# THE MAIN DISEASES OF ANCISTRUS BREVIPINNIS (REGAN, 1904) AND CORYDORAS AENEUS (GILL, 1858) SPECIES, OF LORICARIIDAE AND CALLICHTHYIDAE FAMILIES, BEING IN CAPTIVITY, THEIR PREVENTION AND TREATMENT

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## Rezumat

In aceast lucrare, autorii eviden iaz principalele boli întâlnite la speciile luate în studiu: *Ancistrus brevipinnis* (Regan, 1904) i *Corydoras aeneus* (Gill, 1858), crescute în captivitate. In timp ce în condi iile naturale de via apari ia i r spândirea îmboln virilor

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sunt mai pu in frecvente i mai pu in d un toare, cu excep ia cazurilor de poluare, în condi ii de cre tere dirijat sunt cu mult mai periculoase, condi iile artificiale de via favorizând ac iunea unei diversit i mai mari de agen i patogeni, abiotici i biotici. Dup natura agen ilor patogeni, se întâlnesc la pe ti ca i la alte organisme animale, boli specifice provocate de: agen i patogeni animati (virusuri, bacterii, parazi i) i boli nespecifice provocate de agen i fizico-chimici, nutri ionali i constitu ionali.

Condi iile de mediu ac ioneaz atât asupra pe tilor ci i asupra agen ilor patogeni pe care-i pot favoriza sau inhiba în ac iunea lor asupra gazdei. St rile de boal sunt rezultatul interac iunii strânse dintre agen ii patogeni, gazd i mediu ambiant. *Cuvinte cheie*: Acvariu, captivitate, pesti exotici, stres, boli.

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#### Introduction

The diseases initiate and evolve over time, their stages including the following: the infiltration of the pathogenic embryo inside the body of the host, followed by a period of time until the disease is exhibited and the first symptoms appear; the development, is the period during which the symptoms are manifested; the death or healing, represent the end of the disease; the convalescence period, is the period in which host susceptibility to the environment is very high. The pathogenic embryo may disappear from the body of the host, or not [1]. In this study, the authors present the main diseases encountered in the species selected for this study : *Ancistrus brevipinnis* (Regan, 1904) and *Corydoras aeneus* (Gill, 1858), bred in captivity.

#### Material and method of work

The biological material used consisted of 260 specimens of *Corydoras aeneus* (Gill, 1858) and 250 specimens of *Ancistrus brevipinnis* (Regan, 1904).

Species of the genus *Corydoras* are subtropical species and they need a temperature of 25-28°C, pH 6-8, and a hardness dG = 5-19. In captivity, in Constanta city water conditions, the pH is around 8 dg hardness reaches the values of 19-20, and dK = 11, values determined calorimetrically using the kits from Merck test (fig. 1).



Figure 1. Determination of water pH, using the Kits from Merk test (the pH value of 8,5 is observed) (original photo).

In the study 260 specimens of *Corydoras aeneus* were taken, 130 specimens of classical variety and 130 albino variety, aged approximately 1 year and ranging in size from 3.0 to 4.0 cm. For fish diagnosis a macroscopic examination was carried out, together with the microscopic examination.

### **Results and discussions**

# 1. Diseases caused by bacteria

**Bacterial haemorrhagic septicemia** – the disease has been reported in species *Corydoras aeneus*. BHS *prognosis* is serious in acute forms (fig. 2). In the chronic form of the disease, the prognosis is easy, the disease is cured by the application of measures to improve the life conditions. *Diagnosis* was based on clinical signs and isolation of specific bacteria *Aeromonas* and *Pseudomonas* 



Figure 2. *Corydoras aeneus* with clinical signs of SHB – eyes bulging, bleeding at the base of the pectorals (original photo).

For *prevention of disease*, the most important measures are to ensure optimal fish life and eliminate as much as possible the stressing factors. The *treatment* of the illness was done with antibiotics.

**Nocardiosis** – after a period of a month, the first symptoms of disease occurred in species *Corydoras aeneus*. (fig. 3). Prognosis is serious only if massive infections. *Diagnosis* was based on clinical signs and bacteriological isolation of bacteria on culture media. Because the triggering conditions of the disease are not specified yet, the measures of prevention and treatment of this disease have not been developed.

Experiments of treating the disease have been made with oxytetracycline. Preventive measures typically include general measures to ensure normal living conditions for these fish species.



Figure 3. Corydoras aeneus specimens that show clinical signs of nocardiosis (original photo).

2. Diseases caused by microfungi were reported in fish species Corydoras aeneus. The identified microfungi were those belonging to the genera Aspergillus, Trichophiton, Trichoderma and Penicillium (figs. 4, 5). This species generally grows on organic substrate in decay.

*Prognosis* is serious when these species invade the body of the fish, situations in which an increased mortality occurs.

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*Diagnosis* was based on clinical signs and isolation of microfungi in Sabouraud environment. To *prevent and control* the diseases caused by microfungi, all measures were taken into consideration in order to improve the living conditions of the fish.



Microciuperci parazite pe tegument la Corydoras (Penicillium, Aspergillus, Trichoderma, Trichophiton)



Penicillum, Trichophiton, Trichoderma) (original photo).

Figure 4. Parasitic microfungi on the skin of *Corydoras aeneus* (Aspergillus,

Figure 5. *Aspergillus spp.* - detail (original photo).

Aspergillus spp

# 3. Parasitic diseases.

**Trichodiniosis** was found in the species of *C. aeneus*. Prognosis depends on the parasitizing degree, the serious prognosis occurring in case of massive invasion of the parasite. *Trichodiniosis* was encountered in the species *C. aeneus*.

The prognosis depends on the degree of parasitizing, being serious only during big invasions of parasite. At small invasions, as the ones noticed in *C. aeneus*, the parasites did not produce evident signs of disease, nor severe anatomical-pathological modifications. The diagnosis was established through the identification of the parasite on the microscope, using the samples taken from the body and bronchia (fig. 6).

The disease prophylaxis and treatment are hard to be done. Taking into consideration only the measures of treatment of the infested fish is not enough in combating the disease.

**Hepaticolosis** was observed in the sapling of *Ancistrus dolichopterus*. The prognosis in hepaticolosis is easy, in non-severe infestations. The *diagnosis* was established trough the macroscopic observation of the kidney and afterwards through the microscopic observation of the pieces of kidney, in this way showing the parasites and their eggs (fig. 7).

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The *prophylaxy and therapy* in this disease include only the general prophylactic measures. The measures of treatment are not mentioned in the special literature.



Figure 7. *Hepaticola spp.* a - general view, b - image detail (parasite eggs) (original photo).

### Conclusions

On the basis of the results of research and experiments carried out for the identification of diseases, their prophylaxis and therapy, for the two species of aquarium fish, as well as the accumulated knowledge in this field in the literature, a number of measures result, that are necessary to be taken for preventing and combating the morbidity of these species of fish [3, 4].

Aquatic environment acts on fish by its physical-chemical abilities and pathogenic agents which it contains. For the diseases to be prosecuted it is necessary that the body of the fish to be sensitive, sensitivity generated by the living conditions or transmitted hereditary lines.

The prophylactic measures aim at increasing the resistance of fish to disease, as well as at limiting the action of pathogenic agents in the aquatic environment of life.

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