

A CASE OF SCOLIOSIS IN THE MIRROR CARP, *CYPRINUS CARPIO* LINNAEUS, 1758 VAR. *SPECULARIS* (PISCES: CYPRINIDAE)¹

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SYNOPSIS - A case of deformity in the fresh-water fish *Cyprinus carpio* Linnaeus, 1758 var. *specularis*, raised and captured at the Pisciculture Station of the Escola Superior de Agricultura de Mossoró - ESAM (Mossoró, Rio Grande do Norte, Brazil) was observed in september, 1986. The deformations correspond to the loss of the entire tail, including the caudal as well as great part of the anal fin, with a torsion of the backbone, more accentuated in the last 9 vertebrae. This constitutes a typical case of superior convex caudal scoliosis, of probably congenital and embryological origin.

Index Terms: mirror carp, fish, ichthyopathology, scoliosis, fish anomalies, pisciculture.

INTRODUCTION

Fishes, in general, are prone to a series of skeletal anomalies, more frequently in the vertebral column. This fact is registered by SCHRADER (1930), MARQUARD (1936), PENSO (1936, 1953), WUNDER (1936), GREENWOOD *et alii* (1966), LAGLER *et alii* (1977) and HUET (1978). Ordinarily, such anomalies are of congenital origin and do not have a noxious influence with reference to the edibility of the meat. Vertebral column torsion occurs less frequently in marine fishes (Gadidae) as a consequence of parasitic infestation, such as lentosporiasis, caused by protozoans of the class *Cnidosporidia* Doflin, by the group *Myxosporidia* Butschli and by *Lentospora cerebralis* (Plehn), in which case the use

of the meat is not recommended.

There are only a few references in Portuguese about the subject, the principal papers being those by GESTEIRA (1976), OSÓRIO *et alii* (1979a and 1979b), ARAGÃO *et alii* (1985), and COSTA (1989).

A case of deformity in one specimen of the mirror carp, *Cyprinus carpio* Linnaeus, 1758 var. *specularis*, is recorded in a fish pond at Escola Superior de Agricultura de Mossoró - ESAM (Mossoró, Rio Grande do Norte, Brazil).

MATERIAL AND METHODS

This paper is based in one deformed specimen of the mirror carp, *C. carpio* Linnaeus, 1758 var. *specularis*, raised in fish pond n. 1 of the

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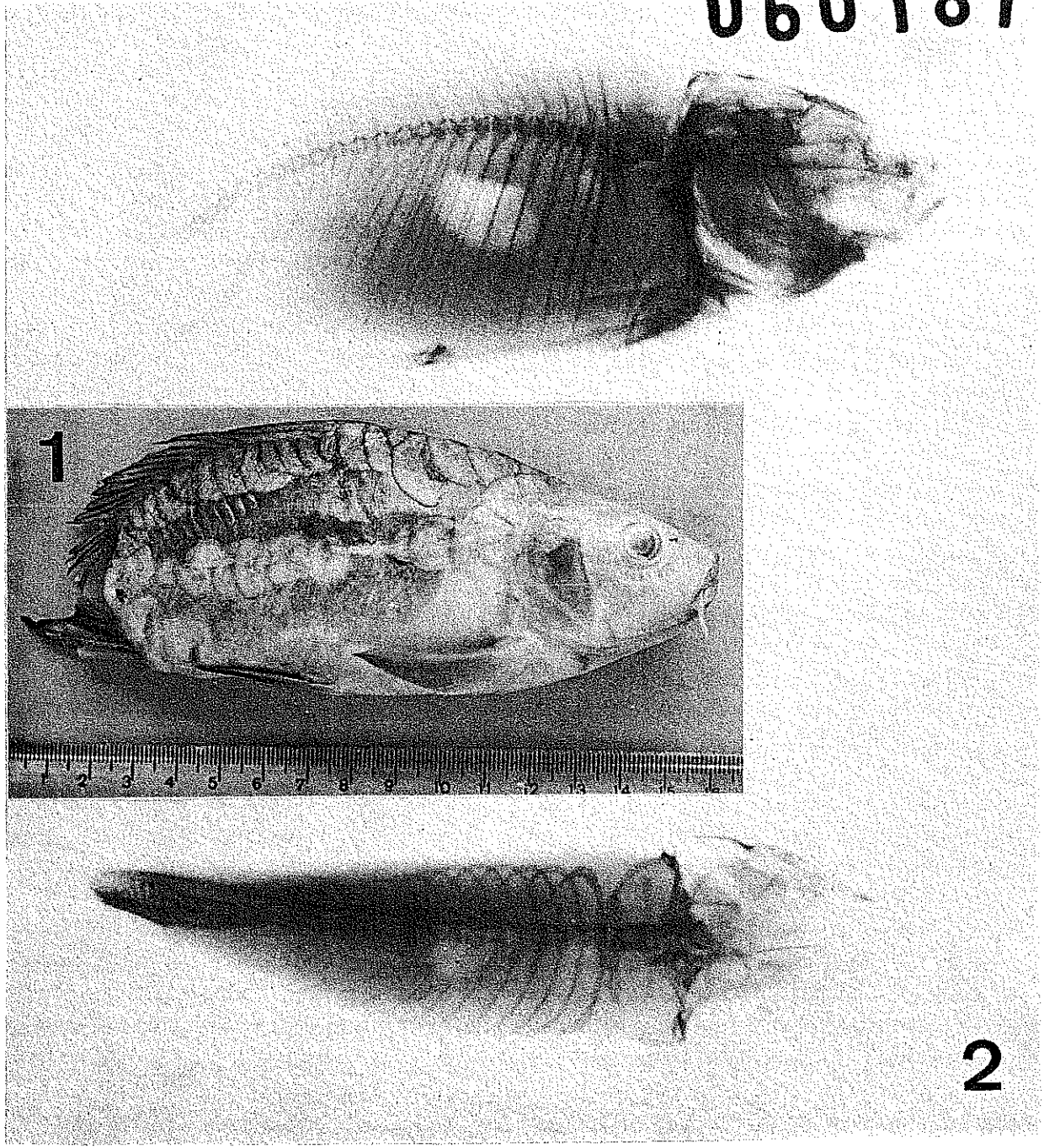


FIGURE 1 - Mirror carp, *Cyprinus carpio* Linnaeus, 1758 var. *specularis*, with totally absent tail.

FIGURE 2 - X-ray of mirror carp, *Cyprinus carpio* Linnaeus, 1758 var. *specularis*, showing the shape of the vertebral column.

pisciculture Station of ESAM, among a total of 1,000 fry received from DNOCS Ichthyological Research Center "Rodolpho von Ihering" (Pentecoste, Ceará, Brazil), and caught during the monthly sampling, September, 1986.

The specimen was registered, preserved with formaldehyde (10%) and deposited in the ichthyological collection of the Pisciculture Station referred to above.

Following capture, the specimen was taken to the laboratory for registration which consists of number, species, body length (minus tail) and head length. The body length was measured from the anterior end, with mouth closed, to the more extreme part of the body, with the fish lying on its left side on a level plane. The head length was measured from the anterior end, with the mouth closed, to the more pronounced part of the operculum. A steel pachimeter capable of registering tenth of a millimeter was used.

The carp was X-rayed at the Hospital Dix-sept Rosado, in the city of Mossoró, State of Rio Grande do Norte, Brazil, in order to localize the sites of possible bone deformation. Radiation intensity was of 55 kv, during 6.6 mA/s.

The fish was also photographed at the photographic laboratory of ESAM to record the external anatomical deformities.

DISCUSSION AND CONCLUSIONS

According to WUNDER (1934), it is possible to find vertebral column deformities among carps as a consequence of infections or even of congenital or embryonic origin. For HUET (1978),

many deformities found in fishes are caused by illnesses induced by Protozoa, fungi, or environmental conditions under which the fishes live, such as water with a pH lower than 5.0 or too alkaline, with a pH above 9.0, as well as water temperature, lack of oxygen and either deficiency or excess of food.

In the present case, the mirror carp, with 13.5 cm body length and 5.0 cm head length, is practically without a tail, including the caudal fin, even though there are indications of this fin on the left side of the body and on the ventral and most posterior part of the body (Figure 1). The outlines of the posterior end of the body is otherwise natural with normal scales.

Probably, such external anatomic alterations are not caused by parasitic organisms or by sickness due to environmental conditions, according to the morphological analysis of the body parts affected, as well as by the occurrence of a single case in quite a large community.

On the other hand, the shape of the vertebral column (Figure 2) shows a torsion, more remarkable in the nine last vertebrae, thus constituting a typical case of congenital and embryological deformity.

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UM CASO DE ESCOLIOSE NA CARPA-ESPELHO, *CYPRINUS CARPIO* LINNAEUS,
1758 VAR. *SPECULARIS* (PISCES: CYPRINIDAE)

RESUMO - Um caso de mal formação em peixe de água doce foi observado pelos autores em setembro de 1986, num exemplar de carpa-espelho, *Cyprinus carpio* Linnaeus, 1758 var. *specularis*, medindo 13,5 cm de comprimento, criado e capturado no tanque nº 1 da Estação de Piscicultura da Escola Superior de Agricultura de Mossoró - ESAM, em Mossoró, Rio Grande do Norte, Brasil. A deformidade se caracterizou pela destituição da extremidade posterior do peixe, inclusive com ausência da nadadeira caudal e parte da anal, bem como uma torção da coluna vertebral, mais acentuadamente nas últimas 9 vértebras. O fato se constitui num caso típico de escoliose caudal convexa superior, provavelmente de origem congênita e embrionária.

Termos de Indexação: carpa-espelho, peixes, ictiopatologia, escoliose, anomalias em peixes, piscicultura.