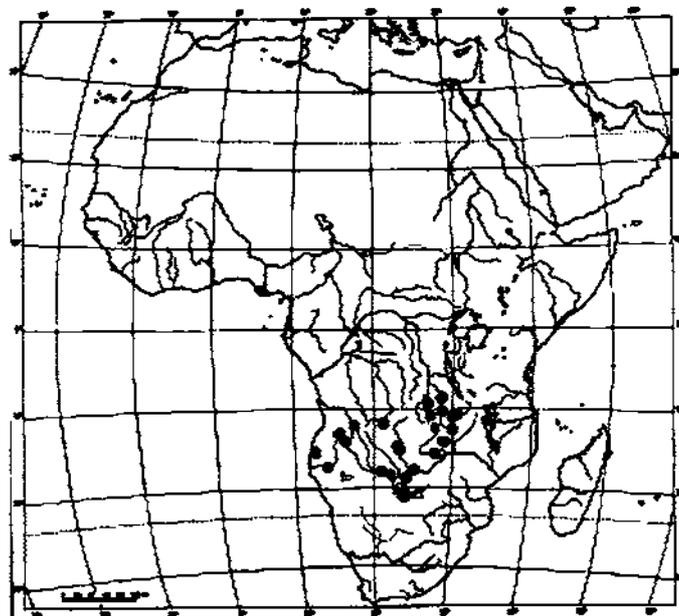


Fig. 1 - Geographical distribution of *Clarias ngamensis* (after Teugels, 1986).



Fig. 2 - General view of the lake from Titan Park (Bucharest).

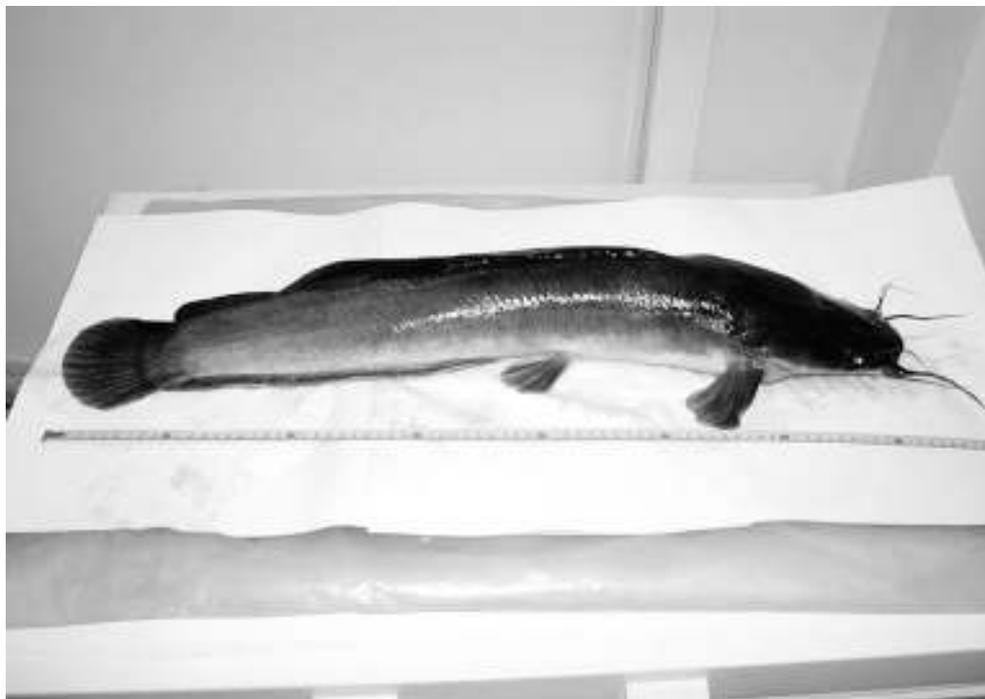


Fig. 3 - The specimen of *Clarias ngamensis* Castelnau, 1861 collected from Titan Park.

RESULTS AND DISCUSSIONS

Invasive alien organisms generated important lacks of balance in the native ecosystems all over the world. The introduction of alien species and the loss of the natural habitats are the main responsible factors in the disappearance of some species during the last centuries (Strahm & Rietbergen, 2001). Aquatic ecosystems (especially those already disturbed by the anthropic activities) seem to be extremely vulnerable to these invasions (Lodge & col., 1998).

There are around 40 fish species introduced in Europe, and much more were translocated from different European countries to others (Holčík, 1991). As regards the genus *Clarias*, after Holčík (op.cit.) and according to the „Convention on the Conservation of European Wildlife and Natural Habitats” (Strasbourg, 2001), two clariid species are present in Europe: *Clarias gariepinus* (Burchell, 1842) and *Clarias batrachus* (Linnaeus, 1758). The first species was introduced in aquaculture in 1974, first in Cyprus, and later on in Czechia, Slovakia, the Netherlands (Holčík, op. cit.) and Poland (Brylińska, 2001). For the time being it occurs in the fish farms from Hungary and even in Romania, in Oradea (I. Falka, pers. comm.). The second one was introduced only in the United Kingdom (Holčík, op. cit.). The presence of a *Clarias* species was also reported from Italy, in the hydrographical basin of Arno (Bianco & Ketmaier, 2001).

In Romania there are already several alien fish species (Gavriloaie, 2003). Some of them were deliberately introduced, from different reasons. For instance,

Table 1

Morphometrical features analysed in the specimen of *Clarias ngamensis*, occurred in Titan Park.

Analysed feature	Value (mm)	% of the standard length	% of the head length
Total length	740		
Standard length	640		
Head length	185	28.90	
Head width	116.51	8.20	
Head depth	84	13.12	
Snout length	45		24.32
Interorbital distance	77		41.62
Eye diameter	10		5.40
Predorsal length	224	35.00	
Preanal length	364	56.87	
Prepelvic length	247	46.4	
Prepectoral length	147	22.96	
Dorsal fin length	330	51.56	
Anal fin length	280	43.75	
Pelvic fin length	63	9.84	
Pectoral fin length	80	12.5	
Pectoral spine length	59	9.21	
Caudal fin length	100	15.62	
Adipose fin length	78	12.18	
Distance between the occipital process and the origin of the dorsal fin	34.5	5.39	
Body depth at anus	88	13.75	
Caudal peduncle depth	59	9.21	

Table 2

Meristic features analysed for the specimen of *Clarias ngamensis*, occurred in Titan Park.

Analysed feature	Value
Ray number of the dorsal fin	51
Ray number of the anal fin	48
Ray number of the pelvic fin	6
Ray number of the pectoral fin	I 10

four Chinese cyprinid species (*Ctenopharyngodon idella*, *Mylopharyngodon piceus*, *Hypophthalmichthys molitrix* and *Aristichthys nobilis*), three buffalofishes of the family Catostomidae (*Ictiobus cyprinellus*, *I. bubalus* and *I. niger*), a specimen of Channel catfish (*Ictalurus punctatus*), three whitefish species (*Coregonus lavaretus maraenoides*, *Coregonus albula ladogensis*, *Coregonus peled*) and a sturgeon (*Polyodon spathula*) were introduced in the Romanian aquaculture; *Gambusia holbrooki* was introduced as an aid in the antimalarial activities; Topmouth gudgeon (*Pseudorasbora parva*) reached here incidentally, together with the four species of Chinese cyprinids. We have to mention that from all these fish species some of them exist only in fishfarms, but even there are small populations, as the buffalofishes, the Black carp (*Mylopharyngodon piceus*), the species *Ictalurus punctatus* and *Polyodon spathula*; some of the species introduced in aquaculture do not occur anymore (*Coregonus peled*, *Parabramis pekinensis*, *Megalobrama terminalis*). Others, although they naturalized in the Romanian waters, have a limited distribution, in some regions of the country. Thus, Mosquitofish (*G. holbrooki*) occur in Mangalia Lake, some lakes from Bucharest and its surroundings and in some pools near Oradea (Bănărescu, 1964), and *Ictalurus melas*, recorded in Romania in 1997 for the first time, occurs only in Ierului Valley, Barcău and maybe in Criș rivers (Wilhelm, 1998).

Other species spread in Romanian waters as a result of the introductions made outside the country. The Silver crucian carp (*Carassius auratus gibelio*), Pumpkinseed sunfish (*Lepomis gibbosus*), American catfish (*Ictalurus nebulosus*) are such kind of species, the last one distributed in a relatively limited range, especially in Banat and in the surroundings of Bucharest (Bănărescu, op. cit.)

Clarias ngamensis, found by us, seems to be the second species of African catfish recorded in Romania (together with *Clarias gariepinus*) and the third recorded in Europe. This idea is supported by the fact that we haven't found in the specialized literature which we had at our disposal any kind of mention on this species in the European waters, and during our researches in the field, along the years, we haven't found any specimen of African catfish.

For the time being, we haven't understand fully the way in which this species reached Romania. It could be an isolated case, the specimen being released from an amateur's aquarium, but also it is possible that this species to be deliberately introduced, in larger populations, in several autochthonous aquatic ecosystems. The future researches will clear this important problem.

Conclusions

The problem of the alien fish species is a very delicate one, with important ecological and economical implications. The species of African catfish, reported by the authors from Romania, can generate some important changings in the aquatic ecosystems of the country by predatism and/or by the competition for the food sources with the autochthonous fishes, especially if it is proved that it was introduced on a large scale. Also, some parasites can be tranferred from this foreign species. Moreover, being a predator species of a large size, we think that it won't be under control by the predator fishes of Romanian waters. Therefore, it is absolutely necessary to continue the research in the field in order to find out if this species of African catfish is also present in other areas or the collected specimen is an isolated case.

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NOTĂ ASUPRA PREZENȚEI SOMNULUI AFRICAN *CLARIAS NGAMENSIS*
CASTELNAU, 1861 (PISCES: CLARIIDAE) ÎN ROMÂNIA

REZUMAT

În data de 24 noiembrie 2004, autorii au colectat din lacul Parcului Titan din București un exemplar mort de somn african, care a fost măsurat și cântărit. În urma analizei unor caractere calitative și cantitative (morfometrice și meristice) a fost determinat ca aparținând speciei *Clarias ngamensis* Castelnau, 1861. Aceasta este, din câte știm noi, prima semnalare a speciei în Europa.

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