

A Suggestion for a Biological Laboratory on Stradbroke Island for the Protection of *Ceratodus*.

By THOS. L. BANCROFT, M.B.

(*Read before the Royal Society of Queensland, 28th April, 1924.*)

There are no young *Ceratodus* in the Burnett River at the present time. There are many aged fish, some of which spawn every year. The last week in August and first in September is the spawning season. Some fish continue dropping a few eggs right into November.

Fish, particularly the Jew fish, eat up the *Ceratodus* spawn, every bit they can find; yet owing to the cunningness of *Ceratodus* in placing some of the spawn at the extreme edge of the bank amongst water weeds and grass roots, in places inaccessible to other fishes, a fair quantity of it escapes.

Unfortunately, however, as soon as the little *Ceratodus* hatch out they are devoured immediately by dragon-fly larvæ.

Under artificial conditions in a hatchery the little fish thrive well for several weeks; they then cease eating and become rapidly emaciated; air bubbles form in the stomach, and most of them die. I have likened this condition to teething in the human infant.

A very few, only, survive this illness. They commence feeding again and their heads rapidly grow, so that at about three months the head is three times the size it was. They now resemble in appearance tadpoles; they have passed the critical period, and provided you can protect them from their enemies, dragon-fly larvæ especially, they will continue to thrive. I am of opinion that from in-breeding the constitution of *Ceratodus* has suffered. The Burnett is a comparatively small river; it is possible that no *Ceratodus* in it alive to-day has not frequently been, during flood time especially, up and down the river; and that brothers and sisters have bred together for millions of years. One can imagine what the constitution of the human race would be under similar conditions.

Fortunately *Ceratodus* is not confined to the Burnett only; it exists also in the Mary River. I have longed to put this experiment to the test:—Mate some female *Ceratodus* from the Burnett with males from the Mary River, and *vice versâ*. I am confident that the progeny would have a robust constitution.

The sexes can be distinguished by the size of the cloaca being large in the female and small in the male.

There are more male fish than female: three to one; the largest fish are mostly females.

I think the time has arrived when a supreme effort should be made to raise money to initiate a *Ceratodus* station on Stradbroke Island, for with the advent of the new settlers into the Burnett and Mary districts the fish is doomed to extermination in a few years.

Protection of the fish in its native home is impracticable and impossible.

My scheme for the initiation of a Biological Laboratory with the principal object of protecting *Ceratodus* and preventing its extinction has been submitted to the principal scientists in Australia, to the Universities, and all the scientific societies, and has been endorsed by them all.

I propose to use the Blue Lake, a large fresh-water lagoon about nine miles from Amity Point and seven and a-half from Dunwich; introduce into it a hundred *Ceratodus*, some from the Burnett and some from the Mary Rivers. Plant water weeds round the edge of the lake in places, after digging away the bank to allow the water to come in, and to a depth of about 3 feet. The *Ceratodus* is principally vegetarian in diet, and there are practically no water weeds at present in the Blue Lake. Instal a petrol engine to pump water from the lake to a hatchery and a number of large ponds, wherein to study the habits of the fish and rear young ones. I have prepared estimates of the cost of this undertaking, but have been asked to omit specific details from this paper, as the actual figures may depend on contingencies. I propose that control of the laboratory should be in the hands of the Professors of Biology of the Australian Universities.



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