

THE GALAXIID FISHES OF AUSTRALIA
(PISCES: GALAXIIDAE)

R. M. McDOWALL,

Fisheries Research Division, Ministry of Agriculture and Fisheries, Christchurch,
New Zealand

and

R. S. FRANKENBERG,

Department of Zoology, University of Melbourne, Melbourne, Victoria,
Australia*

*Present address: "Warrangee", Howlong, New South Wales 2640 Australia.

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INTRODUCTION

The family Galaxiidae comprises mostly small, scaleless fishes (to about 600 mm long, usually less than 250 mm) that are frequently benthic and cryptic in habit. Most species are elongate and fusiform, often with broad, somewhat depressed heads and thick fleshy fins. Some species are free-ranging in pools and lakes. These tend to have more membranous fins, are more slender in form, and are sometimes slightly compressed. Cryptic species usually have truncate to rounded caudal fins while the more open-living species may have forked tails.

The family is confined largely to the southern temperate zone, occurring in temperate and sub-tropical western and eastern Australia, Tasmania, Lord Howe Island, New Caledonia, New Zealand, the Chatham, Auckland and Campbell Islands, Chile, Patagonian Argentina, Tierra del Fuego, the Falkland Islands and the southern tip of South Africa. A species of *Galaxias* was described from India by Day (1888) but the identity of the fish has never been adequately established and *Galaxias indicus* Day (1888) is regarded as a *nomen dubium* by McDowall (1973a).

Diversity of galaxiid fishes is greatest in Australia with 20 species in three genera; there is one endemic species in the uplands of New Caledonia (McDowall, 1968a), and another widespread species at Lord Howe Island. Two genera and 13 species occur in New Zealand and its outlying islands (McDowall, 1970a, 1972a), four species in two genera in South America and the Falkland Islands (McDowall, 1971), and a single species in South Africa (McDowall, 1973b). Most species are endemic to one of the major geographical areas within this range, although *G. maculatus* (Jenyns) is known from Western Australia, eastern Australia (from southern Queensland south and west to South Australia), Tasmania, Lord Howe Island, New Zealand, the Chatham Islands, South America and the Falkland Islands. *G. brevipinnis* Günther occurs in eastern Australia, from central coastal New South Wales, south and east to South Australia, Tasmania, New Zealand, the Chatham, Auckland and Campbell Islands. *G. truttaceus* (Valenciennes) is found in Western Australia, eastern Australia (Victoria), and Tasmania.

Most galaxiid species are confined to fresh waters but several are known to be diadromous with the larval, post-larval and juvenile phases occurring in the sea (McDowall et al., 1975). One species, *G. maculatus*, is known to spawn in tidal, estuarine waters (McDowall, 1968b) but all others are believed to spawn in fresh water, movement to sea in diadromous species probably taking place soon after hatching in fresh water (e.g. Ots and Eldon, 1975). Very little is known about the natural history of galaxiid fishes, except for *G. maculatus* which has been the subject of intensive study — it has considerable commercial importance in New Zealand and is taken in small fisheries in Tasmania and Chile (McDowall, 1968b; Scott, 1938; Campos, 1970, 1973, 1974). Other species have also been studied in less detail. Benzie (1968a) examined the life history of a New Zealand species, *G. vulgaris* Stokell; Cadwallader (1975a, b, 1977) added to knowledge of this species and also examined aspects of the natural history of *Neochanna burrowsius* (Phillipps), another New Zealand form (Cadwallader, 1975c). Hopkins (1971) described the life history of *G. divergens* Stokell (New Zealand), and Eldon (1968, 1971, 1978) discussed varied aspects of the natural history of *Neochanna apoda* Günther (New