

OBSERVATIONS AND TREATMENTS IN THE CASE OF FALLING ILL OF SOME SPECIES IN CONSTANTA AQUARIUM

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Abstract. In this material, the authors describe some diseases (four) often meet into aquariums, describe the parasite, the symptomatology and the clinic evolution as a consequence of an induced treatment.

Keywords: diseases, freshwater fishes, Aquarium, Constanta, Roumania.

Rezumat. Observații și tratamente în cazul îmbolnăvirii unor specii de pești din acvariul constănțean. In acest material, autorii au descris cateva (4) boli frecvent intalnite in acvarii, descriindu-se parazitul, simptomatologia si evolutia clinica ca urmare a tratamentului indus.

Cuvinte cheie: boli, pesti dulcicoli, Acvariu, Constanta, Romania.

INTRODUCTION

Since the fish fall ill easily and are often parasitized by agents belonging to the most various groups, the study of these parasites has a major importance, theoretically and practically.

In establishing the diagnosis, for most of the fish diseases, the symptomatology cannot be considered to be specific, but only informative, since the diagnosis requires investigations in a laboratory.

Although in aquarium conditions (closed circuit, limited space), and with all the prophylactic measures that are taken, the fish fall ill more frequently compared with the fish living in their natural habitat.

SUBJECTS AND METHODS

As subjects we had the freshwater aborigine fish, the marine fish and the exotic freshwater fish in Constanta Aquarium.

The methods we used in order to determine the parasites and the bacteria were the parasitologic analysis, microscopic examinations, inseminations in selective culture environements.

RESULTS

After having analysed seven different species of fish, from different families, we have discovered the following diseases:

THE "ICH" or WHITE SPOT DISEASE

This disease is caused by a ciliate protozoan, *Ichthyophthirius multifiliis*, Fuoquet. The body is round shaped, lenticular, with a diameter of 0, 5-1 mm. The entire surface of the body is covered with short cilia. This parasite usually does not live on the body, but in the derm and epidermis, which makes its control even harder.

Depending on the water temperatures, the protozoan reaches the adult stage as follows:

~ in 2 days for 25-28°C

~ in 3-4 days for 21-24°C

~ in 6-8 days for 16-22°C

After this period, the adult parasite leaves its host, the fish, and falls on the bottom of the tank where, in 2-6 hours it forms a cyst inside of which a series of binary divisions develop. (OTEL V. & CONSTANTIN GH. 1989; RADULESCU I. et al., 1976).

The symptoms presented by the Aquarium fish which contacted this disease were: the white spots on their entire body surface, and in more advanced stages, the fish had the flippers clutched and herded together on the corners of the basins, convulsively breathing.

The disease affected fish in the *Ilyphessobrycon callistus* belonging to the *Characidae* and the *Platydoras costatus* from the *Doradidae*.

The prognostic is serious, if not very serious, since the disease has caused massive infestations.

THE LERNEA / THE ANCHOR WORM DISEASE

It is produced by the copepod *Lernea cypriniacaea*.

Only the females infect the fish, which have a 9-22 mm long, slime, coffee-coloured body. The anterior part has 4 forked excrescents, while the posterior part has two ovigenous sacks. After the insemination, the males remain on the body surface for 2-3 days, and then they die, while the females pass to the parasitary life, invading the skin of the fish. The parasite introduces its anterior part inside the muscular system of the fish, causing inflammations, congestions

and bleedings and often, even bacterian infections, which eventually leads to the necrosis of the adjacent tissue. (MUNTEANU GABRIELA & BOGATU D. 2003; MUNTEANU GABRIELA ET ALL., 2000).

The parasite infested four specimen of goldfish (*Carassius auratus gibelio*) and two specimen of carp (*Cyprinus carpio*), which were collected from the Danube, near Crisan, Tulcea, in July.

The diagnosis can be established through observations with the naked eye.

THE COLUMNARIS DISEASE

This disease is caused by *Flexibacter columnaris*, a bacterium from Myxobacteriales Order. From the specialized literature, it appears that the disease breaks out at 20°C water temperature.

The fish infested with this disease (sturgeons from the *Acipenseridae*, specimen of about 1 metre length, more precisely, three *Huso Huso* and one *Acipenser güldenstaedti*) presented cartilage tissue destruction and as a consequence, they showed remaining bleeding spots, which could be easily invaded by some other parasites.

The diagnosis has been established by microscopic examination of scrapings from the infested areas, and insemination in selective culture environments.

The prognostic is serious.

THE GYRODACTYLUS DISEASE

It is a disease caused by the monogenetic flatworm *Gyrodactylus*. A major identifying characteristic of this parasite is their organ of attachment, the haptor. This is at the posterior end and it has 2 pairs of anchors and a number of 16 hooklets around the periphery. Other identifying characteristics include the presence or absence of "eye spots". (OPREA M., RALEX C., RICARDO D. 1997).

In our Aquarium, this parasite affected the *Cichlasoma cyanoguttatum* species from the *Cichlids*. The parasite is localized at skin level, in the dorsal muscle (picture 1) and in the bronchial system (picture 2).

The diagnosis has been set by microscopic examination of fresh scrapings from the bronchi and from the tegument.

The prognostic is favourable.

Cichlasome nigrofasciattum, into Constanta Aquarium, with girodactylus disease localised in the dorsal muscle (picture 1) and into the branhial system (picture 2) (photos by Adriana Chiorean).



Picture 1



Picture 2

CONCLUSIONS

We have identified 4 diseases which affected the exotic fish and also the marine and the freshwater aborigine fish.

The established diagnosis started from less severe in the case of *Lernea* disease to severe in the case of *Columnaris* disease and even to very serious because of the massive infestations in the case of the *White Spot* disease.

The treatments that have been applied to the infested specimen consisted in the use of different medications, depending on the type of disease, as follows:

- in the case of **the White Spot (Ich) disease**, we appealed to the 3-4 days treatment with mineral green (malahit) and we added 1 ml at every 10 litres of water, directly into the aquarium, followed by partially changing of the water. Some other times we used 20-30 minutes baths in another tank, with a different concentration: 1 ml / 1 litre of water. The results were not satisfactory, most of the fish dying. In the specialized books, there are some other treatments that are indicated in case of the *Ich* disease, for example, the aureomycin with a concentration of 13mg/litre. But in reality, the parasites localized in the tegument are not affected by these products, and the parasites free swimming in the water respond to potassium permanganate. For this reason we can say that there an efficient treatment has not been found so far, but the scientists are trying to find a vaccine.

- with **the Lerne disease**, we appealed to short baths with sodic chloride, 8g/ 1 litre of water, but the treatment was not efficient because the diagnosis was established too late. Despite this, two specimen of crucian carp and only one carp survived.

- in the case of **the Columnaris disease**, the treatment we have applied was the administration of oxytetracycline in the food, in doses of 100mg/ kilo/ fish, for two weeks.

- with **the Gyrodactylus disease**, we appealed to long baths with sodic chloride, alternated with long baths with potassium permanganate in a concentration of 1%. The results were good, all the infested specimen were cured.

BIBLIOGRAPHY

MUNTEANU GABRIELA & BOGATU D. 2003. *Tratat de Ihtiologie*. Edit. Excelsior. Bucuresti. 815 p.

MUNTEANU GABRIELA, CRISTEA V., GRECU I. 2000. *Parazitoze la peștii de cultură din România*. An. Univ. "Dunarea de Jos" Galati. **7**: 2-10.

OPREA M., RALEX C., RICARDO D. 1997. *Acvaristica practică*. Edit. Vocea Romaniei: 237-265.

OTEL V. & CONSTANTIN GH. 1989. *Ghid ihtiopatologic pentru piscicultura din Delta Dunării*. I. P. Bucuresti: 153 p.

RADULESCU I., LUSTUN L., VOICAN V. 1976. *Bolile peștilor*". Edit. Ceres. Bucuresti. 59 p.

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