

OPHTHALMOSCOPICAL OBSERVATIONS ON THE AMAZON DOLPHIN, *INIA GEOFFRENSIS* A.D.G. Dral, Netherlands Institute for Sea Research, Texel, Netherlands.

A study of the anatomy of the eye of *Inia geoffrensis* a more elaborate description is in preparation- has shown that in this species the eye is of quite another nature than usually found in Cetacea. In only a few details, like the spherical lens, the thickness and structure of the sclera and the iris vascularisation, the cetacean characteristics can be recognized. More apparent are the globular shape of the bulbus, the relatively large and protruding cornea (even giving rise to a modest external sulcus) and the deep anterior eye chamber, all factors which also belong to terrestrial eyes. Whereas Cetacea usually have eyes adapted to make a maximal use of the available light, *Inia* seems to wear sunglasses: cornea and lens have a yellow colouration, and pigment is present in all corneal layers as well as all over the surface of the retinal epithelium. The latter, together with nearly complete absence of a tapetum, prevents any eye-shine. Apart from the (apparently normal) presence of capillaries in the corneal stroma, the eye of *Inia* shows no sign of degeneration.

These anatomical findings seem to rule out any use for vision under water. The optical arrangement (large and protruding cornea, relatively big and backward shifted lens) rather suggests that an aerial use of the eyes is the more appropriate. However, the animals' behaviour seems not to support the latter suggestion.

With the kind permission of Dr. W. Gewalt and the appreciated help of Dipl. Biol. Ostenrath, attempts were undertaken to refractionate the eyes of two adult male Amazon dolphins, present in the Zoo at Duisburg. The animals were taken out of the water and their eyes examined in air. It appeared that in both animals the eye lenses were completely opaque. The lens capsule was clear, though brown, the grey-brown tissues immediately underneath lacked any transparency. Consequently, it was not possible to see the eye fundus through the lenses, neither in axial, nor in rostro-temporal direction. During the observations the animals kept their eye lids opened. Also the circular pupils showed wide apertures, which did not narrow at the penetration of the light from the instrument into the eyes. In fact, there was no sign at all that the animals perceived the penetrating light. One must conclude that they were completely blind.

There are many ways to explain the blindness of these two specimens. However, as long as no more observations on living eyes are made, the possibility cannot be ruled out that, besides the Ganges river dolphin, another blind dolphin species exists. This short note is written in the hope that it might stimulate those, who have the opportunity, to examine ophthalmoscopically the living eyes of the Amazon dolphin.