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INFECTION OF *SARCOCYSTIS RILEYI* IN A MALLARD

PEGGY LOU STEWART

A Mallard, *Anas platyrhynchos*, infected with *Sarcocystis rileyi* (Stiles) was shot on the Kansas River between Lawrence and Eudora, Douglas County, Kansas. Dr. E. E. Bayles killed the duck on October 26, 1958, and presented it to the University of Kansas Museum of Natural History, whence the bird was made available to me for study.

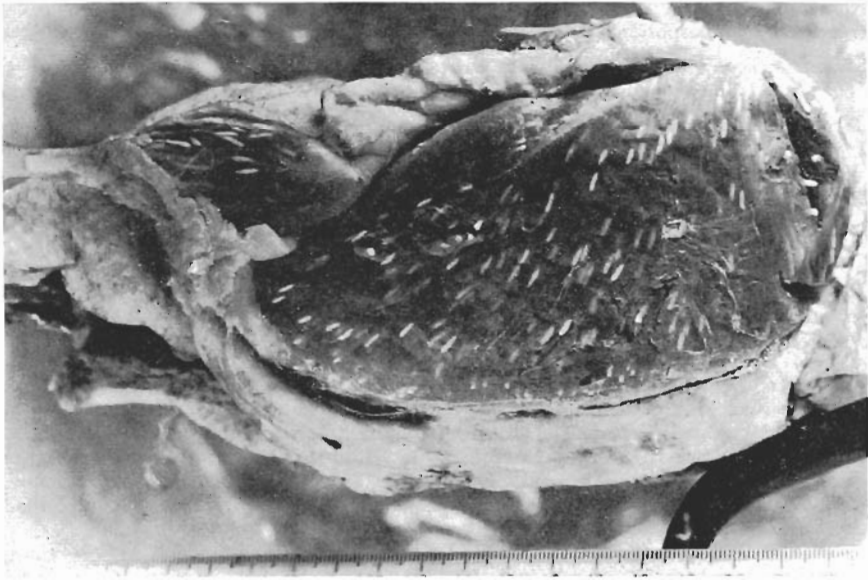


FIGURE 1. Spore cases of *Sarcocystis rileyi* in the muscles of a Mallard. (Courtesy of Harold Murray.)

The parasite was found in the duck in spore cases; these were white, nearly cylindrical, 1.0 to 1.5 mm. long and .4 to .7 mm. wide at the middle. Opposite ends of some spore cases varied in width by .05 mm. The infection was heaviest in the breast muscles and extended in decreasing degrees onto the wings and legs (fig. 1). Areas most heavily infected contained four spore cases per square centimeter of muscle. The cases were situated along the axes of the muscle fibers and were more abundant laterally and ventrally than medially. The spores within the cases were uniform in size and measured 8.70 by 1.20 micra.

Sarcocystis rileyi was determined by Spindler and Zimmerman (1945) to be a part of the life cycle of the fungus *Aspergillus* sp. Possible sources of infection are

flesh that contains ripe spore cases and food contaminated by the excrement of infected birds (Riley, 1931). McAtee (1918) showed that nine-tenths of the food of Mallards is vegetable. Seemingly, ducks are infected by eating vegetable matter upon which excrement has been deposited. The encysted parasite does not seem to have any effect on the flight of the bird, but no work has been done to determine effects after the spores have been liberated (Erickson, 1940).

Sarcocystis has been reported in Mallards from Missouri, Minnesota, the eastern seaboard, California, Utah, Montana, North Dakota, and Nebraska. Erickson (1940) reported *Sarcocystis* in eleven North American species of birds: wild and domestic Mallard, Black Duck, Gadwall, Pintail, Blue-winged Teal, Shoveler, Turkey Vulture, domestic fowl, Wilson's Snipe, and the American Redstart.

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Department of Zoology, University of Kansas, Lawrence, Kansas, December 12, 1958.

KANSAS BREEDING BIRD SURVEY: FIRST ANNUAL REPORT

RICHARD F. JOHNSTON

This year, 1958, was the first year of operation of the Kansas Breeding Bird Survey. The program appears to be functioning satisfactorily at present, in spite of limited participation by members of the Kansas Ornithological Society (less than ten per cent of the membership sent in reports). Twenty-two individuals contributed 5595 breeding records on 80 species of birds. The totals actually imply broader coverage than was gotten, since some important and abundant birds were all but overlooked (the best examples are the Crow, Robin, Starling, Purple Martin, English Sparrow, feral Rock Dove, Common Grackle, and Chimney Swift). Certain other species were nonetheless fairly well documented (such as, Mourning Dove, Phoebe, Cliff Swallow, Bank Swallow, Brown Thrasher, and, surprisingly, the Great Horned Owl and American Coot).

It is, of course, impossible as yet to draw any meaningful conclusions concerning most aspects of breeding of any species in the State as a whole. Yet, certain features of breeding of some species in northeastern Kansas can already be discussed with some validity (for some species average clutch-size in 1958, for others breeding habitat preference). Also, the first record of breeding within Kansas for the Lazuli Bunting was recorded (Thompson, 1958. *Bull. Kans. Orni. Soc.*, 9:19). Little information was obtained on precise limits to the breeding distribution of any species in the State, but this is not one of the matters that can best be investigated by such a survey.

Participants, to whom go our thanks for assisting in the survey, are (in order of number of records submitted): Steve Stephens, Merrill McHenry, Marvin D. Schwilling, Dr. Ted F. Andrews, Max C. Thompson, S. D. Roth, Jr., Mr. and Mrs. T. W. Nelson, William Reynolds, Mrs. E. Raymond Hall, Mrs. Mary Louise Myers, L. C. Binford, William Brecheisen, Charles S. Edwards, Sue Griffith, J. W. Hardy, Nathan H. McDonald, Richard H. Schmidt, Frank Robl, E. K. Urban, Mr. and Mrs. J. W. Wallace, H. E. Warfel.

APPENDIX

Species for which five or more records were submitted: Blue-winged Teal, American Coot, Upland Plover, Mourning Dove, Great Horned Owl, Red-bellied Woodpecker, Phoebe, Western Kingbird, Cliff Swallow, Bank Swallow, Barn Swallow, Bewick Wren, House Wren, Brown Thrasher, Mockingbird, Robin, Blue-gray Gnatcatcher, Redwing, Cardinal.

The remaining species were represented primarily one or two times: Pied-billed Grebe, Great Blue Heron, Green Heron, Mallard, Cooper Hawk, Red-tailed Hawk, Swainson Hawk, Sparrow Hawk, Greater Prairie Chicken, Bobwhite, Ring-necked Pheasant, Killdeer, Avocet, Yellow-billed Cuckoo, Black-billed Cuckoo, Barn Owl, Nighthawk, Chimney Swift, Yellow-shafted Flicker, Red-headed Woodpecker, Hairy Woodpecker, Downy Woodpecker, Pileated Woodpecker, Eastern Kingbird, Crested Flycatcher, Scissor-tailed Flycatcher, Rough-winged Swallow, Purple Martin, Horned Lark, White-necked Raven, Crow, Blue Jay, Magpie, White-breasted Nuthatch, Carolina Wren, Black-capped Chickadee, Tufted Titmouse, Catbird, Wood Thrush, Bluebird, Loggerhead Shrike, Starling, Warbling Vireo, Bell Vireo, English Sparrow, Prothonotary Warbler, Louisiana Waterthrush, Eastern Meadowlark, Western Meadowlark, Yellow-headed Blackbird, Baltimore Oriole, Orchard Oriole, Common Grackle, Scarlet Tanager, Dickcissel, Indigo Bunting, Lazuli Bunting, Blue Grosbeak, Lark Sparrow, Rufous-sided Towhee, Field Sparrow.

Museum of Natural History, University of Kansas, January 5, 1959.

NOTES AND NEWS

Following is a summary of the spring, 1958, meeting of the Society held at Baldwin, Kansas. The report was submitted by Amelia J. Betts, who also has included (see below) another interesting note from the Baldwin area.

Thirty-two cities, including three in Missouri, were represented in the registration of the 116 persons who attended the tenth annual spring meeting of the Kansas Ornithological Society at Baldwin, May 3 and 4, 1958. The largest groups were from Lawrence, Topeka, and Baldwin, but seven other communities had registrations of four or more.

Saturday's program was presented in the multi-purpose room of the new grade school. For the morning session papers were given by Mrs. R. V. O'Neil, Wellsville; George M. Boicourt, Baldwin; and J. C. Johnson, Jr., Pittsburg. Photos of birds in India were shown by Dwight Platt, Newton.

More bird photography was presented by the Daileys and Mrs. Ralph White of Junction City during the afternoon. Papers for this session were given by Charles S. Edwards, Richmond; L. D. Wooster, Hays; Merrill McHenry, Ames; Richard F. Johnston, Lawrence; Kirk E. Downing, Arkansas City; and Ted Andrews, Emporia.

For the evening's entertainment, editor J. W. Hardy, Lawrence, briefly discussed the "best birds" of the year as selected from numerous records sent to him, after which Orville O. Rice, Topeka, showed a color slide series, "Birding in Kansas."

The Saturday evening banquet and the lunches both days were served by the staff of Parmenter Commons on the Baker University campus.

Despite the cold, rainy weather, over eighty members, their families and friends took the three field trips offered on Sunday morning and they found the largest number of species ever recorded on a K.O.S. spring trip. Of the 136 species reported, six were new to the K.O.S. spring list—Rock Dove, Solitary Vireo, Black-throated Blue Warbler, Black-throated Green Warbler, Chuck-will's-widow and Whip-poor-will. The latter two had been heard singing the night before.

The Baldwin Bird Club reports that several prints of the group photograph taken during these spring sessions are still available.—Amelia J. Betts.

Mrs. Ivan L. Boyd, Baldwin, received word September 23 from the Fish and Wildlife Service that recovery of one of the 79 robins she had banded last fall during the unusually large concentration near Baldwin (see Betts, 1958. *Bull. Kans. Ornith. Soc.*, 9:10-11) had been reported. An immature male banded Dec. 1, 1957 was found dead by Wayne Frederes, Alton, Iowa, June 15, 1958. The band number was 542-869-39.

The Baldwin group reports that there has been no repeat of the concentration this fall. Only the normal number of robins has been seen.—Amelia J. Betts.

The editor has received a letter from the former President of the Society, Marvin D. Schwillig, now a biologist with the Nebraska Game, Forestation and Parks Commission and stationed at Burwell, Nebraska. Marvin writes that he and family find the climate and work agreeable (though he still can't fish or hunt on a resident license) and that he hasn't seen any Brown-headed Nuthatches or other bad dreams there as yet. He sends best wishes to Kansas birders and hopes they turn up some good finds on the Christmas census.

They did. The census reports are coming in steadily, and while this may not be a record year, there are already a number of rarities, impossibilities (that is, rarities unsupported by specimens or other evidence!), counts of large numbers (of individuals and species), tomfoolery (Frank Robl still has merely "too many" English Sparrows) and evidences of a great deal of good fun had by the members of the Society in the holiday season.

Max Thompson is taking charge of the Christmas counts and as he did last year will ready them for publication in the March, 1959, issue.

Incidentally, there was a report of a flock of Bohemian Waxwings at Lawrence in mid-December by Messrs. Jon Barlow and Robert Wimmer, graduate students in zoology at the University of Kansas. We would be interested in reports of these and other visitors from the far north, if you can spare the time to write us.—J.W.H.

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