

Parasites of Amphibians and Reptiles from Michigan: A Review of the Literature 1916–2003

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Abstract.—A summary of the literature on the parasites (protozoans, digenetic trematodes, monogeneans, cestodes, and nematodes) of amphibians and reptiles (herps) in Michigan is presented. It is divided into three sections: 1.) a list of the parasite species by taxonomic group and family followed by their herp hosts and studies, 2.) a list of the herp species in Michigan by order and family and their parasites, and 3.) a list of body sites occupied by parasites in herps by order. At least 84 studies (abstracts and articles) have been published on the parasites of herps in Michigan from 1916 through 2003. These studies include: 49 on frogs, 5 on toads, 19 on salamanders, 15 on snakes, and 16 on turtles. The more widespread or common herp species have more parasite species reported from them compared to the less common species. At least 17 protozoan species, 39 adult digenetic trematode species, 12 larval digenetic trematode species, 2 adult monogenean species, 5 adult cestode species, 2 larval cestode species, 15 adult nematode species, and 3 larval nematode species have been reported from herps in Michigan. Acanthocephalans have not been reported in Michigan herps. Only two studies have been published on the parasites of herps in the Upper Peninsula of Michigan. Nineteen (36%) of the 53 herp species in Michigan have not had articles published on their parasites. This study is the first one to summarize the parasites of herps in a state or province in North America.

The literature on the parasites of herps (defined here as amphibians, snakes, turtles, and lizards) in the central United States is extensive, diverse, and scattered. Historically, studies have focused on two major areas, parasite life histories and taxonomy. Parasite fauna surveys have also received considerable attention. However, many of these surveys are limited in that only one parasite species or parasite group was studied, only one herp species was studied, or the number of herps examined was small. More studies have been performed on the parasites of amphibians than reptiles. Dyer (1991) listed many of the helminth parasites of amphibians from Illinois and adjacent midwestern states. Andrews et al. (1992)

provided a checklist of helminths in bullfrogs *Rana catesbeiana* in North America. Prudhoe and Bray (1982) discussed the helminth parasites of amphibians. Ernst and Ernst (1977) listed the helminths infecting native turtles of the United States. Baker (1987) provided a synopsis of the nematodes parasitic in herps of the world. Kuzmin et al. (2003) reviewed and summarized the literature on the nematode genus *Rhabdias* from herps of the Nearctic. Aho (1990) presented and explored mechanisms influencing the patterns and processes of helminth community organization in herps.

Based on discussions with parasitologists and herpetologists as well as reviewing articles on the parasites of herps, it became apparent that