



3-31-1976

New records and species of Tetranychidae and Tenuipalpidae (Acarina) from Utah and Idaho

Donald M. Tuttle

University of Arizona, Yuma Branch Station

Edward W. Baker

Systematic Entomology Laboratory, USDA, Beltsville, Maryland

Follow this and additional works at: <https://scholarsarchive.byu.edu/gbn>

Recommended Citation

Tuttle, Donald M. and Baker, Edward W. (1976) "New records and species of Tetranychidae and Tenuipalpidae (Acarina) from Utah and Idaho," *Great Basin Naturalist*: Vol. 36 : No. 1 , Article 3.

Available at: <https://scholarsarchive.byu.edu/gbn/vol36/iss1/3>

This Article is brought to you for free and open access by the Western North American Naturalist Publications at BYU ScholarsArchive. It has been accepted for inclusion in Great Basin Naturalist by an authorized editor of BYU ScholarsArchive. For more information, please contact scholarsarchive@byu.edu, ellen_amatangelo@byu.edu.

NEW RECORDS AND SPECIES OF TETRANYCHIDAE AND TENUIPALPIDAE (ACARINA) FROM UTAH AND IDAHO

Donald M. Tuttle¹ and Edward W. Baker²

ABSTRACT.— Twenty-three species of spider mites (Tetranychidae) are recognized for Utah and Idaho; three of these are described as new: *Bryobia neoribis*, *Pseudobryobia knowltoni*, and *Schizotetranychus agropyron*. Eleven species of Tenuipalpidae are recorded.

Spider mites and false spider mites are relatively well known in only a few regions of the United States such as Arizona and California where economic and native plants have been carefully surveyed. Therefore, it was believed opportune to publish the following records of tetranychoid mites from Utah and Idaho. These records were compiled from numerous collections made by George F. Knowlton, Professor Emeritus of Entomology at Utah State University, 1972-1975. Information on species other than these was taken from Pritchard and Baker (1955 and 1958) and Knowlton and Ma (1950).

A total of 24 species of Tetranychidae were determined; *Bryobia neoribis*, *Pseudobryobia knowltoni*, and *Schizotetranychus agropyron* are described as new. Eleven species of Tenuipalpidae were recorded.

TETRANYCHIDAE Donnadieu, 1875

Bryobia praetiosa Koch

Bryobia praetiosa Koch, 1836:8; Pritchard and Baker, 1955:26; Wainstein, 1960:102; Tuttle and Baker, 1968:6.

The clover mite (*B. praetiosa*) is one of the most common species and occurred as follows: *Aesculus hippocastanum* L. (horse chesnut) *ex duff*, Logan, Utah, 15 Apr 1973 and 2 May 1974; *Agropyron desertorum* (Fisch.) Schult. (crested wheatgrass), Duck Creek Camp (Kane Co.), Utah, 5 May 1973 and Holbrook, Idaho, 19 Oct 1972; *Agropyron smithii* Rydb. (western wheatgrass), Reese Valley (Chicken Creek Canyon), Utah (7,500 ft.), 19 May 1972; *Artemisia nova* A. Nels., Logan Canyon, Utah, 2 Jul 1973; *Artemisia tridentata* Nutt. (big sagebrush) *ex duff*, Logan, Utah, 14 Nov 1972; *Chrysanthemum* sp., Logan, Utah,

24 Oct 1973; *Chrysothamnus nauseosus* (Pall.) Britton (rabbitbrush), Logan Canyon, Utah, 5 Jun 1973 and Paradise, Utah, 6 Jun 1973; *Chrysothamnus* sp. *ex duff*, Snowville, Utah, 15 Nov 1972 and North Logan, Utah, 14 Nov 1972; grasses (not determined), 10 collections (some include duff) from Idaho and Utah, Feb-May 1973; *Juniperus* sp. *ex duff*, Black Pine Mt. (Curlew Valley), Idaho, 3 May 1974 and Juniper, Idaho, 15 Nov 1972; moss, Blacksmith Fork Canyon, Utah, 30 Apr and 2 May 1973; *Ribes inerme* Rydb. (gooseberry), Tony Grove Canyon (Cache Co.), Utah, 30 Jul 1974; and *Sarcobatus vermiculatus* Torr. (greasewood) *ex detritus*, Wildcat Hills (Box Elder Co.), Utah, 18 Apr 1974. It was reported by Knowlton and Ma (1950) in Utah on alfalfa, sweetclover, and rabbitbrush.

Bryobia rubrioculus (Scheuten)

Sannio rubrioculus Scheuten, 1857:104.

Bryobia rubrioculus: Tuttle and Baker, 1968:7.

Collections were made from *Juniperus* sp. *ex duff*, Black Pine (Oneida Co.), Idaho, 3 May 1973; *Lonicera* sp. (honeysuckle), Hyde Park, Utah, 16 May 1972; *Populus tremuloides* Michx. *ex duff*, Monte Cristo, Utah, 21 Jun 1973; *Salix* sp. *ex duff*, Mantua, Utah, 17 May 1973; and *Sarcobatus vermiculatus* Torr. (greasewood) *ex duff*, Wildcat Hills (Box Elder Co.), Utah, 18 Apr 1974.

Bryobia neoribis, n. sp.

Figs. 1-7

This species is related to *Bryobia ribis* Thomas, a European species, but differs in having more slender body setae, in having the inner coxal I seta about twice as long as the outer serrate seta, in having

¹Agricultural Experiment Station, University of Arizona, Yuma Branch Station.

²Systematic Entomology Laboratory, IIBIII, Agr. Res. Serv., USDA, Beltsville, Maryland 20705.

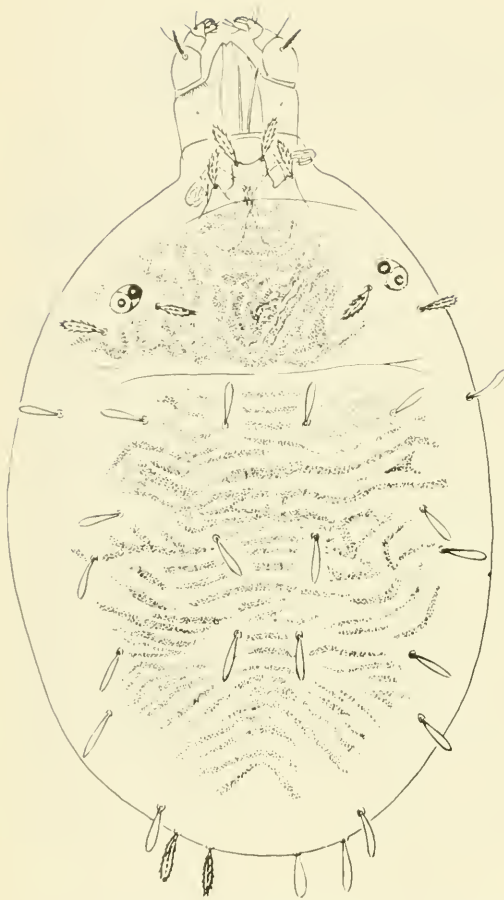
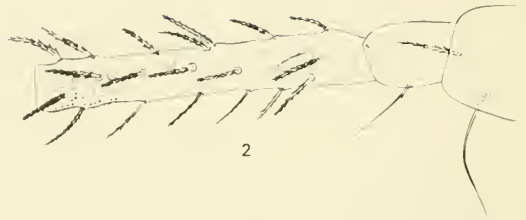


Fig. 1. *Bryobia neoribis*, n. sp.: 1, dorsum of female.

24 setae rather than 16 (as illustrated by Mathys 1957), and in having a long, slender seta on trochanter I.

FEMALE.— Body oval, rounded; rostrum of moderate length and width. Stylophore longer than wide and slightly indented anteriorly; peritremes broadly anastomosing distally. Propodosoma with anterior projections, inner projections longer than outer and distinctly incised to almost a single unit (Fig. 1). Dorsal setae elongate, serrate; dorsum covered with broad tuberculate ridges. Leg I slightly longer than body; other legs shorter; inner seta of coxa I long, slender, outer seta short and serrate; seta of trochanter slender with few serrations; femur I with 24 setae (Fig. 2); duplex setae of tarsi III and IV of equal length (Figs. 3-4).



2

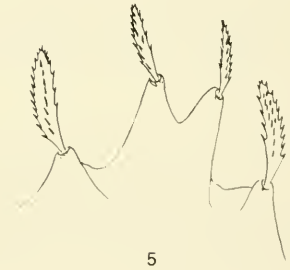


3

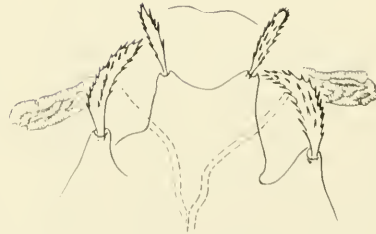


4

Figs. 2-4. *Bryobia neoribis*, n. sp.: 2, femur, trochanter, and coxa I; 3, tarsus III; 4, tarsus IV.



5



6



7

Figs. 5-7. *Bryobia neoribis*, n. sp.: 5, anterior propodosomal projections; 6, anterior dorsal body seta; 7, seta.

HOLOTYPE.— Female USNM No. 3720, *ex Ribes cereum* Dougl., Willard Basin, 9,300 ft, Box Elder County, Utah, 28 Aug 1975.

PARATYPES.— Thirteen females with the above data in the U.S. National Museum.

Eleven nymphs were also collected at the same locality.

Additional collections were made from the same host at Monte Cristo, 9,000 ft, Rich County, Utah, 27 Aug 1975; and Logan Canyon, Utah, 30 Aug 1975.

Pseudobryobia bakeri McGregor

Pseudobryobia bakeri McGregor, 1950:366.
Bryobia bakeri: Pritchard and Baker, 1955:19.
Pseudobryobia bakeri: Baker and Tuttle, 1972:2.

A female was collected from moss material beneath *Artemisia* sp. (sagebrush), Holbrook, Idaho, 17 May 1972.

Pseudobryobia filifoliae (Tuttle and Baker)

Bryobia filifoliae Tuttle and Baker, 1968:10.
Pseudobryobia filifoliae, Baker and Tuttle, 1972:2.

A female of this species was collected from duff of *Artemisia tridentata* Nutt. (big sagebrush), Wildcat Hills (Box Elder Co.), Utah, 2 Oct 1972.

Pseudobryobia knowltoni, n. sp.

Figs. 8-9

This species is similar to *Pseudobryobia curiosa* Summers (1953) but differs in having the peritremes anastomosing distally, in having the stylophore not deeply cleft anteriorly, and in having the dorsal body setae with many more spines than those of *curiosa*.

FEMALE.— Body broadly rounded; rostrum elongate; palpal femoral seta short, lanceolate-serrate. Stylophore broadly rounded anteriorly or only slightly indented, about as long as wide; peritremes an-

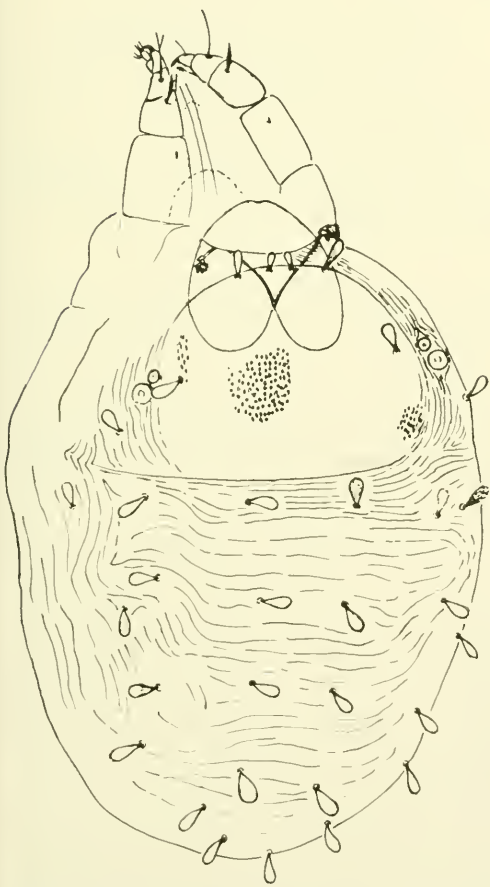
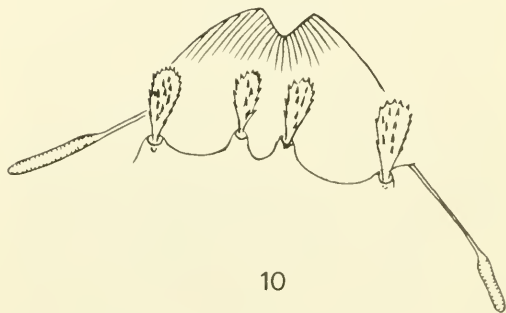
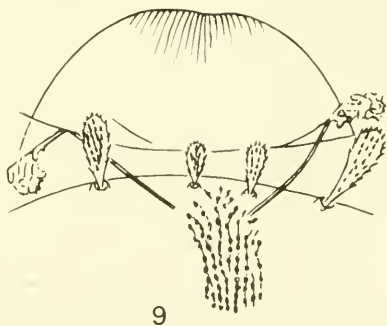


Fig. 8. *Pseudobryobia knowltoni*, n. sp., dorsum of female.



Figs. 9-10. *Pseudobryobia* spp.: 9, *P. knowltoni*, n. sp., stylophore, peritreme, and propodosomal setae; 10, *P. curiosa* Summers, peritreme, and propodosomal setae.

astomosing distally. Propodosoma without anterior projections; anterior propodosomal setae not set on strong tubercles, inner pair smaller than outer pair; dorsum of propodosoma covered with small tubercles. Hysterosoma with few transverse striae; dorsal setae broadly clavate, longer than wide; striae in area of D_3 setae either completely transverse or longitudinal laterad of setae as in *curiosa*; no distinct dorsal aperture between setae D_1 as in *curiosa*; D_4 setae same distance apart as D_3 setae. Empodium simple pad, with single pair of tenent hairs; claws strong and curved, each with single pair of tenent hairs. Length of body 547μ , including rostrum 667μ ; width about 670μ .

HOLOTYPE.— Female, USNM No. 3721, from *Atriplex nuttallii* Wats. (salt sage) (duff), NW Cedar Hill, Curley Valley, Idaho, 6 Oct 1972 by G. F. Knowlton for whom the mite is named.

Paratypes. Three females with the above data and one female with the same data but collected 12 Oct 1972 in the U.S. National Museum. A single female was collected from the same host at Snowville, Utah, 12 Oct 1972.

Petrobia (Petrobia) latens (Müller)

Acarus latens Müller, 1776:187.

Petrobia latens: Pritchard and Baker, 1955:51; Wainstein 1960:134.

Petrobia (Petrobia) latens: Tuttle and Baker, 1968:71.

The brown wheat mite is a common species in Utah and Idaho occurring particularly on several grasses and other low-growing plants: *Artemisia tridentata* Nutt. (big sagebrush), Curlew Junction, Utah, 16 Dec 1969, Wildcat Hills (Curlew Valley), Utah, 17 May 1972, and Holbrook, Idaho (*ex duff*), 25 May and 2 Nov 1972; *Artemisia* sp., Samaria, Idaho, 2 Nov 1972; *Agropyron desertorum* (Fisch.) Schult. (crested wheatgrass), Chicken Creek Canyon (Juab Co.) and Ephraim, Utah, 19 May 1972, Duck Creek Camp (Kane Co.), Utah, 16 May 1973, Curlew National Grasslands (Curlew Valley), Idaho, 19 Oct 1972, Holbrook, Idaho, 25 Mar 1972, 12 and 17 May 1972, and Woodruff (Oneida Co.), Idaho, 2 Nov 1972 and 24 Apr 1973; *Agropyron smithii* Rydb. (western wheatgrass), Chicken Creek Canyon (Reese Valley), Utah (7,500 ft), 19 May 1972,

Hardup, Utah, 14 Apr 1973, and Ephraim Canyon, Utah, 19 May 1972; *Chrysothamnus viscidiflorus* (Hook.) Nutt. (rabbitbrush), Holbrook, Idaho, 17 May 1972; *Elymus canadensis* L. (ryegrass), Malad, "Ida," Idaho, 10 Apr 1973; *Juniperus* sp. *ex duff*, Black Pine Canyon (Oneida Co.), Idaho, 23 May 1974; and *Tetradymia canescens* DC. (horsebrush), Holbrook, Idaho, 17 and 25 May 1972. Pritchard and Baker (1955) report it from Utah and Idaho. Knowlton and Ma (1950) recorded it from wheat and rye in Utah.

Tenuipalpoides dorychaeta Pritchard and Baker

Tenuipalpoides dorychaeta Pritchard and Baker, 1955:99; Tuttle and Baker, 1968:83.

This species was collected in Utah from an unknown host by G. F. Knowlton and Shi Chun Ma (Pritchard and Baker 1955).

Eurytetranychus admes Pritchard and Baker

Eurytetranychus admes Pritchard and Baker, 1955:110.

This species was collected in Utah on juniper by G. F. Knowlton (Pritchard and Baker 1955).

Panonychus ulmi (Koch)

Tetranychus ulmi Koch, 1936:11.

Metatetranychus ulmi: Pritchard and Baker, 1955:128.

Panonychus ulmi: Wainstein, 1960:202.

Knowlton and Ma (1950) reported it from apple, pear, plum, and poplar in Utah.

Schizotetranychus agropyron, n. sp.

Figs. 11-14

This species is similar to *Schizotetranychus eremophilus* McGregor and S. *celtidis* Tuttle and Baker in having the first three pairs of dorsocentral hysterosomal seta shorter than the dorsolateral setae, but differs in having a U-like strial pattern in the dorsocentral area of the propodosoma.

FEMALE.— Body elongate; rostrum long, reaching base of tibia I; terminal sensillum about 2 times as long as broad; peritremes gently hooked distally. Dorsal striae of propodosoma U-shaped in central

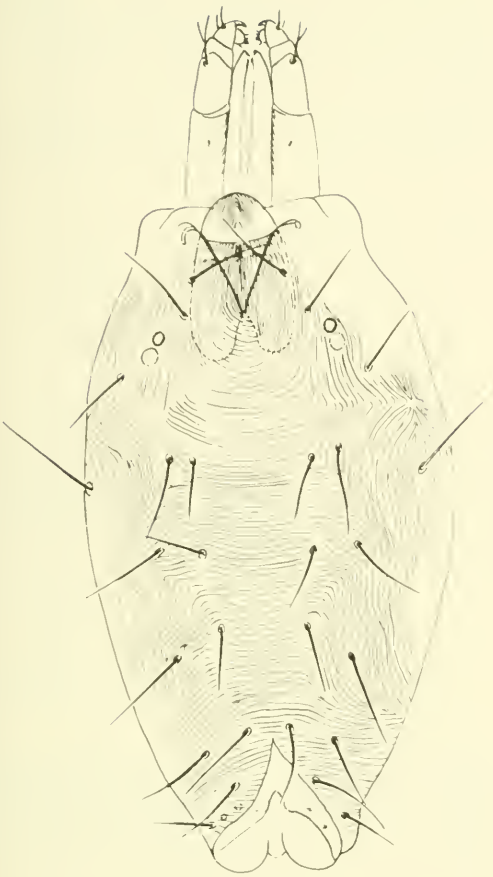


Fig. 11. *Schizotetranychus agropogon*, n. sp., dorsum of female.

area and longitudinal laterally, transverse on central area of hysterosoma and irregularly longitudinal laterally. Second pair of propodosomal setae slightly longer than first and second pairs; first three pairs of dorsocentral hysterosomal setae about three-fourths as long as dorsolateral setae and one-half as long as distance between their bases; fourth and fifth pairs of dorsocentrals as long as dorsolaterals $L_1 - L_4$; L_5 one-half as long as $L_1 - L_4$; humeral setae longer than others. All empodial claws split and strong. Tarsus I with slender solenidion about as long as segment, with four tactile setae proximal to duplex setae; tibia I with eight tactile setae and one shorter solenidion. Tarsus II with one dorsal proximal seta; tibia II with five tactile setae; genu II with five tactile setae, femur II with seven tactile setae. Tarsus III with dorsal solenidion

shorter than segment; tibia III with five tactile setae; leg IV similar to leg III with some setae longer. Striae transverse on genital flap and area anterior to flap. Length of body 422μ ; including rostrum 460μ ; width 250μ .

HOLOTYPE.— Female, USNM No. 3722, ex *Agropyron desertorum* (Fisch.) Schutt., Logan Canyon, Utah, 26 Apr 1973.

PARATYPES.— Two females with the above data in the U.S. National Museum.

Schizotetranychus elymus McGregor

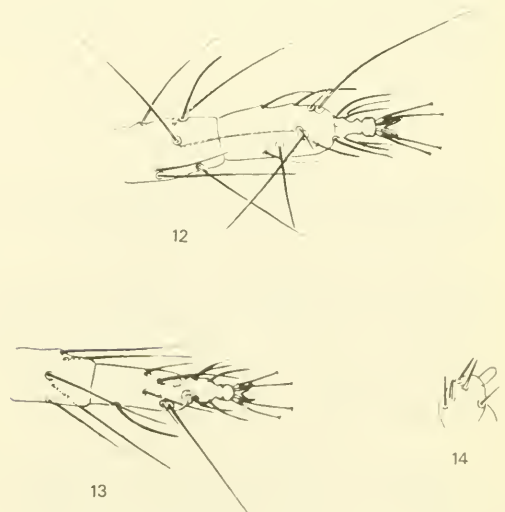
Schizotetranychus elymus McGregor, 1950:310; Pritchard and Baker, 1955:254; Tuttle and Baker, 1968:104.

This species was collected in Utah on unknown host by G. F. Knowlton (Pritchard and Baker 1955).

Platytetranychus libocedri (McGregor)

Tetranychus libocedri McGregor, 1936:771. *Eotetranychus libocedri*: Tuttle and Baker, 1964:20. *Platytetranychus libocedri*: Tuttle and Baker, 1968:106.

Specimens were collected from *Thuja occidentalis* L. (arborvitae), Logan, Utah, 24 Aug 1973. It was also collected by G. F. Knowlton in Utah on juniper and cedars (Pritchard and Baker 1955).



Figs. 12-14. *Schizotetranychus agropogon*, n. sp.: 12, tarsus I; 13, tarsus II; 14, terminal segment of female palpus.

Eotetranychus perplexus (McGregor)

Tetranychus perplexus McGregor, 1950:298.
Eotetranychus perplexus: Pritchard and Baker, 1955:175.

McGregor (1950) records this species from *Cercocarpus* sp. from Idaho.

*Eotetranychus uncatu*s Garman

*Eotetranychus uncatu*s Garman, in Pritchard and Baker, 1952:183; Pritchard and Baker, 1955:183.

Pritchard and Baker (1955) record this species on white birch, Utah.

Eotetranychus sp.

Three nymphs were collected from *Artemisia tridentata* Nutt. (big sagebrush), Cedar Hill (Curlew Valley), Utah, 17 May 1972.

Oligonychus (*Oligonychus*) *ununguis* (Jacobi)

Tetranychus ununguis Jacobi, 1905:239.
Oligonychus ununguis: Tuttle and Baker, 1968:118.

This species is a pest of conifers throughout the world. It was collected in Utah by G. F. Knowlton on juniper, Crystal Springs, and arborvitae at Farmington, Colorado blue spruce, Smithfield, 1933 (Knowlton and Ma 1950); red cedar, Beaver, 4 Aug 1954, ornamental juniper, Provo, 9 May 1957, and on Pfister juniper, Provo, 9 May 1957 (Pritchard and Baker 1955).

Oligonychus (*Reckiella*) *pratensis* (Banks)

Tetranychus pratensis Banks, 1912:97.
Paratetranychus pratensis: McGregor, 1950:350.
Oligonychus pratensis: Pritchard and Baker, 1955:349; Tuttle and Baker, 1968:122.

This is a common species on grasses. It was found in Utah on aspen by G. F. Knowlton (Pritchard and Baker 1955). Knowlton and Ma (1950) reported it on corn at Magna, Utah and on "grass" at Franklin, Idaho, during November.

Oligonychus (*Wainsteiniella*) *milleri* (McGregor)

Paratetranychus milleri McGregor, 1950:343.
Oligonychus milleri: Pritchard and Baker, 1955:280; Tuttle and Baker, 1968:119.

Pritchard and Baker (1955) record this species from Scots Pine, Logan, Utah.
Tetranychus (*Polynychus*) *canadensis* (McGregor)

Septanychus canadensis McGregor, 1950:319.
Tetranychus canadensis: Pritchard and Baker, 1955:393; Tuttle and Baker, 1968:130.

Specimens were taken on *Fraxinus* sp. (ash), St. George, Utah, 9 Jul 1958.

Tetranychus (*Polynychus*) *polys* Pritchard and Baker

Tetranychus polys Pritchard and Baker, 1955:396.
Tetranychus (*Polynychus*) *polys*: Tuttle and Baker, 1968:131.

This species was collected on *Artemisia tridentata* Nutt. (big sagebrush), Logan Canyon, 4 Sep 1972 and *Atriplex nuttallii* Wats. (salt sage), Wildcat Hills (Curlew Valley), Utah, 17 May 1972.

Tetranychus (*Armenychus*) *pacificus* McGregor

Tetranychus pacificus McGregor, 1919:657; Pritchard and Baker, 1955:388; Tuttle and Baker, 1968:131.

This species is an important pest of agriculture in the far western areas of the United States. Pritchard and Baker (1955) report it from Idaho (no hosts listed) and Knowlton and Ma (1950) list plum and rose as hosts from Utah.

Tetranychus (*Armenychus*) *mcdanieli* McGregor

Tetranychus mcdanieli McGregor, 1931:13; Pritchard and Baker, 1955:386; Tuttle and Baker, 1968:131.

This species is a pest of deciduous fruit trees in the northwestern United States. Pritchard and Baker (1955) and Knowlton and Ma (1950) report it from Utah on apple.

Tetranychus (*Tetranychus*) *turkestanii* Ugarov and Nikolski

Eotetranychus turkestanii Ugarov and Nikolski, 1937:28.
Tetranychus atlanticus McGregor, 1941:26; Pritchard and Baker, 1955:424.
Tetranychus turkestanii: Baker and Pritchard, 1953:213; Wainstein, 1960:154; Tuttle and Baker, 1968:128; Baker, 1968:1080.

This species is widespread throughout the world and had been known in North

America as *T. atlanticus*. It is more common on low-growing plants but may occur on some fruit trees. It has been found in Utah and Idaho (Pritchard and Baker 1955). Knowlton and Ma (1950) reported it from strawberry, alfalfa, ragweed, and celery in Utah.

Tetranychus (Tetranychus) urticae
Koch

Tetranychus urticae Koch, 1836:10; Boudreaux and Dosse, 1963:353.

Tetranychus telarius (Linn.) of various authors.
Tetranychus (Tetranychus) urticae: Tuttle and Baker, 1968:129.

These mites are found throughout the temperate areas of the world feeding on many hosts. It was found on *Agropyron desertorum* (Fisch.) Schult. (crested wheatgrass), Holbrook, Idaho, 25 Mar 1972 and *Chrysothamnus viscidiflorus* Nutt. (rabbitbrush), Holbrook, Idaho, 17 May 1972. Pritchard and Baker (1955) also report it in Utah and Idaho. It occurs on numerous crops and plants in Utah (Knowlton and Ma 1950).

TENUIPALPIDAE Berlese, 1913

Aegyptobia baptus Pritchard and Baker
Pentamerimus baptus Pritchard and Baker, 1952:21.

Aegyptobia baptus: Pritchard and Baker, 1958:181; Baker and Tuttle, 1964:21.

Four females were collected from *Chrysothamnus viscidiflorus* Nutt. (rabbitbrush), Holbrook, Idaho, 17 May 1972.

Aegyptobia pseudoleptoides
(Baker and Pritchard)

Pentamerismus pseudoleptoides Baker and Pritchard, 1953b:357.

Aegyptobia pseudoleptoides: Pritchard and Baker, 1958:180.

This species is known only from Utah on *Bouteloua gracilis* (H.B.K.) Lag. (grama).

Aegyptobia aletes (Pritchard
and Baker)

Pentamerismus aletes Pritchard and Baker, 1952:9.
Aegyptobia aletes: Pritchard and Baker, 1958:183.

This species was collected from red cedar in Utah (Pritchard and Baker 1952).

Pentamerismus erythreus (Ewing)
Tenuipalpus erythreus Ewing, 1917:152.
Pentamerismus erythreus: Pritchard and Baker, 1958:188; Baker and Tuttle, 1964:30.

A female was collected from *Thuja occidentalis* L. (arborvitae), Logan, Utah, 24 Aug 1973. The species was also collected on juniper in Idaho (Pritchard and Baker 1958). Knowlton and Ma (1950) reported it from several evergreens in Utah and Idaho.

Brevipalpus aeolus Pritchard and Baker
Brevipalpus aeolus Pritchard and Baker, 1952:32;
Baker and Tuttle, 1964:60.

A long series of males, females, and nymphs were collected from *Artemisia ludoviciana* Nutt. (sagebrush), Green Canyon, Utah, 2 Aug 1973.

Brevipalpus homalus Pritchard
and Baker

Brevipalpus homalus Pritchard and Baker, 1952:25;
Baker and Tuttle, 1964:54.

Mites were collected from *Artemisia nova* A. Nels. (sagebrush), Logan, Utah, 2 Jul 1973 and Monte Cristo, Utah, 21 Jun 1973.

Brevipalpus phoenicis (Geijskes)

Tenuipalpus phoenicis Geijskes, 1939:23.
Brevipalpus phoenicis: Pritchard and Baker, 1958:233.

A female was found on *Salix* sp., Logan, Utah, 4 Jul 1973.

Brevipalpus porca Pritchard and Baker
Brevipalpus porca Pritchard and Baker, 1958:208.

This species has been taken on mistletoe on Douglas fir at Bryce Canyon, Utah.

Brevipalpus punicans Pritchard
and Baker

Brevipalpus punicans Pritchard and Baker, 1952:24; Baker and Tuttle, 1964:38.

Twenty-seven females were taken from *Chrysothamnus viscidiflorus* (Hook.) Nutt. (rabbitbrush), Holbrook, Idaho, 17 May 1972.

Dolichotetranychus carnea (Banks)

Siteroptes carnea Banks, 1906:140.
Dolichotetranychus carnea: Baker and Pritchard, 1956:361; Pritchard and Baker, 1958:251.

Dolichotetranychus carnea has been taken on *Muhlenbergia* and grass in Utah and Idaho.

Dolichotetranychus cracens Pritchard
and Baker

Dolichotetranychus cracens Pritchard and Baker,
1958:253.

This species was found in Utah on
Bouteloua gracilis (H.B.K.) Lag.

Other Species of Tetranychoid Mites

The following species were reported by
Knowlton and Ma (1950) but have not
been verified or seen by us: *Oligonychus*
(*Oligonychus*) *viridis* (Banks), *Eotetra-*
nynchus willamettei (McGregor), and
Pentamerismus nr. *oregonensis* McGre-

JACOBI, A. 1905. Eine Spinnmilbe (*Tetranychus*
ununguis n. sp.) als Koniferenschädling. Na-
turw. Zts. Land. Forst. 3:239-247.

KNOWLTON, G. F., AND S. C. MA. 1950. Some
Utah mites—1949. Jour. Kans. Entomol. Soc.
23(2):74-76.

KOCH, C. L. 1836. Deutsche Crustacea. Myrio-
poda. Arachnida. Fasc. 1:8.

MATHYS, G. 1957. Contribution à la connais-
sance de la systématique et de la biologie du
genre *Bryobia* en Suisse romande. Bull. Soc.
Entomol. Suisse 30(3):189-284.

McGREGOR, E. A. 1919. The red spiders of
America and a few European species likely to
be introduced. Proc. USNM 56:641-679.

———. 1931. A new spinning mite attacking
raspberry in Michigan. Proc. Entomol. Soc.
Wash. 33(8):193-194.

———. 1936. Two spinning mites attacking in-
cense cedar in California. Ann. Entomol.
Soc. Amer. 29(4):770-775.

———. 1941. A new spinning mite attacking
strawberry on the mid-Atlantic coast. Proc.
Entomol. Soc. Wash. 43(2):26-28.

———. 1950. Mites of the family Tetrany-
chidae. Amer. Midland Nat. 44(2):257-420.

MULLER, O. F. 1776. Zoologiae Danicae Pro-
dromus. Copenhagen. 282 pp.

PRITCHARD, A. E., AND E. W. BAKER. 1952. The
false spider mites of California (Acarina:
Phytotipalpidae). Univ. Calif. Publ. Entomol.
9(1):1-93.

———. 1955. A revision of the spider mite
family Tetranychidae. Mem. Pac. Coast Entomol.
Soc. 2:1-472.

———. 1958. The false spider mites (Acarina:
Tenuipalpidae). Univ. Calif. Publ. Entomol.
14(3):175-274.

SCHEUTEN, A. 1857. Einiges uber Milben.
Arch. Naturg. 23(1):104-112.

SUMMERS, F. 1953. *Bryobia curiosa*, a new spe-
cies, from the Mohave Desert in California
(Acarina: Tetranychidae). Ann. Entomol.
Soc. Amer. 46(2):290-292.

TUTTLE, D. M., AND E. W. BAKER. 1964. The
spider mites of Arizona. Univ. Ariz. Tech.
Bull. 158:1-41.

———. 1968. Spider mites of southwestern
United States and a revision of the family
Tetranychidae. The Univ. of Arizona Press.
143 pp.

UGAROV, A. A., AND V. V. NIKOLSKI. 1937. 'K
sistematike sredneaziatskogo pautinnovo
Kleshchika. Pages 26-64 in: Voprosy Zash-
chity Khlupchatnika. Sredneaziatskoi Stantsii
Zashchity Rastenii, Trudy. (In Russian.)

WAINSTEIN, B. A. 1960. Tetranychoid mites of
Kazakhstan (with revision of the family).
Kazakh. Akad. Sel'sk. Nauk. Nauch.-Issled.
Inst. Zash. Rast. Trudy 5:1-276. (In Russian.)

LITERATURE CITED

BAKER, E. W. 1968. Change of name of the
strawberry spider mite. CEIR 18(47):1080.

BAKER, E. W., AND A. E. PRITCHARD. 1953a.
Spider mites of cotton. Hilgardia 22(7):213.

———. 1953b. A key to mites of the genus
Pentamerismus, with descriptions of three new
species (Acarina: Phytotipalpidae). Was-
mann Jour. Biol. 11(3):353-366.

———. 1956. False spider mites of the genus
Dolichotetranychus (Acarina: Tenuipalpidae)
Hilgardia 24(13):357-381.

BAKER, E. W., AND D. M. TUTTLE. 1964. The
false spider mites of Arizona. Univ. Ariz.
Tech. Bull. 163:1-80.

———. 1972. New species and further notes
on the Tetranychoida mostly from the south-
western United States (Acarina: Tetrany-
cidae and Tenuipalpidae). Smithsonian Con-
tributions to Zoology 116:1-37.

BANKS, N. 1905. Descriptions of some new
mites. Proc. Entomol. Soc. Wash. 7:133-142.

———. 1912. New American Mites. Proc.
Entomol. Soc. Wash. 14:96-99.

BOUDREAUX, H. B., AND G. DOSSE. 1963. Con-
cerning the names of some common spider
mites. In: Advances in acarology I. Cornell
Univ. Press, Ithaca, N.Y. 480 pp.

EWING, H. E. 1917. New Acarina. Part II.
Descriptions of new species and varieties from
Iowa, Missouri, Illinois, Indiana, and Ohio.
Bull. Amer. Mus. Nat. Hist. 37(2):149-172.

GELJSKES, D. C. 1939. Betrage zur Kenntnis
der europaischen Spinnmilben (Acari. Tetra-
nychidae), mit besonderer Berucksichtigung
der niederlandischen Arten. Mededeelingen
van de Landbouwhoogeschool te Wageningen
(Nederland) 42(4):1-68.