

# FIRST COMPLETE SPECIMEN OF THE DIPNOAN *GOSFORDIA TRUNCATA* WOODWARD FROM THE TRIASSIC OF NEW SOUTH WALES.

ALEXANDER RITCHIE  
The Australian Museum, Sydney.

## SUMMARY

*Gosfordia truncata* Woodward is based on several incomplete specimens found in the 1880's. The recent discovery of the first complete specimen of *G. truncata* in a Triassic shale lens near Gosford, New South Wales, makes possible the first restoration of the species and clarifies its relationships with other dipnoans, living and extinct.

## INTRODUCTION

Of all the continents, Australia has the longest documented record of lungfish (or dipnoan) evolution (Hills 1958, 103) ranging from the early Devonian marine genus *Dipnorhynchus* (Thomson and Campbell 1971) to the extant Queensland freshwater form, *Neoceratodus forsteri* (Krefft 1870). Until the recent discovery of well-preserved, articulated dipnoan remains in the marine late Devonian Gogo Formation of the Kimberleys, Western Australia (Miles 1979) and in the late Devonian continental deposits of the Mt. Howitt Province, central Victoria (Marsden 1976, 122) few Australian fossil dipnoans have been represented by material sufficiently well-preserved to allow complete restorations to be made.

This certainly applied to *Gosfordia*, a poorly known, early Triassic dipnoan recovered in the 1880's from a shale horizon near the top of the Gosford Formation in the Narrabeen Group of the Sydney Basin (cf. Packham *et al.*, 1969, 407). The original material of *Gosfordia* (and of several other species of Triassic fishes) was uncovered near the town of Gosford, 50 km north of Sydney, N.S.W. during the excavation of a quarry for railway ballast materials. The Railway Ballast Quarry yielded over 400 fossil fish specimens and a labyrinthodont amphibian. Included amongst the fish specimens, which were predominantly actinopterygians, were five incomplete specimens which Woodward (1890, 4-6, Pl. 1 figs 1, 2, Pl. II figs. 1, 2) attributed to a new genus and species of dipnoan which he named *Gosfordia truncata*.

Ninety years after the discovery of *Gosfordia*, and almost exactly 110 years after William Forster, a Queensland squatter, sent to Gerard Krefft in Sydney the first specimens of the living lungfish which now bears his name, *Neoceratodus forsteri* (Krefft), The Australian Museum unexpectedly acquired another remarkable lungfish specimen — the first complete example of the Triassic dipnoan *Gosfordia* (AM F.60621).

The new specimen of *Gosfordia* (Fig. 1) was discovered by an observant quarryman, Mr John Costigan, employed by Glendale Wash Sands Pty. Ltd. which operates a quarry in the Somersby Falls area, west north west of Gosford and only 6-7 km away from the type locality. Mr Costigan noticed a small part of a largish fish exposed on a block of shale and split it to reveal a complete and remarkably well-preserved specimen of unusual type. Shortly afterwards the fish fossil was acquired by an amateur collector, Mr Colin Chidley of Sydney who recognised its unique scientific importance and passed it, in turn, to The Australian Museum for safe-keeping and scientific study.

The quarry from which the *Gosfordia* specimen came works an extensive shale lens in the Hawkesbury Sandstone. The massive, grey silty shale, up to 3.4 m thick, is used for brickmaking materials whilst the considerable thickness of overlying, weathered yellow