

SPIDER MITES OF EL SALVADOR, CENTRAL AMERICA¹
(ACARI: TETRANYCHIDAE)KEITH L. ANDREWS² AND SIDNEY L. POE³

ABSTRACT

Nineteen species representing 6 genera of spider mites (Acarina: Tetranychidae) are reported from cultivated and wild host plants in El Salvador. Many of these species can cause noticeable and probably economically important damage to a number of the most important crops of the country. *Eutetranychus banksi* was by far the most ubiquitous and important species. Other economically important species are *Oligonychus punicae*, *O. mcgregori*, and *Tetranychus ludeni*.

In Central America the damage caused by spider mites has more often than not been overlooked by farmers and researchers. Baker and Pritchard (1963) reported 33 species from Central America, 5 of these from El Salvador. Berry (1959) listed 4 species. Three species which attack beans were listed by Manca and Cortés (1975). Additional incidental reports are cited below.

MATERIALS AND METHODS

The majority of specimens were taken by the senior author during the period February 1978 to April 1979. Other records come from student collections made during a short course given by the senior author in the National University of El Salvador in April 1979.

Mite infested foliage was field collected and placed in polyethylene plastic bags. Infested leaves were examined under magnification and mites removed and mounted directly in modified Hoyer's medium (Jeppson et al. 1975). Mounts were heated gently over an open flame and oven dried until specimens were fixed on the slide. Identifications were made using a phase contrast microscope. In some cases natural enemies of mites were also observed and collected; phytoseiids collected will be discussed by H. A. Denmark (Florida State Collection of Arthropods) and Andrews in a future publication.

RESULTS AND DISCUSSION

Of the 19 species collected, the majority are new country records. The order in which species are listed below follows the arrangement of Pritchard and Baker (1955) and Tuttle et al. (1976). Collection data are given as: host, location (nearest village or city and department), collector, date, and agronomic comments.

¹Florida Agricultural Experiment Station Journal Series No. 2401.

²Department of Entomology and Nematology, University of Florida, Gainesville, FL 32611 and Escuela Agrícola Panamericana, Tegucigalpa, Honduras, Central America.

³Department of Entomology, Price Hall, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061.

Tetranychina harti (Ewing) collected from *Oxalis* sp., Santa Cruz Porrillo, La Paz, by K. L. Andrews 3-V-1978.

Eutetranychus banksi (McGregor) collected from upper leaf surface of *Ricinus comunis*, San Salvador, San Salvador, K. L. Andrews 25-III-1979; *Cajanus cajan*, San Andrés, La Libertad, K. L. Andrews 15-IV-1979; *Shechium edule*, San Salvador, San Salvador, A. Nuila 30-III-1979; *Caladium solocasia*, San Andrés, La Libertad, K. L. Andrews, 15-IV-1978; *Codiaeum variegatum*, San Salvador, San Salvador, K. L. Andrews, 25-III-1979; *Manihot esculentum*, Santa Cruz Porrillo, La Paz, K. L. Andrews, 31-I-1979; *Bixa orellana*, San Andrés, La Libertad, K. L. Andrews, 27-I-1979; and *Citrus* sp., Nueva Concepción, Chalatenango, K. L. Andrews, 20-III-1979.

This species was 1st collected in El Salvador by P. Berry from an unknown host (Baker & Pritchard 1963). Heavy scarring and/or defoliation has been observed with this species in *R. comunis*, *C. cajan*, *M. esculentum*, *B. orellana*, *S. edule* and *Citrus* sp. It appeared to be the most common and most damaging species in El Salvador.

Eotetranychus lewisi (McGregor) collected from the underside of *Carica papaya* leaves, San Andrés, La Libertad, K. L. Andrews, 13-I-1979; and *Poinsettia pulcherrima*, San Andrés, La Libertad, K. L. Andrews, 3-IV-1979. This species was first reported in El Salvador by Berry (1959) from *C. papaya* where its feeding causes scarred, deformed and chlorotic leaves.

Mononychellus estradai (Baker and Pritchard) collected from an unidentified aromatic woody plant at km 39 on CA-1, La Libertad, K. L. Andrews, 17-IV-1978; *Erythrina* sp., San Salvador, San Salvador, G. E. Jiménez, 31-III-1979; and undersides of leaves of *Glyricidia sepium* at km 179 on CA-2, La Union, K. L. Andrews, 20-V-1979.

Mononychellus planki (McGregor) collected from the upper surface of heavily scarred leaves of *Cajanus cajan* in San Andrés, La Libertad, K. L. Andrews, 20-I-1979.

Oligonychus (Oligonychus) sp. nr. *chiapensis* Estebanes & Baker collected from *Mangifera indica*, Santa Tecla, La Libertad, K. L. Andrews, 22-IV-1979.

Oligonychus (Oligonychus) mangiferus (Rahman and Punjab) collected from *Mangifera indica*, Santa Tecla, La Libertad, K. L. Andrews, 22-III-1978.

Oligonychus (Oligonychus) punicae (Hirst) collected from upper leaf surface of *Mangifera indica*, Santa Tecla, La Libertad, K. L. Andrews, 21-III-1979; upper leaf surface of *Persea americana*, Santa Tecla, La Libertad, K. L. Andrews, 22-III-1979; upper leaf surface of *Coffea arabica*, Comasagua, La Libertad, A. Benavides, 29-III-1979; and upper leaf surface of *Terminalia catappa*, El Congo, Santa Ana, K. L. Andrews, 15-V-1979. It has been collected frequently from *C. arabica* and is considered to be an important pest of this crop by Ortiz and Trejo (1976). This species was originally collected by P. Berry from an unknown host in Santa Tecla (Baker and Pritchard 1963).

Oligonychus (Wainsteiniella) subnudus (McGregor) collected from *Pinus* sp. in San Salvador, San Salvador, K. L. Andrews, 30-III-1979.

Oligonychus (Reckliella) mcgregori (Baker and Pritchard) collected from *Persea americana*, Los Planes de Renderos, San Salvador, K. L. Andrews, 27-IV-1978; *Burcera gummifera*, Comasagua, La Libertad, A. Benavides, 29-III-1979; and *Mimosa pudica*, San Andrés, La Libertad, K. L. Andrews,

19-IV-1979. Heavy scarring of *P. americana* is often associated with this species.

Oligonychus (Reckiella) pratensis (Banks) collected from underside of leaves of *Zea mays*, San Andrés, La Libertad, K. L. Andrews, 15-IV-1978 and frequently from the same host thereafter. This species was originally reported from the same host by Baker and Pritchard (1963).

Oligonychus (Reckiella) stickneyi (McGregor) collected from the underside of leaves of *Sorghum bicolor* in San Andrés, La Libertad, K. L. Andrews, 15-IV-1978.

Oligonychus (Reckiella) zae (McGregor) collected from the underside of leaves of *Musa* cvs., San Andrés, La Libertad, K. L. Andrews, 27-I-1979; it has been found on the same host in several sites in different parts of the country.

Tetranychus (Tetranychus) cinnabarinus (Boisduval) collected from *Manihot esculentum*, Tonacatepeque, San Salvador, L. Serrano C., 10-III-1979.

Tetranychus (Tetranychus) ludeni Zacher collected from *Luffa cylindrica* in Santa Tecla, La Libertad, K. L. Andrews, 22-III-1979; and *Citrullus lanatus* in Chalatenango, Chalatenango, K. L. Andrews, 30-I-1979. In both cases the damage observed was severe. This species has been reported from *Pueraria hirsuta* in San Salvador (Jeppson et al. 1975).

Tetranychus (Tetranychus) mexicanus (McGregor) collected from upper sides of *Codiaeum variegatum* leaves in San Salvador, San Salvador, K. L. Andrews, 25-III-1979.

Tetranychus (Tetranychus) nakahari Baker collected from *Theobroma cacao* leaves in Chiapas, Chalatenango, K. L. Andrews, 19-IV-1978.

Tetranychus (Tetranychus) urticae Koch collected in a greenhouse from *Phaseolus vulgaris*, *Zea mays* and *Sephalocarpus tetragolonobus* in San Andrés, La Libertad, K. L. Andrews, 13-IV-1979. The attack caused the death of the plants. This species has been reported from *Gossypium hirsutum* by Mena (1966) and from *P. vulgaris* by Mancía and Cortés (1975).

Tetranychus (Tetranychus) yusti McGregor collected from *Xanthosoma sagittifolium* in Santa Tecla, La Libertad, K. L. Andrews, 20-IV-1979. It was reported by Mancía and Cortés (1975) from *P. vulgaris*.

CONCLUSIONS

Spider mites are found on a large number of cultivated plants in El Salvador. We observed that they can cause considerable foliar scarring and defoliation during the 6 months dry season (November-April) to perennials and to annuals grown under irrigation. The economic importance of this damage is not known. With increasing use of irrigation, high analysis inorganic fertilizers and chemical insecticides these generally overlooked and underrated arthropods will become increasingly more important pests. Considerable basic and applied work is warranted. Through an understanding of the identities of the major species causing damage, their life histories, economic thresholds, and natural enemies, sound management strategies can be implemented.

ACKNOWLEDGEMENTS

This work was conducted under USAID Grant AID-1a-C-1084 (El Salvador). The Salvadorean National Center for Agricultural Technology, Ministry of Agriculture and Livestock (CENTA, MAG) provided facilities. The loan of student collections is appreciated. Our thanks to E. W. Baker for aid in identifying certain of the specimens.

LITERATURE CITED

- BAKER, E. W., AND A. E. PRITCHARD. 1963. Arañas Rojas de América Central. *Rev. Soc. Mex. Hist. Nat.* 23: 309-40.
- BERRY, PAUL. 1959. Entomología Económica de El Salvador. Boletín Técnico No. 24. Publicaciones del Servicio Cooperativo Agrícola Salvadoreño-Americano. MAG. Santa Tecla. 256 p.
- JEPPSON, L. R., H. H. KEIFER, AND E. W. BAKER. 1975. Mites injurious to economic plants. Univ. of Calif. Press, Berkeley. 680 p.
- MANCIA, J. E., AND M. R. CORTÉS. 1975. Lista de insectos clasificados encontrados en el cultivo de frijol, *Phaseolus vulgaris* L. *SIADES* 4: 120-36.
- MENA, J. A. 1966. Principales plagas de los cultivos en El Salvador. Boletín Técnico No. 44. Dirección General de Investigaciones Agropecuarias. MAG. Santa Tecla. 7 p.
- ORTIZ, J. A., AND J. A. TREJO. 1976. Plagas de café. In Anonymous, Manual técnico del cultivo de café in El Salvador. Imprenta MAG. Nueva San Salvador, El Salvador.

A NEW SPECIES OF *SURICATOECUS* (MALLOPHAGA: TRICHODECTIDAE) FROM THE WESTERN CUSIMANSE, *CROSSARCHUS OBSCURUS* (CARNIVORA: VIVERRIDAE)

K. C. EMERSON AND ROGER D. PRICE
 560 Boulder Drive, Sanibel Island, FL 33957, and
 Department of Entomology, Fisheries, and Wildlife,
 University of Minnesota,
 St. Paul, MN 55108, respectively

ABSTRACT

The new species, *Suricatoecus occidentalis*, is described and illustrated from specimens taken off *Crossarchus obscurus* F. Cuvier (Carnivora: Viverridae) from the Ivory Coast and Nigeria. A key to the species in the *Suricatoecus helogale* group is provided.

Werneck (1948) reviewed the 11 species of *Suricatoecus* Bedford and subsequently Emerson and Price (1967) described an additional species, *S. congoensis*. We have recently received a series of African *Suricatoecus* from the western cusimanse, *Crossarchus obscurus* F. Cuvier, that differs from these 12 known species, thereby representing a new species. It is our intent to describe and illustrate this new species here.