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## Amino Acids and the In Vitro Survival of Larval Stages of the Trematode, Fascioloides Magna

F. E. Friedl  
*University of Minnesota*

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## ZOOLOGY

Amino Acids and the *In Vitro* Survival  
of Larval Stages of the Trematode,  
*Fascioloides Magna*

Little is known of the nutritional requirements of trematode worm parasites in the various stages of their life cycles. These requirements, when defined, will aid in an understanding of the character of host-parasite relationships existing in trematode infections.

Very young individuals of the snail, *Lymnaea stagnalis*, were infected with miracidia of *Fascioloides magna*. These miracidia were from ova obtained from bovine livers containing the adult worm. Rediae were dissected from infected snails, washed in a physiological salt solution containing antibiotics, and placed in tubes containing .1 percent solutions of various amino acids in physiological saline plus antibiotics. For controls, worms were added to tubes containing only the physiological saline plus antibiotics. Movement of the worms was the criterion of survival and was recorded at daily intervals. All tubes were incubated at 20°C.

It was found that the longest survival times occurred with the amino acids alanine, hydroxyproline, proline, and serine. The amino acid amides asparagine and possibly glutamine also appeared to prolong survival. Other amino acids gave survival times either about equal to or below those of controls. It is of interest to note that the amino acids associated with longest survival are in general non-essential for higher animals, and are synthesized *in vivo* from carbohydrate and ammonia yielding compounds. It is possible that in the snail host they are also non-essential and can be derived in the same manner.