

A PRELIMINARY LIST OF THE COLLEMBOLA OF EAST TENNESSEE

T. P. COPELAND

*East Tennessee State College
Johnson City, Tennessee*

During the past seven years over 600 field samples of leaves, grass, soil, bark, etc., have been collected and the Arthropoda isolated. This was accomplished chiefly by means of the modified Berlese funnel. For the first collections light and heat were used to drive out the arthropods, but later the technique of sprinkling naphthalene crystals over the detritus was employed and seemed to work equally well, was much more convenient, and made possible the use of the funnels in the field.

Inasmuch as the Tennessee records are meager for several of the arthropod groups, particularly Apterygota, it seems desirable to publish the results of the survey in a series of papers treating each group separately as identifications are completed. Because of the large number of samples and the general abundance of Collembola in each, approximately 50 non-random samples were selected and the Collembola identified.

Unless otherwise indicated, the collections were made by the author during the years 1952-1959 and the determinations made by Drs. D. L. Wray, F. Bonet, and H. B. Mills.

ORDER COLLEMBOLA LUBBOCK FAMILY PODURIDAE LUBBOCK

- Achorutes armatus* Nicolet. CARTER CO., April 13, among hardwood and evergreen litter on the bank of a small stream; April 20, woods mold, Watauga Lake dam; July 12, among molding spruce and fir needles, Roan Mt., 5900 ft. KNOX CO., March 27, in humus under rotting log, U. T. farm; March 15, Knoxville, "swarming" on a porch and in a garage after a heavy rain and so numerous as to blacken the floor and walls.
- Achorutes macgillivrayi* Folsom. CARTER CO., April 20, in woods mold. UNICOI CO., July 5, under rocks on Unaka Mt., 4000 ft.
- Achorutes nivicola* Fitch. CARTER CO., April 13, among mixed deciduous and evergreen litter on the bank of a small stream.
- Neanura barberi* Handschin. LOUDON CO., April 27, among pieces of rotting wood.
- Neanura muscorum* Templeton. COCKE CO., July 20, in deciduous duff. UNICOI CO., July 5, among cedar, hemlock and rhododendron leaves.
- Odontella cornifer* Mills. CARTER CO., April 13, in mixed deciduous and evergreen litter on the bank of a small stream. KNOX CO., March 27, in humus beneath a rotting log, U.T. farm; April 4, among deciduous and evergreen leaves and grass in a bog. SEVIER CO., April 20, among leaf mold of mixed hardwoods, Dupont Mt., 2700 ft.
- Paranura caeca* Folsom. SEVIER CO., April 20, in humus and hardwood leaf mold, Dupont Mt., 2700 ft.
- Podura aquatica* Linn. TENN., Folsom (1916, p. 515), Maynard (1951, p. 25), and Mills (1934, p. 8).

- Pseudachorutes aureofasciatus* (Harvey). UNICOI CO., July 5, in soil and among birch leaves on the ground, Unaka Mt., 3000 ft., also among deciduous leaves on the bank of a creek, Limestone Cove, 1900 ft.
- Pseudachorutes complexus* MacGillivray. CARTER CO., April 20, from deciduous litter on the shore of Watauga Lake.
- Pseudachorutes sextatilis* Macnamara. COCKE CO., July 20, in deciduous duff.
- Pseudachorutes subcrassoides* Mills. CARTER CO., July 12, in molding spruce and fir needles, Roan Mt., 5900 ft. SEVIER CO., April 20, in pine and deciduous leaves, Dupont Mt., 1800 ft.
- Willemia similis* Mills. CARTER CO., April 20, in hardwood leaf mold near picnic area, Watauga Lake dam.

FAMILY ONYCHIURIDAE BOERNER

- Onychiurus fimetarius* (Linn.). CARTER CO., July 12, from fragments of rotting spruce wood and among spruce-fir leaf mold, Roan Mt., 5900 ft.
- Onychiurus ramosus* Folsom. CARTER CO., July 12, in spruce and fir leaves, Roan Mt., 5900 ft. KNOX CO., April 3, in grass and deciduous litter. LOUDON CO., April 6, in pieces of rotting wood. SEVIER CO., April 20, in hardwood duff, Dupont Mt., 2200 ft.
- Onychiurus subtenuus* Folsom. LOUDON CO., April 27, among litter beside a rotting tree.
- Tullbergia clavata* Mills. KNOX CO., April 4, among leaves of pine and mixed hardwoods.
- Tullbergia iowensis* Mills. KNOX CO., March 27, in detritus from beneath a decaying log, U.T. farm.

FAMILY ONCOPODURIDAE DENIS

- Harlomillsia oculata* (Mills). CARTER CO., April 20, among mixed hardwood leaves in a limestone cave. KNOX CO., April 4, among pine and deciduous leaves on the ground. LOUDON CO., April 27, in duff beside a rotting log. SEVIER CO., April 20, from leaf mold, Dupont Mt., 2700 ft.

FAMILY ISOTOMIDAE BOERNER

- Folsomia fimetaria* (Linn.). CARTER CO., April 4, in deciduous leaves and litter which had accumulated inside a limestone cave near Sinking Creek Baptist Church; April 4, among a thick layer of deciduous leaves, Watauga Lake dam. KNOX CO., March 27, in humus beneath a rotting hardwood tree and also in two samples of pine and deciduous leaves, U. T. farm.
- Folsomia sexoculata* (Tullberg). UNICOI CO., July 5, among molding birch, hemlock, and rhododendron leaves, Unaka Mt., 2300 ft., and also in mixed deciduous and pine litter, Unaka Mt., 3200 ft.
- Folsomides parvus* Folsom. KNOX CO., March 27, from fragments of rotting wood, U.T. farm.
- Folsomina onychiurina* Denis. TENNESSEE, (Collection data unavailable).
- Isotoma albella* Packard. (KNOX CO.), Knoxville, April 5, Folsom (1937, p. 97).
- Isotoma cinerea* (Nicolet). LOUDON CO., April 27, in fragments of rotting wood and leaves beside a dead tree.
- Isotoma eunotabilis* Folsom. CARTER CO., April 20, in deciduous litter inside a limestone cave.

- Isotoma grandiceps* Reuter. CARTER CO., July 12, among molding spruce and fir leaves, Roan Mt., 5900 ft. SEVIER CO., June 12, under deciduous leaves on the ground, Dupont Mt., 2700 ft.
- Isotoma minor* Schaeffer. CARTER CO., July 12, among molding spruce and fir leaves, Roan Mt., 5900 ft. UNICOI CO., July 5, among decomposing cedar, hemlock, and rhododendron leaves.
- Isotoma olivacea* Tullberg. CARTER CO., April 20, in deciduous litter inside a limestone cave.
- Isotoma tariva* Wray. CARTER CO., July 12, in spruce and fir leaf mold, Roan Mt., 5900 ft.
- Isotoma trispinata* MacGillivray. KNOX CO., March 27, in chunks of rotting wood and in soil beneath decaying tree, U. T. farm. TENN., Mills (1934, p. 63).
- Isotoma viridis* Bourlet. CARTER CO., July 12, among molding spruce and fir needles, Roan Mt., 5900 ft. TENN., Folsom (1937, p. 112), Maynard (1951, p. 111), and Mills (1934, p. 63).
- Isotomurus palustris* (Mueller). (KNOX CO.), Knoxville, Feb. 18, Folsom (1937, p. 75). TENN., Maynard (1951, p. 123) and Mills (1934, p. 55).
- Proisotoma minuta* (Tullberg). LOUDON CO., April 27, under bark on a dead tree.
- Tetracanthella ethelae* Wray. CARTER CO., April 20, among mixed hardwood leaves in a limestone cave. KNOX CO., April 3, in a mixture of pine and deciduous duff. LOUDON CO., April 27, in detritus beside a rotting log.

FAMILY ENTOMOBRYIDAE BOERNER

- Entomobrya atrocincta* Schött. KNOX CO., April 29, in dry grass and sand next to a walk on U. T. campus; Knoxville, Christiansen (1958, p. 466).
- Entomobrya bicolor* Guthrie. KNOX CO., April 4, in very dry pine leaf mold, also among hardwood leaves mixed with a few pine needles on a slope above a bog. LOUDON CO., April 6, among deciduous leaves on the ground, also from a sample of pine needles and soil.
- Entomobrya corticalis* Nicolet. KNOX CO., April 4, in pine and deciduous leaves on a dry hillside above a bog; April 29, in dry grass and sand next to a walk, U. T. campus. Christiansen (1958, p. 489) synonymizes this name under *E. ligata* Folsom.
- Entomobrya decemfasciata* (Packard). KNOX CO., April 29, in dry grass and sand next to a walk, U. T. campus. LOUDON CO., and SEVIER CO., Christiansen (1958, p. 514).
- Entomobrya griseo-olivata* (Packard). KNOX CO., April 27, in dry grass and sand next to a walk, U. T. campus; Knoxville, Christiansen (1958, p. 469). TENN., Mills (1934, p. 68). See also *E. marginata*.
- Entomobrya ligata* Folsom. CARTER CO. and SEVIER CO., Christiansen (1958, p. 492).
- Entomobrya marginata* Tullberg. TENN., Maynard (1951, p. 145). Christiansen (1958, p. 466) synonymizes *E. marginata* Tullberg under *E. griseo-olivata* (Packard).
- Entomobrya multifasciata* Tullberg. TENN., Maynard (1951, p. 158) and Mills (1934, p. 69). Christiansen (1958, p. 457) shows this name a synonym of *E. nivalis* (Linn.).
- Entomobrya nivalis* (Linn.). (KNOX CO.), Knoxville, Christiansen (1958, p. 464). See also *E. multifasciata*.
- Entomobrya purpurascens* (Packard). TENN., Mills (1934, p. 67). Christiansen (1958, p. 519) shows the species moved to the genus *Entomobryoides*.
- Entomobrya quadrilineata* Bueker. SEVIER CO., May 5, in grass and deciduous detritus in a tree hole, Dupont Mt., 2200 ft. (KNOX CO.), Knoxville, Christiansen (1958, p. 509).

- Entomobryoides purpurascens* (Packard). LOUDON CO., April 6, among hardwood leaves on the ground. See also *Entomobrya purpurascens*.
- Lepidocyrtus beaucatcheri* Wray. CARTER CO., April 20, among hardwood leaf mold and detritus inside a limestone cave; April 20, among deciduous litter. KNOX CO., March 27, in soil and from fragments of rotting wood, U. T. farm. LOUDON CO., April 6, among deciduous leaves on the ground and also from a sample of soil and pine leaf mold.
- Lepidocyrtus beaucatcheri* var. *olforti* Wray. SEVIER CO., April 20, among molding deciduous leaves, Dupont Mt., 2700 ft.
- Lepidocyrtus curvicollis* Bourlet. COCKE CO., July 20, among very dry hardwood leaves on the ground. LOUDON CO., April 6, in molding deciduous leaves. SEVIER CO., April 20, Dupont Mt., 2700 ft.
- Lepidocyrtus cyaneus* Tullberg. TENN., Maynard (1951, p. 183) and Mills (1934, p. 73).
- Lepidocyrtus cyaneus* var. *cinereus* Folsom. GREENE CO., July 10, among deciduous leaves on the ground. KNOX CO., April 10, under the bark of a dead hardwood tree. LOUDON CO., April 27, from fragments of rotten wood and detritus beside a dead tree.
- Lepidocyrtus lanuginosus* Gmelin. JEFFERSON CO., July 20, among deciduous leaves on a dry hillside.
- Lepidocyrtus unifasciatus* James. KNOX CO., April 4, among deciduous and pine duff. SEVIER CO., April 20, among mixed hardwood leaves, Dupont Mt., 2700 ft.
- Orchesella ainsliei* Folsom. JEFFERSON CO., July 20, among locust leaves on the ground. LOUDON CO., April 6, in soil and molding pine needles. UNICOI CO., July 5, among cedar, hemlock, and rhododendron leaves. TENN., Maynard (1951, p. 196) and Mills (1934, p. 81).
- Orchesella carneiceps* Packard. KNOX CO., April 4, among deciduous leaves mixed with a little pine litter. UNICOI CO., July 5, among molding cedar, hemlock and rhododendron leaves.
- Orchesella hexfasciata* (Harvey). UNICOI CO., July 5, among molding cedar, hemlock, and rhododendron leaves.
- Pseudosinella alba* (Packard). COCKE CO., July 20, among deciduous leaves on the ground. GREENE CO., July 10, among hardwood leaves on a very dry hillside. JEFFERSON CO., July 20, in woods mold. UNICOI CO., July 5, in deciduous litter, Unaka Mt., 4200 ft. TENN., Mills (1934, p. 75).
- Pseudosinella candida* Folsom. CARTER CO., April 20, among deciduous leaves mixed with some pine needles; July 12, in molding spruce and fir leaves, Roan Mt., 5900 ft. KNOX CO., March 27, in humus under a decaying log on a river bank, U. T. farm; April 3, among mixed deciduous litter. LOUDON CO., April 6, among leaves beside a rotting tree; April 27, among deciduous litter on well drained bank of a pond. UNICOI CO., July 5, in forest litter, Unaka Mt., about 3200 ft.
- Pseudosinella petterseni* Börner. TENN., Maynard (1951, p. 170). See also *Pseudosinella violenta*.
- Pseudosinella violenta* (Folsom). CARTER CO., April 20, in deciduous detritus in a limestone cave. TENN., Mills (1934, p. 76). Maynard (1951, p. 169) shows this name synonymized under *Pseudosinella petterseni* Börner.
- Tomocerus bidentatus* Folsom. (KNOX CO.), Knoxville, April 5, Folsom (1913, p. 463).
- Tomocerus flavescens* (Tullberg). JEFFERSON CO., July 20, in leaves on the ground. UNICOI CO., July 5, among fallen birch leaves, Unaka Mt., 4500 ft. and among mixed deciduous leaves 4200 ft. (KNOX CO.), Knoxville, Folsom (1913, p. 459).
- Tomocerus flavescens* var. *americanus* Schött. CARTER CO., July 12, among spruce and fir leaves on Roan Mt., 5900 ft. JEFFERSON CO., July 20, in molding locust leaves on the shore of Douglas Lake.

- Tomocerus flavescens* var. *separatus* Folsom. COCKE CO., July 20, in leaf mold near Greeneville and also near Newport. JEFFERSON CO., July 20, in deciduous litter near Dandridge and in moldy locust leaves on the shore of Douglas Lake. KNOX CO., April 4, in deciduous and pine litter in a bog; Knoxville, Folsom (1913, p. 460). UNICOI CO., July 5, among birch leaves on Unaka Mt., 3000 ft. and also at 4800 ft.; July 5, in Limestone Cove among cedar, hemlock, and rhododendron leaves. TENN., Maynard (1951, p. 135).
- Tomocerus lamelliferus* Mills. CARTER CO., July 12, in molding spruce and fir needles, Roan Mt., 5900 ft. COCKE CO., July 20, from leaf mold in mixed woods. GREENE CO., July 10, in very dry deciduous duff. JEFFERSON CO., July 20, among locust leaves on the ground on the shore of Douglas Lake. UNICOI CO., July 5, very generally distributed in Limestone Cove and at all elevations on Unaka Mt. in both deciduous and evergreen leaf mold.
- Troglosinella hirsuta* Delamare-Deboutteville. Delamare-Deboutteville (1949, p. 121).
- Willowsia platani* var. *nigromaculata* (Lubbock). KNOX CO., August 5, on "frog tank" and 4th floor walls of Biology Building, University of Tennessee. MADISON CO., July 10, on walls of men's shower room, Union University. WASHINGTON CO., July 3, on window sills and outside walls of 2nd floor apartment in Johnson City.

FAMILY SMINTHURIDAE LUBBOCK

- Arrhopalites binoculatus* var. *grisea* Börner. CARTER CO., July 12, in molding spruce and fir leaves, Roan Mt., 5900 ft.
- Bowlettiella hortensis* (Fitch). TENN., Folsom (1934, p. 467), Maynard (1951, p. 255), and Mills (1934, p. 101).
- Deuterosminthurus macgillivrayi* Banks. LOUDON CO., April 6, among deciduous leaves on a well drained bank above a pond. SEVIER CO., June 12, in deciduous duff, Dupont Mt., 2700 ft.
- Dicyrtoma curvilineata* Wray. KNOX CO., March 27, under a rotting hardwood tree, U. T. farm; April 3, among mixed deciduous and pine leaves near a bog. LOUDON CO., April 6, in grass, humus, and deciduous leaves on a dry hillside.
- Neosminthurus curvisetis* (Guthrie). CARTER CO., April 20, among deciduous detritus inside a limestone cave. KNOX CO., March 27, in soil beneath a rotting log, U. T. farm; April 4, in deciduous and pine leaves. LOUDON CO., April 6, among hardwood leaves on the ground.
- Ptenothrix marmorata* (Packard). CARTER CO., April 20, in deciduous litter in a limestone cave. KNOX CO., March 27, in soil and litter beneath a rotting log, U. T. farm; April 3, in forest litter; April 10, under bark on a rotting hardwood tree, U. T. farm.
- Sminthurinus elegans* (Fitch). KNOX CO., March 27, in leaves beside a rotting log, U. T. farm; April 3, among deciduous litter in a bog; Knoxville, Folsom (1934, p. 465). LOUDON CO., April 6, among a thick layer of leaves on the ground; April 27, among deciduous leaves next to a dead tree. TENN., Maynard (1951, p. 238) and Mills (1934, p. 96).

FAMILY NEELIDAE FOLSOM

- Megalothorax minimus* Willem. CARTER CO., July 12, in spruce and fir needle mold, Roan Mt., 5900 ft. KNOX CO., July 19, in hardwood leaves by a small brook. UNICOI CO., July 5, in birch, hemlock, and rhododendron leaves, 2300 ft., and in mixed hardwood and hemlock leaves, 3200 ft. The individuals of this species are never numerous in any sample.
- Neelides minutus* (Folsom). KNOX CO., June 19, among molding leaves under honey-suckle vines. UNICOI CO., July 5, never numerous but found at all elevations on Unaka Mt., in both deciduous and evergreen leaf mold; Limestone Cove, under bark on a dead tree.

In this paper 77 species and varieties of Collembola representing 34 genera are listed. Most of these appear not to have been previously reported for Tennessee. When the Collembola fauna of the two other geographical areas of the state is known and a more adequate sampling of East Tennessee is done, the number of species known to occur in the state will probably be greatly increased.

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NEWS OF TENNESSEE SCIENCE

(Continued from page 230)

they are sponsored by the American Physiological Society through its Education Committee and with funds principally from the National Science Foundation. The Carleton College Workshop was directed by Dr. J. Bruce Guyselman of Carleton College and was attended by twenty-one teachers from colleges and universities of the North Central region of the United States. The Workshop instruction was given by a group of eight physiologists chosen for their interest and excellence in research and teaching in physiology. Dr. Tipton attended the workshop as a discussion leader and in his capacity as a member of the Education Committee. On August 19 he discussed "Control of Metabolism by the Thyroid Gland." On the even of August 17 he led a general discussion of the functions and activities of the American Physiological Society, The Society of General Physiologists, and more specifically the various activities of the Education Committee of the American Physiological Society.

Dr. Frederic C. Chang, professor of Chemistry and research associate in pathology and microbiology at The University of Tennessee Medical Units in Memphis, has been awarded a \$28,951 grant by the U.S. Public Health Service for research on the synthesis of steroid hormones.

Dr. Clark E. Grosvenor, assistant professor of physiology at the University of Tennessee College of Medicine, has been awarded a \$37,706 grant by the U. S. Public Health Service. The grant is to be used over a three-year period to support basic studies concerning hormonal factors responsible for mammary gland function during lactation.

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