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A Preliminary Survey of May Beetles in Iowa

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A PRELIMINARY SURVEY OF MAY BEETLES
(*PHYLLOPHAGA* Spp.) IN IOWA

H. E. JAQUES

Few insects within our state are of greater economic importance than are the May beetles which in their larval stage as white grubs are serious pests to many growing crops. A normal loss is sustained from them throughout the state each year. The life cycle of at least the most destructive species seems to cover a period of three years and since one brood greatly exceeds the other two in abundance the years of 1921 and 1924 were times when the farmers paid heavy toll to these enemies of grasses, cereals and cultivated crops. This "Brood A" which was responsible for the heavy loss of the times mentioned, for years, confined its region of heavy infestation to the northeastern corner of the state but in 1921 moved south along the Mississippi river to the southern boundary of the state. The 1924 appearance showed Brood A holding their old territory and spreading to the west in the southern half of Iowa.

The work on which this paper is a preliminary report was started to get some clue to the species of May beetles involved in this damage and to the relative frequency of the different species.

All May beetles belong to the genus *Phyllophaga* of the family Scarabaeidae. Leng¹ lists 98 species for North American north of Mexico. Twenty-nine species of the genus have been reported for Iowa, a list of which follows. The symbols indicate the source of the report and are as follows: A. specimens in collection at Ames; W. reported by Wickham in "A List of the Coleoptera of Iowa";² S. specimens in the collection of Dayton Stoner; J. found among those collected for this paper.

During the spring of 1923, 1254 May beetles were secured from Henry, Van Buren, Davis, Jefferson, Des Moines, Wapello, Louisa, Dubuque, Allamakee, Clinton, Iowa and Warren counties. These were put into one lot and separated by species. The condition of some of these specimens made identification uncertain so that the figures for the larger groups may be taken as close approximations.

¹ Catalog of the Coleoptera of America north of Mexico. Charles W. Leng.

² Bulletin Laboratory of Natural History, State University of Iowa, Vol. VI.

A LIST OF THE SPECIES OF PHYLLOPHAGA FOUND IN IOWA

LENG'S CATALOG NUMBER	SPECIES	
13472	<i>Phyllophaga lanceolata</i>	A. S.
13487	<i>Phyllophaga ephilda</i>	A.
13491	<i>Phyllophaga longitarsus</i>	W. A.
13497	<i>Phyllophaga futulis</i>	J. W. A. S.
13501	<i>Phyllophaga prunina</i>	J. A.
13503	<i>Phyllophaga crassissima</i>	J.
13506	<i>Phyllophaga inversa</i>	W. A.
13507	<i>Phyllophaga bipartita</i>	J.
13508	<i>Phyllophaga micans</i>	J. W. A.
13510	<i>Phyllophaga vehemens</i>	J.
13511	<i>Phyllophaga fusca</i>	J. W. A.
13515	<i>Phyllophaga fervida</i>	W.
13516	<i>Phyllophaga anxia</i>	J. W. A.
13517	<i>Phyllophaga drakei</i>	J. W. A. S.
13520	<i>Phyllophaga marginalis</i>	W.
13521	<i>Phyllophaga spreta</i>	W.
13522	<i>Phyllophaga fraterna</i>	W.
13523	<i>Phyllophaga fosteri</i>	W. A.
13526	<i>Phyllophaga corrosa</i>	W. A.
13530	<i>Phyllophaga rugosa</i>	J. W. A. S.
13534	<i>Phyllophaga implicita</i>	J. W. A. S.
13535	<i>Phyllophaga balia</i>	W. A.
13536	<i>Phyllophaga villifrons</i>	W.
13537	<i>Phyllophaga nitida</i>	W. A.
13538	<i>Phyllophaga hirticula</i>	J.
13540	<i>Phyllophaga ilicis</i>	J. W. A.
13544	<i>Phyllophaga crenulata</i>	J. W. S.
13556	<i>Phyllophaga quercus</i>	W. A.
13563	<i>Phyllophaga tristis</i>	J. W. A. S.

No efforts were made to collect beetles in 1924 but in 1925, 4184 adults of Brood C were secured from Mt. Pleasant, Keosauqua and North English. The results of this work for the two years is tabulated below.

CATALOG NUMBER	SPECIES NAMES	COLLECTION OF 1923	COLLECTION OF 1925			TOTAL
			KEOSAUQUA	Mt. PLEASANT	NORTH ENGLISH	
13497	<i>futulis</i>	407		327	2	736
13501	<i>fraterna</i>	62	3	1		66
13503	<i>crassissima</i>	12	22			34
13507	<i>bipartita</i>		2			2
13508	<i>micans</i>	13	22	7		42
13510	<i>vehemens</i>		50			50
13511	<i>fusca</i>	100	5	1419		1524
13516	<i>anxia</i>		1			1
13517	<i>drakei</i>	7				7
13530	<i>rugosa</i>	90	136	227	15	468
13534	<i>implicita</i>	31	402	740	96	1269
13538	<i>hirticula</i>	517	390	310		1217
13540	<i>ilicis</i>	8	2			10
13544	<i>crenulata</i>	6				6
13563	<i>tristis</i>	1	5			6
	Totals	1254	1040	3031	113	5438

It is hoped to continue this investigation over a period of years, with the collection of larger numbers of the beetles and the keeping of more definite data.

The identifications were made by Mr. Robert J. Sim and a number of County Agriculture Agents and students helped with the collecting.

BIOLOGY DEPARTMENT,
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MT. PLEASANT, IOWA.

VASCULAR STRUCTURE OF THE KIDNEY IN THE
SNAPPING AND PAINTED TURTLES

WILLIS DE RYKE

(*ABSTRACT*)

This paper deals with the vascularization of the kidney in *Chrysemys marginata belli* (Gray) and *Chelydra serpentina*. The arrangement of the vessels in the kidney of the painted turtle produces a true renal portal system while that in the kidney of the snapping turtle permits a considerable amount of blood to shunt around the capillaries of the kidney.

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A NEW HOST FOR THE ASPIDOGASTRID TREMA-
TODE, *COTYLOGASTER OCCIDENTALIS*.

HARRY M. KELLY

(*ABSTRACT*)

This trematode, known heretofore only from W. S. Nickerson's one finding in the intestine of the sheepshead, *Aplodinotus grunniens*, from the Lake Pepin region of the upper Mississippi, occurs not infrequently in a restricted portion of the intestine of the clam, *Lampsilis luteola*, in West Lake Okoboji. In this same lake it has been taken sparingly from the sheepshead also, and as clams are included in the fish's diet, direct transfer by this means is suggested.