

2003 ANNUAL REPORT OF FUNGAL COLLECTIONS FROM JEWEL CAVE NATIONAL MONUMENT

SUBMITTED BY: Dr. Audrey Gabel
Emeritus Professor of Biology
Unit # 9003
Black Hills State University
Spearfish, South Dakota 57799
Email: audreygabel@bhsu.edu or agabel@mato.com
Telephone: 605-642-0989

Ms. Elaine Ebbert
Botanist – TNC
6603 Elk Creek Road
Piedmont, South Dakota 57769
Email: eaebbert@enetis.net
Telephone: 605-787-6114

DATES COLLECTED: 7-16-03 and 8-20-03

PLANT COMMUNITIES IDENTIFIED: All areas were *Pinus ponderosa* forest.

WEATHER CONDITIONS: Conditions were very dry on both collecting dates. Although there was rain a few days before the 8-20 collecting date, the vegetation and soil were still extremely dry.

ACCESSION NUMBERS: Black Hills State University Herbarium accession numbers will be assigned as soon as specimens are ready to be added to the collection.

NUMBER OF SPECIMENS COLLECTED:

Twelve specimens representing seven species were collected on 7-16-03.

Five specimens representing two species were collected on 8-20-03.

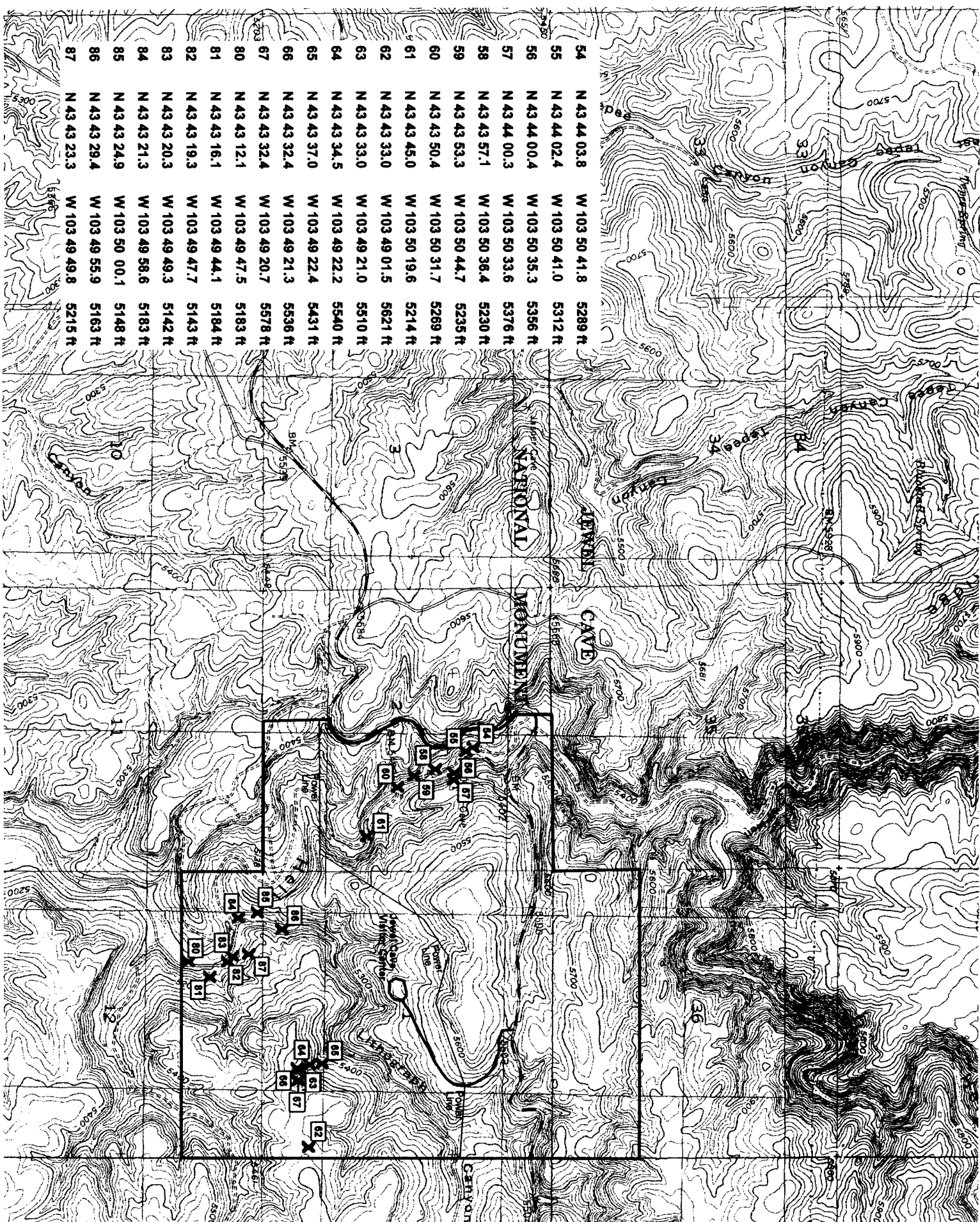
A total of eight different species were collected.

Additional specimens, listed at the end of this report, were observed on both dates but not collected.

SUMMARY AND COMMENTS: Many specimens collected were in the order Aphyllophorales, an order for woody fungi which contain very little moisture. *Cryptoporus volvatus* was very common and is collected from standing dead pines. *Fomitopsis pinicola*, also collected on dead or living pines, was common. Lichens, which can dry down and rehydrate when water is available were also common. Mushrooms are 80-90% water and the single mushroom collected (*Amanita* sp.) was so dehydrated that characters for identification to species were missing. The slime mold, *Enteridium* sp. was an interesting collection because this is the first time in six years we have collected it and from only two other sites in the Black Hills. At this time we do not have enough information to rate any species as rare or unusual.

July and August have been hot and dry throughout the hills and with few exceptions, collecting has not been good. However, Jewel Cave appeared to be drier than many other collecting sites. We believe that with adequate moisture and collecting earlier during the summer, a greater diversity of fungi would be seen. We plan to collect in late May and June during 2004.

MAP: Numbered collection sites are shown on the map and each specimen collected or observed has a site number for location purposes.



SPECIMENS COLLECTED BY SITE:

Site #: 55

Scientific Name: *Enteridium* sp.

Common Name: none

General Discipline, Kingdom, Phylum, Order, Family:

Biology, Protists, Myxomycota, Liceales, Reticulariaceae

Description of Specimen: A large, white athelium containing a dark brown spore mass. Slide of spores only.

Locality: Intersection of Hell Canyon with trail to cabin; T4S, R2E, Sec. 2; N43° 44' 2.4", W103° 50' 41"; SW slope; 5312 ft.

Custer County, South Dakota

Habitat and Remarks: On dead standing *Pinus ponderosa* in *P. ponderosa* habitat.

Date: 7-16-03

Collection #: 1654b

Collected by: A. Gabel and E. Ebbert

Identified by: A. Gabel and E. Ebbert

Depository: Black Hills State University Herbarium

Site #: 56

Scientific Name: *Apiosporina morbosum* (Fr.) von Arx

Common Name: Black Knot

General Discipline, Kingdom, Phylum, Order, Family:

Biology, Fungi, Ascomycota, Dothidiales, Dothidiaceae

Description of Specimen: A loculoascomycete with locules embedded in a hard black stroma.

Locality: Trail to historic cabin; T4S, R2E, Sec. 2; N43° 44' 0.4", W103° 50' 35.3"; SW facing slope; 5356 ft.; Custer County, South Dakota

Habitat and Remarks: On *Prunus virginiana* branches along trail.

Date: 7-16-03

Collection #: 1648

Collected by: A. Gabel and E. Ebbert

Identified by: A. Gabel and E. Ebbert

Depository: Black Hills State University Herbarium

Site #: 56

Scientific Name: *Xanthoria elegans* (Link) Th. Fr.

Common Name: none

General Discipline, General Classification, Phylum, Order, Family:

Biology, Lichen, Ascomycota, Lecanorales, Teloschistaceae

Description of Specimen: A foliose, orange lichen usually occurring on rocks.

Locality: Trail to historic cabin; T4S, R2E, Sec. 2; N43° 44' 0.4", W103° 50' 35.3";
SW-facing slope; 5356 ft.; Custer County, South Dakota
Habitat and Remarks: On sandstone and limestone in *Pinus ponderosa* forest.
Date: 7-16-03
Collection #: 1649
Collected by: A. Gabel and E. Ebbert
Identified by: A. Gabel and E. Ebbert
Depository: Black Hills State University Herbarium

Site #: 57
Scientific Name: *Xanthoparmelia somloensis* (Gyelnik) Hale
Common Name: none
General Discipline, General Classification, Phylum, Order Family:
Biology, Lichen, Ascomycota, Lecanorales, Parmeliaceae
Description of Specimen: A green, foliose lichen.
Locality: Historic cabin area; T4S, R2E, Sec. 2; N43° 44' 0.3", W103° 50' 33.6";
5376 ft.; Custer County, South Dakota
Habitat and Remarks: On granite rock in *Pinus ponderosa* area.
Date: 7-16-03
Collection #: 1650
Collected by: A. Gabel and E. Ebbert
Identified by: A. Gabel
Depository: Black Hills State University Herbarium

Site #: 59
Scientific Name: *Trichaptum biforme* (Fr. in Klotzch) Ryv.
Common Name: Turkey Tails
General Discipline, Kingdom, Phylum, Order, Family:
Biology, Fungi, Basidiomycota, Aphyllophorales, Polyporaceae
Description of Specimen: A thin, annual bracket with a porous hymenium;
usually occurring in groups.
Locality: Hell Canyon; T4S, R2E, Sec. 2; N43° 43' 53.3", W103° 50' 44.7";
canyon bottom; 5235 ft.; Custer County, South Dakota
Habitat and Remarks: On dead downed *P. ponderosa*
Date: 7-16-03
Collection #: 1655
Collected by: A. Gabel and E. Ebbert
Identified by: A. Gabel and E. Ebbert
Depository: Black Hills State University Herbarium

Site #: 60

Scientific Name: *Fomitopsis pinicola* (Swartz ex Fr.) Karsten

Common Name: Red Belt Conk

General Discipline, Kingdom, Phylum, Order, Family:

Biology, Fungi, Basidiomycota, Aphyllophorales, Polyporaceae

Description of Specimen: A woody, perennial bracket fungus with a porous hymenium.

Locality: Hell Canyon; T4S, R2E, Sec. 2; N43° 43' 50.4", W103° 50' 31.7"; 5269 ft.
Custer County, South Dakota

Habitat and Remarks: On dead *Pinus ponderosa* in *Pinus ponderosa* forest.

Date: 7-16-03

Collection #: 1652

Collected by: A. Gabel and E. Ebbert

Identified by: A. Gabel and E. Ebbert

Depository: Black Hills State University Herbarium

Site #: 62 No Collections. Location Reading Only.

Site #: 63

Scientific Name: *Usnea hirta* (L.) Wigg

Common Name: none

General Discipline, General Classification, Phylum, Order, Family:

Biology, Lichen, Ascomycota, Lecanorales, Usneaceae

Description of Specimen: A fruticose lichen that attaches to trees.

Locality: Hillside near Lithograph Canyon; T4S, R2E, Sec. 1; N43° 43' 33",
W103° 49' 21"; NW slope; 5510 ft.; Custer County, South Dakota

Habitat and Remarks: On *Pinus ponderosa* in *Pinus ponderosa* forest.

Date: 7-16-03

Collection #: 1647

Collected by: A. Gabel and E. Ebbert

Identified by: A. Gabel and E. Ebbert

Depository: Black Hills State University Herbarium

Site #: 63

Scientific Name: *Amanita* sp.

Common Name: unknown

General Discipline, Kingdom, Phylum, Order, Family:

Biology, Fungi, Basidiomycota, Agaricales, Amanitaceae

Description of Specimen: A mushroom with an annulus, volva, free gills, and white spores.

Locality: Hillside near Lithograph Canyon; T4S, R2E, Sec. 1; N43° 43' 33.0",
W103° 49' 21.0"; 5510 ft.; Custer County, South Dakota

Habitat and Remarks: On soil under *P. ponderosa* in *P. ponderosa* forest; specimen was dried and characters needed for species identification were missing; similar to *A. pantherina*.

Date: 7-16-03

Collection #: 1656

Collected by: A. Gabel and E. Ebbert

Identified by: A. Gabel and E. Ebbert

Depository: Black Hills State University Herbarium

Site #: 63

Scientific Name: *Coltricia cinnamomea* (Pers.) Murr.

Common Name: none

General Discipline, Kingdom, Phylum, Order, Family:

Biology, Fungi, Basidiomycota, Aphyllophorales, Polyporaceae

Description of Specimen: A small stipitate polypore with a zoned cap.

Locality: Hillside near Lithograph Canyon; T4S, R2E, Sec. 1; N43° 43' 33.0", W103° 49' 21.0"; 5510 ft.; Custer County, South Dakota

Habitat and Remarks: On soil under *P. ponderosa* in *P. ponderosa* forest. Very common.

Date: 7-16-03

Collection #: 1657

Collected by: A. Gabel and E. Ebbert

Identified by: A. Gabel and E. Ebbert

Depository: Black Hills State University Herbarium

Site #: 64

Scientific Name: *Sphaerotheca* sp.

Common Name: Powdery Mildew

General Discipline, Kingdom, Phylum, Order, Family :

Biology, Fungi, Ascomycota, Erysiphales, Erysiphaceae

Description of Specimen: An obligate leaf parasite on plants, appearing as a "powdery growth" on leaves.

Locality: Hillside near Lithograph Canyon; T4S, R2E, Sec. 1; N43° 43' 34.5", W103° 49' 22.2"; 5540 ft.; Custer County, South Dakota

Habitat and Remarks: A powdery mildew on *Shepherdia canadensis*, rabbit berry.

Date: 7-16-03

Collection #: 1662

Collected by: A. Gabel and E. Ebbert

Identified by: A. Gabel and E. Ebbert

Depository: Black Hills State University Herbarium

Site #: 65

Scientific Name: *Xanthoria elegans* (Link) Th. Fr.

Common Name: none

General Discipline, General Classification, Phylum, Order, Family:

Biology, Lichen, Ascomycota, Lecanorales, Teloschistaceae

Description of Specimen: An orange, foliose lichen usually occurring on rocks.

Locality: Hillside near Lithograph Canyon; T4S, R2E, Sec. 1; N43° 43' 37.0",
W103° 49' 22.4"; SW slope; 5431 ft.; Custer County, South Dakota

Habitat and Remarks: On rock

Date: 7-16-03

Collection #: 1660

Collected by: A. Gabel and E. Ebbert

Identified by: A. Gabel and E. Ebbert

Depository: Black Hills State University Herbarium

Site #: 67

Scientific Name: No Identification

Common Name: No Identification

General Discipline, Kingdom, Phylum, Order, Family:

Biology, Fungi, Ascomycota, Pezizales

Description of Specimen: Dessicated group of cup fungi, partially buried;
Characters needed for identification missing.

Locality: Hillside near Lithograph Canyon; T4S, R2E, Sec. 1; N43° 43' 32.4",
W103° 49' 20.7"; 5578 ft.; Custer County, South Dakota

Habitat and Remarks: Partially buried in soil, under *P. ponderosa* in
P. ponderosa forest

Date: 7-16-03

Collection #: 1718a

Collected by: A. Gabel and E. Ebbert

Identified by: not identified

Depository: Black Hills State University Herbarium

Site #: 80 Gate at southwest boundary of Lithograph Canyon. Started
collecting here.
N43° 43' 12.1", W103° 49' 47.5"; 5183 ft.

Site #: 81

Scientific Name: *Usnea hirta* (L.) Wigg

Common Name: none

General Discipline, General Classification, Phylum, Order, Family:

Biology, Lichen, Ascomycota, Lecanorales, Usneaceae

Description of Specimen: A fruticose lichen that attaches to trees.

Locality: Lithograph Canyon, T4S, R2E, Sec. 12; N43° 43' 16.1",
W103° 49' 44.1"; 5184 ft.; SW- facing slope; Custer County, South Dakota
Habitat and Remarks: On dead pine, in *Pinus ponderosa* forest.
Date: 8-20-03
Collection #: 1843
Collected by: A. Gabel and E. Ebbert
Identified by: A. Gabel and E. Ebbert
Depository: Black Hills State University Herbarium

Site #: 82
Scientific Name: *Cryptoporus volvatus* (Peck) Shear
Common Name: Cryptic Globe Fungus
General Discipline, Kingdom, Phylum, Order, Family:
Biology, Fungi, Basidiomycota, Aphyllophorales, Polyporaceae
Description of Specimen: A spherical, bracket polypore, with the porous
hymenium covered by a membrane.
Locality: Lithograph Canyon, T4S, R2E, Sec. 12; N43° 43' 19.3"; W103° 49' 47.7";
5143 ft.; bottom of canyon; Custer County, South Dakota
Habitat and Remarks: On standing dead *Pinus ponderosa* in *P. ponderosa* forest.
Date: 8-20-03
Collection #: 1840
Collected by: A. Gabel and E. Ebbert
Identified by: A. Gabel and E. Ebbert
Depository: Black Hills State University Herbarium

Site #: 84 Junction of Hell Canyon and Lithograph Canyon
Continued collecting from here.
N43° 43' 21.3", W103° 49' 58.6"; 5183 ft.

Site #: 85
Scientific Name: *Cryptoporus volvatus* (Peck) Shear
Common Name: Cryptic Globe Fungus
General Discipline, Kingdom, Phylum, Order, Family:
Biology, Fungi, Basidiomycota, Aphyllophorales, Polyporaceae
Description of Specimen: A spherical, bracket polypore, with the porous
hymenium covered by a membrane.
Locality: Lithograph Canyon, T4S, R2E, Sec. 12; N43° 43' 24.9", W103° 50' 0.1";
5148 ft.; Custer County, South Dakota
Habitat and Remarks: On standing dead *Pinus ponderosa* in *P. ponderosa* forest.
Date: 8-20-03
Collection #: 1837
Collected by: A. Gabel and E. Ebbert

Identified by: A. Gabel and E. Ebbert
Depository: Black Hills State University Herbarium

Site #: 85

Scientific Name: *Usnea hirta* (L.) Wigg

Common Name: none

General Discipline, General Classification, Phylum, Order, Family:

Biology, Lichen, Ascomycota, Lecanorales, Usneaceae

Description of Specimen: A fruticose lichen that attaches to trees.

Locality: Lithograph Canyon, T4S, R2E, Sec. 12; N43° 43' 24.9", W103° 50' 0.1";
5148 ft.; Custer County, South Dakota

Habitat and Remarks: On dead pine, in *Pinus ponderosa* forest.

Date: 8-20-03

Collection #: 1839

Collected by: A. Gabel and E. Ebbert

Identified by: A. Gabel and E. Ebbert

Depository: Black Hills State University Herbarium

Site #: 87

Scientific Name: *Cryptoporus volvatus* (Peck) Shear

Common Name: Cryptic Globe Fungus

General Discipline, Kingdom, Phylum, Order, Family:

Biology, Fungi, Basidiomycota, Aphyllophorales, Polyporaceae

Description of Specimen: A spherical, bracket polypore, with the porous
hymenium covered by a membrane.

Locality: Lithograph Canyon, T4S, R2E, Sec. 12; N43° 43' 23.3"; W103° 49' 49.8";
5215 ft; south-facing slope; Custer County, South Dakota

Habitat and Remarks: On standing dead *Pinus ponderosa* in *P. ponderosa* forest.

Date: 8-20-03

Collection #: 1842

Collected by: A. Gabel and E. Ebbert

Identified by: A. Gabel and E. Ebbert

Depository: Black Hills State University Herbarium

SPECIMENS OBSERVED BY SITE:

Site #: 54

Scientific Name: *Cryptoporus volvatus* (Peck) Shear

Common Name: Cryptic Globe Fungus

General Discipline, Kingdom, Phylum, Order, Family:

Biology, Fungi, Basidiomycota, Aphyllophorales, Polyporaceae

Description of Specimen: A spherical, bracket polypore, with the porous hymenium covered by a membrane

Locality: Hell Canyon; T4S, R2E, Sec. 2; N43° 44' 3.8", W103° 50' 41.8"; 5289 ft.
Custer County, South Dakota

Habitat and Remarks: On standing dead, burned *Pinus ponderosa* in *Pinus ponderosa* and *Prunus virginiana* habitat.

Date: 7-16-03

Observation #: 1654a

Observed by: A. Gabel and E. Ebbert

Identified by: A. Gabel and E. Ebbert

Site #: 58

Scientific Name: *Fomitopsis pinicola* (Swartz ex Fr.) Karsten

Common Name: Red Belt Conk

General Discipline, Kingdom, Phylum, Order, Family:

Biology, Fungi, Basidiomycota, Aphyllophorales, Polyporaceae

Description of Specimen: A woody, perennial bracket fungus with a porous hymenium.

Locality: Hell Canyon; T4S, R2E, Sec. 2; N43° 43' 57.1", W103° 50' 36.4"; 5230 ft.;
Custer County, South Dakota

Habitat and Remarks: On standing burned *Pinus ponderosa* stump in *Pinus ponderosa* forest.

Date: 7-16-03

Observation #: 1651

Observed by: A. Gabel and E. Ebbert

Identified by: A. Gabel and E. Ebbert

Site #: 60

Scientific Name: *Enteridium* sp.

Common Name: none

General Discipline, Kingdom, Phylum, Order, Family:

Biology, Protista, Myxomycota, Liceales, Reticulariaceae

Description of Specimen: A large, white athelium containing a dark brown spore mass.

Locality: Hell Canyon; T4S, R2E, Sec 2; N43° 43' 50.4", W103° 50' 31.7"; 5269 ft.;
Custer County, South Dakota

Habitat and Remarks: On standing *Pinus ponderosa* in *Pinus ponderosa* forest.
Species is similar to *Enteridium lycoperdon* but spores are larger.

Date: 7-16-03

Observation #: 1653

Observed by: A. Gabel and E. Ebbert

Identified by: A. Gabel

Site #: 61

Scientific Name: *Cryptoporus volvatus* (Peck) Shear

Common Name: Cryptic Globe Fungus

General Discipline, Kingdom, Phylum, Order, Family:

Biology, Fungi, Basidiomycota, Aphyllophorales, Polyporaceae

Description of Specimen: A spherical, bracket polypore, with the porous hymenium covered by a membrane.

Locality: Hell Canyon, T4S, R2E, Sec. 2; N43° 43' 45.0"; W103° 50' 19.6";
5214 ft.; Custer County, South Dakota

Habitat and Remarks: On standing dead *Pinus ponderosa* in *P. ponderosa* forest.

Date: 7-16-03

Collection #: 1659

Collected by: A. Gabel and E. Ebbert

Identified by: A. Gabel and E. Ebbert

Site #: 65

Scientific Name: *Coltricia cinnamomea* (Pers.) Murr.

Common Name: none

General Discipline, Kingdom, Phylum, Order, Family:

Biology, Fungi, Basidiomycota, Aphyllophorales, Polyporaceae

Description of Specimen: A small stipitate polypore with a zoned cap.

Locality: Hillside near Lithograph Canyon; T4S, R2E, Sec. 1; N43° 43' 37.0",
W103° 49' 22.4"; SW slope; 5431 ft.; Custer County, South Dakota

Habitat and Remarks: On soil under *Pinus ponderosa* in *P. ponderosa* forest;
very common

Date: 7-16-03

Observation #: 1661

Observed by: A. Gabel and E. Ebbert

Identified by: A. Gabel and E. Ebbert

Site #: 66

Scientific Name: *Usnea hirta* (L.) Wigg

Common Name: none

General Discipline, General Classification, Phylum, Order, Family:

Biology, Lichen, Ascomycota, Lecanorales, Usneaceae

Description of Specimen: A fruticose lichen that attaches to trees.

Locality: Hillside near Lithograph Canyon; T4S, R2E, Sec.1; N43° 43' 32.4", W103° 49' 21.3"; 5536 ft.; Custer County, South Dakota
Habitat and Remarks: On dead snag of *P. ponderosa* in *P. ponderosa* forest.
Date: 7-16-03
Observation #: 1718b
Observed by: A. Gabel and E. Ebbert
Identified by: A. Gabel and E. Ebbert

Site #: 83
Scientific Name: *Fomitopsis pinicola* (Swartz ex Fr.) Karsten
Common Name: Red Belt Conk
General Discipline, Kingdom, Phylum, Order, Family:
Biology, Fungi, Basidiomycota, Aphyllophorales, Polyporaceae
Description of Specimen: A woody, perennial bracket fungus with a porous hymenium.
Locality: Lithograph Canyon; T4S, R2E, Sec. 12; N43° 43' 20.3", W103° 49' 49.3"; 5142 ft.; bottom of canyon; Custer County, South Dakota
Habitat and Remarks: On dead *Pinus ponderosa* in *P. ponderosa* forest.
Date: 8-20-03
Observation #: 1841
Observed by: A. Gabel and E. Ebbert
Identified by: A. Gabel and E. Ebbert

Site #: 85
Scientific Name: *Fomitopsis pinicola* (Swartz ex Fr.) Karsten
Common Name: Red Belt Conk
General Discipline, Kingdom, Phylum, Order, Family:
Biology, Fungi, Basidiomycota, Aphyllophorales, Polyporaceae
Description of Specimen: A woody, perennial bracket fungus with a porous hymenium.
Locality: Lithograph Canyon; T4S, R2E, Sec. 12; N43° 43' 24.9", W103° 50' 0.1"; 5148 ft.; Custer County, South Dakota
Habitat and Remarks: On dead *Pinus ponderosa* in *P. ponderosa* habitat.
Date: 8-20-03
Observation #: 1838
Observed by: A. Gabel and E. Ebbert
Identified by: A. Gabel and E. Ebbert

Site #: 86
Scientific Name: *Cryptoporus volvatus* (Peck) Shear
Common Name: Cryptic Globe Fungus
General Discipline, Kingdom, Phylum, Order, Family:
Biology, Fungi, Basidiomycota, Aphyllophorales, Polyporaceae

Description of Specimen: A spherical, bracket polypore with the hymenium covered by a membrane.

Locality: Lithograph Canyon; T4S, R2E, Sec.12; N43° 43' 29.4", W103° 49' 55.9"; 5163 ft.; Custer County, South Dakota

Habitat and Remarks: On standing dead *P. ponderosa* in *P. ponderosa* forest

Date: 8-20-03

Observation #: 1835

Observed by: A. Gabel and E. Ebbert

Identified by: A. Gabel and E. Ebbert

Site #: 86

Scientific Name: *Fomitopsis pinicola* (Swartz ex Fr.) Karsten

Common Name: Red Belt Conk

General Discipline, Kingdom, Phylum, Order, Family:

Biology, Fungi, Basidiomycota, Aphyllophorales, Polyporaceae

Description of Specimen: A woody, perennial bracket fungus with a porous hymenium.

Locality: Lithograph Canyon; T4S, R2E, Sec. 12; N43° 43' 29.4", W103° 49' 55.9"; 5163 ft.; Custer County, South Dakota

Habitat and Remarks: On dead *Pinus ponderosa* in *P. ponderosa* habitat.

Date: 8-20-03

Observation #: 1836

Observed by: A. Gabel and E. Ebbert

Identified by: A. Gabel and E. Ebbert