

THE SPIDER MITES (PROSTIGMATA: TETRANYCHIDAE) OF GEORGIA^{1,2}

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ABSTRACT

Collection data are summarized for 27 species of spider mites (Tetranychidae) collected from Georgia. *Eotetranychus crossleyi*, n. sp. and the female of *Schizotetranychus camur* Pritchard and Baker are described; *Eotetranychus multidigituli* (Ewing) is reassigned to the genus *Platy-tetranychus*. Setal reductions on legs I and II of females and leg II of males of *Tetranychus urticae* Kock are reported and discussed.

Key Words: Spider mites, Tetranychidae, Tetranychoidae, mites, Georgia.

The Tetranychidae (spider mites) are one of the most destructive plant feeding mite groups. Mites of this family cause injury by piercing the plant epidermis with their cheliceral stylets. This results in a loss of contents in the punctured cells and ultimately in the death of the cells. Heavy infestations result in a blotching, stippling, or bronzing of the attacked leaves and leaf fall may occur. Crop yield reduction is common in severe infestations (e.g., Bacon, Lyons and Baskett, 1962; Fulton, 1957; Wilcox and Howland, 1957). The importance of these mites is indicated by the fact that they have been the primary subject of two review papers (Boudreaux, 1963; and Huffaker and McMurty, 1969), and have been discussed in review articles on mite transmission of plant viruses (Slykhus, 1965; Oldfield, 1970).

Despite the economic importance of the tetranychid mites, most distribution and host records to date come from only a few sources: i.e., Pritchard and Baker 1952, 1955, Tuttle and Baker, 1968. Faunal and host records for most states, including Georgia, do not exist. The present paper lists the Tetranychidae collected in Georgia as a result of specific collections during the past year by the senior author and irregular collections over the past 10 years by the junior author. A list of host plants and the associated mite species is given in Table 1.

Superfamily TETRANYCHOIDEA Reck, 1952

These prostigmatic mites are characterized by having long, needlelike chelicerae that are strongly recurved proximally and arise within an eversible pouch, the stylophore. This superfamily includes four families, of which two—Tuckerellidae and Linotetranaidae—are of minor importance and have not been collected in Georgia. The remaining families, Tetranychidae (true spider mites) and Tenuipalpidae (false spider mites), include a large number of serious pest species and both families are represented in Georgia.

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Family TETRANYCHIDAE Donnadieu

The Tetranychidae are distinct in having a palpal thumb-claw process, tarsi I and II usually bearing a specialized duplex seta, claws possessing tenent hairs, and empodium with or without tenent hairs. The classification used here follows Tuttle and Baker (1968). Unless stated otherwise, species distribution and host records are those reported by Pritchard and Baker (1955) or Tuttle and Baker (1968).

Subfamily Bryobiinae Berlese

This subfamily is distinct in that the empodium bears tenent hairs.

Genus *Bryobia* Koch
Bryobia praetiosa Koch

Bryobia praetiosa Koch. 1836, Deu. Crust. Myr. Arach. 1:8.

This species is world wide in distribution in the temperate regions of the world. *Bryobia praetiosa* has been collected from various low-growing plants throughout its geographical range. In Georgia the species has been collected from various ground plants and berlese samples of grasses and litter from Clarke, Elbert, Union, and Fulton Counties.

Genus *Petrobia* Murray

Tuttle and Baker (1968) list three subgenera of *Petrobia* only one of which, *Tetranychina*, was represented in our material.

Petrobia (Tetranychina) apicalis (Banks)

Tetranychina apicalis Banks, 1917, Entomol. News 28:195.

Petrobia apicalis: Pritchard and Baker, 1955:49.

This species is common on legumes throughout the southeastern United States. Georgia specimens were taken from crimson clover (*Trifolium incarnatum* L.) in Dougherty and Early Counties.

**Petrobia (Tetranychina) harti* (Ewing)

Neophyllobius harti Ewing, 1909, Trans. Amer. Entomol. Soc. 35:405.

Tetranychina harti: Banks, 1917, Entomol. News 28:195.

Petrobia (Tetranychina) harti: Tuttle and Baker, 1968:72.

This species is world wide in distribution and has been collected only from *Oxalis*. The species was collected from that host plant in Georgia, in Clarke County.

Petrobia (Tetranychina) lupini (McGregor)

Tetranychina lupini McGregor, 1950, Amer. Midl. Nat. 44:362.

Petrobia lupini: Pritchard and Baker, 1955:47.

Petrobia lupini has been reported only from the California coast, on lupines. In Georgia this species was collected from grass on sand dunes on Sapelo Island, McIntosh Co., Georgia.

Subfamily Tetranychinae Berlese

The mites of this subfamily have no tenent hairs on the empodium.

*Represents new species record for Georgia.

Genus *Eurytetranychus* Oudemans*Eurytetranychus buxi* (Garman)

Neotetranychus buxi Garman: in Ries, 1935, J. Econ. Entomol. 28:57.

Eurytetranychus buxi: Pritchard and Baker, 1955:103.

This species is world wide in distribution and appears to be limited to boxwood (*Buxus*). The species was collected from that host plant in Clarke Co., Georgia.

Genus *Aponychus* Rimado**Aponychus spinosus* (Banks)

Tetranychopsis spinosa Banks, 1909, Proc. Entomol. Soc. Wash. 11:134.

Eutetranychus spinosus: Pritchard and Baker, 1955:113.

Aponychus spinosus: Tuttle and Baker, 1968:82.

In North America this species has been reported from Canada and New York. In these areas the species is common on linden. In Georgia specimens were collected from the American elm (*Ulmus americana* L.) in Clarke Co.

Genus *Panonychus* Yokoyama*Panonychus citri* (McGregor)

Tetranychus citri McGregor, 1916. Ann. Entomol. Soc. Amer. 9:284.

Metatetranychus citri: Reck, 1941, Soobsh. Akad. Nauk. S.S.R. 2(9).

Panonychus citri: Ehara, 1956, J. Fac. Sci. Ser. VI Zool. 12:500.

Panonychus citri, commonly called the citrus red mite, is known from semitropical and tropical areas of the world. This species was collected from citrus trees at the USDA Experiment Station, Peach Co., from peach trees (*Prunus* sp.), Chatman Co., and from toyon (*Photinia serrulata*), Clarke Co.

Genus *Eotetranychus* Oudemans**Eotetranychus clitus* Pritchard and Baker

Eotetranychus clitus Pritchard and Baker, 1955:170.

This species is known only from the southeastern United States, on low-growing plants. Georgia material was taken from the legume beggar's-lice (*Desmodium* sp.) in Clarke Co. and from apple fruit at the farmers market, Atlanta.

Eotetranychus hicoriae (McGregor)

Tetranychus hicoriae McGregor, 1950, Amer. Midl. Nat. 44:287.

Eotetranychus hicoriae: Pritchard and Baker, 1955:211.

Literature references report this mite from pecans, hickory, horse-chestnut, oak and *Castanea*. In Georgia, *E. hicoriae* was collected from pecan leaves (*Carya illinoensis* Wang) in Clarke, Ben Hill, Dougherty, and Burke Counties. This appears to be one of the more common spider mites on pecans.

**Eotetranychus crossleyi* n. sp.

Fig. 1 A-H

The male of *Eotetranychus crossleyi* belongs to the species complex of *E. carpini*, *E. willamettei*, *E. coryli*, *E. viticola*, *E. uncatus* and *E. pruni* (see Pritchard and Baker, 1955:181). The males of this complex have a long, slender, tapering and undulating aedeagus. *Eotetranychus crossleyi*

differs from other species in this complex in that the undulation is more pronounced. *Eotetranychus crossleyi* also differs from *willamettei* by having the proximal member of each duplex seta very short in comparison with the distal member, and from the other species of the complex by having the peritreme ending in a straight distal bulb.

MALE. Palpus with terminal sensillum long and slender, about four times as long as broad at base. Peritreme straight, ending in a bulb. Tibia I with 9 tactile and 4 sensory setae; tarsus I with 4 tactile and 3 sensory setae proximal to duplex setae. Empodium I with 3 pairs of short teeth. Tibia II with 8 tactile setae, tibia III with 6 tactile setae. Dorsal body setae slender, tapering, slightly longer than longitudinal interval between their bases. Aedaeagus long, slender, tapering, strongly undulate, distal portion U-shaped. Length of idiosoma, 240 μ .

FEMALE. Terminal sensillum of palpus robust, about 2½ times as long as broad at its base. Tibia I with 9 tactile and 1 sensory setae; tarsus I with 5 tactile and 1 sensory setae proximal to duplex setae. Genital flap and integument immediately anterior to flap with transverse striae. Length of idiosoma 450 μ ; greatest width 210 μ .

Holotype male, from *Acer leucoderme* (Small); coll. C. Flechtmann; Echols Mill, Oglethorpe Co., Georgia; 24 July 1969. Paratype series consisted of 7 males and 11 females all with the same collection data as holotype. Types deposited as follows: holotype, 1 male, 6 female paratypes, Acarine Collection, Department of Entomology, University of Georgia, Athens; 2 male, 2 female paratypes, United States National Museum, Washington, D. C.; 1 male, 1 female paratypes with Dr. D. M. Tuttle, University of Arizona, Yuma; 2 male, 2 female paratypes retained by senior author, Department of Zoologia, E.S.A. "Luiz de Queiroz", Universidade de Sao Paulo, Brazil.

This species was named for Dr. D. A. Crossley Jr., Department of Entomology, University of Georgia.

Genus *Schizotetranychus* Trägårdh

**Schizotetranychus camur* Pritchard and Baker

Schizotetranychus camur Pritchard and Baker, 1955:260.

To date this species has been reported only from Florida, on grass. The species description was based on the male, the female being unknown. Males and females of this species were collected in Clarke Co., Georgia, and the female is described here.

FEMALE. Fig. 2. Rostrum elongate, reaching distal end of femur II; terminal sensillum of palpus short and stout, about as long as broad. Stylophore elongate, distinctly concave anteromedially. Peritreme straight, ending in a distal bulb. Striae of propodosoma longitudinal, hysterosomal striae transverse. Dorsal setae minutely pubescent, widened at base and tapering to a slender acute tip. First pair of dorsocentral setae reaching bases of second pair of dorsocentrals; all other dorsal hysterosomals shorter than longitudinal distances between their bases; humerals longer. Striae of genital flap transverse, becoming somewhat broad and inverted U-shaped on anterior area. All empodial claws split, without proximolateral setae. Tarsus I short and abruptly declivate distally, with 1 tactile (a long solenidion) and 4 sensory setae proximal to the duplex setae. Tibia I with 7 tactile and 1 sensory setae. Tibia II with 5 tactile setae.

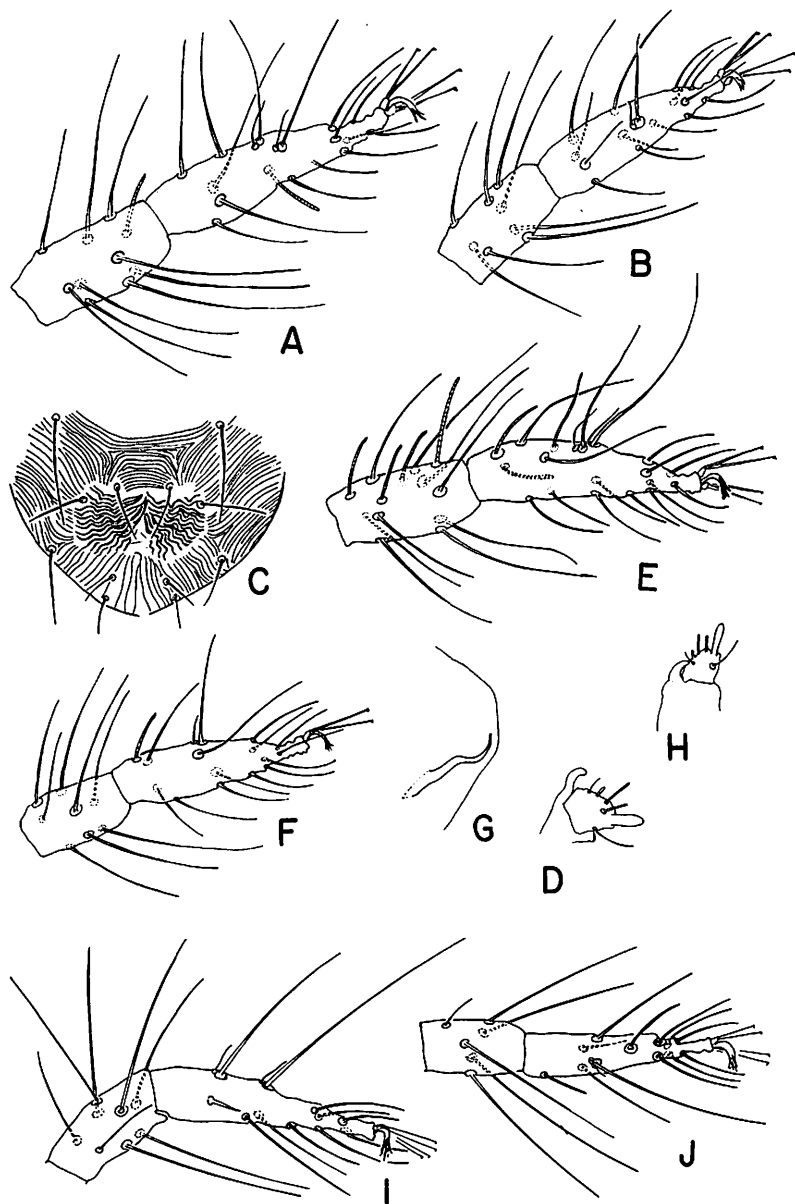


Fig. 1. *Eotetranychus crossleyi*, n. sp. A-H. Female: A, tibia and tarsus I; B, tibia and tarsus II; C, genito-anal area; D, terminal segment of palpus. Male: E, tibia and tarsus I; F, tibia and tarsus II; G, aedeagus; H, terminal segment of palpus. *Tetranychus urticae* Koch. I-J. Female: I, tibia and tarsus I, abnormal condition; J, tibia and tarsus II, abnormal condition.

Specimen series consisted of 2 females and 1 male, all collected from a cane plant (*Arundinaria* sp.); 23 June 1969; coll. S. Brown; Clarke Co., Georgia. One female is deposited with U.S. National Museum, Washington D.C.; the remaining specimens in the Acarine Collection, Department of Entomology, University of Georgia, Athens.

Genus *Platytetranychus* Oudemans

**Platytetranychus multidigituli* (Ewing) new combination

Tetranychus multidigituli Ewing, 1917, J. Econ. Entomol. 10:407.

Eotetranychus multidigitulis Pritchard and Baker, 1955:163.

The species has been reported only from honey locust and was previously known from Connecticut, Washington, D.C., North Carolina, and Louisiana. We have collected *P. multidigituli* from honey locust (*Gleditsia triacanthos* L.) in Clarke Co., Georgia. After discussing its taxonomic position with Dr. E. W. Baker, USDA, Washington, D.C. we have moved this species from *Eotetranychus* to *Platytetranychus*. Tuttle and Baker (1968) described a new species of *Platytetranychus* from *Symphovicarpus*, a genus of honeysuckle, but indicated that the mite-host relationship may be accidental since all other species of *Platytetranychus* were from conifers. Our taxonomic placement of *multidigituli* makes the second species of this genus from non-conifers and further collecting may show that species of *Platytetranychus* occur on both deciduous and coniferous plants.

Genus *Oligonychus* Berlese

Tuttle and Bake (1968) divided *Oligonychus* into six subgenera, three of these subgenera—*Oligonychus*, *Metateranychoides* and *Reckiella*—were represented in our material.

**Oligonychus (Oligonychus) bicolor* (Banks)

Tetranychus bicolor Banks, 1894, Trans. Amer. Entomol. Soc. 21:218.

Paratetranychus bicolor: McGregor, 1919, Proc. U. S. Nat. Mus. 56:675.

Oligonychus bicolor: Pritchard and Baker, 1955:308.

Pritchard and Baker (1955) reported that this mite may cause severe damage to shade trees. The species has been reported from oak and chestnut from Connecticut, Washington, D. C., North Carolina, and Kansas. Georgia specimens were collected in Clarke Co. from oak (*Quercus* sp.).

**Oligonychus (Oligonychus) ilicis* (McGregor)

Tetranychus ilicis McGregor, 1917, Proc. U. S. Nat. Mus. 51:586.

Paratetranychus ilicis: McGregor, 1919, Proc. U.S. Nat. Mus. 56:673.

Oligonychus ilicis: Pritchard and Baker, 1955:305.

This species has been collected throughout much of the United States and from Japan. Pritchard and Baker (1955) list *O. ilicis* as a particularly serious pest of camellias and azaleas in the southeastern United States; however, the species has not previously been reported from Georgia. Our material was collected from the upper leaf surface of deergrass (*Rhexia* sp.) in Oglethorpe Co. and from the lower leaf surface on *Cleyera* sp. in Dougherty Co. The mite is normally found on the upper leaf surface of the host plant and is a dry weather pest, not being abundant during rainy periods.

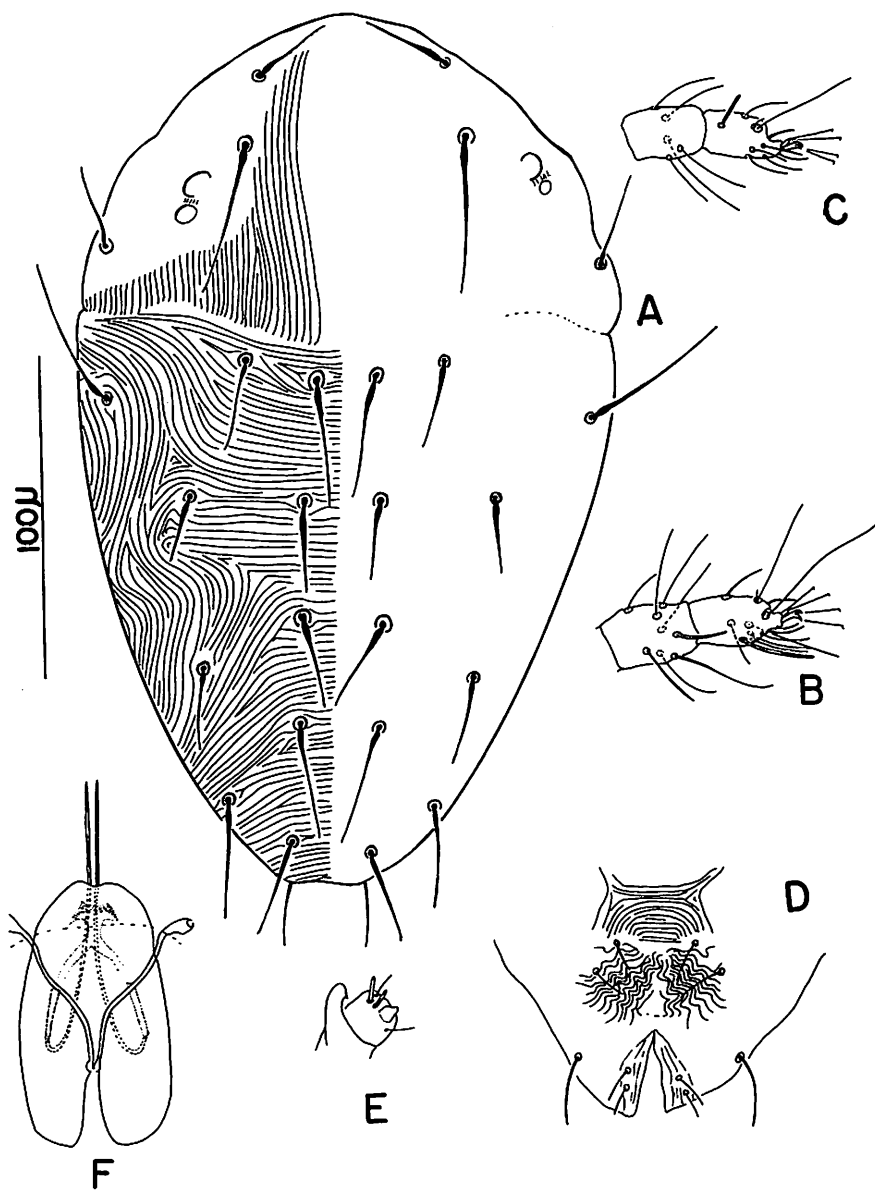


Fig. 2. *Schizotetranychus camur* Pritchard and Baker. Female: A, dorsum; B, tibia and tarsus I; C, tibia and tarsus II; D, genito-anal area; E, terminal segment of palpus; F, stylophore and peritreme.

Oligonychus (Oligonychus) ununguis (Jacobi)

Tetranychus ununguis Jacobi, 1905, Naturw. Zts. Land Forest 3:239.
Paratetranychus ununguis: Zacher, 1913. Mitt. Kais. Biol. Anst. Land Forest. 14:39.

Oligonychus ununguis: Pritchard and Baker, 1955:319.

This species is widely distributed over the United States and Europe on conifers. Georgia specimens were collected from *Juniperus* sp. in Dougherty Co.

Oligonychus (Oligonychus) viridis (Banks)

Tetranychus viridis Banks, 1894, Trans. Amer. Entomol. Soc. 21:218.
Paratetranychus viridis: McGregor, 1919, Proc. U. S. Nat. Mus. 56:671.
Oligonychus viridis: Pritchard and Baker, 1955:311.

Oligonychus viridis has been collected only from pecans and has been reported from New York, Georgia, Louisiana, and Florida. Specimens we collected were collected on pecans (*Carya illinoensis* (Wang.)) in Clarke and Dougherty Counties. The mite is an upper leaf surface feeder and becomes abundant only during dry periods.

**Oligonychus (Metatetranychoides) endytus* Pritchard and Baker
Oligonychus endytus Pritchard and Baker, 1955:301.

This species has been reported only from California on oak and chestnut trees. Pritchard and Baker (1955) reported this mite as a serious pest of chestnut trees with only moderate infestations developing on oak. Specimens from Georgia were taken on oleaster (*Elaeagnus* sp.) in Fulton Co. and from American holly (*Ilex* sp.) in Dougherty Co. Most species of this subgenus feed on the upper leaf surface, our specimens from *Ilex* were taken from the lower leaf surfaces.

Oligonychus (Metatetranychoides) aceris (Shimer)

Acarus aceris Shimer, 1869, Trans. Amer. Entomol. Soc. 2:320.
Oligonychus aceris: Banks, 1907. Proc. U. S. Nat. Mus. 32:598.
Oligonychus aceris: Pritchard and Baker, 1955:297.

Oligonychus aceris is widespread in the United States and has been reported only from maple. *Oligonychus aceris* was also collected from maple (*Acer* sp.) in Clarke Co., Georgia.

Oligonychus (Reckiella) pratensis (Banks)

Tetranychus pratensis Banks, 1912, Proc. Entomol. Soc. Wash. 14:97.
Paratetranychus pratensis: Banks, 1915, U.S. Dept. Agr. Rep. 108:37.
Oligonychus pratensis: Pritchard and Baker, 1955:349.

Specimens of this species have been reported from North and Central America from grasses. Georgia material was taken from Johnson grass (*Sorghum halepense* (L.)) in Clarke Co.

**Oligonychus (Reckiella) modestus* (Banks)

Tetranychus modestus Banks, 1900, U. S. Dept. Agr. Div. Entomol. Tech. Ser. 8:73.
Paratetranychus modestus: Banks, 1915, U. S. Dept. Agr. Rep. 108:37.
Oligonychus modestus: Pritchard and Baker, 1955:355.

In the literature this species is reported from corn and bamboo from Washington, D.C. and from corn in Arizona. Georgia specimens were taken from corn (*Zea mays* L.) in Clarke Co.

Genus *Tetranychus* Dufour

Tuttle and Baker (1968) divide *Tetranychus* into three subgenera, two of these subgenera—*Tetranychus* and *Polynychus*—were represented in our collection.

Tetranychus (Tetranychus) cinnabarinus (Boisdual)

Acacus cinnabarinus Boisdual. 1867, Essai sur l'entomologie horticole. p. 88.

Tetranychus cinnabarinus: Boudreaux, 1956, Ann. Entomol. Soc. Amer. 49:46.

Tetranychus cinnabarinus: Tuttle and Baker, 1968:129.

This is the common red spider mite (females red) and occurs throughout the warmer parts of the world on a wide variety of hosts. Georgia material was collected from mulberry (*Morus* sp.) and *Paennia* sp., a horticultural plant. Specimens were collected from Clarke, Spalding, and Washington Counties.

Tetranychus (Tetranychus) desertorum Banks

Tetranychus desertorum Banks, 1900, U.S. Dept. Agr. Entomol. Tech. Ser. 8:76.

This mite occurs on a wide variety of plants in the warmer areas of the world and is an important pest of cotton in the United States. Our material was collected from evening primrose (*Oenothera speciosa* Nutt.) in Clarke and Dekalb Counties.

**Tetranychus (Tetranychus) merganser* Boudreaux

Tetranychus merganser Boudreaux, 1954, Pan-Pac. Entomol. 30:181.

Tetranychus merganser was previously known from only Louisiana on privet. Our material was also collected from privet (*Ligustrum* sp.) in Clarke Co.

Tetranychus (Tetranychus) tumidus Banks

Tetranychus tumidus Banks, 1900, U. S. Dept. Agr. Div. Entomol. Tech. Ser. 8:37.

Specimens of *T. tumidus* are common in the southern United States and other warm areas of the world. The species is a common pest of cotton and vegetable crops. In Georgia this mite was collected from cotton (*Gossypium* sp.) in Evans County and Christmas fern (*Polystichum arcostichoides* (Michx.)) in Clarke Co. Although many collections from cotton were made throughout the state, *T. tumidus* was never collected outside of Evans Co.

Tetranychus (Tetranychus) urticae Koch

Tetranychus urticae Koch, 1836, Deu. Crust. Myr. Arach. 1:10.

Tetranychus urticae: Tuttle and Baker, 1968:129.

Tetranychus urticae is the common green two-spotted spider mite. The species occurs in temperate regions of the world and has been taken from a wide variety of host plants. Tuttle and Baker (1968) comment on the taxonomic history of *T. urticae*.

Transmission of plant virus by *T. urticae* has been reported and questioned in the literature. Schulz (1963) showed that *T. urticae* (*T. telarius* in his work) transmitted potato virus Y in greenhouse studies; however, Orlob (1968) was not able to duplicate Schulz's transmission results.

In Georgia *T. urticae* has been collected from all areas of the state. This is the commonest spider mite on cotton in Georgia; the species is also common on peanuts. In addition to cotton and peanuts, we collected this species from sweetpotatoes, celery, roses, honeysuckle, peaches, pecans, soybeans, weeping willow, hydrangea, tomatoes, mulberry, ash tree, marigold, *Tangetes*, *Solidago* sp., *Plantago* sp., and *Phytolaca americana*. On conifers this species was collected from *Chamaecyparis thyoides* (L.), *Pinus* sp., *Juniperus* sp., and *Tsuga canadensis* (L.) *Tetranychus urticae* was collected in Dawson, Spalding, Clarke, Tift, Washington, Sumpter, Turner, Clayton, Quitman, Randolph, Seminole, Dougherty, Peach, and Thomas Counties.

In our collection we have males and females of *T. urticae* collected from the same population on celery in which the tibial and tarsal chaetotaxy of legs I and II differs significantly from the pattern described for the species. The variations compared to the normal condition were as follows:

Female: Tarsus I: normal condition — 4 tactile setae and solenidion proximal to duplex setae. Variations found—all tactile setae absent (Fig. 1 I); solenidion reduced (Fig. 1 I) or absent.

Tibia I: normal condition — 9 tactile setae and 1 solenidion.

Variations found—8 tactile, no solenidion; 7 tactile, 1 solenidion (Fig. 1 I); 5 tactile, 1 solenidion.

Tarsus II: normal condition — 4 tactile and 1 solenidion proximal to duplex setae. Variations found—all tactile setae absent (Fig. 1 J), solenidion absent.

Tibia II: normal condition — 7 tactile setae. Variations found — 6 tactile normal in size, 1 tactile reduced in size; 5 tactiles normal, 1 tactile reduced in size and 1 tactile absent (Fig. 1 J).

Male: Tarsus I and tibia I normal in all specimens.

Tarsus II: normal condition — 3 proximal tactile setae subequal in length, and 1 solenidion proximal to duplex setae.

Variations found — tactile less than $\frac{1}{2}$ normal length; solenidion absent.

Tibia II: normal condition — 7 tactile setae subequal in length.

Variations found — 6 tactile normal, 1 tactile minute.

The abnormal conditions were always bilateral. Of a total of 7 females and 4 males collected, 4 females and 2 males showed one or more of the above variations from the normal *T. urticae*.

Setal reductions on tibia and tarsus I have been reported previously (Davis, 1952; Keh, 1952; Boudreaux, 1959); however, in all cases the conditions occurred only on legs I of the female. The above authors reported that setal reduction was passed from mother to daughter regardless of the origin of the male parent. Boudreaux (1959) carried out a series of genetic crosses which went beyond those of Davis and Keh, and concluded setal reduction resulted from a cytoplasmic transovarian material "viruslike" in its behavior. The expression of this characteristic was believed to involve a threshold concentration effect and the male, being haploid, would not reach the threshold required for expression of reduced setal numbers. Boudreaux (1959) found a similar condition in another species of *Tetranychus* and postulated a reduced leg chaetaxy resulting from a "viruslike" substance which may be common in the spider mites.

The conditions we have found are unusual in that a reduction was noted on both legs I and II in the female, and tarsus and tibia II in the male showed a setal reduction. These two conditions have not previously been reported.

Tetranychus (Polynychus) schoenei McGregor

Tetranychus schoenei McGregor, 1941, Proc. Entomol. Soc. Wash. 43:223.

This species is widely distributed over the eastern and southwestern United States. Previous distribution records included Georgia. *Tetranychus schoenei* has been reported as a serious pest of apples, cotton, and shade trees (Pritchard and Baker, 1955). Our collections were from mulberry, plum (*Prunus* sp.), *Bignonia* sp., and milkweed (*Asclepias* sp.) in Clarke County.

**Tetranychus (Polynychus) sinhai* Baker

Tetranychus sinhai Baker, Canad. Entomol. 94:956.

This species has been collected only from Canada, North Dakota, and Oregon (Baker, 1962) and in Poland (Boczek, 1964). Baker listed the species as a serious pest of barley in Manitoba. The collection of this species in Georgia is the first record of *T. sinhai* from a southern climate. Wallace and Sinha (1961) have suggested the possibility that this mite may transmit a virus in wheat. In our material this species was taken on Johnson grass (*Sorghum halepense* (L.)) in Clarke Co. and terrell grass (*Elymus virginicus* L.) in Oglethorpe Co. *Tetranychus sinhai* is probably more widely distributed over the state than our collections indicate and also probably occurs over much of the eastern United States.

Table 1. Host plants and associated spider mites.

<i>Acer leucoderme</i> (Small) (maple)
<i>Eotetranychus crossleyi</i> n. sp.
<i>Acer</i> sp. (maple)
<i>Oligonychus aceris</i> (Shimer)
American elm, see <i>Ulmus americana</i> L.
American holly, see <i>Ilex</i> sp.
<i>Arachis</i> sp. (peanut)
<i>Tetranychus urticae</i> Koch
<i>Arundinaria</i> sp. (cane)
<i>Schizotetranychus camur</i> P. & B.
<i>Asclepias</i> sp. (milkweed)
<i>Tetranychus schoenei</i> McGregor
Ash, see <i>Fraxinus</i> sp.
Beggar's-lice, see <i>Desmodium</i> sp.
<i>Bignonia</i> sp.
<i>Tetranychus schoenei</i> McGregor
Boxwood, see <i>Buxus</i> sp.
<i>Buxus</i> sp.
<i>Eurytetranychus buxi</i> (Garman)
Cane, see <i>Arundinaria</i> sp.
<i>Carya illinoensis</i> (Wang.) (pecan)
<i>Eotetranychus hicoriae</i> (McGregor)

Table 1 (Continued)

<i>Oligonychus viridis</i> (Banks)
<i>Tetranychus urticae</i> Koch
Cedar, see <i>Juniperus</i> sp.
<i>Celeri</i> sp. (celery)
<i>Tetranychus urticae</i> Koch
Celery, see <i>Celeri</i> sp.
<i>Chamaecyparis thyoides</i> (L.) (cypress)
<i>Tetranychus urticae</i> Koch
Christmas fern, see <i>Polystichum acrostichoides</i> (Michx.)
<i>Cleyera</i> sp.
<i>Oligonychus ilicis</i> (McGregor)
Corn, see <i>Zea mays</i> L.
Cotton, see <i>Gossypium</i> sp.
Crimson clover, see <i>Trifolium incarnatum</i> L.
Cypress, see <i>Chamaecyparis thyoides</i> (L.)
Deergrass, see <i>Rhexia</i> sp.
<i>Desmodium</i> sp. (beggar's-lice)
<i>Eotetranychus citus</i> P. & B.
<i>Elaeagnus</i> sp. (oleaster)
<i>Oligonychus endytus</i> P. & B.
<i>Elymus virginicus</i> L. (terrell grass)
<i>Tetranychus sinhai</i> Baker
Evening primrose, see <i>Oenothera speciosa</i> Nutt.
<i>Fraxinus</i> sp. (ash)
<i>Tetranychus urticae</i> Koch
<i>Gleditsia triacanthos</i> L. (honey locust)
<i>Platytetranychus multidigituli</i> (Ewing)
<i>Glycine</i> sp. (soybean)
<i>Tetranychus urticae</i> Koch
Goldenrod, see <i>Solidago</i> sp.
<i>Gossypium</i> sp. (cotton)
<i>Tetranychus tumidus</i> Banks
<i>T. urticae</i> Koch
Grass
<i>Bryobia praetiosa</i> Koch
<i>Petrobia lupini</i> (McGregor)
Hemlock, see <i>Tsuga canadensis</i> (L.)
Honey locust, see <i>Gleditsia triacanthos</i> L.
Honeysuckle, see <i>Lonicera</i> sp.
Hydrangea, see <i>Hydrangea</i> sp.
<i>Hydrangea</i> sp. (hydrangea)
<i>Tetranychus urticae</i> Koch
<i>Ilex opaca</i> Ait. (American holly)
<i>Oligonychus endytus</i> P. & B.
<i>Ipomoea batatas</i> (L.) (sweetpotato)
<i>Tetranychus urticae</i> Koch
Johnson grass, see <i>Sorghum halepense</i> (L.)
Juniper, see <i>Juniperus</i> sp.
<i>Juniperus</i> sp. (juniper)

Table 1 (Continued)

<i>Tetranychus urticae</i> Koch
<i>Ligustrum</i> sp. (privet)
<i>Tetranychus merganser</i> Boudreaux
<i>Lonicera</i> sp. (honeysuckle)
<i>Tetranychus urticae</i> Koch
Maple, see <i>Acer</i> sp.
Marigold, see <i>Tagetes</i> sp.
Milkweed, see <i>Asclepias</i> sp.
<i>Morus</i> sp. (mulberry)
<i>Tetranychus cinnabarinus</i> (Boisdual)
<i>T. schoenei</i> McGregor
<i>T. urticae</i> Koch
Mulberry, see <i>Morus</i> sp.
Oak, see <i>Quercus</i> sp.
<i>Oenothera speciosa</i> Nutt. (evening primrose)
<i>Tetranychus desertorum</i> Banks
Oleaster, see <i>Elaeagnus</i> sp.
<i>Oxalis</i> sp.
<i>Petrobia harti</i> (Ewing)
<i>Paennia</i> sp.
<i>Tetranychus cinnabarinus</i> (Boisdual)
Peach, see <i>Prunus</i> sp.
Peanut, see <i>Arachis</i> sp.
Pecan, see <i>Carya illinoensis</i> (Wang.)
<i>Photinia serrulata</i>
<i>Panonychus citri</i> (McGregor)
<i>Phytolacca americana</i> L. (poke)
<i>Tetranychus urticae</i> Koch
Pine, see <i>Pinus</i> sp.
<i>Pinus</i> sp. (Pine)
<i>Tetranychus urticae</i> Koch
<i>Plantago</i> sp. (plantain)
<i>Tetranychus urticae</i> Koch
Plantain, see <i>Plantago</i> sp.
Plum, see <i>Prunus</i> sp.
Poke, see <i>Phytolacca americana</i> L.
<i>Polystichum acrostichoides</i> (Michx.) (Christmas fern)
<i>Tetranychus tumidus</i> Banks
Privet, see <i>Ligustrum</i> sp.
<i>Prunus</i> sp. (peach)
<i>Panonychus citri</i> (McGregor)
<i>Tetranychus urticae</i> Koch
<i>Prunus</i> sp. (plum)
<i>Tetranychus schoenei</i> McGregor
<i>Quercus</i> sp. (oak)
<i>Oligonychus bicolor</i> (Banks)
<i>Rhexia</i> sp. (deergass)
<i>Oligonychus ilicis</i> (McGregor)

Table 1 (Continued)

<i>Rosa</i> sp. (rose)
<i>Tetranychus urticae</i> Koch
Rose, see <i>Rosa</i> sp.
<i>Salix babylonica</i> L. (weeping willow)
<i>Tetranychus urticae</i> Koch
<i>Solanum</i> sp. (tomato)
<i>Tetranychus urticae</i> Koch
<i>Solidago</i> sp. (goldenrod)
<i>Tetranychus urticae</i> Koch
<i>Sorghum halepense</i> (L.) (Johnson grass)
<i>Oligonychus pratensis</i> (Banks)
<i>Tetranychus sinhai</i> Baker
Soybean, see <i>Glycine</i> sp.
Sweetpotato, see <i>Ipomoea batatas</i> (L.)
<i>Tagetes</i> sp. (marigold)
<i>Tetranychus urticae</i> Koch
Terrell grass, see <i>Elymus virginicus</i> L.
Tomato, see <i>Solanum</i> sp.
<i>Trifolium incarnatum</i> L. (crimson clover)
<i>Petrobia apicalis</i> (Banks)
<i>Tsuga canadensis</i> (L.) (hemlock)
<i>Tetranychus urticae</i> Koch
<i>Ulmus americana</i> L. (American elm)
<i>Aponychus spinosus</i> (Banks)
Weeping willow, see <i>Salix babylonica</i> L.
<i>Zea mays</i> L. (corn)
<i>Oligonychus modestus</i> (Banks)

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