

# Oligonychus biharensis (Hirst, 1924)

## Material examined

syntype? (see Notes); non-types

## Taxonomy

Subfamily Tetranychinae

Tribe Tetranychini

## Distribution

+Australia, American Samoa, Antigua, Bangladesh, Brazil, China, Fiji, French West Indies, Hainan Island, Hawaii, \*India, Malaysia, Mauritius, Mexico, New Caledonia, Okinawa Island, Papua New Guinea, Philippines, South Africa, Taiwan, Thailand, Tonga, Wallis & Futuna, Western Samoa

## Taxonomy Changes

*Paratetranychus biharensis* Hirst 1924

*Oligonychus biharensis* (Hirst) Pritchard & Baker 1955

*Paratetranychus hawaiiensis* McGregor 1950, synonymy Pritchard & Baker 1955

## Diagnosis

### Female

- empodia I-IV stout, strongly curved claw as long as or slightly shorter than proximoventral hairs; ventral proximoventral hair significantly thicker than dorsal hairs (Figs 1-4) [Pritchard & Baker 1955 illustrates empodial claws with 1-2 tiny dorsal fine hairs]
- peritreme recurved distally = distal hook (other Australian *Oligonychus* do not have such a peritreme) (Fig. 5)
- most dorsal striae transverse, except irregular longitudinal and/or oblique between opisthosomal setae *e1-e1* and *f1-f2* (Figs 6-11)
- dorsal setae *f1* longer than *f2*
- pregenital striae longitudinal with broad anterior band of broken striae (Figs 4, 12-15)
- description of spinneret on palp varies in the literature:
  - three times as long as wide (Gupta & Gupta 1994)
  - short and broad (Meyer 1987)
- tarsus I with the sockets of four tactile setae and one solenidion proximal to the socket of proximal duplex seta [same as recorded by B&P 1960]
- tarsus II with sockets of three tactile setae and one solenidion proximal to, and one tactile seta overlapping, the socket of the duplex seta [same as recorded by P&B 1955]
- tibiae I-IV 10(1+0), 7, 6, 7 [B&P 1960, P&B 1955 - record tibia II with 5]

### Male

- empodium I stout, strongly curved, with dorsal hairs; longer than proximoventral hairs
- empodium II with dorsal hairs; shorter than proximoventral hairs
- empodia II-IV as in female
- peritreme recurved distally = distal hook (as in female) (Fig. 5)
- spinneret of palp twice as long as wide
- number of proximal setae on tarsus I varies in the literature:
  - tarsus I with sockets of three tactile setae and three solenidia proximal to the socket of the proximal duplex



Fig. 1. *Oligonychus biharensis* adult female syntype (?) - detail of claw IV.

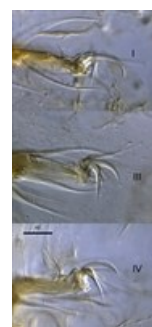


Fig. 2. *Oligonychus biharensis* adult female (non-types) - detail of claws I, III, IV.

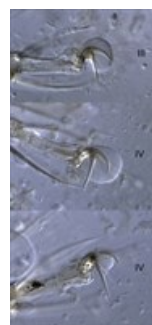


Fig. 3. *Oligonychus biharensis* adult female (non-types) - detail of claws III and IV.

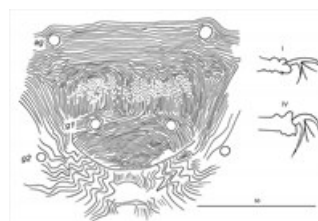


Fig. 4. *Oligonychus biharensis* adult female - detail of pregenital striae (from Cambodia, on type host, rose); detail of claws I and IV (from Singapore, on type host, rose).

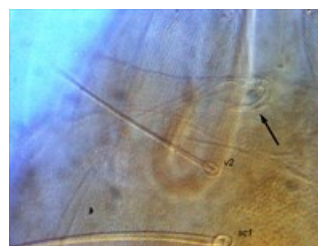


Fig. 5. *Oligonychus biharensis* adult female syntype (?) - detail of peritreme.

seta (Aust. material from *Ficus*)

- tarsus I with the sockets of four tactile setae and two solenidia proximal to the socket of the proximal duplex seta
- tarsus I with the sockets of four tactile setae and three solenidia proximal to the socket of the proximal duplex seta (B&P 1960; P&B 1955)
- tarsus II with the sockets of two-three tactile setae and one solenidium proximal to the socket of the duplex seta (P&B 1955)
- tibiae I-II 11(3+0), 7
- tibiae I-II 11(4+0), 5 (B&P 1960; P&B 1955)
- aedeagus dorsally directed, axis of knob parallel to that of shaft; posterior projection long, slender, tapering to point, dorsal margin flat becoming slightly downcurved distally [n.b. strongly downcurved in Jeppson *et al.* 1975 and P&B 1955 - illustrations of aedeagus very different to that of other authors]; anterior projection short stout triangular bump; dorsal margin of knob flat to convex due to downward curve posteriorly (Figs 16-18)

## Hosts

Types from rose leaves, Pusa (India), 6.ii.1918, T.B. Fletcher (Hirst 1924)

> 40 including: *Acacia confusa*, *A. spirorbis* (Mimosaceae), *Artocarpus altilis*, *A. heterophyllus* (Moraceae), *Bauhinia purpurea*, *Cassia fistula*, *C. fruticosa* (Caesalpinaceae), *Citrus* sp. (Rutaceae), *Diospyros maritima* (Ebenaceae), *Eugenia javanica* (Myrtaceae), *Ficus retusa* (Moraceae), *Grewia paniculata* (Tiliaceae), *Hibiscus tiliaceus* (Malvaceae), *Litchi chinensis* (Sapindaceae), *Malus domestica* (Rosaceae), *Mangifera indica* (Anacardiaceae), *Manihot esculenta* (Euphorbiaceae), *Musa* sp. (Musaceae), *Persea americana* (Lauraceae), *Pyrus communis*, *P. pyrifolia* (Rosaceae), *Psidium guajava* (Myrtaceae), *\*Rosa* sp., *Rosa centifolia* (Rosaceae), *Sapindus mukorossi* (Sapindaceae), *Tamarindus indica* (Fabaceae), *Vitis vinifera* (Vitaceae)

## Similar Taxa

*Oligonychus calicicola* Knihinicki & Flechtmann 1999

## Biology

In India this mite infests litchi, loquat and sometimes mango, but never becomes a serious pest. Like other *Oligonychus* that feed dorsally on the leaves of their hosts, their shed skins and empty eggs build up as the population grows. These skins and egg shells remain after the colony has died off, and appear to the naked eye as white spots or dust along main vein.

On loquat leaves, feeding by this mite leaves a characteristic bronzing (Jeppson *et al.* 1975).

## References

- +Davis, J.J. (1968f) Survey of Tetranychidae. *Item 12 Qld. Dept. Agric.*
- \*Hirst, S. (1924) Descriptions of new Acari, mainly parasitic on rodents. *Proceedings of the Zoological Society of London*: 49-69
- McGregor, E.A. (1950) Mites of the family Tetranychidae. *American Midland Naturalist*44: 257-420
- Pritchard, A.E. and Baker, E.W. (1955) A revision of the spider mite family Tetranychidae. *Pacific Coast Entomology Society Memoirs* 2: 1-472
- Schicha, E. and Gutierrez, J. (1985) Phytoseiidae of Papua New Guinea, with three new species, and new records of Tetranychidae (Acari). *International Journal of Acarology*11: 173-181

## Notes

A female specimen from NHM was examined that could represent a syntype. The specimen was collected from rose leaves in Pusa, India, but has no collection date or collector.

Other material examined included material collected from rose leaves (type

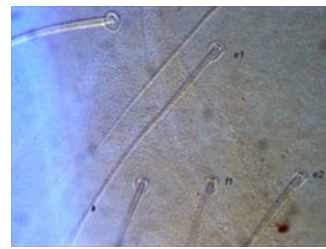


Fig. 6. *Oligonychus biharensis* adult female syntype (?) - detail of pattern of dorsal striae between setae e1 and f1.

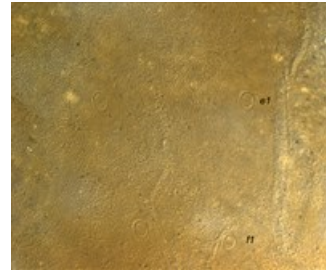


Fig. 7. *Oligonychus biharensis* adult female (non-types) - detail of pattern of dorsal striae between setae e1 and f1.



Fig. 8. *Oligonychus biharensis* adult female (non-types) - detail of pattern of dorsal striae between setae e1 and f1.

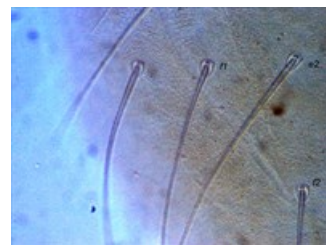


Fig. 9. *Oligonychus biharensis* adult female syntype (?) - detail of pattern of dorsal striae between setae e1 and f2.



Fig. 10. *Oligonychus biharensis* adult female (non-types) - detail of pattern of dorsal striae between setae f1 and f2.

host) in Singapore and Cambodia, and material from India (type country) collected from cassava.

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Fig. 11. *Oligonychus biharensis* adult female (non-types) - detail of pattern of dorsal striae between setae f1 and f2.

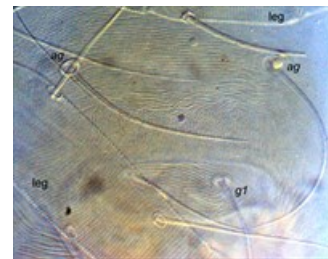


Fig. 12. *Oligonychus biharensis* adult female syntype (?) - detail of pattern of pregenital striae.

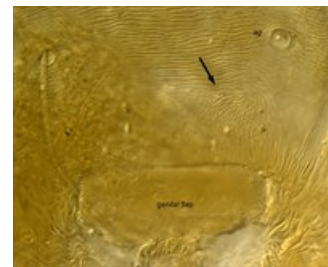


Fig. 13. *Oligonychus biharensis* adult female (non-types) - detail of pattern of pregenital striae.



Fig. 14. *Oligonychus biharensis* adult female (non-types) - detail of pattern of pregenital striae.



Fig. 15. *Oligonychus biharensis* adult female (non-types) - detail of pattern of pregenital striae.

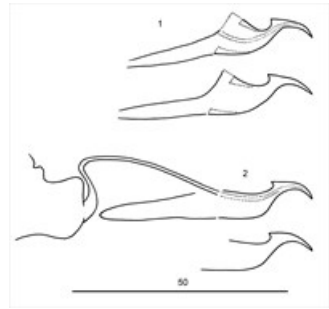


Fig. 16. *Oligonychus biharensis* adult male (non-types) - detail of aedeagus (at different focal points) - 1. from South India (on cassava), 2. from Singapore (on type host, rose).

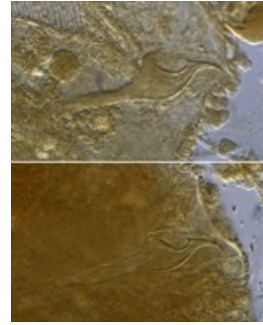


Fig. 17. *Oligonychus biharensis* adult males (non-types) - detail of aedeagus, from South India (on cassava).



Fig. 18. *Oligonychus biharensis* adult male (non-types) - detail of aedeagus (at different focal points), from Singapore (on type host, rose).