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Marvinmeyeria Lucida (Moore, 1954) (Annelida: Hirudinea) A Commensal Of *Helisoma Trivolvis* (Say) (Mollusca: Gastropoda) In Nebraska

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MARVINMEYERIA LUCIDA (MOORE, 1954) (ANNELIDA: HIRUDINEA) A COMMENSAL OF *HELISOMA TRIVOLVIS* (SAY) (MOLLUSCA: GASTROPODA) IN NEBRASKA

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Duing September, 1974, in the course of examining aquatic snails for larval trematode infections, specimens of *Helisoma trivolvis* (Say) were collected and found to contain one or two specimens of the leech *Marvinmeyeria lucida* (Moore, 1954) Soos, 1969 between the shell and mantle. The leeches were identified on the basis of comparison with the original description and with the specific diagnosis given by Soos (1969, Acta Zool. Acad. Scient. 15:397-454). Specimens were observed live with the aid of a stereoscope or compound microscope, then flattened with slight coverslip pressure, fixed with aceto-formo-alcohol (AFA), and stored in 70% ethanol. They were then stained with Mayer's hematoxylin and mounted in Canada balsam for study as whole mounts. Voucher specimens have been deposited in the University of Nebraska State Museum Division of Parasitology.

Marvinmeyeria lucida was described from specimens collected in Manitoba, Canada as free-living among plant debris in shallow water (Moore, in Meyer and Moore, 1954; Wassmann, J. Biol. 12:63-96). Moore (1966, Nat. Hist. Pap. Nat'l. Mus. Can. 32:1-11) stated that small snails constitute the principal food source of *M. lucida* in Alberta, Canada and listed *Physa heterostropha* (Say), *Menetus exacuous* Call, and *Lymnaea marginata* (Say) as prey. When leeches were isolated in aquaria containing only snails, they readily ate the snails, showing a definite preference for *Physa hererostropha.*

Scudder and Mann (1968, Syesis. 1:203-209) reported *M. lucida* from temporary ponds in British Columbia, Canada. Specimens were said to be free-living among plant debris. Sawyer (1968, Ohio J. Sci. 68:226-228) reported *M. lucida* from southern Michigan and stated that in his rare encounters with the leech species, he usually found them in association with snails of the genera *Physa* and *Lymnaea,* but never observed them feeding upon the snails. Sawyer (1972, Ill. Biol. Mono., Univ. Ill. Publ., Urbana Ill.) later expressed the opinion that the relationship between *M. lucida* and the snails was other than predator-prey.

In the present study, nine of ten *Helisoma trivolvis* from a pond 2 miles south and 2 miles west of Lincoln and 27 of 30 *H. trivolvis* from a slow-moving stream 2 miles south and 1.5 miles west of Lincoln, Nebraska harbored one or two specimens of *M. lucida.* Specimens of *Physa integra* examined at the same locality were negative. In most cases, when the snail's shell was crushed, the leech (-es) swam rapidly away. In no case was a leech observed feeding on the snail, nor was any pathology evident. Further, examination of stomach contents of mounted specimens revealed the presence of diatoms of the genus *Navicula,* suggesting that the leech's diet is in part composed of plant material. These observations indicate that the relationship between *M. lucida* and *Helisoma trivolvis* in Nebraska may be commensal, the leech utilizing the snail's shell for protection. If, as indicated by the stomach contents, *M. lucida* is a plankton feeder, the leech may serve to partially protect the snail from infection by larval trematodes. None of the snails harboring *M. lucida* was infected by larval trematodes, but the sample was too small to ascertain whether or not that finding is significant. In times of stress, especially if normal food supplies are interrupted, it is conceivable that the leech might consume its snail host [as in Moore's (1966) experiment].

The specimens collected were of two, size classes, with only those specimens of the larger class bearing mature ova. The bimodality of the size distribution may be explained on the basis of studies done by Moore (op. cit.). In studying the reproductive strategy of *M. lucida,* Moore concluded that *M. lucida* overwinters in a pond, then produces one set of progeny in the early spring and another in early summer. Under laboratory conditions, the progeny produced in the early spring were shown to be capable of reproducing in the

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