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Lichens of Arkansas I: A Summary of Current Information

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General Notes

Cicurina sp., Troglophile (?). Independence Co.: Dodd Cave. A juvenile was removed from the anterior chamber of this cave. The genus includes several cave species.

Family Araneidae

Meta menardi (Latreille), Troglophile. Izard Co.: Needles Cave. The cave orb weaver is found in caves, mines, and similar habitats throughout the eastern U. S.

Family Ctenidae

Ctenus n. sp., Troglophile. Stone Co.: Roasting Ear Cave. Ctenids are foraging spiders, and our specimen was found in the dry front chamber of this cave.

Family Linyphiidae

Meioneta sp., Troglophile. Independence Co.: Dodd Cave. Collected from a dry guano pile near the center of the cave.

Porrhomma cavernicolum Keyserling, Troglophile. Searcy Co.: Davis Pit. A widespread cave inhabitant.

Family Lycosidae

Lycosa sp., Trogloxene. Searcy Co.: Davis Pit; Sharp Co.: Center Cave. Wolf spiders were found associated with leaf litter on the floor of the cave.

Family Nesticidae

Eidmannella pallida (Emerton), Troglophile. Izard Co.: Vickery Cave. Formerly *Nesticus*. This spider is widespread and a common cave inhabitant.

Class Diplopoda

Order Chordeumida

Family Conotylidae

Trichopetalum sp., Troglophile. Searcy Co.: Davis Pit. *T. uncum* was previously reported from Sharp Co. (McDaniel and Smith, 1976).

Class Insecta

Order Diplura

Family Campodeidae

Plusiocampa n. sp., Troglophile. Fulton Co.: Richardson Cave; Izard Co.: Clay Cave; Stone Co.: Hell Creek Cave, Roasting Ear Cave, Roland Cave. Although a very common cave inhabitant, diplurans are taxonomically very poorly known.

Order Diptera

Family Heleomyzidae

Amoebaleria defessa (Osten Sacken), Trogloxene. Independence Co.: Cushman Cave; Stone Co.: Roasting Ear Cave. All specimens of this common cave inhabitant were found in the front chamber of caves.

Aecothea specus (Aldrich), Trogloxene. Izard Co.: Clay Cave. Found only in the front chamber of the cave.

Heleomyza brachypterna Loew, Trogloxene. Sharp Co.: Center Cave. Another of the flies that overwinters in Arkansas caves.

PHYLUM CHORDATA

Class Amphibia

Order Anura

Family Hylidae

Hyla versicolor versicolor LeConte, Accidental. Stone Co.: Hell Creek Cave. A single specimen of this frog was found at the bottom of a shaft into the cave.

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LICHENS OF ARKANSAS I: A SUMMARY OF CURRENT INFORMATION

The earliest publications on lichens in this country included only a few references to these plants from Arkansas. The earliest of these, written by the "Father of American Lichenology," Edward Tuckerman (1882), listed three species from Arkansas which were collected by Dr. Peters. Much later, Bruce Fink (1935) listed a total of five species from the state, including those mentioned by Tuckerman. Edward C. Berry (1941) listed 18 specimens from Arkansas in his monograph of the genus *Parmelia*. This included two new species of *Parmelia* which he had collected about 11 miles south of Harrison in Newton County. The type specimen for *Parmelia erecta* Berry was placed in the Missouri Botanical Garden herbarium

(#154724, collected by Dodge, Berry, and Johnson); the type specimen for *Parmelia hypotropoides* Nyl. was also filed in that herbarium. Alexander W. Evans included references to collections of *Cladonia* from Arkansas (1944, 1947) in his publications on this genus and was most helpful to me in identification of *Cladonia* (Moore, 165).

Even with these references to Arkansas lichens, however, very little was definitely known of the general lichen flora of the state until Albert W. C. T. Herre (1945) made a checklist including 54 species. These collections had been sent to him by Delzie Demaree, primarily from Petit Jean Mountain in Conway County and from Pulaski and Drew Counties. Herre predicted that this number was perhaps an eighth of the lichen flora of the state. This may prove to be a correct prediction, as extensive collecting usually has resulted in many additional state records. For example, when Mason E. Hale (1957a) gathered corticolous lichens from 98 sampling stations in the 22 northwest counties of the state, he listed 62 species. Twenty-one of these species were issued in Hale's exsiccate and distributed to a number of the larger herbaria. Other publications by Hale (1955a, 1955b, 1956a, 1956b, 1957a, 1957b, 1958a, 1958b, 1959, 1962, 1964, 1967) have dealt primarily with clarification of taxa and lichen chemistry, but these papers have included references to Arkansas plants. Hale also has been responsible for the identification of lichens for many field botanists (Moore, 1959, 1975). Hale collected the type specimen for *Parmelia hypomelaena* Hale from novaculite rocks near Malvern and has filed it in the National Herbarium in Washington.

Monographs of the lichen flora have included citations of plants from Arkansas: *Leptogium* (Sierk, 1964), *Physcia* (Thomson, 1963), *Lobaria* (Jordon, 1973), and *Ochrolechia* (Howard, 1970). Chemotaxonomic work also often included references to Arkansas lichens (Almeda and Dey, 1973; Bowler, 1972; Culberson, 1969, 1973; Hale, 1962, 1965, 1966). Other publications dealing primarily with distribution patterns of various lichens have included Arkansas in the lichen ranges (Culberson and Hale, 1965, 1966; Ohlsson, 1973; Thomson, 1956). Hale (1969, 1979), in his two keys to the foliose and fruticose lichens of the United States, added perhaps a hundred species to the Arkansas checklist based on the distribution maps in these publications.

The present checklist of perhaps 250 lichens, obtained from the literature, will be published in *Arkansas Biota*, a publication of the Arkansas Academy of Science.

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EVALUATION OF UNDERGRADUATE COURSES BY BIOLOGY TEACHERS

Eighteen high school science teachers who brought students to a High School Science Day at the University of Central Arkansas were asked to complete questionnaires about the size and organization of their schools, some aspects of their lives as teachers, and their evaluation of selected college courses as far as the usefulness of these courses to a high school science teacher. The questionnaire required only the checking of appropriate blanks.

Of the eighteen teachers who were polled, fourteen were biology majors in college, two were mathematics majors, one was a physical education major, and one was a business administration major. Each of the participants was teaching one or more science courses in high school. The teaching experience of the respondents ranged from one year to twenty years with a mean of 5.2 years. Twenty-eight percent of the teachers taught only biology, and 72% taught biology and another science. Seventy-two percent indicated that they had free periods during the school day that could be used for the preparation of lessons and teaching materials.

The smallest school represented in the survey had 115 students, and the largest had 500. Twelve percent of the schools included grades 10-12, 25 percent had grades 9-12, 25 percent had grades 8-12, and 38 percent were grades 7-12. Table 1 summarizes other information about the schools. formation about the schools.

Table 2 indicates the number of teachers who had taken each of the selected courses in college, the percent who had taken each course, and their evaluations of the courses.

It should be noted that only small schools are represented in the study. The pupil-teacher ratio for either biology teachers or for science teachers in general is not high.

Explaining the course evaluations is difficult. Why should General Zoology be given a perfect 1.00 rating and both General Botany and General Biology receive lower ratings? The differences in evaluations cannot be ascribed to large differences in the number of teachers who evaluated the courses because in each case a large majority of the teachers who were polled evaluated each course. The higher rating of zoology compared with botany might be caused by a greater interest in animals than in plants. If this is true, however, how can the fact that botany rated higher than General Biology be explained?

It should be noted that, except for Conservation, the biology courses that rated 1.00 are some aspect of zoology or human biology. Applied Physics, which has a life science emphasis, was rated higher than General Physics. This may be a result of the small number of respondents who had taken the course, or it may indicate the natural antipathy of many biology majors for anything that requires a rigorous mathematical treatment.

Although this study is too small for any of the results to be statistically significant, some of the results are interesting. The ratings of various college courses may indicate a need for continuing evaluation of courses required of biology teachers.

Table 1. Some characteristics of schools included in study.

	School Organization (Grades)			
	10-12	9-12	8-12	7-12
Number of schools	2	4	4	6
Number of students				
Range	*	120-275	280-300	115-500
Mean		198	290	326
Number of science teachers	12	3	6	13
Students/science teacher		66	48	25
Number of biology teachers	7	2	2	8
Students/biology teacher		99	145	41

*Teachers did not supply information requested.