CHRYSOMELIDAE OF WIND CAVE NATIONAL PARK
SOUTH DAKOTA

by

WILLIAM LEROY SIGAFOOS
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INTRODUCTION

Wind Cave National Park is located in the Southwest corner of South Dakota where it occupies some 28,000 acres in Custer County. It ranges in altitude from 5,013 feet at Rankin Ridge to 3,600 in the southeast corner. It is about three-fourths grassland and one-fourth Ponderosa pine, *Pinus ponderosa* Dougl., forest. The grassland areas are dominated by the bluestems and other prairie grasses. Several species of sumac, *Rhus*, along with goldenrod, *Solidago*; sage, *Artemisia*; and sunflower, *Helianthus petiolaris* Nutt., occur also. No ponds or lakes are present in the park. The main water source is Beaver Creek, a small stream which flows part way through the park before sinking underground. Most of the rain occurs in May and June and the remainder of the summer is hot and dry.

The National Park Service is always interested in the acquisition of more knowledge concerning the areas under their administration. They are continually promoting the historical and biological studies which lead to this understanding. The suggestion has recently been made that an entomological study be carried on at Wind Cave National Park; with this in mind the current investigation was organized so that it might be used as a basis for a future enlarged study of the insects of the area.

Very little work had been done in previous years in this particular section of the United States. Earlier information relating to this family was available mainly from the collections of Kansas and Kansas State Universities and from the literature pertaining to the group. A small amount of actual collecting had been done in the area; this was by M. W. Sanderson in 1935, by R. H. Beamer in 1937 and by H. C. Severin in 1947.

It was hoped that some of the biology of these beetles could be learned in connection with determining the species present in the park. However,
since the study was made over a relatively short period, the chief accomplishment along this line was the association of certain species with their host plants.

LITERATURE REVIEW

The literature pertaining to the Chrysomelidae of this area was widely scattered. The Leaf Beetles of Ohio (Wilcox, 1954) was the most valuable single piece. It not only contained keys and descriptions but was the newest monograph treating the entire family. The generic monographs published by Blake at various times (1927 to 1955) afforded valuable help in species records as well as in providing keys; Blatchley (1910) included in Coleoptera of Indiana some species which were not recorded by Wilcox.

Another help was the unpublished work, The Keys to North American Species of Chrysomelidae, compiled by Wilcox, who has attempted here to bring together all the keys pertinent to the family. Some occur as they have been previously published in other papers, some he modified and brought up to date by including new species which had been described after the keys were published and still others are keys which he formulated out of his own observations and work with the Chrysomelidae.

Leng's catalogue (1920) and supplements were useful in providing species records as well as in being the source for locating the descriptions of some of the species scattered throughout the literature on Coleoptera.

METHODS AND MATERIALS

Collections were made in the summer of 1959. Most of the specimens were taken without the use of a net in order that beetle-host relationships could also be established. Less precise, but more strenuous methods, such as
sweeping, might have yielded a few additional species.

It was felt at first that the occurrence of a given species could be definitely established only by collecting it within the park boundary. However, due to limitations imposed by collecting methods and unusually poor climatic conditions, other sources of information were needed. Species records in literature as well as collections at the University of Kansas and Kansas State University were examined; an effort was made to obtain collecting records from other institutions but positive results in these attempts were not forthcoming. On the basis of comparable vegetational and environmental areas surrounding the park, species recorded in the literature as occurring in nearby areas have been included.

Identification was carried out later in the laboratory by making use of existing keys to the Chrysomelidae and of identified material in the Kansas State University collection. In some groups, particularly the Alticinae (flea beetles), adequate keys do not presently exist and certain species could be determined only to genus. In others, where only one or two individuals were collected, positive determination was difficult because of the individual variations which normally occur within species.

The keys used most extensively were the ones set up by Wilcox (1954). Where these keys did not work or in order to compare the results of the first identification three other sources were employed. These were The Keys to North American Species of Chrysomelidae (Wilcox, unpublished); Coleoptera of Indiana (Blatchley, 1910); and Doris Blake's series of generic monographs published by the United States National Museum (1927 to 1955). The keys included in the present paper have been modified and adapted from the above sources to fit the species found in Wind Cave National Park.
LIST OF SPECIES

The following list is of the 24 genera and 36 species which are included in this paper. It contains those which have been collected in the park as well as those which should be found there. The species marked with an asterisk (*) are those which are presently known to occur in the park.

CHRYSTEMELIDAE

Criocerinae

Lema
- trilineata Oliv.

Clytrinae

Anomoea
- laticlavia (Forst.)

Coscinoptera
- vittigera Lec.
- dominicana Fab.

Cryptoccephalinae

Cryptoccephalus
- confluentus Say

Pachybrachys
- othonus (Say)

Eumolpinae

Nodonota
- tristis (Oliv.)

Myochrous
- squamatus

Chrysomelinae

Leptinotarsa
decemlineata (Say)

Zygogramma
*exclamationis (Fab.)

Gastrophysa
cyanea Meish

Chrysomela
crotchii Brown

Calligrapha
lunata (Fab.)

Galerucinae

Diabrotica
*stripenis (Say)
*fossata (Say)

Galerucella
*integra (Lec.)
*americana (Fab.)
*cribrata (Fab.)
Galerucella (con't)

nymphaeae (L.)

Trirhabda

*canadenis (Kby)

adela Blake

attenuata (Say)

convergens Lec.

Acalymma

vittata (Fab.)

Alticinae

Disonycha

*punctiger Lec.

triangularis (Say)

Altica

ovulata Fall

Alticinae (con't)

Orthaltica

*copalina (Fab.)

Cheatocnema

*subviridis Lec.

Hispinae

Microrhopala

*vittata (Fab.)

Cassidinae

Chelymorpha

*cassidea (Fab.)

Jonthonota

nigripes

Four species could not be identified beyond the genus. These included one each in Monoxia, Altica, Coscinoptera, and Diabola.
KEY TO THE SUBFAMILIES OF CHRYSOCELIDAE

1. Front normal, mouth anterior ........................................... 2
   Front inflexed, mouth turned caudad ................................ 11
2. Intermediate sternites not narrowed; no exposed pygidium .......... 3
   Intermediate sternites narrowed medially; a pygidium usually present. 6
3. Pronotum without lateral margin ..................................... 4
   Pronotum with a lateral margin ..................................... 8
4. Antennae separated by the entire width of the front .............. 5
   Antennae somewhat approximate; first sternite as long as all the others ............................................................ Donaciinae
5. Elytral punctation confused, or in rows, pronotum has small teeth on sides; prosternum distinct ........................................ Orsodacninae
   Elytral punctation in regular rows, pronotum without lateral teeth, prosternum very narrow ..................................... Criocerinae (p. 7)
6. Prosternum with antennal grooves .................................. Chlamisinae
   Prosternum without antennal grooves ................................ 7
7. Antennae filiform or clavate ........................................ Cryptocephalinae (p. 8)
   Antennae dentate or pectinate from beyond the third or fourth segment ................................................................. Clytrinae (p. 7)
8. Antennae separated by entire width of front ...................... 9
   Antennae approximate at base ........................................ 10
9. Anterior coxal cavities circular .................................... Eumolpinae (p. 10)
   Anterior coxal cavities transversely oval ........................ Chrysomelinae (p. 11)
10. Hind femora slender, lacking apodeme ............................. Galerucinae (p. 12)
    Hind femora swollen, with inner sclerotized organ ............... Alticinae (p. 17)
II. Head free; margins of prothorax not explanate ........... Hispinae (p. 19)
    Head concealed; or margins of prothorax explanate .... Cassidinae (p. 19)

CRIOCERINAE

Lema

Elytra unicolorous blue or black ........................................... collaris
Elytra yellow, with longitudinal stripes .............................. trilineata

Lema collaris Say

Journal Academy Natural Science Philadelphia, 3:430, 1823

Elytra shining dark blue; pronotum shining yellow, very finely and sparsely punctate; length, 4-5 mm., width, 2-2.2 mm.

Although this species has not been collected from the park, it does occur in areas to the south and east. The host plant is spiderwort, Tradescantia virginiana L., and is found from spring to fall in the park.

Lema trilineata (Oliv.)

Entomologie, VI, Paris, p. 739, 1808

Yellow, robust; elytra with sutural and submarginal stripes black, pronotum with two small black spots; antennae, tibiae, and tarsi black; length, 6-7.5 mm., width, 2.8-3.5 mm.

L. trilineata feeds on solanaceous plants.

CLYTRINAE

Front coxae contiguous .................................................... Anomoea
Front coxae separated ..................................................... Coscinoptera

Anomoea

Anomoea laticlavia (Forst.)

Chrysomela laticlavia Forster 1771, Nov. Sp. Ins. 1:27
Yellow, subcylindrical; tibiae, antennae and sutural stripe black; the one occurring in the park area also has the apical half of the lateral margin black; length, 6-8 mm., width, 3-4 mm.

_Coscinoptera_

Disc of thorax evenly and regularly convex; punctuation dense and even; a smooth median line, no humeral spot; black .................._domicana_

_Disc of thorax uneven and irregularly convex, the punctuation unevenly disposed and rather coarse, no well defined smooth median line, elytra vittate._

_vittigera_

_Coscinoptera dominicana_ Fab.

_Syst. El. II, p. 34._

Cylindrical, robust; black with white pubescence denser on ventral surface than on dorsal; length, 4-6 mm., width, 2.3-3.5 mm.

This species was taken from the skunk brush, _Rhus trilobata_ Barkley, which apparently was its food plant.

_Coscinoptera vittigera_ Lec.

_Proc. Acad. N. S. Phila. 1861, p. 357._

Less robust than _domicana_, piceous black; body black beneath, not densely pubescent; legs black, sparsely pubescent; each elytron with a yellow vitta of variable width, usually starting at epipleural lobe, curving upward without including the entire umbone, passing parallel with the side margin to the apex and curving into the suture; length, 3-5.5 mm., width, 2.5-3 mm.

_C. vittigera_ was also taken on skunk brush, _Rhus trilobata_ Barkley.

CRYPTOCEPHALINAE

Prothorax not margined at base, crenulate ........................................ 2
Prothorax margined at base, not crenulate ........................................ 3
2. Front edge of prothoracic flanks sinuous or toothed .............. Bassareus
   Front edge of prothoracic flanks straight ....................... Cryptocephalus

3. Prosternum flat in front, depressed behind ...................... Griburius
   Prosternum feebly channelled, smaller .......................... Pachybrachys

   Cryptocephalus

1. Elytra with two vittae ............................................ venustus
   Elytra trilineate .................................................. 2

2. Inner line confluent with suture ............................... confluentus
   Inner line not confluent with suture but merging with other vittae
   before apex ......................................................... C. sp.

   Cryptocephalus confluentus

   Rufous; elytra yellow, trilineate with black; with inner line confluent
   with the suture beyond the middle; elytra with punctured striae; thorax im-
   punctured, polished, with anterior and lateral margins lighter; scutellum
   black.

   This beetle although not collected in the park should occur there as it
   has been collected in the immediate vicinity.

   Cryptocephalus sp.

   Smaller and darker than C. confluentus; the three vittae converge, not
   reaching apex; length, 3.5-4 mm., width, 1.7-2 mm.

   This species was taken in the park on skunk brush, Rhus trilobata Barkely.

   Pachybrachys

   Elytra vittate....................................................... othonus
   Elytra not vittate .................................................. praeclarus

   Pachybrachys othonus (Say)

   Cryptocephalus othonus Say 1825, Amer. Ent. 2

   Black, robust; legs part of face, margins and two discal stripes on each
elytron yellow; black area of pronotum coarsely and densely punctate; length, 3.5-4 mm., width, 1.7-2.3 mm.

*Pachybrachys praesclarus* Weiss

*P. elegans*, Coleoptera of Indiana, Blatchley, p. 1127

Shining black; subcylindrical, robust; thorax with narrow ivory white line near side margins, edge black; elytra each with similar line, upper portion of epipleural lobe white from humerus to middle, punctuation coarse, deep and in regular rows becoming confused near the suture.

**EUMOLPINAE**

Anterior margin of the prothorax arcuate beneath, forming postocular lobes, body pubescent; front tibiae toothed ........................................... *Myochrous*

Anterior margin of prothorax straight ........................................... *Nodonota*

*Myochrous*

*Myochrous aquamousus* (Lec.)

Smithsonian Contr. Knowl. 11:24, 1895

Oblong; shining black with a bronzy, sometimes bluish luster; covered by wide flat, brown-and-white scales; in many specimens these form a white lateral elytral vitta; prothorax not definitely toothed but with anterior angularity; elytral punctation not round but angular; length, 5 mm.

According to Blake (1950), this species should occur in the park.

*Nodonota*

*Nodonota tristis* (Oliver)

*Colapsia tristis* Oliver 1808, Ent. 6:889

Oblong, oval; dark metallic green; elytral punctation slightly striate; sides of metasternum finely punctate; length, 3.3-4 mm., width, 1.9-2.5 mm.
CHRYSOMELINAE

Last segment of maxillary palpi oval, attenuate toward apex, at least as long as the penultimate ........................................... Chrysomelini

Last segment of maxillary palpi subquadrangular or dilated, broadly truncate at the extremity ........................................... Zygogrammini

Zygogrammini

1. Last palpal segment shorter than the preceding, truncate .... Leptinotarsa

Last palpal segment not shorter than the preceding, dilated ............ 2

2. Tarsal claws parallel, connate at base, tarsal segment dentate beneath .............................................................. Zygogramma

Leptinotarsa

Leptinotarsa decemlineata (Say)

Chrysomela decemlineata Say 1824, Jour. Acad. N. S. Phila. 3:453

Broadly oblong oval, very convex; dull yellow with elytral suture and five narrow discal stripes black; pronotum with numerous black spots, the two near the center elongate; punctures in irregular rows.

L. decemlineata, the common potato beetle, probably occurs sparsely on the buffalo bur, Solanum rostratum Dunal, its native food plant.

Zygogramma

Zygogramma exclamationis (Fab.)

Supp. Ent. Syst. 1798 p. 86

Oval, convex; brown, with yellow elytra, each having four brown vittae with the fourth interrupted; punctures bordering vittae in regular rows; prothorax with broad yellow band across anterior margin, wider at margins.

This species was taken on sunflower, Helianthus petiolaris Nutt., on which it was feeding.
Calligrapha

Calligrapha lunata (Fab.)

Chrysomela lunata Fabricius 1787, Mant. Ins.

Oblong oval, very convex; reddish brown, with lateral margins of elytra and vittae on third and fifth intervals yellowish white; length, 7-9 mm., width, 4.5-5.5 mm.

Chrysomelini

Prosternum produced posteriorly as a distinct process; third tarsal segment scarcely or not at all emarginate ........................................ Chrysomela

Prosternum not produced behind as a process .................. Gastrophyse

Chrysomela

Chrysomela crotchii Brown

n. sp. Can. Ent. 83(3):24. 1956

Elongate oval; dark metallic green; elytra entirely pale yellowish brown; sides of apical ventral segment always pale; length, 7.5-9 mm., width, 4.5-5.5 mm.

This beetle feeds on quaking aspen, Populus tremuloides Michx.

Gastrophyse

Gastrophyse cyanea Meish

Proc. Acad. N. S. Phila. 3:175, 1847

Oblong oval, moderately convex; color varies from dark metallic green to blue; upper surface coarsely and closely punctate; length, 4-5.5 mm., width, 2.2-3.2 mm.

This beetle feeds on dock, Rumex spp.

CALERUCINAE

1. Tibiae without terminal spurs ........................................ 3
At least some of the tibiae with terminal spurs .......................... 2

2. Punctation of elytra confused ........................................... Diabrotica
   Punctation of elytra in regular rows ................................. Acalymma

3. Third segment of antennae shorter than the fourth ................. Trirhabda
   Third segment of antennae longer than the fourth .................. 4

4. Elytra testaceous, may be spotted or mottled with black; antennae short,
   not reaching beyond humerus; pronotum longer and more deeply impressed
   along median line; abdomen of male usually with a deflexed pygidium;
2.3-5.3 mm. long ................................................................. Monoxia

Elytra yellow, red or testaceous, often with black stripes, may be en-
tirely black or black with pale lateral margins, rarely mottled or spotted;
antennae longer, usually reaching nearly to middle of elytra; pronotum
broader, width is twice length; abdomen without pygidium;
6.5 mm. long ................................................................. Gelerucella

Trirhabda

1. Occipital and pronotal spots and elytral vittae piceous or black without
   metallic luster ............................................................... 2
   Occipital or pronotal spots or vittae or entire elytra except for margin
dark with metallic luster .................................................... 3

2. Occipital spot small; vittae united at apex; punctation fine, dense ......
   canadensis

   Occipital spot large extending across occiput, vittae not united; punc-
tation coarse ................................................................. adelia

3. Pronotum conspicuously pubescent; pronotal spots small, median one situated
   nearer base of pronotum than anterior margin; lateral and sutural vittae
   usually coalescing behind middle, rarely the attenuated, median pale vitta
   extending much below middle ............................................ attenuata
Pronotum either entirely glabrous or very inconspicuously and sparsely pubescent; alutaceous. Elytra entirely green except for margin. Lateral and sutural vittae united at apex in vittate forms; densely pubescent; body dark ........................................... *convergens*  

**Trirhabda canadensis** (Kby)

*Galleruca canadensis* Kirby 1837, *Fauna Bor. Amer.* 4:219

Elongate; brownish yellow, with vittae and pronotal spots black; occipital spot small; vittae usually united at apex; elytral punctuation very fine and dense; size variable, 7-10 mm. long, 3-4 mm. wide.

This species feeds on goldenrod, *Solidago* spp., from which it was taken.

**Trirhabda adelae** Blake


Appearance similar to *T. canadensis* but with a broad black plage extending across occiput and larger, rounded spots on pronotum; elytral vittae not united; scutellum black and a little more coarsely punctate, densely and finely pubescent; length, 6-10 mm., width. 2.8-5.5 mm.

*T. adelae* feeds on thistle, *Cirsium* sp. and tall goldenrod, *Solidago altissima* L.

**Trirhabda attenuata** (Say)


Elongate, finely punctate and lightly pubescent; pale yellow with a wide black plage over occiput; elytra have wide blue or green lateral and sutural vittae usually coalescing at middle and leaving only an attenuated pale vitta, wider at base; scutellum bicolored; length, 5-8 mm., width, 2-3.8 mm.

The food plants include sagebrush, *Artemisia*, and goldenrod, *Solidago*. 
Trirhabda convergens Lec.


Paler, with a wide dark basal plaque across the head and large black pronotal spots; elytra either entirely metallic green except for the margin or else with narrow pale vittae; sides subparallel, faintly shining with metallic luster; length, 5-6.5 mm., width, 2.3-3 mm.

This species feeds on goldenrod, Solidago.

Galerucella

1. Front coxae distinctly separated .................................. nymphaeae
   Front coxae contiguous .................................................. 2
2. Elytra vittate .............................................................. 3
   Elytra immaculate .......................................................... 4
3. Broadly oval and convex .................................................. 4
   Body more depressed and elongate ....................................... integra
4. Elytra pubescent ........................................................... americana
   Elytra glabrous ............................................................. cribata

Galerucella nymphaeae (L.)

Chrysomela luteola Muller 1766, Mel. Soc. Roy. Turin 3:187

Oblong; dark brown; the legs, pronotum and elytral margins paler; elytral punctuation irregular in size and finely pubescent; length, 4.5-6 mm., width, 2.6-3 mm.

Galerucella integra (Lec.)


Elongate oval; light brown; elytra with subsutural and first discal vittae joining at apex; area between converging vittae sometimes dark, length, 3.5-5.8 mm., width, 1.7-3.3 mm.
Galerucella americana (Fab.)

Galleruca americana Fabricius, Syst. Eleut. 1:489, 1801

Oval, convex, pubescent; yellowish brown, elytra often with three black vittae on each; vittae do not occur in the specimen collected in the park; elytral punctuation coarse; length, 4.5-6 mm., width, 2.3-3.2 mm.

The food plant of this species is goldenrod, Solidago.

Galerucella cribrata (Lec.)


Similar in form and color to G. americana but is slightly larger; upper surface glarous rather than pubescent; length, 5-6.5 mm., width, 3-3.5 mm.

It also feeds on goldenrod, Solidago.

Diabrotica

Thorax and abdomen yellowish brown ......................... atripennis
Thorax and abdomen black ........................................ var. fossata

Diabrotica atripennis (Say)


Elongate oval; black with thorax and abdomen yellowish brown; elytra irregularly and closely punctate with prominent submarginal plica; length, 5-6 mm., width, 2-2.5 mm.

O. atripennis was taken from prairie clover, Petalostemon purpureum Rydb., and other flowers.

Diabrotica atripennis fossata


Resembles O. atripennis except variety fossata is entirely black.

The two were found together.
Acalymma

Acalymma vittata (Fab.)

Syst. Ent. 1775, p. 122

Oblong oval; pale yellow above with the head, scutellum, one common sutural, and a discal striae on each elytron, black; thorax smooth but with two deep foveae.

This, the common striped cucumber beetle, is one of the very limited number of economic species of Chrysomelidae which may exist in the park; it feeds on cucumber and related plants and should be found on the wild cucumber, Micromelis lobata (Michx.) Greene.

ALTICINAE

1. Anterior coxal cavities open behind ........................................... 2
   Anterior coxal cavities closed behind ........................................... 3

2. Prothorax without transverse antebasal impression ....................... Dissonycha
   Prothorax with a feeble transverse antebasal impression ............... Altica

3. Posterior tibiae sinuate near apex ........................................... Chaetocnema
   Posterior tibiae without sinuation or tooth .................................. 4

4. Pronotum with distinct antebasal transverse impression, not interrupted by longitudinal impression ................................................. Orthaltica
   Pronotum without antebasal impression ........................................ 5

5. Spur of posterior tibia small and slender, form oval convex ... Tanygaster
   Spur of posterior tibia broad, emarginate or bifid at apex ........ Dibolla

Dissonycha

Elytra dark; unicolorous; thorax yellow with three small black spots ...........

triangularis

Elytra vittata; submarginal and sutural vittae not uniting at apex. puntigera
**Disonycha triangularis** (Say)


Oblong oval; generally black but may have a faint blue or green luster; prothorax brownish yellow with three small black spots; length, 5.2-6.5 mm., width, 2.8-3.8 mm.

**Disonycha punctigera** Lec.

Smithsonian Contr. Knowl. 11:24, 1859

Broadly oblong oval; pale and feebly shining; occiput darkened; specimens from Wind Cave have four spots on pronotum and three elytral vittae, black; a striking orange vitta is located between the sutural and median vittae; submarginal and sutural vittae not united at apex; length, 6.3-7.6 mm., width, 3.3-4.4 mm.

**Orthaltica**

**Orthaltica copalina** (Fab.)

*Crioceris copalina* Fabricius, Syst. Eleut. 1:466, 1801

Elongate, parallel; brown, with antennae and tibiae lighter; antennae nearly as long as body; elytral punctuation in rows, these confused near scutellum; length, 2-2.2 mm., width, 0.9-1.1 mm.

This is a common species on sumac and poison ivy. It was taken in the park on skunk brush, *Rhus trilobata* Barkley.

**Chaetocnema**

**Chaetocnema subviridis** Lec.

Smith. Cont. Knowl. 11:27, 1859

Oval, robust; surface shining green bronze or slightly bluish; head finely alutaceous; a punctured fovea near each eye; outer seven antennal joints, tibiae (in part), and tarsi, piceous; thorax with an entire basal marginal line not defined by punctures.
Altica

Altica ovulata Fall

Trans. Am. Ent. Soc. 36:89-197, 1910

Elongate oval, blue, shining; upper surface finely alutaceous and sparsely, finely punctate; elytral punctures scarcely coarser than those of the prothorax; antennae piceous, longer than one-half the body, segments 2-3-4 gradually longer; prothorax unusually elongate, feebly arcuate, narrowly margined, and with basal margin bisinuate, basal groove faint; length, 4.3 mm., width, 1.8 mm.

HISPINAE

Microrhopala

Microrhopala vittata (Fab.)

Hispa vittata Fabricius, Suppl. Ent. Syst. p. 117, 1798

Elongate oval, wider posteriorly; elytra black or brown, each with an indefinite red vitta; thorax reddish brown; intervals between rows of punctures slightly raised; length, 5.2-7 mm., width, 2.4-3.4 mm.

The food plant is a species of goldenrod, *Solidago*.

CASSIDINAE

Head visible from above .................................................. Chelymorpha
Head covered by the front margin of the pronotum; claws simple; form oval or circular .................................................. Jonthonota

Chelymorpha

Chelymorpha cassidea (Fab.)

Cassida cassidea Fabricius, Syst. Ent. p. 82, 1775

Oblong oval; dark red or yellow; pronotum usually with six small black
spots and with one common to both; legs and body beneath black; length, 8-11 mm., width, 6.5-8 mm.

This beetle feeds on the bush morning glory, _Ipomea leptophylla_ Torr.

_Jonthonota_nigripes_ (Olliv.)

_Cassida nigripes_ Olivier, Ent. 6:959, 1790

Broadly oval, convex; dark red; each elytron with three small spots; scutellum at least margined with black; body black beneath; length, 6-8 mm., width, 5-6.2 mm.

**SUMMARY**

Two plant species appeared to yield more species of Chrysomelids than any others. These were skunk brush, _Rhus trilobata_ Barkley (four species) and the goldenrods, _Solidago_ sp. (four species). Other plants on which the Chrysomelids occurred included the sunflower, _Helianthus petiolaris_ Nutt., prairie clover, _Plealostemon purpureus_ Rydb. and bush morning glory, _Ipomea leptophylla_ Torr. Altogether, 17 species were found on the various plants in the park.

Another 19 species should be found there according to information in the literature and in collections. Goldenrod should also be a host plant for a major part of these; other plants on which Chrysomelids should be found are the buffalo bur, _Solanum rostratum_ Dunal, spiderwort, _Tradescantia virginiana_ L., dock, _Rumex_ sp., sagebrush, _Artemisia_ sp. and wild cucumber, _Micranthes lobata_ (Michx.) Greene.

One noticeable absence from the species list is that of the subfamily, _Donacilinae_. As was noted in the Introduction there is very little, if any, standing water in the park. Larvae of the members of this subfamily are
aquatic, feeding on the roots of various species of water lilies. Because these plants do not occur in the park it is very doubtful that any member of the subfamily occurs there. However, some species of Donacia occur in the surrounding area and should the one pond in the park, known as Norbeck Lake, be managed so as to hold water permanently, a habitat beneficial for the Donacinae would probably develop.
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CHRYSOMELIDAE OF WIND CAVE NATIONAL PARK
SOUTH DAKOTA

by

WILLIAM LEROY SIGAFUOS

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AN ABSTRACT OF A THESIS

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1960
This study of the Chrysomelidae was made in the Wind Cave National Park, South Dakota, which is under the administration of the National Park Service. The primary purpose was to determine the species of Chrysomelids and their host plants which occur in the park and to organize the investigation so that it might serve as a basis for a future enlarged study of other insects of the area.

Most of the specimens actually collected in the park during this study were taken without the use of a net in order that beetle-host relationships might be established. Sweeping might have yielded more species but less information about them. Altogether 17 species of Chrysomelids were found on the various plants in the park. Skunk brush, Rhus triacaba Barkley and goldenrod, Solidago sp., were the chief host plants with four species being taken on each.

According to the literature and collection records obtained from the University of Kansas and Kansas State University, another 19 species could occur in the park. These records have been included as a part of the current paper.

Donacinae, the subfamily in which the larvae are aquatic, is apparently absent from the park area because of a lack of a suitable aquatic habitat.