

**An account of a ganoid fish from Queensland (Ceratodus)**

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PETH P.M. 2886 Zoology

AN ACCOUNT OF A GANOID FISH FROM  
QUEENSLAND (*Ceratodus*).

By DR. ALBERT GÜNTHER, F.R.S.

ASSISTANT KEEPER IN THE ZOOLOGICAL DEPARTMENT OF THE  
BRITISH MUSEUM.

[PLATE LXXXVI.]

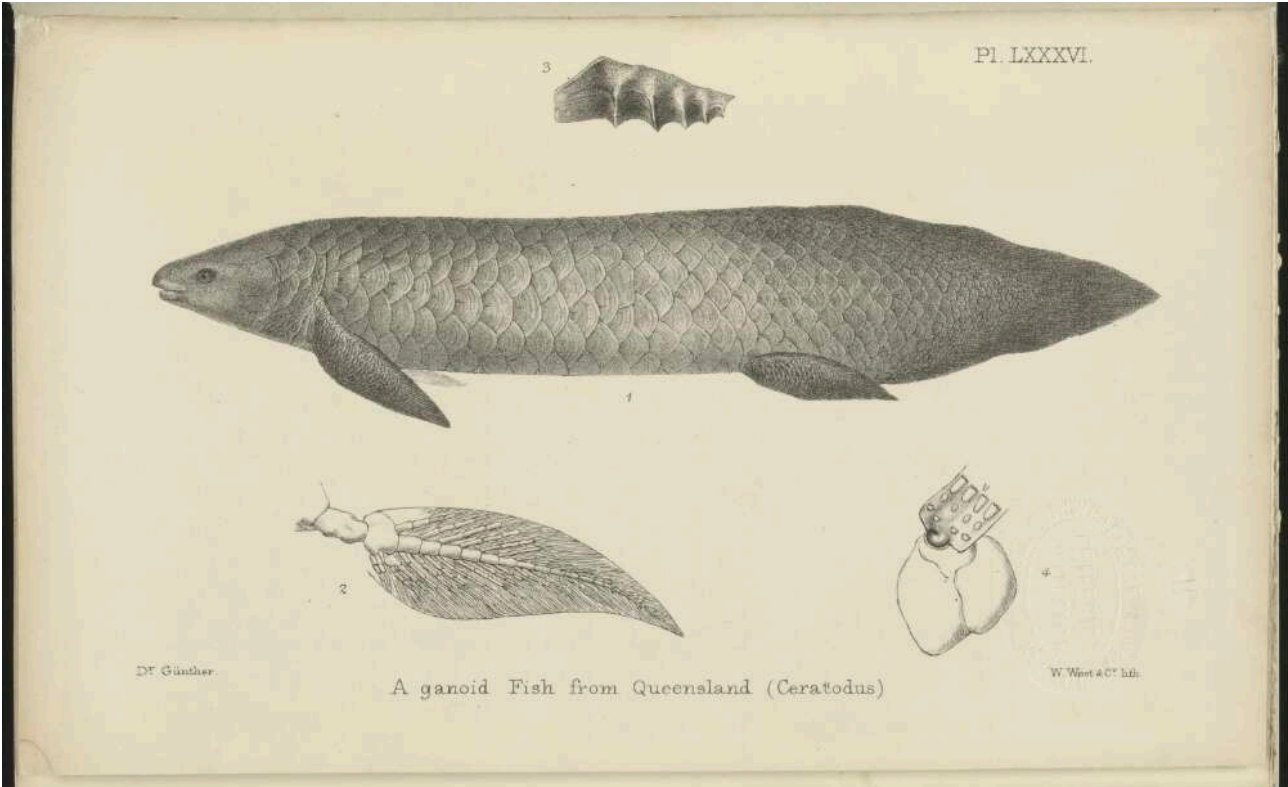
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THE genus *Ceratodus* has been established by Professor Agassiz for teeth which are found in strata of Jurassic and Triassic formations in various parts of Europe and India. These teeth (fig. 3), of which there is a great variety with regard to general shape and size,\* are much longer than broad—sometimes 2 in. long—depressed, with a flat or slightly undulated, always punctuated crown, with one margin convex, and with from three to seven prongs projecting on the opposite margin. They have always been found isolated, sometimes with a portion of a bony base attached to them. Yet Professor Agassiz pointed out, from their shape, that there must have been only two of them in the upper jaw and the same number in the lower, that the convex margin was directed inwards, and the prongs outwards. No other part of the fish to which they belong has hitherto been found associated with them; but Agassiz considered it to have been a cartilaginous fish, or more especially a shark—a view not so very far from the truth, as we shall see hereafter.

The discovery of a Ceratodont fish in the recent fauna is due to the Hon. William Forster and Mr. Gerrard Krefft, the Curator of the Australian Museum at Sydney. Years ago the former of these gentlemen had informed Mr. Krefft that there existed in the fresh waters of Queensland a large fish with cartilaginous backbone, but he was thought to be mistaken

\* Mr. Higgins possesses the largest, and probably most unique, collection of Ceratodont teeth from one locality—viz. from Aust-passage near Bristol. Among some 300 specimens there are scarcely two which are sufficiently alike to be assigned to the same individual.

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genus (*Ceratodus*) testify to its presence; no further trace of it has been found until the present period, where it reappears in three genera (*Ceratodus*, *Lepidosiren*, *Protopterus*), one of which is identical with that of the Mesozoic era. Now, at present scarcely any zoologist will deny that there must have been a continuity of the Dipnoous type, and it is only a proof of the incompleteness of the palæontological record that we have to derive all our information regarding it from only three so very distant periods of its existence.

In conclusion I may add a synoptical table, from which the systematic views advocated above, and more especially the position of *Ceratodus* in the system, may be readily understood. After the separation of *Amphiosus* and the Lampreys as types of two distinct sub-classes (*Leptocardii* and *Cyclostomata*), the remaining host of fishes are referred to two other sub-classes:—

SUB-CLASS: *Teleostei*. Heart with a rigid bulbus aortæ; intestine without spiral valve; optic nerves decussating (living species, nearly 9,000).

SUB-CLASS: *Palæichthyes*. Heart with a contractile conus arteriosus; intestine with a spiral valve; optic nerves non-decussating.

Order I.—*Plagiostomata*, or *Marine Palæichthyes* (sharks and rays; living species, nearly 300).

Order II.—*Holocephala* (four living species).

Order III.—*Ganoidei*, or *Freshwater Palæichthyes*.

Sub-order 1.—*Amioidei* (one species).

Sub-order 2.—*Lepidosteoidi* (three species).

Sub-order 3.—*Polypteroidei* (two species).

Sub-order 4.—*Chondrostei* (sturgeons, thirty species).

Sub-order 5.—*Dipnoi*.

Fam. a.—*Sirenidae*.

Sub-fam.—*Ceratodontina* (*Ceratodus*).

Sub-fam.—*Protopterina* (*Lepidosiren*, *Protopterus*).

Fam. b.—*Ctenododipteridæ* (*Ctenodus*, *Dipterus*).

Fam. c.—*Phaneropleuridæ* (*Phaneropleuron*).