

Comparative Morphology of the Fishes of the Family Ammodytidae, with a Description of Two New Genera and Two New Species

Hitoshi Ida^{1,*}, Pailoj Sirimontaporn² and Supap Monkolprasit³

¹School of Fishery Sciences, Kitasato University, Sanriku-cho, Kesen-gun, Iwate 022-01, Japan

²National Institute of Coastal Aquaculture, Kaoseng, Songkhla 90000, Thailand

³Faculty of Fisheries, Kasetsart University, Chatuchak, Bangkok 10903, Thailand

(Accepted April 19, 1994)

Hitoshi Ida, Pailoj Sirimontaporn and Supap Monkolprasit (1994) Comparative morphology of the fishes of the family Ammodytidae, with a description of two new genera and two new species. *Zoological Studies* 33(4): 251-277. The generic characters of the fishes of the family Ammodytidae are discussed and two new genera and two new species are described.

The new genus *Protammodytes* (type species: *Protammodytes brachistos*) is characterized by the presence of pelvic fins and a symmetric squamation, fewer vertebrae, and a complete series of infraorbitals. These characters are believed to be least derived state among the family Ammodytidae. Another new genus *Lepidammodytes* (type species: *Lepidammodytes macrophthalmus*) is characterized by having strongly ctenoid scales, larger eyes, perforated lacrymals, and a moderate number of vertebrae. The combination of general and derived characters is unique among the family.

The fishes placed in the genus *Bleekeria* Gunther are divided into two genera, *Bleekeria* and *Ammodytoides*. The genus *Bleekeria* includes *B. kallolepis*, *B. mitsukurii*, and *B. viridianguilla*. The genus *Ammodytoides* is comprised of *A. gilli*, *A. vagus*, *A. renniei*, *A. lucasanus*, *A. kimurai*, and *A. pylei*.

Embolichthys is moved to subgeneric level under the genus *Bleekeria*.

The seven genera of the family are grouped into two subfamilies, Bleekeriinae and Ammodytinae. The subfamily Bleekeriinae consists of *Protammodytes*, *Bleekeria*, *Lepidammodytes*, and *Ammodytoides*, the subfamily Ammodytinae consists of *Gymammodytes*, *Ammodytes*, and *Hyperoplus*. The Bleekeriinae share many general features. Ammodytinae is characterized by many derived features. Genera characters of *Ammodytoides* and *Gymnammodytes* fill the gap between the generalized and specialized subfamilies.

Key words: Ammodytidae, Morphology, *Protammodytes* (gen. nov.), *Lepidammodytes* (gen. nov.).

The ammodytid fishes are characterized by an elongated body, reduced pelvic fins, a reduction of the number of principal caudal rays and branched dorsal and anal fin rays, as well as a greater number of abdominal vertebrae than caudal vertebrae. Combination of these characters presents a unique feature in the order Perciformes.

Fishes of the genera *Ammodytes* and *Hyperoplus* are distributed circumboreally, while less specialized forms such as *Bleekeria* sp. are found in tropical or temperate waters. A more primitive form was reported from the western tropical

Atlantic (Robins and Bohlke 1970). The monotypic family Hypoptychidae, which had been regarded as the most specialized form among Ammodytoidei, was moved from the Perciformes to the Gasterosteiformes (Ida 1976).

Hitherto the ammodytids have been divided into two groups, viz. Ammodytinae and Bleekeriinae. These two groups were often assigned family status. Despite the smallness of the group, the relationships and their classification are still ambiguous because primitive form rarity and scarce comparative morphology information as well as other

*To whom all correspondence should be addressed.