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NOTES ON SOUTHERN APPALACHIAN  
FUNGI, II<sup>1</sup>

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Since the publication of an earlier report by the writer (1936), a number of rare or otherwise interesting fungi have come to light. One recently described species, *Mycena borealis* A. H. Smith, a northern agaric, has been found in the Great Smoky Mountains National Park. Another fungus, a new genus, collected by A. J. Sharp and J. K. Underwood, in Fentress County, has recently been described by Snell (1936); he names it *Polyporoletus sublividus* Snell.

Four species, which hitherto have been observed from their type localities only, have been found here: *Aleuria cestricea* (E. & E.) Seaver, *Patella miniata* (Clem.) Seaver, *Eccilia unicolor* Pk., *Lepiota alluviina* Pk.

Noteworthy extensions of geographic ranges are reported for several species, nearly all of which are southern extensions of species heretofore known in our country only from the northern United States. A few of these species may be noted at this point: *Armillaria caligata* Vitt.-Bres., *Bolbitius fragilis* Fr., *Bolbitius glatfelteri* Pk., *Crepidotus haerens* Pk., *Eccilia nivea* Pk., *Entoloma cyaneum* Pk., *Flammula graveolens* Pk., *Flammula liquiritiae* Fr., *Inocybe jurana* (Pat.) Sacc., *Lactarius hyginus* Fr., *Lepiota cristatella* Pk., *Nyctalis parasitica* Fr., *Omphalia rugosodisca* Pk., *Panus nigrifolius* Pk., *Tricholoma imbricatum* Fr.

The words "the Park," where used, refer to the Great Smoky Mountains National Park. The total list comprises 137 species and one variety, of which 101 species are recorded from the Park.

Indebtedness is acknowledged to Mr. A. J. Sharp and others who have contributed a number of the collections here reported; and to several mycologists who either have determined some of the species or have confirmed the writer's identification: Dr. Bessie Kanouse,

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<sup>1</sup>Contributions from the Botanical Laboratory, The University of Tennessee, N. Ser., No. 18.

Dr. L. O. Overholts, Miss Ruby Rice, Dr. F. J. Seaver, Dr. A. H. Smith, Dr. W. H. Snell, Mr. S. L. Wallace, and Miss Mary B. Wilson.

### ASCOMYCETES

**Aleuria aurantia** (Pers.) Fckl. No. 9295, on soil, Elkmont, Sevier Co., the Park, Oct. 13, 1935; det. by Dr. Bessie Kanouse.

**Aleuria cestriza** (E. & E.) Seaver. No. 9296, on soil and exposed roots of pine, Cataloochee, North Carolina, the Park, July 27, 1935. Identified by Dr. Bessie Kanouse. Seaver (1928:99) states that it is known only from the type locality (West Chester, Penn.).

**Aleuria wisconsinensis** Rehm. No. 4962, on soil, Greenbrier Pinnacle, Sevier Co., the Park, Sept. 16, 1934, coll. A. J. Sharp; det. Dr. Bessie Kanouse. Previously recorded (by Seaver, 1928:98) from Wisconsin and Minnesota.

**Aleurina atrovinosa** (Cke.) Seaver. No. 4973, on soil, near Knoxville, June 22, 1934; No. 5176, on soil, in mixed woods, Highlands, N. C., July 28, 1934; No. 9307, on soil, Elkmont, Sevier Co., the Park, Aug. 19, 1936. Previously known range: New York, New Jersey, Maine and Montana (Seaver, 1928:102). All collections by A. J. Sharp; determined by Dr. Bessie Kanouse.

**Apostemidium guernisacii** (Fr.) Boud. No. 8171, on twigs, Haywood Co., N. C., the Park; Aug. 3, 1935; coll. by A. J. Sharp; det. by Dr. Bessie Kanouse.

**Ascophanus granulatus** (Bull.) Speng. No. 10108, on cow-dung, Knox Co., Dec. 9, 1936; det. by Dr. F. J. Seaver.

**Lamprospora constellatio** (B. & Br.) Seaver. No. 9310, on soil, Elkmont, Sevier Co., the Park, Aug. 14, 1936; coll. by A. J. Sharp; det. by Dr. Bessie Kanouse.

**Patella miniata** (Clem.) Seaver. No. 9293, on soil, Cosby, Cocke Co., the Park, Aug. 23, 1936; coll. by Dr. H. M. Jennison; det. by the author, and confirmed by Dr. Bessie Kanouse. Previously recorded by Seaver (1928:163) from the type locality only (Nebraska).

**Peziza pustulata** (Hedw.) Pers. No. 9297, on soil, Knoxville, July 24, 1935; coll. by A. J. Sharp and the writer; det. by Dr. Bessie Kanouse. Seaver (1928:224) records its range from New York to Wisconsin and Wyoming; also in Europe.

### AURICULARIACEAE

**Eocronartium muscicola** (P. ex Fr.) Fitzp. No. 8025, on moss (*Sematophyllum carolinianum* (C. M.) E. G. Britt.). Monterey, July 20, 1935; coll. A. J. Sharp and J. K. Underwood. Moss identified by Sharp.

### THELEPHORACEAE

**Aleurodiscus candidus** (Schw.) Burt. Collections on living oak: No. 4835, Crossville, April 14, 1935; No. 6751, near Knoxville, March 3, 1935; No. 7190, same, Dec. 30, 1934. Also on *Halesia monticola*, No. 4992, Greenbrier, Sevier Co., the Park, April 28, 1935; det. L. O. Overholts.

**Aleurodiscus nivosus** (B. & C.) v. Hohn. & Litsch. No. 6785, on red cedar, Montvale Springs, Blount Co., April 21, 1934; det. L. O. Overholts.

**Aleurodiscus oakesii** (B. & C.) Cke. On oak: No. 4836, on bark, Union Co., March 24, 1935; coll. A. J. Sharp; det. by S. L. Wallace; No. 4837, on white oak, near Walland, March 24, 1935, Blount Co., det. by S. L. Wallace.

## CLAVARIACEAE

*Clavaria amethystina* (Batt.) Pers. No. 5375, Cades Cove, the Park, Aug. 13, 1934; No. 5376, Mt. LeConte, the Park, Aug. 8, 1934. Both collections taken by A. J. Sharp.

*Clavaria angulispora* Pat. No. 3588, Mt. LeConte, the Park, July 5, 1934.

*Clavaria grandis* Pk. Two collections from woods, Montvale Springs, Blount Co.; No. 6279, Aug. 23, 1934; No. 9410, Aug. 30, 1936 (by A. J. Sharp, J. K. Underwood, and the writer).

*Clavaria ornatipes* Pk. No. 5378, Cades Cove, the Park, Aug. 14, 1934; No. 8341, Newfound Gap (N. C.), the Park, Aug. 18, 1935; coll. A. J. Sharp and the writer; No. 9259, Highlands, N. C., Aug. 16, 1936, coll. A. J. Sharp and the writer.

## POLYPORACEAE

*Fomes fulvus* (Scop.) Gill. No. 8653, on *Prunus pennsylvanica* L., the Park, Boulevard Trail, Sevier Co., Nov. 9, 1935. Identified by Dr. L. O. Overholts. First record from Tennessee.

*Polyporus radiatus* Fr. No. 8639, on *Abies fraseri* (Pursh) Poir, Mt. LeConte, 6500 ft., Sevier Co., the Park, Nov. 10, 1935; det. by Dr. L. O. Overholts who says (letter) that there is no record of the occurrence of this on a coniferous substratum. We have other collections from deciduous substrata, especially birch.

*Polyporus undosus* Pk. No. 8667, on *Abies fraseri* (Pursh) Poir, Mt. LeConte, 6500 ft., Sevier Co., the Park, Nov. 10, 1935; det. by Dr. L. O. Overholts who states that this is the first record from Tennessee. Murrill (1907:34) reports it from Maine, New York, and West Virginia.

## BOLETACEAE

*Boletus cyanescens* Bull. No. 4493, Cades Cove, the Park, July 2, 1934; No. 9428, Swain Co., N. C., the Park, Sept. 7, 1936.

*Boletus nigrellus* Pk. A large dark-brown to black *Boletus*, with thick flesh which is white, changing to pinkish when wounded, and with a stout stipe. Murrill (1910:136) reports it from New York to Georgia and Mississippi. We have it from four stations in the Park. No. 8234, Newfound Gap, N. C., Aug. 18, 1935; No. 9116, Cosby, Tenn., July 30, 1936; No. 9270, Newfound Gap, N. C., Aug. 16, 1936; No. 9404, Sevier Co., Sept. 6, 1936.

*Boletus parasiticus* Bull. Found on *Scleroderma aurantium* (Vaill.) Pers. No. 4496, Mt. LeConte, the Park, July 20, 1934; No. 5080, Highlands, N. C., July 25, 1934; No. 5278, Mt. LeConte, the Park, Aug. 10, 1934; No. 9282, Meigs Creek, Sevier Co., the Park, Aug. 22, 1936. Previously reported from New England, New York, and Europe (Murrill, 1910:141); also from North Carolina and Pennsylvania (Coker, 1927:255).

*Boletinus porosus* Pk. No. 9532, on soil, Greenbrier, Sevier Co., the Park, Oct. 11, 1936.

*Polyporoletus sublividus* Snell. No. 6375, on soil, in oak-pine woods, near Allardt, Fentress Co., coll. by A. J. Sharp and J. K. Underwood, July 8, 1934. Because of its tough and corky texture, it was assumed to be a rare or new species of *Polyporus*. The writer communicated the whole collection to Dr. L. O. Overholts, who, thinking it one of the boleti, in turn transmitted it to Dr. W. H. Snell. The fungus was subsequently regarded as a new genus by Snell, who finally published a description of it (Snell, 1936:467).

## AGARICACEAE

**Amanita abrupta** Pk. No. 9285, in mixed woods, Meigs Creek, Sevier Co., the Park, Aug. 22, 1936. Doubt as to the validity of this species, expressed by Murrill (1914b:76), was removed by Coker (1917:71-73). Previously reported from North Carolina and Alabama.

**Amanita cinereoconia** Atk. (Fig. 1). Three collections from the Park, by A. J. Sharp and the writer: No. 9051, Newfound Gap, July 26, 1936; No. 9088, Cherokee Orchard Aug. 2, 1936; No. 9119 Newfound Gap, Aug. 2, 1936. Reported from North Carolina (Coker, 1917:86).

**Armillaria caligata** Vitt.-Bres. No. 9628, on soil, in woods, Walland, Blount Co., coll. by H. P. Mason, Oct. 30, 1936. Agrees closely with the description given by Kauffman (1918:650).

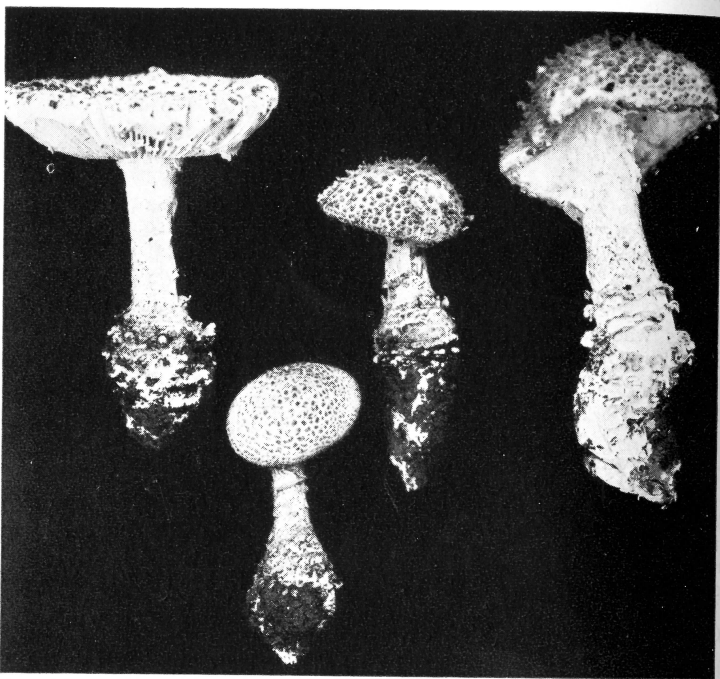


Fig. 1. *Amanita cinereoconia* Atk. (No. 9051).  $\times 2/3$ . (Photo. by Jim Thompson, Knoxville.)

**Bolbitius fragilis** Fr. No. 4080, on silage compost, Knoxville, April 23, 1934. Reported from Europe, Michigan, and Colorado.

**Bolbitius glatfelteri** Pk. No. 3534, on silage compost, Knoxville, April 25 1934; No. 4081, same, April 23, 1934. Murrill (1917e:190) gives its distribution: Missouri and Illinois.

**Claudopus nidulans** Fr. (Fig. 2). No. 5229, on pine stump, Knox Co., Feb. 11, 1934; No. 5230, on oak log, Coal Creek, Anderson Co., March 4, 1934; No. 6540, on log of deciduous tree, Knoxville, Oct. 20, 1934; No. 8102, on soil (?), Roan Mt., Carter Co., 5500 ft., July 21, 1935; No. 10121, on dead pine tree, Wartburg, Morgan Co., Jan. 10, 1937.

*Claudopus variabilis* Fr. Previously reported from Massachusetts, New York, North Carolina, Tennessee, Oregon, and Europe. No. 7874, on log, Cades Cove, the Park, July 4, 1935; No. 9407, Montvale Springs, Blount Co., Aug. 30, 1936. Found by Kauffman at Elkmont (1917:164).

*Clitopilus novaboracensis* Pk. (Fig. 3) Previously reported from Maine to North Carolina and west to Ohio and Michigan. Our collections agree with Kauffman's description (1918:569-570). No. 5356, on humus, in woods, near Knoxville, Aug. 19, 1934; No. 5381, same locality and date (this lot seems to be var. *brevis* Pk.; see Kauffman, 1918:570); No. 9277, above Bryson City, N. C., the Park, Aug. 23, 1936; coll. A. J. Sharp and the writer; No. 9408, Montvale Springs, Blount Co., Aug. 30, 1936.

*Collybia amabilipes* Pk. Nos. 3620, 3621, 8065, 9041, from the Park, May-July; No. 4096, LaFollette, July 11, 1934; No. 7819, under balsam, Roan Mt., 5500 ft., June 23, 1935.



Fig. 2. *Claudopus nidulans* Fr. (No. 10121).  $\times 1/5$ . (Photo. by Dr. S. A. Cain.)

*Collybia conigenoides* Ellis. No. 9283, on fallen magnolia fruits, Meigs Creek, Sevier Co., the Park, Aug. 22, 1936; coll. A. J. Sharp and the writer; No. 9439, Swain Co., N. C., the Park, Sept. 7, 1936; No. 9507, Meigs Creek, Sevier Co., the Park, Oct. 4, 1936; No. 9530, Greenbrier, Sevier Co., the Park, Oct. 11, 1936. Reported from Elkmont, Tenn., by Kauffman (1917:164).

*Collybia stipitaria* Fr. No. 9467, on hickory nuts, near Knoxville, Sept. 26, 1936. Its range seems to be general over North America; also occurs in Europe.

*Collybia succosa* Pk. Hitherto recorded from Canada, New England, New York, and Michigan. No. 6521, on log, Greenbrier, Sevier Co., the Park, July 5, 1934, coll. A. J. Sharp and J. K. Underwood, det. A. H. Smith; No. 9141, on log, Elkmont, the Park, Aug. 9, 1936, coll. A. J. Sharp and the writer; No. 9291, same, Aug. 19, 1936.

*Collybia zonata* Pk. No. 3636, Knox Co., July 10, 1934; No. 4097, LaFollette, July 11, 1934; No. 8958, Knoxville, July 24, 1936.

**Cortinarius glandicolor** Fr. No. 9500, in deep moss under fir, Clingman's Dome, the Park, Sept. 27, 1936. It has been recorded previously from New York to Michigan, Colorado; Washington; and from Europe (Kauffman, 1932:335).

**Cortinarius hemitrichus** Fr. No. 9499, in deep moss under fir, Clingman's Dome, the Park, Sept. 27, 1937. Reported distribution: New England to Tennessee and Wisconsin; also Europe (Kauffman, 1932:337-338).

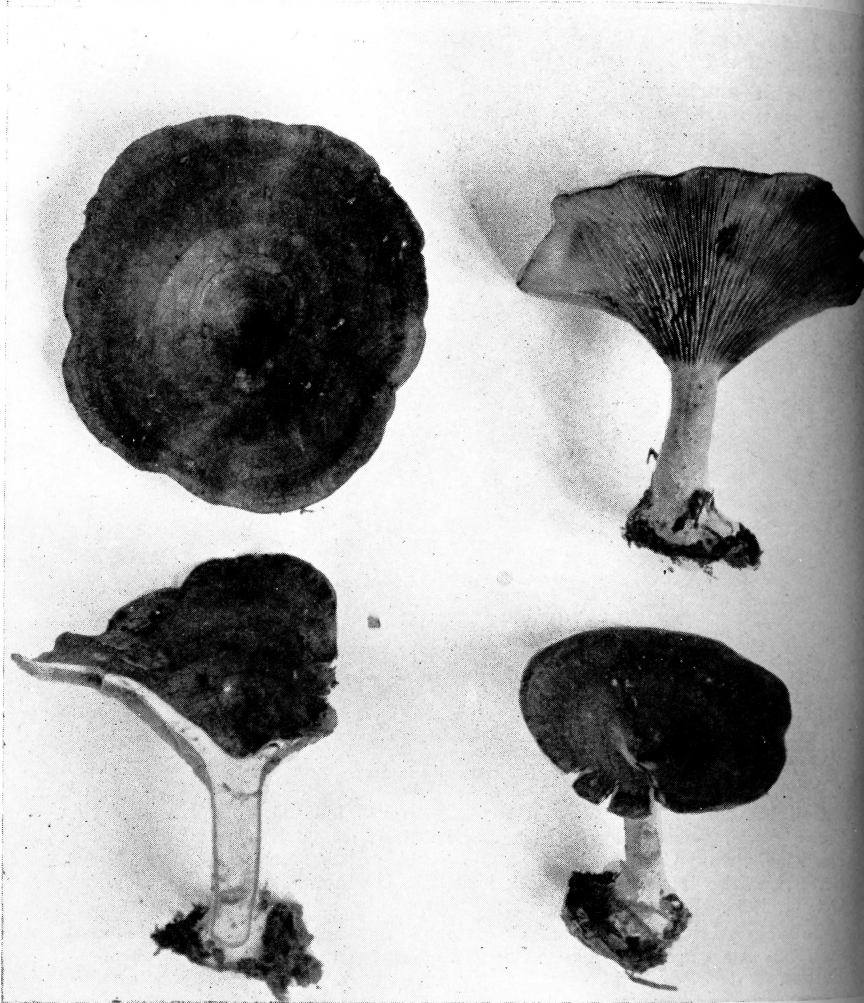


Fig. 3. *Clitopilus novaboracensis* Pk. (No. 5353). x 1.

**Cortinarius multiformis** Fr. Two collections from the Park: No. 9482, in deep moss, Clingman's Dome, Sept. 27, 1936, and No. 9609, Greenbrier, Oct. 18, 1936. Kauffman (1932:302-303) gives its range then known: New England to Minnesota, Colorado, and Europe.

**Cortinarius obtusus** Fr. No. 9501, in deep moss under fir, Clingman's Dome, the Park, Sept. 27, 1936. Known earlier from Adirondack Mts., New York, Colorado; also Europe (Kauffman, 1932:344).

**Cortinarius sphaerosporus** Pk. Previously recorded from New England, New York, Canada, and Michigan (Kauffman, 1932:293). No. 9440, Swain Co., N. C., the Park, Sept. 7, 1936.

**Crepidotus applanatus** Fr. No. 5115, on oak log, Highlands, N. C., July 26, 1934; No. 5116, on chestnut log, Highlands, N. C., July 27, 1934; No. 5009, conifer log, Mt. LeConte, the Park, July 20, 1934; No. 8934, near Chimneys, the Park, July 26, 1936. Reported from Elkmont by Kauffman (1917:164).

**Crepidotus calolepis** Fr. No. 8246, on log, Newfound Gap, the Park, Aug. 18, 1935; No. 9040, on log, near Knoxville, July 24, 1936.

**Crepidotus dorsalis** Pk. No. 3654, on log, Knoxville, May 22, 1934; No. 8077, on log, Eidson, Hancock Co., July 27, 1935; coll. A. J. Sharp.

**Crepidotus flammeus** Murr. No. 3655, on log, Rich Mt., Blount Co., June 24, 1934. Its distribution, according to Murrill (1917d:153) is from Connecticut to the mountains of Virginia and Tennessee, and southern Florida.

**Crepidotus fulvotomentosus** Pk. No. 4100, on dead twigs, Demaree, Anderson Co., July 11, 1934; No. 5117, on log, Highlands, N. C., July 27, 1934.

**Crepidotus haerens** Pk. No. 4101, on log, LaFollette, July 11, 1934; No. 9208, on exposed sycamore roots, near Knoxville, Aug. 14, 1936. Reported from New York and Indiana by Murrill (1917d:150), and Michigan by Kauffman (1918:518). Pileus up to 4.5 cm. broad, very viscid.

**Crepidotus herbarum** Pk. No. 3656, on log, Rugby, Morgan Co., June 10, 1934; coll. and det. Ruby Rice; No. 3657, Knoxville, May 22, 1934; No. 3658, Greenbrier, the Park, June 7, 1934; No. 5010, Mt. LeConte, the Park, July 20, 1934; No. 8083, Roan Mt., July 20, 1935; No. 8966, near Knoxville, July 24, 1936; No. 9145, Elkmont, the Park, Aug. 9, 1936. Reported by Murrill (1917d:149) in temperate North America south to New York and west to Washington and California.

**Crepidotus malachus** B. & C. No. 5011, Mt. LeConte, the Park, July 20, 1934; coll. A. J. Sharp; No. 8099, Roan Mt., July 21, 1935; No. 8969, Indian Gap, the Park, July 26, 1936.

**Crepidotus malachus** B. & C. var. **plicatilis** Pk. No. 4331, Highlands, N. C., June 12, 1934; coll. Mrs. A. J. Sharp; No. 8066, Cataloochee region, the Park, July 28, 1935. Reported earlier from New York, Michigan, and Washington.

**Crepidotus mollis** Fr. No. 4249, on willow log, near Jasper, July 15, 1934; coll. A. J. Sharp and J. K. Underwood; No. 5388, near Knoxville, Aug. 19, 1934.

**Crepidotus putrigenus** B. & C. No. 5118, Highlands, N. C., July 26, 1934; No. 9066, Cosby, the Park, July 30, 1936.

**Crepidotus versutus** Pk. No. 3659, Knox Co., July 10, 1934; coll. A. J. Sharp and J. K. Underwood; No. 3660, Greenbrier, the Park, July 5, 1934; coll. A. J. Sharp and J. K. Underwood.

**Eccilia atrides** Fr. No. 5393, on mossy log, Cades Cove, the Park, Aug. 14, 1934.

**Eccilia griseo-rubella** Fr. No. 3670, on soil, woods, Mt. LeConte, 3000 ft., the Park, July 5, 1934. Reported from Michigan (Kauffman, 1918:588).

**Eccilia nivea** Pk. No. 9469, on soil, in deciduous woods, Mt. LeConte, 2800 ft., Sevier Co., the Park, Oct. 10, 1936. Reported by Murrill (1917a:81) from New England and New York only.

**Eccilia unicolor** Pk. No. 5394, on soil, woods, Cades Cove region, Aug. 13, 1934; coll. A. J. Sharp; No. 9021, on soil, woods, Cosby, the Park, July 30, 1936; No. 9280, near Bryson City, N. C., the Park, Aug. 23, 1936; coll. A. J.

Sharp and the writer. Reported heretofore from type locality only (Falmouth, Mass.; see Murrill, 1917a:82). Specimens were sent to Dr. A. H. Smith, University of Michigan, who states that they compare well with the type.

**Entoloma clypeatum** Fr. No. 9100, on soil, woods, Indian Gap, 5000 ft., the Park, Aug. 2, 1936. Reported from Elkmont, Tenn., by Kauffman (1917:165).

**Entoloma cuspidatum** Pk. No. 6282, on humus, woods, Montvale Springs, Blount Co., Aug. 23, 1934; No. 9147, on soil, woods, Elkmont, the Park, Aug. 9, 1934; coll. A. J. Sharp and the writer.

**Entoloma cyaneum** Pk. No. 9551, Greenbrier, Sevier Co., the Park, Oct. 11, 1936. Occurrence in New York and Michigan noted by Murrill (1917c:115), who lists it as *E. violaceum* Murr.

**Entoloma griseum** Pk. No. 4940, low wet soil, woods, Lea Lakes, Grainger Co., June 19, 1934; No. 9047, soil, woods, Cosby, the Park, July 30, 1936; coll. A. J. Sharp and the writer. Reported from Elkmont, Tenn., by Kauffman (1917:164).

**Entoloma jubatum** Fr. No. 3673, on soil, woods, Mt. LeConte, 6000 ft., the Park, May 12, 1934; coll. J. K. Underwood.

**Entoloma peckianum** Burt. No. 7902, on soil, mixed woods, Cades Cove, the Park, July 4, 1935; No. 8927, on soil, mixed woods, near Chimneys, the Park, July 26, 1936; coll. A. J. Sharp and the writer; No. 9281, near Bryson City, N. C., the Park, Aug. 23, 1936; coll. A. J. Sharp and the writer. Previously reported from Maine and New York (Murrill, 1917c:118).

**Entoloma salmoneum** Pk. (Fig. 4). No. 5014, soil, under hemlock, Mt. LeConte, 5000 ft., July 20, 1934; No. 5123, soil, under rhododendron, Highlands, N. C., July 29, 1934; No. 5352, under rhododendron, Bote Mt. trail, the Park, Aug. 13, 1934; coll. A. J. Sharp. Murrill (1917c:113) gives range from New England to Ohio; Kauffman lists it for Michigan (1918:560).

**Entoloma sericeum** Fr. No. 7946, soil, woods, Clark Range, Fentress Co., July 7, 1935, forming a partial fairy-ring about 8 ft. diameter; No. 9029, near Chimneys, the Park, July 26, 1936; coll. A. J. Sharp and the writer; No. 9076, Cosby, July 30, 1936; coll. A. J. Sharp and the writer.

**Entoloma strictius** Pk. Murrill (1917c:123) reports this species from New England to Ohio. Kauffman (1918:557) says it is infrequent in Michigan. No. 3674, on sphagnum, Shady Valley, Johnson Co., May 20, 1934; coll. J. K. Underwood; No. 5015, under rhododendron, Mt. LeConte, 5000 ft., the Park, July 20, 1934; No. 5124, under pine, Highlands, N. C., July 25, 1934; No. 5395, Bote Mt. trail, the Park, Aug. 13, 1934; coll. A. J. Sharp; No. 6283, Montvale Springs, Blount Co., Aug. 23, 1934; No. 7783, under balsam, Roan Mt., 5500 ft., June 23, 1935; No. 7960, on decaying log, Roaring Springs, Knox Co., July 9, 1935; No. 8030, under spruce, Roan Mt., 5500 ft., July 21, 1935; No. 9148, Elkmont, the Park, Aug. 9, 1936; coll. A. J. Sharp and the writer.

**Flammula carbonaria** Fr. Nos. 4259 and 4260, on soil and log, Shady Valley, Johnson Co., April 15, 1934; coll. A. J. Sharp and J. K. Underwood. Identification confirmed by Dr. A. H. Smith. No. 10128, on charred wood and burned-over soil, near Clinton, Jan. 10, 1937.

**Flammula graveolens** Pk. No. 9586, on hemlock log, Greenbrier, Sevier Co., the Park, Oct. 18, 1936. Reported from Massachusetts and New York by Murrill (1917f:199), and from Michigan by Kauffman (1929:204). Identification confirmed by Dr. A. H. Smith.

**Flammula liquiritiae** Fr. No. 9598, on hemlock bridge-timbers, Greenbrier, Sevier Co., the Park, Oct. 18, 1936; No. 10161, on soil and pine chips, Highlands, N. C., Aug. 16, 1936; coll. by A. J. Sharp and the writer. Reported from Oregon by Kauffman (1930:191), and from Wyoming (1926:23); known also in Europe. Identification confirmed by Dr. A. H. Smith.



*Flammula lubrica* Fr. No. 9486, log of *Abies fraseri*, Clingman's Dome, the Park, Sept. 27, 1936. Identified by Dr. A. H. Smith.

*Flammula polychroa* Berk. On logs, sawdust, etc. No. 3682, Knox Co., July 10, 1934; coll. A. J. Sharp and J. K. Underwood; No. 4261, Knox Co., July 15, 1934; coll. Ruby Rice; No. 5396, same, Aug. 19, 1934; No. 5397, near Knoxville, Aug. 19, 1934; No. 8076, Eidson, Hancock Co., July 27, 1935; coll. A. J. Sharp; No. 8919, near Knoxville, July 24, 1936.



Fig. 4. *Entoloma salmoneum* Pk. (No. 5352).  $\times 1$ .

*Flammula sapinea* Fr. No. 4262, Shady Valley, Johnson Co., June 17, 1934; coll. A. J. Sharp and J. K. Underwood; No. 5019, on balsam log, Mt. LeConte, 6500 ft., the Park, July 20, 1934; No. 5298, on hemlock log, Mt. LeConte, 3000 ft., the Park, Aug. 10, 1934; No. 9086, on balsam log, Clingman's Dome, 6600 ft., the Park, Aug. 2, 1936.

*Flammula spumosa* Fr. No. 10160, on chips and soil, base of pine stump, Knox Co., Jan. 24, 1937.

**Gomphidius vinicolor** Pk. The difficulties involved in the assignment of specific names to members of this genus are pointed out by Kauffman (1925). In two collections (No. 7792), from near Clinton, Nov. 11, 1934, the dried sporophores are reddish-brown as Kauffman reports for the type at Albany (1925:125). A portion of this collection was examined by Dr. A. H. Smith, University of Michigan, who, with some reservations, assigned it to *G. vinicolor*. Smith also suggested its affinity to *G. viscidus* f. *columbiana*. Our No. 9236, from Highlands, N. C., Aug. 16, 1936, and No. 9470, Mt. LeConte, the Park, Oct. 4, 1936, are small plants, and are black when dried. These latter forms agree well with Kauffman's description of *G. vinicolor* f. *minor* (1918:171), but may belong to *G. nigricans* Pk.

**Hebeloma fastibile** Fr. No. 3692, on soil, under Liriodendron, Knoxville, May 22, 1934.

**Heliomyces nigripes** (Schw.) Morg. Although reported only from North Carolina, New Jersey, Ohio, and Michigan, it is common in eastern Tennessee. No. 5409, near Knoxville, Aug. 19, 1934; No. 7976, near Knoxville, July 9, 1935; No. 8106, near Knoxville, July 24, 1935; No. 9149, Elkmont, the Park, Aug. 9, 1936.

**Hypholoma coronatum** Fr. Reported by Parker (1933:176) from New York and Michigan. It is somewhat frequently met with here. No. 4117, LaFollette, July 11, 1934; No. 4477, near Knoxville, July 17, 1934; No. 8019, near Knoxville, Aug. 16, 1935; No. 9155, Elkmont, the Park, Aug. 9, 1936.

**Hypholoma hydrophilum** Fr. No. 9550, Greenbrier, Sevier Co., the Park, Oct. 11, 1936; No. 9555, same, Oct. 18, 1936. In the latter collection, the sporophores occurred in numerous dense clusters of fifty to one hundred individuals. Parker (1933:182-183) reports it from New York, Pennsylvania, Maryland, District of Columbia, Virginia, North Carolina, and Florida.

**Hypholoma oblongisporum** Parker. Described by Parker (1933:179) from Pennsylvania. No. 9495, on soil, in deciduous woods, Mt. LeConte, Sevier Co., the Park, Oct. 4, 1936.

**Inocybe calospora** Quel. No. 8930, near Chimneys, the Park, Sevier Co., July 26, 1936.

**Inocybe cookei** Bres. No. 9075, Cosby, the Park, July 30, 1936. Reported also from Elkmont (Kauffman, 1917:164).

**Inocybe fastigiella** Atk. No. 9435, in woods, Swain Co., N. C., the Park, Sept. 7, 1936.

**Inocybe jurana** (Pat.) Sacc. Reported previously from Michigan and Ohio, also Europe (Kauffman, 1924a:256). No. 9244, Highlands, N. C., Aug. 16, 1936.

**Inocybe lacera** (Fr.) P. Karst. No. 9157, Elkmont, the Park, Aug. 9, 1936; No. 9254, Highlands, N. C., Aug. 16, 1936.

**Inocybe leptocystis** Atk. Known heretofore from New York and Michigan (Kauffman, 1924a:246-247). No. 9430, Swain Co., N. C., the Park, Sept. 7, 1936; No. 9509, Mt. LeConte, Sevier Co., the Park, Oct. 4, 1936; No. 9560, Knox Co., Oct. 17, 1936.

**Inocybe longicystis** Atk. No. 9494, on mossy soil, fir woods, Clingman's Dome, the Park, Sept. 27, 1936. Kauffman (1924a:235) reports its occurrence in Massachusetts, New York, and Michigan.

**Lactarius allardii** Coker. Originally described from North Carolina (Coker, 1918:12-13); apparently it is a southern species. No. 3714, near Allardt, July 8, 1934; coll. A. J. Sharp and J. K. Underwood; No. 8187, Blount Co., the Park, Aug. 11, 1935.

**Lactarius deceptivus** Pk. Previously known from New York to District of Columbia, and North Carolina. No. 3715, near Knoxville, June 22, 1934; coll. Mary B. Wilson.

- Lactarius hyginus** Fr. No. 9221, Highlands, N. C., Aug. 16, 1936. Burlingham (1910:182) states that it is known from Maine to New York, also in Michigan.
- Lactarius mucidus** Burl. Reported from Vermont and North Carolina (Burlingham, 1910:181). No. 5144, Highlands, N. C., July 29, 1934; No. 5425, Cades Cove, the Park, Aug. 14, 1934; No. 9238, Highlands, N. C., Aug. 16, 1936.
- Lactarius subvellereus** Pk. Previously reported from Alabama and North Carolina. It is common in East Tennessee, collections from counties of Knox, Fentress, Sevier, and Blount (several collections from the Park); June-August.
- Lactarius trivialis** Fr. Several times found in counties of Blount, Knox, Bledsoe, Sevier, and Scott; June-August. Found at Elkmont by Kauffman (1917:165).
- Lentinus umbilicatus** Pk. Known previously from Maine to Virginia and west to Idaho. Rather common near Knoxville; several collections, fall and early winter.
- Lepiota acerina** Pk. No. 9526, on soil and decaying wood, Greenbrier, Sevier Co., the Park, Oct. 11, 1936. Originally found in New York, and later in Michigan.
- Lepiota acutaesquamosa** Fr. No. 9534, Mt. LeConte, Sevier Co., the Park, Oct. 4, 1936. Known generally in United States and in Europe.
- Lepiota alluviina** Pk. Previously reported from type locality only—Albany, N. Y. (Murrill, 1914a:54). No. 9171, Elkmont, the Park, Aug. 9, 1936.
- Lepiota cristatella** Pk. No. 9209, near Knoxville, Aug. 14, 1936. Known by its small, white pileus with pink disk. Known heretofore from New England to Michigan and south to Missouri (Murrill, 1914a:46.)
- Lepiota delicata** Fr. No. 9288, on soil, in woods, near Elkmont, the Park, Aug. 19, 1936; coll. A. J. Sharp. A small mushroom with a pink cap and brown umbo. The spores are ellipsoidal-fusoid, most  $7 \times 3.5$  u, a few larger. Possibly it should be referred to *Lepiota rubida* Kauff. (see Kauffman, 1924b:320).
- Lepiota pusillomyces** Pk. Previously reported from New York (Peck, 1876), and Michigan (Kauffman, 1918:639). No. 9289, in woods, Meigs Creek, Sevier Co., the Park, Aug. 22, 1936; coll. A. J. Sharp and the writer.
- Leptonia serrulata** Fr. Reported by Murrill (1917b:89) from Maine to Wisconsin and Ohio, also Europe. No. 8131, Blount Co., the Park, Aug. 11, 1935; No. 9412, Swain Co., N. C., Sept. 7, 1936.
- Leptonia strictipes** Pk. Previously known only from the type station, Stow, Mass. (Murrill, 1917b:93), and from Michigan (Smith, 1935a:180). Found at Highlands, N. C., on sphagnum. No. 5153, July 25, 1934; No. 9267, Aug. 16, 1936.
- Marasmius albiceps** Pk. No. 5165, on fallen oak leaves, Highlands, N. C., July 30, 1934; No. 9108, on fallen needles of spruce and fir, near Indian Gap, the Park, Aug. 2, 1936. Pennington (1915:283) reports it from New York and Michigan, and Coker (1929:172) from North Carolina.
- Marasmius capillaris** Morg. No. 3776, Mt. LeConte, the Park, July 5, 1934; No. 8215, Elkmont, the Park, Aug. 17, 1935.
- Marasmius confluens** (Fr.) Ricken (*Collybia confluens* Fr.). Common at Highlands, N. C., and in the Smoky Mts. We have several collections from these two regions; July-August. Pennington (1915:269-270) reports it from New York, Ohio, Michigan, and Europe.
- Marasmius delectans** Morg. Known heretofore from New York to Michigan and Ohio (Pennington, 1915:281). No. 7964, on dead leaves, Knox Co., July 9, 1935.
- Marasmius fuscopurpureus** Fr. Found but once; No. 8954, near Chimneys, the Park, Sevier Co., July 26, 1936; coll. A. J. Sharp and the author.

Its previously recorded distribution (Pennington, 1915:273): Rhode Island, Ohio, Colorado, and probably Minnesota; also Europe.

**Marasmius minutus** Pk. Previously known from New York, Virginia, Wisconsin, and Minnesota. No. 9177, on fallen leaves, Elkmont, the Park, Aug. 9, 1936.

**Marasmius praeacutus** Ellis. Pennington (1915:277) says this species is known from New York and New Jersey. It is common in eastern Tennessee and western North Carolina (Smoky Mts. and Highlands, N. C.), July-August.

**Marasmius resinus** (Pk.) Sacc. Three collections from the Park, July-August. Previously reported distribution: New York to Virginia and west to Michigan and Ohio (Pennington, 1915:276), and from Harlan, Ky., by Kauffman (1917:165).

**Marasmius semihirtipes** Pk. Found at Elkmont, the Park, and at Highlands, N. C., July-August.

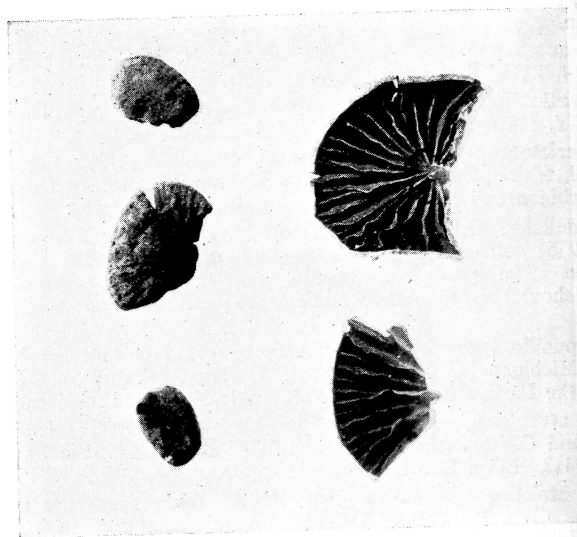


Fig. 5. *Panus nigrifolius* Pk. (Photo. of type; courtesy of Dr. L. O. Overholts). x 1.8.

**Mycena borealis**, A. H. Smith. This species was recently described by Smith (1935b:586-587), who reports it from Nova Scotia, New Brunswick, New York, Michigan, and Tennessee. Two collections have been taken from the Park: No. 6513, Mt. LeConte, 6000 ft., Sevier Co., July 20, 1934, and No. 9059, below Indian Gap, Sevier Co., 4500 ft., July 26, 1936.

**Mycena clavicularis** (Fr.) Gillet. No. 8002, on soil in spruce woods, Roan Mt., Tenn., at an altitude of 5500 ft., July 21, 1935. Previously reported from New York, Massachusetts, Michigan, and North Carolina; also Europe.

**Nolanea dysthales** (Pk.) Atk. No. 9691, on soil, woods, Greenbrier, Sevier Co., the Park, Oct. 11, 1936. Identified by Dr. A. H. Smith. Our specimens are larger than usually described; pileus 1.5-5 cm. broad; stipe 3-6 cm. long. Previously recorded from New York and Michigan, and from Elkmont, Tennessee (Kauffman, 1917:165).

**Nolanea mammosa** Fr. Five collections to date, from counties of Knox and Morgan, November-January.

**Nyctalis parasitica** Fr. No. 9572, on *Russula* sp., Greenbrier, Sevier Co., the Park, Oct. 18, 1936. *Pileus* up to 8 mm. in diameter; chlamydospores smooth, pale brown, 12-15x9-10 u. Reported from Pennsylvania by Overholts (1930), and from Nova Scotia by Smith and Wehmeyer (1936).

**Omphalia rugosodisca** Pk. Although this species has been recorded from the northern United States only (Maine, New York, and Michigan), it has been found four times in the Park, on decaying hemlock logs: No. 6514, Mt. LeConte, Aug. 10, 1934; No. 6520, Chimneys, June 27, 1934; No. 9061, below Indian Gap, July 26, 1936; No. 9128, Elkmont, Aug. 9, 1936. Determined by Dr. A. H. Smith.

**Panus nigrifolius** Pk. (Fig. 5). *Pileus* 1-2.5 cm. dimidiate, membranous, margin decurved, cinnamon-brown (when dry), reddish-brown (when wet), laterally attached by a short stem-like base, sulcate to disk, dry, rather tough, surface covered by dense short velvety tomentum, pelliculose. *Flesh* corky, thin, chestnut-brown, *taste* bitter. *Gills* radiating from a villose tubercle or stem-like base, dark-brown to purplish-brown, intervenose, subdistant, medium broad, broadest in front, many short, short ones often narrow, white-frosted; often forked in front, stem-like base often with yellowish-brown villosity. *Spores* 7-9x4-5 u, elliptical. *Cystidia* none.

No. 9690, on *Rhododendron* twigs, Greenbrier, Sevier Co., the Park, July 5, 1934. Coll. by A. J. Sharp and J. K. Underwood; det. by Dr. A. H. Smith. It was earlier collected (about 1928) at Gatlinburg (specimens lost by fire). The type was found by Earle, in Alabama, on alder. Dr. L. O. Overholts has examined the type, and states that the spores are 8-12 x 5-7 u. The illustration here (Fig. 5) was made by Overholts, from the type.

**Pholiota aeruginosa** Pk. No. 9591, on hemlock log, Greenbrier, Sevier Co., the Park, Oct. 18, 1936. *Pileus* areolate, tinged pink and green, scales becoming black; *stipe* pink at apex, greenish downward, yellowish at base. Overholts (1924:269-270) reports it from New York and Pennsylvania, and westward to Arkansas, Idaho, and Washington.

**Pholiota caperata** Fr. No. 5032, Mt. LeConte, the Park, July 20, 1934; No. 9442, Swain Co., N. C., the Park, Sept. 7, 1936. Overholts (1927:123-124) reports it from Ontario, New England, New York, and Pennsylvania; Kauffman (1918:294-295) reports it from Michigan. Also known in Europe.

**Pholiota flammans** Fr. Previously recorded from Elkmont, Tenn., by Kauffman (1917:165), and from New York, Michigan, and Oregon; also Europe (Overholts, 1932:278). No. 9433, Spruce Flats, Sevier Co., the Park, Sept. 6, 1936.

**Pholiota praecox** Fr. No. 5033, Mt. LeConte, the Park, July 20, 1934; No. 9325, Indian Creek, above Bryson City, N. C., the Park, Aug. 23, 1936; No. 9454, Tennessee Branch, Swain Co., N. C., the Park, Sept. 7, 1936.

**Pholiota squarrosoides** Pk. Reported by Kauffman (1917:165) from Elkmont, Tenn., and by Overholts (1932:278) from Maine to Connecticut, and west to Michigan. No. 8324, Alum Cave, Sevier Co., the Park, Sept. 24, 1935; No. 9388, Spruce Flats, Sevier Co., the Park, Sept. 6, 1936.

**Pleurotus albolanatus** Pk. No. 8226, on dead hemlock tree, Newfound Gap, the Park (North Carolina), Aug. 18, 1935; No. 9490, on log of *Abies fraseri*, near Indian Gap, the Park, Sevier Co., Sept. 27, 1936. Described from Michigan (Kauffman, 1918:672). Identification confirmed by Dr. A. H. Smith.

**Pleurotus atropellitus** Pk. No. 4932, on decaying wood, Mt. LeConte, the Park, May 6, 1935; coll. C. W. Horton; No. 6205, on dead apple limbs, Knoxville, April 6, 1935. Murrill (1915:243) reports it from New York, Connecticut, and Pennsylvania.

**Pleurotus niger** Schw. No. 9273, on dead wood, Mt. Sterling, N. C., the Park, Aug. 2, 1936; coll. John R. Raper; No. 9649, Oliver Springs, Oct. 25, 1936.

**Pluteus leoninus** Fr. Occasional in eastern Tennessee and western North Carolina, June-August.

**Psilocybe atomatoides** Pk. No. 9427, on log, Tennessee Branch, Swain Co., N. C., the Park, Sept. 7, 1936. Ventricose cystida few, on sides and edges of lamellae.

**Tricholoma imbricatum** Fr. No. 10147, on soil, pine woods, near Clinton, Jan. 10, 1937. Reported from Michigan by Kauffman (1918:693).

**Volvaria bombycina** Fr. No. 9514, on living poplar tree, Knoxville, Sept. 14, 1936. Known throughout eastern and middle United States and Europe.

**Volvaria pusilla** Fr. No. 4487, on soil, oak woods, Knoxville, July 17, 1934. Widespread in United States east of the Rocky Mts., and in Europe.

### GASTEROMYCETES

**Bovista pila** B. & C. No. 5282, Roaring Fork, Sevier Co., the Park, May 13, 1934; coll. and det. Ruby Rice; No. 5371, on soil, Shady Valley, Johnson Co., Aug. 19, 1934; coll. A. J. Sharp and J. K. Underwood; det. Ruby Rice.

**Bovistella radicata** (Mont.) Pat. No. 5372, on soil, Shady Valley, Johnson Co., Aug. 19, 1934; coll. A. J. Sharp and J. K. Underwood; det. Ruby Rice; No. 8597, soil in pasture, Knox Co., Nov. 10, 1935; coll. and det. Mary B. Wilson.

**Calostoma cinnabarina** Desv. No. 5091, soil, Highlands, N. C., July 28, 1934; coll. Mrs. J. K. Underwood and Alice Caton; det. Ruby Rice; No. 8170, soil, Bullhead, Sevier Co., the Park, Aug. 5, 1935; coll. A. J. Sharp; No. 8172, Laurel Falls, Elkmont, July 6, 1935; coll. A. J. Sharp; No. 8208, Thomas Ridge, the Park, Aug. 12, 1935; coll. A. J. Sharp; No. 8601, Mt. Sterling, N. C., Aug. 23, 1935; coll. D. Bain, det. Mary B. Wilson. Reported from Elkmont by Kauffman (1917:166).

**Calostoma lutescens** (Schw.) Burnap. No. 5228, Gatlinburg, Jan. 21, 1934; det. Ruby Rice; No. 6535, Montvale Springs, Blount Co., Nov. 13, 1934; coll. T. H. Jones, det. S. L. Wallace; No. 8222, Dupont Springs, Aug. 19, 1935; coll. Miss T. Hickman; No. 8624, Unaka Springs, Unicoi Co., Oct., 1935; coll. D. M. Brown, det. S. L. Wallace; No. 10189, Sevier Co., the Park, Jan. 26, 1937; coll. Dr. H. M. Jennison.

**Calostoma ravenelii** (Berk.) Masee. No. 6276, Montvale Springs, Blount Co., Aug. 23, 1934; det. Ruby Rice; No. 6536, Wartburg, Nov. 11, 1934, coll. and det. C. W. Horton; No. 8599, Mt. Sterling, N. C., the Park, Aug. 27, 1935, coll. D. Bain, det. Mary B. Wilson; No. 8625, Unaka Springs, Unicoi Co., Oct. 1935, coll. D. M. Brown, det. S. L. Wallace.

**Simblum sphaerocephalum** Schlecht. No. 9705, on low grassy soil, Knoxville, coll. by Lora Bond, Nov. 1, 1936. More than a dozen excellent specimens were collected. Coker and Couch (1928:7) say: "This is a rare plant in the United States. . . . It is said to be common in South America. . . ." Conard (1913:271) states that it is known from New York, Maryland, District of Columbia, Iowa, Nebraska, Kansas, and Texas.

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#### VETERINARIANS O. K. REMEDY FOR HEART WORMS IN DOGS

The comparatively new treatment for heart-worm infestation in dogs has given good results in most cases when used by practicing veterinarians according to a check made recently by zoologists of the United States Bureau of Animal Industry.

The treatment, which was perfected by zoologists of the Bureau and has been used for more than a year, consists of injections into the blood stream of the drug known as Fuadin. Dogs affected with heart worms may become greatly exhausted when hunting and many of them die.

In checking the effectiveness of the remedy, the Bureau's study showed that out of a total of 1,000 dogs treated by the method, more than 90 per cent were restored to usefulness. Blood tests of dogs that had received treatment showed that the microscopic parasite had disappeared from the blood stream. The remedy is therefore considered the most practical means of treating heart-worm disease in dogs.