

VERTICAL DISTRIBUTION AND MIGRATION PATTERNS
OF THE HAWAIIAN MID-WATER PENAEIDAE

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ABSTRACT

Ten penaeid species belonging to 3 genera were collected in 174 mid-water trawl samples off Oahu, Hawaii. Four species of the genus Gennadas comprised 98% of the specimens collected.

Three of the four common species "normally" underwent extensive diel vertical migration. Occasionally, however, portions of the populations of these three species failed to migrate. These instances of non-migration involved all three of these species simultaneously and occurred between the months of October and March. Non-migration in these species was not always concurrent with non-migration in other taxa and suggests the phenomenon may be related to feeding.

The four common species exhibit similar depth distributions during the day and distinctive depth distributions above 600 m at night as a result of diel vertical migration. These species are extremely similar in morphology and three of these four are similar in size. This suggests a potential for competition for a common food resource which is reduced through vertical partitioning of the habitat at night.