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The Ecology of an Intergrade Population of
Hexagenia munda marilandica and *H. m. elegans*
(Ephemeroptera) in Stone Mountain Lake,
Georgia

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A large population of burrowing mayflies living in Stone Mountain Lake, filled in 1964, appeared to be intergrades of the southern highland *Hexagenia munda marilandica* and the coastal plains subspecies *H. m. elegans*. Individual adult males and large nymphs with wing pads have morphological characteristics and color patterns intermediate between those of the subspecies; adults which most closely resemble each subspecies are interfertile; large *marilandica*- and *elegans*-like nymphs have the same respiration rate; and nymphs, regardless of subspecific variations, occupy the same habitat niche.

Nymphs live for one year and are nonselective detritus feeders using their enormous mandibular tusks for burrowing. They transfer energy from organic detritus to carnivores. Distribution in the lake seems to be independent of pH and temperature but low dissolved oxygen is limiting. Nymphs migrate to areas having favorable conditions. Burrows cannot be established in substrata with more than 55% sand by weight. Although nymphs are negatively phototactic and respond positively to cover, they respond more strongly to burrows and even occupy glass tubes in the light when cover is available.

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