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## A Preliminary List of the Elateridea of Iowa

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## A PRELIMINARY LIST OF THE ELATERIDAE OF IOWA

BILLY OWEN AND H. E. JAQUES

The Elateridae, or click beetles as they are commonly called, constitute a comparatively large family. Leng's catalog lists over 600 species for North America, north of Mexico. While a few of our adult Elaterids reach the length of nearly two inches, the majority of our common species would range around ½ inch in length, and occasionally species are not over 1/10 inch long. They are elongate in form, tapering more or less at each end, thus somewhat resembling the Buprestidae but are more loosely jointed between the thorax and abdomen. Many are dull brown or blackish in color, and are covered with a fine pubescence. They are found beneath bark, logs, stones, at the roots and on the foliage of various plants. The elasticity of the Elateridae gives the members of this family the power to leap into the air when placed on their backs. The actual movement is directly due to these facts: first, the prosternum is prolonged into a spine which extends into a groove in the mesosternum; and second, there is a loose articulation between the prothorax and the mesothorax so that the former can freely move up and down. As a preparation for the leap, the beetle bends its body so as to bring the prosternal spine nearly out of the groove in the mesosternum. Then by relaxing the muscles, the body straightens and allows the prosternal spine to be forcefully plunged back into the groove. This violent blow given to the mesothorax causes the base of the elytra to strike the supporting surface with force; thus the insect is hurled upward for several inches. The purpose of this interesting movement seems to be two fold: protection from enemies and to turn the beetle back on its feet.

The eggs of the female are found mainly around the roots of grasses. The adults live 10 to 12 months. Most of this and all of the other stages is spent in the soil. The time spent in the egg stage is a few days to a few weeks. The larvae, after hatching, stay in the soil from 2 to 6 years, feeding on the roots of grasses and other plants. At the beginning of summer, the larvae migrate downward from the hot dry surface of the soil. In dry summer weather, it is often hard to find them even in severely infested areas. The winter is spent in the larval and adult stages in the ground.

The larvae of the Elateridae are known as wireworms. They are slender, cylindrical worms, ½ to 1½ inches or more in length. Their outer surface is usually brownish or yellowish, the segments easily distinguishable. They have three pairs of small, dark, jointed legs on the thorax, and a stump process on the last segment of the body. Some of them live under bark and decaying stumps, but the greater majority of them live in the ground, infesting a variety of field and garden crops and working on or in the roots of tubers. They are often destructive to grasses although they are more frequently noticed when attacking corn, and are especially injurious to the corn if it is planted in sod or the second year from sod.

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Wireworms are among the most difficult insects to control. Corn if attacked fails to germinate as the insects eat the seeds or hollow them out. If attacked after germination the young plant wilts and dies because the worms eat holes in the underground part of the stalk. As these worms live under ground, they are extremely hard to control or destroy. There is no application to the soil that will kill them unless made so strong that it proves injurious to the plant life also. Suitable crop rotation combined with fall plowing and good cultivation is the chief means of handling them. The fall plowing exposes the wireworms or the adults, depending upon in which stage they may be.

88 species of this family are now in the Iowa Insect Survey Collection and an additional 19 species have been reported by reliable authorities, making a total of 107 species now known to occur in Iowa. The list follows. It should be understood, of course, that there are doubtless many more species to be found within the state and it is hoped that further work can be done in this highly important family.

Help from the Iowa State University and through research funds from the Iowa Academy of Science has from time to time aided very materially in the work of the Iowa Insect Survey project.

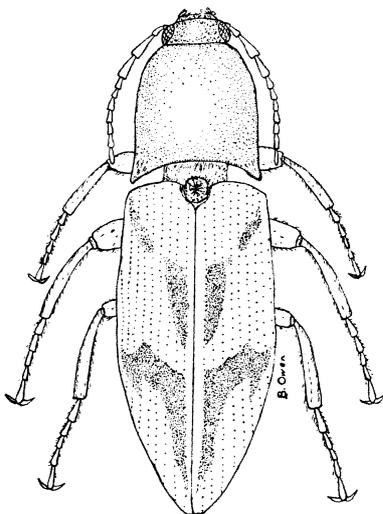


Figure 1. *Ludius hieroglyphicus* (Say)

- \*8553 *ADELOCERA AURORATA* (Say)  
 8554 *A. IMPRESSICOLLIS* (Say)  
 8560 *A. MARORATA* (Fab.)  
 8561 *A. DISCOIDEA* (Web.)  
 8564 *LACON RECTANGULARIS* (Say)  
 8571 *ALAUUS OCULATUS* (L.)  
 \*8596 *MONOCREPIDUS LIVIDUS* (DeG.)  
 8601 *M. VESPERTINUS* (Fab.)  
 8607 *CONODERES AURITUS* (Hbst.)  
 8609 *M. BELLUS* (Say)  
 \*8611 *M. BLANDULUS* Lec.  
 8613 *AEOLUS AMABILIS* (Lec.)  
 8613.5 *A. ELEGANS* (Fab.)  
 8614 *A. DORSALIS* (Say)  
 8616 *A. LIVENS* (Lec.)  
 8619 *LIMONIUS AURIPILIS* (Say)  
 8625 *L. PROPEXUS* Cand.  
 8625a *L. GRISEUS* Beauv.  
 8626 *L. INTERSTITIALIS* (Melsh.)  
 \*8627 *L. CONFUSUS* Lec.  
 8629 *L. PLEBEJUS* (Say)  
 8633 *L. QUERCINUS* (Say)  
 8635 *L. BASILLARIS* (Say)  
 8649 *PHELETES ANCEPS* (Lec.)  
 8650 *P. ECTYPUS* (Say)  
 \*8654 *P. NIMBATUS* (Say)  
 8662 *ATHOUS BRIGHTWELLI* (Kby.)  
 8663 *A. ACANTHUS* (Say)  
 8666-1 *A. CAROLINUS* Van D.  
 8667 *A. CUCULLATUS* (Say)  
 8668 *A. SCAPULARIAS* (Say)  
 8708 *LUDIUS SJAELANDICUS* (Muller)  
 8715 *L. PYRRHOS* (Hbst.)  
 8721 *L. CYLINDRIFORMIS* (Hbst.)  
 \*8739 *L. SPINOSUS* (Lec.)  
 8780 *L. INFLATUS* (Say)  
 \*8791 *L. ROTUNDICOLLIS* (Say)  
 8796 *L. HIEROGLYPHICUS* (Say)  
 \*8807 *GLYPHONYX TESTACEUS* (Melsh.)  
 8812 *HEMICREPIDIUS INDISTINCTUS* (Lec.)  
 8813 *H. DECOLORATUS* (Say)  
 8814 *H. MEMNONIUS* (Hbst.)  
 8815 *H. BREVICOLLIS* Cand.  
 8817 *H. BILOBATUS* (Say)  
 \*8821 *CRYPTOHYPNUS EXIGUUS* Rand.  
 8826 *C. ABBREVIATUS* (Say)  
 \*8834 *HYPNOIDUS CHORIS* (Say)  
 8836 *H. CUCULLATUS* Horn  
 8844 *H. AESTIVUS* Horn  
 8848 *H. OBLIQUATULUS* (Melsh.)  
 8849 *H. PECTORALIS* (Say)  
 8850 *OEDOSTETHUS FEMORALIS* Lec.  
 8853 *MELANACTES PICEUS* (DeG.)  
 8856 *M. PUNCTICOLLIS* (Lec.)  
 8861 *PARALLELOSTHUS ATTENUATUS* (Say)  
 8866 *NEOTRICHOPHORUS ABRUPTUS* (Say)  
 8875 *OXYGONUS OBESUS* (Say)  
 8878 *DOLOPIUS LATERALIS* Esch.  
 8885 *AGRIOTES MANCUS* (Say)  
 8886 *A. STABILIS* (Lec.)  
 8887 *A. INSANUS* Cand.  
 8888 *A. FUCOSUS* (Lec.)  
 8893 *A. PUBESCENS* Melsh.  
 8897 *A. OBLONGICOLLIS* (Melsh.)  
 8900 *A. AVULSUS* (Lec.)  
 8906 *GLYPHONYX RECTICOLLIS* (Say)  
 8909 *G. QUIETUS* (Say)  
 8910 *G. INQUINATUS* (Say)  
 8934 *ELATER NIGRICOLLIS* Hbst.  
 8935 *E. LINTEUS* Say  
 8936 *E. SELLATUS* Dej.  
 8938 *E. LAESUS* Lec.  
 8939 *E. SAYI* Lec.  
 \*8940 *E. VERTICINUS* Beauv.  
 \*8941 *E. SEMIINCTUS* Rand.  
 8942 *E. MILITARIS* Harris  
 \*8943 *E. RUBRICUS* Say  
 8948 *E. COLLARIS* Say

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| 8950 E. SANGUINIPENNIS Say               | 9036 M. FISSILIS (Say)                |
| 8953 E. APICATUS Say                     | *9040 M. PARUMPUNCTATUS<br>(Melsh.)   |
| 8955 E. OBLIQUUS Say                     | 9042 M. VERBERANS (Lec.)              |
| 8955a E. OBLIQUUS AREOLATUS<br>Say       | *9045 M. CRIBULOSUS (Lec.)            |
| *8956 E. PUSIO Germ.                     | 9048 M. PERTINAX (Say)                |
| 8959 E. MANIPULARIS Cand.                | 9051 M. AMERICANUS (Hbst.)            |
| *8960 E. PEDALIS Germ.                   | 9054 M. GRADATUS Lec.                 |
| *8968 E. LUCTUOSUS Lec.                  | 9055 M. OPACICOLLIS Lec.              |
| 8971 ECTAMENOGONUS MEL-<br>SHEIMERI Leng | 9061 M. PILOSUS Blatch.               |
| 8996 ISCHIODONTUS SOLEATUS<br>(Say)      | *9063 M. PARADOXUS Melsh.             |
| 9019 MELANOTUS DECUMANUS<br>(Er.)        | 9071 CARDIOPHORUS CARDISCE<br>(Say)   |
| 9026 M. DEPRESSUS (Melsh.)               | 9092 C. CONVEXLUS Lec.                |
| 9029 M. TRAPEZOIDEUS (Lec.)              | 9117 HORISTONOTUS UHLERI<br>Horn      |
| 9034 M. DIVARCARINUS Blatch.             | *9124 ESTHESOPUS CLARICOLLIS<br>(Say) |
| 9035 M. COMMUNIS (Gyll.)                 |                                       |

IOWA WESLEYAN COLLEGE  
MT. PLEASANT, IOWA

\*Reported for Iowa but not as yet found by Survey collectors.