THE SUMMER FLESHY FUNGUS FLORA OF THE GORGE OF CARP CREEK, UNIVERSITY OF MICHIGAN BIOLOGICAL STATION, WITH A COMPARISON OF THE YEARS 1961 AND 1962

by

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INTRODUCTION

Nature and Scope of the Problem

The primary objective of this study was to make a floristic survey of the mid-summer species of epigeous fleshy fungi occurring in the Gorge of Carp Creek, University of Michigan Biological Station, Cheboygan County, Michigan. Representatives of the Agaricales, Boletales, Clavariales, Hydnales, Polyporales (exclusive of the resupinate members), Gasteromycetes, and the larger fleshy species of Heterobasidiomycetes and Ascomycetes were included in this study. Their relative abundance, substratum, and associations were determined whenever possible.

The secondary objective of this study was to compare the fleshy fungus flora of the Gorge during the summer 1961 with that of 1962, and to interpret major differences thereof.

Physiographic Considerations

Situated in the part of Michigan which was heavily glaciated during the Pleistocene, the Gorge of Carp Creek comprises a recent drainage which cuts through glacial and lake sands. Water from Douglas Lake, located at an elevation of 711 feet, flows underground and comes to the surface in the form of many springs. The drainages of these unite to form

Carp Creek. The latter flows southward into Burt Lake which is at an elevation of 594 feet.

The Gorge is topographically distinct, being demarked to the north, east, and west by a sudden drop of approximately 60 feet and to the south by Reese's Bog. The latter is artificially separated from the Gorge by an iron bridge across Carp Creek. They are also separated at a point where the west and east bluffs come within 30 feet of one another.

The topography of the Gorge floor is relatively uniform, interrupted by an occasional mound of sand a few inches to 15 feet in height from the floor, and by numerous springs and their drainage systems. There are no rock outcrops. A few small rocks from glacial moraine are scattered throughout the Gorge. Most of the soil is sandy, but where drainage is poor, there is an accumulation of swamp and bog humus.

Only those fungi occurring on the floor of the Gorge were studied. Those occurring on the sides of the Gorge were not studied. The total area of the Gorge floor is approximately 140 acres. See map on page 7.

Natural Vegetation

Situated in the transition zone between coniferous forest to the north and deciduous forest to the south, the Gorge has a vegetation characteristic of both regions. The area studied has never been under cultivation. However, heavy lumbering

operations took place in the late nineteenth century and this was followed by forest fires. Unlike the surrounding sandy areas with a dominant flora of aspen (Populus sp.), bracken-fern (Pteridium aquilinum), and lichen mats (Cladonia sp.), the Gorge is quite moist and has several distinct forest and associations.

Surrounding the source of Carp Creek at the head of the Gorge and the springs that feed it, is a mixed forest of conifers and hardwoods. Tsuga canadensis, Pinus strobus, Acer rubrum, and Betula lutea are the dominant trees. Within this area, the ground cover varies with the presence or absence of springs. Most of the ground is covered by a mat of Bryophytes such as Mnium, Brachythecium, Hypnum, and Conocephalum; only occasionally do species of vascular plants such as Circaea, form large colonies.

Several areas in the Gorge are devoid of springs and running water. In such areas one finds a hardwood forest of Betula papyrifera with other scattered hardwood species. The soil is sandy and a well defined herb layer of Equisetum and Pteridium is formed.

In the center of the Gorge there is an extensive swamp containing Alnus, Salix, Carex, Typha, and Picea. Most of the soil in this area is covered by standing water.

The southern portion of the Gorge is a Picea-Thuja bog. Within this area is a large accumulation of humus. Local

communities are formed by only a few inches change in elevation. The ground cover includes Bryophytes, notably Sphagnum, Cratoneuron, Hylocomium, Tricholea, Mnium, and Aulacomnium.

In each of the forest associations, the trees are shallowly rooted and readily wind-blown. These fallen trees provide a continual substratum for lignicolous fungi. Listed below are the tree species that occur in the Gorge.

Abies balsamea (L.) Mill

Acer pensylvanicum L.

Acer rubrum L.

Acer saccharum Marsh.

Acer spicatum Lam.

Alnus rugosa (Du Roi) Spreng.

Amelanchier laevis Wieg.

Betula lutea Michx.

Betula papyrifera Marsh.

Cornus alternifolia L.

Cornus stolonifera Michx.

Fagus grandifolia Ehrh.

Fraximus nigra Marsh.

Fraximus pennsylvanica Marsh.

Hamamelis virginiana L.

Ilex verticillata (L.) Gray

Larix laricina (Du Roi) K. Koch

Picea mariana (Mill.) B.S.P.

Pinus resinosa Ait.

Pinus strobus L.

Populus grandidenta Michx.

Populus tremuloides Michx.

Prunus pennsylvanica L.

Quercus borealis Michx.

Salix bebbiana Sarg.

Salix discolor Muhl.

Salix humilis Marsh.

Salix lucida Muhl.

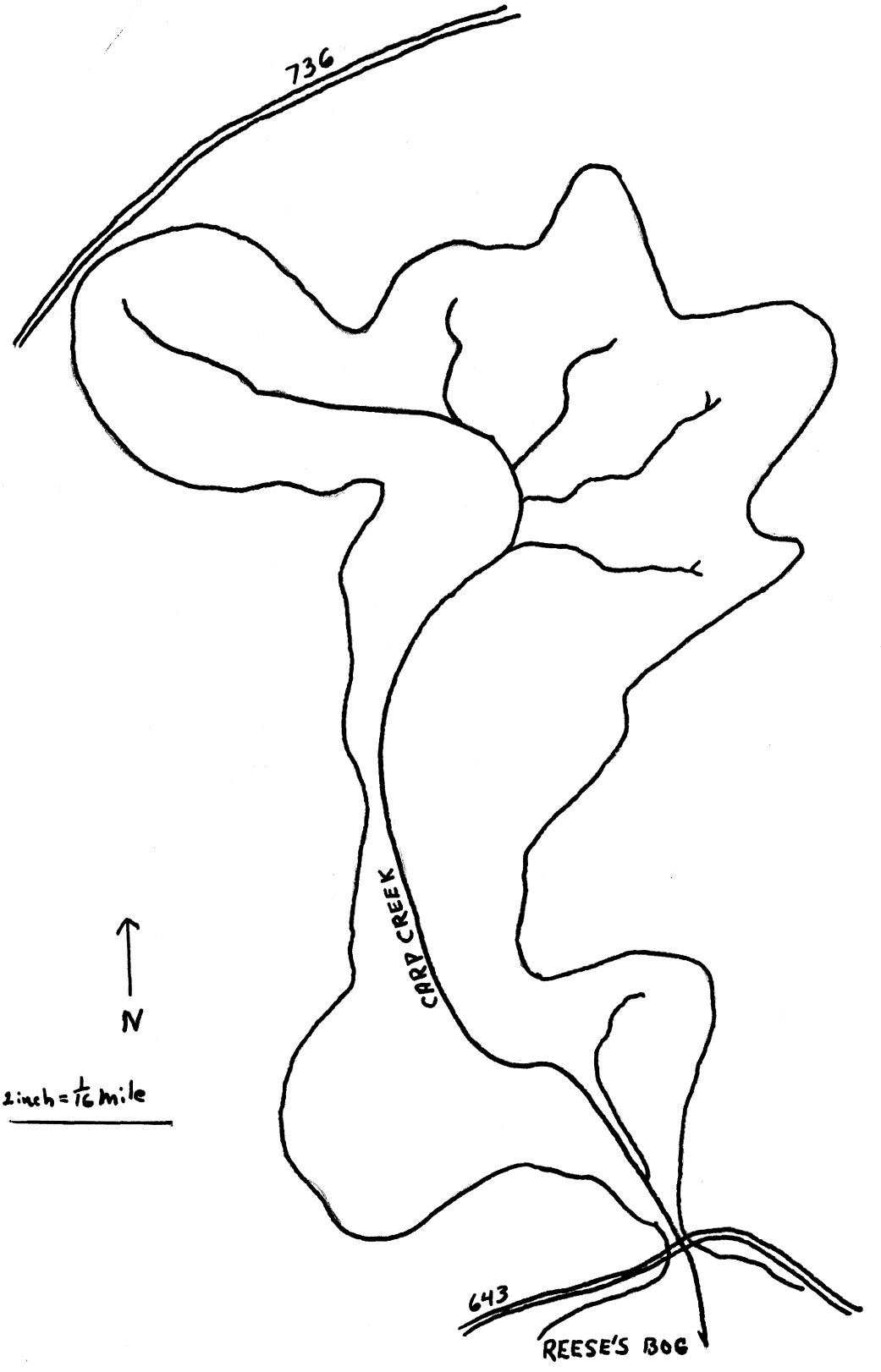
Salix serissima (Bailey) Fern.

Thuja occidentalis L.

Tilia americana L.

Tsuga canadensis (L.) Carr.

Ulmus sp.



The Gorge of Carp Creek*

*adapted from U.S. topographic map: Mullet Lake, Mich.

METHODS AND MATERIALS

Collection of Specimens

In collecting fleshy fungi quadrats are not used. Instead, one wanders through an area investigating as many habitats as possible for the presence of fungi. Sporocarps representing the various species present were collected and brought to the laboratory for detailed study.

Collections of sporocarps were placed on a sheet of wax paper which was then rolled into a cylindrical tube and twisted at the ends to prevent loss of moisture. Larger species were placed upright in a market basket to prevent damage. Extremely small species were placed in cans within the basket. Whenever possible information regarding substrate, relative abundance, and associations, especially the associated vascular plants and to a lesser extent the Bryophytes were recorded in a field notebook at the time of collection. Whenever a spore print was desirable, a piece of white twenty pound bond paper was placed under the pileus of a specimen. The pileus and paper were then wrapped together and placed with the original collection in a manner allowing the spores to fall on the paper.

Identification of Specimens

Identifications of the specimens collected were made in

the laboratory as soon as possible after collections were made. The smaller and more delicate specimens such as members of the genera Coprinus, Mycena, and Galerina were identified first. Larger and more durable specimens such as members of the genera Boletus, Polyporus, and Fomes were identified as time permitted. When immediate identifications were not possible, notes regarding color, odor, taste, and other characters subject to change upon standing were recorded. These collections were then stored in a refrigerator to prevent decay and damage from Coleoptera and Diptera larvae.

Identifications were made by using macroscopic, microscopic, and chemical characteristics. Macroscopic characteristics used included habitat, manner of growth, color of spores in mass, size, shape, texture, arrangement, and presence or absence of a stipe, annulus, pileus, and hymenium. Color determinations were made according to Ridgeway (1912).

Microscopic characteristics used included the arrangement, color, shape, size, texture of spores, basidia or asci, cystidia, setae, cuticle, trama, context, etc. of the sporocarp. Sections for microscopic study of fresh material were made free-hand by placing a portion of the sporocarp between the thumb and the index finger and slicing across the sporocarp several times with a sharp, straight-edged razor. Some of the sections were then floated off the razor in a drop of water and onto a glass slide. Dried material was placed in 95 per cent

ethyl alcohol, then soaked immediately in distilled water for a few minutes prior to sectioning. Free-hand sections of such material were made between two halves of elder pith. These sections were floated off the razor in a drop of 2 per cent aqueous potassium hydroxide and onto a glass slide. All microscopic examinations and measurements were made using a compound monocular microscope equipped with 10x, 43x dry objectives and 97x oil immersion objective.

Chemical characteristics were of two kinds, those evident without reagents such as odor, taste, bruising, and color changes, and those involving chemical reagents such as the presence of starch, certain acids, and other substances. The presence of starch was determined by mounting the material to be studied in Melzer's solution. Aqueous solution of potassium hydroxide, aqueous solution of ferric sulphate, and other reagents were placed directly on the sporocarp or on microscopic sections as indicated by various keys.

Voucher collections were dried on a fungus drier, consisting of interchangeable trays of 1/4 inch wire mesh and a hot plate for a source of heat. The importance of well preserved specimens cannot be over-emphasized.

Materials Studied

Approximately 2000 collections were examined during

this study. The collections were made by the author and other students at the University of Michigan Biological Station. Six hundred two collections were saved as voucher collections. One collection of each species recorded is deposited in the University Herbarium of the University of Michigan, and duplicates wherever avilable are deposited in the cryptogamic collection at the Virginia Polytechnic Institute, and in the writer's personal herbarium.

Classification and Nomenclature

The system of classification followed in this study is that of Smith (1960b). Nomenclature for most of the Agaricales was taken from Singer (1951), and Kauffman (1918). Nomenclature for the Agaric genera Pluteus, Mycena, Xeromphalina, and Tricholomopsis was taken from Singer (1956), Smith (1947), Smith (1952) and Smith (1960a), respectively. For the Polyporaceae, Overholts (1953); for the Boletaceae, Coker and Beers (1943); for the Gasteromycetes, Smith (1951); and for the Hydnaceae, Harrison (1961) were used. Leathers (1955) was employed for the genus Clavaria. Smith and Reid's manuscript (1962) was utilized for the genera Cantharellus and Craterellus. For the Heterobasidiomycetes, Martin (1952) was employed. For all Discomycetes, except the Geoglossaceae, Seaver (1928) was used. For the Geoglossaceae, Mains (1954, 1955, and 1956) was utilized.

FUNGI COLLECTED

Annotated Check List

Most of the determinations were verified while the sporocarps were still fresh by Dr. Robert L. Shaffer or by Dr. A. H. Smith.

The relative abundance is indicated as follows:

infrequent - one to two collections of few sporocarps,

common - more than two collections,

very common - many collections in several areas of the Gorge,

abundant - many collections present over a large area throughout the summer.

Class Basidiomycetes

Subclass Homobasidiomycetes

Series Hymenomycetes

Order Agaricales

Family Amanitaceae

Amanita brunnescens Atk.

Common. Solitary to gregarious in sandy soil under hardwoods and conifers. Collected only in 1961.

Charlton number: 250.

Amanita flavoconica Atk.

Common. Solitary to scattered in mixed conifer and hardwood forest. This species was found occurring in several different habitats, including on very decayed wood, among moss at the edge of springy areas, and on sandy soil. Collected only in 1961.

Charlton number: G 208.

Amanita fulva (Schaeff. ex) Pers.

Common. Solitary to scattered in Picea-Thuja bog and in mixed forest of conifers and hardwoods. Collected only in 1961 from Sphagnum.

Charlton number: G 267.

Amanita inaurata Secr.

Common. Solitary to scattered in hardwood forest and

in mixed forest of conifers and hardwoods. Growing in sandy soil and among moss. Collected only in 1961.

Charlton number: G 231.

Amanita muscaria Fr. var. formosa Fr.

Common. Solitary to scattered in sandy soil under hardwood forest and mixed forest of conifer and hardwood. In 1961 this species fruited abundantly under Populus and Betula. In 1962 only one sporocarp was found in a damp area under conifers.

Charlton numbers: G 49, G 47, G 374.

Amanita rubescens Fr.

Common. Solitary, scattered, to cespitose in poor sandy soil under mixed conifer and hardwood forest. Collected only in 1961.

Charlton number: G 256.

Aminata vaginata (Bull. ex Fr.) Quel.

Common. Solitary to scattered in mixed forest of conifer and hardwood, and in Picea-Thuja bog. Collected only in 1962 from Sphagnum.

Charlton number: G 585.

Aminata verna Fr.

Common. Solitary to scattered in mixed conifer and hardwood forest. This species was collected from sandy soil and

among moss. Not collected in 1962.

Charlton numbers: G 221, G 255.

Family Bolbitaceae

Agrocybe acericola (Pk.) Sing.

Common. Solitary to gregarious on decayed logs of hardwood species. Collected only in 1961.

Charlton numbers: G 80, G 185.

Bolbitus reticulatus (Pers. ex. Fr.) Ricken

Infrequent. Solitary to scattered on decayed logs of hardwood species. Collected only in 1962.

Charlton numbers: G 382, G 461.

Family Coprinaceae

Coprinus atramentarius (Bull. ex. Fr.) Fr.

Common. Cespitose on ground at base of Acer in mixed forest of conifers and hardwoods. Collected only in 1962.

Charlton number: G 361.

Coprinus micaceus (Bull. ex. Fr.) Fr.

Common. Cespitose near base of tree in sandy soil. Collected only in 1961.

Charlton number: G 246.

Coprinus sp.

Common. Gregarious on deer dung. Collected several times in 1962.

Charlton number: G 528.

Psathyrella candolleana (Fr.) Sm.

Common. Cespitose in sandy soil near base of hardwood species.

Charlton numbers: G 168, G 354.

Psathyrella typhae (Kalchbr.) Sing.

Common. Solitary to gregarious on old leaf sheaths of Typha.

Charlton numbers: G 300, G 425.

Psathyrella sp. 1, sp. 2, sp. 3, and sp. 4

Infrequent. Only one sporocarp of each of these were collected. All four occurred on the ground of a mixed conifer and hardwood forest.

Charlton numbers: G 129, G 360, G 393, G 335.

Family Cortinariaceae

Cortinarius annulatus Pk.

Common. Solitary to scattered among fallen leaves in rich mixed forest of conifers and hardwoods.

Charlton numbers: G 301, G 595.

Cortinarius infractus (Pers. ex Fr.) Fr.

Common. Solitary to scattered on ground in rich mixed forest of conifers and hardwoods. Collected only in 1961.

Charlton number: G 277.

Cortinarius sp. 1

Infrequent. Solitary on sandy floor of mixed conifer and hardwood forest. Collected but once in 1961.

Charlton number: G 217.

Cortinarius sp. 2

Infrequent. Solitary to scattered among fallen leaves of hardwoods. Collected but once in 1961.

Charlton number: G 45.

Crepidotus fulvotomentosus Pk.

Very common. Scattered to gregarious on hardwood logs, notably Populus and Acer.

Charlton numbers: G 3, G 33, G 72, G 318, G 339, G 498.

Crepidotus putrigenus (Berk. and Curt.) Sacc.

Infrequent. Solitary to scattered on hardwood log. Collected only in 1962.

Charlton number: G 362.

Crepidotus sp.

Infrequent. Solitary on hardwood log. Specimen lost in processing.

Galerina fuegiana Sm.

Common. Solitary to gregarious. Always among moss, often on a moss covered conifer log.

Charlton numbers: G 240, G 282, G 352, G 359, G 540.

Galerina paludosa (Fr.) Kuhner

Common in 1961. Solitary to gregarious on Sphagnum in Picea-Thuja bog.

Charlton number: G 41.

Gymnopilus bellulus (Pk.) Murr.

Infrequent. Solitary to cespitose on hardwood log. Collected only in 1961.

Charlton number: G 285.

Gymnopilus sapineus (Fr.) R. Maire

Infrequent. Solitary to scattered on hardwood log. Collection lost in processing.

Inocybe calospora Quel.

Common. Scattered to gregarious in mixed forest of conifers and hardwoods. Abundant in damp sandy soil in 1962.

Charlton numbers: G 395, G 510, G 551.

Inocybe cincinnata (Fr.) Quel.

Common. Scattered to gregarious in permanently damp humus in mixed forest of conifer and hardwood.

Charlton numbers: G 106, G 549, G 409, G 511.

Inocybe eutheloides Pk.

Infrequent. Solitary to scattered among fallen Tsuga needles. Collected but once in 1961.

Charlton number: G 137.

Inocybe frumentaceae Bres.

Infrequent. Solitary to scattered in permanently damp areas in mixed conifer and hardwood forest. Collected in 1961.

Charlton number: G 138.

Inocybe geophylla (Sow. ex Fr.) Quel.

Infrequent. Solitary to scattered in permanently damp areas in mixed conifer and hardwood forest.

Charlton number: G 514.

Inocybe histrix Fr.

Infrequent. Solitary to scattered in sandy soil in mixed forest of conifers and hardwoods. Collected in 1962 only.

Charlton number: G 417.

Inocybe lacera (Fr.) Quel.

Infrequent. Solitary to gregarious in sandy soil under conifers and hardwoods. Collected only in 1961.

Charlton number: G 241.

Inocybe melenopoda Stuntz

Common. Solitary to gregarious in permanently damp areas

in Picea-Thuja bog and in mixed forest of conifers and hardwoods.

Charlton numbers: G 101, G 280, G 284, G 317, G 416.

Inocybe rimosa Fr.

Infrequent. Solitary to scattered in sandy soil in mixed forest of conifers and hardwoods. Collected in 1962.

Charlton number: G 520.

Inocybe subaemula (Britz.) Sacc. sensu Sing.

Infrequent. Solitary in sandy soil in mixed forest of conifers and hardwoods. Collected in 1961.

Charlton number: G 270.

Inocybe trechispora (Berk.) Karst.

Common. Solitary to gregarious in rich humus in mixed forest of conifer and hardwood and in Picea-Thuja bog. Frequently collected in 1962, but not in 1961.

Charlton numbers: G 408, G 413, G 464, G 509, G 571.

Inocybe sp. 1

Common. Scattered to gregarious in organic debris under mixed forest of conifer and hardwood.

Charlton numbers: G 104, G 442, G 512.

Inocybe sp. 2

Infrequent. Scattered in sandy soil under conifers and hardwoods.

Charlton number: G 513.

Inocybe sp. 3

Infrequent. Solitary to scattered in organic debris under mixed forest of conifers and hardwoods.

Charlton number: G 469.

Naucoria atripes Sm.

Infrequent. Solitary to scattered on decaying hardwood logs.

Charlton number: G 80.

Naucoria ericacanella (Fr.) Quel.

Infrequent. Solitary in sandy soil in mixed forest of conifers and hardwoods. Collected only in 1961.

Charlton number: G 91.

Naucoria latifolia Sm.

Infrequent. Solitary to scattered on hardwood logs. Collected in 1961.

Charlton number: G 79.

Naucoria limulata Sm.

Infrequent. Solitary to scattered on rotten logs and twigs. Collected only in 1961.

Charlton numbers: G 44, G 34.

Naucoria serrulata Murr.

Infrequent. Solitary to gregarious on hardwood logs and

twigs. Collected only in 1961.

Charlton number: G 161.

Pholiota adiposa (Fr.) Quel.

Infrequent. Cespitose on hardwood logs and stumps. Collected in 1962 from Alnus log.

Charlton number: G 390.

Pholiota curvipes (Fr.) Quel.

Common. Scattered to gregarious on decaying hardwood.

Charlton numbers: G 169, G 332, G 340.

Tubaria furfuracea (Pers. ex Fr.) Gill.

Common. Scattered to gregarious on hardwood, notably Betula and Acer.

Charlton number: G 130, G 343.

Tubaria sp.

Infrequent. Solitary to scattered among moss in Picea-Thuja bog.

Charlton number: G 405.

Family Gomphidiaceae

Gomphidium flavipes Pk.

Infrequent. Solitary on bare sandy knob in Picea-Thuja bog. Collected but once in 1961. Specimen was given to Orson Miller who was working on the genus Gomphidius.

Family Hygrophoraceae

Hygrophorus acutoconicus (Clements) Sm.

Common. Solitary to scattered in numerous habitats, including sandy soil under hardwoods, and mossy areas in the Picea-Thuja bog.

Charlton numbers: G 115, G 474.

Hygrophorus borealis Pk.

Infrequent. Solitary to scattered in damp humus in mixed forest of conifers and hardwoods. Collected only in 1961.

Charlton number: G 252.

Hygrophorus cantharellus (Schw.) Fr.

Abundant. Scattered to gregarious in numerous habitats. This species most frequently occurred along the margins of springs areas among moss, however, it has been collected from decaying logs, sandy soil, and from soil rich in organic debris.

Charlton numbers: G 39, G 85, G 143, G 323, G 344, G 366, G 406, G 452, G 486.

Hygrophorus ceraceus (Fr.) Fr.

Infrequent. Solitary in damp humus in mixed conifer and hardwood forest. Collected in 1961.

Charlton number: G 178.

Hygrophorus coccinus Fr.

Infrequent. Solitary to scattered in mixed forest of conifers and hardwoods. This species was collected from decaying wood in the Gorge, where outside the Gorge it was normally collected from the ground.

Charlton number: G 244.

Hygrophorus conicus Fr.

Common. Solitary to scattered. In 1961 this species was most frequently encountered on sandy soil in hardwood forest and mixed forest of conifers and hardwoods. In 1962 it was most frequently collected from mossy areas in the Picea-Thuja bog.

Charlton numbers: G 134, G 418, G 483.

Hygrophorus cuspidata Pk.

Infrequent. Solitary to scattered among moss in mixed forest of conifers and hardwood. Specimen lost during processing.

Hygrophorus flavescens (Kauff.) Sm. and Hesler

Very common. Scattered to gregarious in mixed forest of conifers and hardwoods. This species most commonly grew among mosses such as Mnium, although it was occasionally collected from rich humus.

Charlton numbers: G 23, G 342, G 365, G 421, G 450, G 499, G 503, G 539.

Hygrophorus laetus Fr. forma laetus (Fr.) Fr.

Very common. Solitary to gregarious among mosses in permanently damp areas. This species was most commonly collected from the Picea-Thuja bog, although it was occasionally collected from mixed forests of conifers and hardwoods.

Charlton numbers: G 100, G 127, G 162, G 198, G 420, G 451, G 485.

Hygrophorus marginatus Pk. forma marginatus Sm.

Very common. Solitary to gregarious in mixed forest of conifers and hardwoods and the Picea-Thuja bog. This species was most frequently collected from rich humus and sandy soil, although it has been collected from among moss and from decayed wood.

Charlton numbers: G 38, G 114, G 226, G 348, G 423, G 475, G 588, G 377, G 398, G 406.

Hygrophorus marginatus Pk. forma olivaceous (Sm. and Hesler) Sing.

Infrequent. Solitary on damp humus in mixed forest of conifers and hardwoods. Collected only in 1961.

Charlton number: G 213.

Hygrophorus miniatus Fr.

Common. Solitary to gregarious in mixed forest of

conifers and hardwoods. This species equally at home in rich humus as it was among moss.

Charlton numbers: G 248, G 358, G 376, G 422.

Hygrophorus nitidus B. and C.

Infrequent. Solitary to scattered in Picea-Thuja bog among moss, notably Mnium.

Charlton number: G 261.

Hygrophorus parvilus Pk.

Infrequent. Solitary among moss in mixed forest of conifers and hardwoods. Collected only in 1961.

Charlton number: G 186.

Hygrophorus psitticinus Fr.

Common. Solitary to scattered in damp humus and among moss in mixed forest of conifers and hardwoods and in Picea-Thuja bog.

Charlton numbers: G 63, G 116, G 154, G 367, G 385, G 419, G 487.

Hygrophorus puniceus (Fr.) Fr.

Infrequent. Solitary in humus in mixed forest of conifers and hardwoods. Collected once in 1961. Specimen lost in processing.

Hygrophorus reai Maire

Infrequent. Solitary to scattered in moss in mixed forest of conifers and hardwood.

Charlton number: G 73.

Hygrophorus unguinosus (Fr.) Fr.

Infrequent. Solitary to scattered in damp humus in Picea-Thuja bog. Collected only in 1961.

Charlton number: G 260.

Family Paxillaceae

Paxillus atrotomentosus (Batsch ex Fr.) Fr.

Infrequent. Collected in 1962 from a conifer stump which was partly submerged in water.

Charlton number: G 468.

Paxillus panuoides (Fr. ex Fr.) Fr.

Infrequent. Solitary to gregarious on hardwood.

Charlton numbers: G 305, G 363.

Paxillus vernalis Sm.

Infrequent in 1961. Solitary to gregarious among leaves of mixed forest of conifers and hardwoods.

Charlton number: G 180.

Family Rhodophyllaceae

Rhodophyllus albogriseus (Pk.) Sing.

Common. Solitary to scattered in mixed forest of conifers and hardwoods. Collected from sandy soil, humus soil, leaf covered soil, and from among moss.

Charlton numbers: G 82, G 157, G 192, G 372, G 527.

Rhodophyllus formosus (Fr.) Quel.

Common. Solitary to gregarious in mixed forest of conifers and hardwoods and in Picea-Thuja bog. Collected from damp humus and from among moss.

Charlton numbers: G 188, G 545, G 570.

Rhodophyllus lampropoda (Fr.)

Infrequent. Solitary on ground in mixed forest of conifers and hardwood. Collected in 1962.

Charlton number: G 546.

Rhodophyllus salmoneus (Pk.) Sing.

Infrequent. Scattered among mosses in Picea-Thuja bog. Collected in 1962. Specimen lost in processing.

Rhodophyllus serricellus (Bull. ex Fr.) Quel. sensu Soudier

Infrequent. Solitary to scattered on sandy soil in mixed forest of conifers and hardwoods.

Charlton numbers: G 573, G 526.

Rhodophyllus serrulatus (Pers. ex Fr.) Quel.

Common. Solitary to scattered among moss and in humus soil in Picea-Thuja bog and mixed forest of conifers and hardwoods.

Charlton numbers: G 171, G 465, G 525, G 544, G 566.

Rhodophyllus sp. 1

Infrequent. Solitary among moss in Picea-Thuja bog. Collected only in 1961.

Charlton number: G 105.

Rhodophyllus sp. 2

Infrequent. Solitary to scattered among moss in mixed forest of conifers and hardwood. Collected only in 1962.

Charlton number: G 441.

Family Russulaceae

Lactarius affinis Pk.

Common. Solitary to scattered in mixed forest of conifers and hardwoods. In 1961 this species was collected from sandy soil and in 1962 from among moss.

Charlton numbers: G 60, G 537.

Lactarius camphoratus (Bull. ex Fr.) Fr.

Common in 1961. Scattered to gregarious in sandy soil and among moss in mixed forest of conifers and hardwoods.

Charlton numbers: G 209, G 282.

Lactarius chrysorheus Fr.

Common. Solitary to scattered among moss. In 1961 it fruited most abundantly in mixed forest of conifers and hardwoods. In 1962 it fruited most abundantly in the Picea-Thuja bog.

Charlton numbers: G 306, G 578, G 587.

Lactarius deciptivus Pk.

Very common. Solitary to scattered on ground among fallen leaves and moss. This species was collected in 1961 primarily from mixed forest of conifers and hardwoods, and the Betula forest. In 1962 it was collected primarily from the Picea-Thuja bog.

Charlton numbers: G 56, G 140, G 201, G 388, G 401, G 432.

Lactarius fuliginosus Fr.

Common in 1962. Solitary to gregarious among moss in Picea-Thuja bog.

Charlton numbers: G 569, G 590.

Lactarius griseus Pk.

Very common. Solitary to scattered on ground in Picea-Thuja bog and mixed conifer and hardwood forest.

Charlton numbers: G 68, G 94, G 278, G 242, G 243, G 383, G 430, G 470, G 476, G 484.

Lactarius nigroviolascens Atk.

Infrequent. Solitary in moss in Picea-Thuja bog.

Charlton number: G 492.

Lactarius rufus (Scop. ex Fr.) Fr.

Infrequent. Scattered among moss in Picea-Thuja bog. Collected only in 1962.

Charlton number: G 543.

Lactarius subdulcis (Bull. ex Fr.) Gray

Infrequent. Scattered in sandy soil in mixed forest of conifers and hardwood. Collected only in 1961. Specimen lost in processing.

Lactarius subpurpureus Pk.

Common. Solitary to scattered among moss and on bare soil in Picea-Thuja bog and in mixed forest of conifers and hardwoods.

Charlton numbers: G 225, G 298, G 491, G 584.

Lactarius thyinos Sm.

Common. Solitary to scattered in Picea-Thuja bog. This species was abundant in 1962, but scarce in 1961. One collection was made in the center of the Betula forest.

Charlton numbers: G 292, G 556, G 575.

Lactarius trivialis (Fr. ex Fr.) Fr.

Common. Solitary to scattered in sandy soil under

hardwoods and conifers. Collected only in 1961.

Charlton numbers: G 167, G 200.

Russula amygdaloides Kauffm.

Infrequent. Solitary to scattered in sandy soil in mixed forest of conifers and hardwoods. Collected only in 1961.

Charlton number: G 232.

Russula aurata Fr.

Infrequent. Solitary to scattered in sandy soil under mixed forest of conifers and hardwoods. Collected only in 1961.

Charlton number: G 294.

Russula brunneola Schaeff.

Common. Solitary to scattered in sandy soil and in soil covered by organic debris.

Charlton number: G 271.

Russula compacta Frost

Infrequent. Scattered on sandy slope under mixed forest of conifers and hardwoods. Collected in 1962.

Charlton number: G 529.

Russula delica Fr.

Infrequent. Scattered among mosses in mixed forest of

conifers and hardwoods. Collected only in 1961.

Charlton number: G 222.

Russula emetica (Schaeff. ex Fr.) Pers. ex Fr.

Infrequent. Solitary to scattered in Picea-Thuja bog. Collected only in 1962. Specimen beyond preservation.

Russula fallax (Fr.) Sacc. sensu Sing.

Common. Solitary to scattered among moss and in sandy soil under mixed forest of conifers and hardwoods.

Charlton numbers: G 88, G 410, G 428, G 460, G 562.

Russula foetens Pers. ex Fr.

Infrequent. Solitary among moss in mixed forest of conifers and hardwoods. Collected only in 1962.

Charlton number: G 502.

Russula fragilis (Pers. ex Fr.) Sing.

Very common. Solitary to scattered among moss under mixed forest of conifers and hardwoods and in Picea-Thuja bog.

Charlton numbers: G 65, G 117, G 177, G 17, G 84, G 380, G 399, G 429, G 456, G 481.

Russula gracilis Burl.

Infrequent. Solitary on ground in mixed forest of conifers and hardwoods. Collected but once in 1961.

Charlton number: G 181.

Russula ochroleucoides Kauffm.

Infrequent. Scattered in sandy soil in mixed forest of conifers and hardwoods. Collected but once in 1961.

Charlton number: G 136.

Russula pallescens Karst.

Infrequent. Solitary on ground in mixed forest of conifers and hardwoods.

Charlton number: G 24.

Russula palumbina Quel.

Common. Solitary among moss in mixed forest of conifers and hardwoods.

Charlton numbers: G 446, G 501.

Russula virescens (Schaeff. ex Zanted.) Fr.

Infrequent. Solitary among fallen leaves of hardwoods and conifers. Collected in 1961.

Charlton number: G 235.

Russula xerampelina (Schaeff. ex Secr.) Fr.

Infrequent. Solitary to scattered among organic debris under conifers and hardwoods.

Charlton numbers: G 270, G 583.

Russula sp. 1

Infrequent. Solitary among moss in mixed forest of

conifers and hardwoods.

Charlton number: G 312.

Russula sp. 2

Infrequent. Solitary to scattered in Picea-Thuja bog.

Charlton number: G 234.

Family Strophariaceae

Keuhneromyces vernalis (Pk.) Sing. and Sm.

Common. Gregarious on rottening hardwood. Collected only in 1961.

Charlton number: G 29.

Family Tricholomataceae

Armellaria mellea Fr.

Common. Solitary to cespitose on wood and on ground near trees. This typically autumn fungus was collected several times in late June and July of 1962.

Charlton numbers: G 349, G 394.

Clitocybe aurantiaca (Fr.) Studer

Infrequent. Cespitose on conifer wood. Collected only in 1962.

Charlton number: G 591.

Clitocybe ectypoides (Pk.) Sacc.

Infrequent. Scattered among fallen leaves in mixed forest of conifers and hardwoods. Collected only in 1961.

Charlton number: G 276.

Clitocybe parosis (Pk.) Sacc.

Infrequent. Solitary on ground in mixed forest of conifers and hardwoods. Collected only in 1961. Specimen lost during processing.

Clitocybe radicellata Godey

Common. Solitary to scattered on ground in mixed forest of conifers and hardwoods.

Charlton numbers: G 35, G 86.

Collybia chrysopepla Berk.

Common. Solitary to gregarious on hardwood logs and stumps.

Charlton numbers: G 124, G 183.

Collybia colorea Pk.

Infrequent. Scattered among leaves in mixed forest of conifers and hardwoods.

Charlton number: G 303.

Collybia confluens (Pers. ex Fr.) Quel.

Common. Cespitose on fallen leaves of deciduous trees.

Collected only in 1961.

Charlton number: G 216.

Collybia dryophila (Bull. ex Fr.) Quel.

Common. Solitary to gregarious among fallen leaves, and on wood in Betula forest and mixed forest of conifers and hardwoods.

Charlton numbers: G 5, G 445.

Collybia dryophila Fr. var. luteifolia Sm.

Infrequent. Solitary to gregarious among fallen leaves in mixed forest of conifers and hardwoods. Collected only in 1961. Specimen lost during processing.

Collybia myriadophylla Pk.

Common in 1961. Scattered to gregarious on hardwood logs.

Charlton numbers: G 54, G 150.

Collybia polyphylla Pk.

Infrequent. Scattered among fallen leaves of deciduous trees.

Charlton number: G 70.

Collybia radicata Quel.

Common. Solitary to gregarious on ground near stumps in mixed forest of conifers and hardwoods.

Charlton numbers: G 57, G 345, G 530.

Crinipellis campanella (Pk.) Sing.

Common. Scattered to gregarious on dead Thuja stems and logs.

Charlton numbers: G 92, G 449.

Crinipellis setipes (Pk.) Sing.

Common. Scattered on organic debris, notably Tsuga leaves.

Charlton numbers: G 67, G 458.

Laccaria amethystina (Bolt. ex Fr.) Berk. and Fr.

Infrequent. Solitary to scattered on ground of mixed forest of conifers and hardwoods.

Charlton number: G 516.

Laccaria laccata (Scop. ex Fr.) Berk. and Br.

Very common. Solitary to scattered on wood, among moss, on sandy soil and on humus. In Betula forest, mixed forest of conifers and hardwoods, and in Picea-Thuja bog.

Charlton numbers: G 123, G 133, G 179, G 313, G 327, G 459, G 490, G 555.

Laccaria striatula Pk.

Infrequent. Scattered in sandy soil under mixed forest of conifers and hardwoods. Collected only in 1961.

Charlton number: G 90.

Laccaria tortilis (Bolt. ex Fr.) Pat.

Infrequent. Scattered in sandy soil under mixed forest of conifers and hardwood. Collected only in 1961.

Charlton number: G 36.

Lentinellus cochleatus (Pers. ex Fr.) Karst.

Infrequent. Cespitose on decaying wood. This specimen was collected by one of the students after study period was over.

Lentinellus umbilicatus (Pk.) Sing.

Common. Scattered to cespitose on live deciduous trees, notably Acer.

Charlton number: G 51, G 76, G 351.

Lentinellus vulpinis (Fr.) Kuhner and Maire

Infrequent. Scattered on live Acer. Collected only in 1961.

Charlton number: G 211.

Lentinus lepideus Fr.

Common. Solitary to scattered on dead wood of deciduous and coniferous trees, notably Thuja. Collected only in 1962.

Charlton number: G 418, G 577.

Leucopaxillus laterarius (Pk.) Sing. and Sm.

Common. Solitary to cespitose in fallen leaves of

deciduous trees. Collected only in 1961.

Charlton number: G 206.

Lyophyllum sp.

Infrequent. Scattered in sandy soil. Collected once in 1961. Specimen given to Dr. A. H. Smith.

Marasimus capallaris Morg.

Infrequent. Scattered on twigs and organic debris in mixed forest of conifers and hardwoods. Collected only in 1961.

Charlton number: G 158.

Marasimus cohaerens (A. and S. ex Fr.) Quel.

Common. Scattered to cespitose on dead twigs and among fallen leaves. Collected only in 1961.

Charlton numbers: G 153, G 204.

Marasimus foetidus Sow. ex Fr.

Very common. Scattered to gregarious on wood of deciduous trees, notably Acer, Betula, and Populus.

Charlton numbers: G 77, G 444, G 488, G 554.

Marasimus resinosus Pk.

Common in 1961. Scattered in organic debris, notably Tsuga needles.

Charlton number: G 189.

Marasimus rotula (L. ex Fr.) Fr.

Abundant. Scattered to gregarious on bark of trees, logs, twigs, leaves, and organic debris in mixed forest of conifers and hardwoods.

Charlton numbers: G 42, G 75, G 320.

Marasimus siccus (Schw.) Fr.

Infrequent. Scattered on fallen leaves and twigs of deciduous trees. Collected only in 1961. Specimen lost during processing.

Mycena acicula (Fr.) Quel.

Common. Solitary to gregarious on debris in wet places in Picea-Thuja bog and in mixed forest of conifers and hardwoods.

Charlton numbers: G 58, G 404.

Mycena alcalina (Fr.) Quel.

Common. Solitary to cespitose on wood of coniferous trees.

Charlton numbers: G 110, G 215, G 329, G 392, G 474.

Mycena algeriensis R. Maire in Kuhner.

Infrequent. Cespitose on wood of deciduous trees, notably Alnus. Collected only in 1961.

Charlton number: G 164.

Mycena corticola (Fr.) S. F. Gray

Common. Gregarious on bark of deciduous trees, notably Quercus and Acer.

Charlton number: G 79.

Mycena delicatella (Pk.) Sm.

Infrequent. Gregarious on conifer debris.

Charlton number: G 251, G 415.

Mycena epipterygia var. lignicola Sm.

Infrequent. Gregarious on conifer wood.

Charlton numbers: G 160, G 472.

Mycena fibula (Fr.) Kuhner

Very common. Solitary to gregarious among moss in mixed conifer and hardwood forest and in Picea-Thuja bog.

Charlton numbers: G 78, G 111, G 170, G 328, G 434, G 505.

Mycena gracilis (Quel.) Kuhner

Infrequent. Scattered on ground in Picea-Thuja bog. Collected only in 1961.

Charlton number: G 32.

Mycena haematopus (Fr.) Quel.

Common. Solitary to cespitose on decaying wood. Collected only in 1961.

Charlton number: G 173.

Mycena leaiana (Berk.) Sacc.

Common. Cespitose on decaying wood of deciduous trees, notably Acer and Betula. In 1961 most of the hardwood logs were covered with this species, whereas in 1962 only two small collections were found.

Charlton numbers: G 6, G 25, G 319, G 384.

Mycena leptocephela (Fr.) Gillet

Infrequent. Solitary to gregarious on fallen twigs and organic debris.

Charlton number: G 122.

Mycena lilacifolia (Pk.) Sm.

Common. Gregarious on decaying conifer logs, notably Tsuga. In 1961 most of the old Tsuga logs contained this species. In 1962 it was not collected.

Charlton number: G 144.

Mycena niveipes Murr.

Common. Solitary to gregarious on old logs of deciduous trees. Collected only in 1961.

Charlton number: G 113.

Mycena purpureofusca (Pk.) Sacc.

Infrequent. Solitary to cespitose on conifer wood. Collected only in 1961.

Charlton number: G 112.

Mycena radicatella (Pk.) Sacc.

Common. Scattered on decaying wood of deciduous trees particularly Acer and Populus. Collected only in 1961.

Charlton number: G 156.

Mycena rubromarginata (Fr.) Quel.

Infrequent. Scattered on coniferous wood in Picea-Thuja bog. Collected only in 1962.

Charlton number: G 165.

Mycena sanguinolenta (Fr.) Quel.

Common. Cespitose on dead coniferous wood.

Charlton numbers: G 2, G 448.

Mycena subcaerulea (Pk.) Sacc.

Infrequent. Solitary on hardwood log. Collected only in 1961.

Charlton number: G 239.

Mycena ulmicola Sm.

Common. Gregarious on Ulmus log.

Charlton numbers: G 148, G 462.

Mycena sp.

Infrequent. Cespitose on Acer lob. Hymenium immature.

Charlton number: G 471.

Panus sp.

Infrequent. Solitary on hardwood stump. Collected only in 1961. Specimen lost during processing.

Pleurotus candidissimus Berk. and Curt.

Infrequent. Scattered on hardwood twig. Collected only in 1961.

Charlton number: G 309.

Pleurotus ostreatus (Jacq. ex Fr.) Quel.

Common. Solitary to cespitose on living or decaying wood of deciduous trees. One collection was made from a Tsuga log.

Charlton numbers: G 7, G 59, G 400, G 552.

Schizophyllum commune Fr.

Common. Solitary to gregarious on decaying wood of deciduous trees.

Charlton numbers: G 4, G 523.

Tricholoma unifactum Pk.

Infrequent. Solitary on sandy soil in mixed forest of conifers and hardwoods. Collected only in 1961.

Charlton number: G 297.

Tricholomopsis decora (Fr.) Sing.

Common. Solitary to scattered on decaying wood of conifers, particularly Tsuga.

Charlton numbers: G 495, G 557, G 576, G 593.

Tricholomopsis platyphylla (Fr.) Sing.

Common. Solitary to scattered around decaying wood of deciduous trees.

Charlton number: G 211.

Tricholomopsis rutilans (Fr.) Sing.

Common. Solitary to gregarious on decaying logs and stumps of conifers.

Charlton numbers: G 210, G 389, G 519, G 592.

Xeromphalina campanella Kuhn. and Maire

Very common. Gregarious on Tsuga logs and stumps.

Charlton numbers: G 62, G 338, G 434.

Xeromphalina cauticinalis (Fr.) Kuhner and Maire

Infrequent. Solitary on Sphagnum. Collected but once in 1962.

Charlton number: G 517.

Xeromphalina tenuipes (Schw.) Sm.

Common. Solitary to cespitose on decaying wood of deciduous trees.

Charlton number: G 322.

Family Volvariaceae

Pleutus admirabilis (Pk.) Pk.

Common. Solitary to cespitose on decaying wood of deciduous trees, particularly Acer. Collected only in 1962.

Charlton numbers: G 371, G 506, G 567, G 596.

Pleutus brunneidiscus Murr.

Infrequent. Cespitose on decaying log of deciduous trees. Collected only in 1962.

Charlton number: G 397.

Pleutus cervinus (Schaeff. ex Secr.) Quel.

Common. Solitary to cespitose on decaying wood of deciduous trees. Collected only in 1961.

Charlton number: G 291.

Pleutus crysophaceus (Schaeff. ex Lasch) Quel.

Common. Solitary to cespitose on decaying logs of deciduous trees.

Charlton numbers: G 74, G 174, G 391, G 568.

Pleutus flavofuligineus Atk.

Common. Solitary to cespitose on decaying logs and stumps of deciduous trees, particularly Acer.

Charlton numbers: G 31, G 83, G 202, G 396.

Pleutus longistriatus (Pk.) Sacc.

Common. Solitary to cespitose on decaying wood of deciduous trees. Collected only in 1961.

Charlton number: G 121.

Pleutus magnus McClutchie

Common. Solitary to cespitose on decaying wood of deciduous trees, particularly Acer and Betula.

Charlton numbers: G 466, G 370.

Pleutus parvicystus var. parvicystus Sm.

Infrequent. Solitary on decaying wood of deciduous trees. Specimen lost in processing.

Pleutus tomentosulus Pk.

Infrequent. Solitary on decaying wood of deciduous trees. Collected only in 1961. Specimen lost during processing.

Order Boletales

Family Boletaceae

Boletinus pictus Pk.

Very common. Solitary to gregarious under conifers, notably Pinus strobus. In 1961 it occurred most frequently on sandy forest floor, whereas in 1962 it seemed to be restricted to permanently damp areas characterized by the Bryophytes Mnium, Tricholea, and Hypnum.

Charlton numbers: G 175, G 197, G 48, G 438, G 479, G 535, G 558.

Boletus acidus Pk.

Infrequent. Collected but once in 1961. Solitary to gregarious on sandy slope with Pinus, Thuja, and Tsuga forming the overstory.

Charlton number: G 265.

Boletus affinis Pk.

Common. Solitary to gregarious in mixed conifer and hardwood forest with a sandy floor poor in humus. Collected in 1961, but not 1962.

Charlton number: G 223.

Boletus affinis Pk. var. maculosus Pk.

Common. Solitary to gregarious in mixed conifer and hardwood forest. This was more common than Boletus affinis in that it occurred on permanently damp soil, sandy soil, and soil covered with fallen leaves. Collected only in 1961.

Charlton number: G 274.

Boletus americanus Pk.

Common. Solitary to gregarious under conifers, notably Pinus strobus. In 1961 it fruited abundantly on a sandy forest floor. Only one depauperate sporocarp was collected in 1962.

Charlton numbers: G 274, G 457.

Boletus aurantiacus Sing.

Common. Solitary to gregarious in mixed conifer and hardwood forest with a sandy floor. Collected only in 1961.

Charlton number: G 284.

Boletus chromapes Frost

Infrequent. Solitary in mixed conifer and hardwood forest with floor covered with fallen leaves. Collected twice in 1961, apparently from same mycelium.

Charlton numbers: G 207, G 247.

Boletus elegans Pk.

Infrequent. Solitary. Collected but once in 1962 under Larix.

Charlton number: G 580.

Boletus gracilis Pk.

Infrequent. Collected but once in 1961. Solitary to scattered in mixed conifer and hardwood forest with a rich humus floor.

Charlton number: G 214.

Boletus hirtellus Pk.

Common in 1961. Solitary to scattered on floor of mixed conifer and hardwood forest. Collected from permanently

damp soil, sandy soil, and soil rich in humus.

Charlton number: G 205.

Boletus oxydabilis Sing.

Infrequent. Collected but once in 1961. Solitary to gregarious in mixed conifer and hardwood forest with a sandy floor.

Charlton number: G 176.

Boletus piperatus Bull.

Common. Solitary to gregarious in mixed conifer and hardwood forest. This species occurred most frequently along the edges of springy areas, although unlike most Boletaceae it seems to occur in almost any habitat. Collected only in 1961.

Charlton number: G 224.

Boletus punctipes Pk.

Very common in 1962. Solitary to gregarious. This species was collected only from the Picea-Thuja bog area. Sporocarps were seen among Sphagnum, Mnium, and other Bryophytes as well as on bare ground.

Charlton numbers: G 534, G 582.

Boletus scaber Bull.

Very common. Solitary to scattered in numerous habitats. Sporocarps were collected from Picea-Thuja bog, hardwood forest,

and mixed conifer and hardwood forest. Besides occurring on the forest floor it was also collected from Sphagnum and from a log several feet above the ground.

Charlton numbers: G 61, G 131, G 311, G 337, G 480, G 536, G 586.

Boletus subtomentosus L.

Common. Solitary to scattered in mixed conifer and hardwood forest. This species was equally common on very rotten wood as it was on the forest floor.

Charlton numbers: G 66, G 147, G 273, G 293, G 379, G 424.

Order Clavariales

Family Clavariaceae

Cantharellus cibarius Fr.

Very common. Solitary to gregarious in hardwood forest and mixed conifer and hardwood forest. This species occurred most abundantly on sandy soil. Not collected in 1962.

Charlton numbers: G 87, G 135, G 137.

Cantharellus infundibuliformis Fr.

Common. Gregarious to cespitose in Picea-Thuja bog and mixed conifer and hardwood forest. Usually occurring in

permanently damp areas among moss but in rainy spells it has been collected from a forest floor covered with leaf mold.

Charlton numbers: G 218, G 532.

Cantharellus tubaeformis Fr.

Infrequent. Gregarious to cespitose in permanently damp areas. Usually growing among Bryophytes such as Sphagnum, Aulacomnium, and Mnium. Collected only in 1961.

Charlton number: G 304.

Clavaria abietina Fr.

Infrequent. Solitary to gregarious in organic debris under conifers, notably Tsuga. Collected only in 1961.

Charlton number: G 187.

Clavaria cinerea Fr.

Common. Solitary to gregarious in Picea-Thuja bog, among Sphagnum and Mnium. Collected only in 1962.

Charlton number: G 579.

Clavaria corniculata Fr.

Common. Solitary to gregarious in hardwood forest and mixed forest of conifers and hardwoods. This species occurred mostly in sandy soil. In 1961 it was collected from bare sandy soil, whereas in 1962 it was collected from sandy knobs covered with moss.

Charlton number: G 212.

Clavaria cristata Fr.

Common. Solitary to gregarious in hardwood forest, mixed forest of conifers and hardwoods, and Picea-Thuja bog. This species was collected from several habitats, notably from heavily decayed wood, and moss covered ground around springy areas.

Charlton numbers: G 253, G 572, G 594.

Clavaria kunzei Fr.

Common. Solitary to gregarious in mixed forest of conifers and hardwoods. This species was collected only among mosses, notably Rhodobryum and Mnium.

Charlton numbers: G 163, G 268, G 462, G 504.

Clavaria pulchra Pk.

Abundant. Scattered in permanently damp humus in mixed forest of conifer and hardwoods. This is one of the most frequently encountered species in the Gorge.

Charlton numbers: G 199, G 316, G 368, G 411, G 467.

Clavaria pyxidata Fr.

Common. Solitary to densely gregarious on hardwood logs and stumps.

Charlton numbers: G 1, G 357.

Clavaria sanguinea Coker

Infrequent. Solitary to gregarious in mixed forest of

conifers and hardwoods. Collected only in 1961.

Charlton number: G 249.

Clavaria stricta Fr.

Common in 1961. Solitary to gregarious on logs and other decaying wood.

Charlton numbers: G 69, G 144, G 254.

Clavaria vermicularis Fr.

Common in 1962. Solitary to gregarious in rich organic material which was once covered by water. This species was collected only from Picea-Thuja bog.

Charlton numbers: G 489, G 541.

Pistillaria sp.

Infrequent. Solitary to gregarious in mixed forest of conifers and hardwoods. Specimen lost in processing.

Craterellus cornicopioides Fr.

Common. Gregarious to cespitose among moss and fallen leaves in mixed forest of conifers and hardwoods. Collection given to Dr. A. H. Smith.

Craterellus lutescens Fr.

Very common. Gregarious to cespitose in Picea-Thuja bog and mixed forest of conifers and hardwoods. Usually occurring at the margins of springy areas, but often collected from sandy areas.

Charlton numbers: G 40, G 149, G 275, G 387, G 531.

Order Hydnales

Family Hydnaceae

Dentinum repandum (Fr.) S. F. Gray

Common. Solitary to gregarious on sandy soil and among moss. In 1961 this species was collected most commonly from the Betula forest and the mixed forest of conifers and hardwoods. In 1962 it was collected from the latter and from the Picea-Thuja bog.

Charlton numbers: G 119, G 496, G 538, G 589.

Phellon albo-niger (Pk.) Banker

Infrequent. Scattered in sandy soil under mixed forest of conifers and hardwoods. Collected only in 1962. Specimen lost during processing.

Phellon tomentosus (Fr.) Banker

Infrequent. Scattered in sandy soil under mixed forest of conifers and hardwoods. Collected only in 1961.

Charlton number: G 286.

Order Polyporales

Family Polyporaceae

Daedalea confragosa Bolt. ex Fr.

Common. Scattered on hardwood logs and twigs.

Charlton numbers: G 190, G 560.

Daedalea unicolor Bull. ex Fr.

Common. Cespitose on dead wood of deciduous trees. Collected only in 1961.

Charlton numbers: G 96, G 166.

Favolus alveolaris (P. C. ex Fr.) Quel.

Common. Solitary to scattered on twigs of hardwood trees, notably Acer, Betula, Populus and Quercus.

Charlton numbers: G 9, G 559.

Fomes applanatus (Pers. ex Wallr.) Pat.

Very common. Solitary to scattered on living and dead deciduous trees, notably Acer, Betula, and Populus.

Charlton numbers: G 22, G 335.

Fomes connatus (Weinn) Gill.

Common. Effused-reflexed at base of live Acer rubrum.

Charlton numbers: G 219, G 378.

Fomes fomentarius (L. ex Fr.) Kickx.

Common. Solitary to scattered on logs and trunks of deciduous trees, notably Acer and Betula.

Charlton numbers: G 46, G 334.

Fomes ignarius (L. ex Fr. Kickx.)

Common. Solitary to scattered on trunks of living and dead deciduous trees, notably Acer, Betula, and Quercus.

Charlton number: G 375.

Fomes ohiensis (Berk.) Murr.

Infrequent. Scattered on hardwood trees, noted on Acer. Collected only in 1962.

Charlton number: G 598.

Fomes pinicola (Swartz ex Fr.) Cooke

Common. Solitary to scattered on conifers, notably Pinus, Larix, and Picea.

Charlton number: G 21.

Polyporus adustus Willd. ex Fr.

Common. Effused-reflexed on deciduous trees.

Charlton numbers: G 289, G 561.

Polyporus albellus Pk.

Common. Solitary to scattered on twigs of deciduous trees. Collected only in 1961.

Charlton number: G 288.

Polyporus betulina Bull ex Fr.

Common. Solitary to scattered on Betula.

Charlton number: G 99.

Polyporus dryophilus Berk.

Common. Scattered on logs of deciduous trees, notably Populus and Betula.

Charlton numbers: G 8, G 109, G 120, G 336.

Polyporus elegans Bull. ex Fr.

Common. Solitary to scattered on hardwood twigs and logs.

Charlton numbers: G 26, G 37, G 324, G 402, G 477.

Polyporus fagicola Murr.

Infrequent. Solitary on hardwood log. Collected only in 1961.

Charlton number: G 257.

Polyporus guttalatus Pk.

Common in 1961. Solitary to scattered on Tsuga log.

Charlton numbers: G 125, G 258.

Polyporus immitis Pk.

Infrequent. Scattered on Populus log. Collected in 1961.

Charlton number: G 220.

Polyporus nidulans Fr.

Common. Scattered on dead wood of deciduous trees.

Charlton number: G 141.

Polyporus pargamenus Fr.

Common. Effused-reflected on dead deciduous trees, notably Populus.

Charlton numbers: G 97, G 443.

Polyporus perennis L. ex Fr.

Common. Solitary to scattered in sandy soil under mixed forest of conifers and hardwoods and in Betula hardwood. Collected only in 1961.

Charlton number: G 147.

Polyporus resinosus Schrad. ex Fr.

Common. Scattered on living and dead conifers. Collected only in 1961.

Charlton number: G 296.

Polyporus tsugae (Murr.) Overh.

Common. Solitary to gregarious on conifer wood, notably that of Tsuga.

Charlton numbers: G 20, G 494.

Polyporus versicolor L. ex Fr.

Common. Gregarious on dead wood of deciduous trees. Collected only in 1961.

Charlton number: G 27.

Series Gasteromycetes

Order Lycoperdales

Family Lycoperdaceae

Lycoperdon pussilum Pers.

Infrequent. Solitary on ground under mixed forest of conifers and hardwoods.

Charlton number: G 243.

Lycoperdon pyriforme Pers.

Common. Cespitose on dead wood of deciduous trees. Fresh sporocarps were found only in 1961, although many old sporocarps were seen each year from the previous fall.

Charlton number: G 138.

Order Nidulariales

Family Nidulariaceae

Crucibulum levis (D. C.) Kambly and Lee

Infrequent. Scattered in Quercus acorns. Collected only in 1961.

Charlton number: G 89.

Order Sclerodermales

Family Sclerodermaceae

Scleroderma aurantium Pres.

Infrequent. Solitary among most in mixed forest of conifers and hardwoods. Collected only in 1961.

Charlton number: G 116.

Subclass Heterobasidiomycetes

Order Dacrymycetales

Calocera cornea (Fr.) Loudon

Common. Scattered to gregarious on dead wood of deciduous trees.

Charlton numbers: G 180, G 478.

Guipiniopsis torta (Fr.) Pat.

Infrequent. Scattered on dead wood of coniferous trees. Collected only in 1962.

Charlton number: G 473.

Order Tremellales

Pseudohydnum gelatinosum (Fr.) Karst.

Common. Scattered on dead Tsuga log. Collected only in 1961.

Charlton numbers: G 184, G 264.

Tremella lutescens Fr.

Common. Solitary to scattered on dead twigs of deciduous trees. Collected only in 1961.

Charlton number: G 107.

Tremellodendron cladonia (Schw.) Burt.

Common. Gregarious among moss on a sandy bank under a mixed forest of conifers and hardwoods.

Charlton number: G 439.

Tremellodendron sp.

Infrequent. Solitary among moss. Specimen of Dr. Ewell Stowell.

Class Ascomycetes

Order Hypocreales

Cordiceps michigenensis Mains

Common. Cespitose on Coleoptera larva which was beneath humus in a mixed forest of conifers and hardwoods.

Charlton numbers: G 145, G 447.

Hypomyces lactifluorum

Common in 1961. Parasitic on Lactarius species.

Charlton number: G 126, G 203.

Order Pezizales

Family Geoglossaceae

Geoglassum cohaerens Durand

Infrequent. Scattered on ground under conifers and hardwoods.

Charlton number: G 522.

Geoglossum fallax Durand

Common. Scattered on very rotten log.

Charlton numbers: G 287, G 435.

Geoglossum glabrum Pers. ex Fr.

Common. Scattered to gregarious among moss in Picea-Thuja bog and in mixed forest of conifers and hardwoods.

Charlton numbers: G 195, G 309, G 436, G 542, G 574.

Geoglossum nigritum (Pers.) Cooke

Common. Scattered on ground in mixed forest of conifers and hardwoods.

Charlton numbers: G 308, G 437.

Leotia lubrica Fr.

Common. Solitary to cespitose on ground and on decaying

wood. In mixed forest of conifers and hardwoods.

Charlton numbers: G 299, G 563.

Microglossum longisporum Durand

Infrequent. Scattered on decaying wood in mixed forest of conifers and hardwoods.

Charlton number: G 270.

Microglossum rufum (Schw.) Underw.

Abundant. Scattered to gregarious along margins of permanently wet places and in rich humus. In mixed forest of conifers and hardwoods and in Picea-Thuja bog.

Charlton numbers: G 28, G 98, G 120, G 142, G 356, G 381, G 453, G 497.

Spathularia flavida Fr.

Infrequent. Scattered in organic debris in mixed forest of conifers and hardwoods. Collected only in 1961.

Charlton number: G 152.

Trichoglossum velutipes (Pk.) Durand

Infrequent. Scattered on humus in mixed forest of conifers and hardwoods. Collected only in 1961.

Charlton number: G 310.

Trichoglossum sp.

Infrequent. Solitary among moss in Picea-Thuja bog.

Asci of sporocarp were immature.

Charlton number: G 518.

Family Helvellaceae

Helvella atra Oed.

Common. Solitary to scattered among moss and on rotten logs in Picea-Thuja bog. Collected only in 1962.

Charlton numbers: G 524, G 548, G 564.

Helvella crispa (Scop.) Fr.

Infrequent. Solitary to scattered on mossy log in mixed forest of conifers and hardwoods. Collected only in 1961.

Charlton numbers: G 194, G 263.

Helvella elastica Fr.

Common. Solitary to scattered among moss in Picea-Thuja bog and in mixed forest of conifers and hardwoods.

Charlton numbers: G 50, G 279, G 412.

Helvella mitra L.

Common. Solitary to cespitose on ground and among moss in Picea-Thuja bog and in mixed forest of conifers and hardwoods.

Charlton numbers: G 52, G 95, G 565, G 581.

Helvella sphereospora Pk.

Infrequent. Solitary on decaying hardwood. Specimens were beyond preservation.

Family Pezizaceae

Humaria hemisphaerica Funckel

Common. Solitary to scattered on ground, on decaying wood and among moss in Picea-Thuja bog and in mixed forest of conifers and hardwoods.

Charlton numbers: G 295, G 455.

Patella scutellata (L.) Morgan

Abundant. Scattered to gregarious in permanently wet places on ground, wood and organic debris of all sorts.

Charlton numbers: G 11, G 51, G 321, G 386.

Paxina hispida (Schaeff.) Seaver

Common. Solitary to scattered on very rotten logs and on ground in mixed forest of conifers and hardwoods.

Charlton numbers: G 155, G 262, G 426, G 493.

Peziza badia Pers.

Very common. Solitary, gregarious, to cespitose among moss, on rich humus, on ground, and on decayed wood in mixed forest of conifers and hardwoods.

Charlton numbers: G 15, G 65, G 71, G 325, G 480.

Peziza emileia Cooke

Common in 1962. Scattered on logs partly submerged in water.

Charlton numbers: G 364, G 414.

Peziza liliacina Fr.

Common. Solitary to scattered on ground among moss in Picea-Thuja bog and in mixed forest of conifers and hardwoods.

Charlton numbers: G 230, G 272, G 599, G 600.

Peziza sylvestris (Boud.) Sacc. and Trott.

Common. Solitary to scattered on rotten wood, humus, sandy soil, and among moss in mixed forest of conifers and hardwoods, in Betula forest, and in Picea-Thuja bog.

Charlton numbers: G 10, G 53, G 326, G 341, G 369, G 403, G 431, G 553.

Peziza sp. 1

Common. Gregarious on hardwood logs.

Charlton numbers: G 43, G 229, G 347.

Pseudoplectania nigrella (Pers.) Funckel.

Infrequent. Cespitose on ground from buried twig. Collected only in 1961.

Charlton number: G 228.

Seasonal Distribution

	1961	30 June	7 July	11 July	17 July	19 July	21 July	26 July	31 July	7 Aug	9 Aug	1962	24 June	26 June	30 June	2 July	5 July	8 July	10 July	14 July	17 July	21 July	24 July	26 July	30 July	3 Aug	6 Aug
Agaricales																											
Amanitaceae																											
Amanita brunnescens										X																	
Amanita flavoconica									X																		
Amanita fulva										X																	
Amanita inaurata									X																		
Amanita muscaria var. formosa			X	X																							
Amanita rubescens										X																	
Amanita vaginata																											X
Amanita verna										X																	
Bolbitiaceae																											
Agrocybe acericola					X				X																		
Bolbitus reticulatus																	X					X					

	1961	30 June	7 July	11 July	17 July	19 July	21 July	26 July	31 July	7 Aug	9 Aug	1962	24 June	26 June	30 June	2 July	5 July	8 July	10 July	14 July	17 July	21 July	24 July	26 July	30 July	3 Aug	6 Aug
Coprinaceae																											
Coprinus atramentarius																								X			
Coprinus micaceus			X																								
Coprinus sp.																								X			X
Psathyrella candolleana								X																X			
Psathyrella typhae										X											X						
Psathyrella sp. 1						X																					
Psathyrella sp. 2													X														
Psathyrella sp. 3														X													
Psathyrella sp. 4																	X										
Cortinariaceae																											
Cortinarius annulatus											X																X
Cortinarius infractus										X																	

	1961	30 June	7 July	11 July	17 July	19 July	21 July	26 July	31 July	7 Aug	9 Aug	1962	24 June	26 June	30 June	2 July	5 July	8 July	10 July	14 July	17 July	21 July	24 July	26 July	30 July	3 Aug	6 Aug
Cortinarius sp. 1								X																			
Cortinarius sp.				X																							
Crepidotus fulvotomentosus		X	X	X	X								X	X			X			X			X			X	
Crepidotus putrigenus														X													
Crepidotus sp.														X													
Galerina fuegiana										X	X				X							X			X	X	
Galerina paludosa			X																								
Gymnopilus bellulus										X																	
Gymnopilus sapineus								X																			
Inocybe calospora																								X	X		
Inocybe cincinnata					X										X						X		X		X		
Inocybe eutheloides						X																					
Inocybe frumentacea						X																					

	1961	30 June	7 July	11 July	17 July	19 July	21 July	26 July	31 July	7 Aug	9 Aug	1962	24 June	26 June	30 June	2 July	5 July	8 July	10 July	14 July	17 July	21 July	24 July	26 July	30 July	3 Aug	6 Aug
Inocybe geophylla																									X		
Inocybe histrix																				X							
Inocybe lacera									X																		
Inocybe meleanopoda				X	X	X			X		X									X			X		X		
Inocybe rimosa																							X				
Inocybe subaemula										X																	
Inocybe trechispora																			X	X		X		X	X	X	
Inocybe sp. 1							X											X			X	X	X	X		X	
Inocybe sp. 2																								X			
Inocybe sp. 3																						X					
Naucoria atripes									X																		
Naucoria ericacanella					X																						
Naucoria latifolia					X																						

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Naucoria limulata				X																							
Naucoria serrulata								X																			
Pholiota adiposa																X											
Pholita curvipes																							X	X			
Tubaria furfuracea						X								X													
Tubaris sp.																			X								
Gomphidiaceae																											
Gomphidius flavipes								X																			
Hygrophoraceae																											
Hygrophorus acutoconicus						X																	X		X		
Hygrophorus borealis										X																	
Hygrophorus cantharellus				X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hygrophorus ceraceus								X																			

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Hygrophorus coccinus									X																			
Hygrophorus conicus							X	X	X	X											X	X	X	X	X	X	X	
Hygrophorus cuspidata									X																			
Hygrophorus flavescens				X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Hygrophorus laetus forma laetus					X	X		X	X												X	X	X	X	X	X	X	
Hygrophorus marginatus var. marginatus			X	X	X	X	X	X	X					X			X		X		X		X	X	X	X	X	
Hygrophorus marginatus var. olivaceous								X																				
Hygrophorus miniatus					X			X	X					X			X				X		X	X	X	X	X	
Hygrophorus nitidus										X																		
Hygrophorus parvilus								X																				
Hygrophorus psitticinus					X	X	X	X							X		X			X				X	X	X		
Hygrophorus puniceus									X																			

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Hygrophorus reai					X																						
Hygrophorus unguinosus										X																	
Paxillaceae																											
Paxillus atrotomentosus																						X					
Paxillus panuoides											X			X													
Paxillus vernalis				X																							
Rhydophyllaceae																											
Rhydophyllus albogriseus					X	X		X	X							X			X			X		X		X	X
Rhodophyllus formosus								X																		X	X
Rhodophyllus lampropoda																									X		
Rhodophyllus salmoneus								X																			
Rhodophyllus serricellus								X						X												X	X
Rhodophyllus serrulatus									X	X	X										X	X	X	X	X	X	
Rhodophyllus sp. 1						X																					
Rhodophyllus sp. 2																						X					

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Russulaceae																											
Lactarius affinis					X																				X		
Lactarius camphoratus								X	X																		
Lactarius chrysorheus											X															X	X
Lactarius deciptivus				X		X	X	X	X								X		X		X		X	X	X		X
Lactarius fuliginosus																										X	X
Lactarius griseus						X		X	X	X				X			X			X	X	X	X	X	X	X	
Lactarius nigrovioloscens									X													X					
Lactarius rufus																									X		
Lactarius subdulicis									X																		
Lactarius subpurpureus									X		X													X			X
Lactarius thyinos										X															X	X	
Lactarius trivialis								X	X																		
Russula amygdeloides									X																		

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Russula aurata										X																	
Russula brunneola										X						X											
Russula compacta																									X		
Russula delica									X																		
Russula emetica																						X					
Russula fallax					X		X		X										X			X			X	X	X
Russula foetens																								X			
Russula fragilis					X	X	X	X	X								X		X		X	X	X	X	X	X	X
Russula gracilis								X																			
Russula ochraleucoides									X																		
Russula pallescens				X																							
Russula palumbina																						X		X			
Russula virescens									X																		

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Russula xerompolina										X																	X
Russula sp. 1						X																					
Russula sp. 2									X																		
Strophariaceae																											
Kuehneromyces vernalis				X																							
Tricholomataceae																											
Armellaria mellea														X			X										
Clitocybe aurantiaca																											X
Clitocybe ectypoides										X																	
Clitocybe paropsis									X																		
Clitocybe radicellata				X	X																						
Collybia chrysopepla						X		X														X					
Collybia colorea											X																
Collybia confluens									X																		
Collybia dryophila		X											X								X						

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Collybia dryophila var. luteifolia				X																							
Collybia myriadophylla				X				X																			
Collybia polyphylla					X																						
Collybia radicata				X		X		X						X											X		
Crinipellis campanellus					X																	X					
Crinipellis setipes					X																	X					
Laccaria amethystina									X																X		
Laccaria laccata					X	X	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
Laccaria striatula					X																						
Laccaria tortilis				X																							
Lentinellus umbilicatus						X			X															X			
Lentinellus vulpinus									X																		
Lentinus lepideus																					X					X	
Leucopaxillus laterarius									X																		

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Lyophyllum sp.		X																									
Marasimus capallaris								X																			
Marasimus cohaerens								X	X																		
Marasimus foetidus					X		X	X	X												X		X	X	X		
Marasimus resinosus								X																			
Marasimus rotula				X	X								X														
Marasimus siccus							X																				
Mycena acicula				X															X								
Mycena alcalina						X			X				X				X					X					
Mycena algeriensis								X																			
Mycena corticola					X																					X	
Mycena delicatella										X																	
Mycena epipterygia var. lignicola								X														X					

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Mycena fibula					X	X	X	X													X		X	X			
Mycena gracilis				X																							
Mycena haematopus								X																			
Mycena leaiana		X	X	X		X							X				X										
Mycena leptocephala						X																					
Mycena lilacifolia								X																			
Mycena niveipes						X		X	X																		
Mycena purpureofusca						X																					
Mycena radicatella								X																			
Mycena rubromarginata								X																			
Mycena sanguinolenta		X																				X					
Mycena subcaerulea									X																		
Mycena ulmicola							X	X														X					
Mycena sp.																						X					

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Panus sp.			X																								
Pleurotus candidissimus											X																
Pleurotus ostreatus		X			X														X							X	
Schizophyllum commune					X																			X			
Tricholoma unifactum											X																
Tricholomopsis decora																								X		X	X
Tricholomopsis platyphylla									X																		
Tricholomopsis rutilans									X	X							X						X				X
Xeromphalina campanella					X	X	X	X	X					X								X					
Xeromphalina cauticinalis																								X			
Xeromphalina tenuipes				X									X														
Volvariaceae																											
Pluteus admirabilis																X								X		X	X
Pluteus brunneidiscus																	X										
Pluteus cervinus										X																	

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Pluteus crysophaceus					X			X										X								X	
Pluteus flavofuligineus				X	X				X										X								
Pluteus longistriatus						X	X	X																			
Pluteus magnus														X							X						
Pluteus parvicystus var. parvicystus							X																				
Pluteus tomentosulus							X																				
Boletales																											
Boletinus pictus				X				X	X	X	X										X		X		X	X	X
Boletus acidus											X																
Boletus affinis										X																	
Boletus affinis var. maculosus											X																
Boletus americana						X															X						

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Boletus aurantiacus										X																	
Boletus chromapes									X	X																	
Boletus elegans																										X	
Boletus gracilis									X																		
Boletus hirtellus									X																		
Boletus oxydabilis								X																			
Boletus piperatus									X																		
Boletus punctipes																									X		X
Boletus scaber		X			X	X		X						X										X			X
Boletus subtomentosus					X			X		X	X						X				X						
Clavariales																											
Cantharellus cibarius					X		X		X																		
Cantharellus infundibuliformis									X																		

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Cantharellus tubaeformis											X																
Clavaria abietina								X																			
Clavaria cinerea																									X		
Clavaria corniculata									X															X			
Clavaria cristata										X																X	X
Clavaria kunzei									X		X												X		X		
Clavaria pulchra					X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X
Clavaria pyxidata								X						X													
Clavaria sanguinea										X																	
Clavaria stricta					X			X		X																	
Clavaria vermicularis																								X	X		
Craterellus cornucopiodes									X																		
Craterellus lutescens				X	X	X	X	X	X	X							X		X	X	X	X		X	X	X	X
Pistillaria sp.									X																		

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Hydnales																											
Dentinum repandum						X																		X	X		X
Phellon albo-niger									X																		
Phellon tomentosus									X																		
Polyporales																											
Daedalea confragosa							X																			X	
Daedalea unicolor					X			X																			
Favolus alveolaris									X																	X	
Fomes applanatus				X				X					X														
Fomes connatus									X								X										
Fomes fomentarius			X																					X			
Fomes ignarius			X														X										
Fomes ohiensis																											X
Fomes pinicola				X													X										

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Polyporus adustus											X															X	
Polyporus albellus											X																
Polyporus betulina					X																						
Polyporus dryophilus			X				X							X													
Polyporus elegans		X		X		X			X				X							X				X			
Polyporus fagicola										X																	
Polyporus guttalatus						X				X																	
Polyporus immitis									X																		
Polyporus nidulans							X																				
Polyporus pargamenus					X																	X					
Polyporus perennis								X																			
Polyporus resinosus									X																		
Polyporus tsugae				X																				X			
Polyporus versicolor				X																							

	1962	30 June	7 July	11 July	17 July	19 July	21 July	26 July	31 July	7 Aug	9 Aug	1962	24 June	26 June	30 June	2 July	5 July	8 July	10 July	14 July	17 July	21 July	24 July	26 July	30 July	3 Aug	6 Aug
Lycoperdales																											
Lycoperdon pussilum										X																	
Lycoperdon pyriforme									X																		
Nidulariales																											
Crucibulum levis					X																						
Sclerodermales																											
Scleroderma aurantium							X																				
Dacrymycetales																											
Calocera cornea								X																X			
Guepeniopsis torta																						X					
Tremellales																											
Pseudohydnum gelatinosum								X		X																	
Tremella lutescens					X																						
Tremellodendron cladonia																					X		X				

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Tremellodendron sp.										X																	
Ascomycetes																											
Hypocreales																											
Cordiceps michigenensis					X			X			X											X					
Hypomyces lacifluorum						X			X																		
Pezizales																											
Geoglossaceae																											
Geoglossum cohaerens																								X			
Geoglossum fallax										X											X						
Geoglossum glabrum									X		X										X				X	X	
Geoglossum nigritum									X												X					X	
Leotia lubrica											X																
Microglossum longisporum										X																	

	1961	30 June	7 July	11 July	17 July	19 July	21 July	26 July	31 July	7 Aug	9 Aug	1962	24 June	26 June	30 June	2 July	5 July	8 July	10 July	14 July	17 July	21 July	24 July	26 July	30 July	3 Aug	6 Aug
Microglossum rufum				X	X	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
Spathularia clavata								X																			
Trichoglossum velutipes										X																	
Trichoglossum sp.																								X			
Helvellaceae																											
Helvella atra																								X	X	X	
Helvella crispa								X	X																		
Helvella elastica			X						X											X							
Helvella mitra			X		X																					X	
Helvella sphereospora		X											X														
Pezizaceae																											
Humaria hemisphaerica											X											X					
Patella scutellata		X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Paxina hispida								X	X	X											X		X	X	X		

	1961	30 June	7 July	11 July	17 July	19 July	21 July	26 July	31 July	7 Aug	9 Aug	1962	24 June	26 June	30 June	2 July	5 July	8 July	10 July	14 July	17 July	21 July	24 July	26 July	30 July	3 Aug	6 Aug
Peziza badia		X	X		X								X										X				
Peziza emileia														X						X							
Peziza liliacina									X	X																	X
Peziza sylvestris		X		X		X	X						X	X	X				X		X					X	
Peziza sp. 1				X					X					X													
Pseudoplectania nigrella								X																			
Total		12	14	34	48	40	28	65	80	47	26		14	23	11	9	26	8	18	16	29	41	28	46	41	45	35
Total minus polypores *		11	10	29	45	37	25	62	75	45	24		12	22	11	9	23	8	18	15	29	40	28	44	41	42	34

Total number of species 276

number of species in 1961 231

number of species in 1962 145

number of species new in 1962 45

number of species found in 1961, but not in 1962 131

number of species common to both years 100

* Many polypores are perennial and would be present the duration of the study period.

DISCUSSION

The Gorge was an ideal place for a floristic survey and for a study of yearly fluctuations because of its well defined boundries, its moderate area, and its four distinct forest associations.

Moisture, temperature, and maturity of the mycelium are the three most obvious factors which influence the fruiting of fleshy fungi (Smith, 1949). Adequate moisture is a prime necessity, but precipitation beyond a certain point appears to be detrimental to fruiting (Smith, 1949). In 1961 there was a steady increase in the number of species collected with an increase of moisture, but during a continuous rainy spell the number of species collected was drastically reduced. See Figure 1, page 98. It was realized that the sharp reduction in the number of species of fungi between July 17 and 21 might not solely be attributed to the saturation of the substratum, but to the depletion of the reserve food supply by former fruitings or by any number of other factors. In 1962 there was a noted increase in the number of species collected three to six days after a rain. See Figure 2, page 99.

The summer of 1961 was considerably wetter than the summer of 1962. The most striking difference in the fungus flora between the two summers was the abundance of sporocarps

in 1961. One could not walk through the Gorge without stepping on the fungi in 1961, whereas in 1962, one could walk for several minutes without seeing any fungi. The difference in the number of species collected in 1961, as compared with those collected in 1962, was striking. See page 93. This difference was primarily due to a reduction in the number of species of Amanita, Boletus, Russula, and other species which inhabited the sandy soils of the Betula forest and of the mixed forest of conifers and hardwoods; and in the lignicolous species of Mycena, Marasimus and other genera. The majority of lignicolous species collected in 1962 were from partly submerged wood.

There was an appreciable difference in the number of species collected in 1962 but not in 1961. See page 93. Many of these species were collected from the Picea-Thuja bog. This can probably be attributed to the abundance of precipitation during the summer of 1961 saturating the bog. It was realized that the difference in the number of species collected in 1961 and 1962 might not always be a direct result of climatic conditions, but to the maturity of the mycelium and other factors.

No direct correlations between temperature and the number of species could be made for the six week period of either summer. See pages 98-99. Unlike rainfall, temperature did not have an immediate effect. The number of

species fruiting during the year had a standard distribution with the maximum number fruiting between July and September. Hygrophorus cantharellus, Clavaria pulchra, and Microglossum rufum started fruiting about ten days earlier in 1962 than they had in 1961. This delay in the season in 1961 could be attributed to the cooler weather, since June 1961 was slightly cooler than June 1962. The three above species were considered most characteristic of the Gorge because they fruited in equal abundance throughout the summer regardless of rainfall.

Temperature and rainfall values were obtained from the weather station on the Biological Station grounds. It was assumed that any significant change in temperature and precipitation would be expressed a half mile away in the Gorge. Weather stations posted within the Gorge for a two week period showed that this assumption was correct and that the Gorge represented a complex of environments.

Some species of fungi proved to be more abundant in one area of uniform substratum of the Gorge than another. This could be accounted for by the fact that fungi are influenced by the microclimate of their immediate habitat rather than by the macroclimate of the whole Gorge.

The mixed forest of conifers and hardwoods produced the greatest number of species. The Picea-Thuja bog, Betula forest and the Alnus-Typha swamp produced the next larger number of species respectively.

SUMMARY

A floristic survey of the summer species of epigeous fleshy fungi occurring in the Gorge of Carp Creek, University of Michigan Biological Station, Cheboygan County, Michigan, was made during 1961 and 1962. A comparison was made of the two years.

A total of 276 species was collected from the Gorge. Two hundred thirty-one species were collected in 1961 and 145 species were collected in 1962. Of these 100 species were common to both years. One hundred thirty-one species were collected in 1961 which were not collected in 1962, and 45 species were collected in 1962 which were not collected in 1961.

The summer of 1961 was considerably wetter than 1962 and had a larger crop of sporocarps and more species. Mixed forest of conifers and hardwoods produced the greatest number of species. *Picea-Thuja* bog, *Betula* forest, and *Alnus-Typha* swamp produced the next larger number of species respectively.

Figure 1. The rainfall, temperature, and number of species of fleshy fungi found in 1961.

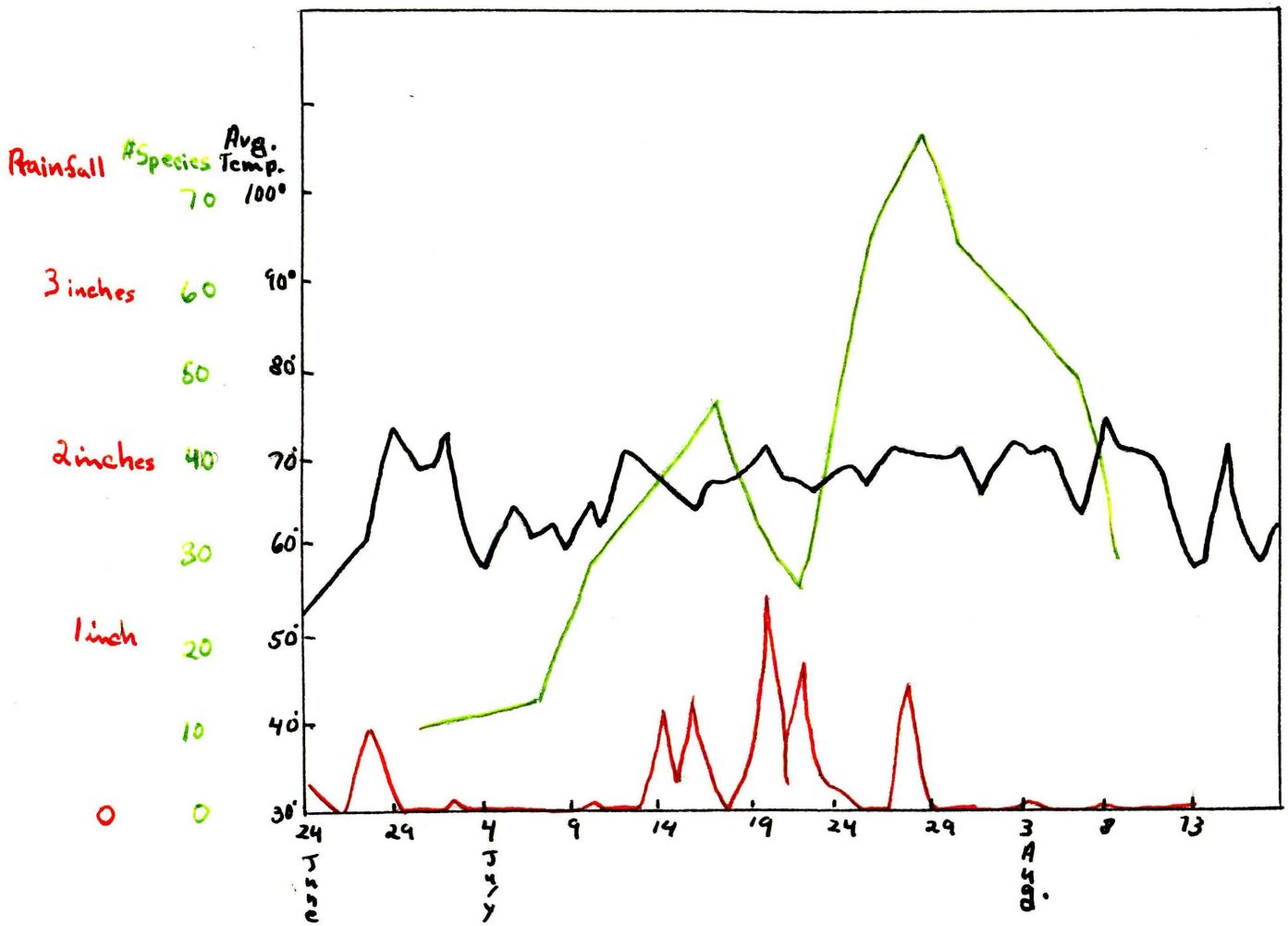
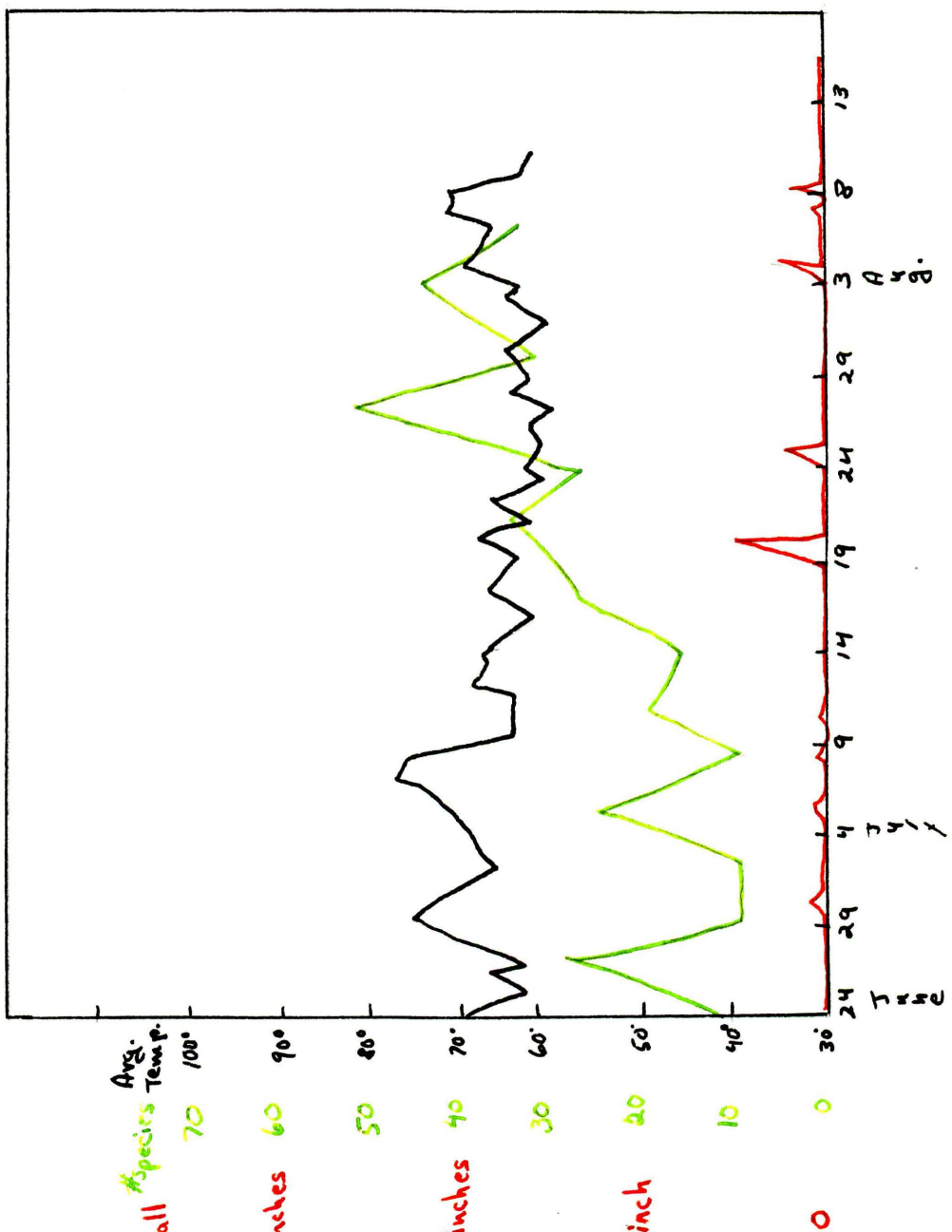


Figure 2. The rainfall, temperature, and number of species of fleshy fungi observed in the summer of 1962.



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ABSTRACT

A floristic survey of the summer species of epigeous fleshy fungi occurring in the Gorge of Carp Creek, University of Michigan Biological Station, Cheboygan County, Michigan, was made during 1961 and 1962. A comparison was made of the two years.

A total of 276 species was collected from the Gorge. Two hundred thirty-one species were collected in 1961 and 145 species were collected in 1962. Of these 100 species were common to both years. One hundred thirty-one species were collected in 1961 which were not collected in 1962, and 45 species were collected in 1962 which were not collected in 1961.

The summer of 1961 was considerably wetter than 1962 and had a larger crop of sporocarps and more species. Mixed forest of conifers and hardwoods produced the greatest number of species. Picea-Thuja bog, Betula forest, and Alnus-Typha swamp produced the next larger number of species respectively.