

The lateral line system and its innervation were examined in six species of the family Apogonidae (Percomorpha). Data on the system in the additional five apogonid species were also included based on specimens and literatures. Thence this study covered a total of eight genera in three subfamilies. Typical apogonids were characterized by proliferated superficial neuromasts (SNs) on the head, trunk lateral line scales and caudal fin, whereas some groups (Pseudamiinae, Paxtoninae and Gymnapogonini of Apogoninae) had numerous SN rows over the entire body surface. On the head of apogonids, the mandibular ramus of the anterior lateral line nerve branched uniquely, innervating most of SNs on the head, including its dorsal surface. In typical apogonids, the trunk lateral line system was innervated by the lateral ramus of the posterior lateral line nerve in the pattern as identical with that in a typical percomorph *Lateolabrax japonicus* (Percoidei *incertae sedis*), while each distal branch (innervating a canal neuromast) ramifying to supply SN rows on the lateral line scale. In Pseudamiinae and Gymnapogonini, the innervation pattern in each taxa for supplying SNs on the entire trunk differed clearly, indicating that the overall SN distribution on the trunk had evolved convergently between the two taxa. Fishes of Gymnapogonini (*Gymnapogon*, *Pseudamiops*, *Cercamia*, *Lachneratus*) were distinguished from other apogonids by their neotenic nature. However, three series of inconspicuous lateral line scales in *Pseudamiops*, a characteristic having been overlooked in previous taxonomic studies, pointed a close phylogenetic affinity of the genus to *Pseudamia* (Pseudamiinae). The view was also supported by a molecular study. Thereby, the neotenic nature was considered as a homoplasy between *Pseudamiops* and the other three genera of the tribe. *Paxton concilians*, constituting the monotypic Paxtoninae, showed a unique SN pattern,

but with some commonalities to the pattern in *Gymnapogon*, its placement within Gymnapogonini being consistent with a previous osteological study that recognized monophyly of *Paxton* plus Gymnapogonini. *Kurtus gulliveri* (Kurtidae), a putative sister family of Apogonidae, exhibited distinctive SN distribution and innervation, rejecting a suggestion that the presence of many SN rows is a synapomorphy of Apogonidae and Kurtidae.