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COLEOPTERA OF THE IDAHO NATIONAL ENGINEERING LABORATORY: AN ANNOTATED CHECKLIST

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ABSTRACT.—An insect survey was conducted on the Idaho National Engineering Laboratory during the summers of 1981–1983. This site is on the Snake River Plains in southeastern Idaho. Presented here is an annotated checklist of the Coleoptera collected. Successful collecting methods, dates of adult occurrence, and relative abundance are given for each species. Relevant biological information is also presented for some species.

The Idaho National Engineering Laboratory (INEL) was designated an Environmental Research Park in 1975. Because of the increased number of ecological studies on the INEL since this time, there is a need for an entomofaunal list for this area. This information will be valuable to many biologists since insects interact with many other organisms, e.g., plants as pollinators and herbivores or vertebrates as food and parasites. Therefore, an insect survey was conducted on the INEL during the summers of 1981–1983. The objectives of this survey were to document the taxonomic composition of the insect fauna and the seasonal occurrence, relative abundance, and host information for the insect species present.

Several arthropod surveys were conducted on the INEL, formerly known as the National Reactor Testing Station, under the auspices of Brigham Young University. Allred (1968) reported seven species of ticks from a variety of hosts. Forty-two species of spiders were collected in a pitfall trap survey (Allred 1969). Allred and Cole (1971) published a checklist of 22 species of ants, and Allred and Muma (1971) listed the solpugid species found on the INEL. Allred (1973) reported the occurrence of scorpions. Although these studies provide valuable information on the ant and arachnid faunas, information on other insect taxa is lacking.

STUDY AREA

The INEL is on the Upper Snake River Plains at the base of the Lost River and Lemhi

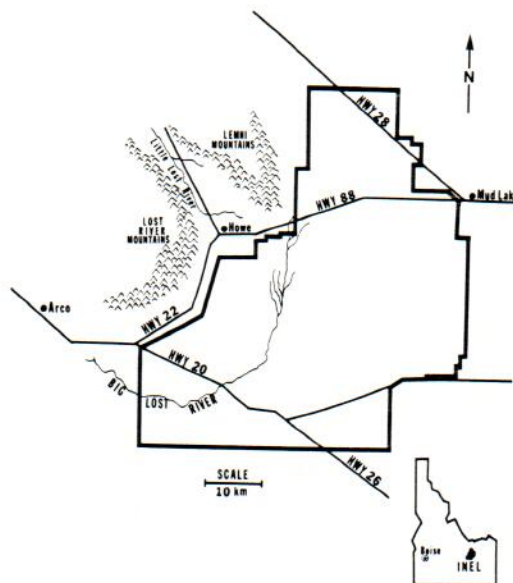


Fig. 1. Location and detail of the Idaho National Engineering Laboratory.

Mountain Ranges in southeast Idaho (Fig. 1). The topography is flat to gently rolling; mean elevation is 1,490 m. Soils are generally aeolian sandy loams and loess and classified as Aridisols (McBride et al. 1978), with scattered lava outcroppings. The vegetation is dominated by big sagebrush (*Artemisia tridentata* Nutt.) Other conspicuous shrubs include green rabbitbrush (*Chrysothamnus viscidifloris* [Hook.] Nutt.), gray rabbitbrush (*C. nauseosus* [Pall.] Britt.), gray horsebrush (*Tetradymia canescens* D.C.), and winter fat

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(*Ceratoides lanata* [Pursh] J. T. Howell). The dominant grasses are bluebunch wheatgrass (*Agropyron spicatum* [Pursh] S. & S.), Indian ricegrass (*Oryzopsis hymenoides* [R. & S.] Ricker), bottlebrush squirreltail (*Sitanion hystrix* [Nutt.] J. B. Smith), and needle-and-thread (*Stipa comata* Trin. & Rupr.). The more alkaline areas are dominated by shadscale (*Atriplex confertifolia* [Torr. & Frem.] Wats.) and saltsage (*A. nuttallii* Wats.). In depressions prone to flooding are stands of Great Basin wildrye (*Elymus cinereus* Scribn. & Merrill). Extensive stands of Utah juniper (*Juniperus osteosperma* [Torr.] Little) occur on the foothills of the surrounding mountains. Harniss and West (1973) described the vegetation patterns and presented a detailed map of the vegetation found on the INEL. Jeppson and Holte (1978) listed the plant species found in the area.

RESULTS

Presented here is an annotated checklist of the Coleoptera we collected in approximately 800 man-hours of collecting during this survey and previous collecting efforts on the INEL over the last 25 years by one of us (WFB). The list includes 214 species in 29 families, making it the most extensive faunal list yet published for the INEL. This information should be useful for those undertaking entomological and ecological studies in semiarid regions of the West, particularly in the Great Basin and Snake River Plains. The placement of family names follows *A Catalog of the Coleoptera of America North of Mexico* (Kingsolver 1979). Genus and species names are arranged in alphabetical order. Determinations, except as noted in the acknowledgments, were made by the authors and Paul J. Johnson (also at the University of Idaho) using published keys, e.g. Arnett (1963) and Hatch (1953-1973), and the University of Idaho insect collection as reference material. Following each species are the collecting methods, dates of occurrence, and abundance. Biological information is presented for some species. Voucher specimens are housed in the William F. Barr Entomological Museum at the University of Idaho.

Collecting Methods

BF = Berlese Funnel; GC = General Collecting; LT = Light Trap; MT = Malaise Trap;

SW = Sweep Net; PE = Plant Examination; PF = Pitfall Trap; WP = Windowpane Trap.

Relative Abundances

U = Uncommon, 1-15 specimens; C = Common, 16-50 specimens; A = Abundant, 51+ specimens.

The assignment of the abundance rating is subjective. It is based upon both the number of specimens collected and on personal observations. Because of population fluctuations we have observed over the years, these ratings may not always be indicative of the abundance of a species in that particular year. Also, the collecting methods employed may not always reflect the relative abundance of a species.

COLEOPTERA CHECKLIST

Carabidae

- Agonum balesi* Gray: PF; May, Jun; U.
Agonum placidum (Say): LT; Jul; U.
Amara apricaria Paykull: LT; Jul; U.
Amara impuncticollis Say: PF; Jul; U.
Amara laticollis LeConte: LT; Jul; U.
Amara musculus Say: PF; Jun, Jul; U.
Amara sp. (poss. *quenseli* Schonherr): PF; Jul; U.
Axinopalpus biplagiatus (Dejean): PF, WP; Jul; U.
Bembidion immaculosum Hatch: LT, PF; Jul, Aug; U.
Bembidion nebraskense LeConte: LT; Aug; U.
Bembidion obscurellum Motschulsky: LT; Jul, Aug; A.
Bembidion rupicola Kirby: LT; Aug; U.
Bembidion timidum LeConte: LT; Aug; U.
Calosoma luxatum Say: PF; May-Jul; U.
Cicindela decemnotata Say: PF, GC; May-Aug; U.
Cymindis planipennis LeConte: PF; Jun-Aug; U.
Harpalus amputatus Say: PF; May; U.
Harpalus basilaris Kirby: PF; Jun; U.
Harpalus fraternus LeConte: LT, PF; Jun, Jul; U.
Lebia vittata (Fabricius): WP; May-Jul; U.
Microlestes nigrinus (Mannerheim): PF; Jun, Jul; U.
Philophuga viridis Dejean: PF, PE; May-Jul; U.
 Larva observed feeding on larva of the sagebrush defoliator, *Aroga websteri* Clark, (Lepidoptera: Gelechiidae), on *A. tridentata*.

Piosoma setosa LeConte: PF, WP; Jun, Jul;
U. New state record.
Pseudomorpha behrensi Horn: PF; Jul, U.

Dytiscidae

Laccophilus decipiens LeConte: LT; Aug; U.

Hydrophilidae

Berosus fraternus LeConte: LT; Jul; U.
Berosus styliferus Horn: LT; Jul, Aug; U.
Cercyon quisquilius (Linnaeus): LT; Jul; U.
Helophorus sp.: LT; Jul, Aug; U.
Sphaeridium scarabaeoides (Linnaeus): PF;
Jun-Aug; U.

Histeridae

Psiloscelis corrosa Casey: WP; Jun; U. New
state record.
Saprinus lugens Erichson: GC; May; U.
Saprinus oregonensis LeConte: PF; Jun, Jul;
U.
Xerosaprinus acilinea (Marseul): PF; Jun, Jul;
U.
Xerosaprinus lubricus (LeConte): PF; Jun-
Aug; C.

Scarabaeidae

Aphodius denticulatus Haldeman: LT, PF;
May-Jul; U.
Aphodius distinctus Müller: PF; May; U.
Aphodius fossor (Linnaeus): GC; Jul; U.
Aphodius hirsutus Brown: PF; May; U.
Aphodius granarius (Linnaeus): PF; Jun; U.
Aphodius vittatus Say: PF; Jul; U.
Aphodius sp. (poss. *militaris* LeConte): PF,
WP; May; U.
Boreocanthion simplex (LeConte): PF; May;
U.
Cremastocheilus crinitus bifovius Van
Dyke: PF, GC; Jun, Jul; U.
Dichelonyx truncata LeConte: GC; Jun, Jul;
C.
Diplotaxis haydenii LeConte: GC, LT, WP;
Jun, Jul; U.
Diplotaxis obscura LeConte: PF; May-Aug;
C.
Diplotaxis subangulata LeConte: LT, WP;
Jul; U.
Glaresis canadensis Brown: PF; Jun-Aug; C.
Ochodaeus simplex LeConte: LT, WP; Jul, U.
Paracotalpa granicollis (Haldeman): GC; Jul;
U.
Serica anthracina LeConte: GC, PF; Jun; U.

Serica barri Dawson: LT, PF; Jul; A.
Trox sp.: LT; Jun; U.

Leiodidae

Hydnobius sp.: LT, PF; Jun, Jul; U.
Ptomophagus californicus (LeConte): PF; Jul;
U.

Silphidae

Nicrophorus hecate Bland: PF, WP; May-
Aug; C.

Staphylinidae

Anotylus sp.: LT; Aug; U.
Bledius strenuus Casey: LT; Jul; U.
Philonthus concinnus (Gravenhorst): PF; May;
U.
Philonthus cruentatus (Gmelin): PF; May; U.
Platystethus americanus (Erichson): LT; Aug;
U.
Tachinus angustatus Horn: WP; Jun; U.

Pselaphidae

Pilopius sp.: GC; May; U.

Heteroceridae

Lanternarius brunneus (Melsheimer): LT;
Jun; U.

Buprestidae

Acmaeodera immaculata Horn: GC, PE; Jul;
C. Larvae bore roots of *C. lanata*, adults on
flowers of *Opuntia polyacantha* Haw.
Agrilus politus (Say): GC, PE; Jul-Aug; U.
Larvae bore *Salix* spp.
Agrilus pubifrons Fisher: GC, PE, SW; Jul,
Aug; C. Larvae bore roots and adults feed in
the flowers of *C. viscidifloris*.
Agrilus walsinghami Crotch: GC, PE; Aug;
U. Larvae bore roots of *C. nauseosus*.
Anthaxia retifer LeConte: GC, PE; May; U.
Adults on flowers of *Balsamorhiza sagittata*
(Pursh) Nutt.
Chrysobothris deleta LeConte: GC, PE; Aug;
U. Larvae bore roots of *A. tridentata*.
Chrysobothris horningi Barr: GC, PE; May;
U. Larvae bore roots of *Eriogonum* spp.
Chrysobothris idahoensis Barr: GC, PE; Jun-
Aug; U. Larvae bore roots of *Eriogonum* spp.
Chrysobothris texana LeConte: GC, PE;
Jun-Aug; C. Larvae bore branches of *J. os-
teosperma*.
Nannularia brunneata (Knull): GC, PE; Jul; U.
Larvae bore roots of *Eriogonum* sp.

Elateridae

- Ampedus ursinus* (Van Dyke): PF; Jun; U.
Anchastus cinereipennis (Ecshscholtz): PF;
 May-Jul; C. Adults associated with *E. cinereus*.
Cardiophorus sp. 1: BF, PF; Mar, May, Jun; U.
Cardiophorus sp. 2: PF; May, Jun; U.
Cardiophorus sp. 3: GC, PF; May, Jun; U.
Cardiophorus sp. 4: WP; Jun; U.
Cardiophorus sp. 5: BF, PF, WP; Mar, May; U.
Ctenicera noxia (Hyslop): PF; May, Jun; U.
Ctenicera semivittata (Say): GC; May; U.
Hypolithus bicolor (Eschscholtz): PF; Jul; U.

Cantharidae

- Malthodes* sp.: GC; May, U.

Dermestidae

- Dermestes marmoratus* Say: GC, LT; Jul, Aug; C.

Cleridae

- Enoclerus acerbus* Wolcott: GC, PF, WP; May-Jul; C.
Enoclerus barri Knull: GC; Jul, Aug; U.
Phyllobaenus sp.: GC, PE, SW, WP; Jun-Aug; C. Adults often found on *A. tridentata* preying on small Lepidoptera larvae.
Trichodes ornatus Say: WP; Jul; U.

Melyridae

- Amecoceris* spp.: BF, PF, WP; May-Jul; A.
Attalus glabrellus Fall: GC, WP; May-Jul; C.
Attalus morulus smithi Hopping: GC, SW; May, Jun; U. Adults associated with *E. cinereus*.
Attalus oregonensis Horn: GC, PE, PF; Jun, Jul; C. Adults feed on pollen in flowers of *O. polyacantha*.
Collops bipunctatus (Say): PE, SW; Jul; U. Adults feed on pollen of *E. cinereus*.
Collops bridgeri Tanner: GC, PF; May-Jul; U.
Collops hirtellus LeConte: SW; Jun; U.
Collops punctulatus LeConte: PF, WP; U.
Dasytillus sp.: PF, WP; Jul; C.
Hoppingiana nitida Hatch: WP; Jul; U.
Trichochrous spp.: GC, PE, WP; C. Adults feed on pollen in flowers of *O. polyacantha*.

Nitidulidae

- Brachypterolous pulicarius* (Linnaeus): WP; Jul; U.
Carpophilus pallipennis (Say): GC, PE, WP; Jun-Aug; C. Adults feed on pollen in flowers of *O. polyacantha*.

Phalacridae

- Olibrus rufipes* LeConte: GC, PE; Aug; C. Adults feed on pollen in flowers of *C. viscidifloris*.
Phalacrus penicillatus Say: GC, PE, SW; U. Adults associated with *E. cinereus*.

Coccinellidae

- Brachyacantha dentipes socialis* Casey: GC; Aug; U.
Brachyacantha ursina uteella Casey: GC, SW; Jun, Jul; U.
Brumus septentrionus Weise: GC; Jun-Aug; U.
Coccinella difficilis Crotch: WP; May, Jun; U.
Coccinella novemnotata degener Casey: SW; Aug; U.
Coccinella prolongata Crotch: WP; Jun; U.
Coccinella transversoguttata richardsoni Brown: GC, LT; May-Aug; U.
Hippodamia apicalis Casey: GC, SW, WP; Jun-Aug; A.
Hippodamia convergens Guerin: SW; May-Aug; U.
Hippodamia glacialis lecontei Mulsant: WP; Aug; U.
Hippodamia quinquesignata Kirby: GC; May; U.
Hippodamia tredecimpunctata tibialis (Say): LT; Aug; A.
Hyperaspidius hercules Belicek: PF, WP; Jun-Aug; U.
Hyperaspidius vittigera LeConte: WP; Aug; U.
Hyperaspis lateralis montanica Casey: MT, SW, WP; May-Aug; U.
Nephus sordidus (Horn): PF; Jun; U.
Scymnus caurinus Horn: SW; Jun; U.
Scymnus marginicollis Mannerheim: PF, WP; Jun-Aug; U.
Scymnus postpictus Casey: WP; Jul; U.

Lathridiidae

- Melanophthalma americana* Mannerheim: BF; May; U.
Melanophthalma sp.: SW; Jul; U.

Tenebrionidae

- Alaudes singularis* Horn: BF; Mar; U.
Araeoschizus airmeti Tanner: GC, PF; May–Aug; U. Inquiline in the nests of the harvester ant, *Pogonomyrmex owbyheei* Cole
Blapstinus barri Boddy: PF, WP; May, Jun; U.
Blapstinus substriatus Champion: PF, WP; May–Jul; C.
Coelocnemis punctatus LeConte: PF; Aug; U.
Coniontis obesa LeConte: PF; May, Jun; U.
Coniontis setosa Casey: BF, PF; Mar, May, Jun; U.
Eleodes cordata Eschscholtz: PF; May–Aug; U.
Eleodes extricata cognata Haldemann: GC, PF; May–Aug; A.
Eleodes hispilabris connexa LeConte: PF; May–Jul; U.
Eleodes nigrina LeConte: GC; Jul, Aug; U.
Eleodes obscura Say: PF; May–Aug; U.
Eleodes pilosa Horn: GC, PF; May–Aug; A.
Embaphion elongatum Horn: PF; May–Jul; U.
Helops californicus Mannerheim: PF; May, Jun; U.
Helops convexulus LeConte: BF; Mar; U.
Helops opacus LeConte: PF; May–Jul; U.
Melanastus ater (LeConte): BF, PF, Mar, Jul; U.
Oxygonodera hispidula (Horn): PF; May–Aug; C.
Sphaeriontis muricata (Casey): PF; Jun; U.

Alleculidae

- Mycetochara procera* Casey: GC, WP; May, Jun; U.

Oedemeridae

- Oxaxis bicolor* (LeConte): WP; Jul; U.

Mordellidae

- Mordellistena idahoensis* Ray: PF; Jun; U.
Mordellistena sericans Fall; MT, WP; Jun, Jul; U.

Meloidae

- Epicauta immerita* Walker: WP; Jun; U.
Epicauta piceiventris Maydell: WP; Jul; U.
Gnathium eremicola Macswain: GC, PE; Aug; A. Adults feed on nectar in flowers of *C. viscidifloris*.
Lytta vulnerata cooperi LeConte: GC, PE; Aug; U.
Nemognatha lutea LeConte: GC; Jun; U.

Anthicidae

- Anthicus cervinus* LaFerté: LT; Aug; U.
Anthicus formicarius LaFerté: PF; Jul; U.
Anthicus hastatus Casey: LT; Aug; U.
Notoxus serratus LeConte: GC, PE, PF, WP; May–Jul; C. Adults feed on pollen and developing seeds of *E. cinereus*.

Cerambycidae

- Centrodera nevadica nevadica* LeConte: LT, PF, WP; Jul, Aug; C.
Cortodera barri Linsley & Chemsak: GC, MT, PE, PF, WP; Jun; U. Adults associated with *E. cinereus*.
Crossidius ater LeConte: GC, PE; Aug, Sep; U. Larvae bore roots of *A. tridentata*.
Crossidius coralinus LeConte: GC, PE; Aug; U. Larvae bore roots and adults feed on pollen of *C. nauseosus*.
Crossidius hirtipes allgewahri LeConte: GC, PE; Aug; U. Larvae bore roots and adults feed on pollen of *C. viscidifloris*.
Crossidius punctatus LeConte: GC, PE; Aug, Sep; U. Larvae bore roots and adults feed on pollen of *C. nauseosus*.
Judolia gaurotoides Casey: GC, PF; May; U.
Mecas bicallosa Martin: PE; Jun; U. Larvae bore roots of sagebrush.
Megacheuma brevipennis (LeConte): GC, PE; Aug; C. Larvae bore roots of *A. confertifolia*, *A. nuttali*, and *Sacrobatus vermiculatus* (Hook.) Torr.
Megasemum asperum (LeConte): LT; Jul; U.
Prionus californicus Motschulsky: GC; Aug; U.

Bruchidae

- Acanthoscelides pauperculus* (LeConte): GC, WP; Jun–Aug; U.

Chrysomelidae

- Altica* sp.: GC; Jun; U. Adults associated with *E. cinereus*.
Anisostena californica Van Dyke: GC; Aug; U. Adults associated with *E. cinereus*.
Brachycoryna montana (Horn): GC; Jul; U.
Chaetocnema sp.: PF; Jun, Jul; U.
Crepidodera nana (Say): GC; Jun; U.
Cryptocephalus spurus LeConte: GC, SW; Jul; U. Adults and larvae feed on foliage of *C. viscidifloris*.
Disonycha latifrons Schaeffer: PF, SW; May–Aug; C. Larvae and adults feed on foliage of *C. viscidifloris*.

- Exema conspersa* (Mannerheim): SW; Jul, Aug; U.
Glyptoscelis sp. (poss. *artemisiae* Blake): PF, SW, WP; May, Jun; U.
Monoxia consputa LeConte: PF, SW, WP; May, Jun; U.
Monoxia pallida Blake: WP; Jul; U.
Monoxia puberula Blake: GC; Jul; U.
Pachybrachys caelatus LeConte: PE, SW; Jun-Aug; C. Feeds on foliage of *C. viscidifloris*.
Pachybrachys jacobyi Bowditch: GC; Jun-Aug; U.
Phyllotreta albionica LeConte: PF, SW; May-Aug; C. Adults commonly found on wild mustards, *Descurania* spp. and *Schoenocrambe linifolia* (Nutt.) Greene.
Pyrrhalta luteola (Müller): GC; Jul; U.
Pyrrhalta nymphaeae (Linnaeus): GC; Jun; U.
Saxinis saucia LeConte: GC; Jul; U.
Scelolyperus nigrovirens (Fall): GC; Jun; U.
Stenopodius vanduzeei Blaisdell: GC; Jul; U.
Systema blanda (Melsheimer): GC; Jul; U.
Trirhabda nitidicollis LeConte: GC, PE, Jul; C. Adults and larvae feed on *C. nauseosus*.

Anthribidae

- Trigonorhinus* sp. (near *annulatus* Carr): WP; Jun, Jul; U.

Curculionidae

- Acmaegenius granicollis* Van Dyke: GC; Jun; U.
Anthonomus sp. 1: GC, PE, SW; Jun-Aug; U. Adults feed on foliage of *C. viscidifloris*.
Anthonomus sp. 2: GC, PE, SW; Jun-Aug; U. Adults feed on foliage of *C. viscidifloris*.
Apion sordidum Smith: PE, PF, SW, WP; May-Jul; U. Inquiline in tephritid and cecidomyiid galls on *A. tridentata*.
Brachyrhinus ovatus (Linnaeus): GC; Jun-Aug; U.
Cleonus kirbyi Casey: PF; May, Jun; U.
Cleonus quadrilineatus (Chevrolat): PF; May, Jun; U.
Cosmobaris americana Casey: MT; Jun; U.
Dinocleus denticollis Casey: PF; May, Jun; U.
Dyslobus alternatus Horn: PF; May-Aug; C. Gyrotus sinuatus Hatch: PE; Jul; U. Larvae bore in *Artemisia* stems.
Miloderoides maculatus VanDyke: PF; Jun, Jul; U.

- Myrmex vittatus* (Horn): GC; Jul, Aug; U.
Ophryastes latirostris LeConte: GC, PE; Jun; U. Larvae and adults feed on foliage of *C. lanata*.
Sitona hispidula (Fabricius): LT; Aug; U.
Smicronyx sp.: PF; SW; Jun-Aug; U.
Sphenophorus gentilis LeConte: PE, PF, SW; May-Jul; A. Adults feed on developing seed heads of *E. cinereus*.
Trachyploeni sp. (undescribed genus): PF; Jul, Aug; U.
Tychius tectus LeConte: PF; June; U.

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